Imputing common ground by using temporal connectives: The pragmatics of *before* and *after*

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1. Introduction

The semantics of *before* and *after* have long been in the centre of researcher's curiosity because of their relation to the conceptualization of time. Temporal clauses involving these connectives serve to give a time reference for the main clause, i.e., the event described in the main clause is anchored in time in relation to the event described in the subordinate clause. In other words, the event in the subordinate clause is 'taken for granted' to some degree, as it is capable of serving as an anchor for other events. This observation paves the way for a pragmatic analysis of these connectives, with a focus on the circumstances in which they may be employed in a way coherent in the discourse context, and acceptable to both speaker and hearer.

In this study, naturally occurring instances of *before* and *after*, collected from online available corpora of spoken dialogues, are analysed with respect to the question to what degree the speaker can assume that the listener takes the event in the temporal clause 'for granted'. In some cases, this means that the information conveyed in the temporal clause is already known material from the previous discourse context. In other cases, it means that, although the information itself is new to the hearer, the speaker 'imputes' knowledge of the event on the hearer, in order to be able to anchor the main clause's event in time. This effect corresponds to what happens when somebody states something completely new somewhat too casually, a phenomenon reflected in a common German colloquialism ('nur in einem Nebensatz erwähnt' - 'only mentioned in a subordinate clause').

With this range of possibilities in mind, the folk concept of 'taking for granted' is specified for the present analysis of temporal clauses with regard to its relation to the notions of presupposition, givenness, common ground, and other much debated concepts in the field of discourse pragmatics. The analysis addresses the speakers' range of options in conveying their temporal 'anchor' in a transparently coherent way in the discourse, their use of other lexical markers together with the temporal connectives that serve to suggest common ground, such as definite articles, anaphora, or pronouns, as well as the range of variety in listeners' reactions.

2. Background

2.1. Basic notions

All instances of naturally occurring language are based on the speaker's (or writer's) assumptions about many things: e.g., the world, the interlocutor (listener or reader), the present situation, the relation to the interlocutor, etc. This fact is well established in the literature, but treated fairly differently by various research directions: for example, Halliday's (1985) systemic-functional framework is based on the assumption that linguistic utterances can be analysed as representing three kinds of metafunction reflecting three aspects of context (field, tenor, and mode). Clark (1996) emphasizes that the use of natural language is based on the interlocutors' motivation to carry out joint activities which are part of larger ongoing projects, embedded in a complex cultural background. Formal approaches, on the other hand, have often restricted their analysis to the immediate textual context, and are only gradually attempting to formalize the intricate connections between the real world and the language that is used in it (various papers in this direction can be found in Bras & Vieu, eds., 2001).

Corresponding to this diversity in treating what is called 'pragmatic' aspects of language use, there is also diversity in the employment of relevant terminology. In the following, some of the concepts often encountered in the literature, and some problems associated with them, are outlined briefly.

I. Common Ground. Clark (1996) treats the notion of *common ground* as a technical term denoting that which the interactants of a conversation believe to be their shared basis. This belief needs to be based on some kind of justification, for which there is a great variety of possible sources, e.g., shared common knowledge of a community ('communal knowledge'), joint personal experiences ('personal knowledge') or the ongoing discourse itself (the accumulation of common ground in the course of an interaction). Closely related is the notion of 'grounding': "To ground a thing (…) is to establish it as part of common ground well enough for current purposes" (Clark 1996, 221) – interactants try to reach 'closure' on their actions, to receive evidence that their action has been successful.

Roughly, Clark's usage of the notion of common ground corresponds to the non-technical use of this term, as exemplified by the following usage (found online[1]): 'Linguistics is a social science that shares common ground with other social sciences such as psychology, anthropology, sociology and archaeology.' The Hallidayan approach, on the other hand, does not make use of this term at all, focusing instead on the linguistic phenomena that reflect the relationships to various kinds of context, such as phoricity, discourse coherence as established by various linguistic devices, or the given/new distinction. Reference to elements known from resources other than the textual context is then indicated by lexical choices and the treatment of those elements as 'given'. Formal approaches attempt to capture the interactants' common ground by including relevant items into the formal discourse representation, a model that is gradually updated with each utterance in the discourse (e.g., Krause et al., 2001). At present, however, it is clear that only a very small portion of the shared background between the discourse participants can be captured in this way; thus, formal approaches tend to restrict themselves to those elements of 'common ground' which are needed to be able to represent the aspects that are currently focused on.

II. Foregrounding / Backgrounding. Linguistic elements can be either 'foregrounded' or 'backgrounded' in the overall discourse or in a single clause. Roughly, this notion captures the intuition that some elements are presented as more important than others. Thus, linguistic means are employed to achieve prominence in discourse: main clauses are generally considered to be foregrounded, while subordinate clauses are backgrounded; additionally, there are specific linguistic devices enabling emphasis or de-emphasis of parts of an utterance, such as left-dislocation or omission. In contrast to some other notions dealt with in this paper, the foregrounding/ backgrounding distinction is a *relative* concept: some elements are relatively more foregrounded than others in a discourse, while they can at the same time be relatively more backgrounded than yet other elements.

III. Presupposition. Another notion that is prevalent in the literature and closely related to that of 'common ground' is that of *presupposition.* Here, also, treatment differs considerably among the diverse approaches. A very rough definition, taken from the Merriam-Webster dictionary, is that to presuppose is 'to suppose beforehand' (this is a fairly straightforward translation from the verb's Latin roots). In a broad sense, presupposition is ubiquitous in language: It is impossible to use language without presupposing some kind of background. For example, with regard to the previous sentence in the present text it is presupposed (among other things) that backgrounds exist, and that there are different kinds of them.

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[1] http://www.geocities.com/CollegePark/3920/

In a narrower sense, it has been stated that presuppositions need to be satisfied by their local context. In this view, specific presupposition triggers serve to activate specific expectations about the previous discourse context, as is immediately obvious with regard to expressions such as "too" (Zeevat 2002).

Two kinds of definitions are prevalent in the literature: In the 'semantic approach', presuppositions are taken to be those parts of the sentence that remain true when the main proposition is negated ('negation test'; cf. Strawson 1950). In the 'pragmatic approach', "pre-suppositions are what is taken by the speaker to be the *common ground* of the participants in the conversation" (Stalnaker 1978: 320). Correspondingly, Clark (1996) takes presuppositions as evidence of common ground, i.e., presupposed elements are elements that one speaker assumes to be already grounded.

Both views overlap to such a high degree that many authors do not explicitly state which one they adopt, especially since, by now, knowledge about the notion of 'presupposition' is often presupposed by authors in the field. But they have clearly differing consequences with regard to the question whether discourse-new information may be introduced in a clause that is logically presuppositional (i.e., cannot be negated directly). It may seem that the negation test simply captures on a logical basis which elements speakers assume to be unquestionably true since they are regarded as 'common ground'. However, a consequence of the pragmatic view seems to be that presuppositions cannot (or should not normally) be new to the discourse, since elements that already belong to the common ground cannot be new. But there is nothing in the negation test that precludes that elements remaining true by negating the main proposition are discourse-new. Thus, a sentence like 'She kissed them both before she brushed their hair'[2], in which a sequence of actions that were not mentioned before is presented, contains a logically presupposed clause ('she brushed their hair' remains true even if negating the sentence, as in: 'She did not kiss them both before she brushed their hair') that is undoubtedly discourse-new. Thus, a consequence of the pragmatic view would be that the propositions of clauses introduced by 'before' or 'after' are not necessarily presupposed, while in the semantic view, they are (Heinämäki, 1974; Schilder, 2001).

Since a great amount of paper has already been dedicated, mainly by formal theoreticians, to these (and further) approaches to presupposition, and since the orientation of this paper is empirical rather than theoretical, I will not pursue this issue further. Much of what has been said about the topic seems to be a matter of terminology: Most authors, for instance, seem to recognize the fact that speakers can – and do – show in their utterances that they presuppose facts that the listeners cannot know; but this fact is dealt with in different ways. For the present paper, it is merely important to distinguish clearly between elements assumed to be common ground, discourse-new elements, and elements that remain true when the main proposition is negated.

It is precisely this distinction that opens up an opportunity for the speaker to 'impute' common ground on the listener by presenting facts in a linguistic construction that is hard to challenge, even if the proposition expressed in it is discourse-new. This phenomenon is also known for other linguistic constructions, as mentioned, for instance, in Biber et al. (1998): In "The fact that in many insect groups the newly emerged adults show a slow gliding type of flight linked to dispersal suggests, however, that the earliest winged insects may have evolved in temporary habitats of small, erect plants…" discourse-new facts are introduced as established facts through the use of a clause starting with "the fact that".

IV. Given/ New. When dealing with notions such as 'discourse-new', 'new', and 'given', it is important to distinguish between issues that are 'new' in the discourse, and elements that

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[2] John le Carré, The Russia House.

are foregrounded by the speaker because these elements are communicated as 'new' even if the expression itself has been mentioned before; possibly because the speaker does not consider them as recoverable at the moment. Obviously, both views overlap to a high degree, the unmarked case being that discourse-new elements are also communicated as 'news' to the recipient. In Halliday's (1985) terms, the given/new structure is reflected prosodically in spoken language, with each clause possessing its own given/new structure in terms of prominent and non-prominent elements. The unmarked structure is that the given part is followed by the new. In these cases the given part corresponds to the clause's Theme, representing what the speaker is talking about (something which through longer stretches of the discourse signifies thematic organisation). But it is also possible that clauses start with the new part; this is realised by prosodic prominence, and in written language, by marked syntactic structure. Goffman (1983) points out how prosodic structure helps organising the discourse for the listener by highlighting more important or contrasted elements in relation to the context, emphasizing the contribution of prosody to fulfilling the 'felicity conditions' of presupposed elements.

Besides prosodic structure, 'given' elements can be indicated by linguistic features such as definite articles, anaphora, and deictic elements. The employment of such features suggests that the speaker assumes the elements to be recoverable or inferable. Thus, linguistic elements presented as 'given' are good candidates for that which the speaker assumes to be 'common ground'. In an online definition[3], the relationship between speaker and hearer is made explicit with regard to 'given' linguistic elements: "Given information is information that is assumed by the speaker to be known to, assumed by, or inferable by the addressee at the time of the speaker's utterance, because it is a) common knowledge, b) part of the extralinguistic context, or c) previously established in the discourse." Thus, the notion of 'common ground', with the detailed distinctions Clark (1996) proposes (see above), is a good resource for explaining why speakers make use of a specific linguistic structure in a sentence, e.g. why they may use a definite article for a concept that has not been previously mentioned in the discourse.

With these notions in place, it becomes clear in which way the semantic and the pragmatic view of presuppositions are closely interconnected: Consider a classical example for presuppositions, 'The king of France is bald'. Here, it is presupposed that there is a king of France, as becomes clear through the negation test: 'It is not true that the king of France is bald', i.e., 'The king of France is not bald', where there still is a king of France even though the main proposition is negated. The sentence has an unmarked information structure: it begins with a 'given' part, as evidenced by the usage of a definite article ('the king') and the exophoric reference to 'France'. The 'new' part of the sentence is the claim of baldness, which can be negated.

Thus, linguistic elements that are clearly 'given' often remain true in negated sentences, while 'new' elements fall under the scope of negation. In subordinated clauses, the case is different, since subordinated clauses have an information structure of their own. Furthermore, since subordinate clauses are 'backgrounded', they are clearly not supposed to be in the focus of attention. Presuppositional elements can therefore reflect what speakers wish to present as established even if they do not assume these elements to belong to the common ground. Some temporal subordinate clauses clearly belong in this category, while others seem to resemble other kinds of subordinate clauses which are not necessarily presupposed, such as 'I think that you are right'.

Conclusion. As this short overview of basic notions shows, a fairly broad range of related issues plays a role in the analysis of linguistic elements that point to the 'common ground' of discourse participants. But in spite of a large amount of literature dealing with these issues,

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[3] http://www.sil.org/linguistics/GlossaryOfLinguisticTerms/WhatIsGivenInformation.htm

there has not been much empirical research adopting these notions to actual discourse. One reason for this is that it is notoriously hard to specify for any utterance what exactly the common ground of the interactants may be; and speakers' reasons for presenting specific linguistic elements as either given or new are equally hard to determine. To be able to restrict the considerable practical problems to a minimum, the present analysis is restricted to one section of this large field, namely to the question how and under what circumstances speakers use temporal clauses to anchor an event to another, considering the degree to which the event in the temporal clause is known to the listener. In the next section, various aspects of speakers' and listeners' strategies in actual discourse are addressed with regard to the presentation of new information in presupposed (or otherwise backgrounded) clauses.

2.2. Speakers' strategies and listeners' reactions in actual discourse

Presuppositional elements that do not already belong to the common ground need to be accommodated. In most cases, they then automatically belong to the common ground. But Karttunen (1974) points out:

"If the current conversational context does not suffice, the listener is entitled and expected to extend it as required. He must determine for himself what context he is supposed to be in on the basis of what was said and, if he is willing to go along with it, make the same tacit extension that his interlocuter appears to have made. This is one way in which we communicate indirectly, convey matters without discussing them."

Thus, while it seems to be the standard case that listeners tacitly accept the information speakers present in presupposed clauses, alternatives to straightforward accommodation are possible. Listeners can explicitly reject the presupposition, resulting in a cancellation of the presupposition (this possibility is captured in formal approaches by distinguishing between local and global accommodation), or they can ignore it either consciously or without being aware that a presupposition has been implied. Then, the speaker will believe something to belong to the common ground that, in fact, is not represented in the listener's current representation of the discourse. Such misrepresentations may cause communication problems, they may be detected later in the discourse, or they may have no effect at all, being irrelevant. Furthermore, the accommodation process itself can happen either consciously or without awareness.

These various possibilities can result in some facets of speakers' and listeners' linguistic behaviour that may be regarded as problematic in some respects. For instance, speakers may choose to formulate their utterances in a way that (in their opinion) irrelevant or unimportant new information is not presented as new, but presupposed, hoping that this will not cause problems. They may also consciously impute some personal opinions about facts on the listener by presenting them as presupposed, in order to avoid discussing potentially controversial topics.

Listeners may choose to ignore such 'imputed' elements, considering them irrelevant, and focus on the main topic of the discourse. If they choose to challenge a backgrounded proposition, this cannot be done by a simple "no"; instead, some effort[4] is needed to refer back to presupposed elements:

"Will you have some more wine before you leave?"

"No" (thanks, I will not have any more wine)

"Oh (you are mistaken in your assumptions), I do not intend to leave for quite some time"

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[4] I am grateful to John Bateman for illustrating this general idea to me.

Since it is easier (and smoother in the course of an interaction) to follow the "main thread" of foregrounded elements in a discourse than to cancel a presupposition, it is possible that presupposed elements are cancelled less often than could otherwise be expected.

These considerations have two kinds of consequences for the interaction between speaker and listener: on the one hand, presupposed elements constitute a tool for the speaker which may or may not be used for subtle manipulation of the listener, depending on the listener's reaction. On the other hand, information that is new to the listener may receive less attention than it should. The latter problem is addressed by the German saying "nur in einem Nebensatz erwähnt" (only mentioned in a subordinate clause): things that should have been in focus, i.e., foregrounded in the discourse and expressed forcefully by main clauses, have received too little attention and are therefore not considered intensively enough by the listener to be able to realize the impact of the information. For example, suppose that a student has missed a session in which the teacher has told the audience about a forthcoming exam. In the next session, she hears the following utterance:

"You need to hand in some documents before you take the exam".

In order to realize that the information in the temporal clause is both new and important for her personally – but not for the rest of the audience – the student needs to be specifically attentive and conscious of the fact that she has missed a session. Otherwise, it is conceivable that she considers the above utterance as irrelevant for herself because she has never heard of any exam and therefore does not see why she should need to hand in any documents.

These phenomena are ubiquitous in language and concern not only presupposed propositions but – to various degrees – also other kinds of backgrounded elements, for instance, other kinds of subordinated clauses, lack of stress in intonation, or nominalizations. This paper, however, focuses on a very small section of this field, namely, how speakers and listeners use 'before' and 'after' to foreground or background propositions, with regard to how they agree on common ground, cancel or accommodate presupposed information that is new to the listener, etc. Such questions need to be addressed empirically. The next section sets the stage by outlining previous work with regard to the discourse connectives 'before' and 'after'.

2.3. 'Before' and 'after'

Previous work focusing on the usage of 'before' and 'after' in natural discourse has established several features of these temporal expressions that can be regarded as being on the verge between semantic and pragmatic characteristics. Most obviously, they are used to denote temporal relationships between events or states (Heinämäki 1974, Herweg 1990, Sánchez Valencia et al. 1994, and others). Lascarides and Oberlander (1993) point out that temporal connectives trigger presuppositions that cannot be acccommodated in all contexts, and Schilder (2001) works out in some detail how the discourse relations between the previous discourse, the main clause, and the temporal clause can account for the corresponding accommodation or binding processes. This approach was carried further using natural language data in Tenbrink & Schilder (2003), resulting in a framework specifying the general insight that specific discourse relations are required in order to employ 'before' and 'after' in natural discourse. This latter paper builds the basis for the present analysis.

The starting point of the analysis in Tenbrink & Schilder (2003) is the hypothesis that speakers do not 'out of the blue' represent events as being in specific temporal relations to each other, but do so for a specific reason, a point already emphasized by Heinämäki (1974). One such reason is that they are in a *proximal temporal relationship* to each other (cf. Herweg 1991). This 'default case' can only be cancelled by explicitly stating the length of time between the events or states. Then, the reason for mentioning the temporal order is precisely

to make a statement about the length of a time span. But the notion of proximality per se is not enough to explain why speakers choose the events they do in their linguistic representations. The results of our qualitative analysis of naturally occurring instances of temporal clauses showed, then, that the events or states described in the main and temporal clause[5] reliably exhibit one of several specifiable semantic relationships to each other. One such relationship is described by the notion of *Immediacy*, where one event happens 'next' after the other on a specific level of granularity. Where this is not the case, the nature of the relationship between the two clauses connected by *before* or *after* can be described via *discourse relations:* as our data showed, according to SDRT definitions (Lascarides & Asher 1993) either a *causal* relationship (either *Explanation* or *Result*) or *Narration* is possible, the latter indicating that the discourse is carried further and the events or states do not overlap[6]. The broad concept of *Narration* is further specified by three subconcepts, namely, *Insertion, Regulation,* and *Dependency*. Thus, the following options are available to speakers:

- Providing an *Explicit length of time*

- *Immediacy*: Where events are described as occurring directly after one another, this can be traced linguistically on either the *agent,* the *patient,* or the *narrative* level, as in 'John entered the house. Then, he went into the kitchen. After that, he went upstairs.' where the agent's actions are described, indicated by the lexical repetition of 'he'.[7]

- *Causality*: One event causes the other, as in 'He fell down after he stumbled over a stone'. 'Before' is not capable of expressing causality: 'He stumbled over a stone before he fell down' seems to imply that the two events are not causally connected.

- *Dependency*. 'Before' and 'after' can both be used to express the fact that the later event is based (non-causally) on the former event. In other words, the former event is a precondition for the latter event to occur, as in 'He entered after opening the door.'

- *Insertion*: Information (which is new to the hearer) about an event that happens earlier than another *expected* (and thus presupposed) event is provided. The latter event may in some cases not occur at all, being precluded by the inserted event. This effect is well-known in the literature as the 'counterfactual' effect of 'before'. In other cases, based on the insertion of the new event it is indeterminate whether the expected event happened after all. Thirdly, it may be presupposed that the expected event occurred. 'After' cannot express the concept of Insertion.

- *Regulation*: 'Before' and 'after' can be used to regulate the order of previously known events. This is often the case when scheduling future actions.

As becomes clear in this overview, some of the identified options necessitate a specific kind of information status, while others do not: for instance, Regulation can only be used for known events, and for Insertion the event described in the temporal clause must be known. But for Immediacy, Causality, and Dependency, no such requirements have been identified. This variability will be specifically relevant for the present analysis.

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[5] Unrestricted temporal precedence only occurs with clause-final (adverbial) 'before'. All other occurrences of 'before' and 'after' are characterized as connecting clauses, abstracting over the differences between full and minimal clauses (such as 'after that').

[6] Immediacy can also be viewed as a semantically weak kind of Narration.

[7] Mostly, this option is realized by 'then' rather than 'after' or 'before', but the latter two can also be employed for it.

A further distinction needs to be made between the two kinds of clause order that can occur with the temporal terms. In functional approaches to language such as Halliday (1985) it is a well-established finding that a sentence normally departs from what is known (or Given) in the discourse context. In this view, the ordering of the clauses of a sentence has implications with regard to the information flow. In Schilder & Tenbrink (2001) we show that sentences beginning with a temporal connective differ from those in which the connective appears only after the main clause because these sentences comprise two kinds of discourse relations instead of only one. In both syntactical variations, the sentence-internal relations described above account for the temporal and non-temporal relationship between the two events that are linked via the connective. However, sentences starting with a connective also contain a sentence-external discourse relation that links the preposed subordinate clause to the previous discourse context. The nature of this latter relation is analysed more closely in Schilder & Tenbrink (2002). The main point relevant to present concerns is the empirical finding that preposed clauses need to be connected in specific ways to the previous context, while postposed constructions have a weaker, and more unrestricted, relationship to the context.

Based on this previous work, it has become obvious that not all clauses introduced by 'before' or 'after' can be analysed as 'common ground' for both speaker and hearer. Instead, intricate relationships between the temporal clause, the main clause, the previous context, and other sources of knowledge account for the employment of a temporal term. Since temporal clauses serve as an anchor for specifying the time of a further event, the question needs to be addressed which discoursal requirements can be identified that account for the employment of such an anchor even if the event or state described in the temporal clause is discourse-new. The analysis presented in the following section deals with this issue.

3. Corpora investigation

3.1. Method

Natural language instances in spoken discourse were analysed using the *Switchboard corpus*[8] of the Linguistic Data Consortium, a large corpus of conversational speech over long distance telephone lines which involves numerous speakers representing a great variety of sociological and dialectal backgrounds. To collect the linguistic data, recruited speakers chose a topic about which they wished to talk, out of a repertory of 70 topics. The corpus is transcribed; the text files are searchable in the WWW with the option of consulting the corresponding sound files. This corpus is advantageous for present purposes since the speakers communicating with each other are not acquainted, and it can therefore be safely assumed that they do not draw upon information from previous encounters. Thus, Clark's (1996) 'personal knowledge', which would otherwise be fairly impossible to control, is ruled out. Furthermore, since the speakers are talking on the phone they cannot make use of exophoric reference, thus reducing the amount of deictic elements (referring to objects or situations not accessible to the analyst) considerably. The only drawback is that the speakers were allowed to 'warm up' before they started the recording by pressing a button, resulting in a certain degree of previous knowledge about each other that is not available to the analyst. Additionally, of course, they share a great amount of knowledge about the world and the community they live in; it will be seen that such knowledge is indeed used continuously as shared background.

As the present analysis is intended to be qualitative rather than quantitative, no statistical methods are employed. Qualitative exploration is a necessary prerequisite for follow-up

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[8] Thanks to Anatol Stefanowitsch for invaluable help in this regard.

studies aiming at statistical significance, which require hard criteria for coding semantic properties to enable inter-annotator agreement (Carletta et al., 1997). Previous research on encoding semantic properties has shown that this is not an easy task to achieve (Spenader 2001). However, a couple of broad quantitative observations need to be pointed out. First, 'before' and 'after' occur more often in sentence-mid position than at the beginning of a sentence. This finding corresponds to the well established finding in the literature that, in the unmarked case, the subordinate clause follows the superordinate one (e.g., Clark & Clark 1968). In this view, speakers need a specific reason for choosing the marked case. Second, 'after' is found more often in sentence-initial position than 'before', which corresponds to the equally well established finding that speakers prefer to narrate events in their natural order (Zimmer 1982).

To identify regularities in the circumstances of presenting either given or new information in temporal clauses, naturally occurring instances of 'before' and 'after' in spoken dialogue were analysed with respect to the following issues:

- Common ground (based on textual context, world knowledge, etc.)

- Information conveyed in the temporal clause: discourse-new, given, or inferable based on the previous context, communal knowledge or world knowledge

- Linguistic indicators of information structure including prosodic organisation

- Relationship between the two connected clauses and the previous discourse (if relevant)

- Listener's reaction with regard to the information provided in the temporal clause, be it given, inferable, or new.

These notions were analysed for each of the categories identified in Tenbrink & Schilder (2003), working out regular patterns in speakers' and listeners' linguistic behavior. These patterns are presented and illustrated by natural language examples in the following section.

3.2. Results

Explicit length of time

When a statement about an explicit length of a time span is made in the main clause, this statement is usually the main point of the present utterance, i.e. the 'news' the speaker wants to convey. In the following example, accordingly, strong prosodic prominence[9] is on 'years':

Example 1. [Context: death penalty]

B.20: Yeah. Well, the sentences are so unbelievable. I just saw on the news last night, that they said the average time a sentenced murderer, you know, is in jail is two years before he's paroled, and a rapists is like six months,

A.21: That's pathetic.

B.22: and a burglar is like two months.

A.23: That's pathetic.

B.24: Because they just say there's either no room in the system, you know, in the jails for them or, you know, it's just that, it seems like the automatic sentences, if, if a judge has leeway, on what he's going to, you know, sentence someone for between, you know, two months and fifty years and, you know, what's his whim to decide it should be two months.

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[9] For readability, I have decided against providing a detailed transcription of prosodic features. Relevant information in this regard is presented in the text rather than the examples.

A.25: This is true,

B.26: You know, it's crazy.

A.27: an, and the way the law reads, uh, if they sentence you to life in prison, then he's available for parole. If it's life and a day, then he's not eligible for parole.

The statement that the murderer (the given part in the temporal clause, indicated by anaphoric 'he') is paroled is also news: there has been no mention of parole in the previous discourse. This is indicated by a weaker stress on 'paroled'. Thus, the information in the temporal clause is news to the hearer, but not as prominent as the information in the main clause is; it is backgrounded as it is presented in a subordinate clause and (according to the 'semantic' analysis) presupposed. The presupposition can, however, be accommodated easily since the listener can be expected to share this much of communal knowledge with the speaker, living in a society where convicts are easily paroled. Moreover, the term 'paroled' is semantically closely related to the previous context of legal procedures. The listener's reaction is, first, tacit acceptance; later (in A.27), however, he evaluates on the proposition given in the temporal clause, rather than following B's train of thought in B.24. It is conceivable that the backgrounded information took more time to react to, which would explain the delay. This is one of the very few examples in my data where the listener explicitly reacts to the information in the temporal clause at all. In the following example, there is no such reaction:

Example 2. [Context: drug testing on the job]

B.46: And then, uh, it got, you know, it got backfired on a lot of kids, too. To a lot of kids, uh, like, you know, like, somehow they missed the physical or something --

A.47: Yeah.

B.48: -- you know, and they wrote down that they, uh, weren't, but then they went back and they checked them, like maybe a week <u>after they were working</u> and if they had drugs in their body, I mean they were fired on the spot.

A.49: Huh.

Here, the information that the 'kids' were working is inferable from the previous context, a fact that is underlined by moderate prosodic prominence on 'working', indicating that the information itself is neither 'given' nor presented as news. The pronoun 'they' and the brevity of the temporal clause also underline the backgroundedness of the information. Prosodically, the main emphasis in the speaker's utterance lies on 'had' (in 'had drugs').

Another possibility for providing an explicit length of time is to present it in the temporal clause, as in:

Example 3. [Context: movies]

A.25: -- it was, the thing is, it was, it was a good story.

B.26: Right.

A.27: And, and, and I guess that's what I really like. Although, I must admit I did look at my watch <u>after about an hour</u>.

B.28: Did you?

A.29: Yeah.

Here, the presupposition is simply that an hour passed, which in itself is of course a natural fact about the world well-known to both interlocutors (exophoric reference). The information is presented as 'given' in that there is no prosodic prominence on the temporal clause. The listener accepts this without comment or evaluation.

Immediacy

Immediacy captures the fact that humans conceptualise events as following 'one after the other' (Avrahami & Kareev 1994) on one specific level of granularity, which is most often expressed by 'then' (Tenbrink & Schilder 2003), but can also be represented by 'before' and 'after'. Linguistic representation of immediate succession either focuses on the actions of one specific person ('agent level'), the undergoings of an object ('patient level'), or the events in a narrative ('narrative level'). No further semantic relation between the events is required except that they are presented as following one another. Very commonly, this concept is expressed linguistically in a brief construction containing no new information such as 'after that'.

Example 4. [Context: privacy]

B.2: I, I think I agree with that. I think in a good example on the typical thing that happens, uh, when the phone rang and it's T I calling, my immediate reaction is that it's some sort of strange phone message and then I realize, oh, no, this is something I solicited,

A.3: That's right [laughter].

B.4: so my immediate reaction was one of that sense of invasion but <u>after that</u> I realized, no, I, I really wanted this and it was sort of exciting and so,

A.5: Uh-huh.

Here, the concept of succession is exposed via the fact that a very similar linguistic representation is given in B's previous utterance using 'then' instead of 'after'. The speaker's reactions are represented as following one another immediately. Prosodically, there is some prominence on 'that', stressing that following the previous event something new happened, which is expressed in the following main clause.

The next example also presents the speaker's actions, but on a rather different level of granularity, focusing on much larger stretches of time:

Example 5. [Context: owning houses]

A.2: We just bought our first home --

B.3: Oh.

A.4: -- <u>after being in school</u> and so, we're just first time homeowners. We've only been living here about six months.

B.5: Okay, uh, well, I've lived in the, in the Dallas and Richardson area for about, uh, twenty-five and a half years, twenty-six years.

Here, the information in the temporal clause is discourse-new in that it has not been mentioned before, but it is easily inferable on the basis of communal knowledge. Accordingly, it is prosodically backgrounded, the prominence being on 'first home'. Notice also that the linguistic form of the temporal clause allows for the omission of the clause's agents, thus supporting its backgroundedness. The listener does not comment on the information.

In the next example, however, the information given in the temporal clause is presented as new by clear prosodic prominence on 'WHO', followed by a pause and elaborated further by a prepositional phrase:

Example 6. [Context: sitcoms]

B.71: I wish they'd put those, that's why I say, did you stay up late to watch this RED DWARF. It came on <u>after DOCTOR WHO</u>,

A.72: Uh-huh.

B.73: <u>on Saturday nights</u>, here at least. And it should, of course I li- really it was, I don't think they should show it during prime time, but still,

The pause seems to indicate the speaker's wish for confirmation of the new information, which is immediately given, in the middle of the speaker's utterance. By backchannelling, the listener informs the speaker that he has managed to accommodate the information. In spite of the speaker's obvious aim of having the information safely in place, it is nevertheless not presented as belonging to the main thematic thread of the discourse. It is presented only in a (backgrounded) prepositional phrase introduced by 'after', notably not a full temporal clause. Thematically, the speaker is talking about the 'Red Dwarf', and wishes to anchor this temporally. To be able to do this, she needs the listener to confirm that he is indeed familiar with this background information.

Causality

'After' can be used to express the conception that one event causes another. In SDRT terms, Result occurs when the temporal clause is proposed: then the main clause is a result of the temporal clause, whereas in Explanation, the temporal clause comes after the main clause, giving a reason for the proposition in it. Semantically, these two variants are similar, both expressing the concept of Causality. They differ, however, in their relation to the previous context (cf. Schilder & Tenbrink 2001).

Example 7. [Context: Pollution]

A.85: Yeah, well, it's, it's like so many, it's like chicken. You know, they go in there and they supposedly inspect this chicken. I don't know if you ever saw that SIXTY MINUTES thing where they showed a chicken processing plant.

B.86: As a matter of fact I did.

A.87: Yeah. I, I haven't touched chicken since.

B.88: Neither have I [laughter].

A.89: Yeah, I, I, couldn't, I couldn't bear to think about eating a chicken <u>after seeing that</u>. And, but the government says it's safe. Uh-huh.

B.90: Uh, yeah.

Here, the anaphorical construction 'seeing that' refers back to the previous linguistic context, indicating that there is no discourse-new information. However, prosodically there is some prominence on 'that', indicating the speaker's intention to point to the importance of the event referred to. In fact, it is important enough to serve as a reason for the speaker's aversion to eating chicken as stated in the main clause. The next example illustrates the other variant, where the temporal clause is preposed:

Example 8.Context: painting

A.17: [/Noise] Well, we did a, uh, we moved, oh, last August and we're getting a house, my house had this dark wood paneling at the end of the den and we decided, we went to, ((I've forgotten)), one of the paint stores and they just said, oh, you can get by, and I forgotten what it was you put down, and then you can just paint right over the dark.

B.18: Uh-huh.

A.19: Well, more or less. <u>After about, uh, half dozen coats</u> it looks reasonable but it kept, the, the dark it was, uh, just a real dark, uh, wood grain type paneling --

B.20: Uh-huh.

Here, the temporal clause provides new information, introducing new linguistic material ("about half dozen coats") in a prepositional phrase, where both actor and process are omitted. This informationally sparse construction is sufficient for the introduction of new information for two reasons: First, prosody supports the transfer of information by the speaker's hesitation

before 'half dozen' and by prominence on 'coats'. Second, the information is inferable because its relationship to the previous discourse is transparent: As is common for preposed temporal clauses, there is an Evaluation relation to some aspect of the previous discourse. In this case, 'half dozen coats' are part of 'painting over the dark' mentioned in speaker A's previous utterance (see Schilder's considerations of *subpart relations* in Schilder 2001). Accordingly, the listener obviously has no problems accommodating the information, accepting without comment that half dozen coats are sufficient to yield a 'reasonable' result.

In the next example, the temporal clause indicates a change between the previous situation and that following the event referred to (cf. Schilder's (2001) Termination relation between 'after'-clauses and the previous context).

> *Example 9. [Context: elderly family members]*
>
> B.74: And, uh, fortunately, we agreed, you know, on exactly, you know, what we thought should be done. My mother also was very very independent. She had her own, still had her own little house and still driving her own car,
>
> A.75: Yeah.
>
> B.76: at age eighty-three. We were lucky in, that in one respect in that <u>after she had her stroke</u> she wasn't really, you know, really much aware of what was going on.
>
> A.77: Uh-huh.

Here, prosodic prominence is on 'had', which does not carry much content; here the prominence again points to the importance of the event. The event itself, however, is no news because it has been mentioned before in the discourse. This is indicated linguistically by the use of pronouns, specifically the possessive pronoun which could not be used to indicate new linguistic material, and the repetition of a previously used noun.

The following example shows how discourse-new material can be introduced in a backgrounded temporal clause carrying no prosodic prominence whatsoever.

> *Example 10. [Context: politics]*
>
> A.28: The only, the only thing I see about Cuba though, is, uh, <u>after Fidel Castro dies</u>, I don't think they'll be a communist power anymore. I, I can't see communism in that country carrying on past him.
>
> B.29: Well, when you take a, a situation where I think in particular in Salvador where there is a significant under class [cough], excuse me, and that, uh, you know, having a, a lot of difficulty, uh, surviving, uh, the question is would they, you know, would they be better off under communism.

The speaker takes for granted that Fidel Castro will die, which does not relate to the previous textual context but is based on world knowledge (people die). The linguistic construction itself is brief, stating just the basic fact in order to go on to evaluating on the result of this fact.

Dependency

In cases of Dependency, the later event is based non-causally on the previous one, i.e., the first event is a precondition for the second one. Unlike Causality, Dependency can be expressed not only by 'after' but also by 'before', as in the following example:

> *Example 11. Context: economical status of Puerto Rico / independent or US state*
>
> B.22: And I think, uh, having listened to you relative to the economy thing, I think if I were being forced to make a decision I would plead ignorance and wait to do more research <u>before picking one of these</u>. So I'm ul-, I guess I'm ultimately in favor of status quo also at this point,
>
> A.23: Well that's interesting.

B.24: ((leaning)) towards the statehood.

A.25: Right. What about if, if, um, they demanded to have Spanish as the official language as a condition for statehood.

Here, the speaker presents 'doing more research' as a precondition for 'picking', i.e. deciding on one of the options, as stated explicitly earlier in the utterance. Prosodic prominence is on 'picking', thus emphasizing the point that 'picking' is a major process that needs preparation. In the next example, the concept of Dependency is similar, but the information conveyed in the temporal clause is new:

Example 12. Context: inspections

B.20: -- and he went to get his inspection and there was something about the emissions, something that wasn't quite right and they wouldn't pass it, and, I mean there's no smoke or anything comes out of his car, it's a nice car and, uh, he had to have a lot of work done on it <u>before it would meet, you know, the emissions</u> and he went to several places.

A.21: Oh gosh.

B.22: So, so, they're starting to crack down.

A.23: Yeah, that will help.

The speaker obviously has difficulties finding the correct expression for the concept she intends to convey. The expression 'emissions' is taken as a shortcut to the intended concept, available because it has been used before; it is spoken very fast and hardly audible, with no prosodic prominence in the temporal clause. Responsibility is clearly loaded on the listener; the speaker does not want to take more time for this backgrounded clause, even giving up finding the appropriate expression for the concept she is alluding to. The listener accepts this, indicating that the message has been understood, the main message focusing on the load of work to be done by the person referred to in order to fulfill the precondition for the (abbreviated) proposition in the temporal clause.

In the next example, similar observations can be made with respect to 'after' rather than 'before':

Example 13. [Context: camping]

A.8: And we managed to, uh, fortunately the rain didn't last long but we managed to get them all back up and, uh, got some sleep in that night. And <u>after we got, uh, back from the weekend</u>, we checked with one of the parents of one of the other college kids and they were a little concerned. They had heard on the radio that the winds on the dam there anyway, had gotten up to ninety-seven miles an hour,

B.9: Good grief.

Here, also, the speaker exhibits problems identifying the right words in the temporal clause. The proposition is informationally sparse because it is not stated where 'back' is supposed to be, nor was there any mention of a weekend in the previous discourse, so that the information (presented as 'old' by a definite article) needs to be inferred. Prosodic prominence is on 'back', indicating that the most important part of the temporal clause is that 'we' needed to come back in order to be able to 'check with one of the parents'. The notion of returning from a holiday (no matter how long) is straightforwardly inferable from the given context of camping, so that the additional information about the length of stay is also accommodated without question.

Insertion

In contrast to the previous concepts, Insertion can only occur where the event given in the temporal clause is expected to occur. It can, however, be precluded by the main clause; or the discourse context remains neutral with respect to whether it occurred or not, since the inserted

event has come into focus. Only 'before' is capable of expressing this concept. In the following example, the event in the temporal clause is clearly presupposed:

Example 14. Context: court trials

B.48: And the victims, you know, the family of these people that have been murdered, they just have to have it dragged on for years and years before they ever get any resolution.

A.49: Exactly, because it's not next day they have, the, start the trial, it's X number of months and just prolongs the situation that much more.

While the information itself has not been mentioned in the previous context, it is easily inferable from the general topic, since 'resolution' belongs semantically into the legal context. Based on communal knowledge it is expected that there will be a resolution; however, before that happens something else is 'inserted', namely, a 'dragging on' for a very long time. Prosodically, there is some prominence on 'resolution' to indicate the importance of this expected event. The listener then evaluates the main proposition rather than the temporal clause.

In the next example, the expected event is precluded by the main clause, yielding a 'counterfactual' reading of the before-clause:

Example 15. Context: Extending school years

A.217: take those subjects, so what that leads me, my next thought is, I understand there's a lot of talk now about extending the school year which seems inordinately short anyway,

B.218: Uh-huh.

A.219: compared to the Japanese,

B.220: Right.

A.221: or the Germans.

B.222: Yeah. #I think, I think,#

A.223: #Well, how do you think# that would work in grammar schools and,

B.224: I think, uh, in, in some sense, um, [lipsmack] what I would do <u>before I would extend a school year</u>, is I would make it better. <u>Before I would continue the agony</u>, ((trailing off))

A.225: Yeah, yeah, #that's right [laughter].#

Here, the speaker apparently wishes to emphasize that the event referred to in the temporal clause should be precluded. This is indicated by the double construction, where, in the first version, the speaker simply repeats the wording of previous utterances to point to the expected event. The second version, in contrast, elaborates the first statement by a clearly negative assessment of the event ('agony'). Accordingly, the first version only carries some weak prominence on 'before', while the second version shows a fairly strong prominence on 'agony'. Then, the speaker does not finish the sentence, since the main proposition (the inserted event) has already been given and does not need to be modified. The listener explicitly acknowledges the speaker's evaluation.

It stands to reason that this example has not only a temporal reading. The utterance stands in a close semantic relationship to a statement like 'instead of extending a school year, I would make it better' where the temporal precedence, having only minor importance in the 'before' clause, has vanished completely. There seems to be a continuum between counterfactual usages of 'before' in cases of Insertion, and non-temporal usages, which are sometimes classified as metaphoric.

In the following example, it does not seem to be clear whether the originally expected event finally occurs:

Example 16. Context: cross-stitching

A.71: Uh-huh [throat_clearing]. There's also a couple of large projects, baby afghans, and I got one done and I think the other one is going. The child is going to be in high school before I get finished.

B.72: [Laughter] On that, uh --

A.73: ((Bear thing)).

B.74: -- is it one of those afghans that I've seen in the packages with the, with

the large squares?

Finishing a current project is a normal process that can easily be inferred from the given context even though it has not been mentioned explicitly before. The temporal clause itself is elliptical in that the speaker does not specify what is finished; this must be related to 'the other one' in the previous sentence. The listener does not comment on that.

Regulation

Using 'before' or 'after', speakers can regulate the order of previously known or inferable events. Here, the main focus is on the temporal term itself, which is in most cases indicated by prosodic prominence. In other cases, linguistic indicators point to the importance of the *order* of the events. The following example shows how given information is taken up to provide information about temporal ordering:

Example 17. Context: Puerto Rico as a state of the US or independent

A.19: Uh-huh. Well, well actually I thin-, one, one thing that I remember hearing in the news the past couple weeks that might be significant is that they've recently voted that Spanish is the official language, which I always assumed it was anyway. So, if they've just taken such action, it would seem to indicate to me either they're doing it because they're afraid they might become a state and want to declare this before they become a state, or maybe because they don't want to become a state for fear of losing the Spanish, or Hispanic heritage.

B.20: Uh-huh, well that's interesting too. Well it sounds as though you are in favor of, uh, status quo.

Here, the information in both the main and temporal clauses is given: 'declare this' points back to 'taken such action', while 'become a state' is an exact repetition of the wording used before. The temporal term is prosodically prominent; the listener does not react to this part of the speaker's utterance. In the following example, the temporal clause is reduced to a minimum:

Example 18. Context: availability of money after retirement

A.27: And then we got that cafeteria plan, do you have that?

B.28: No.

A.29: No.

B.30: I don't know what it's ((about)).

A.31: You can, uh, well you, let's see, it, it shelters your money that you pay for, for insurance. It takes it out of your salary before taxes.

B.32: Oh, okay. Yeah, yeah we got that.

A.33: Okay.

B.34: Pretax insurance?

A.35: Yeah.

'Taxes' is introduced briefly, i.e. without being embedded in a full clause and without article. Based on shared communal knowledge, the speaker obviously expects the listener to be familiar with that concept. Prosodically, the prominence is again on the temporal term. The listener reacts (in the second next utterance) by using a reformulation to make sure that he has understood the temporal clause correctly. Note that this reformulation includes the temporal order in the prefix 'pre'.

The next example shows how the concept of Regulation can be supported by linguistic indicators:

Example 19. Context: Money / credit

B.124: y-, y-, you know, [noise] automatic approval, and they get them, and then these kids start charging and, and they get themselves into some deep trouble.

A.125: Oh, yeah.

B.126: <u>Before they even [laughter] start making money</u>, they're already,

A.127: [Laughter].

B.128: in debt, you know.

A.129: No kidding.

The modal adjuncts 'even' and 'already' point to the peculiarity of the temporal order indicated by the speaker. The fact that 'making money' has not been mentioned before is captured by prosodic prominence on 'money', with a weaker prominence on 'before' to further support the importance of the temporal ordering. The information in the temporal clause is inferable on the grounds of communal knowledge. In the next example, in contrast, the information is discourse-new, yet backgrounded in the given context:

Example 20. Context: pets

B.34: I had one cat for eighteen years. I got her when I lived in Hawaii.

A.35: Oh.

B.36: <u>Before I even got married</u> I had my cat.

A.37: She's old.

From the previous context, the listener cannot know that the speaker is married. However, naturally this information can be easily accommodated based on world knowledge (it is normal to be married). Accordingly, there is only weak prosodic prominence on both 'married' and 'before'; the importance of the temporal information is indicated by 'even', as in the previous example. The speaker's intention in this context is to convey the length of time that has passed since she got the cat. This is immediately supported by the listener's subsequent remark 'She's old'. Thus, the speaker has successfully 'imputed' knowledge on the listener that is not being questioned. However, a different reaction is possible, as in the following example:

Example 21. Context: Studying

A.71: So, are, are you going to go for your Doctorate?

B.72: Probably not. See I'm in the Navy.

A.73: Yeah.

B.74: And, uh, you know, most of the Navy funds that I probably won't do it until I, if I do do it, it will be <u>after I get out of the Navy</u>.

A.75: When do you get out?

B.76: Oh, probably be another twelve years.

A.77: Oh, okay [laughter].

On the basis of communal knowledge, the information that the speaker will get out of the Navy is inferable. There is no prosodic prominence at all on the temporal clause; the linguistic expressions have mostly occurred before. However, the listener wishes to elaborate on this piece of backgrounded information, requesting the time of the event briefly pointed to by the speaker. The speaker then seems to be moderately surprised, as indicated by 'Oh', and gives a fairly vague answer.

Termination

Schilder (2001) describes the capability of 'before' to indicate a Termination relation between the main and the temporal clause; for some reason (possibly related to text type), no example for this categoy was found in the data analysed in Tenbrink & Schilder (2003). In the Switchboard data analysed presently, a Termination relation was found to be fairly frequent, especially with preposed temporal clauses. *Termination* only occurs with 'before', and is indicated by the use of duratives (descriptions of states rather than events) in the main clause. The concept conveyed in this construction can be specified as follows: either

the event in the temporal clause terminates the state of affairs as described in the main clause where the temporal clause describes an event, or

the state described in the temporal clause was different to the state of affairs as described in the main clause where the temporal clause describes a state.

To convey this concept, it is not necessary that the event or state in the temporal clause is known beforehand.

Example 22. [Context: Gardening]

B.72: Yeah. <u>Before I moved down here</u>, when I was up, uh, north in Wisconsin living with my folks, they lived on, uh, three and a half acres of land, and, uh, we started mowing that with a push mower.

A.73: Oh.

The context of this piece of conversation indicates that the speakers know vaguely about each other where they live, although there was no mention of moving house. Thus, the information given in the temporal clause is discourse-new but can be accommodated easily. Prosodically, there is almost no prominence at all in the temporal clause, the emphasis being on the main clause. The speaker is talking very fast, giving the impression that he wishes to be finished with providing the necessary background information in order to be able to get to his main point, where he considerably slows down his speech. He is, however, obviously fully aware that the listener needs the information, as he gives a further evaluation of it in the paralleled 'when' clause. The listener does not react to this information directly, but backchannels on the later main proposition.

Example 23. [Context: Credit cards]

A.1: Do you use credit cards a good bit?

B.2: I do, and I wish I didn't [laughter].

A.3: Uh.

B.4: Before I got married, uh, about the only credit cards I used were gas cards, because I didn't like carrying, you know --

A.5: #Uh-huh.#

Here, it is presupposed that the speaker got married, which is new information as it has not been mentioned before in the discourse. The information can be accommodated easily based on shared world knowledge: there is a good chance that adult strangers talking on the phone may be married. The fact that the information is new is indicated by prosodic

prominence on 'married' and by the employment of new linguistic material, i.e., 'getting married' did not occur in the previous discourse. However, the main point of the utterance is not to convey that the speaker is married, but to indicate that there has been a change in the speaker's life. Therefore, the information about marriage is given in a backgrounded clause. It is acknowledged without evaluation or comment by the listener's 'uh-huh'.

The temporal clause may also be realised by a preposition rather than a connective, possibly reducing the conveyed information to a minimum by employing anaphorical 'that', as in [Example].

Example 24. [Context: Capital Punishment]

B.74: Yes, uh-huh. That's, that's fairly recent, I don't know, how recent, but fairly recent, in the state of Texas. Before that, it was, uh, death by electrocution.

A.75: Uh-huh, wh-, which seems so awful.

Here, the anaphor points back to a state mentioned in the previous discourse, which is different to the previous state of affairs as described in the main clause. Obviously, where 'that' is used rather than a full clause, no new information can be conveyed in the temporal clause, so that the main point of the utterance is to indicate that there is a change of states. Prosodically, there is moderate stress on 'that', but the main clause is far more prominent. Note, however, that there is no stress on 'before', which would convey a notion of contrast ('before' as opposed to 'after'), pointing to *order* (Regulation) of (previously known) situations rather than Termination.

3.3. Discussion

The analysis of natural language data has shown that the information in the temporal clause need not in all cases be known beforehand, in spite of its being classified (in some accounts in the literature) as presuppositions. Thus, 'before' and 'after' cannot be said to mark common ground. However, new information can only be conveyed under certain discoursal conditions, and it is usually easily accommodated on the grounds of its relation to the previous discourse context or communal or world knowledge. For example, discourse-new information can specifically easily be accommodated if there is an obvious discourse relation (such as Elaboration) to the previous discourse, as is often the case in preposed temporal clauses. In some cases, however, the speaker uses temporal clauses to refer to information that is only *treated* as known, so that it can be viewed as being 'imputed' on the hearer. The hearer then has the choice to accept the new information explicitly or inexplicitly, to ignore it or to challenge it.

Assessing the information status of the hearer cannot be achieved in an uncontroversial way. Although the data source used for the analysis was particularly suitable for determining how much the interactants knew about each other, the problem still remains that information status is not straightforwardly mirrored by the use of linguistic expressions or prosodic prominence. Instead, some pieces of information are completely new in the discourse and still backgrounded linguistically and prosodically. But information that has been mentioned before can equally well receive prosodic emphasis and linguistic foregrounding. Thus, these devices may or may not be used to indicate information status; rather, they seem to reflect the speaker's intention to place specific emphasis on parts of the linguistic material. Emphasis can be placed on elements of the temporal clauses, but the thematic thread of the discourse is mostly carried by the main clause.

Summing up, the various kinds of concepts conveyed by 'before' and 'after' can be characterised as follows.

I. Explicit length of time. Explicit statements about the length of a time span do not require the information in the temporal clause to be known beforehand, but it needs to be inferable since it is not presented as important to the main proposition. The main point of the clause complex is either the time span itself or the proposition in the main clause which is supplemented by the information about the length of time. Listeners can challenge or evaluate the information in the temporal clause but usually do not do so, following the 'main thread' of the ongoing discourse.

II. Immediacy. Immediate succession reflects the speaker's conceptualisation of events following one after the other on one level of granularity. The event in the temporal clause may be given, inferable or new. If it is given, then the utterance anchors a 'previous' or 'next' event in time in relation to a known event. If it is inferable or new, then the speaker wishes to anchor an event s/he is talking about in time, establishing the reference time referred to as predecessor or successor 'on the spot'.

III. Causality. Where 'after' is used to express a causal relation between two events (or states), the main emphasis is on the result rather than the cause, which is reflected via the fact that the cause is packaged into a backgrounded clause. This might be one reason why 'before' cannot be used to express this concept: in that case, the result would appear in a backgrounded clause, while the cause would be foregrounded. While this structure is theoretically possible, it seems pragmatically unnatural. Most linguistic constructions expressing cause foreground the result rather than the cause, as is the case in clauses introduced by 'because'. Where causes appear in a main clause, the result is presented in a coordinated, rather than subordinated, clause, as with 'therefore', 'as a result', etc. Thus, the cause introduced by 'after' does not seem to receive the interactants' attention. It is possible that new information is introduced as a cause, but the result is more important. In the data examined in the present analysis, new information given in the temporal clause could be accommodated without problems and was not questioned by the listener. Notice that the causal relation itself is even less challengeable for the listener, since it is not expressed explicitly but needs to be inferred by the juxtaposition of two otherwise unrelated events. Accordingly, no cases were found in which the listener questioned a causal relationship implied by the employment of 'after'.

IV. Dependency. Dependency relationships between main and subordinate clauses occur whenever a precondition between events can be identified. Since the precondition can either be the proposition in the main clause or the temporal clause, either the precondition or the event that is based on it can be foregrounded. In either case, the backgrounded event may be given, new or inferable; but since the speaker focuses on the foregrounded event, the listener naturally follows their train of thought without challenging inferred information.

V. Insertion. In cases of Insertion, the event in the main clause is inserted between present and the event referred to in the temporal clause, which is expected from the previous context. If the information itself is not explicitly stated in the discourse history, it can be accommodated easily. The event in the main clause may prevent the event in the temporal clause: in 'counterfactual' instances, this is obviously the case, while in 'indeterminate' instances, the expected event may or may not take place, this becomes unimportant because of the inserted event.

VI. Regulation. In Regulation, the temporal order of two expected or known events is focussed upon. Usually, the information of both the main and the temporal clause is old or easily inferable. If not, the listener can either accommodate the presupposition or question it.

VII. Termination. Instances of Termination are indicated by duratives in the main clause; they convey that some kind of change has occurred at some point in time. The dependent clause provides the temporal information relevant to the change. It can consist of new, old, or inferable information; since it is clearly backgrounded linguistically, a congruent

listener's reaction is not to react to it at all. In the data, no listener gave any comment on a 'before'-clause indicating Termination.

In accord with previous accounts regarding subordinate clauses, it is common to all concepts conveyed by 'before' and 'after' that the situation described by the temporal clause is backgrounded, i.e., seldom focused upon in the discourse. This is reflected by a nearly consistent lack of reaction on the part of the listener with regard to the information packaged in a temporal clause, as well as a general tendency for the information in the temporal clause to be inferable on the basis of the given context or communal and world knowledge. However, the degree to which new information can be conveyed in a backgrounded temporal clause differs systematically, reflecting a continuum of inferability (or accessibility) in the discourse context. On one end of the scale, the main and temporal clauses are nearly equivalent with regard to the 'newness' of information: this is the case in Immediacy, where in some cases events are listed as happening one after the other without there necessarily being any previous knowledge with regard to either event. Similarly, in cases of Explicit length of time, Termination, Causality and Dependency the main emphasis lies on the semantic relation between the events or the expressed time span, but there is no need for the backgrounded event to be previously known to the hearer. Here, however, the focus is more clearly on the main clause. On the other end of the scale, in Insertion and Regulation the information in the temporal clause needs to be expected, i.e., either 'old' information taken from the dialogue history, or easily inferable. The two categories differ in that in Regulation, also the information in the main clause either already belongs to the common ground or is equally inferable.

It seems, then, that the information in a temporal clause should not in all cases be classified as 'presupposed', since at least in cases of Immediacy information that does not previously belong to the common ground can be conveyed straightforwardly in the temporal clause, as in 'She kissed them both before she brushed their hair' (see above). However, such extremely balanced (with respect to newness of information in the two clauses) examples turned out to be rare in the conversational examples analysed here. Overwhelmingly, people took care to present only easily inferable information even in cases of Immediacy. The following example (a case of Immediacy as indicated lexically by 'right') illustrates this point:

> *Example 25. Context: credit cards*
>
> B.74: Yeah, we've tried to do that, we've paid ours off, you know, all the way down to where we had everything down to zero and especially right <u>before I</u>, I quit work two years ago, to stay home with the kids and right, and <u>before I left</u> we had everything paid off, we were in great shape, we were putting money, you know, because we were both working,
>
> A.75: Uh-huh.

The speaker starts introducing information in a temporal clause but stops in mid-utterance to start anew. It is clear from the prosodic curve of this reformulation that the speaker now starts on a new clause in order to introduce new information, rather than continuing the temporal clause. The temporal relationship is then established only later after having made sure that the listener knows what the speaker is talking about.

These observations lead to a reconsideration of the fact that the present analysis is restricted to one particular type of discourse, namely, telephone conversation between strangers. As outlined above, this restriction has several invaluable advantages which have allowed for this kind of analysis in the first place. However, in terms of Halliday's three-fold distinction between field, tenor, and mode, it is obvious that only the field is varied at all throughout the corpus as a whole. Tenor is restricted via the fact that the interlocutors are

strangers, so that no variety of familiarity or social status and distance could be expected; the mode of conversation also remained the same. Field was varied through the relatively broad variety of topics; however, since the speakers were not supposed to invent a further topic, and naturally did not feel free to talk about something completely different while on the phone, there was some restriction here as well. A natural consequence of these observations is that speakers in this particular setting certainly do not have any reason for unfairly imputing common ground on their listener: there is no reason to suggest in a covert fashion that the other person should do something, as could be the case, for instance, in a spontaneous question from host to guest such as: "Do you want another drink before you leave?". Likewise, there is no reason to accuse the interlocutor of having done something, as could be the case in a courtroom discourse: "What did you do after you robbed the bank?" – a question that might have been asked even before the accused has pleaded guilty at all[10]. That such dialogues do in fact occur has been claimed time and again by authors, sometimes assuming unfair behavior on the part of the speaker and sometimes claiming unawareness. The following example taken from a novel[11] illustrates the phenomenon:

> "Anything you want to know before you sign?" I am using my special voice after all, for
> self-protection. He is at first puzzled, then amused. "Why? Have you got more answers
> you want to tell me?" (…) [Not much later, he signs]

In this short excerpt, the narrator suggests by using a presupposed temporal clause that his interlocutor will sign, although it is clear from the previous text that the man has not yet agreed to that. The common ground shared by both, however, is that it is expected of him to sign. However, although the context ("special voice", etc.) seems to suggest that this interpretation is correct, there is also a possible alternative. The present case is an instance of Insertion – something is inserted between the moment of speaking and an expected event. However, Insertion also allows for indeterminate or counterfactual interpretations. While a counterfactual interpretation seems far-fetched here (knowing cannot prevent signing), an indeterminate interpretation is indeed conceivable. With that analysis, it is conceivable that the narrator offers the man some information that could help him to decide whether he signs or not. – The listener's reaction, in any case, is – in contrast to the Switchboard examples – puzzlement; he does not accept the presupposition directly, nor does he question it.

Furthermore, since the interactants have no further aims apart from conversing on the phone as they are expected to do – they have only limited expectations of their own and do not wish to achieve anything, neither buy nor sell, and the like – many pragmatic phenomena that have been pointed out in the literature, such as those related to performative speech acts, do not occur at all. Thus, many possible linguistic phenomena are quite naturally ruled out by the Switchboard setting. It remains open for future analysis of language use in more natural settings to work out whether speakers indeed use linguistic devices to impute common ground on their interlocutor in a blunter way than has been identified so far. However, it is difficult to see how to evade the observer's paradox with regard to such phenomena.

4. Conclusion

The present analysis of naturally occurring spoken discourse has shown that discourse-new information can unproblematically be presented in a backgrounded temporal clause if it is easily inferable. However, the degree to which the information needs to be accessible in order to convey a particular concept differs systematically between the different concepts conveyed by 'before' and 'after'. In particular, Insertion and Regulation require high

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[10] Dan Scorpio's online essay on ‚Presupposition' (http://www.angelfire.com/nd/danscorpio/presup.html) deals in considerable detail with such 'unfair' usage of presuppositions.
[11] John le Carré, The Russia House.

accessibility of the information in the temporal clause, while Immediacy is much less restricted. Thus, 'imputing' common ground is a matter of degree, since it cannot be assumed that common ground is being imputed unfairly where the information is not really required to be known beforehand. Insertion and Regulation are therefore specifically good candidates for 'imputing' common ground since they require the events in the temporal clause to be known or expected by the discourse participants. The interactants in the Switchboard telephone scenario did not seem to make unfair use of this possibility. Further research in other text types is necessary to identify the impact of significant variation in tenor and mode.

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