1 Introduction
The analysis of narrative technique and in particular of perspective, poses a central problem in literary studies, insomuch as it focuses on methods of presentation that influence the reader's perception of the text. In Joseph Conrad's novel *Heart of Darkness* the phenomenon of an intricately organized shift of point-of-view forms a major challenge and, "Conrad provides us with very little critical guidance" (Ian Watt, 168) in this respect. A systematic computer-assisted analysis of the novel is presented as a reliable and effective way of compiling textual evidence for further analysis and interpretation.

2 The text
The novel *Heart of Darkness* is presented to the reader in a complex way through a multi-layered system of interrelated perspectives. Joseph Conrad's most famous narrator Marlow, the sailor who also appears in *Lord Jim*, *Chance* and Conrad's short story "Youth", relates his adventures on the river Congo to a group of listeners on board a boat moored on the Thames. The reader learns of this through the perspective of an unnamed member of the group, who introduces the setting for the ensuing "tale within the tale", and whose judgements provide the frame of mind for the reader to fully appreciate Marlow's account:

We looked on, waiting patiently - there was nothing else to do till the end of the flood; but it was only after a long silence, when he said, in a hesitating voice, "I suppose you fellows remember I did once turn fresh water sailor for a bit," that we knew we were fated, before the ebb began to run, to hear about one of Marlow's inconclusive experiences. "I don't want to bother you much with what happened to me personally," he began, showing in this remark the weakness of many tellers of tales who seem so often unaware of what their audience would best like to hear; "yet to understand the effect of it on me you ought to know how I got out there, what I saw, how I went up that river to the place where I first met the poor chap.

The hierarchically ordered narrators in the novel relate incidents, dialogues and characterisations by means of a multi-faceted layer of explicit and implicit value-judgements, which are often marked by a change of narrative focus. Marlow occasionally addresses his audience, and the anonymous narrator of the framing part of the novel himself comments on Marlow's attitude and even his technique of relating the story. The different addressees of these statements which structure the text and constantly underline the varying degrees of subjectivity can often only be identified by shifts in the narrative, changing the focus of perception from one narrator to the other. These shifts are frequently marked by interjections, parenthetical comments and a number of phrases indicating a change of perspective. The investigation of these shifts forms the central aim of this analysis, which is based on a computer-assisted approach to provide textual evidence.

3 Methodology
This analysis aims to electronically identify, locate and map instances of narrative shifts in which the governing perspective of the narrator focuses on the respective audience, thus explicitly marking the process of narration. In previous studies of Joseph Conrad, Ruth Sabol's computer-based semantic analysis has shown that in Conrad's novel *Lord Jim* the narrative voice of Marlow is shut out from the fictitious world of the novel. This approach, like Joel Goldfield's analysis of
"tic-words" that can be traced in a text and used for a stylistic investigation have prepared the ground for further electronic analysis of one particular narrative device. In this case, punctuation marks as well as lexical data (words, phrases, sentences) indicating a shift in perspective were filtered electronically.

The electronic text of *Heart of Darkness* was used as the basis for semi-automatic tagging, using TUSTEP, the "TUebinger System von TExterverarbeitungs-Programmen". The automatic identification of parenthetical constructions, using such punctuation marks as parenthesis and dash as the initial and final marker, provided the starting point. Expanding this system of electronic identification to incorporate a wider variety of possible combinations of punctuation marks, lexical indicators of speech and perspective such as *inquit formulae* and separate phrases denoting a speaker were incorporated into the search. Thus, a vast number of passages could be tagged very quickly and consistently. On the basis of a critical evaluation of the novel, the "recall-problem" could be minimized, providing maximum output of the computer-generated results for the ensuing literary analysis. The basic approach of identifying, locating and extracting predefined patterns, facilitates a complete compilation of relevant passages in preparation for a detailed literary investigation. The computer as a tool provides fast access to the complete text and unlimited search-and-copy functions for textual preparation prior to literary analysis. Only by means of this textual reductionism which highlights the narrative device and traces its location across a long text can highly specific questions focusing on textual phenomena be dealt with exhaustively.

4 Theoretical implications

*Heart of Darkness* is considered a prime example of modernist literature, in particular for its innovative use of perspective. A growing uneasiness with established notions of "truth", the concept of "subjectivity" and the reliability of a governing voice in fiction, especially in the context of an eye-witness report, as is the case with Marlow's account of his travels up the river Congo, led Conrad to this experiment in narrative presentation. The merging of a unified point-of-view in an interrelated, sometimes clear cut, but most often interwoven system of different perspectives implies that the reader's awareness of the governing voice of the narrator becomes at times blurred. The interspersed, often parenthetical shifts from the main story set in Africa to the framing part of the novel thus become valuable hinges for an analysis that focuses on techniques of narrative transition. A formalist analysis along the lines of Victor Shklovsky would interpret the function of this particular type of re-directing perspective as "defamiliarisation". It forms an integral part of the novel's strategy, which constantly undermines any attempts at attributing statements and judgements to a unified point-of-view, at the same time drawing attention to its mode of employing perspective. These occasional glimpses through one or more layers of narrative presentation, each with its own set of values, characteristics and aesthetic norms, reveal to the reader an increasing complexity of distancing on the part of Conrad, who thus manages to direct the reader's attention to fundamental questions of authenticity and reliability in fiction.

5 Conclusion

The underlying principle of this approach is to prepare the text of the novel for literary investigation and use computer-aided procedures exclusively for the initial stages of the analysis. Combining established literary criteria and computer-based access to the text, it thus becomes possible to compile a complete survey of all textual instances relevant for this study. The ensuing interpretation of *Heart of Darkness* can then be based upon the enhanced possibilities of electronic presentation. This makes possible what many literary critics demand from a competent reader: that the long text of a novel should ideally be accessible *in toto*:

A simultaneous possession by the reader of all the words and images of *Middlemarch, A la recherche du temps perdu*, or *Ulysses* may be posited as an ideal, but such an ideal
manifestly cannot be realized. It is impossible to hold so many details in the mind at once.
(J. Hillis Miller, 23)

The computer in literary studies has become the means to an immediate and at all times accessible presentation of the sum of all marked phenomena, and thus affords the critic the opportunity of a truly thorough analysis based on a comprehensive body of textual data.

6 References