

## Incremental Semantics for Propositional Texts

C. F. M. VERMEULEN

**Abstract** In this paper we are concerned with the special requirements that a semantics of texts should meet. It is argued that a semantics of texts should be incremental and should satisfy the break in principle. We develop a semantics for propositional texts that satisfies these constraints. We will see that our requirements do not only apply to the semantics but also have consequences for the syntax. The interaction between text structure and text meaning will turn out to be of crucial importance to the semantics of texts. We develop two versions of the semantics: one representational, one in update style.

**1 Introduction** Traditionally in formal semantics the attention has been focussed on the interpretation of *sentences*. But since it was argued, by Kamp [4] and Heim [3] for example, that the semantics of texts requires more than a straightforward extension of the techniques developed for sentences, text semantics has become a separate topic of research. It is now quite generally recognised that special tools have to be developed for the analysis of typically text level phenomena such as anaphora.

The tools that have been developed for the semantics of texts also have been put to use in the analysis of sentences. For example in Kamp's *Discourse Representation Theory* and Heim's *File Change Semantics* it is argued that anaphors that find their antecedent within the sentence can best be treated in the same way as anaphors that find their antecedent in another sentence in the text. The so-called *donkey sentence* is a good example of a situation where this approach pays off:

If a farmer owns a donkey, he beats it.

In the approaches mentioned above, this sentence obtains the required interpretation in a natural way, while this is quite hard in traditional sentential semantics. So the semantics of texts has led to the development of new techniques which have proved useful for the study of old problems in sentential semantics.

In this paper we are concerned with the consequences of this shift of attention for the requirements on the formal methods that are used. In sentence semantics the all important methodological constraint is *compositionality*. But

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