

Courant Research Centre
Grant Proposal

**The Multi-layered Text Protocol:
Micro and Macro Level Structures in Written Discourse**

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II. Summary

While the description and theoretical analysis of isolated levels of text structure has matured substantially over the last thirty years, we possess but anecdotic observations about the interaction between different levels and the surplus literary effects created by such interactions. In the envisaged Courant Research Centre, three research groups will collaborate, two which are theory-oriented and a third one which is empirically focused.

The two theory-oriented research units aim to develop the *Multi-layered Text Protocol*, a comprehensive platform which traces text structures at all linguistic and narratological levels. This platform will serve to protocol textual categories such as common ground, discourse referents, salience, perspectival parameters, temporal and aspectual parameters, information structure, narrative perspective, mode, focalization, thematic structure, and genre specific patterns in a horizontally and vertically structured way.

The empirically focused research unit will investigate dependencies between factors at different levels of the Multi-layered Text Protocol. It will use methods of empirical narratology and psycholinguistics to validate hypotheses about interactions at various levels. As a starting hypothesis, we assume that lower linguistic levels are independent factors which influence high level literary factors such as mode, focus, perspective and narrative structure. We envisage, however, that in view of the highly subjective categories under investigation, the empirical research unit will offer feedback for the theory-oriented research unit and instigate a cyclic process of optimization and verification of the levels and categories of the Multi-layered Text Protocol.

III. Current scientific knowledge and research in area

III.1. Text analysis in literature and linguistics

How do we read and interpret texts? As we all know, “reading a text” involves much more than scanning words and computing the literal meanings of sentences. Research in literary studies as well as in linguistics has revealed that readers use inferencing at many levels in order to achieve a full comprehension of texts. (Note: We will use the term *text* as a cover term for monological and dialogical texts, for nonliterary prose, and literary texts of all kinds.) After a phase of intense exchange between linguistics and literary studies in the 1970s with the aim of formulating an overarching theory of text interpretation, the two disciplines have lost contact in the last decades. Literary studies, and specifically narratology, has extended the investigation of text structure beyond literary texts to texts in legal contexts, narratives in psychoanalytic therapy,

ethnological interviews and many others. These investigations focus on *narrative perspectives, narrative patterns, emotive development, creation of tension and climax* and other macro level structures. In linguistics, theories of discourse analysis have gained maturity and provide a powerful integrated tool to describe the micro level of texts, including *referents, anaphoric cross-referencing, temporal anchoring, information structure* and *rhetorical micro structures*. However, there is to date no common platform where all insights could be surveyed and tested for cross-level interpretive effects. We feel that the time is ripe to provide a common forum of theoretical exchange in order to come to a more comprehensive understanding of the interaction between different levels of text structure.

In the following, we will review levels of text structure as postulated in linguistics (III.2), narratological notions of text structure (III.3), and psychological insights in text comprehension and interpretation (III.4). While each strand of research has reached a high degree of sophistication, we will demonstrate that each field knows is faced with phenomena where different levels of text structure interact and new messages between-the-lines seem to emerge. We maintain that such borderline phenomena cannot be successfully treated by either of the involved disciplines alone. Against this background, we will proceed in section IV to define our research goals. In section V, we will specify how two junior research units will cooperate to develop the Multi-Layer Text Protocol which shall offer the basis to detect and investigate borderline phenomena.

The concept of a Multi-layered Text Protocol borrows from computing the idea that protocols are standardized formats that enable the information transfer between communication partners. The Text Protocol comprises all rules and constraints that are in effect during text production and comprehension. Thus, it is the master unit that manages the text-driven information flow and documents the synchronization of communication between the involved partners.

III.2. Linguistic theories of text structure

Linguistic theories commonly address single aspects of text interpretation. We will first revisit these aspects in isolation and then survey existing comprehensive theoretical frameworks. Most single-aspect theories turn out to be mutually compatible, and overarching frameworks exist or could be merged from existing theories. The resulting frameworks are, however, technically very involved and unsuited for interdisciplinary research. While formal precision is desirable in general, the inaccessibility of theories impedes fruitful interactions with other disciplines. Hence, we miss insights in fields where linguistic theories necessarily remain tacit, notably at a macro text level.

Semantic and pragmatic analyses of text to date cover the following aspects:¹

- The Common Ground: What do writers and readers know prior to a linguistic exchange? How does the knowledge of participants develop? How does text interpretation rely on world knowledge? What information is presupposed by a given text? The common ground can be split up into the epistemic backgrounds of writer and reader, and the joint stock of knowledge if

¹ Several of the listed theories tend to visualize the participants as “speaker” and “hearer” rather than “writer” and “reader”. In order to stay consistent with our general perspective on “text”, we will use the terms “writer/reader” without, however, necessarily intending to exclude participants in spoken language exchanges.

necessary. The classical foundations of the theory of the Common Ground have been laid by Stalnaker (1978).

- Discourse universe: How do we accumulate discourse referents as the text develops? What is the logical type of available discourse referents (entity, plurality, event, time point, proposition, other abstract categories)? The main theoretical strands have their origin in Kamp and Reyle (1993), Heim (1982) as well as in Asher and Lascarides (2003).
- Salience of discourse referents: Which discourse referents are accessible antecedents for anaphors at what point in a text? Which are the most salient referents at each point of the discourse? The structural delimitations are investigated in Segmented Discourse Representation Theory (Asher and Lascarides 2003). However, cognitive attention patterns and grammatical patterns in texts interact in subtle ways which we are only beginning to understand. Centering Theory (Grosz, Joshi, Weinstein 1995) has initiated empirical studies in attention patterns and salience.
- Classical temporal indexicals: What are reference time, event time and speech time at each point of the discourse? While most of the theories mentioned above include an account for temporal reference in discourse, these mainly draw on foundational work by Klein (2004), building on Reichenbach (1947).
- Indexical parameters of the utterance situation: Speaker and hearer are reflected in the grammar system (Kaplan 1977). In recent years, however, research has matured beyond the mere interpretation of pronouns like *me* and *you*. Honorifics, indirect speech, subjunctives, free indirect speech, logophoric pronouns, and other shifted use of indexicals are borderline phenomena in linguistic research (Sharvit (2008), Schlenker (t.a.), Zribi-Hertz (1989) and others). Still, linguistic theories are confined to the prediction of the agreed-upon interpretations and fail to contribute to our understanding of the literary effects of these constructions.
- Information structure: Sentences often follow a bipartition into “old” and “new” and focus and background information. This division depends crucially on the current topic or question under debate. How does the topical question develop? Along which sorting key does the speaker decide to structure her text? Important research traditions in this field draw on Rooth (1985), Klein and von Steutterheim (1989), and Büring (2003). The SFB 632 (Berlin/Potsdam) is devoted to investigating the empirical and typological foundations of focus, coherence, contrast, and other aspects of information structure.
- Discourse particles: By using discourse particles (English *well*, German *doch*, etc.), the speaker can signal awareness of facts about the common ground, information structuring, topicality, novelty value, etc (Zeevat 2003). We are only beginning to understand in detail how these particles interact with text structure.

Before moving on to our survey of comprehensive formats, let us briefly point out some blind spots in this research area.

Formal theories of text (discourse) fail to offer a representational level for grammatical features of sentences. However, grammatical properties are important signaling devices in text interpretation, ranging from grammatical gender (anaphor resolution) to word choice (register, sociolinguistic markers, expert language) to nonstandard syntax. The last factor, in particular, often serves to create specific

literary effects which need to be explored in a formal framework (archaisms, creation of narrative perspective, verb-initial assertions, non-standard word orders). Clearly, macro level text interpretation takes such indicators into account but little is known about *how* these macro level effects emerge from the linguistic structure.

Linguistic theories likewise tend to downplay the role of epistemic background of interlocutors, and they do so for good reason. Clearly, the entirety of world knowledge and reasoning is too complex to be integrated into formal linguistic theory at this point in time. However, much of literary text interpretation rests on world knowledge reasoning about presupposed and asserted information. To put it bluntly, the sentence content of *I admire Oliver Kahn* in semantic analysis amounts to the proposition $\wedge \text{ADMIRE}(\text{SPEAKER}, \text{OLIVERKAHN})$. The same sentence at the macro level of text interpretation opens up entire worlds!

Linguistic theories, finally, do not explore narrative stereotypes or prototypical narrative patterns. They encompass few to no expectations about next turns in a text. We hypothesize that such expectations are essential in understanding how readers manage to reduce ambiguities, for instance the large number of possible readings of a sentence (as computed by standard semantic analyses) to the single intended interpretation. This would suggest that real text interpretation rests on top-down as well as bottom-up inferencing.

It will be one of the more fascinating aspects of the project to examine whether there is evidence for a *Meta Common Ground*. In the *Meta Common Ground*, speakers and hearers can draw on knowledge *about* language, *about* standard use of language and *about* genre conventions. Certain aspects of knowledge about conversational maxims might be allocated at this level, however the perspectives are more far-reaching. We hypothesize that a level of *Meta Common Ground* can be the link to high level knowledge about text where speakers/readers draw on knowledge about literary categories and narrative structures in interpreting a given text.

To round out this section, we will briefly review existing discourse theories or families of theories which could compete in scope with the envisaged Multi-layered Text Protocol. Powerful frameworks are presently available, but none actually offers the full spectrum of structural levels that are needed. Moreover, the high degree of formal involvement of most of these frameworks poses a practical problem, specifically in interdisciplinary research. The Multi-layered Text Protocol is needed to offer a shallow version of modules of discourse theory that can be used in joint investigations by literary scientists and linguists.

Discourse Representation Theory (DRT, Kamp and Reyle 1993) and Segmented Discourse Representation Theory (SDRT, Asher and Lascarides 2003) can be viewed as proto-versions of the layer of reference protocol. SDRT develops DRT further in that it includes rhetorical relations between sentences and thus combines the logic-based structure of DRT with the focus on rhetorical relations from Rhetorical Structure Theory (RST, Mann and Thompson 1988). The intended range of RST, an annotation system for discourse relations in every conceivable kind of text, can certainly compete with the current research project. However, Rhetorical Structure Theory does not tie in well with other, more rigid analyses of discourse phenomena and often is in danger of providing descriptive labels rather than a bottom up analysis. We envisage that the Text Protocol will allow us to *derive* at least some of the labels used in RST in a truly bottom-up fashion.

DRT can be combined with theories of salience (e.g. Centering Theory, Grosz et al. 1995). Discourse-related particles, propositional anaphors and discourse adverbs (*however, therefore, yet, etc.*) can also be consistently merged with the overall

framework (Knott 1996). While reference tracking has a good home in the DRT family, the level of focus-background, the question under discussion, and question-answer pairing are not currently part of the system. Kadmon (2001) proposes a very elegant formal framework where an Alternative Theory of focus is paired with file change semantics (= DRT). The resulting formalism, however, does not easily reveal the universe of discourse, and accessibility of antecedents is deeply hidden in the formalism. Other couplings of theories are possible in principle (Dynamic Montague Grammar plus Alternative Semantics, Dynamic Montague Grammar plus Structured Meaning Focus, or the format in Rossdeutscher et al. 2006) but share the austerity of existing formats. Finally, even such frameworks are less rich than the envisaged Multi-layered Text Protocol in that they share the blind spots that were listed above.

Grosz and Sidner's (1986) theory of discourse can be viewed as an early model for the Text Protocol. They also model discourse structure as a composite of the so-called intentional, attentional and linguistic structure. These are combined to determine the range of possible referents that a description makes available, and to choose the required referent from a set of candidates. This theory demonstrates how processes like anaphor resolution are driven by micro and macro level structures in concert.

The *Quaestio* theory (Klein and von Stutterheim 1987) and other Question under Discussion theories combine a representation of focus-background structure, the development of topics in texts, and temporal reference. What remains somewhat neglected, though, is the anaphoric potential, discourse referents and implicit narrative perspectives (e.g. "narrator") in texts. Different versions of the theory stress different aspects of topical development: Buring (2003) comprises an overarching concept of focus, contrast, topic and background but fails to take care of referential movements. Klein and von Stutterheim (1989, 1991, 2002) distinguish different ontological categories (time points, space, events, protagonists). However, the framework cannot easily take advantage of insights from a general theory of focusing and backgrounding. Once again, a merger of both approaches would be feasible but leads to a level of formal complexity which hinders interdisciplinary research.

Finally, we want to mention the project "Sprache des Rechts" (BBAW), which demonstrates how the gap between disciplines can be successfully bridged. An interdisciplinary team investigated the comprehensibility of legal texts (Becker and Klein 2008). The study focused on the interaction between *common ground* and *comprehension*. Three types of readers were distinguished, lay readers, educated lay readers and experts. The process of comprehension by the reader was made accessible by a "thinking aloud" instruction. The researchers demonstrate lucidly how lack of knowledge (*common ground*), misinterpretation of expert terminology (*compounding, morphology*) and misguided thematic development can lead to defective text comprehension.

Although this project looks at a very specific type of texts, several important insights can be drawn from it. First, it corroborates our expectation that the epistemic background/common ground is central in a theory of text structure. Second, it offers a model of shallow theoretical notions that provide a *lingua franca* for interacting researchers of different disciplines. The Multi-layered Text Protocol should be designed at this level, rather than at the level of the formal theories above. Finally, the project demonstrates that a good understanding of text structures should also offer diagnostic terms and, eventually, remedies for poorly structured texts. These could be texts of learners, texts of inexperienced writers or texts written without proper care. The Courant Research Centre will not, however, take defective texts as its starting

point. But we do aim at understanding the structure of multiple genres and types of text.

III.3. Literary Narratology

Narratological studies approach the structure of texts from a macro level perspective rather than bottom-up. Codified narratological knowledge mainly consists of categories which comprise complex features of narrative text organization. Those categories have only rarely been investigated empirically; rather they have been derived from the historical study of narrative texts from diverse periods and of the respective narrative patterns, or they are the result of theoretical considerations: narratologists construct their categories “on the basis of reference to particular canonical texts rather than using corpus analysis” (Meister, Kindt and Schernus 2005, XII), i.e. they lack a broad empirical basis. The Courant Research Centre shall particularly emphasize that empirical basis in order to describe more profoundly and more precisely representative narratological categories.

Narratological analyses of “what” is told and “how” it is told are based on general patterns of certain types of narratives. An important aspect of this analysis consists in detecting how the empirical author constructs a narrator who serves as the fictive source of text. Properties of this narrator allow the empirical author to distance him/herself from the content of the text, can create special atmosphere, and allow the reader to identify with protagonists, to name but a few effects. The categories used for analysis include, among others

- Time in narrative (e.g. temporal ordering, duration, frequency) (Genette 1986/88, Fludernik 1996, ch. 6.3, Toolan 1988, ch. 3.2)
- Voice: Who is speaking? Which types of narrators should be distinguished? Which narrative levels should be postulated? (Genette 1986/88, Fludernik 1993)
- Mode: Which perception point defines the field of vision in the narrative? Whose perspective orients the text? How distant or close to each other are the agents involved in the narrative communication? (Genette 1986/88, Ryan 2004)
- Narrative speech and thought representation: Which epistemic background underlies the narrative? What protagonists can reasonably hold this epistemic background? (Banfield 1982, Fludernik 1993, Pascal 1977)

The question of how those narrative phenomena are exactly brought about, what sort of linguistic structures on the micro level they require, and what knowledge about the world or about literary conventions needs to be added so that the mentioned macro phenomena can arise from the linguistic structures, – those questions have been explored only selectively so far (the tightest connection between linguistic and literary narratology so far is to be seen in the study of speech and thought representation; see also Winko 2008).

This is all the more true for analytical categories which presuppose a level of harmony between text structure and the reader’s expectations. These comprise, among others, categories which describe how specific ways to organize the flow of information can generate suspense or surprise: Which structures under which conditions can cause suspense (Ryan 2001)? How can suspense persist over several readings? Suspense is considered the result of particular textual parameters (e.g.

information arrangement) and of particular expectations and dispositions on the part of the reader. We have only started to explore suspense as a reader-psychological category (Gerrig and Allbritton 1990; Mellmann 2007), albeit with a strong focus on the macro level phenomenon of plot development; micro-level structures triggering suspense still are virtually unexplored (but see the linguistic study by Fill 2003).

‚Perspective’ is one of the most significant narratological categories on the macro level in which all the concepts already mentioned converge. Because of the tendency to confound voice and focalization, it is no longer viewed as the stylistic master category that it was for structuralist narratologists. Instead, nowadays it is employed to describe the subjective worldview of a narrator or fictive characters (Nünning 1989). Accordingly, the ‚perspective structure’ of a narration results from the diverse character perspectives and their hierarchical significance, and, additionally, from the textual strategies of ‚foregrounding’ and ‚backgrounding’ (Nünning 1989, Surkamp 2003). In this way, ‚perspective’ and ‚subjectivity’ are related phenomena, and the ‚perspective’ in which information is given in a text can be related to the linguistic composition of subjectivity (Smith 2003), e.g. deictic expressions (Duchan, Bruder, Hewitt 1995), diverse forms of indirect speech, clues of proximity or distance (e.g. different grades of ‚showing’), or locative inversion as a means to provoke suspense.

The integrative potential of the concept of ‚perspective’ becomes obvious when we consider the many different aspects of narrative texts it is usually applied to:

- a character’s (usually visual) perception (line of vision, point of view etc.): *focalization*
- a character’s knowledge, his/her proficiency, information status in the course of the story: *knowledge*
- a character’s ideas about the facts of the story world (phantasy, cognition etc.): *imagination*
- a character’s or the narrator’s involvement with the story (emotions, attitudes etc.): *narrator’s / character’s involvement* or *empathy*
- the reader’s involvement in the story (emotions, attitudes etc. toward characters): *reader’s involvement* or *empathy*. Such an adoption of perspective was empirically investigated by Miall/Kuiken (2001), who concentrated on the interplay of several story features and their influence on the creation of reader’s perspective.

If these aspects are differentiated, perspectivation provides an important instrument for describing narrative information management which, in turn, makes it possible to productively connect research on both the micro and the macro level of narrative texts.

To close this section, we will briefly review important studies combining methods of literary studies and linguistics. The envisaged Courant Research Centre will build on some of their results.

- There are some (mostly Anglo-American) studies which try to examine more precisely the linguistic groundwork of narration and to combine their findings with the epistemological interest of literary narratology. Those studies can be located within the contexts of pragmatist, discourse-analytical and, for some years, also stylistic approaches. Banfield’s works (Banfield 1973, 1982) on

narrative speech representation (especially indirect speech) can be cited as examples of canonical linguistic analyses of a narratological category, Her studies are based on models from generative grammar and develop them further. Fludernik's systematic and, at the same time, historically oriented study on the use of language in narrative texts (Fludernik 1993) also relies on Banfield's method. Furthermore, selected narrative phenomena have been examined (e.g. Simpson 1993; Duchan, Bruder and Hewitt 1995). Toolan (1988) defines the whole spectrum of narratological categories on the basis of linguistic terms, but his account of each individual category remains rather short.

- A second group of linguistically oriented studies primarily aims for a specification of analytical instruments for literary texts without the pursuit of a specifically narratological endeavor. Nørgaard (2002), for instance, refers to Michael Halliday's method of „Systemic Functional Linguistics“ and examines its applicability to literature. Although she takes into account „mode“ as a category of text organization, she shows little interest in the narratological application of the term, but rather confines herself to general processes in the constitution of meaning. The same can be said about earlier linguistic analyses of prose texts as, for instance, in Fowler (1977) and, focusing on stylistic aspects and in critical demarcation from Halliday – in Leech and Short (1981).

III.4. Psychological research in text comprehension

Reading texts serves a variety of purposes such as getting information about the world, performing certain actions, or escaping into fictional worlds. Text comprehension researchers agree that highly complex cognitive mechanisms underlie the skill to comprehend texts. Text comprehension is an instance of cognitive information processing based on the interaction between the text structure and the recipient's cognitive structure. It is only successful if the reader is able to convert a sequence of sentences into a coherent text, i.e. to identify semantic relations among the text ideas and to build a mental representation that shows connectedness.

Kintsch and van Dijk (1978) and Kintsch (1988, 1998) offer an influential theoretical framework of text comprehension, the construction-integration theory. They assume that the processing of text involves two sets of subprocesses: a set of lower-level processes such as word retrieval and grammatical parsing and a set of discourse processes that relate the output of the lower-level processes to the actual linguistic and situational context by deactivating contextually inappropriate concepts. The processes of the first set are active during the so-called construction phase, and feed the higher-level processes of the so-called integration phase. Construction-integration cycles may be repeated. If successful, this results in a coherent multilevel text representation consisting of (i) a mental representation of the actual wording of the text, the so-called surface structure (ii) a mental representation of the explicitly stated semantic information in the text, the so-called text base, and (iii) a mental representation of the states of affairs denoted in a text, the so-called situation model or scenario (Sanford and Garrod 1983). It is noteworthy that comprehension of literary texts does not differ substantially from general text processing (for a recent survey see Christmann and Schreier 2003; or Miall and Kuiken 1998). It is still an open issue how surface linguistic input, the text base derived from this input, and the constructed situational model contribute to the text comprehension process. The Courant Research

Centre will tackle the empirical questions of how the layers of the Text Protocol are mentally represented, how they fit to the cognitive multilevel text representations, and to what extent they control the text comprehension process.

Text comprehension research methods typically encompass on the one hand offline memory methods that focus on the results of the comprehension process, i.e. the mental representation of the text as it is stored in the reader's long-term memory, and, on the other hand, online methods that investigate the comprehension process as it is unfolding. One frequently used method uses so-called information-content measures, such as think-aloud protocols and question answering procedures. It is, however, debatable, to what extent they reflect processes that are really going on during online comprehension or to what extent they reflect task demands. The Courant Research Centre will primarily use standard online methods of cognitive psychology which assess the processing load or activation during text comprehension, e.g. measurement of recognition, reading and reaction times, and eye tracking. One important aim of the Courant Research Centre is to evaluate different methods and to identify those methods that are particularly appropriate as a means of empirically testing theories of text comprehension. Depending on the Junior Researcher's background, standard brain activation measures (ERP, PET, fMRI) could be added to the spectrum, for which the University of Göttingen offers an excellent infrastructure.

The psycholinguistic perspective in narrative research

Cognitive studies of readers' comprehension of narratives almost uniformly characterize the reader as constructing a situational model. This model can only be adequate if world knowledge is added to the narrative text and if inferences are made. (see Graesser and Wiemer-Hastings 1999 for a review of research). Specific cognitive processes and strategies that the reader applies to the narrative text affect her mental representation of the plot of a narrative text, its characters, setting, underlying themes, set of events and the situation model, cf. Bloome (2003).

There are several principles that the reader may exploit to combine sequentially ordered sentences uttered in a certain situation into a coherent whole. The psycholinguistic perspective in narrative research is characterized by the central concern to discover the linguistic forms and their corresponding function that serve to structure narratives. It is widely accepted that (i) filtering processes, such as the choice of perspective and the set of options provided by a particular language, as well as (ii) packaging processes that reorganize linear chains of successive events into hierarchical event clusters guide the encoding of perceived events in language. Zwaan and Radvansky (1998) argue that mental representations of single events are the building blocks of situation models. They find evidence that readers keep track of at least five situational dimensions during comprehension: time, space, characters, causation, and motivation. Zwaan and Radvansky (1998) assume that the evolving situation model depends on the degree of overlap in one or more of these dimensions. Although it has been shown that readers simultaneously monitor multiple situational dimensions during comprehension, most studies focus on single dimensions, usually on space (Sanford and Garrod 1998), time (Carreiras, Carriedo, Alonso and Fernandez 1997) or causation (Klin 1995; Noordman and Vonk 1998). This gap will be bridged by the empirical work of the Courant Research Centre. Based on the information stored in the text protocol the interplay of the mentioned five dimensions during text processing shall be clarified.

Text comprehension depends on mental coherence (Schnitz 1994, 2005), and a sequence of sentences is interpreted as a text only if both local and global coherence

are established. A number of empirical studies suggests that coherence emerges from an interplay of the layers of the Text Protocol as envisaged by the PIs: (i) the global theme of a narrative text is a fundamental component of text representation in reading, and thematic inference is normally generated online during comprehension (Zhang and Hoosain 2005); (ii) information-structure guides the processes establishing text coherence (Weskott 2003, Weskott et al. 2006); (iii) continuity, established by coreference relations and discourse connectives, is an important principle of constructing text coherence (Sanders and Gernsbacher 2004); (iv) anaphor resolution controls coherence processes (Garnham 2001); (v) comprehension time increases to the extent that inferences must be made to connect to incoming sentence to prior text (Rickheit and Habel 1995).

We want to stress that the highly subjective nature of the effects under investigation make empirical validations indispensable. We refer to the much-quoted study by Els Andringa which calls into question the traditional view that narrative distance has a strong effect on the reader's feelings of involvement and their perception of a character's emotional state. Surprisingly, her empirical study (Andringa 1996) suggests the contrary: Narrative distance has no significant influence on involvement, and its function appears to substantially differ from the one it is traditionally connected with. On the other hand, studies were able to confirm that the importance of a character in the narrative has an influence on his or her salience as an antecedent of anaphors. Anaphors are more likely to be resolved to an antecedent which is a major character in the narrative, and resolution proceeds faster (Morrow 1985, and similarly Sanford, Clegg and Majid 1998).

The Courant Research Centre complements the empirical research of SFB 632 "Information Structure" at the Universities of Berlin and Potsdam and the DFG-funded research of the psycholinguistics research group at the University of Heidelberg under the direction of Prof. Dr. Christiane v. Stutterheim. Both of these research projects investigate typological aspects of perspectivization and discourse coherence, compare numerous European and non-European languages, and look for universal patterns. The SFB 632, however, focuses on a single parameter, namely information structure. The Heidelberg group addresses aspects of text production. The Courant research objective is more comprehensive in that it consists in the *modeling of text comprehension through the use of all the parameters stored in the Multi-layered Text Protocol*. Likewise, our focus on *literary text* differs from both initiatives. However, both external groups are well-grounded in using empirical methods that the Courant Research Centre plans to exploit and develop. Thus, they would be excellent external partners for collaboration, particularly in the field of eye tracking.

In sum, the field of empirical research is both sufficiently developed and yet broad enough to promise interesting and new insights growing from research by the Courant Research Centre.

IV. Previous work and research goals of Principal Investigators

The general goal of the Courant Research Centre consists in developing a theoretical platform for joint interdisciplinary text analysis. This platform, the Multi-layered Text Protocol, should be at least comprehensive enough to host all phenomena that arrive as a synthesis of low level structures that the principal investigators, but also others in our research communities, are interested in. The platform needs to be based on empirically validated terms. Not only will each discipline have to rethink and justify

its assumptions against other disciplines. We will also have to validate hypothesized interactions and the weight of interacting factors at different levels of text structure (e.g. content, syntax, indexicals/perspective, information structure and coherence).

In order to make our envisaged research goals more tangible, we will start this section by listing some synthesis effect and other poorly understood aspects of text interpretation. In a second step we relate these research goals to the research background of the Principal Investigators.

IV.1. Research goals

In this section, we will review some of the known interactions between levels of discourse structure in order to illustrate the potential of the common platform, the *Multi-layered Text Protocol*. Specifically, we will argue that the notion of *perspectivization* of narratives could be a promising first field of exploration of the two research units in the Courant Research Centre.

The first and simplest interaction of levels is the one between *common ground* and *narrative perspective*. Certain information can only be contributed by certain protagonists or from certain perspectives.

- (1) *Maria sah sehnsüchtig nach der langen Reihe eisgekühlter Bierflaschen.*
Mary was looking longingly at the long row of ice-cold bottles of beer.
- (2) *Maria wünschte sich sehnlichst ein Bier.*
Mary was longing for a beer.

An external description of the protagonist's activities like that in (1) can be given from Mary's own perspective but it is more likely a description by an external observer. Information about the protagonist's internal emotional states as in (2), in contrast, makes it more likely that the narrator takes Mary's perspective at this point.

A somewhat more involved effect can be evoked by a non-standard use of relative clauses, the so-called continuative relative clauses ("weiterführende Relativsätze"). In their standard use, relative clauses serve to determine the reference of a noun phrase ("restrictive relative clause") or to add further information about the referent ("appositive relative clause"). In a derived use, however, relative clauses can serve to further the narrative (Brandt 1990, Holler 2005). (3) offers a simple example, but a passage like that in (4) indicates a speaker's epistemic background which certainly does not coincide with the protagonist's.

- (3) *Heidi traf einen Bauern, den sie dann nach dem Weg fragte.*
Heidi met a farmer who she asked for directions.
- (4) *Auf dem Bahnhof stieß sie mit dem Mann zusammen, den sie später heiratete.*
On the farm she met the man who she would later marry.

Continuative relative clauses introduced by a left-peripheral d-pronoun can be distinguished from standard relative clauses by temporal characteristics. Usually, the topic time (cf. Klein 1994) of the clause containing the antecedent of the relative clause is shifted in the continuative relative clause (Holler 2005).

The temporal movement in texts and its interaction with the level of information structure (*quaestio, question under discussion*) has been described in great detail in Klein and von Stutterheim (1989, 1991), Klein (1994) and subsequent work. They show that a rich Neo-Reichenbachian theory of tense and aspect, together

with an explicit model of the dichotomy of discourse old - discourse new can offer a detailed account of referential movements in discourse. Let us note, however, that a comprehensive interface between linguistic and narrative/literary structure of text will require a richer representation of form and meaning: In many cases, literary effects are achieved by a *form-meaning tension*. For instance, the present tense *form* is used to report about past *times* in the ‘historical present’. English can use the simple tense/present progressive distinction to create specific *form-meaning tensions*. These mismatches between form and function lead to a fictitious shift of the *now* and the reference time of the story and evoke well known “vividness” effects. Hence, we need to protocol information about both linguistic structure (e.g. tense form) and meaning (e.g. *about the past*) in order to detect immediate and long term effects of mismatches.

The pervasive role of information structure and *quaestio* in structuring texts need not be recapitulated here. However, we want to draw attention to several sample areas where the *quaestio* interacts with other levels of grammar and pragmatics. Umbach (2005), referring to earlier work by Grote et al. (1997), demonstrates that the function of *sondern/aber* (Engl. *but*) depends on the current *quaestio*. Different contexts can license different contrasts: *Es ist sonnig und windstill, aber eiskalt* “It is sunny and calm, but ice-cold” and *Es ist sonnig, aber windstill und eiskalt* “It is sunny, but calm and ice-cold” could both be statements about the same situation, but in answer to different *quaestiones*. Umbach argues that the category ‘contrast’ is not absolute, but depends on the thematic development of the text.

Many more overt indicators of the *quaestio* have been postulated in the literature, among them prosodic patterns (Büring 2003), protocol particles (Eckardt 2006a), preposing constructions in syntax (Ward 1988, Webelhuth 2007b), other discourse particles and non-standard syntactic patterns. We will take a closer look at locative inversion in English (Birner 1996) to offer an illustration. Locative inversions like that in (5) violate the general SVO pattern in English sentences. It has been observed (Drubig, 1988, Bolinger 1977, Breivik 1981) that these inversions often serve to create an eye-witness effect, or shift the visual perspective of the narration to certain points.

- (5) *He was not alone. The room was the same, unchanged in any way since he came to it; he could see along the floor, in the brilliant moonlight, his own footsteps marked where he had disturbed the long accumulation of dust. In the moonlight opposite him were three young women, ladies by their dress and manner.*

The last sentence exhibits an inverted PP-V-Subject word order. The reader is invited to take the perspective of the “he” protagonist and, looking up, is faced with three white ladies, vampires in fact.

In present-day English, locative inversions create specific literary effects (Dorgeloh 1997, Chen 2003, Kreyer 2006, Webelhuth 2006, 2007a) Webelhuth (2006, 2007a) argues that these effects arise as consequences of the usage conditions that are conventionally associated with locative inversion as a *linguistic construction* in the sense of Construction Grammar (Fillmore et al. 1988, Lambrecht 1994, Goldberg 1995). Yet, the construction is semi-transparent in that we could speculate at what point in the history of English a more general V2 construction began to disintegrate and some of its special usages (in the case at hand possibly a list of locations and things, listed by the sorting key “place”) turned into constructions in their own right. Literary conventions, we believe, arise from fertile linguistic grounds.

We would expect that the literary quality of text is based on a mix of several factors, corresponding to different layers of the Protocol. In fact, the above example is a slightly changed passage taken from Bram Stoker's *Dracula*; the original text is written in the first person. The specific force of locative inversions is revealed if we conduct a systematic evaluation of the novel. It is written entirely as first person reports (letters, diaries, notes), yet Stoker systematically uses locative inversions at points where he wants to strengthen the identification of reader and first person narrator: Locative inversions are almost exclusively used in those parts of the novel that play in Transylvania, and confront the reader with a sinister country, sublime landscapes, and undead inhabitants. In a German adaption of *Dracula* by Artman, the author chooses the historical present as a means of mapping the reader's *now* onto the reference time of the narration. The very different effects of either of the two means can clearly be felt; while Stoker's locative inversion makes the reader expect the fatal bite at our his/her own throat, Artman's historical present positions us in the (safer) situation of the observer of horror and seduction.

We could experiment with further means of shifting perspective. For instance, intensifying German *selbst* and English *-self* have likewise been observed to create perspective. Intensifiers are commonly used to contrast a central entity with its *entourage* (König 1991, Eckardt 2001). This contrast can be motivated by social status (king *himself* in contrast to court) or function. Yet, it can also be a perspectival contrast between the subjective *ego* and its environment.

- (6) *Susan was surprised. Was all this applause directed towards herself?*
 (7) *Susanne war überrascht. Galt all dieser Applaus etwa ihr selbst?*

The German example makes it clear that the PRO-self form is not an unlicensed use of a reflexive, but more likely an ad-(pro-)nominal intensifier.² We could use the same intensifier construction in the *Dracula* passage above; it is unclear at present whether such combinations strengthen or rather disturb the intended perspectivization:

- (8) *He was not alone. (...) In the moonlight opposite himself were three young women, ladies by their dress and manner.*

These examples illustrate that the effects of combined perspectivizing devices are poorly understood; it would be extremely useful to approach this question with empirical experimental methods on the basis of the well-practiced minimal-pair method.

Theories of anaphor resolution attempt to find the default resolution patterns. Unlike other grammatical phenomena, anaphor resolution that does not adhere to the default isn't necessarily ungrammatical. While linguists agree on the markedness-nonmarkedness distinctions, non-standard resolution often shows literary effects; we offer here one well-known example.

- (9) *The clock struck twelve. She was alone.*
 (as the beginning of a novel)

Many of the interaction effects listed above have received attention in the linguistic literature. We now turn to some examples which illustrate that a conspiracy of textual

² Else, the German analogue should be expected to be "*etwa sich selbst*" which is simply bizarre. Eckardt (2003) offers a fully compositional analysis of the examples in question.

factors can lead to effects that cannot easily be assigned a place in the landscape of text research. We suggest that the Text Protocol as a comprehensive platform of facts about grammar, reference, timeline, and other aspects of texts will offer a valuable tool to understand what is going on in cases like the following by Ror Wolf:³

(10) *vier herren stehen im kreise herum
der erste ist groß der zweite ist krumm
der dritte ist dick der vierte ist klein
vier herren stehen im lampenschein*

*der erste ist stumm der zweite ist still
der dritte sagt nichts der vierte nicht viel
sie stehen im kreise und haben sich jetzt
die hüte auf ihren kopf gesetzt.*

We can but speculate about the surprise effect of the poem. The stage setting in the first verse is quite normal and leads us to expect that some kind of narrative about the four men will follow. The second verse continues with a report of states (being silent, being still, saying nothing, not saying a lot, standing in a circle) which again do not move the reference time further on the time scale. At the end of line 7, the reader expects that the present perfect form, indicated by the *have+now* is, finally, part of a description of the one and important event that will be reported in the narrative. The event in question, however, consists in the men putting on their hats. The overall literary effect is breathtaking. The time scale feels strangely magnified, given that 8 lines and 11 verbs span at best some seconds. This, in turn, creates a slow motion effect, even though practically nothing happens in this slow motion movie at all! The triviality of the final event counteracts the suspense effect created by *jetzt* at the end of line 7 (however that may happen), causing the tense and event structure to “collapse”.

We do not suggest that this is a detailed, valid interpretation. However, cases like this corroborate our impression that interesting analyses of texts require a multi-level protocol which allows for a comprehensive diagnosis of text structures. In fact, there are classical examples in literary theory where a reliable derivation of focalization is highly relevant for interpretation. One much-debated example consists of a passage of *Der Sandmann* by E.T.A. Hoffmann. Here, external or internal focalization changes the entire point of the text. Again, we offer an example:

(11) *Ein Stampfen – ein Klirren – ein Stoßen – Schlagen gegen die Tür, dazwischen Flüche und Verwünschungen. „Laß los – laß los – Infamer – Verrucher! – Darum Leib und Leben daran gesetzt? – ha ha ha ha! – so haben wir nicht gewettet – ich, ich hab die Augen gemacht – ich das Räderwerk – dummer Teufel mit deinem Räderwerk – verfluchter Hund von einfältigem Uhrmacher – fort mit dir – Satan – teuflische Bestie! – halt – fort – laß los!“ – Es waren Spallanzanis und des gräßlichen Coppelius Stimmen, die so durcheinanderschwirrten und -tobten. Hinein stürzte Nathanael von namenloser Angst ergriffen. Der Professor hatte eine weibliche Figur bei den Schultern gepackt, der Italiener Coppola bei den Füßen, die zerrten und zogen sie hin und her, streitend in voller Wut um den Besitz. [...]*⁴

³ From Ror Wolf: “Ein Komplott aus Spiel, Spaß und Entsetzen”. Reclam Verlag, Leipzig 1994.

⁴ E.T.A. Hoffmann (1816): *Der Sandmann*. In: Hoffmann: *Nachtstücke*. Berlin, Aufbau 1994, pp. 9-48, cit. p. 42f.

If we assume an internal focalization for the sentence „Es waren Spallanzanis und des gräßlichen Coppelius Stimmen, die so durcheinanderschwirrten und -tobten.“ the story is one about a mentally diseased person: Nathanael erroneously identifies Coppelius and Coppola, unable to distinguish fiction and reality. If, however, we assume an external or zero focalization, the narration turns into a piece of fantastic literature. An external narrator would, in this case, confirm the identity of two protagonists which was so far stipulated by Nathanael. The example strongly brings to mind the *de re/de dicto* distinction in semantics. Contemporary narratology cannot settle this question conclusively, as we possess no reliable analysis of the way in which linguistic structure helps to determine different focalizations. This influence from micro to macro level will be one focus of the envisaged Courant Research Centre.

We allow for the fact that questions like this might have more than one unique true answer. Like many other effects in language comprehension, focalization effects might essentially rest on the reader's epistemic background and her interpretation of earlier parts of the narrative. If notions like focalization can be relativized to such factors, research in the envisaged Courant Research Centre will be able to set the old saying „everybody reads their own story into the text“ on new, firmer grounds.

It is important to stress that investigations of macro level structures like focalization can rely on a rich stock of existing knowledge in narratology. Again, research in this area confirms the multi-factorial organization of macro-level effects. For instance, the best way to describe a particular focalization consists of determining the “situated focus” (Mellmann, in prep.1), i.e. the “point from which the narrative is perceived as being presented at any given moment” (O’Neill 1992:333). However, its spatio-temporal coordinates are not always explicitly given in a text, but often need to be inferred, by the reader, from *particular ways of presenting* elements of the story world. This is where linguistic instruments come into play: Focalized text passages may be distinguished from unfocalized ones by an increased use of dynamic (vs. stative) verbs (Mellmann, in prep.1), which define a particular time frame; by preposing structures (like V2 syntax and locative inversion) or unresolvable pro-forms, which imply a particular ‘point of view’; by a particular use of the tenses, and so on. To identify precise text features as constituents of focalization is an endeavor not yet undertaken in literary narratology and would mean doing groundbreaking work for a deeper investigation of at least four further aspects of narrative texts:

- *Historical development*: There is a broadly accepted consensus that focalization is a property mainly of modern written literature whereas in pre-modern literature the „teller frame“ (Fludernik 1996, 2003) preponderates. Identifying the linguistic ‘fabric’ of focalization would allow for an annotation of focalization strategies in large digital text corpora and, thus, for the testing of historical hypotheses like the mentioned one, which by now rather have the status of plausible intuitions.
- *Cognitive algorithms*: Identifying the linguistic foundations of focalization could also serve as a prerequisite for hypotheses about the cognitive processing of narrative texts in that it defines *the stimulus (or input) side* in the model of literary understanding that an investigation of the *cognitive algorithms* leading to a particular output cannot do without. One could ask, for instance, why certain linguistic structures entail “psycho-poetic effects” (Mellmann, in prep.2) and, by this, allow for Genette’s distinction of ‘internal’

and ‘external’ focalization. Furthermore, we seem to have a preference for “anthropomorphic focalization” (Mellmann, in prep.1), and it could be asked how those impressions of anthropomorphism are brought about, and if and how they serve narrative cohesion.

- *Different types of focalization*: In this way, the distinction of focalized vs. unfocalized texts underlies further differentiations, e.g. various *kinds* of focalization (internal vs. external focalization, for instance) and various *grades* of focalization (cf. Mellmann, in prep.1). Advances in defining the exact means of focalization would also provide an improvement of narrative theory by integrating the exuberant conceptualizations of present-day theorizing into a consistent, economical, and hierarchically structured system.
- *Emotional effects*: Empirical studies in emotional effects of texts have so far dedicated themselves to text structures on the level of *words*; for instance, one counts up occurrences of the pronoun “I” (Dorfmueller-Karpusa 1989), or one creates hierarchical catalogues of emotive words (Tsiknaki 2005). However, theoretical considerations about emotional text effects have led to the view that we have to consider not only the mention of emotionally relevant objects in a given text but also their *situative embedment* (Mellmann 2006). That is, we also have to take into account the imaginative *situations* which are evoked by a text. And as, in narrative texts, these can be identical with the *perceptual* situations, the study of the means of focalization would at the same time be a study of the emotive potential of a text.

In sum, we see overwhelming evidence in favor of a multi-factorial network of interacting layers of text structure. These layers will be documented in the Text Protocol, which will offer the basis for a systematic empirical exploration of interactions. It will be the main goal of three cooperating research groups in the envisaged Courant Research Centre to develop and validate this multi-layered representation platform.