COMPUTER SUPPORT FOR NARRATIVE STRUCTURES

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Abstract: Coherent document narratives make a document more effective. Research into narratives exposed a vast number of theories that explore and enhance narratives. Our research combines the knowledge from computer science and narrative theories to provide software support to guide the author towards well-structured technical documents. The first prototype uses Rhetorical Structure Theory (RST) to achieve this goal and is described in (De-Silva and Henderson, 2005). We are now exploring the business process of narrative-driven cooperative writing and the implications of expanding our tool to support this. Future work also involves developing a simpler version of RST that better suits technical documents.

INTRODUCTION

For many decades, linguists and experts in narratology have developed structures that are most effective for specific genres of writing (Propp, 1928, Eco, 1979, Freytag, 1863). Meanwhile, studies into the coherence of narratives were also carried out and with each theory, new notations and understandings of narratives have emerged (Lehnert, 1981, Grosz et al., 1995, Hobbs, 1985). The idea of coherence relations between segments in a text was a popular one and was propagated further by Rhetorical Structure Theory (RST). Explanations of RST can be found in (Mann and Thompson, 1988) and applications of this theory to a short story and research proposal can be found in (De-Silva, 2005, De-Silva and Henderson, 2005).

We investigate an approach to document construction that combines knowledge from two parallel strands of research: narratology and computer science.

USING RST TO PRODUCE BETTER DOCUMENT NARRATIVES

We aim to provide software support that guides the author to create more coherent documents. The first prototype of our tool, called CANS, uses RST to achieve this goal and is detailed in (De-Silva and Henderson, 2005). The tool encourages authors to begin their writing process by constructing a document narrative and applying RST to this narrative to validate its coherence. A document narrative is a short piece of text outlining the 'story' that the document should convey to the reader. If the text is coherent, it should produce a tree of RST relations. As an example, a quick RST analysis for the narrative of the proposal submitted to this conference is given in Figure 1. CANS also provides a set of predefined document narratives that the author can choose from (e.g. a research proposal, an abstract for a paper, a short story, a presentation). This list is expected to grow.
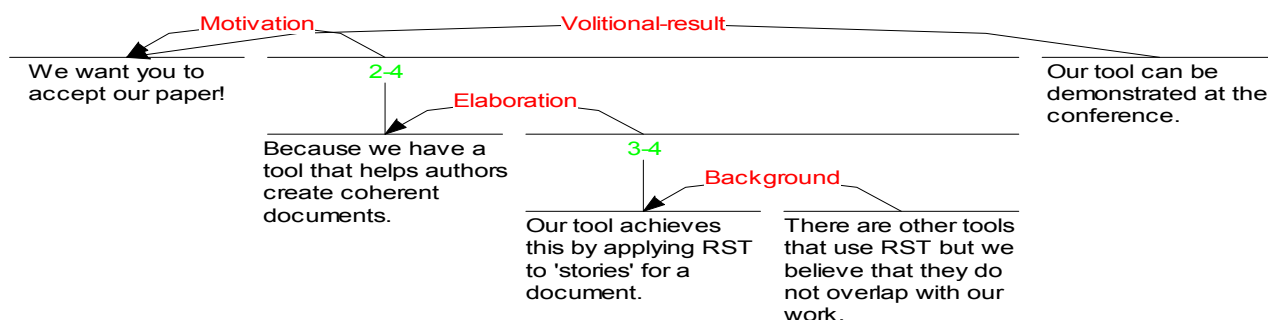

Figure 1: RST analysis of document narrative for the abstract submitted to this conference

CONCLUSIONS & FUTURE WORK

Work in the immediate future includes several enhancements to the user interface of our tool, automated question generation from the RST tree structure and more ways of producing alternative narratives for a document (De-Silva and Henderson, 2005).

With the advent of the Grid and virtual organisations, collaborative working among people who may never physically meet is becoming commonplace. Such work will also entail the creation of cooperative documents. Therefore, we plan to develop a business process model for cooperative writing and make corresponding extensions to our tool. The traditional problems of collaborative working such as concurrent updates will need to be addressed, along with special considerations of narrative-based writing. How will a document narrative be created for a cooperative document and will all the co-authors see the entire narrative?

We also hope to devise a simpler version of RST, informed by narrative theories, that will be more suited to documents in the technical and scientific arena. This will ideally contain a smaller number of relations capable of providing the required narrative functionality for technical authors.

Our research thus far suggests that narrative-based writing is a novel approach to constructing and thinking about technical documents. We are convinced that the above extensions to our work will produce a useful and innovative tool that will help technical writers produce effective collaboratively-authored documents.

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