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"It was a great system" Face-work and the discursive construction of technology during information systems development

"It was a great
system"

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Abstract This paper examines discursive strategies deployed by individuals to manage the deinstitutionalization of technology during IS development. In particular, the strategy of face-work is an inevitable response to requirements analysis, because it centers on identifying "problems". Directly implicated are individuals who work with the legacy system, thus threats to face and place within the organization are inescapable. This research shows that individuals save face by valorizing the past. This face-work is accomplished through constructing the legacy system as a great system of the past and by confessing to previous transgressive acts with this system that attests to their technological competence. Both strategies are an intricate part of identity negotiations that serve to secure an individuals' place in the organization. In this study, the presence of expert consultants and researcher gave expression to particular skewed power relations during the interviews. Thus, face-work is profoundly influenced by the discursive field in which it takes place. Implications for research and practice are discussed.

Introduction

It is widely recognized that requirements analysis is a critical phase in information systems (IS) development. As a result, researchers and analysts alike have devoted much time and effort to IS development methods aimed at eliciting and analyzing requirements. Estimates vary as to the number of different methodologies available to organizations; some suggest 300 (Longworth, 1985) while others suggest that there may be more than 1,000 (Jayaratna, 1994). In the ideal world, the much sought-after requirements would flow smoothly from the mouths of users to the code of programmers, the path of which would be guided by the charts and grids of analysts. However, as research has shown, for a variety of cognitive, communicative, and motivational reasons, information obtained and understood by analysts is considered "incomplete" (Agarwal *et al.*, 1996; Bostrom, 1989; Byrd *et al.*, 1992). Other research has countered this by arguing that the requirements problem is not with information provided but instead with the inability of current techniques to capture the "deep structure" of organizational members' language (Leifer *et al.*, 1994). That is, the values, beliefs and norms that are critical to effective organizational functioning are missed by current techniques. This paper starts from the assumption that users provide very rich and meaningful information during requirements analysis and proposes a method for analyzing this data.

A framework for analyzing the meanings and concerns conveyed in interactional talk by users during requirements analysis is developed by

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drawing on CDA (CDA). CDA employs sociolinguistic methods for examining the linguistic features of different types of discourse units and the way they are tied together to create meaning. CDA also concerns itself with critically examining the social context in which the interaction takes place. In this paper, IS development is conceptualized as a process of IS displacement; old systems and practices are removed and replaced by new ones. The paper examines IS development discourse and shows that in the context of developing a new system, clients valorize past practices and technologies, in an effort to sustain a positive face. This valorization takes place during the requirements analysis interview, which is viewed as a confessional act, where the analyst attempts to extract the "truth" from clients who confess to past IS uses and in some cases misuses.

In the first part of the paper, IS development is conceptualized as a process of system and process displacement rather than solely as a process of bringing in new tools. In the next section a theoretical framework is developed by drawing on CDA for examining interactional talk in its socially situated context. The framework is augmented with the notion of "the confession" as a way to understand the specific type of discourse that emerges during IS requirements interviews. Face and frame are drawn on as discursive mechanism for examining requirements analysis interviews. The framework is then applied to interviews obtained from an IS development project at a large public institution. The paper ends with insights and critique about the knowledge that discourse analysis provides about participants, their reactions to displacement and the implications for IS development.

New system in, old system out

How can IS development be conceptualized? For the most part, IS development is equated with building, buying or in some way establishing "new" information processing tools and techniques in an organization. This, however, obscures other facets of the process, namely the discarding of existing technologies and practices. As Avgerou (2000, p. 235) argues, information technology (IT) innovation can be conceptualized as "a dual process of institutionalization of IT and de-institutionalization of established organizational structures and practices". Extending this argument, this paper suggests that the implementation of a new IS has a third component; deinstitutionalization of the existing technology. One would be hard pressed to find any medium to large organization without a substantial computer-based information system currently in place. If we use enterprise resource systems as a rough indicator, by conservative estimates, sales for 2000 are projected anywhere between \$15.5 billion (*Computerworld Briefs*, 1997) to \$24 billion, with suggestions that this number could easily be inflated by a factor of five (Smith, 1999).

When speaking about IS development on this scale, we are also speaking of IS deinstitutionalization – that is IS replacement or displacement. Deinstitutionalization is defined as "the delegitimation of an established organizational practice or procedure" (Oliver, 1992, p. 564) usually brought

about by a perceived performance crisis. During deinstitutionalization, practices and associated roles that have been “taken-for-granted”, “obvious”, or even “natural” are questioned, challenged and discredited in order to change or abandon them. For most organizations, “new” systems development require that existing technology, as well as enshrined practices, structure and cultural elements that may have been slowly and painfully developed be abandoned. This paper argues that conceptualizing IS development as a process that incorporates displacement and abandonment gives us added insight into the information that users convey during requirements determination. In particular, CDA provides the tools by which, systematically, users respond to and construct the displacement process.

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Critical discourse

CDA is concerned with understanding and interpreting meaning as it is produced in its social context. This provides the basis for a possible critique and transformation of existing practices and social meanings (Caldas-Coulthard and Coulthard, 1996; Fairclough, 1989, 1992, 1995). CDA uses sociolinguistic methods (Schiffrin, 1994) to analyze discourse, language use in speech and writing, interactional talk and text. Sociolinguistics assign special significance to the structure of speech and text, and provide 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, CDA also concerns itself with examining social context along the lines of ideology, power and inequality. As Fowler (1996, p. 10) suggests, CDA goes “beyond the formal structure of language as an abstract system, toward the practical interaction of language and context”. In this sense, language is seen as a mode of action that is always socially situated “in a dialectical relationship with other facets of ‘the social’ . . . [I]t 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.

Similar to hermeneutical modes of inquiry, CDA is concerned with understanding and interpreting socially produced meanings; however, it differs in that it is concerned with critiquing the manner in which the “social” is produced and sustained through language and text. 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. CDA shares with critical theory more generally the premise that there is a degree of “distortion” in all mediums of representation (such as language) that functions to create and maintain power imbalances. What might be called a “hermeneutics of suspicion” evident in the writings of Marx, Nietzsche and Freud, seeks to uncover some deep truth in practices – whether it be “class struggle”, the “will to power”, or the “unconscious” (Ricoeur, 1970, p. 35). In this model, practices and forms of representation are seen merely as distorted

expressions of underlying logics and trends, and the task of analysis is clarification, critique and emancipation (Dreyfus and Rabinow, 1982).

However, unlike critical theory CDA does not seek to uncover the “true” underlying meanings of texts and actions, which are thought to be deliberately concealed by ideological practices or discourses. Instead, CDA assumes that “there is not necessarily any true reality that can be unveiled by critical practice, there are simply relatively varying representations” (Fowler, 1996, p. 4). CDA therefore, demystifies and provides novel interpretations of events and practices that are taken to be “common sense” by defamiliarizing them and signaling their functions and consequences in sustaining the social order. In this way, 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. This demystification sets the conditions for possible social change.

For instance, in examining the 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 and 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 worker as “flexible” and “empowered”. These definitions play down the discourse of profit-making and highlight those of good work ethics which will motivate the workers to take on more responsibility for the same amount of pay. This form of analysis draws our attention to the discourse environment of modern business organizations and provides a critique of these institutions as a site for power negotiations.

Discourse analysis is not new to IS scholars. Several researchers have adopted a critical hermeneutic view that uses discourse analysis of one sort of another to examine technology implementation and use (Myers and Young, 1997). For instance, some of the path-breaking research includes that of Wynn and Novick (1996) who examine the issue of “turns” during cross-functional meetings. They find that what is considered a “valid” contribution is based on discourse style. In particular, listeners receive the story, versus the professional style of discourse, differently. Others, such as Sayer and Harvey (1997), study implementation discourses. In particular, they examine how the use of an electronic mail system is used as a technology of power to manipulate discourses during a BPR project. And, finally, Suchman and Bishop (2000) examine discourses of “innovation” that function to conserve rather than change existing institutional orders. The research here follows this work by critically examining the discourse that emerges with an eye toward identity and power negotiations.

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In addition to using CDA, this paper argues that requirements elicitation and in particular, interviews can be viewed as a confessional act. While the tools and techniques of various IS development methods may vary, the primary means for obtaining information during requirements analysis is the direct interview (Agarwal and Tanniru, 1990; Hotzblatt and Beyer, 1995). During interviews, participants confess a “truth” about actions, problems, hopes and needs in regard to work life. Confession is used here in the Foucaultian sense (Foucault, 1980, 1981, 1991), 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”). A fundamental observation of discourse analysis is that speakers’ identities emerge from discourse (Bucholtz, 1999). 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).

Now consider the requirements analysis interview. During these interviews clients confess to actions and transgression they have performed in relation to the information system. Often users tell of their hopes, fears, troubles and desires for the new information system and organizational structure that may accompany this change. It is through the confession, through the telling of their story, that the identity of the speaking subject is performed, shaped and even contested during requirements analysis interviews (Alvarez, 2001; Alvarez and Urla, forthcoming). Moreover, the information worker confesses in the presence of an authority or “expert” if we consider that a systems analyst or highly-paid consultant usually conducts the interview. The client as speaking subject discloses information about work practices, structures, and culture, thereby making finer and more intimate regions of work life available to the expert for surveillance, judgment, evaluation and classification.

This paper draws on two discursive mechanisms, framing and face-work adapted from the work of Goffman, to analyze requirements analysis interviews. Goffman and others (Bateson, 1972; Goffman, 1974; Tannen and 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 “contextualization cues” which may be prosodic, paralinguistic and non-verbal. These messages

function to call up shared experiences. They are powerful means of negotiating social identity and legitimating preferred styles of communicating in the predominantly asymmetrical interactions in workplace settings (Sarangi and 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.

Another concept used in this paper is face-work. In social interactions, actors seek to organize particular presentations of self or face. Face, as studied by Goffman (1967, p. 5), "is an image of self-delineated in terms of approved social attributes – albeit an image that others may share". 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 social "performance" amounts to a display of character, or identity, which implies a claim to legitimate membership and participation in that particular social group.

Individuals seek to preserve face. As Brown and Levinson (1978, p. 61) suggest, "face is something that is emotionally invested, and that can be lost, maintained or enhanced and must be constantly attended to in interaction". If face is somehow threatened, the issue of face-work becomes key. The management of face may take the form of verbal statements about roles and responsibilities or be managed through prosodic and linguistic markers such as change in tone or hesitation. A complex array of resources, actions and strategies are adopted to protect one's face. This paper takes the position that the goal of requirements analysis, to a large degree, centers on identifying "problems" (i.e. problems with the legacy system, information access, current processes). Therefore, as individuals articulate and construct problems with systems and processes with which they are intertwined, threats to face are inevitable and the management of face-relations becomes an intricate part of identity negotiation. Face management is thus linked to identity construction. In general, framing and face-work apply superbly to IS development settings, where deft face-work and framing are the core of routine interactions.

The empirical study

The organization chosen for the study is a large public research institution called State University (pseudonym is used). State University is located in the northeastern USA, its annual budget exceeds \$5 billion, and has approximately 24,000 students, 1,184 faculty and 3,600 staff. At the time of the fieldwork, the university had recently allocated \$11 million for an IS development project, which I will call the administrative IS (AIS) project. The new IS 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.

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The legacy system that was in place at the start of this project consisted of a combination of in-house developed applications and vendor software that had been heavily customized or no longer updated. The student registration system was built in-house using a System 2000 hierarchical database with some VSAM files. Information Associates, a vendor of higher education software, provided applications that handled student financial aid, bursar and financial functions. All three applications had been discontinued and were now updated and maintained in-house. Information Systems Incorporated provided the human resource application, which was also a discontinued application now updated by in-house staff. The operating system consisted of MVS ESA v4.3, CICS v2.1.2, and OS/VS Cobol 2.4. All applications were located on an IBM 3090. A voice-response system provided by EPOS was in use for student access to information and registration. The ages of each module varied, but for the most part they ranged between ten to 15 years in use.

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For this research, I 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 AIS project. Even so, this, like any other research project, involves negotiations between people of unequal power. As the researcher, I was both an academic and employee of the CIO. Therefore, I was often perceived as having power in the interactions because of this training and organizational position. This type of unequal power relationship, whether acknowledged or not, exists in most research contexts where the researcher has perceived authority over the research participant. The researcher designs, carries out the research program, and ultimately creates a narrative that will be inscribed in academic journals as “findings”. The researcher, in his/her position of power, “discovers” the data that is then interpreted through the researcher’s experiences, lenses and filters through which the individual understands the world. In some way, the “instrument” used in this and other interpretive case studies is the researcher’s sensation, appreciation and ultimate interpretation of what was going on. The case study was completed and a report was provided to the CIO who read and approved its contents. However, I continued my data collection after this because I was interested in capturing the social interactions that made up the discourse environment of the IS development project.

Method and data collection

The research was conducted between January 1996 and December 1998. The entire IS development project lasted from 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 and produce all relevant documentation.

The data collection was conducted through participant observation of requirements analysis interviews and a survey. 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 participation in the discussion. In all interviews at least two analyst-interviewers were present. The analysts' strategy was to have one interviewer ask question, and the other function as "scribe". Conversations during interviews were taped. Respondents were aware of the taping and were able to ask for the recording to be stopped at any time. Data was collected at 32 meetings in which 82 individuals from eight different departments participated. The data set consists of 60 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.

After transcribing tapes from the interviews, qualitative analysis proceeded iteratively. I was involved in every iteration, allowing me to become "intimately familiar" (Eisenhardt, 1989) with the data. The analysis proceeded from open coding to axial coding (Strauss and Corbin, 1990). Selective coding, which usually follows axial coding, did not take place, because after axial coding theoretical saturation was obtained. According to Alvesson and Skoldberg (2000), when using grounded theory the methodology can be modified, it is more a question of continually comparing newly-coded data in a category with data previously coded in the same category, until theoretical saturation occurs.

Open coding is the process of breaking down, examining, comparing, conceptualizing, and categorizing data. The core features of open coding are:

- the inductive development of provisional categories;
- ongoing testing of categories through conceptual analysis and comparison of categories with data that is already coded; and
- the altering of existing categories as other ones are created or eliminated (Strauss, 1987, pp. 11-13).

Once all the data were examined, the concepts were organized by a recurring theme. These themes became candidates for a set of categories, which linked a number of associated concepts. This is known as axial coding, which required that the researcher make connections between categories to construct a comprehensive story. At this point, the overarching theme of valorizing the past emerged that connected the categories. Further analysis of the data no longer contributed to discovering anything new about the category, at which point theoretical saturation was obtained. Precautions were taken to corroborate the interpretation (Miles and Huberman, 1994) through the data obtained in the survey and conversations with participants. While in the following study only two excerpts from the interviews are examined, they represent the overarching theme that was present in many of the other interviews.

A survey to obtain system exposure and demographic information was administered to 213 participants and returned by 86 participants involved in

the IS development project (and the requirements analysis interviews). The mean number of years using the existing (legacy) system by users involved in the AIS project was 9.67 years with a standard deviation of 7.65 years. For self-reported technical expertise, on a scale of one to seven (1 = data entry duties, 7 = programming), findings show a mean of 3.95 years with a standard deviation of 1.72. There were 30 men and 56 women. In general, the respondents had worked a substantial amount of time with the legacy system and rated their technical expertise as average.

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Findings

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, transcription conventions were based on the work of Riessman (1990) and Gronn (1983, 1985) (adapted from Stubbs, 1983). These conventions ensured that overlaps, exclamations, questions, pauses and emphasis were maintained. Symbols used in the transcribed 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). In analyzing the interviews, I identify frames and examine their interactional accomplishment, maintenance and resistance through the use of face-work. I take into consideration the turn-taking system and moves that participants accomplish in each turn. A turn at talk refers to the process of “holding the floor” while a move refers to the speech action taken during ones turn at talk (Coulthard, 1985).

The institutional context

For an understanding of the context of the requirements analysis interviews, it is important to realize that the legacy system and associated processes and structures were discredited by, among other discursive strategies, a number of reports issued prior to and during the AIS project creating a perceived performance crisis. In the spring of 1996, immediately before the AIS project was publicly announced, a committee issued an IT strategic plan. The committee was composed of 30 IS specialists representing a broad cross-section of the campus. The group described the growth and current state of the legacy system as follows:

Administrative systems ... are characterized today by out-of-date, unintegrated, labor-intensive applications. Systems have been created in a haphazard manner and are either inaccessible or difficult to use.

The critique here centered on the lack of planned expansion and current inadequate technology. Other reports criticized the legacy system for other reasons. For instance, the request for bids (RFB) that was issued to secure the services of the consultants who conducted the requirements analysis interviews supported the criticism of uncoordinated growth, as well as the underlying technology itself. The report was a product of the work of about 20 technical staff from the administrative and academic areas of the university. It states:

Many of these applications ... were written when processing and storage capabilities were much more limited. In this era of increasing demands for more direct access ... the systems have proven inadequate in meeting the campus' evolving needs, as well as being difficult and costly to maintain. ... This gradual and uncoordinated decentralization of information processing makes it difficult to ensure that current information is always used, that data integrity is preserved, and that security is consistently maintained.

And still, another report issued by a group of 12 managers from the administrative area several years before the AIS project began, criticized the support structure for the legacy system.

The current administrative structure for administrative computing at the university is ... supported by a center located on the campus. While this administrative structure may have certain advantages in allowing for the sharing of certain computer systems, it also leads to both cumbersome and lengthy procedures before any decision or action may be taken, since any given action may have different impacts on different campuses. This applies to both maintenance and development work.

Consensus around the worth of the legacy system was disrupted by these reports. Yet, consensus is essential for maintaining ongoing conformity to institutional practices (Meyer and Rowan, 1992; Scott, 1987). In particular, a perceived performance crisis eroded institutionalized practices and created dissensus at the university. This is in part due to the fact that performance crises increase the potential for fragmenting socially-shared templates for appropriate organizational activities. As the sampling of reports above shows, the performance crisis was occasioned by open criticism of the legacy system and the organizational structure and processes associated with it. The development of political dissensus around the worth of the legacy system disrupted the consensual agreement and functioned as a critical antecedent to deinstitutionalizing (Oliver, 1992) the existing system and accompanying organizational structures. It was in this context that the requirements analysis interviews took place.

Valorizing the past

Requirements analysis interviews allowed me to observe how clients act in relation to the problem of defending their image as competent information workers in public or how they try at all costs to "save face" which was

constantly threatened because of the stigma of being associated with the legacy system. For users, the preservation of face signifies a struggle, which they see threatened by a perceived performance crisis of the legacy system. Throughout many of the interviews, users attempt to save face by valorizing the past. This discursive strategy is accomplished by several means. First, the legacy system is presented in such a way as to show that, in its time, it was “state of the art”. This mechanism also serves to enhance the client’s identity as “veteran” and a competent information worker in her/his time. The other mechanism that is invoked to valorize the past is one of confessing to transgressions through subversion of the legacy system. These subversions are exceedingly complex work-arounds that exemplify the client’s ability to use an aging but carefully customized system in order to accomplish otherwise difficult or impossible tasks.

In the following section, Bob, from the student billing office, is asked questions by two interviewers (Int. 1 and Int. 2) about the manner in which billing charges are posted to student accounts and how bills are produced. Bob is the director of the billing office and at the time of the interview was approaching retirement from his position. He is interviewed in the presence of two other staff from his office.

- 1 *Bob* – So you see a file being created with all the master file information then as
- 2 soon as we’re ready to put the charges on, say it’s the first week in July, then our
- 3 charges go. That’s the type of job that we run and it’s a two-day process. We
- 4 look at the job ahead of time so the charges are created and we review
- 5 the charges and make sure that everything is okay before we load it onto the file.
- 6 *Int. 2* – In other words you run that first job that produces a report.
- 7 *Bob* – Yeah, it’s not the whole job it’s just a sampling. So we stop the number of
- 8 pages, it would literally take up this whole table, we only want to see a couple
- 9 hundred pages, just to see if it’s going ok.
- 10 *Int. 2* – So it’s a simulation.
- 11 *Bob* – Yes, a simulation, /it is.
- 12 *Int. 2* – So you can/make changes if you need to and then run it in production.
- 13 *Bob* – Yeah, what it’s set up for is the “oops we missed this one”. You know,
- 14 sometimes that happens but we try and find various conditions because the
- 15 University in particular has become so convoluted that there are all these
- 16 different combinations. You have to make sure that you didn’t forget this that the
- 17 freshmen gets charged this, that the sophomore gets /charged that.
- 18 *Int. 2* – Well/ getting (2) looking at the larger issue here it seems as what we need
- 19 to do is document this very complicated business and fee structure to make sure
- 20 that {umm} a new system can/bill people.
- 21 *Bob* – Yeah, exactly/.
- 22 *Int. 1* – With incredible/permutations
- 23 *Int. 2* – Be flexible/
- 24 *Bob* – Yes, but the system we have was never set up for this, it’s a model T trying
- 25 to do all this. As new things came on board we try to adapt things to make it
- 26 work, and it’s worked, but.
- 27 *Int. 1* – As you said there is no single document that shows all the rules. So it’s
- 28 just you getting let’s say a/memo from the trustees and you apply to the

- 29 parameters directly.
 30 *Bob* – yes (2) yes (2) yes/you make the best with what you have.
 31 *Int. I* – ok.
 32 *Bob* – When we put the system in, and it was a great system, it has withstood the
 33 test of time, but a lot of these things we've had to patch, because after somebody
 34 put something through, then we'd say "oh we didn't think about that". Well no,
 35 of course we don't think about that. So you run around try to make the best of it.
 36 As far as if you can understand the concepts of how the system is built-up and
 37 tries to bill the students, then we'd get into different permutations later on,
 38 otherwise, like I said, you'll be so discouraged.
 39
 40 (Brs. 9: 79).

Bob attempts to articulate the complexity of the billing process as well as the ability of the legacy system to handle this, albeit with intervention on the part of Bob and his staff. Particular discursive strategies deployed by Bob support this. Beginning with lines 1-5 and 7-9, Bob describes at length the process by which they charge students and print bills. In particular, Bob stresses the magnitude of the system job by saying that if the entire job run, rather than a sampling, "it would literally take up this whole table". The consultant summarizes Bob's lengthy description by "so it's a simulation" giving name, in one word, to what Bob spent several lines describing in painful detail. In this move, the interviewer reframes the interview placing it in a more formal, technical frame. Bob agrees with the descriptor, as a way to balance the interaction and stay within the proposed frame. This allows him to save face by a means of approximation between the consultant's and his language. He momentarily agrees that his process approximates simulation, as suggested by the consultant. He incorporates his process of the past, likening it to a simulation (a term of the present).

However, in retaking his turn on line 13, Bob reframes the interview by reverting to colloquial or quotidian speech ("oops we missed this one"). He then tells a story about the past to explain how complicated the process has become for tracking changes. This subsequent description would suggest that Bob does not see simulation as sufficiently comprehensive a term to describe the sheer complexity of the system and his process. he therefore counter-frames the interaction to stress his disagreement. Bob now confesses to transgressions with the system. In his example of a "missed one" he details what his staff must do when they mistakenly forget to post a charge. He alludes to other transgressions when he states "we try to adapt things to make it work" (line 25) although he does not specifically describe the transgressive acts performed.

In the subsequent lines (18-23) the consultants are much more generous in their description of the system and process as complex. They now describe it as "complicated business", "incredible permutations", and "flexible". Bob then skillfully moves to praising the legacy system as a good technology whose time has passed. He describes the legacy system as "a model T" (line 24), "it was a

great system” (line 32). These statements evoke an appreciation, a nostalgia, for the system whose time has passed. However, embedded in his nostalgia is critique as he simultaneously praises and recognizes the systems limitations; “you make the best with what you have” (line 30), implying that the existing system is far from adequate for addressing all the modern demands that have emerged since its creation.

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Bob succeeds in constructing the legacy system as a sophisticated but aging technology. Because the context in which the interview takes place is one where the legacy system has been discredited, Bob spends much time convincing the interviewers that the legacy system had its merits. Throughout this extract we observe an unfolding semantics of patterned system competence which culminates in a legitimated legacy system. Rather than Bob being perceived as someone associated with a dying system, thereby discrediting his status, he instead is associated with a once-sophisticated technology. This way, Bob’s face as competent information worker and director of billing is saved by being associated with legacy system. The face saving is produced discursively through his ability to convince the consultants that the legacy system was a sophisticated tool, in its time. His identity *vis-à-vis* the legacy system is enhanced but at the same time, through his critique, he shows an awareness that a need for newer technology is necessary.

In the following excerpt, four members of the enrollment management office are interviewed by two interviewers (only one speaks). The interviewees are Joan, Alice and Enid. They are asked about the process and system functions related to calculating (calc.) and tracking grade changes for students:

- 1 *Enid* – So you have to have been here after the period of transfer work in order
- 2 for that to start /calculating.
- 3 *Joan* – Yeah it starts counting/(3) {umm}.
- 4 *Int. 1* – Well it’s not counting credits.
- 5 *Joan* – At the transfer level it *is* counting credits.
- 6 *Int. 1* – Yes, I know it counts credits but it’s not updated.
- 7 *Enid* – But if we put an old record, for example, on to the student information
- 8 system there are some things that you have to do that are a little funky to keep the
- 9 calc. on the system from showing the same way that they would have shown on
- 10 the/transcript from 1973.
- 11 *Alice* – Yeah, yeah/ I have to lock everything in.
- 12 *Enid* – We have had rule changes it’s just that we haven’t asked the system,
- 13 necessarily, to deal with them, we’ve asked a person to put them on and lock them
- 14 into place so that the system doesn’t overlay them and so that program doesn’t
- 15 have to/include.
- 16 *Joan* – That was/only recent that we started doing that because of GPA.
- 17 *Alice* – Before we would have things like, if you took one semester and you got
- 18 a warning, and it took three warnings, on the fourth warning we would give you a
- 19 suspension. You have people returning like that so we have to lock them in,
- 20 even though on the second semester they would have been out of here.
- 21 *Int. 1* – So really what it is is just a problem of not having enough data fields to

- 22 maintain all the information.
- 23 *Enid* – I don't know if it's just that, I think that the rules have changed, we either
24 have to ask the system to know about every academic rule or you have to ask a
25 person to intervene and indicate to the system that you know what you're asking
26 for.
- 27 *Joan* – That's why from day one you enter a historical in the term academic
28 status, saying "it's frozen, don't recalculate this".
- 29 *Int. 1* – Yes, I understand but in reality it's not ahistorical, it's manually entered vs.
30 automatically calculated, that's what it /really is.
- 31 *Enid and Joan* – yes, yes!
- 32 *Enid* – We would have to make the decision about how much we can
33 accommodate in the new system or whether we have to resort to the same old
34 ways.
- 35 *Joan* – But something else, I know you know this, but you have to consider the
36 design of the database because it's all integral to how the database is designed,
37 how the calculations are done if you're gonna have a totally new model.
- 38 *Int. 1* – I guess we can envision someone wrestling with the calc problem in the
39 new system.
- 40 *Joan* – You're right, it took us like a year to convert it, to be automatic, it's not
41 simplistic at all.
- 42 *Int. 1* – I know.
- 43 *Joan* – You also have to think about all the things we are going to want to
44 accommodate in the future, that, that (2) at great pain, but we've always been able
45 to do anything, it's always allowed us to do anything because it's been in our
46 control, but now with the package (2) I don't know.
- 47
- 48 (Reg. 12: 125).

The excerpt begins with a threat to the face of Joan by the interviewer. Joan states that the legacy system is counting credits and the interviewer challenges her by stating that it is not counting (lines 3-4). Joan responds to the interviewer with intonational resources (*it is*) to address the challenge of the interviewer. She saves face by restating that the legacy system does function as she understands. There is a tone of pride in Joan's statement, she has sufficient technical skill to challenge the institutional authority of the consultant. This challenge causes the interviewer to lose face, Joan was correct and the interviewer was not. The interviewer responds with a face-redressive yes-but-strategy (line 6), by first stating that she agrees with Joan, but that her concern was more with permanent updating of records. Therefore, the interviewer is not incorrect, she was focusing on something more specific. This face-redressive strategy allows the interviewer to manage a threat to her face as institutional authority and technical expert.

Enid then confesses to transgressions with the legacy system (lines 7-10). Enid states that "there are some things that you have to do that are a little funky to keep the calc. on the system" suggesting that they do things that are not necessarily "right" or "correct" but are necessary in order to get the system to adapt to their process. The "funky" actions are examples of transgressions that Enid feels compelled to confess in the context of the

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interview. After hearing Enid, who is also the director of the department, Alice then confesses to her role in the transgression: “I have to lock in everything” (line 11). The declarations of transgressions continue, “we have had rule changes it’s just that we haven’t asked the system, necessarily, to deal with them”. Here Enid confesses to their role in the creating a system that now does not meet the needs. In this way, Enid removes blame from the system and acknowledges contributing to a “broken” technology. Then Alice takes us to the past (line 17) and frames the interview in a story mode. She tells a story of how the broken system allows the students to violate rules, but her “funky” actions, “locking them in” allow her to mitigate this behavior somewhat. The story serves to establish Alice’s identity (and authority) as a critical worker of the organization as well as to establish that the task she performs is quite complicated.

At this point the face of Alice is threatened when the consultant reframes the interview with the comment: “It’s just a problem of not having enough data fields” (line 21). As in the previous interview, we see the interviewer making a summary statement that shifts the interview from the story format into a more professional format. This comment suggests that the work of Alice, who must be vigilant in order to subvert the system, could be remedied by simply having more data fields. Enid intervenes to recuperate the face of Alice by directly challenging the consultant. She states: “I don’t know if it’s just that” (line 23) and proceeds to describe that human intervention will be necessary with any system to track this difficult and changing process of grade calculation. In this move, Enid both saves face for Alice and changes the frame of the interview to one of richer and detailed description. The interviewer again responds with a face-redressive yes-but-strategy (line 29), partially agreeing to Joan’s previous suggestion, but reframing the interview as a more technical interaction than that proposed by Joan.

Enid, who aside from being the director of the office is also a new employee, now contrasts the new system with the old system, and the bad habits associated with it (lines 32-22). In this contrast, the “new system” and “resort to the same old ways” are the two options proposed, clearly suggesting that same old ways and, by extension, the old system, is seen as somehow bad, inappropriate and ineffective by Enid. Joan, who has worked for the organization for approximately ten years, defends the legacy system and process by describing them as “integral”, “automatic”, “not simplistic” (lines 35-41). In the last entry (line 43-46), Joan admits to some of her fears around the new system. She recognizes that customization has caused them “great pain” but confesses to being able to do anything because she felt in control. She clearly perceives the new system as threatening to the control and freedom she enjoys with the painfully customized system by saying “I don’t know”. Implying that she does not know what the future holds. In this statement, Joan discloses uncertainty, something she does not have about the old system, with all its problems.

Discussion and conclusions

The discourse of participants during requirements determination interviews was directly shaped by the deinstitutionalization of the legacy system. As the theoretical review of the paper suggests, IS development goes beyond the dual process of institutionalizing new technology and deinstitutionalizing organizational processes and structures to include the deinstitutionalization of the legacy system. What the study shows is that through discursive forms such as reports, some organizational members constructed the legacy system as outdated, labor intensive, inadequate and costly. It was a system suffering from a performance crisis. The organizational structure that supported the legacy system was also attacked as ineffective. The dual deinstitutionalization pressures served to create a context in which the systems, structures and processes that had been painfully developed and protected for years were now being dismantled. This deinstitutionalization creates a context that evokes particular discursive responses by participants.

First, deinstitutionalizing a technology creates certain conflict that participants attempt to manage discursively. The displacement of the legacy system brings up notions of a dysfunctional system and incompetent workers, which the interviewees attempt to manage through their responses. Removing a technology raises the possibility that something is “wrong” and, as we see, participants try to manage this through valorizing the past, when the legacy system was at its prime. For instance, through deft face-work and re-framing, Bob valorizes the past by constructing the legacy system as a great system, as withstanding the test of time, while Joan suggests that it is integral and automatic. Both Bob and Joan are somewhat wistful about a past, when their system was state-of-the-art, and they commanded this complex tool. Bob’s intimate knowledge of this once “great” system allows him to appear as a competent technical worker. In discursively constructing the legacy system as an effective technology, for its time, Bob’s identity is enhanced as though by contagion; he is a seasoned and knowledgeable worker rather than, like the system, a relic to be replaced.

Second, participants confess to complex transgressive acts that subvert the system and processes but at the same time function to save face of speakers and get work done. For instance, Enid talks about the “funky” little things that they must do in order to stop the legacy system from performing a standard calculation and thereby incorrectly reporting grade point averages for students. Following Enid, Alice’s transgressions are spelled out in detail. The process she must perform to subvert the system’s calculation program is lengthy and complex. She establishes herself as central, if not solely responsible for correctly calculating grade point averages for students, a somewhat critical activity of any university. Through these confessions and others, the identity of the speaking subject emerges as one of a critical and competent worker. Both preservation strategies of constructing the legacy system as complex as well as confessing to complex transgressive acts serve to neutralize threats or save face and legitimate both the technology and the process as carried out by

the participant. These responses are specific to threats to face in reference to a delegitimated system. Both mechanisms work to counter the deinstitutionalization of the technology and processes that accompany the development of a new IS.

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Finally, delegitimizing the existing technology, structures and processes, threatens face but also has the effect of threatening place, which is inextricably linked to identity. A sense of identity is vital for the way in which organizational members secure a psychic place in any organization. It is through identity that we make ourselves known, as a particular director, analyst, manager, or data entry clerk. This subjectivity in some way secures a place in the organization. But as new IS are developed and installed, things shift and change, new technologies emerge while others are discarded. Therefore, although we usually think of IS development projects as “making” technology, they are also breaking existing technologies and identities. Asking people to articulate problems, weaknesses, of the system and processes at work causes workers to become anxious about their worth within the organization. These threats to face are a threat to place, that is, the individuals’ place within the organization. In this context, participants defend their place through valorizing the past, whether it is through stories of past transgressions or system capacities. This discursive strategy allows them to create an image of themselves as competent information workers. The struggles that ensue as workers attempt to secure and maintain their identities and thus their place, are complex, possibly anxious and, for the most part, unacknowledged by IS analysts and managers. Yet, this struggle to maintain face and place suggests that aversion to change, as Joan so clearly expressed in the interview, is far from irrational. People in organizations have very good reason to be concerned about IS development, when it threatens the way in which they make sense of their identity.

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Thus far I have examined participants’ interpretations of themselves, their language and meaning as it is produced. I have developed knowledge about this meaning making, or reality making, through my interpretation as researcher. In other words, I have, to some extent, interpreted interpretive beings as they construct meaning through their language, thereby performing a sort of double hermeneutics (Alvesson and Skoldberg, 2000). However, to stay within a critical framework, Alvesson and Skoldberg (2000) suggest that critical research go beyond this to include a triple hermeneutics. This approach includes those mentioned, as well as a third element, which encompasses the critical interpretation of power relations and other expressions of dominance that entail the privileging of certain interests over others. Critical interpretation requires scrutinizing that which appears self-evident, natural and unproblematic.

To that end, IS development and requirements analysis interviews are events through which social reality is constructed, more importantly, they are power-laden processes. Power shapes the verbal and non-verbal responses of the interviewees as they sit in judgment by 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. This discursive field does not develop freely or arbitrarily, certain legitimated discourses dominate – for instance, those of “discourse technologists” (Fairclough, 1996; Wynn, 1991). These are experts and consultants who have privileged access to scientific information, have accredited roles, and professional discourse and thus interventions on their part carry an aura of “truth”. Therefore, the presence of these experts, among which I include myself, with their 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 it had on what they said or did not say.

However, as mentioned earlier, this critical project is not concerned with finding one “truth”, neither in the discourse of the technologists or participants, but rather the concern is with looking at what representations are accomplished interactionally during the interviews. Many researchers of critical and post-structuralist inclinations have maintained a shift in emphasis away from finding “truth” and toward language and representation. What the interviews allow us is a glimpse into the socially-situated and constructed representation of a system, of processes and identities that are intricately tied to the context. Power is present in this context, in the requirements analysis interview and profoundly colors and constrains the interaction and the representations that are produced at the specific moment of elicitation, in the presence of the interlocutors.

Thinking of IS development as power-laden event where social reality is constructed has several implications for research and practice. Within IS development arena, one consistent finding in the literature is the perennial “communication problem” between analyst and client (Bostrom, 1989; Cronan and Means, 1984; Guinan and Bostrom, 1986). Analysts continue to search for the right technique to bridge this gap and capture the true requirements. However, information and requirements are not like precious minerals that only require the right tools in order to be extracted from the earth. Requirements, as we have seen, are socially constructed and politically motivated. They are socially situated in a context that is produced through discursive strategies specific to the organizational history, the interviewees and the “experts” present (Wynn and Novick, 1996). Organizations will continue to struggle with the issue of communication as long as power and identity negotiations that are brought about by the removal of existing technology and processes continue to be ignored or pathologized. Although insecurity is endemic to an organizational change such as the introduction of a new system, confrontation and clarification might prove to yield interesting results.

The concerns expressed here also have implications for the training of analysts and other technologists. This study has provided a window into, or perhaps made more transparent, how clients use language to manage the conflict brought about by the displacement of technology and processes and the introduction of a “new” system. The talk examined in the context of these interviews, which often may appear as irrelevant to IS development, is saturated with face-work that attempts to secure the identity of speaking subjects. Through these moves, participants manage a complex and potentially threatening social interaction. Thinking of language in this manner will perhaps begin to steer many IS analysts and researchers away from dismissing talk that does not fit within their grids and diagrams or claiming it incomplete. If analysts begin to examine how language works to construct technology choices and processes, they must remove themselves from the technical rational position that they are so often inclined to adopt. Instead we might begin to think of the analyst as anthropologist (Alvarez and Urla, forthcoming; Harvey and Myers, 1995), a researcher who faithfully records and pays attention to “native terminology” and their meanings that are produced through language.

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