

# Narrative-based Writing for Coherent Technical Documents

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## ABSTRACT

Narrative-based writing is a technique that was developed to address the lack of support for document coherence. The technique depends on the production of a story-like executive summary of the document called a DN (Document Narrative). This is then analysed using a discourse theory called Rhetorical Structure Theory (RST) which helps further to correct any lapses in coherence in the DN before proceeding to use it to write the document. Previous papers have described the technique briefly, alongside discussions of the ongoing software development to incorporate narrative support in writing tools. It has now become apparent that the technique itself needs to be explained in greater detail. This is the purpose of this paper. Here, narrative-based writing and the reasoning behind it is described. This is followed by a description of a user experiment conducted in May 2006 to evaluate narrative-based writing and discover areas in which it could be improved. The positive feedback from the volunteers has motivated us to continue to refine and simplify the technique.

## Categories and Subject Descriptors

I.7.1 [Document and Text Editing]: General; I.7.2 [Document Preparation]: Format and notation; H.5.3 [Group and Organization Interfaces]: Computer-supported cooperative work

## General Terms

Documentation, Human Factors, Theory

## Keywords

Narratives, Rhetorical Structure Theory (RST), Technical documentation

## 1. INTRODUCTION

Technical documents are often unpopular both among their writers and their readers. From a writer's perspective, technical documentation is seen as "that burdensome chore that managers

are always trying to force onto...programmers" [19]. This may not always be applicable to academic technical writing but does ring true for some industrial settings. The documents tend to be produced against tight deadlines and by authors with little or no training in formal writing. Furthermore, technical documents are regularly produced collaboratively. Misaligned contributions from various authors can further impair the semantic consistency of a document [11]. These factors make technical documents harder to read and understand.

Ways to improve the situation include software tool support and encouraging authors to follow better document planning techniques. However, existing tools and techniques (such as outlining), while being excellent at what they were designed to provide, do not seem to support the aspect of writing that we call "coherence" [2].

We, therefore, look at technical documentation from a different angle. By combining ideas from narratives and a discourse theory called RST [12], we present a technique called **narrative-based writing**. The technique is based on the production of a **document narrative (DN)** which is a précis of the story that the author intends to convey to the reader. It is not unlike the storyboarding technique used to plan motion graphics. RST is used next to study and improve the coherence of this DN before using it as a guide to structuring the eventual document. The uniqueness in this approach lies in the combination of ideas from parallel fields and the use of RST in the *synthesis* of documents as opposed to its mainly *analytical* applications [17]. This paper is dedicated to describing this technique and the ongoing work to refine it.

So, we first include some areas of background information which are necessary to fully appreciate the problem and our solution. This includes a brief tutorial on RST. We then introduce narrative-based writing together with an example of how it can be applied to a research proposal. Next, we describe a small user study conducted in May 2006 where technical authors gave us feedback on DNs and the use of RST in this context. Motivated by the positive feedback, we proceeded to refine and simplify the narrative technique. The start of a simple, generic narrative for documents is presented in section 5 along with comparisons to other techniques such as the pyramid principle and the STOP method. The final section contains the conclusions and plans for future work.

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## 2. BACKGROUND

### 2.1 Why technical documents?

In this context, ‘technical documents’ refer to various forms of scientific communication such as research papers and proposals. In the past, the term has been used in our research to encompass websites and presentations too [2]. Our research focuses on technical documents because they have a reputation for being poorly structured. There are several reasons for this. Firstly, technical documents are often written by authors with little or no formal training in writing and linguistics [8]. Secondly, when writing a technical document the focus is often on the content (such as experimental results) as opposed to the structure. In our opinion, this contrasts greatly to creative writing where a great deal of attention is paid to the structure. Thirdly, and most significantly, technical writing is often done in groups; thus making coherence even harder to achieve. This makes technical documentation a particularly useful area in which to apply our narrative-based research.

#### 2.1.1 Holistic structures

Certain sections or chapters in a document are compulsory due to standard practice. For instance, most documents are required to have an introduction at the start and conclusions at the end. Similarly, letters are expected to have a letterhead and a signature. These fixed structures are sometimes called holistic structures [13]. Narrative-based writing, however, is a way of planning the rest of the document; the relational aspects of the *body* of the document.

### 2.2 A definition of coherence

Coherence is a subjective phenomenon. Several factors such as grammar, the use of language and the previous knowledge of the reader can affect coherence. However, for this paper, it is necessary to specify what is meant by the word ‘coherence’ within the scope of our research.

A group of well-formed sentences does not necessarily form a coherent paragraph. The order in which they are placed can significantly alter the ease with which they can be understood [9]. With just a little bit of planning, the sentences can be organised such that there is a smooth and natural progression of ideas between them. It could even be said that such a paragraph conveys a consistent story or a narrative to the reader. It is this feature of text that we refer to as coherence. While this is relatively easy to achieve in short texts, it is much harder with larger documents where planning has to occur both at the level of sentences and at the higher level of sections (and chapters).

It is support for *this* aspect of document structuring that we find missing in current software and writing techniques.

### 2.3 The role of narratives

The word “narrative” has been used in connection to technical writing before [21]. For instance, Evans and Gruba [5] say that a thesis should “read like a novel”, thus implying the need for a storyline or a smooth progression of ideas. Therefore, turning to narratives was a natural development of our research.

A narrative can be broadly defined as a representation of a series of events [16]. While some researchers distinguish between a story and a narrative [1, 10], others use the two words interchangeably as is the case in this paper.

The need for an underlying narrative seems obvious in novels, movies and other stories. This requirement is less visible in technical writing where the focus is often on scientific content. However, even technical documents benefit from a good structure. One of the major complaints with technical documents, particularly ones written collaboratively, is that the sections do not quite fit together properly [11]. We, therefore, attribute the coherence of a document to the implicit narrative conveyed by it.

### 2.4 The role of discourse theories

Having established the role narratives can play in technical documents, it was important to study ways in which this narrative can be improved. There are several discourse theories that aid the process of producing coherent texts [e.g. 6, 7].

After considering some of them, Rhetorical Structure Theory (RST) [12] was chosen for this research. RST is simple and has precise definitions for the relationships. It also requires the formation of tree structures which provide a useful visual aid in understanding the logical structure of the text.

#### 2.4.1 Rhetorical Structure Theory (RST)

RST is based on the idea that logical relationships exist between segments of a text that show how they are dependent on each other. This section presents a quick tutorial on how to analyse a text using RST.

The first step is to divide the text into segments. Each segment is expected to have functional integrity and is often a clause [12]. Some segments are classified as *nuclei*. They are considered important and necessary for the understanding of the text. Others are called *satellites* and provide supporting information but are not considered essential.

The second step is to identify relationships between these segments. Most relationships exist between two segments: usually, a nucleus and a satellite (e.g. SOLUTIONHOOD). Some can exist between multiple segments of equal importance (e.g. SEQUENCE). These relationships are illustrated using diagrams like the ones below (which have been drawn using the free RSTTool [15]).

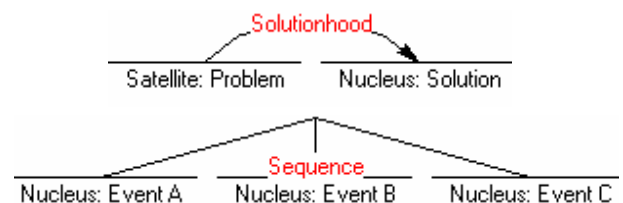


Figure 1: An illustration of two RST relationships

Once a relationship has been defined as shown above, the segments involved collectively form a span which can, in turn, become part of another relationship. Hence, the application of relationships is recursive and it continues until all the segments are involved in a *tree* of relationships. This is called a RS-tree.

Mann and Thompson identified 23 relationships that could exist in a text and defined each one precisely. However, for narrative-based writing we have selected nine relationships (out of the 23) that we have used regularly and think are adequate for the analysis of technical documents. These are listed below. Mann and Thompson also specified the order of the satellite (S) and nucleus (N) for some relationships. This can help in the DN. For instance, placing the problem (satellite) before the solution (nucleus) in a SOLUTIONHOOD relationship is better. More information about RST can be found in [12]. The analysis is also demonstrated in the next section.

**Table 1: Subset of nine relationships**

Name	Description	Order of S and N
Background	Satellite provides background information to the nucleus	S before N
Contrast	Applies to two nuclei that contrast each other	
Elaboration	Satellite elaborates the information in the nucleus	N before S
Enablement	Information in the satellite enables the reader to perform action in nucleus	N before S
Evidence	Satellite provides evidence to the statement in the nucleus	N before S
Justify	Satellite justifies the nucleus	
Motivation	Satellite motivates the reader to perform the action in the nucleus	
Sequence	Multiple nuclei that follow each other in sequence	
Solutionhood	Satellite is the problem. Nucleus provides the solution.	S before N

### 3. NARRATIVE-BASED WRITING

Having had introductions to narratives and RST, it is now possible to present **narrative-based writing**. The technique is based on the idea that the coherence of a document can be attributed to the story conveyed to the reader. Narrative-based writing is about encouraging authors to pay more attention to this story (or a DN as it is termed in our research). The process can be distilled into three steps, which are explained in greater detail below.

1. Formulate the document narrative (DN)
2. Analyse the DN using RST
3. Implement the DN and RST analysis in the document

#### 3.1 A document narrative (DN)

A DN is an explicit précis of the story that the author intends to convey to the reader. It can be compared to an executive summary of the document or even an elevator speech. It is a top-level view of what the document is expected to say and how all the pieces of information fit together.

At the start of this research, DNs included phrases that described the author's intentions such as 'We want you to fund us' [3] and

structural information such as 'On the next page' (Appendix A). Such statements have now been removed from DNs. They do not contribute to the overall narrative of the document. Also, some of the author's intentions are encapsulated in RST relationships (in the next stage) making it unnecessary to repeat them in the DN.

It is possible to create different DNs about the same content to fit various audiences. A classic example is when the same work is presented to groups of people in different positions in the hierarchy. For instance, a DN for managers may focus on the benefits resulting from the work (e.g. reduction in costs to the company) while a DN for technical developers may need to contain more details about the implementation.

A DN can help in situations when the author has to tie together several pieces of information in a document. Attempting to fit the information into a natural narrative can help work out the sequence of the sections. In this paper, for example, sections 3 and 4 could have been interchanged (thus conveying a slightly different narrative).

There are no restrictions regarding the length of a DN. However, very long DNs can be difficult to deal with and may defeat the purpose of producing one. One of the positive aspects of a DN is that it enables authors to contain a 'model' of the document in their mind and continue to mull over it at leisure. Longer DNs would, in our opinion, make it difficult for this to happen. A rough guideline is to produce a DN no more than half a page long.

To demonstrate the process better, each step has been applied to a research proposal. Research proposals are an interesting genre of documents [20]. They have the added task of persuading the reader for funding and convincing them that their research is worthy; an area where a DN could particularly be useful. Below is a possible generic DN (segmented for RST) for a research proposal.

[We will achieve the required results in the given timeframe.]<sup>1</sup>  
 [These results are beneficial to you and the scientific community at large]<sup>2</sup> [because there exists this unsolved problem to which our results are the answer.]<sup>3</sup> [Studies into previous work in this area show that existing solutions do not address all the complexities of this problem.]<sup>4</sup> [Our solution is unique and different to previous attempts.]<sup>5</sup> [To achieve this, we will need total-time]<sup>6</sup> [and these resources]<sup>7</sup> [The research will be carried out by researchers in the following institutions]<sup>8</sup> [because they have an impressive track record of work in this area.]<sup>9</sup>

**Figure 2: A possible generic DN for a research proposal**

It is normal for DNs to read somewhat awkwardly and to contain an unusual, rather mechanical use of English. This is because a DN is really a sequence of placeholders for sections in the document. It is deliberately kept short and made to contain certain keywords that indicate the nature and content of the corresponding section.

### 3.2 The RST analysis

The second step in the process is the RST analysis. There are several properties of RST that can be put to good use at this stage to study and gauge the quality of the DN. For instance, simply identifying relationships helps establish the significance of each of the segments and justify their presence. Also, the advice by Mann and Thompson about the ordering of the nucleus and satellite for some relationships, can also guide the order of the segments in the DN. Additionally, the ease with which a RS-tree can be formed can indicate the level of coherence. For example, if segments cannot be fitted into the tree, it could show that they need to be re-positioned or removed from the DN.

Figure 2 showed a DN for a research proposal divided into segments. Below is a possible analysis of it using RST. To illustrate the bottom-up analysis better, relationships between some pairs of segments have been shown first. They are later combined in Figure 4 to produce a tree.

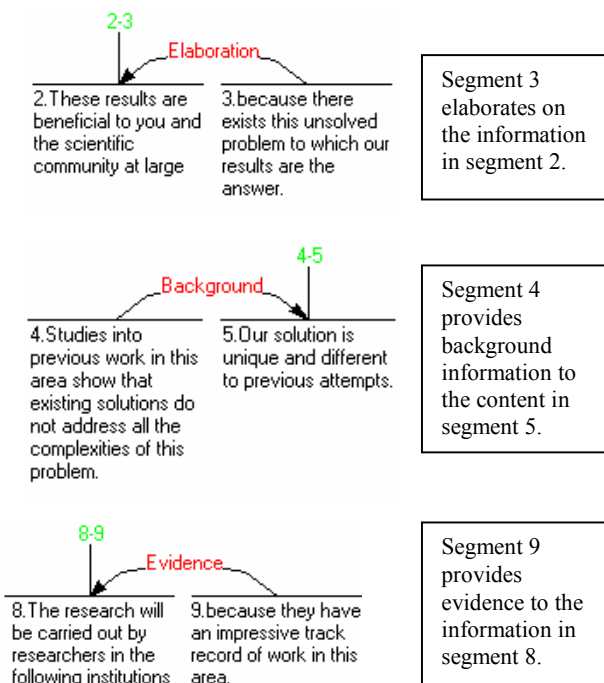


Figure 3: RST relationships between some pairs of segments

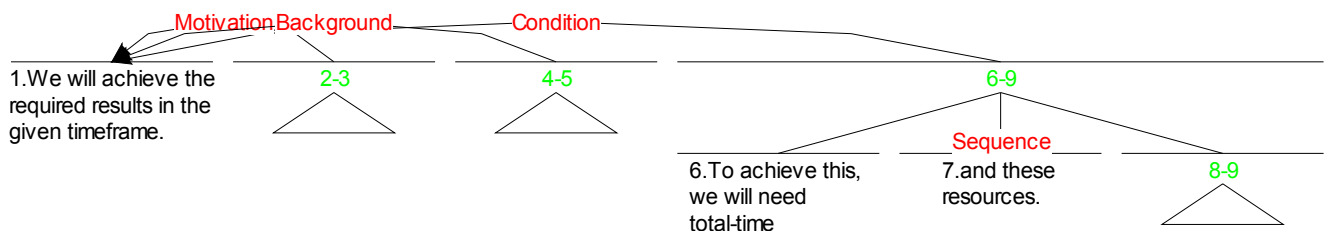


Figure 4: The whole RS-tree. The sub-trees already shown in Figure 3 have been collapsed to save space.

The tree in a RS-tree may not, at first, be obvious. In reality, it is a traditional tree structure with RST relationships added on. In the diagram below, the tree structure is shown by the horizontal lines. The nine segments are divided into four sub-trees first: 1, 2-3, 4-5 and 6-9. The sub-tree 6-9 is divided further into smaller sub-trees.

It is possible for different analysts to recognise different relationships between segments. This is why the RST analyses presented in this paper and elsewhere in our research have been labelled as ‘possible’ analyses. It is natural for authors to have differing opinions about the analysis. The important thing is for a team of authors working together to *agree* on one analysis.

### 3.3 Producing the document

The third and final step is to implement the DN and RS-tree in the document. It is difficult to provide a definite set of rules for this step. In our opinion, much of the benefit of narrative-based writing lies in just thinking about the DN and working out the relationships between the components in the story. When it comes to writing the document, we anticipate that this thinking about the DN will influence the way that authors create the text (which can be particularly beneficial in collaborative writing).

However, we have developed two general guidelines as to how the DN can be used. Firstly, if there are sections in the document that correspond to segments in the DN, they should follow the same sequence. (Note: Not all segments have to have corresponding sections.) Secondly, the RST relationships that the segment is involved in need to be highlighted in the content in the corresponding section. For instance, if the section is required to provide motivation about why the researchers tackled a certain problem, it has to contain the necessary material. To demonstrate, here are some possible sections for a research proposal following the DN in Figure 2. The segment each section corresponds to is indicated within brackets.

Table 2: List of possible sections in a research proposal

Introduction (1) – not always dictated by DN
Benefits of these results (2)
Description of problem (3)
Background research (4)
Details of our solution (compare to existing research) (5)
Time plan (6)
List of resources (e.g. money) (7)
List of researchers (8)
Details of researchers (maybe CVs etc) (9)
Conclusion – see section 2.1.1 (Holistic structures)

## 4. A SIMPLE USER STUDY

In order to get some feedback about narrative-based writing, an all-day experiment was conducted on the 11<sup>th</sup> of May 2006 with nine volunteers from the School of Electronics and Computer Science at the University of Southampton, UK.

### 4.1 Aims and objectives

The aim of the experiment was to get feedback on the process of narrative-based writing and the prototype of the corresponding tool [2] from technical authors. In this paper, only the feedback regarding the technique will be discussed. The suggestions about the software are more relevant in a paper describing the tool. Primarily, we wanted to find out if technical authors welcomed the idea of a DN and how they dealt with the RST analysis.

We also wanted to find out how collaborative writing teams developed DNs and if a DN assisted in clarifying the ideas among the authors.

### 4.2 Experiment design

At the start, we presented a tutorial describing narrative-based writing, including a tutorial on RST. The volunteers were also given handouts with some sample DNs and RST analyses.

The volunteers were then asked to do a RST analysis of a DN for a travel brochure (Appendix A). By giving the volunteers a DN, we made sure that they focused entirely on the RST analysis and not on creating the DN. A travel brochure was chosen because it was a short and informal example. Note that the DN was still in the old style and contained phrases such as “the next page” and “the first of these paragraphs.” It was feedback from this experiment that made us recognise that this was not ideal and change the format of DNs.

The volunteers were asked to do the analysis using the subset of RST relationships identified for this research (Table 1). Even though the DN was not of a technical document, we did not anticipate that its analysis will require any additional relationships. This enabled us to evaluate if this list was sufficient or whether the volunteers needed other relationships to complete their analyses.

Next, each volunteer was asked to enter the analysis from the previous task into the web-based tool. The volunteers had brought their own laptops and accessed the tool via a Web browser. (Feedback from this exercise is omitted in this paper.)

Finally, the volunteers were divided into three teams: A, B and C. Each team was asked to produce a DN for a research paper. No other specifications were given. The volunteers then had to fill in a questionnaire about the tasks above. The responses and the conclusions drawn from them are discussed next.

## 4.3 Results and conclusions

### 4.3.1 Information about the volunteers

The volunteers were all academic staff and PhD students from the department and they were all fairly experienced with technical writing, both single-author and collaborative. This made them ideal candidates to comment on narrative-based

writing. They said that they usually used outlining when planning their documents.

### 4.3.2 Feedback about the RST analysis

With the exception of one volunteer who found the RST analysis easy, the rest had rated their experience as ‘Moderate’ or ‘Hard’. The time taken for the analysis ranged from 15 – 45 minutes. There were a few incorrect applications of relationships but these could have been avoided if there was more time to teach RST properly.

The important point is that all the volunteers had managed to form RS-trees, using a range of relationships that were applicable to the given DN (SEQUENCE, MOTIVATION, ELABORATION, CONTRAST, ENABLEMENT, SOLUTIONHOOD, JUSTIFY and BACKGROUND). The analysis by volunteer 5 is given in Appendix A. After just a short tutorial teaching RST, this is actually promising. The results suggest that technical authors can be taught narrative-based writing even in a short space of time. There appears to be no apparent correlation between the experience of the writer and the ease with which he performed the RST analysis. Two volunteers with the most writing experience found the analysis at the same level as the others.

None of the volunteers had said that they needed more relationships for the RST analysis. However, during the discussions after the experiment, one volunteer suggested the possibility of having an IF-THEN-ELSE relationship which he thought was useful for documents written by computer scientists. In our opinion, however, the CONDITION and OTHERWISE relationships defined by Mann and Thompson in RST fulfil this need. They were not included in the list of relationships provided to the volunteers since they had not been used frequently in our previous analyses. We will consider including them in the list of relationships for technical documents.

In general, the volunteers thought that the DN was appropriate for the travel brochure (or at least that it resembled the DNs that we presented in the tutorial). One volunteer thought that the DN was difficult to read because of phrases such as ‘on the next page’ and so on. It was at this point that we decided to remove such contextual information from a DN altogether. A DN is now a précis of the *story* in a document and this is the definition used in this paper.

### 4.3.3 Feedback about producing a DN in a team

The final section in the questionnaire asked the volunteers about their experience producing a DN collaboratively. The three DNs produced are listed in Figure 5.

The three DNs were exceptionally good. Since the tutorial at the start contained a DN for a research proposal, we expected the DNs to be almost identical to that research proposal DN. Two of the DNs (by teams A and B) bore some resemblance and appeared to be for a generic research paper. The third DN, however, was for a specific research paper about proving Newton’s law and was very different to the research proposal DN. Many of the volunteers had said that they analysed the DN using RST even though they were not required to do so. Each team had taken about 20 minutes to complete the DN.

Team A

There is an area of scientific work that we wish to survey and bring together. There is an absence of such a survey and, as far as the foremost researchers in the field, we are the most qualified. Précis history of that area as background. We will look at the web, printed material and contact active practitioners in the field. We then correlate, categorise, structure the material and identify visible trends, gaps, conflicts, corroboration and reinforce agreements. We predict future trends in the field and identifying areas we think need further research. In the study, we have identified a significant gap in the knowledge, a conflict between two research trends and a common agreement between major research.

Team B

We have solved an important problem. Our solution will help people in the future. There are existing solutions or partial solutions to this problem – highlight some of these solutions. Our solution is better than their's. Here is evidence of our claim based on experiments. Here is a comparison of our results with others. Here is a summary of results and claims.

Team C

We are students of Mechanical Engineering and learning some aspects of dynamics. We wanted to verify if Newton's Law is valid with varying air friction. Originally, in Newton's law, the effect of air friction was not considered. Due to recent advances in aero dynamics, air friction measurement and its impact is a major issue. We conducted experiments X, Y and Z. As a result, we found that air friction is an important parameter affecting Newton's law. During the analysis, we found that there is a significant difference between the end velocity calculated using the formula and that produced in the experiments.

#### 4.3.4 Summary

The experiment would have benefited from more time but it was not possible to get volunteers for a longer period than one day. However, even in this short time, the volunteers welcomed the idea of a DN for a technical document and grasped the process of doing a RST analysis surprisingly fast.

Suggestions to improve the tutorial on narrative-based writing have been noted. The volunteers did not need additional relationships to complete their analysis but we will consider adding the CONDITION relationship to the identified subset for technical documents.

A significant change that took place as a result of this experiment is the difference to the style of writing a DN. We used to include information about the physical layout and authors' reasoning. After the remarks made by the volunteers, we realised that this type of information was unnecessary. Current DNs only contain a précis of the story in the document.

In conclusion, the results of this initial investigation were definitely encouraging and we were motivated to carry on with this research.

## 5. WORK IN PROGRESS

### 5.1 Towards a generic narrative template

The volunteers in the experiment grasped the concepts of a DN and RST analysis very quickly. This has encouraged us to progress further with this research. The next step is to simplify the technique and introduce a generic template that authors could intuitively extend without requiring great amounts of knowledge in RST.

This process has already begun. After analysing different types of technical documents, it is clear that several of them present a solution to a chosen problem. There is often a section preceding the solution which sets the context (background). These three sections – Background, Problem and Solution – can then be thought of as being essential. We introduce a fourth: the Motivation. This is a section that presents the motivation (or justification) for solving this problem. It could, for instance, be a success story, results of an experiment or a list of benefits to a community that is affected by the existing problem. The motivation, in our opinion, is often what's missing in documents. We propose that it too is an important part of the story conveyed in a document. Therefore, the generic DN looks something like the following:

“[This is the background to the problem.]<sup>1</sup> [Here's the problem.]<sup>2</sup> [Here's our solution]<sup>3</sup> [and the motivation that led us to find this solution.]<sup>4</sup>”

Of course, the DN needs to be customised for each document. The intention is to have a template that gets authors thinking about the important aspects of the narrative.

A possible RST analysis of this DN is below. The text in the segments has been shortened to make the tree clearer.

Figure 5: The DNs produced by the three teams during the experiment

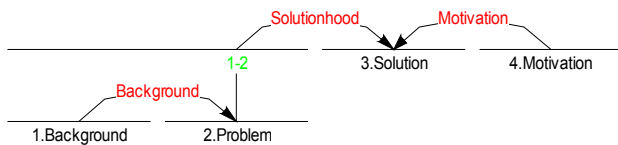


Figure 6: RST analysis of the simplified narrative

The arrangement of the segments in the tree can illustrate the content necessary for each of the sections. For instance, segment 1 above is expected to provide background to the problem and segment 4 is motivation for the solution. Other variations could exist. However, in this paper, section 2 was background to *both* the problem and the solution (introducing narratives and discourse theories), and the results of the experiment in section 4 provided motivation for us to refine our solution. So, in order to communicate this change, the RS-tree ought to be rearranged as shown.

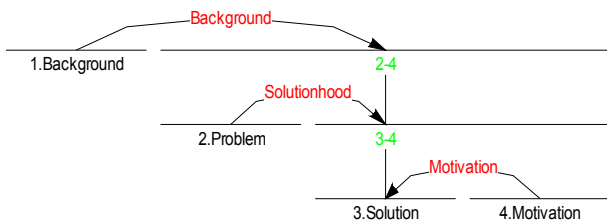


Figure 7: Another RST analysis of the simplified narrative

These ideas about a generic structure are still in their infancy and more work needs to be done.

## 5.2 Brief comparison to the pyramid principle

Minto's pyramid principal [14] is a popular document planning technique. Minto advises that information should be structured as if to form a pyramid where questions raised in the reader's mind at one level in the document are answered in the level immediately below it. Additionally, Minto also presents a narrative structure for the top-most box in the pyramid (the Introduction) as follows:

**Situation:** The current state of the subject (that you know the reader agrees with)

**Complication:** Complication to this state

**Question:** The question that the document answers

**Answer:** The answer to this question

These four sections in the introduction are comparable to the four segments in our short generic DN above. For instance, the Background and Problem sections in the DN are similar to the Situation and Complication sections. In the pyramid principle, the 'answer' then becomes the topic for the document which raises questions and thereby a pyramid is built based on a question-answer dialogue with the reader. This pyramid too is

comparable to tree structures which are the dominant feature in RST.

The main difference is the prominence given to the Motivation section in our generic DN. It is, of course, likely that the motivation can be presented lower down in Minto's pyramid depending on the developing question-answer dialogue. However, one of the things that we will focus on in the future is the attention to this Motivation section and the role it plays in strengthening the DN.

## 5.3 Brief comparison to the STOP method and storyboarding

Our technique can also be compared to the STOP method from as far back as 1965 [18]. STOP focused on getting authors to develop themed 2-page modules which help draw the reader's attention to one topic at a time. The use of storyboarding to group the text and the associated pictures together became hugely popular. We see DNs as being similar to storyboards in that they too aim to capture the 'story' in the document. The DN can perhaps be thought of as a summary of the storyboards.

## 6. CONCLUSIONS

Narrative-based writing is a process that was developed to address the lack of support for document coherence. Two important steps of the technique are the creation of a DN and the use of RST to improve it. A DN is an explicit précis of the story conveyed to the reader and is fundamental in working out the natural progression of ideas in a document. RST is a discourse theory developed by Mann and Thompson in 1988. The theory provides a way of formally analysing the coherence of a DN. Various properties of RST such as the need for a tree structure help make judgements about the quality of the DN before proceeding to use it as a guide to writing the document. This paper is dedicated to explaining this process in detail.

Having devised this technique, we proceeded to use a small group of volunteers to test out these ideas. The feedback was encouraging. The volunteers (all technical authors) grasped the concepts quickly and provided useful suggestions about ways to improve DNs. This gave us confidence and motivated us to carry on refining and simplifying this technique.

Work on generating a simpler narrative template has already begun. We presented the initial ideas in section 5. The narrative template, at the moment, contains four sections and is comparable to some guidelines that Minto provides (for an introduction) in the popular pyramid principal. The ultimate goal of our research is to successfully integrate narrative-support into existing writing tools. Work is underway [4].

The combination of ideas from parallel fields such as RST, narratives and technical documentation is a unique contribution of our research. The extra attention to the DN and the careful analysis of it, can, in our opinion, only have a significant benefit on the eventual document.

## 7. ACKNOWLEDGMENTS

We would like to thank the volunteers who participated in the experiment in May 2006 for both their time and valuable feedback.

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## APPENDIX A

[We want to convince the reader to book a holiday in the country described.]<sup>1</sup> [Therefore, on the first page, we'll place a catchy title and a picture showing a leisurely activity or scenery that this country is famous for.]<sup>2</sup> [The next page will begin with a greeting in the local language and its translation. Five to six short paragraphs will follow this,]<sup>3</sup> [each describing attractions that will appeal to a wide range of holiday-makers; some of these attractions will be familiar and some unique so as to distinguish this country from the rest.]<sup>4</sup> [The first of these paragraphs will include a sentence about the country's geographical location and some of the paragraphs will be enhanced using illustrations.]<sup>5</sup> [Next, brief details about the climate, currency and languages spoken will be given to inform the interested reader]<sup>6</sup> [(who has read this far).]<sup>7</sup> [Finally, contact details of reputable travel agents and a URL for more information about the country will be provided for readers who may now be considering booking their holidays.]<sup>8</sup>

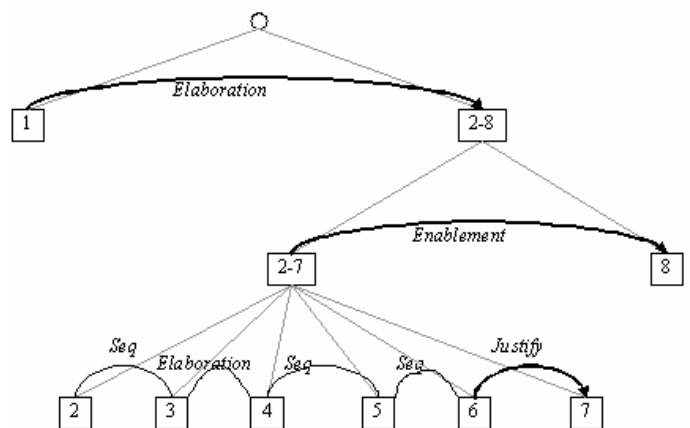


Figure 8: Shows the DN that the volunteers had to analyse (in older style)(above). The RST analysis for it by volunteer 5 (below)