

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, two research groups will collaborate, one which is theory-oriented and a second one which is empirically focused.

The theory-oriented research unit aims 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 und 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 – Verruchter! – 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 two cooperating research groups in the envisaged Courant Research Centre to develop and validate this multi-layered representation platform.

IV.2. Previous work

In this section, we specify how the research goals build on earlier work of the Principal Investigators.

Regine Eckardt has worked on particles and focusing effects in discourse. Eckardt (2008/i.pr.) develops an analysis of German *eigentlich*, a puzzling discourse signaler which serves to compare an asserted fact to related propositions (the *eigentliche* and the *un-eigentliche*, jocularly speaking). Eckardt (2006a) analyzes protocol particles in question-answer discourse and shows how speakers can signal their awareness of earlier discourse moves. Eckardt (2001) offers an analysis of intensifying *self* as a focused identity operator which evokes certain contrasts. The analysis can also explain the emergence of scalar *selbst* / *sogar* from the intensifier and opens a general perspective on semantic reanalysis in discourse. Eckardt (2006) investigates a wider range of cases of semantic reanalysis from which we start to understand how historically late uses of constructions and words draw on fossilized uses of earlier stages in language history. From these studies, she derives an interest in historical motivations of intransparent constructions in synchronic language. Traditional linguistic studies restrict their interest to discourse particles, discourse adverbs, complex prepositions and other endpoints of clines in grammaticization (Eckardt

[2007/t.a.]). The envisaged research of the Courant Research Centre opens up the fascinating possibility to investigate literary effects at a higher level. Eckardt is an experienced member in interdisciplinary research environments, specifically as a research member of the SFB 471 "Variation und Entwicklung im Lexikon", Konstanz between 1997 and 2003.

Anke Holler has worked on several phenomena of German grammar from an empirical and theoretical perspective. She is particularly interested in non-canonical clause constructions, anaphoric relations and discourse structure. In Holler (2005, t.a.) she captures the syntactic, semantic and pragmatic properties of continuative relative clauses in a constraint-based multi-level grammar framework. She accounts for the so-called "Weiterführung" in a formal way by exploiting discourse-relational means (Holler 2005, 2008b). In her research, Holler concentrates on phenomena that cross the sentence and discourse level. She aims at explaining observable grammatical particularities of certain non-integrated clauses by considering aspects of the discourse-hierarchical structure (Holler 2008a, t.a.). In another strand of research, Holler investigates the relation between discourse structure and anaphor resolution in collaborative work with the Psychology Department of the University of Heidelberg using psycholinguistic methods such as measurement of reading times and eye-tracking. In a psycholinguistic study Holler and Irmen provide empirical evidence for the so-called Right Frontier Constraint, (Holler and Irmen 2006, 2007). Holler is an experienced member in interdisciplinary research environments, specifically as a research member of the SFB 340 "Linguistic foundations of computational linguistics" at the University of Tübingen and as an associate member of the research group 437 "Text Technological Modelling of Information" at the Universities of Bielefeld and Dortmund. She also coordinates the scientific network "Constraint-based grammar: empiricism, theory, and implementation". Holler will particularly contribute to the envisaged Courant Research Centre through her experience with formal grammar theory and psycholinguistic research.

Uta Lass has an interdisciplinary training in both (Romance) philology and psychology. Her research interests cover, among other things, the interdependencies between native language and other cognitive skills. Specifically, she investigates how different languages facilitate or impede short term memory tasks. She also approaches the language faculty from the medical angle, conducting research in aphasia and language disorders. Uta Lass will moreover be able to offer substantial advice to the empirical work in the Courant Research Centre, specifically the eye tracking experiments. She has worked on the relation between mental imagery and visual perception and can, in fact, count as one of the pioneers in the field, having organized the Fourth European Conference on Eye Movement in Göttingen, as early as 1987.

Gerhard Lauer works on the neural and the evolutionary psychological basis of literature. In *Im Rücken der Kulturen* (2007), he and his collaborator Katja Mellmann investigate the question of why literature constitutes a suspense-based imitation of the behavior of others. They argue that the abilities to recognize the intentions of others and to learn by imitation are preconditions not only for the construction of the self by others but also for the manner in which humans are capable of developing joint attention for specific text structures. In their view, the investigation of these issues constitutes the beginning of an empirical theory of literature. Mellmann (2006) argues that the long-standing consensus that there is an "emotionalization" of 18th-century

German literature can better be based on an empirical verification in the texts themselves. However, the required measures and standards for the description and evaluation of the emotional effects of text do not yet exist. The book develops a new system of the psychology of literature based on theories of emotion drawn from evolutionary psychology and ethology. With this system, the emotional effects of literary texts can be connected to procedures of text analysis more plausibly and coherently.

Renewing the view already expressed by Aristotle in his *Poetics*, Lauer (2007) shows that there is an underlying neural basis for why literary texts are imitations of human actions. Biopsychological research has recently provided the initial pieces of evidence for why humans have a kind of “hunger” for imitation that explains why we can easily get immersed in books. Empirical methods such as eye tracking studies are a primary area of a new research paradigm that seeks to understand which text structures trigger this kind of simulation of the acts of others in our consciousness. The Courant Research Centre would provide a unique opportunity for such innovative research in collaboration with colleagues from the field of the neurobiology of learning (e.g. Kristian Folta). First experiments of this kind are already being planned.

Ulrich Mattler investigates the interplay between planned behavior and unconscious adaptations to the actual situative environment of an agent. He has shown that short-term expectations can be adapted quickly to changes in the environment, independently of the type of expectations (perception vs. motoric response) involved (cf. Mattler, Wüstenberg and Heinze 2006) and that this can be described by a uniform model. He presently investigates (i) parameters that modulate the adaptation of expectations, (ii) the role of implicit and explicit processes, (iii) how expectations are adapted in speech perception and speech processing, and (iv) what the neuronal correlates of expectation adaptation (EEG/fMRI) are. In a second strand of research, Mattler investigates priming effects beyond the motoric system (Mattler 2003). Moreover, he is interested in priming effects of stimuli in different presentation modes (visual, auditive) and observed priming with identical time course for reportable and invisible prime stimuli, despite qualitative changes in the masking time course. He has proposed a model that provides a quantitative account of priming effects on response speed and accuracy (cf. Vorberg, Mattler, Heinecke, Schmidt and Schwarzbach 2003). Matter and his research team are experienced in designing and conducting psycho-social experiments in a wide range of methods and will fruitfully assist the empirical work in the Courant Research Centre.

In her dissertation, *Interpreting Imperatives* (2006, under revision), **Magdalena Schwager** addressed the task of explaining how literal meanings link to contextual facts in the semantic composition of sentence meanings at the syntax-semantics interface. She was able to show that a seemingly wide variety of functions of imperative sentence mood (request, order, advice, wish, permission, curse, etc.) can be reduced to a modalized proposition, which is context-dependent in the type of modality, yet relies on particular properties of this modality in order to ensure the performative (non-truth-conditional) effect. The resulting theory makes fruitful predictions also in cases in which imperatives occur as parts of larger sentential structures, e.g. conditionals (cf. Schwager 2007a), or in which they interact with tense (cf. Schwager t.a.-b).

Another important interaction between utterance context and semantic interpretation can be detected in the interpretation of opaque argument positions of

verbs like *rise*, *know* and *seek*. In recent papers (e.g. Schwager 2007b, 2008a), Schwager argues that many of these phenomena can only be understood if we take into account how particular objects are given to the participants in an utterance context.

Schwager's interest in the influence of utterance contexts on semantic interpretation culminates in her work on speech reports. Speech reports are particularly interesting because they linguistically encode reference to speech situations and thus tell us something about the minimal requirements of what has to be represented about utterance contexts. While standard means of subordinating propositional information are quite well studied, further work needs to be done to show how the epistemic background in the reported and in the reporting situation interact in order to account for the faithful transmission of the intended information. Schwager (t.a.-a.) argues for the co-existence of weak and strong reportative elements within a language like German, as well as across languages. Strong reportative elements induce presuppositions that need to be anchored to descriptions of or referents for actual speech events (e.g. German *sollen*); weak reported speech elements (e.g. German subjunctive, Tagalog *daw*) mark the presence of a higher embedding operator. Different kinds of reportativity can be structurally distinguished, and depending on the text sort and the register of the element, we obtain effects that range from "scare quote" interpretations to free indirect speech. These insights lay important foundations in the investigation of perspective.

Gert Webelhuth has been working on the syntax and pragmatics of non-canonical constructions in English and German, including preposing and inversion constructions. Currently, he aims at creating an integrated grammatical framework for the levels of syntax, morphology, semantics, and information structure in a formal surface-oriented environment. Towards this end, Webelhuth (2007b) develops a construction-based approach to syntax that is connected to a compositional Lambda-DRT semantics, and a version of Krika's (1992) structured meaning theory of topic and focus and applies the theory to English VP-preposing. With Regine Eckardt he taught a course *Interface Issues in English* at the Australian Linguistic Institute 2008 that combines Head-Driven Phrase Structure Grammar with a compositional Lambda-DRT semantics. He has worked extensively on English locative inversion. Webelhuth et al. (2006) and Webelhuth and Walkow (2006) primarily analyze the syntax of the construction. Webelhuth (2006, 2007a) deal with the limits of a purely syntactic analysis and argue that locative inversion structures serve as perspectivizing devices in text and discourse and that their grammar and usage in contemporary English cannot be properly understood without consideration of this perspectivizing function. Webelhuth will contribute to the envisaged Courant Research Centre both by his extensive experience with multi-level grammar frameworks and his knowledge of the grammar and usage of non-default syntactic structures in English and German. He is an experienced member in interdisciplinary research environments. From 1999-2002 he was a Visiting Scholar in the Artificial Intelligence Section of the Computer Science Department of Duke University where he participated in interdisciplinary grant research on human-computer interaction (Baker et al. 2004). He was elected an Ordinary Member of the Academy of Sciences at Göttingen in 2005 and interacts with biologists, chemists, physicists, psychologists, and computer scientists as part of a research group of the academy called "The Nature of Information."

Ever since her doctoral thesis, **Simone Winko** has investigated how values and evaluations are constituted in texts. In order to solve this problem, she combines a genuine literary studies approach with methods of the philosophy of language and of linguistics (Winko 1991). The combination of these disciplines also guides her research into the representation and presentation of emotions in literary texts (Winko 2003, 2003a). Winko has developed a model of emotion-oriented analysis of literary texts which is grounded – inter alia – on narratological and linguistic research and aims at describing emotional compounds of literary texts – lyric poetry in particular – at various levels. Her work has been widely discussed in recent linguistic studies on the topic ‘emotion’ (e.g. Schwarz-Friesel 2007, Fries 2007). Currently, Winko’s work is focused on the question to what extent the cooperation of literary studies and linguistics can contribute to the explication of the category ‘textuality’ and to the attribution of textuality (Winko 2008). In addition, in two articles, Winko analyzes the relation between empirical, reception-oriented research on the one hand and the traditionally text-orientated literary studies that are based on hermeneutical assumptions on the other hand (Winko 1995, 2003). She defends the view that only a combination of both perspectives offers an approach adequate to the phenomenon „text“. Winko’s research goals over almost two decades offer an invaluable background for the envisaged Courant Research Centre.

V. Research Areas for Junior Research Groups

The Courant Research Centre will consist of two closely collaborating research units with a focus on theory and empirical studies, respectively. The theory-oriented research unit will consist of one Group Leader, one researcher at the post-doctoral level and two doctoral students. This unit will review existing theories of text structure both at a theoretical linguistic level and at the level of literary theory (narratology). The Group Leader will have proven expertise in one of the two fields of narratological and discourse semantic/pragmatic investigation of texts with the post-doctoral junior researcher being trained in the complementary field. One of the two doctoral students needs to hold an excellent degree in linguistics (preferably with a focus on pragmatics/discourse analysis). The other doctoral student needs to hold an excellent degree in narratology/literary studies. The Senior Principal Investigators take special responsibility in jointly advising the doctoral junior researcher who works in the field not covered by the Group Leader.

The research unit with an empirical focus will consist of one Group Leader at the post-doctoral level, two doctoral students and a full-time student assistant. The Junior Researcher must have accomplished a Ph.D. in empirical narratology, psycholinguistics, or in psychology with a strong focus on natural language production/comprehension. The doctoral students will hold a similar background, and have a strong interest in empirical research in text comprehension. The student assistant will be necessary in managing the practical side of experimenting. The research unit will develop experimental designs in close collaboration with the theory-oriented research unit and will be actively assisted by Prof. Uta Lass and Prof. Uwe Mattler and his group, both Georg-Elias-Müller Institut für Psychologie, and Prof. Anke Holler. The research unit has full access to the laboratory equipment of the Principal Investigators.

We specify the research plan for both Research Units in parallel, divided into three major phases.

In the *first phase*, the theory unit will propose a coherent range of theories which define the layers of a Multi-layered Text Protocol in its first version. The principal investigators will offer advice in this choice, and will help to ensure that the chosen frameworks are mutually compatible even though no integrated *formal* framework will be aimed at, for the reasons given above. The empirical unit will use phase one in order to calibrate known methods in psychology to textual categories like perspective, focalization and mode. Pilot experiments will be conducted where the research group will develop methods to operationalize notions like perspectivization, emotive development, visual perspective, focalization etc. We envisage a strong methodological focus on reading time experiments, judgment tasks, and eye-tracking experiments. At the end of phase one, the empirical unit should contribute a reliable set of testing tools to evaluate interdependencies between different layers of text structures at least in clear-cut cases.

In the *second phase*, the theory unit will be able to formulate hypotheses about possible interactions between factors at various layers of the Text Protocol. The two Courant units will jointly develop suitable experimental designs to verify or falsify these hypotheses. The results will serve to clarify the status of various levels of text structure, and their internal organization. Moreover, the theoretical unit will test the validity of the Text Protocol against a systematic choice of types of text beyond literary texts. It is to be expected that different layers of the Text Protocol are involved in different degrees in different kinds of text. The Courant Research Centre researchers will jointly address the question of whether typical profiles of different genres can be singled out.

In *phase three*, the theory unit will fine-tune the Multi-Layered Text Protocol in accordance with the results in phase two. The final version should achieve a strict match between independent factors in text interpretation/comprehension and layers of the Protocol (i.e. no factor should emerge from properties which spread over more than one layer). Moreover, it is to be expected that preliminary versions of the Text Protocol contain a “wastebin” layer, i.e. a layer which protocols observations and facts that cannot easily be attributed to one of the theoretically motivated layers. In the final phase, the workload of “wastebin” layers is to be minimized or even reduced to zero. Ideally, the theory-based unit will develop a competition based model of interacting factors in text interpretation and comprehension. However, in view of the wide range of partial attempts in this direction already available, it will also be a scientific achievement if isolated observations about interactions of single factors are conceptualized in a common overarching framework, offering a rich eco-system of cognitively relevant structures in text comprehension and interpretation. The final phase of the empirically focused research unit will in part be shaped by the developments in phase one and two. Realistically, the research program is broad enough to supply material for subsequent empirical research over the last phase. However, the empirical unit could spend the last phase in part on extending the experiments to new groups of subjects (readers). An important question concerns the reading/interpretation habits of learning readers (age group 8 – 12) or inexperienced adult readers. Such round-out experiments can set the basis for subsequent applications of the Text Protocol tool in learner-directed projects in Göttingen schools or in adult education. We expect that the Courant Centre will grow into a larger research unit (Forschergruppe, SFB) at the end of the funded period.

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VI. Contribution to the profile of the university

Internationally, the university of Göttingen is renowned for its leadership in basic and empirical research. The present grant proposal aims at making a contribution from the humanities and psychology to the University's profile by crossing the boundaries between the natural sciences and the humanities. The proposed Courant Research Centre will deal with some of the most fundamental intellectual issues in the history of science: What is text, how are meanings encoded in forms for the transmission from person to person, what are the strategies for breaking down large messages into small units that can be processed by humans equipped with short attention spans and limited short-term memories?

At its core, the research of the Centre will be concerned with the cognitive basis of language, of meaning, and of communication. In its research it will draw on the tools of the humanities, but it will enrich them with the empirical and objective methods of the sciences, seeking to make methodological innovations in bringing together ideas from, psychology, literary theory, and linguistics. The latter has been viewed as an intellectual bridge between the humanities and the natural sciences in so far as it seeks to understand language—arguably the most distinctive characteristic of the human race and a prerequisite for cultural evolution—with the empirical and objective methods of the natural and biological sciences.

Within the University of Göttingen, the planned Courant Centre is an innovative milestone insofar the Centre will institutionalize a research agenda that crosses the borderline between the humanities and the natural and life sciences for the first time here in Göttingen. Moreover, as a research facility which combines basic research in linguistics, literature, and psychology, the Centre is almost without precedent in the landscape of German scientific institutions.

The Courant Research Centre will be located in a rich ensemble of further research groups, including the Courant Group “Evolution of social behavior: Comparative studies of human and non-human primates”, the German Primate Centre, the Centre for Statistics, the Centre of Informatics, and the envisaged Göttingen Digital Humanities Centre. Against this strong empirical background, the main disciplines of the philological departments—linguistics and literary studies—enhance a new strand of research in empirical humanities which will complement and extend the range of the traditional research fields in philology and cultural studies.

The Courant Centre “The Multi-layered Text Protocol” will contribute strongly to the profile of the university. In particular, it will provide:

- a highly innovative field of research that seeks to cross the borderline between the “two cultures” of the sciences and the humanities

- qualitative new empirical research methods for the ‘empirization’ of the humanities
- a link between highly visible research Centres like the Courant Group “Evolution of social behavior: Comparative studies of human and non-human primates”, the German Primate Centre, the Centre for Statistics, and the Centre for Informatics, and the envisaged Göttingen Digital Humanities Centre
- interdisciplinary training of Ph.D. students in the GSGG and GAUSS
- foundational research for a better understanding of the principles of learning which is of great importance for the reform of teacher education in the direction of a modern pedagogical psychology (ZEUS)
- an arena for active scientific exchange with international developments in the humanities.

With its bold reach across the borderline between the humanities and the sciences, the proposed Centre would constitute a cornerstone of an innovative interdisciplinary institutional strategy for the 21st Century. According to this strategy, the future Göttingen perspective on the humanities will not perceive them as disconnected from the natural sciences but rather as specialized branches in a single scientific community of researchers with large methodological and thematic intersections. This overarching structure will be capable of addressing fundamental problems of basic science—e.g. the structure and function of the brain, cognition, and language--that are too large and diverse in nature to be solved by either the humanities or the sciences alone.

VII. Structure and management of the research centre

The Courant Research Centre consists of two research units which cooperate with each other and with the Principal Investigators. The research units are open for discussion with other Centres at the University of Göttingen, individual scientists and advanced students.

Internal cooperation will be initiated and enhanced by a regular joint colloquium where the members of the Courant Centre and the PIs will meet to present ongoing research. The colloquium is open to all members of the university, and external guest speakers will contribute to the program. In the first phase, one main goal must be to bring members with different academic backgrounds to a common level. This will be achieved by organising one-week workshops on specific topics, which serve to introduce members to complementary topics and theories. Depending on space limitations, these workshops will also be open to advanced students. Interdisciplinary research, finally, requires special care to initiate a substantial exchange between the disciplines. We envisage achieving this in an informal yet intense and secluded workshop atmosphere with space for face-to-face discussions of both long term goals and technical details. We will organise yearly „Klausur-Workshops“ where members will offer tutorials and present their research background, specially tuned for an interdisciplinary audience.

The Courant Research Centre will adopt the governance structure common to all centres. The PIs will select an executive committee (Vorstand) of three PIs, one Research Group Leader, one post-doctoral researcher and one doctoral student. These will elect a coordinator. All major decisions which concern the Courant Centre as a whole will be taken by the executive committee, after consultation with all PIs and the two Group Leaders. Such decisions include, but are not restricted to, candidate selection for post doctoral positions, Ph.D. students and staff members of the Centre:

the commitment to organize large scale scientific events (summer schools, international conferences), major financial decisions, and the assignment of sabbaticals.

The principal investigators have the opportunity to take a one year sabbatical as part of their Courant research. The PI on sabbatical leave will assist the main coordinator of the Courant Centre in the planning and organization of joint scientific and teaching events. Practical matters of organisation will be in responsibility of the assistant coordinator. Sabbaticals will be granted with the obligation to offer one seminar on empirical and theoretical approaches to text structure where background to and results of Courant research are taught to students in the humanities and psychology. The seminar can be offered as a two-week intensive course („Blockseminar“).

Organisation Meetings: The two Junior Research Group Leaders and Principal Investigators will meet twice per term in order to discuss organizational matters and research strategies and results. These organizational meetings are *not* open to other members of the university or the public. The Group Leaders will report on presentations at external conferences, experimenting and laboratory issues, publication activities, teaching activities, and applications for third party funding. The PIs will advise the Research Groups in these issues, and propose further turns in research. The Junior Researchers are, however, autonomous in all decisions that concern research and organizational matters in the Research Units.

External evaluation and quality assessment: As soon as the Centre has constituted itself, the CRC executive committee will propose 4-6 members of an international scientific advisory board to the Göttingen Research Council. The scientific advisory board will perform all functions that are part of the general Courant Research Centre design of the University of Göttingen. The Courant Centre will moreover organize an evaluation colloquium in year three where the research groups as well as PIs will present their research to members of the advisory board. External guests may be invited to the evaluation colloquium, depending on the needs of the Courant researchers. The evaluation colloquium will serve (a) to offer feedback on the results, (b) to discuss problems and recalibrate research goals, if necessary and (c) to discuss initiatives for third party funding. Both research units will present and discuss at least one grant proposal at this occasion. This defines a regulated procedure to achieve independent external funding in the mid-term.

VIII. Teaching and training programs for graduate students

The Courant research units will consist of two Group Leaders, one Junior Researcher at the post-doctoral level, four doctoral students and two full-time student assistants. The four doctoral students will be fully integrated in the training programs offered at the institutes of the Principal Investigators. The following measures will provide a structured doctoral education of high professional quality:

- In general, each doctoral student will be advised by an interdisciplinary thesis committee of Principal Investigators and their respective Group Leader. Such interdisciplinary thesis committees have yielded excellent results in earlier cases. By individual Thesis Agreements, we guarantee a structured doctoral education.
- The doctoral students will participate in their advisors' research colloquia which are part of the mentoring of doctoral students at the German Department, the English Department, the Georg-Elias-Müller-Institute for

Psychology, and the Department of Linguistics.

- Doctoral students outside the Courant Junior Research Groups who work with the Principal Investigators on similar fields can participate in the training and research program of the Courant Research Centre. They will be offered intense training units in topics which are not normally part of the curriculum. Students of the Centre, in turn, will be integrated in suitable teaching formats in linguistics, literary theory and psychology at the University of Göttingen, e.g. the „Göttinger Workshops zur Literaturtheorie“ (since 2005).
- Doctoral students and mentoring professors have the opportunity to become members of the GSGG (Graduiertenschule für Geisteswissenschaften Göttingen, Graduate School of Humanities Göttingen) or GAUSS (Georg-August-University School of Science). The doctoral students can take advantage of all Graduate Training and Ph.D. programs at institutions within the University of Göttingen. Both graduate schools offer a wide range of Transferable Skills Courses for their junior members; the doctoral students will profit from these courses.
- Furthermore, the principle investigators of the Courant Centre are among the applicants for the graduate school „Theory and Methodology of Textual Science and their History“ (MWK Niedersachsen). This program is dedicated to fundamental research in several disciplines studying the structure of text.
- The Courant Research Centre will organize regular workshops and colloquia which serve to bring members of different disciplines to a common theoretical level. These workshops will provide the necessary background for both senior members and doctoral students and offer the opportunity to meet international scholars in all fields of the Courant Research goals.

IX. Long-term perspective

The proposed Courant Research Centre is designed to be a component of a potential future cluster of excellence at the University of Göttingen. This cluster would be outstanding in that it transcends the traditional borderline between the natural and life sciences on the one hand and the humanities on the other. We have the vision that the conception of „two separate scientific cultures“ which causes a deep divide between the humanities and the natural sciences, both in Göttingen and world-wide, will be overcome in the foreseeable future. We maintain that the Centre, with its unique intense cooperation structure between literary sciences, psychology, and linguistics will be one cornerstone in a larger institutional strategy. In order to further this aim, it will be indispensable to develop theoretical concepts and rigorous methodological standards that are appropriate for basic research in the humanities, i.e. to accomplish an empirization of the humanities.

An important next milestone consists in putting these terms and methods to a systematic test, on the basis of a much wider variety of text types and genres. Only if we confront our results with texts by inexperienced authors, texts for special purposes, texts by learners, and other special forms of written discourse can we assess the roles of culture and nature, the learned and the innate, rule and exception when it comes to the interpretation of texts.

At this point, we anticipate a strand of research which will focus on possible applications of the newly developed theories. Our everyday life is dominated by text production and text comprehension, and either happens optimally all the time. School teachers and guides offer practical tips on „how to write“, but these rarely rest on a

solid theoretical basis. The humanities need to take responsibility and contribute to a badly needed reform of teacher training in Germany, specifically in the direction of an empirically oriented pedagogical psychology. The Centre would be an integral component of an innovative cluster of excellence or subsequent SFB, spanning the humanities and the sciences at the University of Göttingen.

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