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IS Perspective

A Method to Bridge the Gap between Breadth and Depth in IS Narrative Analysis *

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Abstract:

We propose a method combining narrative analysis with grounded theory analysis to bridge the gap between breadth and depth in IS narrative research. The purpose of the method is not to develop a theory, but to make narrative analysis more accessible, transparent, and accountable, and to make the resultant narrative more contextually grounded. The method is aimed particularly at inexperienced narrative researchers who have not been guided through the complexity of narrative analysis, but it may also benefit experienced narrative researchers who may not be familiar with the applicability of grounded theory tools and techniques in this area.

Keywords: narrative; narrative analysis; grounded theory; methods.

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1. Introduction

While the use of narrative analysis in information systems research has become more prevalent (see for example, Truex and Baskerville, 1998; Truex, Baskerville and Travis, 2000; Alvarez and Urla, 2002; Wagner, 2003; Wagner, Galliers and Scott, 2004), tensions between the general and particular in the analysis of narrative continue to challenge researchers. Pentland (1999:1) reflects upon such tensions when he writes,

In our efforts to construct the generalities expected by our academic readers, we are often forced to abandon the details and the drama that give the social world its distinctive narrative texture. Rather than attempting to bridge the gap between the abstract and the concrete, we tend to choose one side or the other.

He goes on to summarize some of the choices made in the information systems literature. These include (a) the unpacking of particular narratives, typically found in case studies (e.g., Orlikowski, 1996; Suchman, 1993; Sharrock and Button, 1997; Brown, 1998); (b) the summarization of a collection of narratives, where variations on a common theme(s) are identified (Propp, 1928; Colby, Kennedy, Milanesi 1991) and (c) the reduction of narrative to sequence, where a narrative is seen as a series of events unto which a narrative structure is imposed (Abbot, 1992; Olson, Herbsleb and Reuter, 1995; Shaw and Jarvenpaa, 1997).

Pentland's quest is to find a "middle ground," one that retains the narrative richness of the social world while at the same time provides the basis for generalizations. Borrowing a metaphor from Goguen (1997:4), he explains:

The stories we tell are very wet – full of moral judgments and innuendo and situational particulars that are enormously interesting but not easily generalisable. By capturing and analyzing these stories, we dry them out. In writing up our results, it is common to organize our presentation in the driest possible manner, according to the themes or categories or research questions. Many qualitative techniques, including simple content analysis, rely on this approach (Miles and Huberman, 1994)the question is, how much drying out is desirable, or necessary, to gain a little more generalisability? And along which dimensions can narrative be dried or reduced, while still preserving valuable aspects of its structure? We want to achieve some kind of generalisability without completely sacrificing the narrative structure that is central to group life. Clearly, this is a trade off and a choice.

Whether researchers choose breadth over depth or depth over breadth, important aspects of the story are lost.¹ Generalizability is limited when there is too much situational context and important lessons in the narrative are lost. On the other hand, when there is too little situational context, richness in the narrative is lost and the account is unconvincing. This trade off is evident in the theory and practice of case study research, and well captured in the exchange between Eisenhardt (1989; 1991) and Dyer and Wilkins (1991). The problem is increasingly relevant because narrative analysis is becoming more important to IS research, but there is little guidance on how it may be done well (Wagner, 2003).

As a direct response to Pentland's (1999) challenge, we propose a method that is designed to develop both breadth *and* depth in narrative analysis. In the literature, we note that Mishler (1986) successfully combined insights from three narrative approaches (structural, meaning, and interaction analysis) but did not, as Davidson (1997) points out, integrate the three methods. We are encouraged by Baskerville and Pries-Heje's (1999) integration of Grounded Theory and Action Research; Alvarez and Urla's (2002) integration of Narrative and Grounded Theory; and Wagner, Galliers and Scott's (2004) integration of Narrative and Actor Network Theory.

In this paper, we propose a method of narrative analysis that uses the coding techniques of Strauss and Corbin's (1990) version of grounded theory to better deconstruct and then reconstruct the narrative, delaying the imposition of narrative structure to allow greater meaning in the data to emerge. The purpose of the method is not to develop a theory of narrative analysis but to extend narrative analysis through the use of specific grounded theory tools and techniques. We seek to

¹ Already Pentland has used "narrative" and "story" interchangeably. This is common in the literature. In this paper, we follow Chatman (1978) and determine story to be a subset of narrative (along with discourse). These differences are explained in the next section of the paper.

develop a rich picture of the studied phenomenon, not a substantive theory. Our selective use of the grounded theory method – focusing on its basic coding procedures and stopping short of theory development – follows closely Strauss and Corbin’s (1990) approach. They emphasize coding paradigms throughout the theory development process but permit exiting a grounded theory study after theme analysis or concept development only (1990:115).

Glaser (1992) has criticized Strauss and Corbin (1990) for being too prescriptive, for the imposition of structure too early, or at all, in the analysis of data (indeed, his book is subtitled “Emergence V Forcing”). Such criticism is found also within the field of Information Systems (see for example, Hughes and Howcraft (2000) and the exchange between Urquhart (2001, 2002) and Bryant (2002), or the review by Fernandez (2004)). Where others have seen this as a weakness, we view it as a strength. The Strauss and Corbin (1990) coding process *is* more prescriptive than that found in the original grounded theory method (Glaser and Strauss, 1967) but it is also more transparent, since their objective is to “spell out the procedures and techniques in greatest detail” and “in a step by step fashion” (Strauss and Corbin, 1990:8). In this way, it is useful to the analysis of narrative (particularly by inexperienced researchers) because narrative analysis can quickly become complex in the absence of ready-to-hand procedures.

We introduce and detail our method in the next two sections (Sections 2 and 3). We then illustrate the method (Section 4) using a project history narrative drawn from the development of a Multimedia kiosk system at a large UK University. In Section 5 we acknowledge the limitations of our method and discuss further research. We conclude the paper (Section 6) with a review of the method’s purpose and benefits, and call upon other researchers to test and develop the method.

2. Method Rationale

The purpose of our method is to bridge the gap between breadth and depth in narrative analysis by extending narrative analysis with grounded theory analysis. Therefore, we sought a method of narrative analysis that complimented and facilitated the application of grounded theory analysis across each of these dimensions. We chose Chatman’s narrative theory (Chatman, 1978) for four main reasons.

First, his separation of story from discourse provides for both depth (story is reduced to its basic building blocks of events and existents) and breadth (discourse is the telling of the story from different perspectives). In this paper we focus on story to illustrate the integration of the narrative theory and grounded theory approaches to narrative analysis. However, we believe our method can also be applied successfully to the analysis of discourse, which we discuss further in Section 4.0 of the paper. Second, in common with much narrative theory,² Chatman’s model of narrative analysis is clearly based on events (what happens in a narrative) and on existents (characters and settings associated with those events). As such, it is more likely to be compatible with a grounded theory method that is explicitly event oriented. Third, Chatman’s theory is strong in narrative deconstruction (important in identifying the basic building blocks of narrative) but weak in narrative reconstruction (unlike, for example, Labov’s (1966, 1972) narrative model). Therefore, his method of narrative analysis can be extended by a grounded theory method that includes specific tools and techniques for reconstructing data. Finally, Chatman’s method is sufficiently structured to provide novice researchers with good guidance in how to do narrative analysis, but not so structured as to stifle data emergence through the application of grounded theory techniques.

2.1 Chatman’s Narrative Structure

Chatman (1978) identifies the “necessary components” of narrative. These are the story (or *histoire*), which consists of the content or chain of events (actions, happenings), plus the existents (characters, items of setting); and discourse (*discours*), which is the expression, the means by which the content is communicated. Story is the “what” in narrative that is depicted, discourse is the “how”. Story is “what happens to whom” and discourse is “how the story is told” (1978:19). These components of narrative and their constituent parts are shown in Figure 1, and further explained below.

Discourse is the form of narrative expression manifested in various modes (for example, as history or fiction) and media (for example using verbal, visual, or audio-visual outlets). *Process* statements tell the reader what someone or something does, they relate to actions and happenings. An *action* is something that (a plot significant) character does. A *happening* is something that is done to (a plot significant) character. Together, these constitute *events*, which are one set of building blocks of Story. Chatman distinguishes between major (*kernel*) and minor (*satellite*) events. A kernel event is one that is crucial to the plot, whereas a satellite event is not crucial to the plot, although it may enrich the story aesthetically. *Stasis* statements tell readers what someone or something is, or is like; they describe *characters* and *settings*. These are also what

² Chatman (1990) observes that events are what distinguishes narrative from argument (which is based on assertions) and description (which is based on entities).

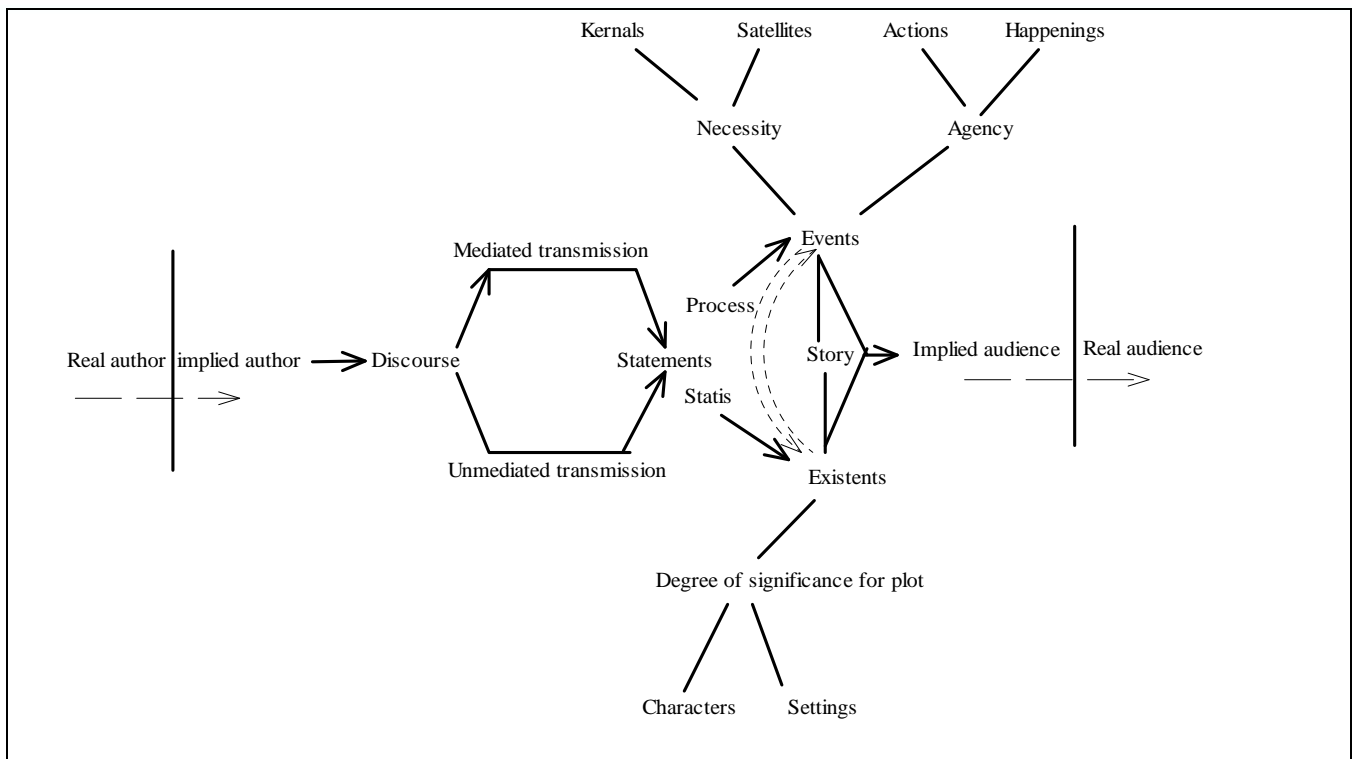


Figure 1: Chatman's (1978:267) model of narrative separating story from discourse

Chatman calls *existents*, and these form the other set of building blocks of Story. Events and Existents (as Story) plus Discourse are "the necessary components" of a narrative (Chatman, 1978:19).

Major (kernel) and minor (satellite) events can be linked chronologically as well as hierarchically. Chatman sets out a schema designed to capture both "a logic of connection" and a "logic of hierarchy" (1978:53-56). Chatman's method is good at narrative deconstruction, but it provides little or no explicit procedures for narrative re-construction. His hierarchical ordering of events anticipates causality but does not explain it. Specific causal relationships are difficult to identify (simply because one event precedes another, or one event can be said to subsume another, we cannot assume that the relationship is causal). Moreover, there is no guidance on how to look for, or to develop (the properties of) causality. This is where Strauss and Corbin's paradigm model makes a useful contribution.

2.2 Strauss and Corbin's Paradigm Model

Strauss and Corbin (1990:99) are unequivocal in their advocacy of their paradigm model: "Unless you make use of this model, your grounded theory analysis will lack density and precision.." The paradigm model is used to link categories and sub-categories in a set of relationships. These relationships describe the phenomenon under study in terms of a set of conditions (causal, contextual, and intervening) and in terms of action/interaction strategies and their consequences. A simplified form of this model would look like this

CAUSAL CONDITIONS [A] → PHENOMENON [B] → CONTEXT [C] → ACTION / INTERACTION STRATEGIES [D] → CONSEQUENCES [E]; INTERVENING CONDITIONS [F]

Thus, causal conditions (A) lead to a phenomenon (B), which leads to context (C), which leads to action/interaction strategies (D), which then lead to consequences (E), under intervening conditions (F). This reflects something of the inductive nature of the paradigm model. Under conditions (A, C, F), which determine the phenomenon (B), then strategies (D) are taken. This is quite different from a deductive model in which strategies (D) are determined by their relationship to the phenomenon (B), while conditions (A, C, F) bound the already well defined phenomenon (B).

The paradigm model is further developed using selective coding. Selective coding is really a more advanced form of axial coding (used to develop the paradigm model), wherein the data is analysed at a higher, more abstract, level. The approach to this phase of the analysis is based on the selective coding procedure set out by Strauss and Corbin (1990:118-142). The first task is to identify a core category.

To achieve integration, it is necessary first to formulate and commit yourself to a story line.³ This is the conceptualization of a descriptive story about the central phenomenon of the study (Strauss and Corbin, 1990:119).

In practice this comes down to writing down, as clearly and as succinctly as possible, the essence of the research findings – as they appear at this stage of the analysis. Then, this “general descriptive overview” is developed conceptually and analytically through the identification of a core category and by relating all other categories to it – again based on the paradigm model.

2.3. Methods Integration

Chatman’s story structure and Strauss and Corbin’s paradigm model is the nucleus of our method because we want to delay the imposition of structure to allow meaning in the narrative to emerge, and subsequently to return to the narrative to validate the analysis of the narrative itself. This delay allows the characteristics of the narrative to be more fully developed – “to let the data speak” (Glaser and Strauss, 1967)—consistent with the notion of emergence expressed by Truex, Baskerville, and Travis (2000):

Emergence is not a sequence of succeeding structures, but a continual movement towards structure without ever attaining a steady state. Emergence is the postponement or deferral of structure, leaving grammars, organizations and science as provisional, negotiable, and epiphenomenal (Truex et al, 2000:75-76)

In our method we encourage emergence by beginning with Strauss and Corbin’s open coding techniques. This postpones the imposition of narrative structure and allows embedded meaning in the data to be identified and developed. Later in the method, when the story is beginning to take its narrative shape (through the application of Chatman’s story elements and Strauss and Corbin’s paradigm model), we return to the data to seek confirmation of our interpretations. So we delay structure, but also challenge it with data when it is imposed. Through this combination of structure and emergence we seek to achieve the seemingly incompatible goals of breadth and depth in narrative analysis. In the next section we discuss in detail how this may be done.

3. An Extended Method of Narrative Analysis

Table 1 summarizes the major stages of our method and indicates how each stage contributes to our method’s goal of extending narrative analysis through the application of grounded theory coding techniques, specifically addressing how the stage contributes to breadth or depth, wetness or dryness.

“Source” narrative

Stage of Method	Function of Stage	Contribution of Stage
Stage 1: Open Coding	Fractures source narrative into concepts	Delays imposition of narrative structure retaining contextual richness for longer.
Stage 2: Story Decomposition	Organizes concepts in a story structure through abstraction, categorization & generalization	Dries out the narrative, presenting its basic events and existents, or building blocks
Stage 3: Axial Coding	Examines properties and relationships of concepts to determine causality	Adds depth to the story structure by examining its building blocks in greater detail
Stage 4: Selective Coding	Identifies and develops a core category	Simultaneously adds depth and breadth by collapsing concepts into one meta concept and then developing that meta concept in further detail.

“Object” narrative

³ Strauss and Corbin use “story” in a generic, common sense, way meaning what the phenomena is about. Their usage of the term does not equate to Chatman’s more structured and specific usage, and no such equivalence is intended here.

Our method begins and ends with a narrative. The “source” narrative is the narrative that is to be analyzed by the researcher. In the illustration we give below, the source narrative is an extract of an actor’s (the project manager’s) narrative found in a research note (or memo) concerning an information systems failure at a major UK university. The object narrative is the narrative that is produced by the researcher as a result of carrying out the steps in the method. The object narrative may be written up as a memo or presented more formally. It may be the end point of the research exercise or an input to further analysis and understanding of the studied phenomenon.

We are aware that this labeling and distinction of source and object narratives is somewhat arbitrary and artificial. In fact, both narratives are products of the researcher’s reading of them – they differ only to the extent that this is made explicit. Borrowing from Lee’s (2004) interpretation of the work of the philosopher and phenomenologist Alfred Schutz, we conceptualize our source and object narratives as first- and second-level constructs. Our source narrative is a first-level construct that accounts for the everyday meaning and beliefs of the actors involved. Our object narrative is a second-level construct created by the researcher. The purpose of our method is to retain as much wetness as possible in the researcher’s necessary transition from first- to second-level constructs.

In Table 1 the shading of each stage indicates its *primary* function in developing breadth or depth in the analysis (dark shading = wetness, no shading = dryness, and light shading = wetness and dryness). So, Stage 1 (the grounded theory technique of Open Coding) is primarily concerned with analyzing the text and breaking it down into units of analysis (concepts) that are embedded within (or “grounded” in) the narrative itself. This is a conscious attempt to delay the imposition of narrative structure in order that more contextual richness can be captured and retained. So, we denote Stage 1 as primarily wet and shade it accordingly. Stage 2 (Story Decomposition), on the other hand, is concerned with organizing these concepts into a story structure and is primarily dry. Stage 3 (Axial Coding) and Stage 4 (Selective Coding) are grounded theory techniques used to recover some of the wetness that has been lost from the source narrative as a result of the imposition of narrative structure. However, whereas Stage 3 (Axial coding) is primarily wet (because it develops the properties of concepts), Stage 4 (Selective Coding) adds both depth and breadth through the development of a single, explanatory, or core concept.

It should be noted that whilst each stage can be labeled (and colored) wet or dry, these states are not, nor should be, discrete entities. Each stage necessarily involves some abstraction, conceptualization, and organization; and deduction as well as induction. Each stage requires the imposition of some degree of structure. Otherwise, the researcher would not be able to make sense of the text and could not formulate a final narrative. Equally, each stage involves some degree of contextualization in the narrative. Therefore, although stages may be said to be primarily functions for breadth or depth in the analysis, in practice, all stages involve both aspects, and “wetness” and “dryness” remain relative not absolute assignments.

Overall, our method is designed to deconstruct and then reconstruct narrative. Deconstruction is achieved in Stages 1 and 2 using both grounded theory and narrative theory approaches. Reconstruction is achieved in Stages 3 and 4 using grounded theory tools and techniques only. We do not argue that Chatman’s method cannot be used for narrative reconstruction, only that he provides little or no explicit guidance on how this can be done. Nor do we deny the capability to deconstruct and then reconstruct narrative using other narrative methods. We do however argue (again) that the means of doing this is not made sufficiently explicit and therefore accessible, particularly to novice researchers. We therefore employ selective grounded theory tools and techniques for this purpose.

The outcome of the method is an end or object narrative that benefits from the strengths and complementarities of the integrated method used to produce it. This narrative should have enough breadth to allow general lessons to be learned and enough depth to make such lessons plausible in a particular context. We achieve this by combining elements of narrative and grounded theories. We do not replace one method with another, nor do we simply substitute one set of analysis tools and techniques for another set. On the contrary, we seek to integrate the best (most relevant and useful) elements from each constituent method in a way that is logical, rigorous, robust, and transparent. Our method is illustrated in the next section.

4. “Grounding” the Method in an IS Project History Narrative

In this section we illustrate our method through its application to an extract from a project history narrative on the implementation of a multimedia system at a large U.K. university. Following Davidson (1997), we view the capture and study of project history narratives as “critical sensemaking processes” used in “creating and maintaining accounts of actions and events in IS development projects..” The extract is taken from a transcript of an interview with a senior software engineer (who was also the Project Manager) involved in the development of the multimedia system. The application of the

four stages of our method is set out with direct reference to the sample narrative. First, we will provide some background to the project.

4.1 Project History Background

Project X was a multimedia kiosk system intended to provide an interactive introduction to the history and culture of the university, and was to be sited at strategic locations around the campus. It was designed by a core development team of 3 software engineers and 2 graphic designers. However, when including all content and audio-visual content, up to 20 designers were involved in the system's design at some stage. Two organizations split the work of the graphics and programming elements, with development carried out at separate sites. One of these organizations was the client organization (i.e the university that commissioned the multimedia kiosk), the other was a small, local graphic design company. Both organizations were based in the greater Belfast metropolitan area, Northern Ireland.

The project was planned as 12 man months of effort, of which approximately 50 percent was programming and 50 percent was graphic design and content production. An in-house methodology was developed and applied during the project. The main development tools were C++ and Macromedia Director. Software engineers in the customer (and outsourcing) organization drove the project, and it was the senior software engineer in that organization (who was also the project manager) who provided the interview from which this extract (or source narrative) is taken.

The interview was conducted in the software engineer's/project manager's office, tape recorded, and later transcribed for analysis. The interviewee received a copy of the transcript in order to check for accuracy and completeness. The interview was completed as part of a larger study into the differences between software engineering and graphic design approaches to multimedia development, which involved up to 26 participants. The method of analysis was grounded theory (Strauss and Corbin, 1990) and no attempt was made (because this was not part of the larger study) to apply narrative theory to the original transcripts. So, we apply narrative analysis to this project history narrative here for the purposes of this paper only.

4.2 Project History Analysis

In this extract, the senior software engineer/project manager in the client organization (Organization Y) voices his concerns on the split of development responsibility between his (the client's) organization and the graphic design Organization (Organization X).

"Having the graphic designers at [Organization X] and the rest of us at [Organization Y] was a nightmare. Things were being passed back and forth and we didn't even have a network to aid communication. At least being in the same room would have allowed us to talk and argue about things there and then. As it was we had to postpone the argument or try to talk about it over the phone, which is very hard to do and so the phone was used very rarely." [software engineer/project manager]

Stage 1: Open Coding (Strauss and Corbin, 1990)

Applying open coding to this extract, we produce 21 concepts as indicated. These are "in vivo" codes (Glaser, 1978:70; Strauss, 1987:33; Strauss and Corbin, 1999:69) that is, words or phrases used by the interviewees themselves. In addition to their explanatory power, in vivo codes have the advantage of being quick and easy to use and provide a data driven interpretation of the narrative that is readily amenable to further analysis.

[L1] "Having the **graphic designers** at **[Organization X]** and **the rest of us** at **[Organization Y]** was a **nightmare**.

[L2] **Things** were **being passed / back and forth** and we didn't even have a **network** to **aid communication**.

[L3] At least being in **the same room** would have allowed us to **talk** and **argue** about **things there and then**.

[L4] As it was we had to **postpone** the **argument** or try to **talk** about it over **the phone**, which is very **hard**

[L5] **to do** and so the **phone** was **used very rarely**" [software engineer]

These concepts are interpreted as follows

Graphic Designers [at Organization X]

Rest of us [software engineers, at Organization Y, as referred to by narrator. Immediately suggests "them and us" attitude, which is found in later analysis]

Things [refers specifically to interim and final project deliverables, or to documentation associated with the design. Note: contrast to the generic use of "things" [L3]]

Back and forth [refers to manner by which aforementioned things were dealt with, indicating ad-hoc, even haphazard nature of project design method and management]

Organization X [outsource Organization handling the graphics]
Organization Y [outsourcing Organization, to which the narrator belongs]
Nightmare [emotive term indicating state of particular project but also suggesting bigger concerns]
Network [communication network which may include, but is not limited to, technology network]
Aid [*mn* help, assist. Implying that something already exists to be aided]
Communication [between designers (SE and GD), but also designers and managers. Some communication clearly exists but is regarded as inadequate]
Same room [physical co-location request confirming that designers are not co-located]
Talk [part of existing (but inadequate) communication network]
Argue [implies that this was part and partial of design process. Again suggesting the tension between designers]
Things [more generally, issues to do with the design]
There and then [linked to argue and things, implies that arguments still took place. Suggests a communication network would only have enabled them to happen more quickly]
Postpone [refers to argument]
Argument ["postponed" not avoided]
Talk [in contrast to argument, narrator implies that "talk" would have helped the situation]
The phone [one aspect of existing communication network]
Hard to do [talking over the phone, refers to obvious difficulty of communicating a design over this limited bandwidth]
[phone] **used very rarely** [ergo, talked very rarely].

Already a theme is discernable in the narrative. This is evident as a communication problem in a particular design project, but the narrative suggests also an underlying tension between graphic designers and software engineers. There are clues in the open coding analysis—for example words and phrases such as "argue," "nightmare" and the "rest of us"—but further analysis is required in order to establish causality.

Up to this point, there has been no attempt to formally order the concepts using narrative structure, but this will now be done in the next stage. The delay in the imposition of narrative structure has enabled the researcher to explore the data unencumbered by narrative theory, and has—we argue—resulted in a richer and deeper analysis than would otherwise have been achieved in a conventional narrative analysis approach (wherein the text would have been structured according to narrative theory much sooner, even at the very beginning of the analysis).

Stage 2: Story Decomposition (Chatman, 1978)

In this stage we organise significant concepts according to Chatman's (1978) basic building blocks for Story, as follows

- 1.0 graphic designers at Organization X [**Process Statement-Event-Happening-Kernal**]
- 2.0 rest of us at Organization Y [**Process Statement-Event-Happening-Kernal**]
- 3.0 (this, 1 and 2) was a nightmare [**Process Statement-Event-Happening-Kernal**]
- 4.0 things were being passed back / forth [**Process Statement-Event-Action-Satellite**]
- 5.0 we didn't even have a network to aid communication [**Stasis Statement-Existent-Setting-Plot Significant**]
- 6.0 being in the same room would have allowed us to talk face to face (there and then) [**Stasis Statement-Existent-Setting-Plot Significant**]
- 7.0 we had to postpone the argument [**Process Statement-Event-Action-Satellite**]
- 8.0 or, try to talk about it over the phone [**Process Statement-Event-Action-Satellite**]
- 9.0 [this] is hard to do [**Stasis Statement-Existent-Character-Plot Significant**]
- 10.0 the phone was used rarely [**Process Statement-Event-Action-Satellite**]

This identifies events and existents, and further categorizes events according to their perceived importance—kernel (major) or satellite (minor). In this short extract, we have identified 7 events and 3 existents. Of the 7 events, 3 are kernel (plot

significant) events and 4 are satellite (plot secondary) events. This does not mean that we read the satellite events as unimportant, but only that we see them as less important than the kernel events in shaping the narrative.

At this point in a conventional narrative analysis, the researcher would begin to construct his or her own narrative of what is happening. Researchers experienced in narrative analysis may quickly move to develop or “flesh out” the concepts identified. They do so implicitly, with few obvious tools and techniques to assist them. Clearly, narrative analysis (whether based upon Chatman or some other narrative theorist) can and does produce good quality analysis and narratives. But we regard this as improbable where inexperienced researchers are concerned. The experienced researcher may do this intuitively (perhaps implicitly borrowing from a number of narrative theories), but the inexperienced researcher will struggle in the absence of explicit guidelines. Therefore, we include as the next phase of our method further grounded theory analysis in the form of the paradigm model. This identifies causality between concepts and structures the analysis for further research.

Stage 3: Axial coding (Strauss and Corbin, 1990)

Here, concepts are linked causally using the paradigm model to better reveal the story structure. Because we carry forward events and existents from the previous phase of analysis, this is primarily a deductive exercise (i.e., we are looking for pre-existing codes in the data). Whereas axial coding usually requires some grouping of concepts prior to, or in addition to, applying the paradigm model, here they are simply pulled into the paradigm model directly without this intermediate step. This is possible because our goal is not to develop a theory, and the source narrative for the purposes of illustrating the method (the extract from the project history narrative) remains very simple.

[1] graphic designers at Organization X+ [2] rest of us at Organization Y {causal conditions} + [5] (we didn't even have a network to aid communication {intervening condition} → and [6] lack of F2F interaction → [3] nightmare {consequence} - [4] things passed back and forth {action/interaction strategy} - [7] we had to postpone the argument {action/interaction} - [8] or try to talk about it over the phone {action/interaction} - [9] which was hard to do {consequence} - [10] the phone was rarely used {consequence}

In this analysis the narrative is defined by two causal conditions (1 and 2) and one intervening condition (5). This combination of conditions influence all other conditions, which are either a response (4, 7, 8) a consequence (3), or both (9 and 10). This brings greater clarity and transparency to the narrative (Chatman's events and existents are illuminated through causality).

Already in earlier phases of the analysis we have suggested tensions between software engineers and graphic designers. These suggest that the story here is not only about a lack of physical co-location and the absence of a communication network leading to a particular communication breakdown in this particular project design. Rather, the communication breakdown may be more profound, caused by, and reflective of, deeper tensions in the relationship between the two design communities. To tease out this potential narrative, we return to the text using selective coding.

Stage 4: Selective coding (Strauss and Corbin, 1990)

Selective coding is “the process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development” (Strauss and Corbin, 1990:116). In normal grounded theory studies where the objective is to develop a theory it can be difficult to commit to one “core category.” Our task is simplified because our objective does not extend to the development of a theory, our data set is small and straightforward (for example we have not—so far—had to progress beyond the level of basic concepts), and we already have organised the data in a story structure (in Stage 2). Figure 2 sets out the essential “storyline” in our data, and indicates how this maps to a simplified version of Chatman's narrative structure.

Here it can be seen how key events (and existents) explain, and are explained by, a communications breakdown. The design team is physically split between two Organizations, communication between these Organizations is poor, there is a lack of face to face contact, the use of the phone is problematical, arguments occur and are not resolved satisfactorily (they are delayed or postponed). *Communications breakdown* then becomes the core category that subsumes (and accounts for) all other significant concepts. Table 2 gives some characteristics of this core category.

By examining the properties (and their dimensional values) of the core category, we develop further depth to the narrative. The analysis suggests that the communication breakdown is not an isolated or infrequent occurrence, caused only (or even wholly) by the particular circumstances of this project. Rather, the analysis leads us toward the conclusion that the

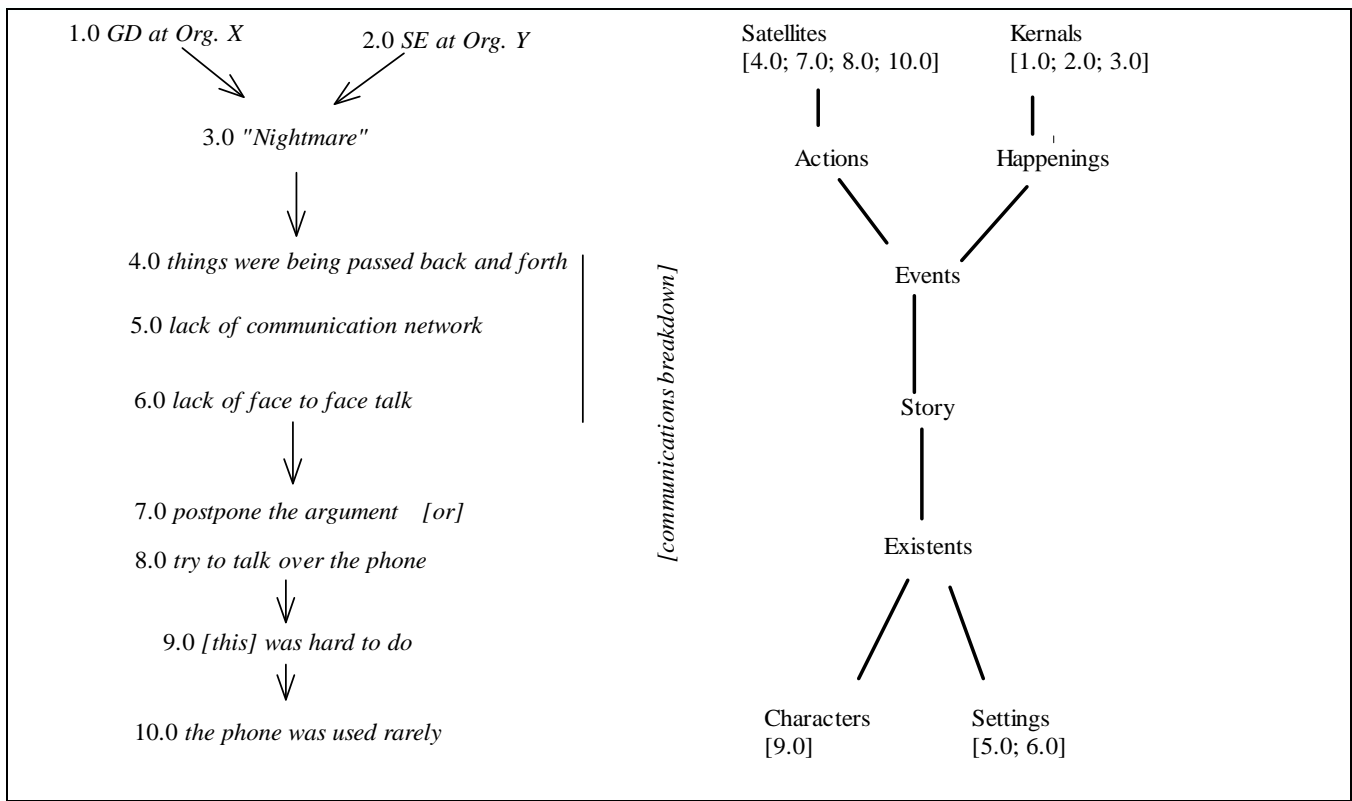


Figure 2: The essential storyline and structure of our project history narrative

Core Category: Communication Breakdown

Table 2: the core category and (some of) its properties

Property	Dimensional Range	Dimensional value
Location	Org X / Org Y	Between X and Y ("things passed back and forth")
Impact	Benign / Malign	Malign ("nightmare")
Response made	Agreement / Argument	"Argument"
Response by	Graphic Design / SE	SE ("the rest of us")
Timing of response	Immediate / Delayed	Delayed ("postponed")

communication breakdown is in fact symptomatic of deeper and more fundamental problems between the two design communities involved. There are a number of suggestions of this in the narrative. The narrator (project manager) clearly indicates a division between the two communities by referring to software engineers as "the rest of us." The communication breakdown is instantiated as an "argument." This argument appears inevitable—the lack of a communications network is simply a cause for its "postponement," not its avoidance. The outcome of the communication breakdown is a "nightmare" with "things being passed back and forth."

At this point in the analysis the researcher would return to the data. The identification and development of the core category remains hypothetical until confirmed (or not disconfirmed) in the data. It is beyond the scope of this paper to investigate this problem further, but we note that others have reported communication breakdowns between these two design communities (e.g., Gallagher and Webb, 2000; Lang, 2003; Webb and Gallagher, 2006).

The example illustrates the major stages in the application of our method. We have concentrated on those aspects of our method that are crucial to the combination of narrative theory and grounded theory approaches and which, therefore, have most impact on the quality of the final narrative. It has not been possible within the confines of this paper to illustrate all of the detailed analysis that takes place within and between stages. For example, although the purpose of our method did not extend to the generation of a theory, grounded theory tools and techniques specifically designed to assist theory building—such as theoretical sensitivity—can also be used in our method. However, this level of analysis is not peculiar to our method and can be found in general or case-specific descriptions (see for example, Strauss and Corbin, 1990:41-47).

5. Limitations and further research

A danger of our method is that the complexity of narrative analysis is replaced by the complexity of grounded theory, or worse still, by the combined complexity of narrative analysis *and* grounded theory. This is offset in our method because we focus on key elements of each approach that combine to provide a straightforward and transparent solution to narrative analysis. Whilst there is inevitably some loss in terms of the power and purity of each approach, we believe our selective integration of the two methods is easier to learn, memorize, and reuse when compared to the complexity of full methods integration. Moreover, the interface between each method is more easily achieved and understood. In particular, the practical steps necessary to interweave grounded theory and narrative analysis would not be so easily implemented and presented without such selective integration.

In combining narrative and grounded theory in one method, we recognize a further tension between the study of a narrative, which has a beginning, a middle and an end, and the use of grounded theory techniques, which, in common with other interpretive research methods (such as content analysis and case study analysis) are best suited not in the analysis of a structured whole, but in the micro analysis of multiple units across multiple interviews and sources. Yet it is the very juxtaposition of conflicting methods that permits an intensive cultivation of the data, as the analysis proceeds at different levels and the author is forced to reconcile different approaches. It is argued that this “harrowing” of data results in better narrative processes and outcomes.

Our method may be criticized for attempting to combine two seemingly incommensurate concepts—wetness and dryness. Imposing wetness on dry data will not necessarily make the data wet, and imposing dryness on wet data will not necessarily make the data dry. Rather, there is the danger that each imposition will result in a “paper mache” effect, where the strengths and benefits of each property are negated. We sought to avoid this problem by imposing each technique at different times. We delayed the imposition of narrative structure until open coding was completed. In further analysis, we utilized the different techniques, at different times, in different ways, for different purposes. So we sought healthy co-existence rather than full integration. However, as already stated, each stage involved some degree of wetness and dryness, breadth and depth, so the problem was reduced but not avoided entirely.

Beyond the exposition of the method and its illustration through its application to an extract from a project history narrative, we have not been able to discuss the extension of the method to incorporate Chatman’s concept of discourse. Given that another purpose of the method is to make narrative analysis more accessible and transparent, explicit identification of the narrator’s voice, and discussion of the problems of interpreting research accounts when the narrator’s (or narrators’) voice is not made explicit, would clearly add to the method.

The next stage of Strauss and Corbin’s coding schema—the conditional matrix—provides an explicit approach to identifying, isolating, and interpreting different perspectives in narrative. The conditional matrix is comprised of eight layers of analysis that “range from the broadest, or more general features of the world at large, to the more specific—those closest to the phenomenon under investigation” (1990:158). It would be possible to apply the conditional matrix to narrative analysis at a time and in a way that is consistent with Chatman’s concept of discourse. Where Chatman deconstructs discourse into a further set of building blocks of narrative, and relates these to those of Story, grounded theory techniques could be applied in the manner outlined in this paper. The judicious use of deduction and induction, structure and emergence, within one explicit and easy to follow method of discourse analysis would be a further contribution to IS research.

Whereas this account of the multimedia systems design was that of the project manager, different accounts could be given, bringing out, for example, the very different perspectives on design held by software engineers and graphic designers, or the difference in views between programmers and analysts, developers and project managers, providers and users. Separation of Story and Discourse makes it easier to identify different narrative voices in the telling of the story. This has practical implications for the development of methods designed to address problems of communication breakdowns at various levels of the conditional matrix, at the individual level (within or between disciplines, where methods are implemented) at the sub-group and organizational level (where methods are chosen, designed, and developed) and at the supra-Organizational or community level (where interventions in the form of education and training are made).

Our research provides a platform for further work. Investigating and testing different approaches, both on the narrative and grounded theory sides of the equation, along with applications to different narrative forms, should lead to the development of the method. Its application to Chatman’s discourse, where grounded theory techniques may be used to structure the plot’s temporality, its causality or to examine the telling of the story from multiple perspectives, has been discussed. The substitution of Labov’s (1966, 1972) narrative theory, or the combination of Labov’s theory with Chatman’s theory, may also yield useful insights into how to present the narrative dramatically.

6. Conclusions

Our objective was to set out a method that bridged the gap between breadth and depth in narrative analysis. This method is aimed primarily at novice researchers and, accordingly, it should be accessible, transparent and accountable. Our method extended narrative analysis with grounded theory analysis. We provided a rationale for this integration, explained the method, and illustrated its application using data from a project history narrative. The method was explicitly stated and the assumptions behind it set out. We discussed method limitations and opportunities for further research and method development.

An important feature of our method is that we delay the imposition of narrative structure to encourage a fuller consideration of the narrative context. Then, after the imposition of narrative structure, we encourage further "emergence" through the use of specific grounded theory tools and techniques which "ground" the analysis in the source narrative. We argue that by delaying the imposition of narrative structure and staying close to the source narrative throughout the analysis, the quality of the narrative analysis, and of the resultant narrative, will be improved.

Although both narrative analysis and grounded theory are complex methods in themselves, we chose a clear path through each, using the approaches of Chatman (1978) and Strauss and Corbin (1990). We suggest that our method of narrative analysis makes it easier for the IS researcher to understand what is being done, when, why, and to whom, and to account for his or her interpretation to other researchers. We invite IS researchers to test our method, and the assumptions that lie behind it, and to develop the method through practical applications and accounts.

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