

COMPOSITION METHOD IN NARRATIVE

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ABSTRACT

This paper presents a model of the task of narrative composition as a set of operations that need to be carried out to obtain a span of narrative text from a set of events that inspire the narration. These have been named different ways by different researchers, story and discourse, histoire and discours, fabula and sujet. There are alternative analyses that postulate different subdivisions. This analysis has provided a break down into subtasks that has led to interesting insights in terms of specific knowledge-based operations that need to be carried out during composition.

KEYWORDS: *Narrative generation, Theory of narrative, Representations, Natural language processing, Artificial intelligence, Cognitive science, Narratology.*

INTRODUCTION

The task of composing a narrative based on a given set of events that have taken place has received little attention in terms of conceptual modelling. Efforts have been made to capture the structure of narratives as a finished product (by the narratology research community), to come up with a set of cognitive processes implied in the tasks of writing in general or of understanding narrative in particular (by the cognitive science community), to build models of how fictional plots are generated from scratch or of how discourse may be structured for a given plot (by the artificial intelligence community) and to construct functional architectures for generating text from conceptual data (by the natural language generation community). The task of putting together a narrative that conveys events that have already happened is related to all these aspects. It is also the kind of basic storytelling that people carry out in their everyday lives to communicate with one another, to convince, to inform, to remember the past, to interpret the present and to plan for the future.

MATERIALS AND METHODS

According to many theorists, narrative has two components: what is told (what narrative is: its content, consisting of events, actions, time and location), and the way it is told (how the narrative is told: arrangement, emphasis / de-emphasis, magnification / diminution, of any of the elements of the content). These have been named different ways by different researchers, story and discourse, histoire and discours, fabula and sujet. There are alternative analyses that postulate different subdivisions. Even between theories that agree on having just two levels of analysis there seem to be many subtleties that cast doubt on whether the same thing is meant by

the different words. This presents a serious obstacle for researchers from the computational field trying to address the treatment of stories in any form. In order to avoid ambiguity, we will restrict our analysis here to three levels of conceptual representation of a story, and refer to these as the story (the complete set of what could be told, organised in chronological order of occurrence), the plot (what has been chosen to tell, organised in the order in which it is to be told) and the narrative (the actual way of telling it).

RESULTS AND DISCUSSION

Cognitive Accounts of Writing

Flower and Hayes (Flower and Hayes, 1981) define a cognitive model of writing in terms of three basic processes: planning, translating these ideas into text, and reviewing the result with a view to improving it. These three processes are said to operate interactively, guided by a monitor that activates one or the other as needed. The planning process involves generating ideas, but also setting goals that can later be taken into account by all the other processes. The translating process involves putting ideas into words, and implies dealing with the restrictions and resources presented by the language to be employed.

Cognitive Accounts of Narrative Comprehension

Although this paper is concerned with modelling the process of narrative composition, it is indirectly affected by models of narrative comprehension in as much as the results of composition must be suitable for comprehension. Narrative comprehension involves progressive enrichment of the mental representation of a text beyond its surface form by adding information obtained via inference, until a situation model (representation of the fragment of the world that the story is about) is constructed (van Dijk and Kintsch, 1983).

Story Telling

Storytelling efforts in AI have focused on two different tasks: that of building fictional plots from scratch and that of structuring appropriate discourse for conveying a given plot. The importance of causal relations in narrative comprehension has led to AI models of plot generation that rely heavily on the concept of planning. Many existing storytelling systems feature a planning component of some kind, whether as a main module or as an auxiliary one.

Natural Language Generation

The general process of text generation takes place in several stages, during which the conceptual input is progressively refined by adding information that will shape the final text (Reiter and Dale, 2000). During the initial stages the concepts and messages that will appear in the final content are decided (content determination) and these messages are organised into a specific order and structure (discourse planning), and particular ways of describing each concept where it appears in the discourse plan are selected (referring expression generation). This results in a version of the discourse plan where the contents, the structure of the discourse, and the level of detail of each concept are already fixed. The lexicalization stage that follows decides which specific words and phrases should be chosen to express the domain concepts and relations which appear in the messages. A final stage of surface realization assembles all the relevant pieces into linguistically and typographically correct text.

A Computational Model of Narrative Composition

The task of heckling can be related to the identification of appropriate focalization decisions for conveying a given material. Focalization, understood as the decision of which character the narration should follow, and how much of the environment around him at each point should be conveyed to the reader of the narrative, heckles the perception of reality into individual fibres (one for each possible focalizer character) that are linear and sequential in nature. For each character involved in the set of events to be conveyed, a possible focalization fibre can be drawn. In contrast with the physical fibres of textiles, different elements of the material (locations, objects, characters, events...) may feature simultaneously in more than one fibre. This difference is not considered problematic, and it will allow the model to represent important features of narrative, such as the possibility of including multiple perspectives of a given event.

Contextualization

Once a specific structure for the narrative has been decided upon in terms of yarns, an important task is to establish appropriate contextualizations after each transition into a new fibre fragment.

CONCLUSION

The model presented in this paper constitutes a first approximation to a computational model of the task of narrative composition. It draws upon an analogy with textile manufacturing well-based on popular culture. This analogy has provided a break down into subtasks that has led to interesting insights in terms of specific knowledge-based operations that need to be carried out during composition. These operations relate reasonably well with structural features of narrative as described in literary studies, such as focalization and chronology.

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