The Texture of Discourse

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Towards an outline of connectivity theory

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Preface

The first book I wrote, a Dutch style manual published in 1979, ended with a reference to the Bible book Ecclesiastes: "And further, by these, my son, be admonished: of making many books there is no end; and much study is a weariness of the flesh" (King James Version). Now, after thirty years of publishing my thoughts, there are two little comments I would like to make.

No, it was not a weariness of the flesh. I enjoyed writing this book; it has deepened my sensitivity to the organization of discourse. Of course, many times I was paralyzed by a little devil on my shoulder, asking me what would be the use of adding another book to the seemingly endless list of books about discourse. I let him talk. For over fifteen years, I have known that connectivity was my topic. And this project became a mound of refuge in the watery land of academic activities.

Year after year the project was on my mind, particularly while I was driving my car from the small village where I live, to a small university town in the southern part of The Netherlands, a trip just long enough to hear two Bach cantatas or some of his preludes and fugues. Many of my ideas were absorbed in the musical sequences I got involved in. But it was not me who chose the topic; the topic always came back to me by itself.

Certainly, there were many frustrations. I read and reread dozens of books and hundreds of papers that were in some way related to the topic. Many times, I thought that all the others had done a better job, but when I started analyzing discourse myself, I encountered a great many unresolved problems. And I have to admit that I sometimes had a hard time understanding the essence or the relevance of some of the proposals that were put forward.

So, was my drive a negative one? Not at all; all the reading and studying I did proved an enduring stimulus to rethink all possible problems involved in discourse relations, starting from the insights that had proved to be fruitful. However, there are about five confessions to be made.

First, very often authors come across flaws when they are reading draft versions of their own 'inventions.' In trying to redress these flaws, new flaws arise, and the process repeats itself cyclically. Authors often are their own worst critics, aware as they are of their shortcomings. I resisted the temptation, at least in part, of taking 'the wind out of critics' sails,' by refraining from presenting a concluding chapter with a list of critical questions and the answers to them. I hope the critics will be able to find their way relatively easily in a structure that is based on special numbers which

have a certain appeal to me: two principles, a three-by-three taxonomy, seven challenges and twelve chapters. All they have to do is start with the question: Why these numbers?

Second, I did not bother with questions regarding the use of writing a book like this—I can easily live with the conclusion that this book is of no use. My interest in this enterprise has not been in its *use* but in its possible *value*, which lies in the trial of getting insight into the question what it is that makes a bunch of sentences a discourse. I know that other areas of discourse studies, such as the understanding of text, critical analysis or multimodality, have a greater appeal to students and young researchers, due to their practical relevance. But I believe that for research into these and other areas it is necessary to first know more about what it is between sentences or utterances that makes them part of a certain discourse. It is this that got me thinking about what goes on around the periods between sentences, or in the silences between utterances.

Third, I am very proud of having written this book without the support of any kind of research grant. Had I been obliged to write a prefab research proposal with a clear method and a well-defined aim, without the freedom of exploring what I wanted to explore, I would certainly have lost my enthusiasm. I did not want to work in a framework in which there had to be a result no matter what, because the project might turn out to be too risky, and fail to yield a satisfactory result. I preferred the risk of failure, without the burden of bureaucratic accountability. However, now that I am reporting on my findings, I want to thank the Department of Communication and Cognition of Tilburg University for supporting me with an infrastructure that enabled me to arrange my normal academic duties (research projects and lectures) in such a way that I could find the time and the energy needed both during and outside office hours to complete this publication.

Fourth, I really had been wanting to (re)think all the connectivity problems on my own. But I have to admit, and this is anything but a perfunctory cliché, that over many years I was deeply stimulated by the sometimes seemingly odd questions from students who attended my classes on discourse theory, and by the puzzled looks of colleagues when I tried to explain certain aspects of what I was doing. Nevertheless, the periods in which I made considerable progress were the months I spent at foreign universities, on the invitation of colleagues. It was at Sydney University, in discussions with Jim Martin, that I was challenged to write more than just a couple of papers on sentence combining, and to delineate a framework that could also be discussed in Systemic Functional Linguistics. It was at Simon Fraser University in Vancouver, in discussions with Maite Taboada, that I got insights into what I could add to Rhetorical Structure Theory. I personally think that

it was this way of exchanging information with colleagues who were looking at the issue from a different point of view that has stimulated me most.

Fifth, it has been my intention to make the book that you are about to read as well-formulated as possible, with clarifying figures, and presented in such a way that readers are offered the best possible support. However, none of this is my work alone. As English is my second language, I always feel very insecure about the best words for all the subtleties I want to express. Therefore, I am very grateful to Linda McPhee who did more than just correct the texts, and also to Hans Verhulst who has rewritten some crucial passages after he found out what exactly I wanted to say. Hans Westerbeek provided useful support for the digital aspects of word processing. My editorial assistant Brigit Kolen did more than design figures and discourse structures; she checked the entire text on inconsistencies and also carried out the ungrateful but extremely useful tasks of composing the author and subject index and checking the references. And finally, I would like to thank Benjamins Publishing House, with whom I have had an author relationship for many years, for turning the manuscript into a very handsome book, and for taking the risk of publishing it.

At the beginning of this preface I said there would be "two little comments." Well, the second comment I would like to make concerns a warning (or maybe a resigned statement by an older and wiser man) that of making books there is no end. For me, it does indeed seem that with this publication for now an end has come to my writing efforts, at least as far as this kind of scientific endeavor is concerned. I am passing the baton to younger runners. I can only hope that the readers of this study will never stop—as I never have nor ever will—to be surprised by the texture of discourse.

Jan Renkema
Spring 2009

CHAPTER 1

Introduction

Licet ipsa vitium sit ambitio
frequenter tamen causa virtutum.
(Marcus Fabius Quintilianus, *Institutio Oratoria*, 95 a.D.)
Though ambition may be a fault in itself,
it is often the mother of virtues.

1.1 The landscape of discourse studies

When Zellig Harris (1952) delineated the field of discourse studies, he identified two related aims: 1. "Continuing descriptive linguistics beyond the limits of a single sentence"; 2. "Correlating 'culture' and language (i.e., non-linguistic and linguistic behavior)." If he could see the progress made in our field up till now, it is doubtful that he would be satisfied.

It is probably essential to work through the first step—linking sentences or utterances—before moving on to the second; Harris's choice of order was no coincidence. There are now several ways to approach this first aim. For example, within SFL (Systemic Functional Linguistics) more and more attention is being paid to phenomena that occur beyond the sentence boundary. In RST (Rhetorical Structure Theory), a set of rhetorical relations has been presented with a focus on tools for analyzing discourse relationships. This approach is supported in CL (Computational Linguistics) with attempts to build reliable corpora. In D&C (Discourse and Cognition), a great deal of experimental work has been done to explore the processes involved in understanding combinations of sentences. In MDA (Multimodal Discourse Analysis), new trials are being undertaken to describe the relationships between different modes using the same approach as in the study of the relationships between sentences. However, all these approaches differ greatly: while SFL is more social and semiotic, D&C is cognitive in character; and RST is rather agnostic, where MDA is more theoretically-based. Unfortunately, contact between the different schools is lacking. Even more disappointingly, debates about different frameworks or on how to encode corpora for discourse relations that encompass analysis possibilities for all the approaches are rare.

Harris's second aim—correlating culture and language—is explored in CDA (Critical Discourse Analysis), CA (Conversation Analysis), and D&I (Discourse and Institution). However, these approaches also differ greatly, and there are heated debates on a number of basic issues. Sometimes it seems that there is no contact at all between the different approaches. However, despite the divisions within the field, the relationship between language and culture is now a flourishing domain of research in discourse studies.

The aim of this study is to give impetus to research that deals with Harris's first basic aim, understanding the links between sentences, by exploring in depth what makes a sequence of utterances or sentences a discourse. The cover term chosen to refer to linking phenomena is *connectivity*. My approach focuses on what is happening at the place of the scarcely perceptible 'inbreathe' or pause between the utterances in conversation, or the punctuation marks between sentences and clauses in written communication.

If there is anything new in my approach, then it is not a specific idea or a theoretical notion, but the eclectic combination of what I see as seminal insights, and a more accurate detailing of certain aspects of prevailing theories. Of course, eclecticism can be criticized for many reasons. I can only hope that the result is considered in relation to what I am trying to explore and explain: the texture of discourse.

1.2 Challenges for a connectivity theory

The theory is best described as presenting a kind of 'discourse grammar.' In a way, the term 'grammar' is deceptive, but it allows us to address a number of questions that have hitherto been unanswered. While regular grammar deals with the structure of sentences and the rules underlying this structure, a discourse grammar could be said to deal with the rules that govern the structure of discourse. In the same way as a sentence can be rewritten as S → NP VP, a discourse could perhaps be rewritten as D → S_1, S_2, etc. However, it is highly improbable that a limited set of rules would be able to describe all the possible connections between sentences in a discourse. The possibilities for combining sentences are infinitely more varied than those for combining constituents in a sentence. Anyone who has set students writing assignments starting from one given sentence or introduction is familiar with the sheer endless possible ways of continuing.

Yet the metaphor 'discourse grammar' is not entirely misleading, for the sentences in a discourse are most certainly linked in some way or another. Although links are not of the same nature as those between constituents in a sentence, they do exist. Even though the variety of linking possibilities is enormous, we can

begin by ascertaining that in each discourse some links will be more likely than others, and that at each point in a discourse most readers will be able to formulate how they think the discourse might continue from there on. Predictably, not just 'any sentence' will do. Some will be far more likely than others, and many will not fit at all. Compare the following examples, of which each one contains two linked sentences:

(1) Teun van Dijk wrote more than 20 books. How many exactly I do not know.
(2) Teun van Dijk wrote more than 20 books. He is the best known discourse researcher.
(3) Teun van Dijk wrote more than 20 books. But he is not running out of ideas.
(4) Teun van Dijk wrote more than 20 books. I owe you a bottle of wine.
(5) I owe you a bottle of wine, because Teun van Dijk wrote more than 20 books.
(6) Teun van Dijk wrote more than 20 books. And I do not have a driver's license.
(7) (A driver's license is said to have a negative influence on a writer's productivity. Here is an example:) Teun van Dijk wrote more than 20 books. And he does not have a driver's license.

The sentences in the first three examples are connected, but in different ways. In (1), the second sentence provides further information about a constituent in the preceding one; it says something about "more than 20 books." In (2), more information is given about another constituent in the preceding sentence: "Teun van Dijk" is referred to by means of the pronoun "he." There is most likely a causal relationship between his being the best known discourse researcher and his having written more than 20 books. In (3) we also find a continuation on the constituent "Teun van Dijk," but at the same time there is a kind of contradiction—not a factual contradiction, but a contradiction with what a reader might expect, namely that an author who wrote more than 20 books is likely to have run out of new ideas. The first three examples thus contain connections that are fairly easy to account for, connections that immediately 'make sense.'

In (4) and (5), the links at first sight appear odd. However, the combination could conceivably be coherent if the speaker has bet a bottle of wine on the number of books this author has written. If so, then in (4) the first sentence functions as a concession to the addressee, which results in a relationship of Consequence or, in (5), of Cause.[1] The combination in (6) is genuinely odd, and not only at first sight; it is a *non sequitur*, which means that these two sentences cannot be meaningfully connected to each other. It could be a combination of one line of an article in a

1. In this study, the labels of discourse relations and technical terms such as Ordination and Extension have been marked with initial capitals, in order to indicate their use as concepts in a connectivity theory.

newspaper, for instance, and another line from a completely unrelated text in the next column on the page. However, example (6) could be interpreted as a piece of discourse if "I do" is changed into "he does," as in (7): "And he does not have a driver's license." In the right context, presented in parentheses, "not having a driver's license" could be adduced to explain the author's high productivity.

Thus, the concept of connectivity has to be applied to all these examples, but it is unclear how it is to be conceived in order to be powerful enough to describe the differences. What is needed is a more articulated view of connectivity than that of discourse grammar, namely a framework for describing the different aspects of connectivity or how utterances or sentences are connected. This is the first challenge.

As can be seen in examples (4) and (5), discourse relations can occur in different forms. A "because"-sentence can occur with or without a connective, as an antecedent or a consequence, and these are only two out of many possibilities. The relationship of Cause can be formulated through a verb (A brings about B), a noun (the cause of A is B) or a preposition (B is due to A). Most discourse relations occur in a variety of forms. A theory of connectivity must contain points of departure to account for this variety in order to present regularities or to discuss the reasons why some forms occur more frequently than others—why for example a causal relation should occur as consequence rather than as an antecedent. This is the second challenge.

In some cases the same example can be labeled in different ways. In example (1), the relationship can be labeled as an Elaboration; it continues on the constituent "more than 20 books." However, the relationship can also be labeled as a kind of Contradiction: "Yet/But I do not know exactly how many." How can we account for these different functions? Does Contradiction always rely on an aspect of Elaboration, being simply a richer interpretation? Or does this variety refer to different readings? In example (3), the discourse relation also fulfills at least two functions, namely that of Contradiction ("but"), and of Concession, in which "but" has the meaning of "however." Given the fact that discourse relations can often be interpreted in more than one way, a theory of connectivity has to account for the various functions a discourse relation can have. This is the third challenge.

In the examples above, some connections are more similar than others, although similarity refers to different aspects. The first three examples contain a continuation of a constituent. In (4), there is no constituent continuation and not even a connective (such as "So") to indicate the relationship, and yet some kind of Cause can be inferred, just as in example (2). The Contradiction expressed in (3) through "But" can also be inferred in (1): "But how many exactly I do not know." This "but" is somewhat different from the counter-expectation expressed in (3). In order to describe these differences referring to various aspects we need more than a mere list of relationships; we need a kind of taxonomy like the Linnaean system

in botany or the Mendeleevian periodic table of elements in chemistry. This is the fourth challenge.

Examples (4) and (5) contain the same discourse relation, namely that of Cause. This relation not only differs in order (Cause – Effect versus Effect – Cause) but also in grammatical form: two main clauses in (4) and a clause – subclause combination in (5). However, (5) could also have been formulated in two main clauses. Is this form variety a free variety, or does it serve a special function? Of course, one would miss a generalization if this phenomenon were to be seen as a characteristic of a Cause relation and not of other discourse relations in a taxonomy. A plausible function for various relations could be that the form is determined by what the speaker wants to have in foreground. If the speaker wants to focus on certain information in one clause, then the form clause – subclause would be preferable. The form with two main clauses could have a possible function if the information in the two clauses is meant to be equally important. A theory of connectivity has to account for these possible form – function correspondences of various discourse relations. This is the fifth challenge.

In the consecutive examples above, there is some sort of gradual decline of connectivity which can be divided in three groups, based on the predictability of the continuation. The continuations in (1), (2) and (3) are more likely than those in (4) and (5), and (6) is not predictable at all. In the first three examples, the continuations contain cohesion elements: a lexical relation between "many" and "more" in (1), and the anaphor "he" in (2) and (3). Examples (4) and (5) lack such cohesion elements. Here the connectivity is a kind of coherence that can only be based on a mental activity on the part of the reader in making an inference from specific knowledge. There also seems to be a difference in predictability within the first group. Example (2), with a continuation on the subject of the first sentence, seems more 'normal' than the continuation in (1) of the adjectival information "more than." The role of connectives like "but" in (3) is not clear, but after this connective the continuation seems more plausible than in (1). Readers do have ideas about plausibility of continuations, based on reading experience and world knowledge, but it remains unclear which underlying factors predict degrees in connectivity likelihood. This is the sixth challenge.

Some relationships appear to be more difficult to process than others. In the course of the reading process that results in the labeling of a counter-expectation in example (3), an inference has to be made, i.e., that an author who has written more than 20 books might have nothing left to say. Does the necessity of this inference make this relation more difficult than the Elaboration relation in (1)? It is plausible to suppose that the difficulty of a relationship increases with the amount of world knowledge or specific knowledge that is required to be able to interpret it correctly. This would suggest that the relationship in (7)—which is 'processable'

only on the basis of some disputed knowledge about the negative relation between a writers' productivity and his or her having a driver's license—without context is more difficult to process than a relation based on a more common inference, as in (3). In applied discourse studies, judgments are needed as to how a discourse relation is appropriately formulated, with or without connectives for instance, with respect to the aim the relation is meant to fulfill in the communication. Therefore, a theory of connectivity must include a basis for evaluating the use of discourse relations in the communication process. This is the seventh challenge.

In sum, a connectivity theory has to fulfill the following seven tasks:

1. Provide a framework for describing connectivity.
2. Describe the variety of forms in which discourse relations occur.
3. Explain the various functions that discourse relations can have.
4. Construct a taxonomy of discourse relations.
5. Formulate form – function correspondences.
6. Predict at any point in a discourse what discourse relations are likely to follow or what readers can reasonably expect as a continuation.
7. Evaluate judgments on discourse relations in the communication process.

1.3 About this study

In starting this endeavor, I want to stress that I am continuing on theories and ideas that I could only superficially discuss in *Introduction to Discourse Studies* (Renkema, 2004). Amongst these are the discussions of complex sentences by 'good old grammarians' like Quirk and Greenbaum (1973), and my favorite Dutch linguist (Den Hertog, 1903 – 1904), language philosophers from the past (Wegener, 1885; Jespersen, 1924; Bühler, 1934), the dialogic approach of Bakhtin (1920 – 1924), the semiotic approach of Peirce (1958), and the stylistic approach of Spencer and Gregory (1964). Last but not least, there are the many, many attempts that have been undertaken in the last three decades or so, trying to account for links between segments in discourse, especially Harweg (1979) and Martin (1992), and studies in Rhetorical Structure Theory; for the latter approach see Taboada and Mann (2006a, 2006b).

This study mainly focuses on the first four challenges a connectivity theory must meet; the other three are discussed and illustrated with a few examples from corpus research and experimental studies. The reason for going about in this way is that exploring form – function correspondences, predictions on discourse continuations and evaluations of judgments can be studied only if the proposed Connectivity Model has been discussed and accepted as viable. In fact, the fourth challenge of constructing a taxonomy is thus the cornerstone of this study.

In Chapter 2, which is a kind of preamble and answer to the first challenge, I will first set out a framework, presenting the two principles on which the Connectivity Model is based, and then illustrate how these principles can guide a view on discourse. This framework is filled out in the three subsequent chapters. First, the formal variety: how clauses are linked in discourse. This is discussed in Chapter 3 about Conjunction. After this, the various functions of discourse relations, or the ways in which information in clauses can be linked, are dealt with in Chapter 4 on Adjunction. And third, the question as to how relations between segments function between writer and reader, is dealt with in Chapter 5 on Interjunction.

Chapters 3, 4 and 5, which present answers to the second and third challenge—describing and explaining the variety of forms and functions of discourse relations—form the run-up to the taxonomy presented in Chapter 6. The reader is kindly asked to hold questions such as: Why is a taxonomy needed? Why this one? What is the use of it? Why this terminology? etc. until Chapter 7. I know this contradicts the dialogic principle (introduced in the next chapter), which prescribes to answer plausible readers' questions as soon as possible. However, I can present my model more clearly in a design in which the proposal is clearly distinguished from possible objections or discussions about other approaches.

After Chapter 6, I will devote two chapters to comments, objections and discussion: Chapter 7 will clarify the architecture of the taxonomy, and in Chapter 8 this model will be compared with other important approaches in discussing certain major issues in the study of discourse relations.

After these comments on the proposed Connectivity Model, three other topics have to be dealt with as a preparation for the next three challenges. In analyzing discourse relations, a segmentation of the text is needed. Also, the relations have to be presented in a structure. These problems about the presentation of discourse relations are dealt with in Chapter 9. Chapter 10 presents a coding procedure as well as a procedure for dealing with the situation that occurs when different labels can be assigned to the same discourse relation; a phenomenon which seems to be more rule than exception in discourse analysis. Chapter 11 deals with problems like how to get started in analyzing discourse. In this chapter an objective of analysis is suggested: the form – function approach.

Based on the taxonomy presented in Chapter 6 and discussed in Chapters 7 and 8, and on the proposals referring to the practice of analyzing discourse relations in Chapters 9, 10 and 11, the last three challenges are now ready to at least in part be elaborated on. In Chapter 12 a start will be made with these three challenges: formulating form – function correspondences in corpus studies, showing recent examples of research into discourse continuation, and discussing discourse relations in the communication process.

Finishing this introductory chapter, four remarks need to be made. First, in analyzing discourse relations, one could believe it impossible to deal with these relationships without clear definitions. In literature, however, there are many differences in nomenclature and only a few studies present explicit definitions of discourse relations like Elaboration, Condition, Justification, etc. Most approaches give general circumscriptions which provide little more detail than an abridged dictionary entry. For my approach, it will suffice to use concepts like the Elaboration relation mentioned above, with the meaning in which they are described in the literature to which I refer. The discourse relations in the proposed Connectivity Model will be defined later on when the building blocks of a connectivity theory have been outlined. (See Sections 6.2 and 6.3, in which over a hundred examples are discussed.)

Second, in the outline of the Connectivity Model short fragments of existing discourse are used, as well as self-devised combinations of sentences or clauses (so-called 'textoids'). The fragments used here, although invented, could have occurred in a real discourse (and in fact similar examples are returned via Google). However, all the phenomena will be illustrated with one small piece of real discourse: a short text about Mother Teresa. The reason for choosing this text is that—apart from the fact that it is short—it has already received some attention in the study of discourse relations.

Third, discourse relations are supposed to occur between (combinations of) full clauses, i.e., clauses containing a finite verb. Clauses (whether main or subordinate) are seen as the basic building blocks in discourse. But why should we not take sentences or utterances as our basic building blocks? Look again at the only example with a subclause so far: textoid (5). The relationship is one between a main clause and a subclause. Of course, one could decide to ignore subclauses. However, discourse can be continued with a sentence or utterance related to a subclause alone, in this case for example with a sentence like: "Most of them were very inspiring." Of course, this is only a preliminary remark. There is much more to be said about the clause as a unit of analysis (see Section 9.1).

Fourth, I will restrict myself to written, monomodal discourse. This is for practical reasons only, as conversations or multimodal discourses are much more difficult to explore. However, the approach outlined here can, in principle, also be applied to what is going on between two turns in a conversation, in patterns of institutional communication, or in the connection between verbal, visual, acoustic and kinetic modes.

CHAPTER 2

Discourse as discursive and dialogic

"Concept" is a vague concept.
(Ludwig Wittgenstein, *Remarks on the Foundations of Mathematics*, 1956)

2.1 Discourse, texture and connectivity

It will not suffice to say that a discourse is a set of sentences or utterances (written, spoken, or in combination with other modes of communication). However, to say something more requires a widely accepted definition of this key concept. Not surprisingly, a concept as broad as *discourse* has a variety of definitions. This can easily be seen by looking up definitions presented on the Internet, where it seems that researchers are each describing their 'piece of the elephant.' To give only two citations from one basic publication (Halliday & Matthiessen, 2004): "…meaning unfolding in some particular context of situation" (page 587) and "… something that happens, in the form of talking or writing, listening or reading" (page 524).

My 'piece of the elephant' covers two essential elements in the concept of discourse which can be distilled from the etymology of 'discourse' and which parallel more or less the two aspects mentioned in the publication cited above. The word 'discourse' stems from the medieval Latin *discurrere*, which has at least two meanings: 1. 'to run on,' like a speaker who runs on about a topic; 2. 'to run to and fro,' indicating that something runs from one person to another. Discourse here is essentially language about a topic in a situation in which an addresser and an addressee are acting.

The concept of 'discourse' might not be the only one that needs to be accounted for. The title of this study also contains some terms which could not be used without further explanation. Before elaborating on 'texture,' it may be useful to say something about why 'discourse' is preferred over 'text.' These terms are often used interchangeably, or to indicate the differences between spoken and written communication. However, in my approach I would like to focus on another distinction. The term 'discourse' in 'discourse relations' will not be used in opposition to written text, nor as a cover term for interaction and spoken or written text, but will be used to refer to the ongoing aspect of spoken or written verbal communication: how utterances or sentences are linked. The term 'text' refers to the product: a transcription

or a written discourse seen as a whole. Thus, discourse is verbal communication 'online,' while text is verbal communication 'offline,' e.g., a transcript of a conversation or a written document outside its communication situation. In other words: while discourse has a dynamic character, text has a more static nature.

The word *texture* is etymologically related to 'text,' and I have chosen this word to refer to the phenomena in discourse that are the topic of this study. Texture, as the warp thread and weft of a piece of textile, does not only refer to the structure of components, but is also used to describe the character or quality of something, as in 'the texture of a piece of art' or 'the texture of life.' It is this combined meaning of 'texture'—the essence as a result of interwoven segments—that this study of discourse relations wants to explore.

The essential characteristics of discourse can only be detected by looking at its structure. To this structure I refer with the term *connectivity* as a cover term for *cohesion* and *coherence*. These last terms, however, are used in an overwhelming variety of meanings, often without making clear distinctions. In my approach, cohesion refers to those phenomena physically present in a discourse which establish its internal ties, e.g., "children" in one clause and "they" in another. Coherence refers to the results of the mental activities a reader has to process in order to derive a meaning from contiguous sentences, e.g., a causal relationship between two sentences in which the connective 'because' does not occur. So, cohesion is linking based on verbal elements in a discourse, and coherence is linking based on mental activities of a listener or reader. Or, to focus on another aspect: in cohesion the interpretation of a constituent depends on another element in the discourse; in coherence the interpretation of a constituent depends on knowledge prompted by the information in the discourse. The following examples could clarify these notions:

(1) The children went to the beach. They came home with sandy shoes.
(2) The children went to the beach. They came home with a very special conch.

Cohesion is the phenomenon that the interpretation of "They" in both sentences depends on the constituent "children." The constituent "They" would have another meaning if the first sentence of these examples were about "my neighbors." Coherence refers here to the phenomenon that readers are likely to see a causal relation in (1). This discourse relation is prompted by the information which evokes a kind of common knowledge, namely that going to the beach can also imply getting sandy shoes, etc. The information in (2) also prompts some common knowledge: that conches can be found at the beach. This knowledge makes a kind of narrative or temporal relation more plausible in (2).

However, cohesion and coherence are often not so easy to distinguish. One could say that cohesion and coherence are two sides of the same coin. The sides are different, but without each other, they are not obtainable. After all, the coherence in these examples is based on verbal elements like "beach" and "sandy shoes" or

"conch." Of course, in cases like these the interpretation of one constituent is not dependent on another in its vicinity, which was the criterion for cohesion, but there is some dependency: Try to imagine the precise meaning of "sandy shoes" in a context of a walk through muddy wood, or the meaning of "a very special conch" in the description of an elephant's ear. The constituents that prompt the common knowledge must be somehow dependent or related in discourse. This is why I prefer to use the cover term 'connectivity' for the 'whole coin,' and to make only a further distinction where it is useful, for example in dealing with the presence (cohesion) or absence (coherence) of connecting verbal elements.

2.2 First explorations

One way to get at least some insight into discourse is to see what happens if information from one clause is presented over two or more clauses. See the following examples:

(3) The children went very gladly to the beach on their free afternoon.
(4) The children went to the beach. They were very glad. It was their free afternoon.

There is a great deal in saying that a sole sentence does not communicate. A listener hearing (3) can only wait for more, or take a turn by saying: "Go on, what do you want to tell?" In (4) some elements are placed outside, so to say 'ex-posed,' from the sentence framework in (3). They have gained the status of utterance with help from certain connecting elements ("They were," "It was"). But there is more at stake than only an 'ex-position.' Presenting constituents as utterances also brings in an expository element: elaborating on "going to the beach" and explaining why the children were glad. This is the 'running on' aspect of discourse. A second difference between (3) and (4) is that (4) could function as the orientation for a story, whereas (3) as a stand-alone utterance would be too short for that function. The telling of a story presupposes a listener, and somehow that listener is more addressed in (4) than in (3). In (3), a listener is easier to imagine if a second utterance was added, for instance, "They did not think about school and stuff like that." With this added sentence, the listener's presence becomes more likely. This refers to the 'running to and fro' aspect of discourse.

Another way to take a first step in understanding what discourse is about, is by looking at very early occurrences. Consider the first human discourse in the Bible. Here are two examples, taken from the book of Genesis (in the Revised Standard Translation): Adam after seeing his wife Eve for the first time, and the start of the beginning of the conversation between Eve and the serpent.

(5) Genesis 2:23

Then the man said, "This at last is bone of my bones and flesh of my flesh; she shall be called Woman, because she was taken out of Man."

(6) Genesis 3:1b, 2

He [the serpent] said to the woman, "Did God say, 'You shall not eat of any tree of the garden?' " And the woman said to the serpent, "We may eat of the fruit of the trees of the garden."

If Adam in (5) had uttered a single sentence, for example, "This is flesh of my flesh," or "She shall be called Woman," then the term 'discourse' would have been somewhat awkward. A stand-alone sentence would merely be an announcement, like: "I name this creature Woman." In 'running on' what he wants to say, Adam presents in the first utterance a statement which explains his name-giving act in the second one, followed by an argument. So, discourse in this case refers to more than a series of utterances: it has to do with the explanatory and argumentative character made possible by the concatenation of utterances.

In example (5), Adam seems to be speaking to himself. A real addressee is absent from the formulation. Otherwise, Adam would have said: "You are at last bone of my bones …" In (6), the interlocutors are clearly present in the question – answer format. Here again, a sole utterance (a question or a statement) would not count as a discourse. Discourse in this case is constituted by 'running to and fro' between addresser and addressee.

So, these first pieces of discourse reveal two essential aspects. The first aspect, to give more than one utterance about a topic, I would like to call the *discursive principle*. The second aspect, the interaction between speaker and listener, or writer and reader, I would like to call the *dialogic principle*. These two principles will be dealt with in the next two sections, and applied to the analysis of a short discourse in Section 2.5.

2.3 The discursive principle

In discourse studies, it is commonly accepted that the content of a discourse can be viewed as a macrostructure, containing propositions that can be summarized in one or more macropropositions (see Van Dijk, 1980). The discursive principle is based on the inversion of this idea: a discourse is to be seen as an expanded macroproposition. The expansion is supposed to more or less mirror the development in children's language. A child's speech develops from utterances consisting of one, then two, then more words, to clauses, and from that point on to combining utterances, in which constituents from a preceding clause are used as stepping stones to new utterances. It is in this way that discourse proceeds: by using *intra*clausal linking phenomena *inter*clausally.

The discursive principle states that discourse relations can be seen as the same as those relationships found in a single clause (interclausal reflects intraclausal,

but not vice versa).[2] The constituents with intraclausal relations are then enlarged into full clauses holding an interclausal relation. The following examples illustrate this principle:

(7a) He told me nothing.
(b) He said that he would not come.
(c) He will attend the meeting. I just heard that from my colleague.
(d) # (…) I have many arguments against this proposal. I will only mention three. # (three arguments).

A direct object can be constructed as a constituent (7a), a dependent clause (7b), an independent clause (7c) and a paragraph, indicated by # in (7d). The discursive principle implies that relationships in discourse can be verbalized in (in)dependent clauses, but can also be compressed into smaller units like words or constituents, or expanded into larger units, such as paragraphs or even sections. Look at the following examples expressing a Cause:

(8a) Alcoholic people may die early.
(b) People who are alcoholic may die early.
(c) Alcoholism may result in early death.
(d) There is much danger in alcoholism. It can lead to early death.
(e) If people are alcoholic they may die early.
(f) Alcoholic people may face serious health problems. This will be explained below. (A paragraph or section on early death following.)

In the relation P → Q, in which "P" stands for "alcoholism" and "Q" refers to "early death," the element Q is verbalized mostly as a verb or a noun, and P is represented in a diversity of verbalizations: first as a clause constituent, the adjective in (8a), then as a restrictive relative clause in (8b). In (8c), P is verbalized as another sentence constituent, the nominalization, which could also serve as an anchor point for a continuation of Q in a clause (8d). Then, a conditional clause in (8e). And in (8f) the Q is first verbalized in the general wording "health problems," which serves as an anchor point for a whole paragraph on Q. And of course, there are more possibilities. The element P could also be verbalized as a whole paragraph,

2. It is important to note that some leading researchers in the field argue the other way round. See Matthiessen and Thompson (1987), who defend the following hypothesis: "Clause combining in grammar has evolved as a grammaticalization of the rhetorical units in discourse defined by rhetorical relations." My approach differs in two aspects: 1. Some rhetorical relations have their origin from clause relations in complex sentences; 2. The clausal relations themselves have arisen from relations between constituents in a clause. So, an adjective as in "poor (people)" can expand into a relative clause "(people) who are poor" and get a bigger expansion in a full clause: "… people. They are poor."

preceding a concluding sentence referring to Q. When seeing varieties like these, it is plausible to conceive (combinations of) clauses as enlargements developed from sentence constituents.

I would like to see this discursive principle applied only to relationships between clauses. Of course, in analyzing style or register, phenomena such as appraisal, intensification, aspects of readability and the like can be found in various segments of discourse. However, these phenomena are not interclausal but supraclausal: they are found within various clauses, not between subsequent ones. For this discussion of the discursive principle I hope to have demonstrated that interclausal relations can be seen as reflections of intraclausal relations.

One final remark would be useful about discourses containing only one sentence or utterance, like "Thank you for observing no smoking," or (mother to child): "But I told you not to nibble from the sugar!" These discourses are only ostensibly counter-examples of the discursive principle that states that a discourse is a set of sentences, originated from one sentence. Of course, expansion would be awkward for one sentence announcements or warnings like "Just painted." However, it could be useful to think of these examples as sets of only one—something Set Theory allows. And single-utterance exclamations or conclusions with a connective, such as "So, you forgot your umbrella," can be seen as connected to the situation or previous discourse. This last argument may not be convincing. If so, there seems no other solution than referring to the proverb: 'the exception proves the rule.'

2.4 The dialogic principle

In discourse studies, the term 'discourse' is frequently used as a cover term for spoken and written communication. This does not mean that there is much in common between approaches like conversation analysis, with its turn-taking model stemming from sociology, and the analysis of genres, which is more stylistically and rhetorically focused. Yet, written discourse has more in common with verbal interaction than is usually assumed. The writer has to meet, in one way or another, the needs of the reader in an informative text, or convince the reader in an argumentative text, etc. The dialogic principle refers to this audience orientation.[3]

3. The introduction of the dialogic principle is a good example of my statement in Section 1.1 that in this study it is not the separate ideas that are new, but the way in which they are combined. The notion of dialogue or interaction in written communication can be found in various and mostly separate approaches. See, for example, the work of the Russian philosopher and literary theorist Bakhtin from the beginning of the twentieth century, translated into English in 1981 as *The Dialogic Imagination*; the didactic approach of asking questions to

The dialogic principle states that written discourse is half of a verbal interaction between writer and reader. After each full stop, the reader can take the floor and may react or ask something. Seen this way, the act of writing is not only communicating a message, but is also playing a proactive role in managing readers' reactions. Below are some examples to illustrate this principle.

(9a) Miss Smith and Mr. Johnson did not attend the meeting. Miss Smith was ill and Mr. Johnson was abroad.
(b) Miss Smith and Mr. Johnson did not attend the meeting. So we could easily handle the agenda and we had a pleasant drink in the pub afterwards.

The discourse relations can be described in terms of their capacity to fulfill readers' expectations. These expectations are formed through possible questions a reader might ask after reading the first sentence, on which an answer will then be given in the second. In (9a), a likely question to be asked is: "What was the reason for their absence?" And in (9b) the relation between the two sentences can be described as an answer to the question: "What were the consequences?" Another example:

(10a) This politician, who has been living in France for the last two years, will return to his country tomorrow. It is generally expected that he will participate in the new elections.
(b) This politician, who has been living in France for the last two years, will return to his country tomorrow. Years ago he fled to France because he was accused of fraud.

In (10a), the second sentence answers the question: "What is his purpose?" In (10b), the second sentence answers the question: "Why did he live in France?"

The dialogic principle says that discourse relations in written discourse can be described in terms of answers to anticipated readers' questions. This principle does not state however which questions actually are expected. It is plausible, however, to suppose that the questions are prompted on three levels: 1. the discourse type (the superstructure); 2. the discourse topic or subtopic (the macrostructure); 3. the form or style of the discourse segment under consideration. Below are examples of questions on these three levels.

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study texts in Doblaev (1969); the suggestions on text as half of a dialogue in Roulet (1984); the approach of Hellwig (1984); Bolívar's 1986 dissertation on newspaper analysis; the monograph by Nystrand (1986) on the reciprocity between writers and readers; Van Kuppevelt (1995) on answer – question patterns; and an introduction to written discourse, based on the notion of textual interaction by Hoey (2001).

Superstructural questions include: "What happened next?" in stories; "Why should I buy this product?" in advertisements; and "Do the police already know who committed the crime?" in crime reports.

Macrostructural questions depend on our schematic knowledge of the topic. A second sentence in example (9c) could answer a question stemming from our schematic knowledge of meetings: "Was it, in that case, possible to make decisions?"

(9c) Miss Smith and Mr. Johnson did not attend the meeting. Nevertheless, we succeeded in making the necessary decisions.

The form used at a certain point in a discourse can also evoke a question. Writers can use special techniques to prompt readers' questions, for example by placing a constituent at the beginning of a sentence or by placing information in the background in a nested construction, e.g., in a relative clause. For example:

(10c) Tomorrow this politician, who has been living in France for the last two years, will return to his country. If he postpones his journey home, he may not be able to participate in the elections.

(d) Tomorrow this politician, who has been living in France for the last two years, will return to his country. In these two years he has worked very hard on his comeback.

In (10c), the order of the constituents with "Tomorrow" at the beginning focuses on the first constituent and makes the question "Why tomorrow?" more plausible. This question is answered in the second sentence. The nesting of "two years" in a relative clause makes the topic continuation of "two years" not impossible, as can be seen in (10d), but nevertheless it is less plausible.

It is important to stress here that the dialogic principle does not predict specific continuations. This principle only states that discourse relations can best be described in questions about continuation. These questions are related to discourse type, topic and form aspects.

The dialogic principle states that the reader can take the floor after each full stop. Just as in the turn-taking model the concept of 'transition-relevance place' is used, so in written communication a new concept like 'reaction-relevance place' could be used in the same way. But just as in real conversation, the writer has the opportunity to suppress this possibility, e.g., by writing "there are three arguments" and then provide these arguments in three paragraphs. In this case, the first 'reaction-relevance place' would be after these three paragraphs. And just as in real conversation, a reader can refrain from taking a turn when a sentence gives too little information to allow a reaction, by continuing reading until enough information has been given to establish a relation between the segments of the discourse.

This section will conclude with a few words on the term *dialogic*. This term is chosen instead of other possibilities like 'interactive' or 'cooperative,' because the term 'interactive' refers to real interaction, which is of course not the case in written text, and 'cooperative' in the Gricean sense refers to some sort of reader compliance. The term 'dialogic' refers to collaboration, and is much stronger than 'cooperation.' Its first syllable, 'dia' refers not to 'di' (two), but to something like 'across' or 'the other side.' So with the term *dialogue* the focus is on mutual efforts by both addresser and addressee: on behalf of the addressee, who is trying to understand the addresser's aims, and on behalf of the addresser, who is trying to take into account the addressee's expectations. The term 'dialogic' is also chosen because it refers to the process of understanding, as formulated by Bakhtin: "Any true understanding is dialogic in nature. Understanding is to utterance as one line of a dialogue is to the next. Understanding strives to match the speaker's word with a counter word."[4]

This dialogic principle is also active when writing in a diary or talking to oneself. Because there is only one person in this communication situation, it appears at first sight awkward to speak about a dialogue between interlocutors. However, in situations like these one could argue that addresser and addressee coincide.

2.5 The principles as a framework

In Figure 1 the discursive principle, the string of clauses, is symbolized by the intertwined chord.[5] The dialogic principle is symbolized by the presence of two interlocutors: an addresser and an addressee.

The discursive principle and the dialogic principle constitute a framework for the analysis of discourse relations. As an illustration of the way this framework operates, consider a specimen of discourse that has received different analyses in

4. See Voloshinov, 1929. Bakhtin is supposed to have published also under the names of his friends Voloshinov and Medvedev, due to conflicts with official Soviet literary dogma in the 1920s. The same idea of understanding via dialogue is found in an interview with Ulrich Körtner about ecclesiastic dogmas: "*Verstanden hat man etwas, wenn man es als Antwort auf eine Frage versteht.*" ("Something is understood if it has been conceived as an answer to a question.")

5. This visualization is inspired by the stimulating publication *The Thread of Discourse* (Grimes, 1972). However, as for discourse relations, matters proved to be more intricate. Hence the intertwined chord instead of a thread. This will become clear in the next three chapters.

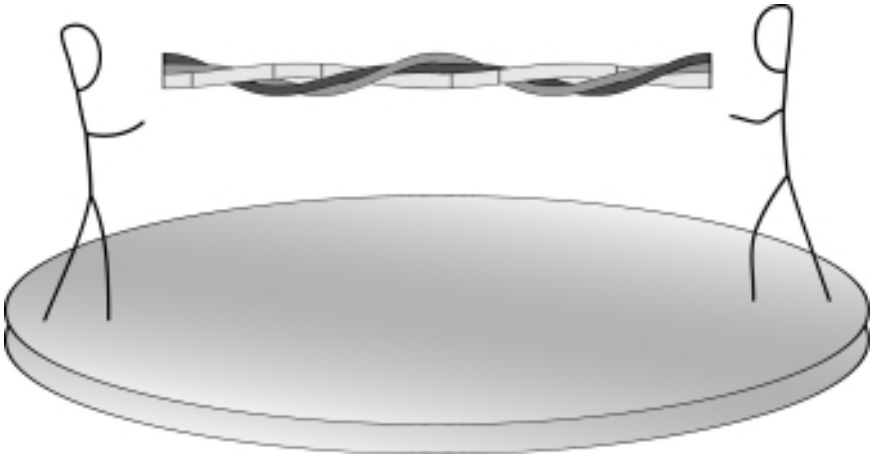

Figure 1. Discourse as discursive and dialogic verbal action

Rhetorical Structure Theory (RST).[6] It is a text about Mother Teresa from *Readers' Digest* (1986). The text is provided below, with RST segmentation:

(11) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

First, the discursive principle: discourse relations parallel constituent relations. Segments 2–3, repeated as (12a) below, could also have been formulated in one or three segments:

(12a) 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families.

(b) During a visit of a group of Americans she was asked for some advice for taking home.

(c) Once a group of Americans visited her in Calcutta. Many of them were in the teaching profession. They asked her for some advice to take home to their families.

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6. In this analysis I differ slightly from other analyses. The interested reader is referred to the three analyses on the RST site, www.sfu.ca/rst, and to Renkema (2006) for more discussion about possible analyses of this text.

Of course, the reformulation in (12b) does not present the same information, but it contains the same circumstantial relationship as between segments 2 and 3 in (12a). The main difference is that in the original version (12a), the expanded circumstance offers the narrator the possibility to add extra information about the visitors and the location of the visit. In (12c), the second segment about the teaching profession has the same relationship with "Americans" as in the original, but in expanding this information into a full segment, the narrator gives extra emphasis to this information: it may explain their request for advice. Thus, viewing discourse segments through the glasses of constituent analysis can enlighten the (internal) discourse function of discourse segments, simply by examining possible reasons for an author to put information into a constituent or a segment.

Second, the dialogic principle: discourse relations answer readers' questions. After the first segment about "unexpected advice," a plausible question could be: "Can you give an example?" Given this question, the segments 2 through 5 are related to the first segment in an Exemplification relation. The first opportunity for a new question is after this advice. Given the narrative mode, a plausible question here is: "What was the reaction of the person who asked for advice?" After this reaction, in segments 6 to 8, the remainder of the text gives an answer to the question in the reaction, and in this answer there is a subdivision between 9–10 and 11. The last segment answers the question "Why?" making this segment an Explanation to the preceding one. Thus, based on the dialogic principle, a discourse can be segmented in (clusters of) segments, indicating their relationships.

The dialogic principle is also needed to discuss possible interpretations of the function of a discourse segment. Look again at segment 7, "coming from an unmarried person," which can be labeled as a Cause.[7] This labeling however does not reveal much about how this relation can or should be understood in real communication. A Cause can function in various ways, as can be seen in the following discourse fragments:

The Cause relation in dialogic perspective

(13a) She doesn't know anything about living together. She is unmarried.
(b) She can't have mentioned her husband. She is unmarried.
(c) She can go out with any man she wants. She is unmarried.
(d) Maybe you could ask her to come along with you. She is unmarried.

A Cause can be used to relate discourse segments in various ways, including an Explanation relation (13a), an Evidence relation (13b), a Justification relation (13c) and a Motivation relation (13d). In the Mother Teresa text, it is most likely

7. This discourse relation could also be labeled as a Circumstance or a Reason. However, this does not change my line of argumentation; these other labels can also function in various ways.

that the Cause is used as an Explanation. The dialogic principle thus frames our view of discourse in the segmentation of discourse and the communicative aspects of the segments.

In this study, the discursive principle and the dialogic principle delineate the framework for analyzing how discourse is built up. The following three chapters are devoted to the way this 'building up' takes place. Using the metaphor of discourse as masonry—a segment as a building block—makes it possible to distinguish three aspects: *Conjunction* or the possible ties between building blocks of different forms—the linking of the segments (Chapter 3); *Adjunction* or the possible ways in which building blocks of different material constitute a wall—the content characteristics of the segment linkings (Chapter 4); and *Interjunction* or the possible ways in which the composition of building blocks can indicate what is outlined on the wall—the 'interactional' qualities of the segment linkings (Chapter 5).

CHAPTER 3

Conjunction

Alles Faktische schon Theorie.

(Wolfgang Goethe, *Aphorismen und Aufzeichnungen.*
From "*Wilhelm Meisters Wanderjahren*":
Betrachtungen im Sinne der Wanderer, 1829, part 567)

All that is fact is already theory.

3.1 Discourse basics

In many introductory studies into discourse, examples like the ones below are used to deal with the question: "What makes a discourse a discourse?"

(1) 1. John wants to visit his girlfriend. 2. Mr. Smith lives in a small village nearby. 3. The vacuum cleaner didn't work. 4. It is going to be a long talk.

(2) 1. John wants to visit his girlfriend. 2. Mary lives in a small village nearby. 3. The car wouldn't start. 4. It is going to be a long walk.

Example (1) is a series of non sequiturs, yet (2) is a discourse. Examples like these reveal that relations between discourse segments cannot be established if constituents in the segments are not somehow linked to constituents in other segments. Within sentences, constituents are to be interpreted in terms of their dependency on other constituents. Within discourse, at least some constituents in segments need a dependency with other constituents in other segments. Otherwise, there is no discourse at all. Example (1) does not count as a discourse because, among other reasons, the constituent "Mr. Smith" lacks an antecedent, and some other constituents, like "vacuum cleaner" or "talk," cannot be interpreted within the evoked 'picture' or mental representation of the discourse. Example (2) is a discourse because dependencies exist between constituents in different segments: "Mary" has "girlfriend" as antecedent, the concept "car" can have an interpretation based on the constituents "village" and "nearby," and the concept "walk" can be interpreted on the basis of "wouldn't start."

Only with constituents that are somehow related beyond the segment boundaries can discourse be discourse. This 'conjunction' is the condition sine qua non for discourse relations. It is only then that discourse relations can be attributed to a series of sentences. On the basis of the conjunction in (2), a number of discourse relations can be distinguished. The relation between the first sentence and the following three is a kind of Elaboration, telling more about the topic of "visiting a girlfriend." The relation between sentence 2 and sentences 3–4 can be labeled as a Clarification, giving information that makes the information about the "car" and the "walk" processable. And the relation between sentences 3 and 4 can be labeled as an Explanation, explaining why it was going to be a long walk, or as the Effect, of a broken car.

However, it is worth having a closer look at the (rhetorical) non sequitur, a discourse segment without any relation to the preceding segment(s), and the claim that discourse segments must be 'somehow related.' It can be helpful to see first what is going on in sentences which at first sight can be labeled non-sentences (see for an inspiring collection Rigotti & Rocci, 2001). Below are some examples:

(3) Peace is war.
(4) France is a hexagon.
(5) Colorless leftish ideas will have to meet certain conditions.

These non-sentences can make perfect sense. Example (3) is an oxymoron, a figure of speech based on contradictory terms like 'the edge of a round table.' In fact, this statement can be considered as a concise translation of the Latin saying *si vis pacem para bellum* ('if you want peace prepare for war'). Example (4) is a good sentence in a situation where "hexagon" is used metaphorically, roughly indicating the geographic form of France. And the variant of the famous Chomskyan sentence in (5) is conceivable in a speech of a right wing politician criticizing opponents. It would be a fair claim to say that any string of constituents in a sentence can make sense if there is enough context, and if the sentence obeys the rules of grammar. Even if the grammatical structure is disrupted, as in anacoluthons (in which the construction in a sentence suddenly shifts into another, inconsistent one), interpretation is possible in many cases. Look at the following examples:

(6) During the weekend Mary working was not allowed.
(7) Mary worked hard that the pig was grunting.

These anacoluthons can easily be interpreted if in (6) "Mary" is separated from the rest of the sentence with commas, and if in (7) "so" is added before "hard" in the context of a fairytale.

What counts for sentences also counts for discourse. It seems a fair claim that for every combination of sentences an interpretation is possible, if 1. the

conditions for rules referring to constituents are satisfied or could be easily corrected, as in anacoluthons, and 2. enough context is added.[8] For example (with * marking non sequiturs):

(8)* There is someone on the phone. The phone does not work.

(9a) I promise you to give you a hundred bucks, but I do not intend to do so.
(b)* I promise you this: yesterday I gave you a hundred bucks.

(10a)* John sold his books. Nobody bought them.
(b) John sells books. Nobody buys them.

Discourse fragment (8) is a non sequitur because the repetition of "phone" is only superficially a good reference. Here, "broken phone" actually refers wrongly to "working phone." Of course, this passage could be a 'sequitur' if it is followed by "Just to make you puzzled," but this could only be done due to the weird reference. Fragment (9a) is contradictory, but the rules for reference are obeyed, so it follows. This does not hold, however, for (9b), where the second sentence refers to "promise." This reference is wrong because the concept "promise" must be related to a future act. Example (10a) is a non sequitur too. The verb "sell" means that there must be a buyer, so the reference from "not buying" to "selling" is wrong. Yet, when using another, more general meaning of "sell," as in (10b), the combination makes sense. Here, "sells books" means "is a bookseller." That makes a reference between "buys" and "sells" possible.

In sum, discourse is based on reference between conjuncted constituents from various discourse segments. This is why we have to deal with Conjunction before we can try to get more insight into the relationships between discourse segments.

In the following three sections, three aspects of Conjunction between clauses are considered: first, the order of the segments and the contact places between them, the *Location* (3.2); second, the relative status of the linked clauses, the *Ordination* (3.3); third, the various ways clauses are linked, the *Combination* (3.4). This chapter concludes with an overview and an example of discourse analysis (3.5).

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8. Note the hedging "seems" at the beginning of this sentence. It could be argued that in some cases you need a very fancy context or a third sentence to explain the relation. Look at combinations like: "The concert was impressive. 15 million people suffer from HIV." In order to establish a relation a third sentence may be necessary, like: "The benefits will help anti-HIV research." However, even without a third sentence a relation can be established, for example a Contrast: "So harrowing, this beautiful music and those sufferings!"

3.2 Location

In studying discourse relations from the viewpoint of Location, two aspects can be distinguished. First, discourse segments can be put in different orders. We can say "X and Y" or "Y and X"; we can present evidence before or after a claim, etc. This is the *order* aspect of Location. Second, segments do not only vary in the direction in which they are linked together, but also in the places or 'glue areas' where they are fitted together. This can be called the *contact* aspect of Location.

Due to the order possibilities, the direction in which the fixing of segments takes place can vary. This is irrespective of the status of the segments, which will be discussed in Section 3.3. Here are some possibilities.

(11) Possibilities in directions of linking

$X \leftarrow Y, X \rightarrow Y; Y \rightarrow X, Y \leftarrow X; X \leftarrow Y \rightarrow Z$

The direction of the linking can be anaphoric (←) or cataphoric (→), and it is possible that a segment contains both anaphoric and cataphoric linkings, represented as: $X \leftarrow Y \rightarrow Z$.

The contact aspect of the linking, the place where the segments are glued together, has to be described with two concepts. Segments can contain constituents by which they are linked to other segments, for example "he" or "in the next section." These constituents are the 'pointers' or 'fixing points.' I would like to refer to such constituents as *phorics*, which allows us to deal with them without taking into account the direction of the linking, anaphoric or cataphoric. Segments also contain constituents to which other segments are linked. These constituents are the 'anchor positions' ("he" to "John," etc.) or the scope of the phorics. I would like to refer to such constituents as *grounds*, which allows us to abstract from the direction, antecedent or postcedent.

The phoric part of a segment, connected to the preceding or following segment, can consist of one constituent, for example "she" referring to "Mary" or other constituents like "the daughter of my neighbors, who happened to be one of my pupils at high school." It can even be a whole clause. For example, "It is a bad cold" could be linked to a preceding or following "I am not going to work."

The ground part of a segment, before or after the phoric, can consist of one or more constituents. See the following examples:

(12) Ann and Mary were glad because they had asked Bill to keep their secret.
(13) She loves him. That's why we have to wait and see.
(14) (…) The last paragraph contains three typos.
(15) (…) Summarizing, …

In (12), the phoric "their" refers to "Ann and Mary," and may include "Bill" as well. In (13), "That" refers to the clause "She loves him." A ground can also be a compound sentence or a paragraph, as in (14), or a section or whole text, as in (15).

However, in discourse, phorics can also point to constituents that are not verbalized, and even to more or less clearly expressed speech acts. See the following examples:

(16) The dealer just called. Only my brakes had to be repaired.
(17) In our village, wooden igloos are being built. They have built more strange houses here.
(18) William the Conqueror came back from a long war. At that time, war was not like war as we know it now.
(19) When do you want to leave? For I heard about a terrible road accident nearby.
(20) Children can stand more than parents think. Look at Ann and Mary.

All of these clause combinations are elliptical with respect to the ground of a phoric element. They contain, as you might call them, 'zero-grounds.' In (16), "my" refers to the non-verbalized "car," evoked by "dealer." In (17), "They" has the implied builders as ground. In (18), the ground of the phoric "that time" is the period in which the event referred to in the preceding clause took place. In (19), the phoric is the first word of the second clause, "For," and the ground is only a small part of the first clause, namely the speech act of questioning: "I ask you this, for I heard …" In (20), one could say that the conjunction is established by the phoric "Ann and Mary," referring to the ground "Children." However, on the level of speech acts there is another conjunction. One can see the first segment as the act of claiming and the second one, presenting 'examples' of the claim, as the act of presenting support for the claim. In that case the whole second segment is a phoric, referring to a non-verbalized ground—the claim, which is the speech act aspect of the first segment.

3.3 Ordination

Clauses in a discourse are not a string of segments with the same status. Some clauses are more prominent than others. The string of segments can better be conceived of as a string of beads in different sizes and various combinations (big – big, big – small, small – small – big, etc.). These relative differences in size (or weight) between the beads or the clauses is called Ordination.

If we want to link two segments, X and Y, and the segments have the same status, then the linking is symmetrical. But we can also connect segments that differ in status; then the linking is asymmetrical. Below are some ordinal possibilities. The status of the linked segment is represented in upper case and small caps: same case for symmetry and different case for asymmetry.

(21) Possibilities of Ordination

X – Y, X – ʏ, x – Y, X – ʏ – z, X – ʏ/Y – z

As in Location, in Ordination also two aspects can be distinguished: a *grammar* based Ordination, as in coordination and subordination, and a *content* based Ordination in nucleus and satellite.

First, the grammar based Ordination. Operating at sentence level, this distinction mirrors the syntactic distinction between coordination and subordination. The most specific and maybe also most basic form is the coordination due to the interactive character of communication in so-called 'conversational pairs,' like greeting – response, offer – acceptance and question – answer. Segments are linked because the second one is a reaction to the proposition made in the first, or because an invitation is followed by acceptance or refusal. This type of linking can be called *interordination*. Interordination mainly occurs in conversations (22), or in narratives with reported interactions such as in (23):

(22) You can watch a movie here tonight. Sorry, I have to study.
(23) Can you clean the dishes? he asked. I walked away.

With *coordination* is meant the symmetrical linking between main clauses, between subclauses, and also between independent or complex sentences. Via *subordination* a subclause is connected to a main clause or to another subclause at a higher level. Here are some examples:

(24) Peter had organized a short vacation but his wife would not come with him.
(25) Peter was sitting at the window. Mary was busy with her car.
(26) Peter would not come because he hated parties, and because he had no time, either.
(27) Although he did not want to say that he was ill, everyone knew it.

The first three examples present varieties of coordination: two main clauses in (24), connected via "but," two independent sentences in (25), and two subclauses in (26), connected via "and … either." In (26), subordination also occurs: two subclauses connected to a main clause. And (27) reveals subordination at two levels: the subclause "that he was ill" to the subclause "Although …" And this complex subclause is subordinated to the main clause "everyone knew it."

In Section 4.4, many examples of subordinate adverbial relations will be given, like the ones above with "because" and "Although." Therefore, the following examples are restricted to complement relations, i.e., relations expressing the same function as subject or (indirect) object. (See further Section 8.3.)

Subject complement

(28a) It is to be doubted whether Tom will attend the meeting.
(b) Tom will attend the meeting. This is fine.

Object complement

(29a) John asked me whether Tom would attend the meeting.
(b) Tom will attend the meeting. At least, I guess so.

Indirect/prepositional object complement

(30a) We have to approve what was decided in the last meeting.
(b) We only agreed about the following: The procedure will start in ten days.

These examples illustrate that subordination does not only occur between main clause and subclause (the a-examples) but also between full sentences (the b-examples). So, subordination and coordination are used here in a broader sense than the strict grammatical meaning.

There is not only grammar based Ordination, but also content based Ordination, operating on the level of information flow. Segments can differ in status with respect to their importance, their topicality in the discourse. This phenomenon can be described using the concepts *nucleus* (more important) and *satellite* (less important). In many cases the grammatical Ordination does not parallel the content Ordination. Two subsequent main clauses can have the same importance, as in X – Y, or differ in status, as in X – y or x – Y. A main clause 'X' can have a lower status than a subordinate clause (x – Y and Y – x), and a clause can even simultaneously have a lower status (than the preceding segment) and a higher status (than the following segment), e.g., X – y/Y – z. So, the nucleus – satellite distinction refers to the relative informational status of segments, irrespective of whether a segment is a main clause or subclause. The following examples demonstrate how this distinction works:

(31) Pete announced a short vacation because his wife was depressed. But he announced it with such hate that I did not believe him.
(32) Pete announced a short vacation because his wife was depressed. She had visited many therapists with no result.

Both examples contain a subordination in the first sentence with "because," but the status of this subclause is altered by the information verbalized in the second sentence. In (31), the continuation focuses on Pete. Therefore the subclause has the status of satellite. In (32), however, the subclause has the status of nucleus; it is related to two satellites, namely the preceding main clause and the following clause. The next two examples deal with main clauses only.

(33) Pete is depressed. His wife left him. He is terribly shocked.
(34) Pete is depressed. His wife left him. She could not stand a husband who always looked sad.

In the first two main clauses in (33) and (34), the relationships can be labeled as Cause and Reason respectively. This means that "His wife left him" is a satellite in (33) as a Cause for Pete's depression, but a nucleus in (34) with the Reason "because Pete is depressed."

The same segment can also simultaneously function as a nucleus and a satellite. This can be seen in the following example:

(35) Pete is depressed. His wife left him. That happened just before his birthday. Their last conversation was a turbulent one.

The second segment, "His wife left him," can be a satellite in relation to "Pete is depressed," but that same segment functions as a nucleus to which a satellite in a Time relationship is added. And to that satellite another one is added about the manner in which it took place.

So, for a decision about the status of a segment as nucleus or satellite, one needs to analyze the context in order to find cues for relative importance or topicality. This also holds for the interordination at the beginning of this section. If, for example, the conversation in (22) proceeds on the topic of study, then the denial of the offer becomes nuclear, giving the offer itself a satellite status.

3.4 Combination

Segments in a discourse can be put in various orders and fixed together at various contact areas—Location—and may have a different status—Ordination—based on their grammatical form and their content. But however big these varieties may be, there is a source of even greater variety: Combination, the way in which segments are tied together, whatever their order or contact, or whatever their grammatical form or content may be.

Combination can be realized in five ways. First, a constituent can be repeated. For example, in a discourse about sheep, it is fully imaginable that the word "sheep" will occur in various clauses. This type of linking is obvious. Second, constituents can be substituted. In a discourse about sheep, it is often easier to refer to a sheep with constituents like "she" or "this animal," because the topic "sheep" is known to the reader who will thus know what those constituents refer to. Third, constituents are related because they occur together more frequently than others. For example, "sheep" and "wool" are more likely to occur in the same discourse than "sheep" and "toothbrushes." The relation between words based on their occurrence in each others' neighborhood is called collocation. Fourth, clauses can be tied via connection with connectives like "because" or "but." Finally, clauses may be zero-linked, which means there are no linking elements at all. For example, if a person continues after "I would like to see the sheep" with "Auntie Annie's car is approaching" the continuation has to be interpreted as, for example, "Let's get going before she sees us." The continuation, however, does not contain linking elements with the preceding segment.

Starting this section, it should be noted that the five types of Combination can occur simultaneously. The following example includes the three types that occur most frequently: substitution, collocation and connection.

(36) Pete thought that only the brakes had to be repaired, but he was told that the entire car was in poor condition.

The segments in (36) are linked via "Pete" and "he"; this is substitution. The segments also contain three pairs of words in collocation, words for which it is easily conceivable that they occur in the same context: a. "only – entire" as a kind of opposition; b. "brakes – car" as a part – whole relation; c. "repair – poor condition," since "to repair" can be defined as "restore something which is in poor condition." And finally, this piece of discourse also reveals connection, via the connective "but."

In this section, the five types of combination will be further discussed. The first three types—repetition, substitution, and collocation—are often subsumed under the cover term *referential cohesion,* because the combination of clauses here is the result of the reference to the same or related concepts verbalized in discourse. The fourth type, connection, is also referred to as *relational cohesion*, because a connective characterizes the relation between the segments. The fifth type, zero-linking, is somewhat problematic because there is obviously a link, but the link is not visible. Let me take the risk to proceed on a part of the metaphor on masonry at the end of the previous chapter with clauses as the building blocks of discourse. The referential cohesion refers to the various pin-hole or screw connections between the blocks. The relational cohesion can be seen as the mortar between the blocks. And zero-linking can be regarded as just stapling blocks without connecting elements or mortar.

1. Repetition

Repetition of a lexical item is a clear and unambiguous way to create links between sentences. It definitely has its place, e.g., where substitution via, for instance, synonyms would add or subtract unnecessary connotations or other meanings.

2. Substitution

Substitution can be either grammatical or lexical. Grammatical substitution is the replacement of a constituent with a 'dummy word.' This substitution can be interpreted via the constituent with which it has a reference relation. Some examples, with the substitutions italicized:

(37) *She* certainly has changed. No, behind John. I mean Karin.
(38) Have you called the doctor? No, but I will *do*.

(39) We grew up in the 1960s. We were very idealistic *then*.
(40) An old man crossed the street. Suddenly, a gunshot hissed. *The* old man seemed to stumble.

In most cases, the substitution is a pronoun referring backwards (an anaphor), but it can also refer forwards (a cataphor), as "She" does in (37). A number of words can be used for grammatical substitution, such as the verb "do" in (38), the adverb "then" in (39) and the definite article "The" in (40) with a repetition of an indefinite constituent.

Lexical substitution is realized using synonyms or hyponyms/hyperonyms. Both are used in the following example:

(41) People who are depressed are adviced to buy roses. Flowers are said to soothe those who are feeling down.

Lexical substitution is established here by the hyponymy between "roses" and "flowers" and by the synonymy between "depressed" and "down."

3. Collocation

Collocation is a very broad concept, which could best be described as the phenomenon that 'somehow related words' occur in each other's neighborhood in discourse, as the concepts are somehow related in the 'real world.' It is realized by words sharing a semantic link that need not be based on synonymy or hypo/hyperonymy: for example "students" and "lectures," or "good" and "bad." These semantic links can be very vague. Just as in Ordination, based on grammar and content, and in substitution, which can be grammatical or lexical, two types of collocation can be distinguished. The first type, *language-based collocation*, refers to the linguistic aspects of combining discourse segments and includes three levels used to describe the combination possibilities: grammar, semantics and pragmatics. The second type, *knowledge-based collocation*, refers to the fact that in our encyclopedic knowledge about the world concepts can belong somehow together in nature, or more specifically in culture, or even more specifically in a situation.[9] First some examples of language-based collocation:

Language-based collocation: grammatical, semantic, pragmatic

(42) I sent a postcard last week. My mother was delighted.
(43) Old movies don't do it anymore. New media are more appealing.
(44) We have too many problems. The solutions are not at all clear.
(45) John came walking. Our car enemy wanted to give a signal once again.

9. In the cognitive approach to discourse, this phenomenon is studied via concepts such as schemata, frames, scripts and scenarios. See, for instance, Renkema (2004: 236–237) for an overview.

How can we account for the fact that the sentences in (42) are linked? Or, more specific: how can we account for a plausible inference that the mother got the present? A possible explanation is that the first sentence evokes a grammatical construction in which 'someone' is giving 'something' to 'someone else.' The grammatical position for 'someone else' is empty in the first sentence, and this slot is verbalized in the second sentence with "My mother." This is called *grammatical collocation*. It is based on underlying grammatical constructions—for example the fact that a passive form can evoke an actor who is mentioned in the subsequent sentence, as in: "The fire was fought for many days. The tired citizens …" Grammatical collocation is generally accompanied by other types of collocation. In (42) there is also cultural collocation, namely that receiving a present can cause delight (see below).

The examples (43) and (44) demonstrate what is called *semantic collocation*. This can be as clear as the antonymy of "old" and "new" in (43), but it is not always so obvious. It also occurs when two words that 'logically' belong more or less together, like "question – answer," "research – result," etc., appear together. This is why the sentences in (44) count as a piece of discourse: the words "problem" and "solution" are linked through a semantic aspect which can also be found in dictionaries, namely that a "solution" can be defined as an "answer to a problem."

Example (45) contains a type of collocation for which it is difficult to give a satisfying description. The conjunction between the two sentences is established by the constituents "walking" and "our," which identify "John" as a "car enemy." This lexical linking is based on some kind of knowledge that "walking" could be used as a signal to express disdain for cars. This collocation can be called *fuzzynymy* because there is no classic 'nymic' relationship or other relation establishing the link between the words. The lexical items "walker" and "car enemy" are not generally accepted synonyms or hyponyms. If they were, this would be an example of substitution (see 2 above). The relation between these words can only be interpreted on the basis of some sort of troponymy (in this case: "means of transport"). This type of fuzzy collocation is mostly used as a kind of open ended category, closely related to the cultural collocation mentioned below, when other labels are inapplicable. It is called *pragmatic collocation* because it is just the use of a word in combination with another identifying word, in this case "Our" to "John," that establishes the linking.

The second type of collocation is knowledge-based collocation. Below are some examples:

Knowledge-based collocation: natural, cultural, situational

(46) I saw people in the street. All the faces made such a tired impression to me.

(47) Red Cross helicopters were in the air continuously. The blood bank will soon be in desperate need of donors.

Knowledge-based collocations can be ordered from general to specific. The most general collocation is *natural collocation*. This type occurs when words can be linked based on our knowledge about nature, for example that fire causes smoke, or that mothers have children. This is what links the segments in (46): our knowledge about nature, namely that "people" have "faces." A more specific type is *cultural collocation*. This can be seen in (47), where "blood bank" and "donors" are linked to "Red Cross." This linking is based on our cultural knowledge about the activities of the Red Cross. The most specific type, *situational collocation,* which is based on our knowledge about situations, can also be seen in (47). One of the links is evoked by the words "desperate need" and "in the air continuously," since we know that Red Cross helicopters are normally only in the air in situations of disaster or war activities. In natural, cultural and situational collocation, the phenomenon of meronymy (a part – whole relationship, as in "people" and "faces" or "car" and "brakes") can be frequently seen.

4. Connection

The fourth type of combination, connection, is completely different from the referential cohesion in repetition, substitution or collocation, where the linking is established via constituents in different clauses, referring to the same or somehow related concepts. Connection means that the linking between clauses is established via words indicating a relation; it is relational cohesion. The 'relation words' are called connectives. To these connectives do not only belong conjunctions like "and," "although," etc., but also discourse markers like "well," "anyway," and so on.

Connectives usually have some sort of basic meaning: "and" for a Sequence, "or" for a Disjunction, etc. However, one form may have several functions, and thus can indicate different relationships, as can be seen in the following examples of "or":

(48) You may go, or you can stay for a while.
(49) You may go, or you will miss the train.
(50) You may go, or to put it more directly: you are fired.

In (48), "or" is used as a pure Disjunction, indicating a choice between two possibilities. In (49), however, "or" indicates a Negative Condition: "if you do not go …" And in (50), "or" forms the start of a Restatement of what has already been said.

Unlike repetition, substitution and collocation, connection adds its own meaning, such as Sequence, Causation, etc. This meaning can be verbalized through various connectives. A few examples will suffice to illustrate this.

Sequence

(51) Besides the fact that John is mean, he is also hateful.
(52) She is very competent. Furthermore, she is a good team player.

Causation

(53) Ann got a great job last year and now she is rich.
(54) As long as you have the time, why don't you join us?

A Sequence relationship is verbalized with words like "and" or "also," but also with "Besides" as in (51), or "Furthermore" as in (52). Causation is verbalized not only through obvious connectives like "because," but also by the connective for a sequence, like "and" in (53) and even by a temporal connective such as "As long as" in (54).

5. Zero-linkage

Segments can also be combined through zero-linking, that is to say, linking without ties. The most clear way of zero-linking can be called *elliptical linking*.

(55) My neighbor walks in the park every morning, goes for a swim every afternoon, visits the pub in the evening—has no time to visit his mother.
(56) Those ladies work out in the park every day. How about you?

Example (55) reveals two types of zero-linking. In the last segment, "has no time to visit his mother," the lacking of a constituent like "my neighbor" or "he" can be seen as zero-repetition or zero-substitution. Moreover, (55) also shows "zero-connection." There are no connectives; the linking is asyndetic. However, the linking between the segments is interpreted as if the connectives like "and" and "but" are present. In (56), the second segment has to be understood as dealing with "working out in the park." These constituents are not present via repetition, substitution or collocation.

A more confusing way of zero-linking can only be accounted for by using concepts as bridging or inference, mental activities to which the reader is invited in order to establish a link between segments. The links are, so to say, inserted or interpolated. This can be called *bridged linking*. See the following examples:

(57) My neighbor works out in the park every day. An old duffer tries to put on a show.
(58) My neighbor was brought to the emergency room. A dog was hungry.
(59) The artists held a press conference. Mr. Clafifax missed his flight.

Example (57) shows in the second segment neither a classic nymic relation nor a collocation related to "neighbor" or "working out." There is no fuzzynymy either,

based on general knowledge, for example that neighbors are usually people that can be asked for sugar, etc., or that "working out" can be "a show." Nevertheless, it is obvious that "An old duffer" links to "neighbor" and that the "working out" is labeled as a "show." It is a kind of 'evoked synonymy.' And it differs from the pragmatic collocation mentioned above in (45), because there is no cue like "Our (old duffer)," which could serve as a base for this linking.

Less clear even is the Conjunction between the segments in the other examples. How to account for the linking in (58)? The reader can bridge the clauses by assuming that the neighbor was attacked by a dog. This is bridging based on knowledge about nature, so it should be subsumed under collocation referring to our knowledge about a possible causal relation between "dogs" and "emergency." But then collocation becomes nearly too vague a concept for analyzing the combination of clauses. Examples like (59) also pose many problems. How to account here for the plausible link that "Mr. Clafifax" is an artist or a journalist who could not come to the press conference due to traveling problems, or the other way round; that he missed his flight because the conference took longer than planned? Here, only a kind of language-based collocation can be referred to, saying that a topic in one segment is likely to be continued in a following segment, which makes that there is some sort of 'evoked meronymy,' making "Mr. Clafifax" a member of the group of artists or of the implied group of journalists.

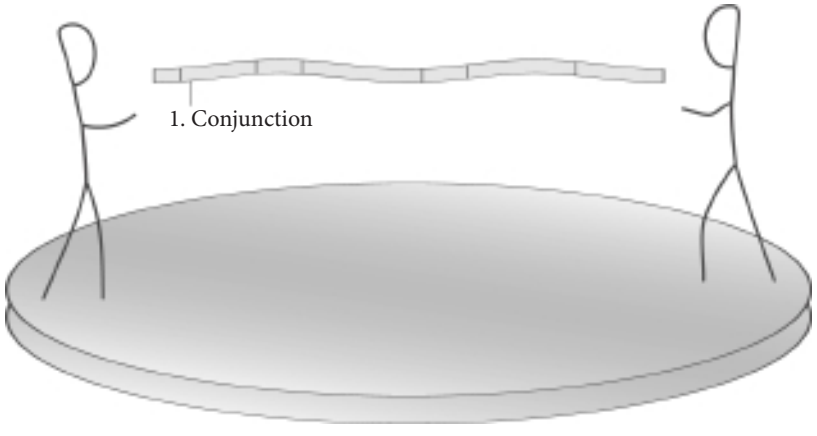
In Zero-linkage, many problems need to be solved. This concept refers to the beginning of this chapter dealing with non sequiturs, where the conclusion was reached that for every combination of sentences an interpretation seems possible, if rules for referring to constituents are not violated, and if enough context is added. Given these two conditions, it seems impossible to construct a non sequitur, or in other words: to design a textoid without (implied) cues for ties. Especially in seemingly non sequiturs we need the concept of Zero-linkage as a kind of open ended category to describe possibilities of combinations which cannot be accounted for with the other four types of Combination.

3.5 Schema and application

With segments as the building blocks of discourse, we could say—referring again to the masonry metaphor given at the end of Section 2.5 and refined in 3.4 above heading 1—that a discourse is a wall of stones, not bricks: stones of many different sizes and forms. In the conjunction of these stones into a wall, we have to deal with Location (which stone is cemented to which, and at which part), Ordination

(the relative size of the stones), and Combination (the various kinds of linkings, or mortar, between the stones).

Pursuing Figure 1 in Section 2.5 about discursive and dialogic discourse, Conjunction can be symbolized as the most central wire of the three levels of communication, the base line. The vertical lines indicate segment boundaries as they can occur in a discourse.



Location	Ordination	Combination
Order	*Grammar*	*Reference*
a X before Y	c interordination	g repetition
X after Y	d coordination	h substitution •
	e subordination	i collocation ⋆
Contact	*Content*	*Relation*
b phoric	f nucleus	j connection
ground	sattelite	
		Zero-linkage
		k elliptical linking
		l bridged linking

• substitution: grammatical (ana/cataphora, dummy words); lexical (synonymy/hyperonymy)

⋆ collocation: grammatical – semantic – pragmatic; natural – cultural – situational

Figure 2. Conjunction

Below, this schema of Conjunction analysis—containing twelve key concepts with some divisions and possible subdivisions—is applied to a text that has also been used to demonstrate the discursive and dialogic principle.

(60) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

Location

As far as the *Order*, the direction of linking, is concerned, we can see that there are at least three possibilities to reverse the order in these 11 segments. Below are the reversed orders for some segments (with minimal stylistic adaptations):

(61) 3. A group of Americans, many in the teaching profession, asked her for some advice to take home to their families, 2. when they visited her in Calcutta.

(62) 8. One of them asked, "Are you married?" 6. thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person.

(63) 9. "Yes," she replied, to their surprise. 11. "He can be very demanding." 10. "Therefore I find it hard sometimes to smile at Jesus."

One could argue that the order in (61) with segment 3 before 2 is not as good as the original in (60). In the original, the asking for advice is placed at the end, which gives a smooth continuation with the advice verbalized in the following segments. The same goes for the order in (62). When the topic of being (un)married is placed at the beginning and at the end, there is less built-in suspense, and the style becomes more explanatory than in the original version. Moreover, the distance between the question "Are you married" and the answer "Yes" is rather long. The order in (63), however, with segment 10 after 11, could be defended as slightly better than the original. The topic is about smiling at husbands, so the closing of this short story is a little bit stronger with the words "smile at Jesus."

The segments make Contact via *phoric* and *ground*. There are many clear cases, like "they" to "Americans" and "He" to "Jesus." But sometimes it is more difficult to delineate phoric and ground. Look at segments 6 and 7. Here the concept "simplistic" is explained, so this word is the phoric part pointing to the next segment in which "an unmarried person" can be seen as the ground. Sometimes more interpretations are

possible. Look at the connective "and" in segment 10: a phoric pointing backwards and forwards to two pieces of discourse (X and Y). The Y-part consists of segments 10 and 11. But how about the X-part, is that only segment 9? If so, segments 10 and 11 are to be seen as part of the answer, as an Elaboration on "Yes." Or does "and" connect this information about smiling to Jesus as a continuation of the advice about smiling to husbands in segments 4 to 6? Then segments 10 and 11 would have to be placed at a higher level in the narrative as a kind of Sequence in the story.

Ordination

In Ordination, two levels of analysis are distinguished. First, the grammatical status, coordination – subordination, and a special type of interordination for the interactive aspect of communication in pairs like question – answer, offer – refusal, etc. Second, the relative importance of a segment in the discourse, the content status, conceptualized with the nucleus – satellite distinction. The Mother Teresa text nicely shows that all these distinctions are needed.

The discourse contains two examples of *interordination*: the question – answer pair in the segments 3 and 4–6, and the question – answer pair in the segments 8 and 9 with 10 and 11.

In this discourse, seven out of eleven segments are parts of compound sentences. This means that they are in a sub- or coordination relation. These seven segments are repeated below:

(64) 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families.

(65) 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?"

(66) 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus."

Example (66) reveals a *coordination* between segments 9 and 10. In (64), segments 2 and 3 are in a *subordination* relation. In (65) there is a two-level subordination with a subclause, an embedded subclause and a main clause.

Sometimes the relation main clause – subclause mirrors the difference in information status; the nucleus – satellite relation. This is the case in (64), with an opening subclause as less important information (satellite) for the main clause (nucleus) about asking advice. This is also the case in (65), where the 'known information' about Mother Teresa as an unmarried person is presented in the most embedded (satellite) position.

However, grammatical Ordination distinctions are not enough for analyzing all the segment relations in the Mother Teresa text. Two relations between main

clauses are still to be analyzed: the relations between segments 1 and 2, and between 10 and 11. A possible label is coordination, but this label does not account for the status in the flow of information. Segment 1 functions as the central statement of the story, which makes that it has the status of a *nucleus* to which at least the segments 2–5 are related as dependent segments.[10] Also, the coordinated segments 10 and 11 are not equally important. Segment 11 is an independent main clause, but its discourse function is a *satellite*, giving a reason for the statement in segment 10. This function, by the way, also could have been fulfilled with segment 11 in the grammatical form of a subclause: "because he is very demanding."

Combination

In the Mother Teresa text we see *repetition* through "advice" in segments 1 and 3, "asked" in 3 and 8, and "smile" in segments 4, 5 and 10. *Grammatical substitution* is also frequently used: the protagonist Teresa is referred to six times with pronouns: "her," "she," "I" and "you." The antagonist, "a group of Americans" is also referred to six times through pronouns: "they," "them," "their" and "your." The final pronominal reference beyond the clause boundary is "he" in the last segment, referring to "Jesus" in segment 10. *Lexical substitution* is found in the synonymy "advice – counsel" and in hyponymy: "a group of Americans" is a specimen of "people."

In this text, all types of *collocation* can be found. *Grammatical collocation* can be seen in the relation between "coming from an (unmarried) person" in segment 7 and "counsel" in 6. This relation is based on the fact that the word "counsel" can be a part of the underlying grammatical construction in which 'some person' gives a counsel to 'someone else.' The 'someone' is verbalized in the next sentence with "from a person." There are three manifestations of the *semantic collocation*: the antonymy "unmarried – married," an interactional combination at two places where a question is answered: "asked – told," "asked – replied," and a general semantic collocation between "surprise" and "unexpected," the last word being an aspect of the meaning of "surprise." *Pragmatic collocation* can be seen in the combination of "asking advice" and "teaching profession." There is no other link between these two concepts except that they can easily be used within the same context because teachers are professionally in situations in which they give advice.[11] Thus, with some imagination it sounds sensible, based on some kind of (cultural) knowledge

10. Other analyses of the text are possible—I only want to clarify why concepts such as 'nucleus' and 'satellite' are needed.

11. Pragmatic collocation is often related to cultural collocation, see Section 3.4 under heading 3.

about teachers, that they want to take home some useful advice, in order to teach their relatives.

An example of *natural collocation*, based on our general knowledge of the world, can be found in the circumstance that "visitors of Calcutta" can "take" something back to their "home." *Cultural collocation* is established by our knowledge that "Mother Teresa," as a nun, is "unmarried" and that she has a special relation with "Jesus," and also by the fact that "Americans" can have "families," "wives" and "husbands." Moreover, our cultural knowledge says that husbands "can be very demanding." The same could be said about the relation between "simplistic" and "smile at your wives/husbands." Based on our (cultural) knowledge about marriages and advice on maintaining a good marriage, it is more or less predictable that this advice can be evaluated as simplistic. And finally, *situational collocation* is realized by the fact that "Mother Teresa" lived in "Calcutta."

The fourth procedure, *connection*, has two examples in this text: "when," linking segments 2 and 3, and "and," linking segments 10 and 11.

The fifth procedure, *Zero-linkage*, can be seen if we try to account for some linkings, which could be understood as unrealized forms of substitution, collocation and connection referring to *elliptical* or *bridged linking*. The elliptical "Yes" in segment 9 has to be understood as "Yes, I am married." Here we see evoked substitution for the words "I am married." An example of what might be called bridged or evoked collocation can be detected if we consider the relation between "unexpected (advice)" and "smile." The word "smile" has to be interpreted as the aforementioned "unexpected (advice)." However, this is not a regular collocation: it is not possible to refer to some kind of encyclopedic knowledge which makes this combination plausible. Yet, "smile" is conceivable as "unexpected advice." But in the discourse there is only the placement of the words in collocation that establishes this as an even vaguer link than the pragmatic collocation mentioned above.

The text contains five examples of what can be called evoked connection. The non-verbalized linking between segments 1 and 2 is an Exemplification or Illustration. A connective could be something like: "Here is an example." Between segments 4 and 5, the implicit connective "and" could easily be filled in. The same goes for the connective "For" at the beginning of the last segment. Another method of evoking connection is the way present participles "Thinking" and "coming" begin segments 6 and 7. They have to be linked with a causal connective, which remains implicit.

The examples of combination above are restricted to interclausal combinations, but the Mother Teresa text also contains intraclausal combinations via substitution, collocation and connection. We see intraclausal substitution, such as the "it" in segment 10, and intraclausal semantic collocation, such as the link between "many" and "group" in segment 2, and the cultural collocation between "families"

and "home" in segment 3. There is also intraclausal linking which parallels connection, such as the preposition "to (their surprise)" in segment 9, indicating the causal relation Result between "Yes" and "surprise." These relations, however, do not play a role in the way the segments are linked.

If we leave function words like articles and prepositions and the copulative verb "be" aside, most words play a role in Combination analysis. In this example of analysis, only a few words are not linked either interclausally or intraclausally. Examples missing from the foregoing analysis would be "often" in segment 1 and "sometimes" in 10 in the Mother Teresa text.

In order for information to flow (and thus to be within a discourse) segments must have links. This makes the analysis of Conjunction, the formal aspects of linking, the bedrock for the next chapters on Adjunction (that what is linked in the forms, the linking of 'in-formation') and Interjunction (how that linking refers to the interlocutors in the discourse situation).

CHAPTER 4

Adjunction

Het denken dat zijn formulering zoekt,
heeft zich altijd te wachten voor het gevaar
zich aan de te gebruiken betekenis te verkopen.
(Anton Reichling, *Het Woord*, 1935)

Thought in search of formulation,
always needs to be aware of the danger
to sell itself to the meaning of the words that are to be used.
[Author's translation]

4.1 On adding information

Adding a new discourse segment is adding a piece of information to an already written or spoken piece of information. In the most basic and abstract way, a piece of information can be conceived of as a proposition containing two entities: a concept C (like a person, a lie, a mermaid) and an event E (actions, processes, states of affairs).

A simple concept like "John" or a single event like "being ill" provides no information. Information is the result of a C+E combination: "John is ill." Of course, the utterance of just a concept or an event can function as a piece of information in a context where "John" means "There is John," or "Walk?" means "Do you want to take a walk with me?" In these cases, the single words are elliptical clauses. But normally, the combination C+E is the basic information block, which in discourse studies usually is referred to as a 'discourse proposition'. A basic clause like "John is ill" consists of one proposition. Usually clauses contain several propositions which together function as one segment in a discourse, for instance: "My brother John is terribly ill," containing also the propositions "John is my brother" and "The illness is terrible."

In traditional grammar, the two entities 'concept' and 'event' are referred to as noun and verb, but a noun can have event-like aspects, like "the walk," and a verb can have concept-like aspects, like "the talk." The distinction between concepts and events is that a concept is or can be conceived as static; something

that 'is,' whereas an event is or can be conceived as dynamic; something that 'happens.'

In the process of adding a piece of information to discourse, essentially three procedures can be distinguished: adding information to a C, to a C+E combination, or to an E. First, we can add information to a C, which means giving aspects, features, details or properties to a concept. For example:

(1) Mary went to the market. It was a small market in the suburb.
(2) Mary went to the market. She was in a good mood.

In (1), two aspects of the concept "market" are mentioned: size and place. In (2) something is added to the concept "Mary." Of course, we could also have continued the discourse by saying something about Mary's appearance, etc.

From the dialogic perspective, adding information in this way presents an answer to "Please, tell me more about concept C?" The information is essentially adnominal. This can be seen if the information from two segments is condensed into one. In (1), the information could also have been presented adjectivally or postnominally: "Mary went to a small market in the suburb." In (2), the same information could have been presented in a relative clause: "Mary, who was in a good mood, …" Adding information about a C in a new segment is called *Elaboration*.

Second, we can proceed on a C+E combination by adding C's and/or E's, for example:

(3) Mary went to the market. Or was it the mall?
(4) Mary went to the market. John went to the hairdresser.
(5) Mary went to the market. I cleaned the house.
(6) Mary went to the market, but she lost her way and ended up at the station.

In (3), another C is added to the C+E combination "going to the market." In (4), in the event frame "someone goes somewhere," another actor and place are added. In (5) the combination of an E ("went") and a C ("to the market") is generalized to the E, "doing a household activity"; this information is added with a similar E ("cleaned the house") and another actor. In (6) a related E ("lost her way") is added to an E ("went") in combination with a related C concerning place.

From the dialogic perspective, the addition of this kind of information presents an answer to "Please, go on?" or a reaction to an expectant or questioning silence of the addressee. The information is not added adnominally or adverbially, but is related in another way than by only adding to a C or only adding to an E. It is added to a C+E combination. This is called *Extension*.

Third, it is also possible to add information to an E. In referring to an event, one could add information about aspects of the event. In doing this, the event frame is filled in more precisely. The aspects of the event frame can be distinguished

with questions such as: where, when, how and why did the event occur? See the following examples:

(7) Mary went to the market. She had to go to the other side of the city.
(8) Mary went to the market. That day was the longest day of the year.
(9) Mary went to the market. It was a pleasant walk.
(10) Mary went to the market. She wanted to please her mother.

In (7), the continuation refers to the place of the event: "where?" In (8), information about the time of the event of going to the market is added: "when?" In (9), information is added about the manner aspect: "how?" And in (10) a reason is added: "why?"

From the dialogic perspective, adding event information presents an answer to "Please, tell me more about event E?" The information is essentially adverbial: it could easily have been presented in the same segment, as an adverbial phrase. In, for example, "Mary went to the market at the other side of the city to please her mother," the aspects of place and reason are incorporated. Adding information about an E in a new segment, information related to the frame in which an E occurs is called *Enhancement*.

Above, only examples are given of the three procedures in isolation. In discourse, however, they can be used simultaneously, as can be seen in the following example:

(11) Mary went to the market. Happily starting her car, she thought she could first drop in on an old friend.

The second segment elaborates on the concept "Mary" in the first one, by mentioning something about her mood: "Happily." With "starting her car," the second segment enhances the event in the first segment; by presenting information about the manner of the event "went." With "drop in on an old friend" a new event and a new goal are introduced; this information is an Extension of the first segment. Note that "happily" and "starting her car" could also be labeled as Enhancement within the second segment, as constituents referring to manner and time, but that is only within the second segment. If one wants to describe the relation between the two segments, "happily" is an Elaboration, and "starting her car" is another kind of Enhancement, namely Manner.

Just one remark ought to be made to avoid possible confusion. It concerns the notion of 'event frame,' in the Enhancement relations. The concept of frame can be conceived of as the frame of a painting. This frame delineates the event description, and this is the notion which is meant in Enhancement relations. But there is also another conceptualization of frame: namely as a bike frame with fitting points for a saddle, sprockets, wheels, etc. This metaphor can be helpful to see another way of adding information to an event. We can also provide information about the

'participants' in the event frame: the semantic roles for a subject or (indirect) object like actor, goal or recipient. This can be observed in the following examples:

(12) Mary went to the market. She bought apples and some vegetables.
(13) Mary went to the market. For me, she could not find anything nice.

The information that a person goes to the market implies a possible event: buying. The frame of this event contains a subject, an object and an indirect object, with three semantic roles, namely actor, goal and recipient: someone buys something for someone. In (12), the frame-element 'goal' is added in the second segment. In (13) the link is established by the frame element 'recipient.'

However, the relation in (12) can be better characterized as an Extension relation, adding information to the concept "Mary" and the event "going to the market." Likewise, the relation in (13) could better be conceived as an Extension relation, indicating some kind of Contrast, just as in example (6), or as a Concession in a situation where the expectation of getting a present is violated. In labeling relations, the distinctions are more clear when Enhancement relations are confined to pure adverbial relations, excluding semantic role relations.

The following overview could be helpful as a stepping stone for the detailed explanation in the next sections. (See Section 7.1 for the choice of this terminology.)

(14) Three types of Adjunction (linking information to information)

Elaboration	Adjunction to a C Linking aspects, details, features or properties to a concept C
Extension	Adjunction to a C+E Linking C's and/or E's to a clause, a C+E
Enhancement	Adjunction to an E Linking elements in the frame of an event E

4.2 Elaboration

In an Elaboration relation, the discourse continues with information about a concept. The most common ways to elaborate on a concept are by giving detailed information of aspects of quality and quantity. First some examples referring to quality:

Quality

(15) I would like to introduce a new rule. It works as a rule of thumb.
(16) He is always pestering me. There is never a day without some kind of criticism.
(17) I've done a lot of shopping. I bought all we need for the weekend.

In (15), the continuation is about a quality of the concept "rule." In (16), the concept "always" is elaborated on. In adding a quality, often more specific or concrete information is given. If that specific information is somehow in focus in the discourse, the general label 'Quality' can be too vague. This argues in favor of a label like Specification for the Elaboration on "a lot of shopping" in (17). Of course, in the practice of analyzing further subtypes of quality can be defined.

Quantity

(18) The tennis federation has published a list with 170 curses that can be fined. A lot of these curses are of French origin.

(19) Our school will organize a sports competition next month. All students can compete in basketball, soccer and gymnastics.

In (18), the Elaboration is established by giving a quantity: "A lot of." Mostly, the Quantity relation has to do with a Part – Whole relation. This type of relation occurs twice in (19): "school – all students" and "sports competition – basketball, soccer and gymnastics." Note that if in (18) the words "A lot of" were replaced by "Only a few," then a label like Restriction (see Section 4.4) would have been more suitable.

Elaboration relations can easily be confused with others. In the following examples, for instance:

(20) This company does not get support for investments in the Middle East. The government refuses funding because of the situation there.

(21) You are still too weak. You are not able to walk by yourself.

In (20), the relationship between the two sentences can be labeled as a Quality Elaboration, because "refuses funding" is a kind of Specification of "does not get support." However, this substitution by synonymy serves as a stepping stone for a Cause relation; see Section 4.4. In (21), the relationship can also be labeled as a Quality Elaboration: "not able to walk" is an aspect of "too weak," and can as such also be considered a Specification. However, the relationship Cause (see 4.4) can also be defended, as in: "Because you are too weak …" or "Because you are not able…" In many cases, ambiguities like these can be explained by locational aspects (see 3.2). The Elaboration has a ← direction with the first sentence as an antecedent, and the Cause relation can have a → or a ← direction. Sometimes it is difficult to give a specific label to the kind of Elaboration. In (21), it is hard to decide why Specification would be a better label than, for example, Exemplification. This is the reason that, in the practice of discourse analysis, the general label Elaboration is mostly not further specified.

In many cases, a good criterion for Elaboration is the type of information presented. Elaborations normally have to do with more or less predictable encyclopedic knowledge, for example, that "a rule" in (15) can be "a rule of thumb"

or that "shopping for the weekend" in (17) is a special kind of shopping. With this criterion of encyclopedic information we can make a distinction in labeling between the following examples.

(22) I looked into the kitchen. There were a lot of dishes on the sink.
(23) I looked into the kitchen. There was a strange animal sitting on the sink.

The difference between (22) and (23) lies in the predictability of aspects of the concept "kitchen." An attribute like "dishes" falls within an Elaboration, but an unexpected "strange animal" enriches the relationship into an Extension (see Section 4.3), in which the adding of non-encyclopedic information is foregrounded. In terms of collocation, one could say that the couple "kitchen – dishes" ranks much higher on a degree of plausible continuation than "kitchen – strange animal."

In short, Elaboration continues a discourse by mentioning an aspect of a concept (a thing, an entity). This continuation is based on lexical linking, mostly via substitution or collocation. Within the two categories Quality and Quantity, further subdivisions can be made. However, for many research questions into discourse relations, simply the label Elaboration will suffice.

4.3 Extension

The second way to add information is Extension. In Extension relations, a new concept and/or event is connected to a C+E combination from the discourse so far. The main difference from Elaboration (continuation of a C) and Enhancement (continuation of an E) is the fact that it is a continuation of a C+E. Extension relations can be divided into three basic categories which can be expressed with the connectives "and," "but" and "or." Here are some examples:

Sequence

(24) Yesterday's storm damaged a big part of the village. And a terrible accident on the highway caused unusually big traffic jams.
(25) (There are at least two main reasons for retirement.) It enables young employees to get better jobs. Moreover, there is more time for family life.

Contrast

(26) He says that his proposal has benefits only. But I see some serious problems.

Disjunction

(27) You can take a study break for about a year. Or you can start your apprenticeship abroad now.

The Sequence relation also covers the List or Enumeration relation in (25). And instead of Contrast, Opposition could be a good label too. For Disjunction the term Alternative could be used.

It is important to note that a single discourse relation can have various labels at different levels. See the following example:

(28) I saw a little girl playing in the street. What she was playing seemed to be an old childhood game, but she did not look very happy.

In (28), the first segment is followed by two segments which are together elaborating on the concept of "playing." Within this Elaboration, there is an Extension relation of Contrast between the second and the third segment, so the label of a segment can vary with the level of discourse being analyzed.

4.4 Enhancement

Enhancement relations are established by framing an event. Whereas Elaborations are essentially adnominal in giving more information about a concept, Enhancements are adverbial, in giving more information about an event. The division within Enhancement is based on the grammar of (complex) sentences. Four categories can be distinguished, mirroring the traditional distinction within adverbial constituents: Place, Time, Manner and Causation. The examples below consist of a combination of a main clause and a subclause, or of two independent (complex) main clauses.

Place

Within the Place Enhancement, an absolute – relative distinction can be made between Spot and Distance as in (29) and (30):

(29) Where there are grain fields now, the sea had its tides centuries ago.
(30) I dreamt that I walked through a desert. Far away, a beautiful white village with many palm trees could be seen, their tops fading into a trembling air.

Of course, there is a time aspect in (29), in "now" and "years ago," referring to a Contrast relation, but the relationship between the clauses can also be labeled as a Place (or Spot) relation. One could argue too that there is an Elaboration relation in (30), with "white village" and "palm trees" as a continuation on "desert." However, the Place relation is much more in focus via "Far away." There is also another

aspect of place, namely Direction, like "into a trembling air" in (30). But it is rather difficult to find a (Direction) relation between two clauses in discourse, or to construct one. In (30), the Direction relation is not inter- but intraclausal.

Time

Within the Time Enhancement, several distinctions can be made. Seven different Time relationships can be detected in the following two examples:

(31) Before going to the movies, we have to do some shopping, and at the end of the evening we can go to a bar till the last bus departs.
(32) Since I was a student, every time I hear his voice I have to think of my parents' home. Then I am gone and this can last for several minutes, while others are staring at me.

Example (31) contains two basic Time relations. A Time relation can be Absolute as in "at the end of the evening" or Relative as in "Before" (or "after"). Example (32) contains three Time relations. A Time relation can have its focus on the aspect of Simultaneousness, as in "Then." And while there is also an aspect of Duration, as in "for several minutes," there is also an aspect of Frequency, as in "every time." Related to Duration are the so-called Terminus Ad Quem, "till the last bus departs" in (31) and the Terminus Post Quem, "Since I was a student in (32)."

Manner

Manner Enhancement indicates the way in which an event happens. Usually it refers to aspects of the situation, mostly through information about the Circumstance in which an event takes place. Other possibilities refer to aspects of quality, mostly by Comparison, and aspects of quantity, mostly by Restriction. Here are some examples of these three types of Manner relations:

Circumstance

(33) Get it while it is hot.
(34) Years ago I had a terrible experience. I was in high school in Vancouver then.
(35) We went to the beach. We decided to take the bus.
(36) Please help me, instead of looking at me!

The Circumstance relation can also contain aspects of Time or Place as in (33) and (35), but in many cases local and temporal aspects indicate not only place and time, but also a situation, which often includes aspects of Time *and* Place as in (34). Circumstance includes the Instead or Substitute relation as in (36).

(Quality) Comparison

(37) Please do it exactly as I have told you.
(38) Employees will receive a gratuity in proportion to the years they have worked.
(39) He was the first to finish. He left the others way behind.

Under Comparison, there is not only a pure Comparison (37), but also a Proportion (38). The aspect Degree could be labeled as another type of Manner, but Degree is mainly based on comparison, hence the classification of (39) under Comparison.

(Quantity) Restriction

(40) All computers have the same price-performance ratio nowadays, at least as far as we can see.
(41) All computers have the same price-performance ratio nowadays. This conclusion, however, does not hold for computers made in Hong Kong.

Restriction (40) also includes Exception, as in (41).

Causation

Causation is a cover term for five varieties of the Causal relation P → Q. Below are two examples of each variety of Causation, one in a complex sentence and one in two sentences, and with different orders in the P and Q segments.

Cause – Effect – volition

(42) Because he is ill, he will not attend the meeting. (P – Q)
(43) He could not attend the meeting. His flight was delayed. (Q – P)

Reason – Result + volition

(44) He does not want to join us, because he hates parties. (Q – P)
(45) He wanted to please his girlfriend. So, he cancelled his business trip. (P – Q)

Means – Purpose + aim

(46) He was practicing every day, so he might win the race. (P – Q)
(47) Please, would you open the door. Here is the key. (Q – P)

Condition – Consequence – reality

(48) You can take a job after school hours, if you take care of your homework. (Q – P)
(49) You have to rinse the glasses carefully. Otherwise the beer won't foam. (P – Q)

Concessive – Outcome – implication

(50) He is a very bad basketball player, although he is very tall. (Q – P)
(51) I know that it is very unusual. Still, I would like to introduce my dog first. (P – Q)

The Cause relation indicates that an event is non-volitional. The Reason relation indicates that volition plays a role. The Means relation enriches this volition into an aim. The Condition relation places the causation in a non-reality. The so-called Otherwise relation is also ordered under the Condition relation (49), because it can be conceived as a Negative Condition. The Concessive states that the relation between P and Q counters some kind of implied meaning or connotation or expectation, or some general implication (not in the logical sense). Usually, tall persons are good at basketball. This connotation or implication is countered in the first segment of (50) via backward linking of the second segment. If someone knows that something is unusual, s/he would be less inclined to do that. This expectancy or implication is countered in the second segment of (51).

The five Causation relations could be labeled more specifically using the most prominent segment, which then has the status of nucleus in a certain discourse. The relation between the segments in (46) could be labeled as a Purpose relation, and the relation between the segments in (47) as a Means relation. However, in cases like these more surrounding discourse is needed to provide arguments for choosing one of the two possible labels.

As stated before, in analyzing discourse, sometimes more labels are applicable. A good example is the following combination of segments:

(52) When John was a student, he was often drunk.

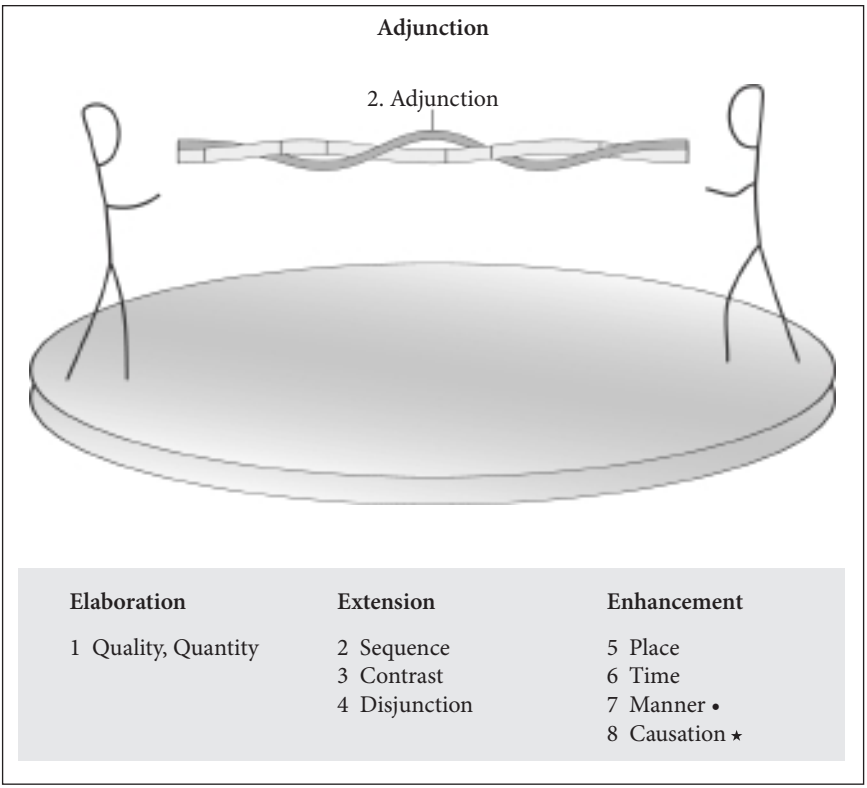
The clauses are connected via a Time relation, in mentioning a period. Of course, it could also have been a Place like in "When John was in Barcelona, …" This period or place can be interpreted as a Circumstance as well, or another relation under Manner, namely Restriction: only during the time that John was a student, or when he was in Barcelona. And the Circumstance can even be interpreted as a kind of Causation (a Cause): Students usually drink more than (older) adults. This combination of Time/Place + Manner + Causation can be labeled as a Contingency relation. So, the Contingency relation is the most general Enhancement relation in which all four aspects can play a role simultaneously.

4.5 Schema and application

In Figure 3, the level of Adjunction is added to the level of Conjunction from Section 3.5. As stated there in metaphorical terms, in Conjunction a discourse is conceived as a wall of stones that can be cemented in various order with various fixed areas (Location). These stones are of different sizes (Ordination). And the stones are linked together with different types of pen-hole linkings and/or mortar (Combination).

Adjunction looks at the linking of these stones from another point of view. Given the places, the relative sizes of the stones and the various kinds of linkings between them—the 'form' of linking—one could ask what type of linking is established with the stones. One could focus on the variety of materials that stones can be composed of, and how these materials in the various stones are related, or what is added in the shape of the stone, what is the 'in'-formation of the linking.

In the following scheme Adjunction is visualized as a wire, winding around the central wire of Conjunction. Basically, Adjunction contains three categories. Elaboration connects a segment only to a concept in the discourse so far. Extension presents new related concepts and/or events to a clause. Enhancement frames an event in a segment. The two categories with the most important subdivisions are added below.



• Manner: Circumstance, Restriction, Comparison

⋆ Causation: Cause – Effect, Reason – Result, Means – Purpose, Condition – Consequence, Concessive – Outcome

Figure 3. Adjunction

This schema of Adjunction analysis is applied below to the same specimen of discourse used in the previous chapters.

(53) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

The continuation in segment 2 and the subsequent segments 3, 4 and 5 present an Elaboration on the concept "unexpected advice," because they give an example of such advice. Segment 2 frames the event in 3, and is thus a kind of Enhancement. Candidates here are Time and Manner, but the most plausible candidate is Circumstance. There is more information given than only the time of the event; therefore Manner is the most plausible candidate for the relation between 2 and 3. After 3, the discourse continues with an answer to a question. So segments 4 and 5 can be labeled as a Sequence of 3.

After segment 5, something new starts, with the segments 6 through 9 linked by Extension, with a Sequence. Segments 6 and 7 frame the question in 8; within this Enhancement 6 is a Reason, and 7 is a Circumstance or Reason embedded in the main Reason. The answer to the question, the segments 9 through 11, has an Extension or Sequence relation with the preceding discourse. Within this Extension there is another Sequence with 10, followed by an Enhancement, the Reason in 11.

CHAPTER 5

Interjunction

Wir können nicht arbeiten, ohne zu hoffen
dass andere weiter kommen als wir.

(Max Weber, *Wissenschaft als Beruf*, 1917)

We cannot work without hoping
that others will advance further than we have.

5.1 From addresser to addressee

There are three levels on which the links in discourse can be explored. First, there is Conjunction, describing the formal aspects of segment combining. Second, there is Adjunction, describing the way information in a discourse segment is connected to other segments. Third, there is the level of Interjunction, which deals with how relations between segments function between writer and reader, or speaker and listener. Interjunction has to do with the ways an addresser joins with an addressee via discourse relations. The following scheme presents the differences between these levels.

(1) Conjunction – Adjunction – Interjunction

Conjunction	linking form to form
Adjunction	linking information to information
Interjunction	linking addresser to addressee

On the level of Interjunction, discourse relations are studied with respect to how an addresser directs him/herself to an addressee. An insightful framework describing Interjunction is the Organon model from Bühler (1934), in which "Organon" means something like 'tool.' In his approach, Bühler stated that a sound can only qualify as a linguistic sign if a three-pronged relationship exists that connects the sound to an object, to an addresser and to an addressee. Parallel to these relationships, each linguistic sign—and hence each utterance or discourse segment—has three functions simultaneously. A sign can function as:

– a *symptom*, because it expresses an intention of an addresser;
– a *symbol*, because it refers to concepts and events;
– a *signal*, because an addressee must interpret it or react to it.

Addressers can use a discourse relation for these three functions, focusing on themselves, the discourse or the addressee(s) respectively. First, they can use a discourse relationship to express their intention in 'Expressing relations.' Second, they can support the communication by 'Processing relations.' Third, they can try to influence the mental state of the addressee(s) with 'Impressing relations.'

It is important to note that these Interjunction relations always form an extra level upon the Adjunction relations mentioned in the last chapter (Elaboration, Enhancement and Extension). Here are examples of the three Interjunction possibilities based on the Enhancement relation Causation:

(2) They are almost asleep. Well, that is a sign of lack of interest.
(3) They are almost asleep. It was such a hard day.
(4) They are almost asleep. Your speech was too long.

In all three examples, Causation can be detected: a lack of interest, a hard day or a long-winded speech can all be reasons for or causes of being almost asleep. However, in (2) the cause is used to utter an opinion in an Expressing relation. In (3), the cause presents some background used in a Processing relation, in order to make the event of falling asleep more understandable. In (4), the cause (that a lengthy speech can put an audience to sleep) is used as an Impressing relation: evidence to convince the addressee that the speech was too long. These three Interjunction relations can be further subdivided.

5.2 Expressing relations

Expressing relations express a point of view, a way of looking at or thinking about a topic. They can be divided in relations presenting an outlook on how two pieces of information are connected, the Presentation relations, and in relations presenting a comment on a state of affairs, the Comment relations.

Presentation

In a Presentation relation, the addresser indicates from what viewpoint the segments are related. Some examples:

(5) The traffic congestions are still getting worse. Now the government has planned to build some bypass roads.
(6) Do you want a complete overview of our new products? Visit our website!

In (5), the relation between the two segments could be labeled as a Reason under Adjunction. But this labeling does not seem to capture the essence of this relation. Here, "building bypass roads" is presented as a solution for the problem referred to

in the first segment. The relation can be better characterized as a Solutionhood relation.

Example (6) could be described on the Adjunction level as a Condition formulated as an Interactional Pair. But here too the second segment is presented as a solution for the problem implied in de first. So, on the Interjunction level the label Solutionhood would again be preferable.[12]

Comment

Comment relations express comments on behalf of the addresser. They can be divided in those that express cognitive aspects of the addresser (Interpretation: mostly opinions) and those that express attitudinal aspects (Evaluation: mostly qualifications).

Interpretation (expressing an opinion)

(7) His new proposals will soon be implemented. This will improve our job facilities.

Evaluation (expressing a qualification)

(8) His new proposals will soon be implemented. Actually, these proposals are very bad.

In (7), an Interpretation is expressed using a Cause – Effect relation. In (8), the relation of Elaboration is used to express an Evaluation. In many cases, Expressing relations can be recognized through lexical elements expressing an opinion, or a qualification like "bad" in (8). But these elements can be hidden in other wordings, like "improve" in (7).

A special type of Comment is the final comment or closing statement, or summarizing wrap up: the Conclusion. This can be an Interpretation, an Evaluation or a mix of both:

Conclusion (presenting a final comment)

(9) (…) The arguments of this proposal are internally inconsistent. So, we need a more thorough discussion.

5.3 Processing relations

Processing relations are the relationships used to support communication. This support can be given to what is said or how it is said. First, there can be support in facilitating the content of the message, the Explanation relations. Second, there can be support by guiding the addressee through the message's 'wording,' the Metatext relations. Apart from these two there is a specific Processing relation referring not to 'what' or 'how' but to 'who,' the source of the message. This is the Quote relation or Attribution.

12. One could also opt for an Instruction relation, which can be seen as a more 'active' counterpart of the Solutionhood relation. This is further explained in Section 6.3, under heading 9.

Explanation

It is possible to distinguish two explanatory relations:

Background (improving understanding with something 'given')

(10) He was totally upset after this war documentary. You know where his father died.

Clarification (improving understanding with something 'new')

(11) I don't like this proposal. I just discovered that the financing is completely wrong.

In both relationships an Explanation is presented. The difference between these relationships can be related to the given – new axis of information in the communication situation. In a Background relation, information is given that could already have been known to the addressee, or is presented as such. In a Clarification relation, new information is added. Here too, the Interjunction relations are based on Adjunction relations, in this case the relation of Causation, either with a Cause in (10) or with a Reason in (11).

Metatext

Metatextual relations are based on Elaborations, and can be related to the three main levels in discourse, from local to global: wording, structure and content.

Restatement (improving understanding of wording)

(12) We have some doubts about your education. Or to put it more directly: we don't understand why you even applied for this job.

Organizer (improving guidance through structure)

(13) There are at least seven objections to this proposal. Three of them will be dealt with below.

Summary (improving storage of content)

(14) (…) In sum, this report provides three arguments against having children at an early age.

The Restatement or Reformulation also includes Correction and Definition. The Organizer relation contains all kinds of Advanced Organizers or Preparations, and Digression Indicators or Asides. In improving the storage of content (14), an author can present a Summary: "In sum." Of course, other cue phrases are possible to indicate these Metatext relations: "in other words" (Restatement); "I first want to say something about …" or "Just a side remark: …" (Organizer), or headings indicating a Summary, like "Abstract" and "Recapitulation."

Attribution

A special type of Processing relations is Attribution. Here the addresser wants to indicate that the addressee is not reading the words of the sender, but a message of someone else. It is an Other – Text, or a Source – Citation relation.

(15) He said: "I never want to see her again."
(16) The growth of the national income will not "diminish" next year, according to unnamed bank officials.

This Attribution relation occurs mainly in reported dialogues and newspapers. The Attribution can be a full clause as in (15), but also an elliptical one as in (16).

5.4 Impressing relations

Impressing relations are the relationships used to influence the mental state of the addressee. This influence can be related to three aspects of the mental state of the addressee(s) in the communication process: Attention, Acceptance and Action. Not all segments in a discourse are of equal importance for the aim of the addresser. Therefore an addressee has to be directed to special segments by Attention relations. In many communication situations a reader must be convinced by arguments. Therefore, an addressee has to be directed by Acceptance relations. And in other communication relations, an addressee has to be motivated to do something. For that an addressee is to be directed by Action relations.

Attention

Two Attention relations are distinguished: Climax and Antithesis. With a Climax relation, the attention of the addressee is directed to the last part of a segment in a List relation. The Antithesis relation positively directs the addressee's attention towards one of the two segments in a Contrast relation. The Attention relations are based on segment order.

Climax (focusing attention on the last element in a string of segments)

(17a) Not only tall buildings were damaged; lower buildings were also destroyed and even some avenues were demolished.
(b) Not only were some avenues demolished; lower buildings were also destroyed and even tall buildings were damaged.

In ordering segments, it is possible to place one or more segments in focus, usually (but not always) by putting them in last place. In (17a), which is possibly a description of a city after a hurricane, attention is drawn to the fact that the hurricane was so devastating that even avenues were demolished. In (17b), which is possibly a report after heavy riots, attention is drawn to the fact that even tall buildings were damaged. Attention can also be drawn to the first segment of a list via an Anticlimax. This could be the case in a listing like: "tall buildings were destroyed, lower buildings were demolished and avenues damaged."

Antithesis (positively focusing attention for one out of two possibilities)

(18a) We can try to defend common European values. However, we can also renew our trust in national identities.

(b) We can renew our trust in national identities. However, we can also try to defend common European values.

A special phenomenon can be seen in the ordering of two excluding segments. By placing a segment in the second position with a contrastive word like "but" or "however," we not only focus on the segment after the contrastive term (implementing the saying "Start listening after *but*"), but also increase positive attitude towards the content of the second segment. So, in (18a) the addressee is prompted to prefer the national identity standpoint, and in (18b) the European perspective is favored.

Acceptance

Acceptance relations usually occur in argumentative discourse and have a claim – argument structure. They are used to increase a positive attitude to or an acceptation of an opinion. Two types can be distinguished:

Evidence (increasing acceptance; objective)

(19) Our traffic department has to be reshuffled. The traffic jams are just as bad as they were years ago.

Justification (increasing acceptance; subjective)

(20) She has tried it several times. Now she can give up.

The difference lies at the axis objective – subjective (cf. given – new under the heading "Explanation" in Section 5.3). In an Evidence relation, information is given to support a statement or to increase belief in a claim. The given arguments focus on a process of reasoning in which the addresser as such is not involved. This is contrary to a Justification, in which also arguments are presented, but these arguments are related to the addresser; they are subjective. There can

be Evidence for a case (something objective) and there can be Justification for a person's behavior.

Action

If an addressee is supposed to take action, then there are two basic impediments. The addressee may lack the ability to perform the action, or the addressee may not want to perform the action. The relations Enablement and Motivation refer to these two aspects.

Enablement (increasing ability to perform an action)

(21) If you want to know more, here are my coordinates.

Motivation (increasing desire to perform an action)

(22) If you want to become rich in a few months, read this brochure.

As stated before, the relation between two segments can sometimes be labeled differently. Look again at example (52) from Section 4.4, here repeated as (23):

(23) When John was a student, he was often drunk.

The relation between the two clauses on the level of Adjunction is labeled as a Contingency relation: a combination of Time + Circumstance + Cause. On the level of Interjunction, the relation can be labeled in two ways. First, it can be seen as a Processing relation of Background, improving the understanding of the fact why John was often drunk, or Clarification (if the information that John was a student is new). Second, it can be seen as a Justification: increasing acceptance of a person's past behavior.

5.5 Schema and application

In Figure 4 below, the Interjunction is symbolized by the third wire in the same framework as Adjunction and Conjunction were symbolized in before. Taking the risk to use the masonry metaphor again (see Sections 2.5, 3.4, 3.5 and 4.5) the three wires can be distinguished as follows.[13] Conjunction refers to the technical

13. It is important to note here that every metaphor—be it discourse as a wall, or a mosaic (with clauses as fragments of pottery) or maybe more correctly put a quilt (with pieces of textile sewn together as fabric) is also to a certain extent deceptive, just as the metaphor 'discourse grammar' discussed in Section 1.2. The masonry metaphor is only used as a 'stepping stone' (also a metaphor) to describe as clearly as possible the differences between the three 'wires' or 'levels' or 'wavelengths' (also metaphors) in discourse relations.

aspects of linking stones: which stones are connected to which at what places, the relative size of the stones and the various connections (pin-hole, mortar or the lack of them). Adjunction has to do with the various materials of which the stones are made and with the way they are linked. Interjunction, however, looks at something completely different: the images that are outlined on the wall by the composition of the stones, in order to express something which has a certain impression on the person who looks at the wall.

If Conjunction refers to the formal aspects of linking clauses, and Adjunction refers to the way the in-formation in segments—what is in the forms—is linked, then Interjunction could be seen as information from another point of view, namely putting the mental state of the addressee in a specific form. This in-'formation' has three starting points: 1. expressing mental aspects of the addresser; 2. processing the communication; and 3. impressing aspects of the mental state of the addressee.

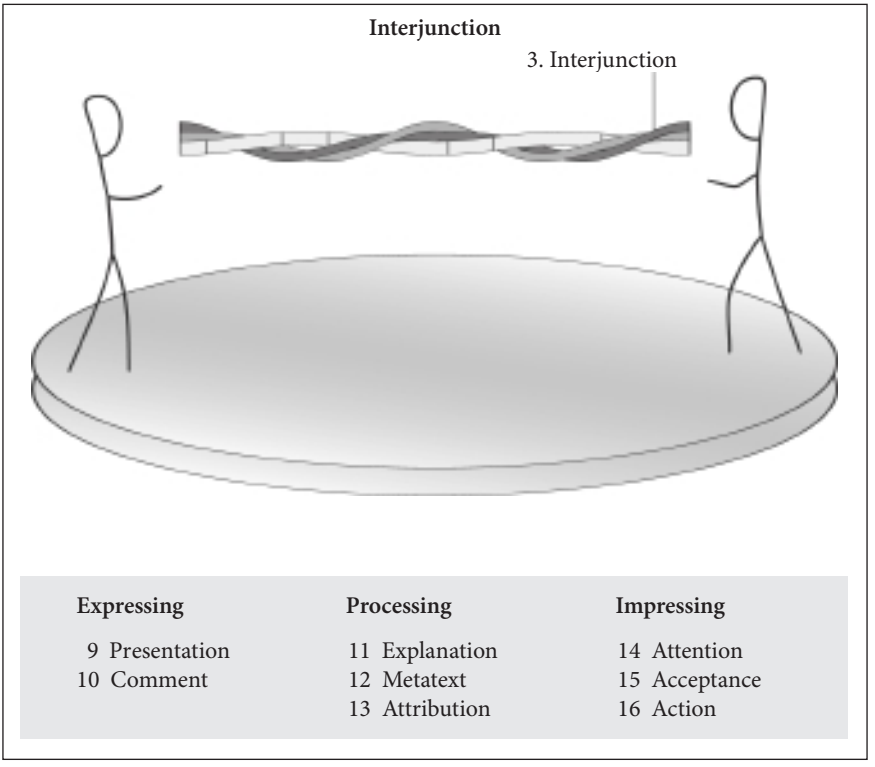


Figure 4. Interjunction

The Mother Teresa text can be used again to illustrate an analysis on the Interjunction level.

(24) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

On the level of Adjunction, there are discourse relations between all segments. This is not the case on the level of Interjunction, simply because not every segment has an aspect of Expressing, Processing or Impressing. Moreover, just as in a real dialogic discourse (such as a conversation), where an interlocutor can combine several utterances in one turn, a writer can combine several segments into a 'move' (see Section 2.4). Thus, Interjunction relations exist simultaneously with one or more Adjunction relations. This means that discourse relations may have a multilevel nature in the cases that writers need to align themselves with readers. Therefore, Interjunction relations are, essentially, surplus relations: adding an aspect of interaction to the Adjunction.

The Mother Teresa text contains two clear examples of the Processing relation Attribution by which an addresser indicates that the words are not his or her own. They are indicated by quotation marks. However, these relations are partly not between but within clauses; see segments 4 and 9. Moreover, three of the eleven segments could be interpreted as if the writer is adapting more or less to the reader. Two of them are in the following fragment:

(25) 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?"

On the level of Adjunction, segments 6 and 7 are related as a Reason to 8, with segment 7 as an embedded Circumstance, Cause or Reason related to 6. However, these segments could also be interpreted on the level of Interjunction, because with this information, the writer explains or tries to make it plausible why in segment 8 the specific question "Are you married?" is asked. This 'move' belongs to the Processing mode. Segment 7, with the given information about the marital state of Mother Teresa, has a Background relation with segment 6, and segment 6 with new information has a Clarification with 8.

In the following fragment, a segment relation can be interpreted on the level of Interjunction too:

(26) 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

The segments 10 and 11 are in a Result – Reason relation; they could have been connected with "because." This Adjunction relation can have an extra meaning on the level of Interjunction. There are two possibilities: the mode of Processing and the mode of Impressing. Segment 11 can be interpreted as providing either explanatory new or given information; in the first interpretation the discourse relation is a Clarification, in the second a Background. It could also be a Justification. With a Justification, the speaker attempts to increase acceptance of an attitude or way of behavior. Then the audience gets an answer to a more critical question: "Why is it so difficult to smile at Jesus?"

To decide between Explanation (the category under which Clarification and Background are subsumed) and Justification, one would need more information about the precise situation in which this discourse has taken place. If the group of Americans had never read a Bible before, the information in segment 11 could have been regarded as new and the relation would be a Clarification. One could also opt for the label Background (improving understanding by given information), if the group of Americans did have biblical knowledge. If the group of Americans was rather critical in its nonverbal reactions, then Justification would have been the better label. An objection to this interpretation is that it seems impossible for an addresser to justify something s/he finds hard to do. A justification usually has to do with behavior, not with the evaluation of it. Thus, the labels Clarification or Background would be preferable. As detailed information about the biblical knowledge of the audience is missing, the general label Explanation will suffice.

The polyinterpretability of this segment underlines again that sometimes more labels are possible. See further on this topic Section 10.2. The next chapter will open with a summarizing overview of the distinctions that have been made up till now.

CHAPTER 6

The Connectivity Model

A theory is a battlefield in your head.
(Haruki Murakami, *Kafka on the Shore*, 2002)

6.1 A new taxonomy of discourse relations

This chapter first presents an overview of the Connectivity Model. The three schematic overviews which conclude the preceding three chapters on Conjunction, Adjunction and Interjunction together form the base of a taxonomy of discourse relations. This model is presented on page 65.[14]

The (white) baseline or 'central chord,' with vertical lines symbolizing the segments, is the level of Conjunction; the linking of clauses via textual elements. It forms the very base of the Connectivity Model: A discourse always contains links at the level of Conjunction. In this formal linking twelve aspects (numbered from a to l) can be distinguished. The segments always appear in a specific order, have a phoric and a ground and are connected by one of the three forms of Ordination in a nucleus or satellite status. Moreover, at least one of the three forms of Reference is always present. The only two aspects of Conjunction that are optional, are the presence of a relation marker and the appearance of zero-linking. An overview of the aspects and their possibilities was given in Chapter 3.

The grey line is the level of Adjunction, adding pieces of information expressed in clauses. The black line is the level of Interjunction, on which the addresser wants to join with the addressee(s). The levels of Adjunction and Interjunction are of a different nature than the level of Conjunction. They refer to discourse relations, while Conjunction refers to the formal aspects of linking constituents beyond the segment boundaries. Moreover, Adjunction and Interjunction also differ from each other on an important aspect. One might say that between discourse

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14. The Connectivity Model (Figure 5) and the two tables with the taxonomy of the discourse relations are available in pdf via the website http://www.benjamins.com (fill in 'Z 151' in the catalog search field). These pages are meant to keep next to the book, as a convenient study aid.

segments, Adjunction relations are always present, whereas Interjunction relations are optional in the sense that an addresser not always feels the need or uses the opportunity to join with the addressee after every segment boundary. The relation between two segments in a discourse can thus always be formed by a relation on the level of Adjunction, and often also on the level of Interjunction.

After the presentation of the Connectivity Model, a table of discourse relations is presented which form the backbone of the model. Their position in the model is indicated by their place under "family," "category" or "type." See pages 66 and 67.

Some relation names have synonyms. An overview of these synonyms is presented in notes below Tables 1a and 1b.

It should be noted that the taxonomy of discourse relations only serves as a starting point. It is, together with the Connectivity Model, meant to present the most important commonly distinguished discourse relations in a hopefully insightful framework that indicates their relative positions. It can function as a first reference to help make decisions in labeling relations. Of course, expansions or refinements can be made; see Section 8.5.

After the taxonomy, this chapter proceeds with an exposition of Adjunction relations (in 6.2) and Interjunction relations (in 6.3). The exposition, based on the briefly formulated definitions in the past two chapters, gives the opportunity to present precise conceptual delineations with concepts used in other theories on discourse relations and to clarify many details. Where it is convenient and constitutive discourse relations will be clarified using the discursive and dialogic principle presented in Chapter 2. The discursive principle, the principle that discourse can be seen as an expanded clause, directs us to see discourse relations between clauses in the same way as constituent relations occurring within clauses. The dialogic principle, the principle that discourse can be seen as the addresser's part of a dialogue between interlocutors, directs us to see discourse relations also as answers to questions that can reasonably be expected to be posed by an addressee. These questions will be called 'quaestios' here, distinguishing them from real segments in discourse in the interrogative mood.

With reference to the level of Conjunction presented in Chapter 3, for each relation common characteristics will be given that could be helpful to identify similar relations and to delineate distinctive features. These characteristics can mostly be found in contact phenomena between segments (phoric and ground) and the (possible) use of prototypical connectives. Based on the first definitions given in Chapters 3 and 4, complicated examples with ambiguous connectives will be given, in order to make distinctions as clear as possible. Thus, the next two sections can function as a reference manual about how to use the labels of this taxonomy in the analysis of discourse relations.

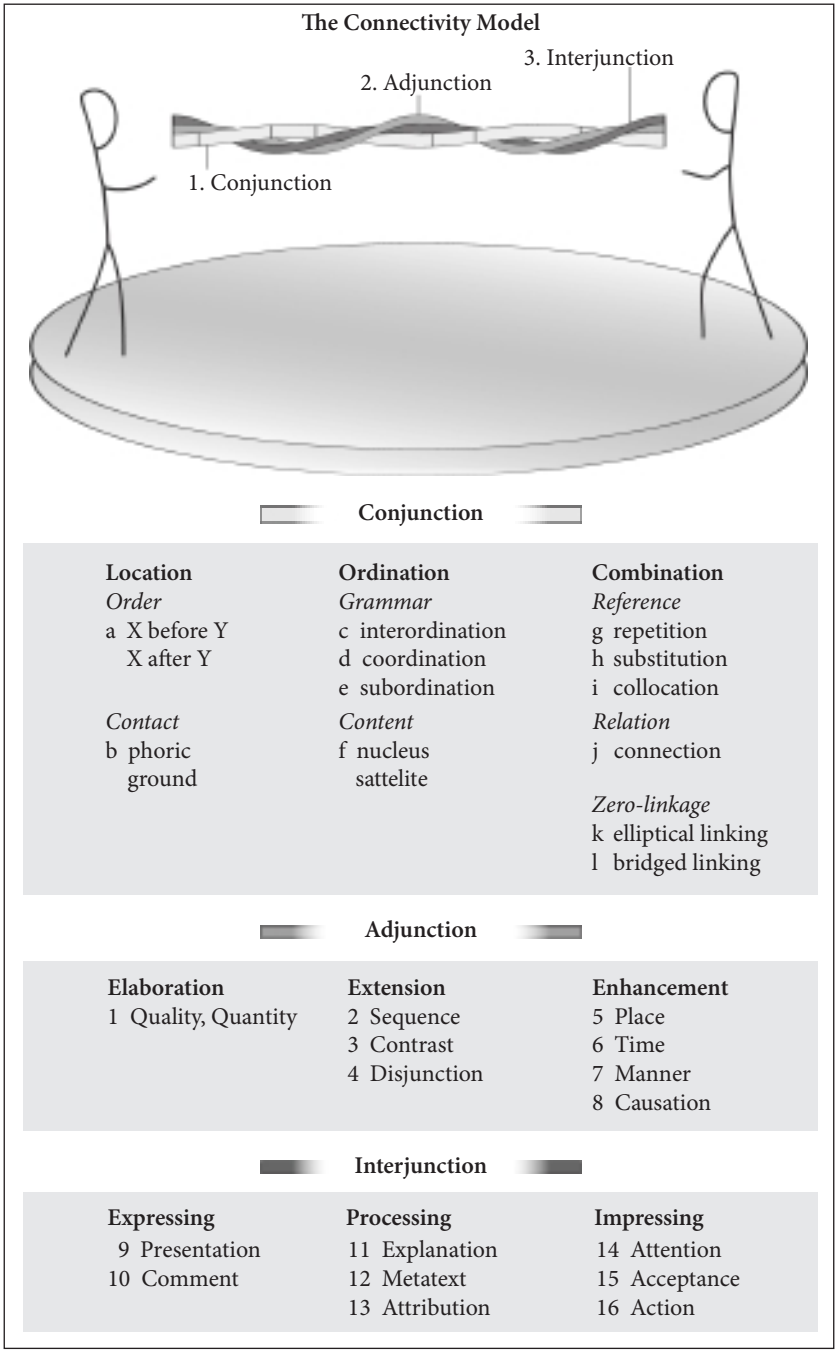

Figure 5. The Connectivity Model

Table 1a. A taxonomy of discourse relations: Adjunction

			Adjunction	
Family	**Category**		**Type**	**Subtype**
Elaboration				
	1	Quality, Quantity	Specification	Object – Attribute
			Part – Whole	Set – Member
				Process – Step
				Abstract – Instance[i]
Extension				
	2	Sequence[ii]	Time Sequence	Narration
				Continuation
				Reverted Sequence
			Interactional Pair	
			List[iii]	
	3	Contrast[iv]		
	4	Disjunction[v]		
Enhancement				
	5	Place[vi]	Spot	
			Distance	
	6	Time	Absolute	
			Relative	
			Simultaneous	
			Duration	Terminus ad / post quem
			Frequency	
	7	Manner	Circumstance	Instead[vii]
			Comparison	Analogy
				Proportion
				Degree: Degree Indicating Cause
			Restriction	Exception
	8	Causation	Cause – Effect	
			Reason – Result	
			Means – Purpose	
			Condition – Consequence	Negative Condition: Otherwise
			Concessive – Outcome[viii]	

Note: Some discourse relations have synonyms. They are listed here: [i] General–Specific; [ii] Addition, Joint; [iii] Enumeration; [iv] Opposition; [v] Alternative; [vi] Location; [vii] Substitute; [viii] Concession, Admission, Contrastive Cause – Consequence, Negative Causation, Denied Implication.

Table 1b. A taxonomy of discourse relations: Interjunction

Interjunction				
Family	**Category**		**Type**	**Subtype**
Expressing				
	9	Presentation	Solutionhood[i]	
	10	Comment	Interpretation	Generalization
			Evaluation	
			Conclusion	
Processing				
	11	Explanation	Background	
			Clarification	Exemplification
				Illustration
	12	Metatext	Restatement[ii]	Correction
				Definition
			Organizer	Advanced Organizer: Heading
				Orientation[iii]
				Digression Indicator[iv]
			Summary	
	13	Attribution[v]	Citation	Indirect Citation
				Anonymous
				General Source
			Thought Incorporation	
Impressing				
	14	Attention	Climax	
			Antithesis	
	15	Acceptance	Evidence	
			Justification	
	16	Action	Enablement	
			Motivation	

Note: The synonyms of Interjunction relations are listed here: [i] Problem–Solution; [ii] Reformulation; [iii] Preparation; [iv] Aside, Topic Shift; [v] Other–Text, Source Citation, Quote relation.

Note: In this overview, three relations are placed after a colon (":"); these are subsubtypes. A Degree Indicating Cause (Table 1a) is a subsubtype of Degree, an Otherwise relation is a subsubtype of Negative Condition, and a Heading (Table 1b) is a subsubtype of Advanced Organizer.

6.2 Adjunction relations, an overview

1. Elaboration

Elaboration is the most open and vague family of discourse relations. In an Elaboration relation, information about a concept in the discourse so far is added. It is also the most frequent discourse relation, since adding aspects, details, features or properties of a concept is probably the easiest way of linking. From a discursive point of view, an Elaboration is the expansion of an adnominal constituent—an adjective, a postmodifier or a relative clause—into a subsequent segment. This means that a segment with the label Elaboration can in principal be condensed into an adnominal constituent. From a dialogic point of view, the Elaboration segment can be seen as an answer to the quaestio "Please, tell me more about concept c?"

On the level of Conjunction, a segment tends to be combined with a preceding one via Referential Combination, particularly by "nymic" relations like synonymy or hypo/hyperonymy, referring to a Quality relation, or meronymy, referring to a Quantity relation. As connectives relative pronouns or demonstratives are used in combination with repetition, substitution and/or collocation. The following examples show characteristics which were not demonstrated in the examples presented in Section 4.2. Possible subtypes within the types Specification (Quality) and Part – Whole (Quantity) are also indicated by an initial capital. Below only the most important ones are presented. Subtypes such as Modification (of a concept) are not dealt with.

A rather common Specification is the Object – Attribute relation, specifying whatever an addresser wants to add about a concept:

(1a) The pilot made many mistakes, which were not recorded by the flight simulator.
(b) The pilot made many mistakes, which was not recorded by the flight simulator.

These examples also show that the concept to which something is attributed can consist of more than one constituent. In (1a), the ground for the connective "which" is "mistakes." In (1b), the ground is the whole clause, condensed to one concept, namely the fact that the pilot made many mistakes. Other phorics than "which" are "recorded," collocating with "mistakes," and "flight simulator," collocating with "pilot" and "mistakes."

A Specification relation can easily be confused with a Definition, a subtype of Restatement, one of the Metatext relations. See the following example:

(2) Another development has to be mentioned. There is a tendency to wait before having children.

Example (2) presents a Specification, not a Definition. A Definition relation can best be confined to a circumscription which could be placed in a dictionary or encyclopedia, answering the quaestio "What is the meaning of concept c?" The Definition as a Metatext is not on the level of the information flow; it is a kind

of Restatement (see below under heading 12). A Specification as in (2) answers a quaestio like: "Please make concept c less vague?" or in this case: "Please specify the concept 'another'?"

To the quantitative Part – Whole relations also belong Set – Member and Process – Step relations. See the following examples:

(3) Many students are sitting in the schoolyard. Mary is among them.
(4) They decided to clean the house today. The kitchen was first on the list.

Another Part – Whole relation is the Abstract – Instance relation as a quantitative counterpart of the qualitative type, the Specification relation:

(5) Many developments have to be mentioned. One is the tendency to wait before having children.

Example (5) differs slightly from the Specification relation in (2), in specifying one instance out of a set: "the tendency …" is an instantiation or specific example of the abstract concept "many developments." In cases like these, confusion can arise with the Explanation relation Exemplification on the Interjunction level; see below under heading 11. This label, however, can best be reserved for the relation in which, on the basis of an Elaboration relation, an example is given in order to make the processing of information more easy. In example (2), the Abstract – Instance relation seems more prominent than the Example aspect.

Another confusing aspect refers to the two concepts Specification and Generalization; while the first is subsumed under Elaboration, the latter is not. Compare the following examples.

(6a) Mary is sitting in the school yard. Her class usually sits there after school.
(b) Mary is sitting in the school yard. So, her class will have left the building by now.

The two segments in (6a) are connected by a meronymic relation: the phoric "Her class" forms a set related to the member "Mary" as a ground. This makes this relation a Part – Whole Elaboration. Between the two segments in (6b), the same meronymic relation exists. However, the relation is one of Causation here: Because someone is sitting in the school yard, the conclusion is drawn that her whole class is free. A reasoning from specific to general, the Generalization, is essentially a Comment, and is hence placed as a subtype under Interpretation; see below under heading 10.

In fact, the Elaboration relation is such an open family that this label is often, incorrectly, used as a kind of underspecification. Here is just one example.

(7a) My holiday was in May. I made an ecological tour in Norway.
(b) My holiday was bad. It was raining day after day.

In (7a), analysts would easily agree that there is some Elaboration relation: an Object – Attribute relation specifying the concept "holiday." One could argue that in (7b) the concept "bad" is specified, so here the label Elaboration would also

characterize the relation. However, the relation in (7b) can also be interpreted as a Cause, in which an explanation with new information is given, answering quaestios like "Why?" or "I don't understand, please explain it to me?" This makes the Clarification relation a better label; see below under heading 11. The problems related to the indeterminacy of relations will be discussed in Section 10.2.

From this point on, the label Elaboration will be used as a cover term for all kinds of distinctions within this broad family of relations via which information is added to a concept in a discourse. The criterion that it has to add something to a concept or a state of affairs conceived as an entity distinguishes it from the other two Adjunction families: Extension, adding something to a concept – event combination, and Enhancement, giving information about an event (Place, Time, Manner and Causation).

2. Sequence

In the family of Extension relations, Sequence is the basic one, adding an other state of affairs to a preceding one. This relation is also called Addition or Joint. It adds new concepts and/or events to a segment. The prototypical connective is "and." Others are "moreover," "besides," "second," etc.

(8) At home I always prepare breakfast and my wife takes care of clothing the children.
(9) This car is too old. And besides that I don't want to be with you in one car.

The category Sequence very often contains a time aspect. Therefore it could be useful to distinguish the type Time Sequence and to use the label Addition for the relation in the two examples above. Here are some Time Sequence examples:

(10) I walked across the street. And then I saw a strange person.
(11) Go to the traffic lights. Turn right.
(12) My right neighbors bought their house last Christmas. My left neighbors moved to this village five years ago.
(13) He turned right after he had passed the traffic lights.

The relation in (10) is a Time Sequence which often occurs in narratives. Hence a subtype of Time Sequence can be distinguished: Narration. Another type can be distinguished in instructional discourse, as in (11). This Time Sequence can be characterized as a Continuation. Note that the Place relation in almost the same example (30) below is less obvious here due to the instruction mode used in this "telling how to get somewhere." In (12), the chronological order is reversed with the earlier date in the second position. This Reverted Sequence can be seen as another subtype. The type Time Sequence, belonging to the Extension family, must be distinguished from the Time relation belonging to the Enhancement family; see under heading 6 below. In a Time relation, as in (13), one segment can be seen as adverbial information to an event presented in another segment.

A special type of Sequence occurs in dialogues or conversations:

(14) Where were you last night at ten o'clock?
– At home.
(15) Here is a small present.
– No, I won't accept anything!
(16) He asked me to return the book to the library, but I forgot.

The so-called conversational pairs, like question – answer and offer – acceptance/refusal (see Section 3.3 on interordination), can be labeled as Interactional Pairs. Of course, there must be a kind of interaction mentioned in the discourse. So, on a closer look, (16) is not an Interactional Pair, but a Contrast (see below under heading 3).

Another Sequence that can be distinguished is List or Enumeration. This relation is characterized by the parallel structure:

(17) ABC told the news in two minutes, BBC brought this item in three minutes. CBC was done in one.
(18) Apart from discussing this, I would also like to comment on another topic.

As in every taxonomy, fuzzy boundaries occur here too, as can be seen in (18). Underlying the remark made in this example is a list of two topics. If the List character is not that prominent, the more general category Sequence will suffice.

Sometimes other connectives besides "and" are used to mark a Sequence, while "and" can also very often indicate another relation. Take a look at the following examples:

(19) To the left here is first our novel section. Then there is a small copy room.
(20) He put in a lot of effort and succeeded in doing the job.
(21) She received many proposals, and never got married.

In (19) the connective "Then" hints at a Time Sequence or maybe first to a Place relation. Still, there is no condensation conceivable into an adverbial constituent in the other segment, like: "When/where there is x, (besides) there is y." Hence, the Sequence or Enumeration/List relation would be preferable here. In (20), "and" combines a Reason and a Result. And in (21), "and" indicates a Concessive, blocking a plausible implication that a woman receiving many proposals will get married sooner or later. These examples show that a connective is not always a reliable indicator for labeling a discourse relation.

3. Contrast

The category Contrast is in fact a Sequence with an opposition. That is why this relation is also called Opposition. The prototypical connective is "but." Others

include: "however," "while," "whereas" and "on the contrary." Due to the opposition, the contrasted segments often contain concepts in an antonymy relation ("new – old," etc). It also frequently occurs that something in one segment is negated in the other.

(22a) Mary is very helpful. John always refuses to do anything.
(b) While Mary is very helpful, John always refuses to do anything.
(23) Mary is at home, but John is at the beach.
(24) The old testament is the base for the Jewish religion. The new testament is very important for the Christians.

In (22a), the Contrast relation is not indicated with a connective, but by antonymy: "helpful" versus "always refuses to do anything." The Contrast relation can also be verbalized in a subclause – clause construction, e.g., with "while" as in (22b). Sometimes the distinction between a Sequence and a Contrast is not clear. In many cases a connective proves helpful, like "but" in (23). Without a connective, (23) could better be labeled as a kind of Sequence. A special problem poses a Contrast in which the contrast is not clearly articulated. In (24), the "old testament" and "new testament" can be seen as a Sequence, it being unclear whether there really is a Contrast presented between the Jews and the Christians here. Note that inserting "But" before the second segment would be a little awkward, due to the diffuse contrast between "the base of" and "very important." Consider 'compare with' as opposed to 'compare to'—where 'compare with' refers to comparing both similarities and differences, and 'compare to' refers to comparing similarities only. A sequence could be considered as comparing two segments *to* each other, whereas a Contrast would be comparing two segments *with* each other, thereby focusing on the differences between the segments. In cases like this, further context is needed to make a decision.

4. Disjunction

The Disjunction or Alternative relation connects segments, usually with "or" or "(n)either ... (n)or."

(25) He neither had the right to call her, nor did he have the right to walk past her house.
(26) There are two possibilities: You can leave, or you can join us.
(27) You have to go now, or you will miss the train.

A Disjunction can be simply a Sequence with "or" (or "neither … nor" like in 25). It can also be mutual exclusive as in (26). A special problem forms the Otherwise relation, which also refers to two possibilities, as in (27) where "or" can easily be replaced with "otherwise." However, this relation can better be listed under the

Negative Condition, a subtype of Condition (see heading 8 below) because the characteristic of a Condition is that the state of affairs is unrealized and that the Consequence can be seen as (un)desirable. Maybe the first characteristic is also true for the Disjunction (26), in which one out of both possibilities has to be realized. But the second criterion would make no sense here—missing the train is usually undesirable. This makes (27) an Otherwise relation.

5. Place

In the family of Enhancement relations, the category Place, or Location relation, is the easiest one to define. From a discursive point of view, it expands an adverbial constituent (referring to a Spot, or a Distance) into a whole clause. From a dialogical point of view it provides an answer to the quaestio "Where?"

(28) Yesterday I ran into John. That was in the library.
(29) He went to the market. There he bought some apples.
(30) You see the traffic lights? Turn right.
(31) The police let the demonstrators approach until they came too close to the embassy.

The Place relation is often established via constituents indicating a location, like "the library" in (28) or locative connectives like "There" in (29), but can also be implicit as in (30). Often the location is placed before the segment referring to the event or state of affairs, as in (29) and (30). Sometimes connectives are used that could also serve as temporal connectives like "until" in (31), just like "before" ("dinner" or "the tree") can.

As stated in the first explanation in Section 4.3, a Place relation can sometimes be confused with an Elaboration. In example (29), one could argue that the second segment elaborates on an attribute of the concept "market," namely that this is a place where one can buy something. In that case, the order of interpretation is from left to right, with the "going to the market" as a nucleus, and the concept of buying as a satellite. In a case like this we need more context for disambiguation in order to decide whether the focus is on the market (Elaboration) or on shopping (Place). See for confusion with Sequence in (30) the comments on example (11).

6. Time

As for the Place relation, Time can also be easily conceived in both principles: discursive as an expanded adverbial time constituent, and dialogic with the quaestio "When?" Below are some prototypic connectives which are used for the

various Time relations, or which can easily be filled in between segments which have a Time relation (see for some basic examples Section 4.4):

(32) Prototypical connectives for various Time relations

Absolute	at ("six o'clock," etc.)
Relative	after, before, ("years," etc.) ago
Simultaneous	when, while, as soon as, at the same time
Duration	as long as
Ad quem	until
Post quem	since, from ("that moment," etc.)
Frequency	whenever

It is important to note that the Time relation has to be conceived of as 'adverbial information' added to the event. There are also time relations in a Sequence, based on "and then," connecting two or more segments in an Extension. These are ordered under Time Sequence; see above under heading 2.

Confusion with other relations can occur due to the fact that several temporal connectives also have other meanings. Below are some examples:

(33) John refused to go to the party after he had heard that Mary was coming.
(34) He wants to start the new project after the company is sold.
(35) You can call me whenever you want.
(36) My father has to stay here as long as he is ill.

In (33), "after" reflects the 'post quem ergo propter quem' interpretation. The fact that John refused after he heard that Mary was coming is interpreted as if her coming is the reason for his refusal, so a Reason relation would be more appropriate here. In (34), the same time connective "after" reflects a Condition. And from (35) it appears that the frequency connective "whenever" can also be used for a Condition. For Reason and Condition, see under heading 8 below. Example (36) is more difficult. Close reading can reveal a Reason relation: "Because he is so ill." But also a more hidden Disjunction relation could be defended, with "either" and "or" describing two situations: "Either my father stays here, or he is healthy enough to go out" (see above under heading 4). However, given the fact that (36) does not present special indicators supporting Reason or Disjunction, the Time relation would be more preferable here.

7. Manner: Circumstance, Comparison, Restriction

The third category in the Enhancement family, named Manner, contains three rather heterogeneous types. One could say that the category Manner contains all aspects of an event frame which can not be subsumed under the other three categories (Place, Time or Causation). From a discursive point of view, the

Manner relations can be seen as extended adverbial constituents of mode. From a dialogical perspective, these relations can be seen as answers to quaestios like: "How?" "In what manner?" and "In what situation?" See for basic examples Section 4.4.

The most obvious relation is Circumstance. It has no prototypical connective, although the temporal connective "while" is used rather frequently. Sometimes the segment contains words which are substitutional or collocational to the concepts in the situated event.

(37) He arrived at the little village in the early afternoon. The marketplace was all quiet.
(38) The turtle crossed the street. Its speed was amazing.
(39) He left home and he did not leave any message!
(40) He left home without saying a word.
(41) You cannot leave without a consent given by your mother.
(42) Instead of staring at me, he started to fix his gaze at my wife.

In (37), the Circumstance of "arrived" is described with "a (quiet) marketplace," a word that has a meronymic relation with "village." In (38), the underlying collocation of "turtle" and "(low) speed" establishes the manner-aspect. Sometimes other connectives hide a Circumstance, like "and" in (39), which has the same Circumstantial relation as in (40) with the connective "without." Of course, connectives can be used for other relations than Circumstance, like "without" in (41), indicating a Negative Condition (see under heading 8). The Circumstance relation itself is also rather heterogeneous: all kinds of subtype relations which indicate some aspect of the situation can be listed under this relation, for example the Instead or Substitute relation in (42).

The type Comparison mainly refers to the qualitative aspects of Manner. It has a remarkable number of clear connectives in complex sentences, including: "than," "as," "as … as," "as if." Here are some examples with "as":

(43) I want to proceed in the same way as he was operating.
(44) As I said yesterday, this seems to be no good.

A subtype within Comparison is Analogy, as expressed in (43). Other subtypes that can be distinguished are Proportion and Degree with connectives like "(large, etc.) enough to..." and "too (late, etc.) to..." Degree is essentially quantitative, but is based rather frequently on comparison, as can be seen in the following examples. Hence the listing under Comparison.

(45) Regarding the kind of work he does, he earns a lot of money.
(46) The more you tease him, the more he will hate you.
(47) He earned a lot of money, which makes his plans realistic enough to support.
(48) He did it so quickly that I could not see it.

In (45), the Proportion relation is verbalized in the connective "Regarding." In (46), the Proportion relation is established in a grammatical construction: "The …, the …" Within Degree, as in (47), a special subsubtype can be distinguished, the so-called "Degree Indicating Cause" as in (48). This relationship marks the transition between this type and the following type of Enhancement: Causation.

The type Restriction refers mainly to the quantitative aspects of Manner. The concept is rather clear: in a set or a whole not all elements or aspects are taken into consideration. A Restriction can also present a degree of sorting out some domain, 'to a certain extent.'

(49) We have checked all measures. But we only followed the old procedures.
(50) We have invited all our neighbors. However, not that guy on the third floor.

A subtype of Restriction is the relation Exception in (50). The Restriction relation can easily be confused with the Contrast relation (see above under heading 3), due to connectives like "But" in (49) or "However" in (50). In a Contrast, however, the focus is on the difference between two states of affairs, where in a Restriction a quantitative or part – whole aspect can always be detected.

8. Causation: Cause, Reason, Means, Condition, Concessive

The category Causation is more clearly delineated than the category Manner. It contains five types, all based on 'P → Q': P causes Q. The following schema summarizes the information given in Section 4.4 with the distinctive features in brackets, and adds prototypical connectives and quaestios. The relations are, for convenience's sake, named after their first part. So, the relation Cause – Effect is named Cause relation, etc. The name of the second part is italicized in the second quaestio:

(51) The five causations with prototypical connectives and quaestios

Cause	(– will)	because	Why? What is the *effect*?
Reason	(+ will)	because	Why? What is the *result*?
Means	(+ aim)	by	By which means? To what *purpose*?
Condition	(– real)	if	Under what condition? What is the *consequence*?
Concessive	(– implication)	although	What is the tacit implication? What is the *outcome*?

The first three types refer to clear concepts, as these examples show:

(52) John had to make a long walk. His car was stolen.
(53) John had to make a long walk. He refused to take the car.
(54) John wanted to please his mother. He bought a very big present.

The difference between Cause and Reason can be clarified with the criterion 'will' or 'volition.' A Cause is situated outside volition. There is no possibility to prevent the effect, as in (52). In a Reason relation, there is always an animate agent who could have reasoned to another Result, as in (53), where John could have decided to take the car. The characteristic of a Means relation is the presence of a goal or a state of affairs to be achieved. Of course, one could say that in (54) the reason for buying a present is the fact that John wants to please his mother, but the aim of "pleasing his mother" makes this relation a Means or Purpose relation.

The characteristic of the Condition is that the state of affairs in both segments is unrealized. The realization of the state of affairs in the 'if-segment' causes the other segment to become true. Moreover, the realization of the state of affairs in the not-if segment has to be considered as (un)desirable. Connectives other than the prototypical "if" or clear ones like "provided that" can also operate in this way:

(55) Suppose that we can afford this house, imagine how happy we would be for ever!
(56) Think about it and you will see that this is the best option.
(57) Plug this in. Then type your password

Examples (55) with "Suppose" and (56) with the general connective "and" are easily recognized as Conditions. For the relation in (57), which lacks a connective, the choice between a Time Sequence and a Condition relation is not so easy. Helpful here is the criterion of (un)desirability. If the context of (57) does not present any cue for a desired state of affairs, the Time Sequence would be more preferable.

Two other Conditions worth mentioning here occur in the examples below. One is the subtype Negative Condition and within this subtype the Otherwise relation:

(58) No one can do this without help from the outside.
(59) You cannot do this unless you have an authorization.
(60) If you don't tell him the truth, I will do it.
(61) Tell him the truth. Otherwise, I will do it.
(62) Either you tell him the truth, or else I will do it.

Examples (58) and (59) present the subtype Negative Condition; the prototypical connective is "unless." A special Negative Condition is the Condition that refers to exactly two possibilities, as in (60). This is called the Otherwise relation after its prototypical connective in (61). This type can easily be confused with the Disjunction relation with "or"; see above under heading 4. But again the criterion '(un)desirability' can be helpful. In (62), the first segment is the non-if segment: "If you do not tell him the truth …" This segment is combined with a segment containing undesirable content. So this is a relation that belongs to Condition.

The Concessive, also called Concession or Admission, is the most particular Causation relation. Prototypical connectives are "although" and "notwithstanding." The characteristic of the Concession relation is that there is an implied meaning or connotation, a tacit implication in the although-segment that is denied or blocked in the other segment. One could also say that the expected effect or result does not happen, or that the expected consequence does not hold. Hence, a Concessive can be described as a Contrastive Cause – Consequence or a Negative Causation: 'P → not Q.' Mostly, a Concessive can be seen as a violated expectation. However, it is important to note that the expectation is based on general knowledge, not on any specific expectations from the addressee, which would make it an Interjunction relation. Hence Denied Implication would be a better term. Here are some examples with other connectives:

(63) He does not eat much. Still, he is fat.
(64) He would be shocked even if someone only suggested the idea.
(65) He is a Republican. Nevertheless he is clever.

In (63), the implication "not being fat" is denied. Sometimes, with so-called combined connectives like "even if" in (64), the implication is hidden in another (Condition) relation. Example (65) shows that an implication can also be evoked, and must be inferred from the following segment, namely that the addresser implies that Republicans are stupid. Often, there is an implied contradiction prompted by antonyms, like "stupid – clever," which makes it difficult to distinguish a Concessive relation from a Contrast relation (see above under heading 3). However, a Contrast relation can always be accounted for without reference to any implication.

In this explanation of the three families of Adjunction relations—Elaboration, Extension and Enhancement—the discourse relations are presented as clearly distinguishable. However, as stated earlier, different categories and types can simultaneously play a role in interpreting a segment combination. Two examples to conclude this section:

(66) As father and mother were not at home, the children began to fight.
(67) Ann tried to smudge little John's shirt, while Mary was trying to calm him down.

In (66) the labels Time, Circumstance and Cause or Reason are applicable. This is the same phenomenon as was seen in example (52) in Section 4.4. A relation in which Time and/or Place and Manner and Causation play a role is called a Contingency relation. In (67), Time and Circumstance also play a role. And Causation may play a role too, for the situation can be interpreted as a Reason, namely that Ann tried to smudge her brother's shirt because he was distracted by Mary. In this case, a Contrast relation is also conceivable: Mary as the good girl against Ann as the nasty one. This topic of the polyinterpretability of Adjunction relations will

be discussed in more depth in Section 10.2 about the ambiguity of the relations. However, even this interpretation of both examples is not exhaustive. In (66), the relation can also be characterized as a Clarification, a type of Explanation for the children's behavior, and in (67) the Contrast can also be interpreted as an Antithesis in which positive attention is drawn to Mary. This brings us to the Interjunction relations.

6.3 Interjunction relations, an overview

Adjunction relations can be used to establish Interjunction relations. Referring to the visualization of the Connectivity Model in 6.1, one can say that relations on the level of Adjunction can be used in another thread of communication: Interjunction. This leveling occurs when an addresser wants to join with an addressee. In Expressing relations a point of view of the addresser is expressed. Processing relations refer to the relationships that support the process of communication and Impressing relations refer to how the addresser wants to influence the mental state of the addressee.

A characteristic of the three families of Interjunction relations—Expressing, Processing and Impressing—is that they can only be defined with reference to the interlocutors: the addresser and the addressee. This makes the labeling as an Interjunction relation more subjective than the labeling of Adjunction relations which can be done by looking at the discourse only. In the first overview presented in Chapter 5, Interjunction relations have been presented, which can be more or less frequently found in discourse. They are further explained below.

9. Presentation: Solutionhood

The first Expression relation is a type of the Presentation relation. In the Solutionhood or Problem – Solution relation, a state of affairs is presented as a solution for a problem posed in another segment. Some examples:

(68) How can I reach our CEO most quickly?
– Ask her secretary.

(69) I want to see an old movie.
– Well, go to Cinehistor.

(70) Many elderly people are lonesome. Therefore the city council has opened some meeting points for seniors.

(71) If the child keeps crying, you can give it half of this bottle.

(72) Many elderly people are lonesome. Yet, it would be easy to ask students to visit them.

The problem – solution combination, mostly in the order problem – solution, can occur in conversations where questions and answers in interordination on the level of Conjunction function as Interactional Pairs on the level of Adjunction. They have a specific presentational function: 'offering a solution,' such as in (68). And, of course, an interlocutor can formulate a question in a kind of statement, as in (69). Solutionhood also occurs in monologues, where often the relation is based on the Adjunction relation Causation. In (70) we see a Reason relation, and in (71) a Condition relation. Sometimes the solution is hidden in another relation, like Contrast in (72).

Confusion with three other Interjunction relations is possible. Look at the following examples:

(73) Everyday I go to visit my old grandmother. She is so lonesome.
(74) I left my office a little bit early to visit my grandmother. She is so lonesome.
(75) You have to visit your grandmother. She is so lonesome.

In all three combinations, one could detect a kind of Problem – Solution relation. Yet these are not Solutionhood relations. The main reason is that the underlying problem, which could be inferred from the second and not from the first segment, is not in focus. In (73), the label Explanation would be more appropriate: it contains a Background or Clarification, depending on whether the information is old or new for the addressee. See also under heading 11 below. In (74), the addresser seems to make his or her behavior acceptable. This makes an Acceptance label, Justification, more appropriate (see under heading 15 below). In (75), the addresser is trying to convince the addressee to do something; this makes the relation a relation of Action, preferably a Motivation relation (see under heading 16 below).

A particular confusion can be caused by the fact that a Solutionhood relation can also in some circumstances be interpreted as an Instruction relation. For example, the Problem – Solution relation in (71) can also be read as an instruction to give the child something to drink when it keeps on crying. Then the focus would be more on the action of the addressee. It may thus be useful to introduce the Instruction relation as a type of the Action relations mentioned under heading 16 below, as an 'active' counterpart of the Expressing relation Solutionhood.

10. Comment: Interpretation, Evaluation, Conclusion

In the second category of Expressing relations, the Comment relations, three types are distinguished: Interpretation, Evaluation and Conclusion. In the Interpretation relation, the addresser gives a cognitive comment on a state of affairs; it is essentially an opinion or a 'reading.' Usually this implies that from a given

state of affairs it is told what it means, especially what it means to something else or how it is related to other states of affairs. The prototypical connective is "This means …" Mostly, the Interpretation is put in the form of an Elaboration that is related via repetition or substitution and provides an anchor for what is going to be interpreted. The segments can also be linked via Causation. Some examples would be:

(76) This CO_2 report denies the influence of agriculture. This finding would imply that we have taken the wrong measures.
(77) John told us the whole story. Now I see that he indeed is traumatized.
(78) He is a Dutchman. So he will be very permissive in ethical questions.

In (76), the interpretation is given via an Elaboration of the denial of some influence. In (77), a Causation relation is the base for interpretation: "Because John told us the whole story, I now see that …" In (78), we see a subtype of Interpretation, namely Generalization. Based on the knowledge about The Netherlands as a permissive society, the addresser makes a generalization that every Dutch person is permissive. (The opposite relation, Specification, or the General – Specific relation, is dealt with under Elaboration; see above, under heading 1.)

In the Evaluation relation, the addresser also gives a comment on a state of affairs. However, this comment is not a (cognitive) opinion but a qualification expressing an attitude. A good criterion for using this label is the occurrence of words or constituents containing appraisal: indicating a degree on the scale "good – bad" or adverbial phrases like "to my amazement" or "unfortunately." Mostly the Elaboration relation is used to express a qualification:

(79) This CO_2 report denies the influence of agriculture. But I don't like this report.
(80) John and Mary have been fighting for years now. It is such a bad marriage.

In (79), the report is elaborated on. "But" only seemingly indicates a Contrast here. In (80), "It" elaborates on the implied "living together." It is important to note that the Evaluation comes from the addresser. This is not the case in the following examples:

(81) John and Mary have been fighting for years now. But John likes his marriage.
(82) John and Mary have been fighting for years now. But according to Ann they have a very balanced relationship.

In (81), the Evaluation expressed in the appraisal "likes" is made by an agent in the discourse. Therefore, this relation can better be labeled as the Adjunction relation Contrast. In (82), the Evaluation is attributed to another speaker; it is essentially a Citation. See the label Attribution under heading 13 below for this phenomenon.

A final comment or closing statement is called a Conclusion. A Conclusion can contain elements of Interpretation and/or Evaluation:

(83) They have been fighting for years now. So I think they might not be right for each other.

Usually, a Conclusion occurs after a set of arguments or observations. Such a conclusion can also have the function of a summary. However, a Conclusion can be seen as a final, summarizing comment; see below under heading 12 for the difference with a Summary.

11. Explanation: Background, Clarification

Within the family of Processing relations, the first category is Explanation, containing the two types Background and Clarification, which refer to the process of understanding. Both relations are used to improve that process. The main difference is that a Background presents supporting *given* information, whereas a Clarification presents supporting *new* information. Very often, a Causation relation is used to establish these relations:

(84) Let's stop talking now. As I said, I have to get up early.
(85) Let's stop talking now. I just heard that I have to get up early.
(86) Let's stop talking now. I have to get up early.

The given – new criterion implies that usually these labels cannot be used without contextual information. If there are cue phrases as in (84) or (85) to decide about the givenness, then the distinction is rather easy: Background in (84) and Clarification in (85). But in many cases there is no such indication, like in (86). Then more context is needed about the (supposed) prior knowledge of the addressee. Within the type Clarification some subtypes can be distinguished:

(87) I have always had difficulties with him. Yesterday he used my bike without asking permission.
(88) I read that people are getting ever more healthy. The average life expectancy has now increased by three years compared to a decade ago.
(89) This decision will have bad effects for our country. Look at other countries where they have done the same thing years ago.

The process of understanding can be supported by an example via Elaboration, as in (87). This is called an Exemplification. In order to ease the process of understanding, one can also use an Illustration, as in (88). In many cases, such as in (89), these subtypes come very close to relations which are meant to increase acceptance of a claim in argumentative discourse; see Evidence and Justification under heading 15 below. The latter labels would be more appropriate in a context of argumentation.

12. Metatext: Restatement, Organizer, Summary

The second category in Processing relations, Metatext relations, refers to all relations which help the addressee to understand the message in the way it is formulated. Whereas the Explanation relations, Background and Clarification, support the understanding of *what* is said, the Metatext relations support the understanding of *how* something is said. In fact, they are not part of the real message, hence the name Metatext relations. There are three types:

(90) This procedure is not permitted here. In fact, it is illegal.
(91) (…) Below I will explain the discourse relations which are more or less frequently used in discourse studies.
(92) (…) In sum, this experiment has confirmed three hypotheses on readability.

Example (90) is a Metatext on the *word* level. It is a Restatement or a Reformulation: information repeated in other words. Example (91) is a Metatext on the *structure* level; it is an Organizer. To this category belong all structure indicating devices: from Advanced Organizers (including Headings) to Orientations. Example (92) contains a Metatext on the *content* level; it is a Summary. Sometimes it is difficult to make a distinction between a Summary and a Conclusion; this was already shortly mentioned under heading 10 above. Usually, a Summary reflects the content in the most condensed form, in an objective way, whereas a Conclusion refers to more or less subjective reasoning, or consideration, presenting a closing argument. A Conclusion is an element of the content itself, and hence not metatextual. A Summary can be deleted without loss of content.

Within the three Metatext types, further subtypes can be distinguished. Here are three examples:

(93) She smiled. No actually, she mocked.
(94) These are examples of Background relations. A Background relation is …
(95) This is an example of a Background relation. For a better understanding it could be appropriate to say something about how the examples are collected first.

Example (93) reveals a subtype of Restatement, namely Correction. And (94) presents another kind of Restatement: Definition. See example (2) of this chapter for the difference between a Definition and a Specification. In (95) we see a subtype within the type Organizer, a Digression Indicator or an Aside or a Topic Shift, explicitly showing that the discourse is deviating from the main topic at that point.

13. Attribution

The third category in Processing relations, Attribution, subsumes the various types of discourse relations which indicate that the addresser incorporates content

from another person into his own discourse. This is also called an Other – Text or Source – Citation or Quote relation. A special characteristic of Attribution is that the incorporated content is used on the same level of Interjunction to make Comments (Interpretations, Evaluations, Conclusions) or in order to increase acceptation via Evidence or Justification (see under heading 15 below) by using an authoritative source.

The category Attribution can be divided into several types referring to direct speech, indirect speech or the incorporation of thoughts and feelings of other agents than the addresser. Some examples:

(96) "This is a very dangerous development," the spokesperson of the presidential candidate admitted, "and it will block all other proposals."
(97) The candidate said that he would like to defend this disputed proposal.
(98) They have planned a new road which is reportedly said to diminish traffic congestion.
(99) Professionals denied that the prices would rise.
(100) Our dean estimates that the faculty will get more money next year.
(101) He said, as expected by the counterparty, that he would vote against it.

The most clear type is Citation: direct speech followed or interrupted by a source. The source is identified with a function or a name, as in (96), and this source is connected to the citation with a verb that belongs to the so-called *verba dicendi*: "say," "comment" or related words like "admit" or "deny." There are several subtypes of Citation, including Indirect Citation in (97), Anonymous Citation, as in (98), and General Source in (99). Another Attribution type is Thought Incorporation, as in (100). And of course some (sub)types can be combined. In (101) we see an Indirect Citation ("He said that...") as well as a General Source: "as expected by the counterparty."

14. Attention: Climax, Antithesis

The third family of Interjunction relations consists of the Impressing relations. Within these Impressing relations, three categories are distinguished: Attention, Acceptance and Action. The Attention category contains the relations Climax and Antithesis. With the Attention relations an addressee is focused on a certain segment in the discourse. Especially in the case of a List or Enumeration, see under heading 2 above, an addressee can be invited not to pay equal attention to all parts. Because attention can be easily drawn to either the last or first part of a List, an addresser can use the Climax (for the last part) or the Anticlimax (for the first part); see the examples in Section 5.4. However, in a List of only two, the attention procedure of making a Climax can be applied too:

(102) Not only did he do the dishes, he also cleaned the bedroom.
(103) Besides the fact that he cleaned the bedroom, he also did the dishes.

There is also a procedure to create not just attention, but even positive attention for one out of two possibilities. This Antithesis relation is usually built on a Disjunction or Contrast relation:

(104) We have to vote for this candidate, or we will encounter serious problems.
(105) We can vote now for this candidate. However, we can also have further discussions.
(106) Although the export rates were getting higher, the import rates received no impetus.

In (104) positive attention is drawn to the first segment in a Disjunction relation. In (105), positive attention is drawn to the second segment in a Contrast relation. It has to be noted that an Antithesis must contain some indication for prompting a positive attitude. In (104) the segment "serious problems" is a prompt, and in (105) the connective "However" prompts to a positive attitude for the second segment. The criterion of 'positive attention' means that example (106) is not an Antithesis, but a Contrast relation. (In spite of the concessive conjunction "Although" it is not a Concessive, because there is no blocked implication; see above under heading 8.)

15. Acceptance: Evidence, Justification

The second category of Impressing relations consists of the Acceptance relations, to which belong the Evidence and Justification relation. They usually occur in an argumentative context, and are used to increase acceptance of a claim or a statement. Both relations are usually based on a Causation relation: P $\rightarrow$ Q, implying that the addressee has to accept Q. The difference between the two relations can be clarified as follows. An Evidence relation refers to a state of affairs which is observable for both interlocutors and is as such an *objective* or at least intersubjective argument in which the addresser is not involved. With a Justification the addresser is involved: a Justification is a *subjective* argument.

(107) We have to choose this candidate. He has the best education.
(108) We have to choose this candidate. We'd never forgive ourselves if we didn't.
(109) We have to choose this candidate. Look at his business proposal.

Example (107) contains an Evidence relation: the degree of education of a candidate can objectively be observed. Example (108) contains a Justification relation. The argument is a subjective estimation. As noted earlier (under heading 11, Explanation) an Exemplification or an Illustration also can be used as Evidence; see (109).

16. Action: Enablement, Motivation

The last category in the family of Impressing relations is the category of Action relations. Two types are Enablement and Motivation. Both relations are meant to bring the addressee (closer) to an action. So, both relations refer to a still unrealized state of affairs, such as in the Condition relation under Adjunction. The Enablement relation increases the *ability* to perform an action, whereas the Motivation relation increases the *desire* to perform an action, which is considered the highest performance of a discourse relation, and hence is the last relation in the taxonomy.[15]

(110) Come to our apartment tonight. You can ask John to pick you up.
(111) Come to our apartment tonight. We have some interesting movies.

The Enablement (110) and the Motivation (111) are based on a Condition relation. However, in the Enablement relation the enablement is formed by the non-if segment: "If you (wanted to) come to our apartment, then …" In the Motivation relation the if-segment is the motivation: "If you want to see some interesting movies." These last examples finish the presentation of the discourse relations which were listed in Table 1a and 1b at the start of this chapter.

15. Note the wording "discourse relation." Of course, discourse can do more, for example in a command or in a baptism. This study however is restricted to discourse relations. See above under heading 9, Solutionhood, for a possible expansion of the taxonomy with the Action relation Instruction.

CHAPTER 7

The architecture of the model

The more explaining you hear, the more
you think things must be pretty bad
that they need so much explaining.
(Graham Swift, *Waterland*, 1985)

7.1 Notes on terminology

Up till now this study has presented a proposal for a taxonomy of discourse relations. This chapter tries to answer a lot of questions which can be summarized as why the taxonomy is built like it is. In this first section, the focus is on the terminology which is, in places, deviant or new, and may raise a few eyebrows. For a discussion of the basic concepts that are used in nearly all approaches to discourse studies—'discourse' and 'text,' 'cohesion' and 'coherence'—the reader is referred to Section 2.1. The concepts used in the three-by-three architecture may prompt readers to ask questions related to three other well-known triplets in discourse studies.

Why not use syntax – semantics – pragmatics?

The triplet Conjunction – Adjunction – Interjunction may show some resemblance to the frequently used triplet syntax – semantics – pragmatics, in which "semantics" can roughly mean "the clause as referring to reality" and "pragmatics" can be provisionally described as "how the clause is used by the addresser or how it functions between interlocutors." However, only a very small part of the domains of syntax, semantics and pragmatics is covered by the 'junction' triplet, referring to the ways in which clauses are combined. Moreover, it would be somewhat awkward to speak about syntactic linking between clauses for several reasons. The term 'syntax' is normally used for *intra*sentential linking. This would make 'syntagmatic linking' a better term for *inter*sentential linking. However, on this level we also have to deal with semantic linking phenomena in substitution and

collocation. These arguments are more or less satisfying for not using the first part of the triplet: syntax.

The terms 'semantics' and 'pragmatics' are not used here either because a close examination of the difference between semantics and pragmatics shows clearly that, when studying discourse relations, these terms are more confusing than clarifying. In many approaches a distinction has been made on two levels that are more or less related to semantics and pragmatics. In discourse studies, several distinctions have been proposed to reveal some of the differences between these two levels (see for example the overviews in Evers-Vermeul, 2005, and Gómez-Gonzáles & Taboada, 2005).

If one starts from the original semiotic approach, semantics refers to "the relationship between signs and objects or concepts," and pragmatics refers to "the relationship between signs and how they are used." Applied to discourse relations, these rough definitions can be formulated more precisely, for example like this:

(1) The concepts 'semantics' and 'pragmatics' in discourse relations

semantics	the reference to aspects of meaning in the relationship.
pragmatics	the use of a relationship to achieve a goal in communication.

In fact, the semiotic approach invites the researcher so see all discourse relations as pragmatic. After all, just the mere fact that a speaker or writer adds one clause to another means that a discourse relation is used to accomplish something in communication (see the discursive and dialogic principle in Chapter 2). Of course, one could narrow down the broad sense of pragmatics to the notion of speech acts, but this is of no help. In essence, each act of combining clauses is a speech act, since adding an Elaboration or presenting a Reason at the level of Adjunction is just as much a speech act as presenting a Justification or an other relation at the level of Interjunction. Moreover, it would be difficult to make a clear distinction between semantic and pragmatic linking in a discourse in which, for example, a Cause relation could be used as just a Cause relation on the level of Adjunction but also as an Evidence relation on the level of Interjunction. It seems wise, therefore, to move away from the semantic – pragmatic dichotomy in discourse relations.

Why not use textual – experiential – interpersonal?

The triplet Conjunction – Adjunction – Interjunction may also show some resemblance to the triplet that serves as the cornerstone in Systemic Functional Linguistics (SFL); see Halliday and Matthiessen (2004). In SFL, three basic functions or metafunctions are distinguished, referring to the meaning of a clause. The textual metafunction describes the clause as a message, as a piece of information. The experiential metafunction describes the clause as a representation of some process

in human experience. The interpersonal metafunction describes the clause as an exchange between addresser and addressee. Leaving aside the problem of how to distinguish clearly between the textual message and the experiential representation, which can also be a message, the distinction 'experiential – interpersonal' at first appears to be a good candidate to replace the distinction Adjunction – Interjunction in the study of relationships between clauses. The experiential (or 'ideational' or 'external' or 'informational') meaning could then refer to the content of the discourse. The interpersonal (or 'intentional' or 'internal' or 'rhetorical') meaning could then refer to the way participants in the discourse are related to the content, the topic of the discourse.[16] In that case, the distinction Adjunction – Interjunction could face Occam's razor, saying that entities, and hence concepts and terms, should not be multiplied without convincing argumentation.

However, a notion like 'content' on the ideational level has a confusing variety of meaning aspects. This can be seen in other proposed dichotomies, for example the dichotomy 'content – epistemic' in Sweetser (1990) and the dichotomy 'content – coordination' in Verhagen (2001). The following examples may clarify these distinctions:

(2a) I don't want to go now, because there is so much traffic.
(b) He will be late, because there is so much traffic.
(c) Let us wait for an hour, because there is so much traffic.

Following Sweetser, (2a) contains a content relation, describing a Causal relation between two states of affairs in reality, and (2b) contains an epistemic relation. An epistemic relation does not express a relation in reality but refers to a kind of knowledge based on reasoning. Example (2c) gives an argument for the speech act 'proposal' in the first segment. However, none of these distinctions provide a criterion that forbids labeling the content relation (2a) as a Justification relation, which is interpersonal per se.[17]

Following Verhagen's dichotomy 'content – coordination,' the examples (2a) and (2b) have to be taken together as content relations, with only (2c) referring to some kind of coordination between the interlocutors. This suggests that (2c) would be the best candidate for the interpersonal (coordinating) Justification

16. Other doublets referring to aspects of the Adjunction – Interjunction distinction are 'conceptual – strategic' and the one proposed in Chafe (1994): 'substantive – regulatory.'

17. Similar remarks can be made with respect to the distinction between 'abductive' and 'non-abductive' relations proposed in Pander Maat and Degand (2001), which is based on the criterion of causality in epistemic relations. Non-abductive relations refer to epistemic relations based on causality, as in (2b), and abductive epistemic relations are based on non-causality, for example: "He will be late, because he is always late."

relation, but this distinction also fails to present an argument against labeling the relations in (2a) and (2b) as Justifications. In discourse relations, ideational and interpersonal aspects always seem to play a role. This is why these distinctions—notwithstanding the fact that they are highlighting some important aspects—are less suitable as basic distinctions in a taxonomy of discourse relations.

Why still use elaboration – extension – enhancement?

Given the reluctance to use already accepted tripartitions it could seem remarkable that the tripartition Elaboration – Extension – Enhancement, also a basic one in SFL, is used to describe the level of Adjunction. The reason is that this triplet fits so nicely that it would be too confusing to introduce new terms.

However, there are some differences with the definitions presented in Halliday and Matthiessen (2004: 377–8). Elaboration, in SFL, also refers to the act of comment or restatement ("in other words …"), but these aspects can be better accounted for within the Expressing and Metatext relations described at the level of Interjunction. Moreover, the term 'elaboration' is used differently in Rhetorical Structure Theory (see Mann & Taboada, 2007), where it means a relation linking "additional detail about the situation or some element of subject matter." Extension, in SFL, is defined as "adding some new element, giving an exception (…), or offering an alternative." But Elaboration can also imply adding a new element, as can be seen in the examples in Section 6.2. In this new taxonomy, Extension is more than just adding an exception or alternative. It includes the three basic ways of adding information expressed in the connectives "and," "but" and "or." Enhancement, in SFL, refers only to Time, Place, Cause and Condition. In the new taxonomy, Manner also belongs to this category, while Condition is seen as a kind of Causation. In order to avoid confusion one could argue for a new triplet, for example: 'featuring – following – framing' relations. But the differences would be too small (and the terms too awkward) to escape Occam's razor.

Paraphrasing the metaphor—a segment is a house—presented in a footnote in Halliday and Matthiessen (2004: 395), this triplet about the Adjunction of information to a segment can be seen as three ways of enriching a house: elaboration of the house without changing it (featuring); extension of the building via expansion and renovation (building more as a follow-up); and enhancement of its environment (framing). See Section 4.1 for the way this triplet is used more precisely in the presented taxonomy.

Other considerations: parsimony, memory, consistency

Other questions about terminology can be answered with reference to parsimony: no more terms are used than are strictly needed. This is the reason that no special

terms have been introduced for the order aspect in Location: the pre- or postponed clause. A possible candidate was the pair for conditional clauses 'protasis – apodosis,' where protasis is the if-clause in first position ("If you help me now") and apodosis the clause that contains the consequence in the main clause ("I will help you tomorrow"). However, in discourse analysis, general indications like 'front position' and 'back position' are clear enough. Hence the simple indicators 'X before Y' and 'Y before X' in the model. Another example is the common word 'ground' used for the antecedent or postcedent in the contact aspect of Location. Here, the term 'locus' could also have been used, but this uncommon term would hardly clarify the easily conceivable term 'ground.'

Mnemonic considerations have also influenced the choice of some terms. A good example is the less frequently used Interjunction, which was chosen after an unsuccessful search for a term that could fill in the third place after 'Cohesion' and 'Adhesion.' Moreover, the term Interjunction presents the intended concept better than, for example, 'alignment,' 'adaptation,' 'coordination' (not the grammatical meaning, but 'communication management'), 'intentional relations' or 'presentational structure.' 'Cooperation' and 'collaboration' are suitable neither. Interjunction seems to be a relatively good cover term for the ways in which addressers can join together with their audience.

In the choice of terms, sometimes the ability to connect with other terms proved to be a criterion. This can also be seen as an aspect of memory. A good example is the possible combination of clauses and subclauses which is referred to in the literature as 'taxis': 'parataxis' and 'hypotaxis.' These Greek terms have been set aside in favor of the Latin terms 'coordination' and 'subordination,' which makes it easier to emphasize their place in the tripartition Location – Ordination – Combination.[18]

Other deviations from regular terminology can be explained by referring to the criterion of consistency. A good example is 'connection,' for which the term 'conjunction' is used more frequently in discourse studies. However, 'conjunction' is both too broad and too narrow. It is too broad, since it refers to concrete 'linking words' and to the abstract concept of 'linking.' It is too narrow, because it refers to only one traditional word class: conjunctions like "and" and "because," and (as a subclass) conjunctive adverbs like "moreover" and "however." In the Connectivity Model, the terms 'connection' and 'connectives' are used instead to cover both the

18. Numerous terminological decisions, which are not all listed here, conceal considerations not to follow other proposals. Just one example from a seminal paper that inspired my discursive principle (see Section 2.3): Matthiessen and Thompson (1987) strongly support a distinction between parataxis – hypotaxis and coordination – subordination. However, their parataxis seems to be too broad because it also includes Apposition and Citation.

traditional conjunctions and also other linking elements or discourse markers: pure adverbs like "anyway," or fixed expressions like "summarizing" and "so far so good," or so-called periphrastic conjunctions or cue phrases like "This is the reason that …" Hence, the term 'connection' is used for all kinds of markers of discourse structure, and the term 'conjunction' is only used as a general term for the linking aspect from the formal perspective in the triplet Conjunction – Adjunction – Interjunction.

Another example is the term 'discursive' in the discursive principle. An alternative and clearer term could have been 'expansion': the expansion principle. However, this term already has a specific theoretical connotation in SFL. This was one of the reasons that the new term 'discursive' was introduced, referring to a related concept: the 'enlargement' of a topic. The other reason was, as can be imagined, that the term discursive evokes 'discourse.'

To conclude this section, I will give just one example of a term which only at first sight seems to be a better candidate than the one which is now adopted: the term 'collocation,' in the sense of possible occurrence in each other's vicinity in a discourse (like "students" and "university"). Instead of this term, 'contiguity' is used, especially in the German literature (*Kontiguität*). And with good reason. The term 'contiguity' refers to concepts that are related in our mental organization of concepts, in which, for example, "university" and "students" are more related than "university" and "environment." Collocation is the 'verbalization' of the fact that concepts are mentally in each other's neighborhood. The resource area for collocation is the discourse itself, notwithstanding the fact that this phenomenon is based on contiguity in our mental encyclopedia. This is the reason that the term 'collocation' is used. It is a concept on the level of Conjunction, where the formal aspects of discourse are analyzed. One could say that collocation has the same relation to contiguity as cohesion has to coherence. Cohesion refers to the verbal linking which is accounted for on the level of Conjunction in the taxonomy presented in Section 6.1. Coherence refers to the mental linking (see Section 2.1).

7.2 The Conjunction as a base

In discussions about the number of discourse relations and the networks between them, one can argue for roughly two approaches. The practical point of view is that a taxonomy is a by-product of the research task: just see how many specimens of relations you need for your analysis, give definitions as clearly as possible, and if more relations are needed, add them. This assumes taxonomies are built to purpose. There is no criterion for distinguishing good or bad taxonomies; there are only less or more useful taxonomies. The theoretical standpoint is that a taxonomy has to be

based on the essential characteristics of the phenomena about to be classified. The deeper the insight into these phenomena, the better the taxonomy will prove to be. This makes taxonomizing a lever in the development of a theory.

These views on the taxonomy are two extremes, but it will be clear from the task I have set in Section 1.2 that my approach is a more theoretical one, because that is what is needed if one wants to insightfully describe the variety of possibilities for linking clauses. Of course, there are practical considerations—a taxonomy must be applicable in the practice of analyzing discourse—but my approach aims to be a step in developing a theory in which form varieties of discourse relations can be explained, and which could result in hypotheses on possible continuations of clauses at any point in a discourse, or which could lead to predictions about the ease of understanding of various clause linkings.

This section focuses on the most striking difference with other approaches, namely the incorporation of the syntagmatic and lexical base: the Conjunction level.[19] Incorporating Conjunction can simply be motivated by what needs to be taxonomized. Because discourse relations are only detectable if they are materialized in clauses, in formal aspects of discourse or in textual indications, adding Conjunction to a taxonomy is a necessity in order to describe how segments are connected in terms of order, status and ways of linking.

The relevance of Conjunction phenomena for the levels of Adjunction and Interjunction may become clear if we look at the practice of analyzing discourse relations. It often happens that analysts have different views on which label is most applicable. For example, consider the last two segments, 10 and 11, in the Mother Teresa text discussed in last section of Chapter 5. To be able to make decisions about labeling, we have to consider the whole text again:

(3) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

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19. There are other more or less similar approaches. The most inspiring ones are the vocabulary and grammar-driven types of cohesion in the model of Louwerse (2004) and the proposals in the grammar-based Functional Discourse Grammar (Hengeveld & Mackenzie, 2006). But the Connectivity Model is the only model that is based so heavily on a broad range of grammatically and semantically based discourse phenomena.

A possible label for the relation between segment 10 and the discourse so far is Sequence (or a synonym like Addition or Joint). This relation is signaled by the connective "and." But another analyst might prefer a different label, namely Elaboration. In discussing these possibilities, the level of Conjunction is indispensable because Sequence and Elaboration refer to different structures. An Elaboration is always linked to a concept, where a Sequence links other concepts and events to whole clauses. With the label Elaboration, the link is interpreted as having its antecedent in the answer "Yes" in segment 9. With the label Sequence, segment 10 is placed on the same level as the sequences 3–5 and 6–9. In other words, a new sequence, 10–11, is opened. In this case the relation has a much broader antecedent than just the word "Yes." To decide which label is correct, it first has to be decided, on the level of Conjunction, what the antecedent of segment 10 actually is, or in other words: how the segment is grounded. Because the content of segment 10 is doing more than merely giving information about the answer "Yes," and also refers to segments 4 and 5 about "smiling"; the label Sequence has better arguments here.

Segments 10 and 11 constitute another example of two possibilities for the labeling of a discourse relation, and hence for the importance of placing Conjunction at the base of the Connectivity Model. This relation can be labeled as a Reason – Result.[20] But it is unclear how to proceed if one has to decide which is which. Is 10 a Result of 11, or is 11 a Reason for 10? The difference between Reason and Result lies in the status of the segments, which is a phenomenon on the level of Conjunction. In a Result relation, the Reason has a lower status; it is a satellite supporting the Result as a nucleus. In a Reason relation, the Result is a satellite to the nucleus Reason.[21] A fairly reliable method for determining the relative prominence of a segment is by looking at combination phenomena like repetition, substitution and collocation from the level of Conjunction: A clause is more basic than another if it contains more lexical material which is also used in other parts of the discourse. Based on this criterion, segment 10 is more basic because of the lexical cohesion of "smile" with the same word in segments 4 and 5 (repetition). Thus, if one wants to decide between Reason or Result, the Result relation would be a more deliberate choice.

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20. If one does not regard "smiling" as a volitional act, then the labeling would be Cause – Effect. The discussion, however, would follow the same lines, ending with Effect as the prominent segment.

21. I do not define nucleus and satellite in the same way as in RST. See for more information Section 8.2.

7.3 The levels of Adjunction and Interjunction

Based on Conjunction, the Connectivity Model describes discourse relations on two levels: Adjunction and Interjunction. An argumentation for this basic dichotomy can best be given by referring to three other important approaches for a structured description of discourse relations.

The most influential approach is the one promoted in Rhetorical Structure Theory (RST); see Mann and Thompson (1988). In this theory, the combination of clauses is considered to be the grammaticalization of rhetorical structures in discourse. (Note that this is just the other way round as in the Connectivity Model; see the discursive principle in Section 2.3). The clause combinations are called rhetorical because they are meant to have an effect on the addressee. RST uses a set of about thirty relations. This set is not fixed; reduction is possible. And extension is feasible, however only to a certain degree because of practical analytical reasons. The term 'rhetorical' would imply that all relations are on the interpersonal level, and not on the ideational level, as could at least for a part be expected. However, the set of RST relations does not clarify this supposed inherent interpersonal character of rhetorical relations.

In RST, the relations are subdivided within three families. Below, the relations are given.

Table 2. The discourse relations of RST

nucleus – satellite		**nucleus – nucleus**
Subject matter	*Presentational*	*Multinuclear*
Circumstance	Antithesis	Conjunction
Condition	Background	Contrast
Elaboration	Concession	Disjunction
Evaluation	Enablement	Joint
Interpretation	Evidence	List
Means	Justification	Multinuclear Restatement
Non-volitional Cause	Motivation	Sequence
Non-volitional Result	Preparation	
Otherwise		
Purpose		
Restatement		
Solutionhood		
Summary		
Unconditional		
Unless		
Volitional Cause		
Volitional Result		

In RST, the notions of nucleus and satellite play a central role. This aspect was dealt with in Chapter 3 on Conjunction via the content aspect of Ordination. The rhetorical relations in RST that have a nucleus-satellite combination are divided into 'subject matter' and 'presentational' relations. Subject matter relations describe connections between events in the world. Presentational relations describe connections which do not necessarily refer to a factual relation in reality. This distinction comes rather close to the 'ideational – interpersonal' division in Systemic Functional Linguistics. However, both the relation to reality and the effect intended by the addresser differ: the intended effect of a subject matter relation is that the reader recognizes the relation, for example that P is a cause for Q. The intended effect of presentational relations is to increase some inclination of the reader, for example to accept a claim on the basis of the presented Evidence or to establish positive regard by the Justification.

A special section in RST is reserved for the so-called multinuclear relations, which consist of two equally important segments. Only if these relations were neither subject matter nor presentational would this tripartition be a real tripartition. However, it is also possible in RST to label a relation such as Sequence both as a subject matter relation and as a presentational relation. The first would be the case after a connective like "after that"; the second after one like "secondly."[22] In other words, because the multinuclear relation Sequence can be categorized as both presentational and subject-matter, there is no real tripartition. The RST tripartition thus causes some problems in building a taxonomy.

Moreover, it is unclear why, for example, relations like Interpretation and Summary versus Evidence and Justification are meant to fit with the distinction subject matter versus presentational. After all, in an Interpretation or Summary, something is presented, whether this is a comment of the addresser (in an Interpretation) or support for the addressee (in a Summary). It is very difficult to avoid seeing this as presentational.

In reply to RST, several proposals for a taxonomy of discourse relations have been presented. Two other, rather extreme, proposals are discussed here to give an idea of other possibilities for distinguishing and ordering. One 'basic taxonomy' focuses on primitives from a cognitive viewpoint without attempting descriptive adequacy, and one 'practical taxonomy' aims to provide an ordered list as an answer to the question of the number of relationship needed to analyze discourse.

22. In the Connectivity Model, these would be called Narration and List respectively.

In the 'basic taxonomy,' discourse relations are categorized with four primitives which are introduced as cognitive categories. They are presented in (4) and illustrated with examples in (5) and (6).

(4) The four primitives in Sanders, Spooren & Noordman (1992)

1. basic operation	additive – causal
2. source of coherence	semantic – pragmatic
3. order	basic – non-basic
4. polarity	positive – negative

(5) He would be an even better player, if he was taller.

(6) John is a small boy, but he is a good basketball player.

The four primitives and eight distinctions can be explained using the Condition in (5) and the Concessive in (6). With the first primitive, the "basic operation," the phenomenon causality (P → Q) as in the Condition in (5) has a very high status. All other relations are listed under additive, for example a Contrast or an Exception, or the Concessive in (6). In this approach, the Concessive is seen as containing two sequential segments in an additive relation, in example (6): "a small boy" and "a good basketball player."

According to the second primitive, the source of coherence, a relation can be labeled as either semantic or pragmatic. The distinction semantic – pragmatic is based on the difference between reference to propositional content, as in (5), and reference to the illocutionary meaning, which has to be related to the goal of the communication, as in (6): contrary to the expectation, John is a good basketball player, although he is small. However, this approach fails to address the fact that semantic relations are also illocutionary or goal oriented. After all, in (5) the 'semantic' relation could also be labeled as illocutionary, expressing an admission.

The third primitive, 'order,' refers to the order of events in reality. The order in (5) has to be labeled non-basic, because the condition that has to be fulfilled first is placed after the outcome. However, this primitive is not really a primitive, because it does not apply to additives like (6).

The fourth primitive, 'polarity,' is a dependent primitive. It operates on the basic operation 'additive-causal' and has been introduced to describe the phenomenon that relations between segments sometimes have to be described with the negative counterpart of a segment, for example the Concessive in (6), which is based on a denial of the expectation that small boys will not excel at basketball.

This cognitive approach poses several questions, including why these four unrelated primitives are presented in this order, why the fourth dependent, 'polarity,' is on the same level, and why this approach uses the diffuse distinction

semantic – pragmatic. But, be that as it may, the three independent primitives can be placed in the tripartition Conjunction – Adjunction – Interjunction. Only the disputed distinction semantic – pragmatic (see Section 7.1) needs to be specified.

Table 3. Primitives in Sanders et al. (1992) compared to the Connectivity Model

Primitives in Sanders et al. (1992)	**The Connectivity Model**
3. order: basic-non basic	Conjunction: Location
1. basic operation: additive – causal	Adjunction: Extension – Enhancement (Causation)
2. source of coherence: semantic – pragmatic	Adjunction – Interjunction: with or without reference to the participants in the discourse

A completely different approach is presented by Hovy and Maier (1997), who start by considering the number of discourse relations that need to be distinguished to analyze discourse. They propose a compromise between a parsimonious and a profligate approach. Based on the SFL tripartition (ideational – interpersonal – textual), seventy relationships are organized in a hierarchy ordered along the line of the parameter 'specificity,' with Elaboration (the least specific one) at the top of the section of ideational relations. Below are the first sixteen relations.

(7) The first part of the Hovy and Maier taxonomy (1997)

Ideational relations

Elaboration	Objects	Object – Attribute, Object – Function
	Parts	Set – Member, Process – Step, Whole – Part
	Generality	General – Specific, Abstract – Instance
	Identification	
	Restatement	Conclusion, Summary
Circumstance	Place	
	Time	
	Means	
	Manner	
	Instrument	
	Parallel Event	
	(…)	

Unfortunately, Hovy and Maier do not present their criteria for the specificity parameter. This makes it difficult to see why, for example, Identification is more specific than an Elaboration of Parts, or why Instrument is more specific than Means. The organization of relations, such as locating Identification under Elaboration or the Parallel Event listed under Circumstance, can also be questioned. Remarkably, Restatement, with a subdivision into Conclusion and Summary, is listed in the ideational section as a kind of Elaboration. In the SFL tripartition

(ideational – interpersonal – textual) this relation would be better placed under "textual." Moreover, the Conclusion relation is made more precise in their explanation with the adding of "interpersonal," which makes it more reasonable to place Conclusion not under ideational relations but under interpersonal relations. Thus, while Hovy and Maier's list provides the most comprehensive overview until now of seventy labels used in the practice of analyzing discourse, their taxonomy does not possess a well-reasoned architecture. This makes it nearly impossible to discuss the architecture's pros and cons.

Given this confusing state of affairs in taxonomies of discourse relations, it seems reasonable to propose another taxonomy based on an other, more precise criterion, such as whether it is possible to describe a relation with or without taking into account how an addresser wants to join with an addressee. In such a taxonomy, any discourse relation not referring to the relationship between the interlocutors has to be labeled as an Adjunction relation, and a discourse relation referring to processes of Expressing, Processing or Impressing has to be labeled as an Interjunction relation.

7.4 Positioning discourse relations

The Connectivity Model has neither a cognitive theoretical orientation as in Sanders et al. (1992), nor a purely practical aim as in Hovy and Maier (1997). The starting point of the Connectivity Model (see Section 1.2) is the overwhelming variety of possibilities in discourse continuation.

The variety in discourse continuations cannot be described without reference to the conjunction phenomena. This is why Conjunction is visualized as the most central wire. A speaker or writer first has to determine Location: what information comes before or after other information, that is, the order of segments. The second step is to determine Ordination (the status of segments), whether one segment serves as a stepping stone for another or whether subsequent segments are equally important. Location and Ordination allow segments to be linked on the lexical level. This lexical connection between segments is accounted for via Combination.

Below Location are theoretically other connectives possible than "before" or "after," for instance: "at a distance," where other segments are inserted between a cause and an effect. Such distance positions are infrequent, but this phenomenon could easily be accommodated if, for example, an analyst wanted to describe Citation relations with an interrupted source (see Section 6.4 under heading 13). Under Ordination, the main possibilities are 'same status' (coordination) and 'different status' (subordination). A somewhat different possibility is interordination, referring to conversational pairs like invitation – acceptation,

greeting – response, command – affirmation, etc. It would be difficult here to imagine another kind of Ordination.

The distinctions under Combination are more or less in line with the well-known cohesion analysis of Halliday and Hasan (1976) as well as with new ways of systematizing patterns in lexis, such as in Tanskanen (2006; see further Section 8.1). It may be worthwhile to say here that the phenomena listed here under reference are ordered following the strength criterion: a repetition ("conference – conference") including anaphoric linking ("conference – it") is stronger than a substitution ("conference – symposium"), and a substitution is stronger than a collocation ("conference – papers"). One of the new aspects in Conjunction is the focus on elliptical combination via Zero-linkages, which can occur in all the Combination categories. This is inspired by the frequently reported lack of indicators, which should prompt a discourse relation.

A taxonomy could provide more insight into the phenomena being categorized if the position of a discourse relation in the taxonomy indicates some of its characteristics. At the level of Adjunction, the three procedures are ordered in the same way as in Systemic Functional Linguistics: Elaboration for adding an aspect to a concept, Extension for adding a new concept and/or event to a clause, and Enhancement for framing an event. This order can be questioned: Why not the order Elaboration – Enhancement – Extension? There is some reason in saying that Enhancement, as the framing of an event in Place, Time, Manner or Causation, comes closer to Elaboration than to Extension, which is a completely other procedure, because it adds a new concept and/or event. However, one could also argue the other way round: Extension simply adds a new concept – event combination, where Enhancement gives a more detailed frame. As there are no convincing arguments for either proposal, the standard order is followed here for the three Adjunction procedures: Elaboration – Enhancement – Extension.

It could have been possible to use other criteria to order the phenomena within the three Adjunction procedures, but these seemed less satisfying. For example, starting from the production level (which inspired the ordering of the tripartition within Conjunction) one could look on a deeper level of acquisition or discourse processing. Literature on the acquisition of connectives indicates that Additives are acquired before Causatives, and that Temporal goes before Contrast (see, for example, the overview in Evers-Vermeul, 2005). Unfortunately, for other relations such evidence is still lacking. Focusing on the discourse itself, one could argue along the lines of specificity, but this gives no guidance on whether, for example, Contrast is more specific than Sequence. Of course, Contrast could be described as 'Sequence plus negation,' but this does not explain whether or not the Contrast relation is more specific. Alternatively, by focusing on the processing of discourse, one could try an ordering according to information load or difficulty. For example,

a Sequence might be easier to understand than a Cause; however, no evidence with respect to this has been found. In fact, arguments do exist for the reversal of the order Sequence – Cause, since causal relations are processed better than sequential relations (see, for example, Sanders & Noordman, 2000).

Given the fact that a convincing ordering criterion is missing, the concepts below Elaboration, Extension and Enhancement are (as far as possible) ordered following the way these concepts are ordered in traditional grammar. Adjectives (quality) are always handled before numerals (quantity). Adverbial clauses are usually ordered from Time to Causation. Within Causation, Condition is normally placed before Concessive. It would be plausible to suppose that this ordering—with Place as more basic than Time, etc.—has roots in considerations about acquisition, specificity or complexity, going back to Aristotelian categories used by Greek and Latin grammarians. For example, noun (see Elaboration) comes before verb (see Enhancement). With no other cues for richer criteria, it seems wise to follow the old conventions in ordering. Perhaps in the future this ordering will support hypotheses about production by stating that the three procedures at the level of Adjunction are acquired from top to bottom with further distinctions in the given order.

The ordering at the level of Interjunction is inspired by the order in the tripartition of the Organon model from Bühler, introduced in Section 5.1. Moreover, the order of the aspects symptom, symbol and signal in Bühler's 'sign triangle' parallels the canonical order of the tripartition in the communication process: sender – message – receiver. Given the fact that there are no other plausible options for ordering Interjunctional discourse relations, the following order seems most reasonable: Expressing (a symptom of a sender), Processing (the symbols in the message) and Impressing (a signal for a receiver).

Within this tripartition, the discourse relations are ordered as far as possible along the lines of easily conceivable or fixed orders. The order of the Expressing relations, Presentation – Comment, is motivated by the fact that commenting on information usually presupposes or depends on the presentation of information. Within Comments, the order Interpretation – Evaluation – Conclusion is inspired by a same sort of consideration, namely that Interpretation is normally needed to give an Evaluation and that the latter one is needed to draw a Conclusion.

The order of the Processing relations, Explanation – Metatext – Attribution, comes close to arbitrariness. However, Explanation seems the most important one in processing information. And as the doublet given – new is never formulated as new – given, within Explanation Background (improving understanding with something 'given') precedes Clarification (improving understanding with something 'new').

The order of the Impressing relations, Attention – Acceptance – Action, is inspired by studies about persuasion in discourse; see for example Petty and

Cacioppo (1986). In order to get an addressee to think, feel or persuaded to do something via a message, the addresser has to get his or her attention first. Only after this stage is acceptance possible, and normally, acceptance is needed for action. Within acceptance, the frequency of the doublet 'objective – subjective' compared to 'subjective – objective' inspired the order Evidence (increasing acceptance, objective) before Justification (increasing acceptance, subjective). Within action, the desire to perform an action, Motivation, is placed after the ability to perform an action, Enablement. The only reason for this is that ability alone does not persuade to action. Apart from ability, desire is needed, and it indeed seems easier to provide for the ability to perform certain behavior, than the desire to do it. This makes Motivation the most addressee-approaching discourse relation of all.

CHAPTER 8

This model and other models

The history of science suggests that we progress
not by simply collecting facts
but by synthesizing ideas and then testing them.
It also teaches us that nothing is so effective
in promoting new thoughts and experiments
as a theory that one can amend or even knock down.
(Gerald M. Edelman, *Bright Air, Brilliant Fire: On the Matter of the Mind*, 1992)

8.1 Cohesion structures

The Connectivity Model presents twelve parameters to analyze Conjunction. Six of these appear in the third module at the Conjunction level: Combination. These six are also, in various ways, accounted for in cohesion analysis (as in Halliday & Hasan, 1976), in discourse semantics (as in Martin, 1992), in research into indirect anaphora (as in Schwarz, 2000), and in lexis analysis (as in Hoey, 2001). This prompts the question: To what respect is this model more useful than existing methods of analysis?

A good way of estimating the value of this approach is to compare it with a method of cohesion analysis which combines several other approaches. One of the most incorporating models is the one presented in Tanskanen (2006). Meant to capture cohesive meaningful relations, this model is based upon the seven most influential approaches in the analysis of lexical cohesion, including the approaches that have been mentioned above. The focus of Tanskanen's study is the application of her model to four varieties of discourse: spoken and written dialogue (face-to-face conversation and mailing list language) and spoken and written monologue (prepared speech and academic writing). But here the model itself is more important, especially because it incorporates various special distinctions in order to have a broad range of parameters for the analysis of various types of discourse.

Below in Table 4, Tanskanen (2006) is compared with the relevant section of the Connectivity Model: the reference part of Combination.

Table 4. Tanskanen (2006) compared with the Connectivity Model

Tanskanen (2006)	**The Connectivity Model**
	Combination: Reference
reiteration	
1. simple repetition	*repetition*
2. complex repetition	
	substitution
3. substitution (pronouns, dummy words)	grammatical
4. equivalence (± synonymy)	lexical: synonymy
5. generalization (± hyperonymy)	lexical: hyperonymy
6. specification (± hyponymy)	lexical: hyponymy
7. co-specification (± meronymy)	
8. contrast (± antonymy)	
collocation	*collocation* (including mero/antonymy)
1. ordered set	grammatical – semantic – pragmatic
2. activity-related	
3. elaborative collocation	natural – cultural – situational

Three types of referential Combination are distinguished on the level of Conjunction in the Connectivity Model: the iteration of a lexical item (repetition), the use of an equivalent (substitution) and the use of a related concept (collocation). Tanskanen's model contains a dichotomy: reiteration and collocation. The notion of reiteration is used in a much broader sense than repetition, covering not only substitution but also meronymy (like using "brake system" or "battery" to refer to a car), and antonymy (like "new" and "old"). However, this seems only a matter of model organization: in both models the same concepts are described.

There is another, more important difference in terminology. Tanskanen refuses to use classical lexical or semantic terms like "synonymy" and so on. The reason for doing this, is that in discourse lexical items that are not synonyms, antonyms, etc., can nevertheless be used as such. Here are two examples. 1. In a discourse, "Dutch politics" can be referred to as the "consensus approach." Semantically, "Dutch" and "consensus" are not synonyms, but in discourse these concepts can be used as such, making the more general term 'equivalence' more appropriate. 2. In a discourse about a playground with parents sitting and children playing, the concepts "parents" and "children" can be used as meronyms, describing the whole group, but also as antonyms, with parents as the elderly people, and children as younger ones. Another possible interpretation would be "passive parents" versus

"active children." Hence the more discourse-specific terms 'co-specification' and 'contrast.' Thus, instead of semantically driven, the Tanskanen model is in its terminology discourse driven.

In the Connectivity Model, the concepts co-specification/meronymy and contrast/antonymy are not subsumed under reiteration or repetition because they are not based on repetition but on naming another element of a concept (meronymy) or a contrasting element (antonymy). That is why these concepts are accounted for under collocation. Interestingly, Tanskanen also needs these concepts in the first type of collocation, the 'ordered set'. In a discourse, an ordered set like "yesterday – today – tomorrow" can constitute lexical cohesion. However, these concepts can also be linked via meronymy, for example as parts of a week survey. And pairs like "today – tomorrow" can also be linked via antonymy, for example in a context in which "today" it is still weekend and "tomorrow" is the first workday. This means that in the Tanskanen model there seems to be some confusing overlap between reiteration and collocation.

Other important differences are the distinctions within collocation. In the Connectivity Model the labels are more general, whereas in the Tanskanen model two concrete types are given (an 'ordered set' like the seasons in a year, and 'activity-related collocation' to account for links like "driving – car" or "meals – eat"), followed by a third, more general type. In the Connectivity Model, the second of these is subsumed under semantic collocation. The third, more general type, 'elaborative collocation,' refers to all kinds of lexical linking that can only be explained by using the concept of frame or scenario, like "university – lecture hall," which is an example of meronymy based on our cultural knowledge about universities, or "Arabs – oil reserves," which is based on our general world knowledge. These and other examples of elaborative collocation are accounted for in the Connectivity Model in the second type of collocation (natural – cultural – situational).

While the referential combinations in the Connectivity Model and the Tanskanen model are to a great extent similar, they differ in that the Connectivity Model uses a clearer tripartition where the Tanskanen model both makes more general distinctions in collocation and uses a sometimes confusing dichotomy. There are some minor differences, too. For example, Tanskanen uses 'complex repetition' as a discrete category to refer to the repetition of words in various grammatical functions, like "to decide" and "decision," and places the repetition of pronouns under reiteration, not under substitution.

The referential component in the Connectivity Model could of course be enlarged, with finer distinctions, and if necessary, it would be possible to distinguish not only between 'simple' and 'complex' repetition, but also between 'whole' and 'partial' repetition, as in "the World Food Conference – this conference" and

"the conference – the keynote." Similarly, within collocation finer distinctions could be made, such as those proposed by Huber (2002). He divided collocation into case relations like agent – object ("farmer – harvest") and action – instrument ("murder – gun") and meronymy into several subdivisions:

(1) Types of meronymy from Huber (2002)

functional object	tree – leaf
collection	forest – tree
group	choir – singer
ingredient	pizza – tomato
functional location	house – living
organization	army – division
measure	hour – minute

The main criterion for refining is that such distinctions should be easily applicable and relevant to research goals. In this respect it seems that, as far as cohesion is concerned, the Connectivity Model can serve as a base into which other important approaches are or can be incorporated.

8.2 On defining discourse relations

In the Connectivity Model, discourse relations are defined using clarifying labeling criteria and examples (see Chapters 4, 5 and 6). However, in Rhetorical Structure Theory (RST), the theory now considered the starting point of research into discourse relations (which it calls rhetorical relations), definitions are given in a completely different way. To see this difference, consider the following examples first:

(2) He traveled to Aruba to see his friend.
(3) John likes to go out; Mary likes staying home.

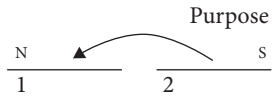
Both RST and the Connectivity Model label the relationship between segments in (2) as Purpose, and for (3) the label List or Contrast is possible. As is stated in the Ordination module of Conjunction, segments can vary in status, so the links can be symmetrical or asymmetrical. This is verbalized grammatically in the constituent "to see his friend" in (2)—asymmetrical linking—and by the coordinated clauses in (3), the symmetrical linking. However, there is also (a)symmetry on the content level. The segments can have a different status, in which case they consist of a nucleus – satellite combination, as in (2), or they can have the same status, in which case they consist of a nucleus – nucleus combination, as in (3). The nucleus – satellite distinction is based on 'importance' or status in the information flow.

In RST, the nucleus – satellite aspect has been promoted to one of the key concepts in the definition of relations. A nucleus, N, is seen as essential for the aim

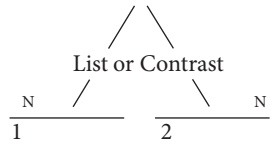
of the addresser. It contains the most important information: it can stand alone, as can, for example, the segment "He traveled to Aruba" in (2). A satellite, s, is not essential to the addresser's aim; instead it supports the information in the nucleus, and depends on the nucleus. Thus, the segment "to see his friend" in (2) serves as a satellite. In RST, satellites can be deleted when making a summary. Satellites can also be substituted by or filled in with other information without corrupting the gist of the message. In the case of (2), one could for example give another Purpose, and so on.

In RST, the nucleus – satellite aspect is visualized with lines and arcs. The line below the arc destination is the nucleus; the line below the arc origin is the satellite (4a). A multi-nucleus combination is symbolized with a joint connection of two diagonal lines (4b):

(4a) RST structure of (2)



(4b) RST structure of (3)



In RST, relations are defined in terms of: constraints on nucleus and/or satellite, constraints on the nucleus – satellite combination and on the effect intended by the addresser. Here is an example — for further information see Mann and Taboada (2007):[23]

(5)	*Purpose* in RST	He traveled to Aruba to see his friend.
	Constraints on N	N is an activity.
	Constraints on S	S is a situation that is unrealized.
	Constraints on N+S	S is to be realized through the activity in N.
	Intention of addresser	The addressee recognizes that the activity in N is initiated in order to realize S.

In RST, the N of a Purpose is defined as an activity, and the S as an unrealized situation. This means that the following Purpose relations cannot be labeled as an RST-Purpose:

(6) He wanted to go to Aruba to see his friend.
(7) He traveled to Aruba in order to find his friend.

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23. In earlier RST papers, for example Mann and Thompson (1988), the parameters 'effect' and 'locus of effect' are also part of the definition. My comments on RST are based on the most recent definitions with four parameters as presented in (5). I only changed "writer" and "reader" in "addresser" and "addressee," in order to include other modes of communication.

The condition "activity in N" in RST may be too strict, since (for example) there is no activity in (6): "He wanted." The condition "situation in S" can also cause problems. The Purpose in (7) is "to find," which can have an negative result in the continued discourse. So, the 'realization of a situation' need not be part of the definition. Notions like "activity" and "situation" could be better replaced with a more general description, like "state of affairs."

Apart from this, there is a more important problem: Why should the unrealized state of affairs always be labeled as an S? If the discourse continues on "friend," then the satellite segment does not satisfy all the conditions it should meet. In this case, it could be the most important information, which cannot be deleted or substituted. Of course, one could say that this segment is not essential for the intention of the addresser. But then one has to offer a plausible argument, which is very difficult to provide without further evidence supplied by the addresser. The main characteristic of a Purpose relation seems to be that in the discourse, 'something' functions as an aim for the realization of 'something unrealized.' This can be described without notions like 'intention' of N or S.

This example was at the level of Adjunction. Other examples can be seen at the level of Interjunction. Below is an example of an Antithesis. In RST, the Antithesis relation is defined as follows:

(8)	*Antithesis* in RST	Do we want freedom of speech or a Big Brother Society?
	Constraints on N	The addresser has a positive regard for N.
	Constraints on S	None.
	Constraints on N+S	N and S contrast, and the incompatibility that arises from the contrast means one cannot have positive regard for both situations; comprehending S and the incompatibility between the situations increases the addressee's positive regard for N.
	Intention of addresser	The addressee's positive regard for N is increased.

The RST definitions all contain assumptions about the state of mind of the addresser. So, in order to check the constraints on the N of Antithesis, we need to know the attitude of the addresser. However, it is to be doubted whether this is really relevant. After all, an addresser can feign positive regard. It would be better to base definitions on objective or intersubjective facts, for example that a positive regard can be deduced from information in the discourse or from general knowledge about the favorability of "freedom of speech" over a "Big Brother Society." Furthermore, it is remarkable that there are no constraints on S. As can be deduced from the constraints on N+S, S must contain contrastive information, and a Contrast cannot be unidirectional (only interpreted from N). Moreover, the constraints on N+S contain information which could better be situated within the intention of the

addresser, namely that the addressee's positive regard for N increases (and not "is increased" as is stated after "intention").

Also questionable here is the restriction that positive regard always has to be increased for the N. Why not create the possibility in the definition of increasing the positive regard of an S-segment? Or, more basically: why incorporate N and S in the definition of a discourse relation at all?

A third problematic RST definition refers to a multinuclear relation, the List:

(9)

List in RST	John likes eating; Mary likes swimming. (Ann likes …).
Constraints on each pair of N	An item comparable to others linked to it by the List relation.
Intention of addresser	The addressee recognizes the comparability of linked items.

Apart from the circularity in the constraints on each pair of N ("linked to it by the List relation"), it is not clear what exactly is meant by "comparable." It is not 'conforming at every respect'; in that case the elements of a List would be more or less the same, in this example "activities that people like." However, something must be different. Otherwise the formulation would be: "John and Mary both like something." Here, "comparable" means something like "capable of comparison," i.e.: capable of an estimation of similarities and differences. This means that the intention of the addresser can be the recognition of a similarity, whereas the addressee also recognizes a difference, and estimates that difference as more important; for example, that John is passive and Mary is active. So, an intended List relation can often also be interpreted as a Contrast relation; see also example (3) above.

It would also be better here to base the labeling on discourse phenomena or general knowledge. In RST, this relation could have been defined in the same way as the RST Joint relation, in which there are no constraints on each pair of N and no intentions of the addresser. Here RST gives an 'empty' definition by only presenting the concept Joint. (In the Connectivity Model Joint is seen as a synonym of Sequence; see Section 6.2).

In a multinuclear relation like List it would be fair to suppose that both segments are of equal importance, so that at least the concept of nucleus would be appropriate in the definition here. However, as in other N – N discourse relations, like Sequence, Contrast and Disjunction, one of the segments can be more or less important than the other, not on behalf of the intention of the addresser or the interpretation of the addressee, but because of its status in the information flow. So, even in multinuclear relations it would also be preferable not to incorporate the concept N into the definition of a relation.

Therefore, in the Connectivity Model, the concepts nucleus and satellite are not incorporated in the definition of discourse relations. However, this does not ignore the fact that in discourse analysis one has to deal with (a)symmetry. It is obvious that there is asymmetry in relations: if A is a purpose of B, then B cannot be a purpose of A, etc. It is also obvious that some relations, like a List, etc., are symmetrical. But that is not to say that a relation has to be defined with constraints on N and S. The status of nucleus or satellite can better be accounted for by looking at the discourse context. The Connectivity Model deviates from the RST in this respect. RST is writer based, hence the focus on the intentions. The Connectivity Model is discourse based, hence the focus on discourse context. Thus, in the Connectivity Model a segment can be S or N, depending on its context. Decisions must be made on the base of Combination phenomena on the level of Conjunction, especially repetition, substitution and collocation (see Section 7.2).

8.3 The domain of connectivity

The Connectivity Model is not intended to describe all sorts of discourse relations. It focuses specifically on relations in the domain between the local level of syntactic structures in sentences and the global level of generic structures in discourse types. In complex sentences, it ignores the relations in complement sentences.

Complement sentences can be found in the following examples (partly repeated from Section 3.3 on Ordination):

(10) It is to be doubted whether Tom will attend the meeting.
(11) This is why Tom did not attend the meeting.
(12) John asked me whether Tom would attend the meeting.
(13) We have to approve of what was decided in the last meeting.

These examples reveal four types of syntactic combination in complement sentences: a subject complement in (10) as an expansion of "It," a predicate complement in (11) as an expansion of "why," an object complement in (12) filling in the object of "asked" in a clause, and a prepositional object complement in (13), filling in the prepositional object of "approve." Such complement relations are not considered in the Connectivity Model because they indicate only syntactic relations. Of course, when these relations are used to combine full clauses, the connectivity taxonomy can be applied:

Subject complement: Evaluation
(14) Tom will attend the meeting. This is fine.

Object complement: Interpretation

(15) Tom will attend the meeting. At least, I guess so.

Prepositional complement: Reason/Interpretation

(16) They have approved. The procedure will start in ten days.

In global discourse analysis, the structure of a discourse as a whole is accounted for, as in the well-known tripartition 'introduction – body – conclusion.' Many examples can be found in analyses of discourse superstructures, for example the lead in a newspaper report or the sections 'experimental design' (with subdivisions) and 'discussion' in a scientific paper. Many discourse relations are also distinguished in the study of narratives and argumentative discourse, including 'setting,' 'episode' and 'complex reaction' in story grammar and 'data – claim' and 'confirmation – refutation' or 'peroration' in pleading.

Such global relations have a characteristic which makes them somehow distinct from discourse relations between subsequent segments: they are not conceived as relations between subsequent segments but as kinds of 'moves' in the discourse as a whole. A sentence or a paragraph is called orientation, digression, peroration, etc., with respect to its function in a narrative or plea as a whole discourse. The Connectivity Model is not designed to replicate this coverage. In principal, global relations are left aside in order to focus on the continuation possibilities at any point in a discourse, i.e., relations which can occur between subsequent segments.

However, this does not mean that all global relations have been set aside. There are global relations that can also have a function as a relation between subsequent clauses. For example, take a look at a well-known quintet in narrative analysis—Labov and Waletzky's story structure—which is based on the analysis of many stories from everyday life.[24]

(17) Labov and Waletzky's story structure (1967)

Orientation
Complication
Evaluation
Solution
Coda

24. See Renkema (2004) for more information about story structures and also for argumentative structures such as the Toulmin model in (18).

According to Labov and Waletzky—in a very short explanation here—every story consists of some kind of Orientation (I was walking down the street), a kind of problematic development (I did not see the banana peel), an Evaluation (It is always a mess in the streets where I live), a Solution (Luckily I had time to change my dress) and a Coda (A stupid story, isn't it?). The Connectivity Model can deal with many aspects of these moves, albeit with another label which could miss a story characteristic. The Orientation is a subtype of Organizer in the taxonomy. The Complication, normally spread out over more segments, would be—less informative—labeled as a Sequence. Evaluation and Solution(hood) are accounted for as Expressing relations, and the Coda would be labeled as an Evaluation, which lacks however the characteristic of a final Evaluation.

Another example is Toulmin's model for argumentation. Following Toulmin, each argument could contain the following six components:

(18) Toulmin's model for argumentation (1958)

1. Data
2. Warrant
3. Rebuttal
4. Backing
5. Qualifier
6. Claim

Following this model—in again a very short explanation—a Claim (John is at home) has to be motivated by Data (There is a light on behind his window). A Claim can be based on a general rule or Warrant (People turn on the lights when they are at home in the evening, and off when they go out) which can be further supported by Backing (This general rule is supported by surveys of human behavior) or affected by a Rebuttal that modifies the scope or applicability of the Warrant (Unless John is unconcerned by his electricity bill). Moreover, a Claim can be modified by a Qualifier (Unless he forgot to switch off the lights).

From these six components, five are incorporated in the Connectivity Model (using different terminology) because they can also occur between subsequent segments: the Warrant (as Justification), and the Backing (as Evidence) under Impressing relations, and the Rebuttal (as Restriction) and Qualifier under Enhancement relations. Finally, a Claim can in principal be placed as another type under the Expressing relation Comment in the same set as Interpretation, Evaluation and Conclusion. Only the component Data is unaccounted for because it has a function for all the other components and is as such only a global relation. Thus, if global relations from general discourse models for specific discourse

types act as relations between subsequent segments, they are or can be incorporated in the Connectivity Model.

Apart from the local syntactic and global generic relations, there is another area of discourse relations that is only partly accounted for in the model: conversational relations like question – answer, order – acknowledgement, etc. In Asher and Lascarides (2003), these relations form an important part in their set of about thirty discourse relations (about the same number as the RST set).[25] Asher and Lascarides distinguish various question-answer pairs with the following labels:

Question – Answer pair

(19) A: How can I get to the treasure?
B: By going to the secret valley and looking under the biggest tree.

(20) Indirect Question – Answer pair

A: How can I get to the treasure?
B: It's at the secret valley, under the biggest tree.

(21) Partial Question – Answer pair

A: Who's coming to the party?
B: Well, I know Mary isn't coming.

(22) Not enough information

A: Who's coming to the party?
B: I don't know.

In the Connectivity Model, all these relations would have been labeled at the level of Adjunction, as Interactional Pairs. Example (19) and (20) could also have been labeled as Means or Purpose, or Solutionhood on the level of Interjunction. Labels like "Partial" (21) and "Not enough information" (22) would not be used in the Connectivity Model because they only refer to the evaluation or impact of the answer. And after all, the same qualification would be possible for the answers in the other examples. In the Connectivity Model, the special characteristics of conversation and written dialogue are only accounted for by a type of Sequence,

25. In this impressive study, *Logics of Conversation*, a very precise description is provided of how interlocutors arrive at a discourse interpretation. Rhetorical structures are conceived as the basic framework in discourse. The analysis is undertaken from a formal semantic approach with a focus on truth conditional effects. In this overview, I cannot do justice to this rich study. Here, I only present some of their labels, using their examples given in the "glossary of discourse relations" (pp. 459–471). I also do not discuss minor differences in terminology, for example the label 'defeasible consequence' for Condition in "If John scuba dives, he'll bring his regulator."

namely Interactional Pair. Of course, one could refine the general Interactional Pair, with 'Indirect Answer,' 'Evaluation of the Answer' or 'Impact of the Answer.'

Apart from question – answer pairs, Asher and Lascarides also distinguish other conversational relations, like the following ones:

Acknowledgement

(23) A: Close the window.
B: OK.

Correction

(24) A: John distributed the copies.
B: No, it was Sue who distributed the copies.

In the Connectivity Model, an Acknowledgement relation like (23) would also be labeled as Interactional Pair. The Correction relation in (24) can be seen as an interactive variety of the subtype Correction in the taxonomy.

The main difference with Asher and Lascarides is that the connectivity labels for discourse relations are independent of the mode of discourse (monologue, dialogue) or the content of a segment. If, however, for special purposes it would be necessary to make finer distinctions, the Connectivity Model provides possibilities to incorporate more specific relations. This topic is further discussed in Section 8.5. First, the presented model will be compared with the most extensive list of discourse relations.

8.4 Comparing taxonomies

Over the last years, quite a few lists with proposals for categories and subcategories in discourse relations have been published. Proposed schemes range between two basic relations—causal and non-causal, in Grosz and Sidner (1986)—to over 400 relations collected from 30 studies, in an overview in Hovy and Maier (1997). Hovy and Maier, already cited in Section 7.3, included other leading taxonomies in their overview, such as the RST list of Mann and Thompson (1988), and then proposed a list of the about 70 discourse relations they regarded as the most important. Their proposal, however, has not been widely accepted.

One counter-proposal (Louwerse, 2001) presents a condensed taxonomy with a parameterization of discourse relations derived from the most influential discourse theories. This proposal distinguishes three classes—Causal, Temporal, Additive—and two parameters: polarity and direction. In Louwerse's taxonomy, 'polarity' refers to positive and negative relations and 'direction' refers to the order

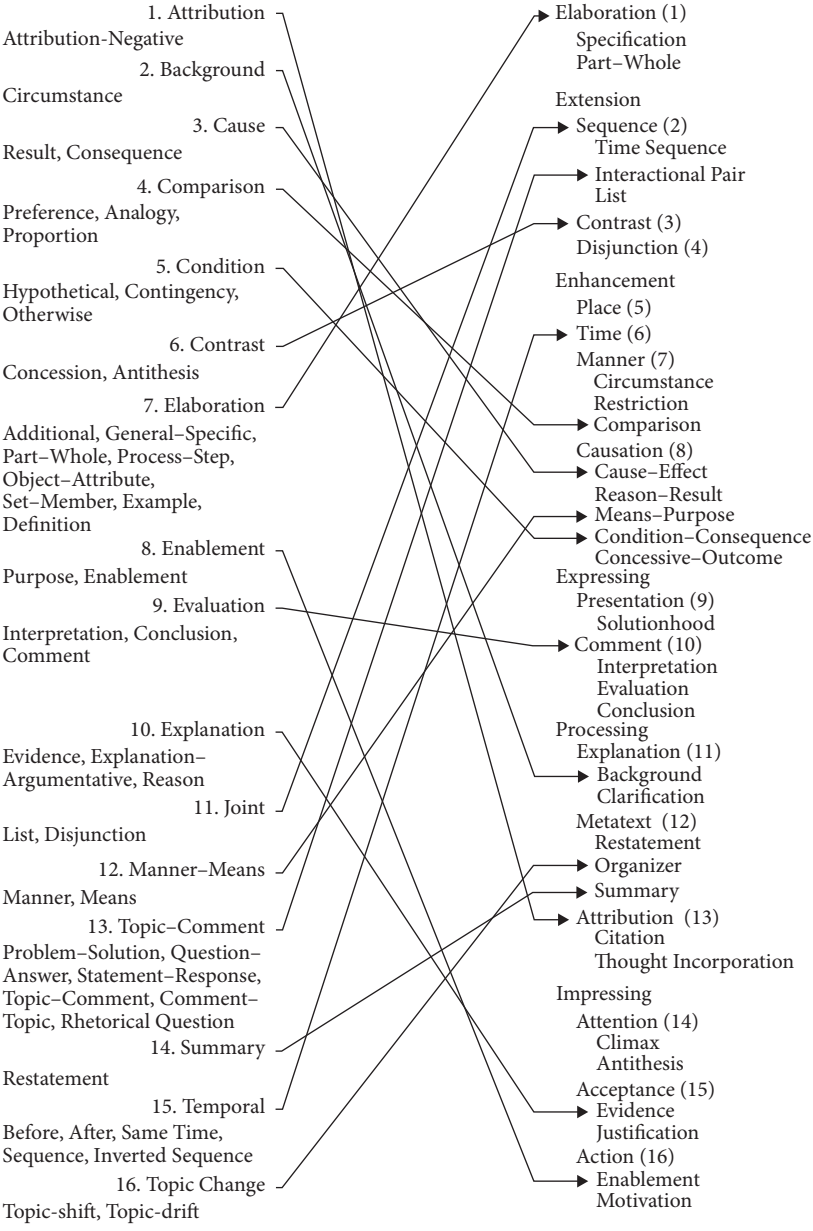
of the segments and the relations. In fact, this approaches the model with four primitives proposed by Sanders et al. (1992) cited in Section 7.3, leaving aside the disputable semantic – pragmatic distinction.

A second, more challenging proposal is the most extensive taxonomy until now, that of Carlson and Marcu (2001). They developed their taxonomy using the largest corpus to date: 385 documents selected from the Penn Treebank (see Section 11.4). To tag this corpus, they developed a reference manual in which they distinguish 79 types divided into 16 categories. See the left column in Table 5. However, they gave no internal structure to these categories; instead, these are simply listed alphabetically, from Attribution to Topic Change. Carlson and Marcu also relied on the RST framework while annotating the relations between segments, so the labeling of a segment depends on its status as a satellite with a nucleus, a nucleus with a satellite, or a nucleus with another nucleus. Thus, for example, Reason (satellite) and Result (nucleus) are two different relations, and a Consequence can be a Consequence-satellite or a Consequence-nucleus or a Multinuclear Consequence combined with whatever other nucleus. Such doublets and triplets can be counted as single types of discourse relations merely by eliminating nuclearity from the definitions (see Section 8.2), as Carlson and Marcu themselves do when providing their overview: they skipped 25 overlapping multinuclear relations in their overview and listed 54 relations that share 'some type of rhetorical meaning' in their 16 categories.

To see the differences between Carlson and Marcu's model and the Connectivity Model, the two have been mapped together in Table 5. The 16 categories of Carlson and Marcu are numbered. They are the headings for the 54 relationships. From these 16 headings, listed in the left column with the numbers from the taxonomy in brackets, arrows have been drawn towards the corresponding categories of the Connectivity Model, which have also been numbered and are listed in the right column. To keep matters as clear as possible the subtypes have been omitted in this overview. For a complete taxonomy of the relations of the Connectivity Model, See Section 6.2.

There are many minor and some major differences. I will concentrate here on four major ones. First, in the Connectivity Model Disjunction is seen as a separate category (4), whereas Carlson and Marcu list this relation under Joint (11); second, in the Connectivity Model, Causation (category 8 in the right column) is conceptualized differently and includes Condition and Concessive. Carlson and Marcu see Condition as a separate category (5 in the left column), placing Concession under Contrast, Reason in the same category as Evidence (10), and Purpose under Enablement (8); third, there is a special Topic – Comment category which seems rather heterogeneous, including Problem – Solution and

Table 5. Carlson and Marcu (2001) compared with the Connectivity Model



Note: The left column contains more than 54 relationships, as Carlson and Marcu have in certain cases counted the category name as a relationship also.

Statement–Response (13); fourth, there is a special Topic – Change category (16) which seems too narrow to capture all the aspects of Organizers.

In some cases, the differences seem to be larger than they are presented in this figure. Here are again four examples. Several differences are mainly caused by varieties in definition. The citations below are from Carlson and Marcu (2001).

First, the type Attribution-Negative in category 1 is distinguished in Carlson and Marcu for cases like "The spokesman denied that …" In the Connectivity Model, negative counterparts like Negative result, Counterevidence, etc., are subsumed under neutral labels: Result, Evidence, etc.

Second, the Preference relation in category 4, Comparison, "compares two situations, acts, events, etc., and assigns a clear preference for one of [them]." However, this relation is described as Antithesis on the Interjunction level of the Connectivity Model, because it reveals an attitude of the addresser.

Third, the Hypothetical Condition in category 5 is defined as presenting "a more abstract scenario than a Condition relation," which makes it more or less a synonym of Condition. The special type of Contingency in category 5, in which "the satellite suggests an abstract notion of recurrence of habituality," uses a label reserved in the Connectivity Model for a relation in which Time, Place, Manner or Causation can play a role; see examples (66) and (67) in Section 6.2.

Fourth, a special type of Explanation–Argumentative is distinguished within category 10. This type comes close to the Justification (category 15) in the Connectivity Model, because it is defined as "explanation for the situation presented in the nucleus."

Another way to compare these taxonomies is by listing the discourse relations which are not subsumed under another label and thus are not accounted for in the Connectivity Model. In fact, only one category (13 on Topic – Comment) is partly unaccounted for. All but two of the types of this category can be listed under Interactional Pair in category 2 of the Connectivity Model. One of its types, Problem – Solution, should be listed under Solutionhood in category 9. And another, Rhetorical Question, cannot find a place in the Connectivity Model because a rhetorical question like "Can you imagine?" is not a discourse relation but a characteristic of a single segment. Of course, the relation between a rhetorical question and another segment could be labeled as a Comment relation (category 10).

All in all, it seems fair to conclude that the Connectivity Model covers the 54 relations (plus the 25 multinuclear pendants) of Carlson and Marcu. Moreover, it incorporates relations that are not in Carlson and Marcu's taxonomy: Place, Restriction, Clarification, etc. And more important, the Connectivity Model is

not built up by listing categories alphabetically, but by presenting them in a clear architecture within a theoretical framework.

8.5 Controlled increasability

Any proposal for a new taxonomy has to be subject of a quality assessment. Generally speaking, there are four overall criteria used to discuss the quality of a taxonomy.

First, the practice criterion. This refers to the usefulness and applicability of a taxonomy in analyzing the domain which is addressed. In order to meet this criterion, the definitions of the families, categories, types and subtypes have to be very clear (see for an attempt Chapter 6). Of course, a thorough discussion of this criterion could only be based on empirical studies using various taxonomies. Such studies, however, have not yet been conducted.

Second, the internal order criterion. A well-built taxonomy has to be preferred above a mere list, because the internal structure reveals at least some of the essential characteristics of the phenomena to be taxonomized. The arguments for the architecture of the Connectivity Model have been presented in Chapter 7.

Third, the relevance criterion. If a new taxonomy adds nothing new, why should anyone consider using it in discourse research? The discussion of the most important differences between this taxonomy and leading approaches in the literature held in this chapter, may lead to the conclusion that it does offer a new, more detailed framework for studying discourse relations.

Fourth, the completeness criterion. Like any taxonomy, the Connectivity Model encounters problems of completeness, exhaustiveness or coverage: whether the tripartition in each dimension is sufficient, and whether the sets of discourse relations contain enough distinctions for analyzing pieces of discourse. Naturally, a taxonomy of discourse relations can only be fruitful if most of the discourse relations found in documents, conversations, etc., can be categorized in it. However, this fourth criterion is hardly applicable. The completeness criterion can only be convincingly discussed on the basis of data from a large corpus research into a great variety of discourse types.

Hence that another criterion, the increasability criterion, seems to make more sense: this is whether a taxonomy enables its users to make decisions about non-categorized discourse relations as to how they fit in. Such decisions unfold in three stages: 1. Is the phenomenon a discourse relation? 2. If yes, where should it be placed in the taxonomy? 3. What is the status of the 'new' discourse relation (can it be added as a family, category, type, etc., to a list in some way, or is a further refinement necessary)? First, the question whether a phenomenon is a discourse relation.

In Section 8.4, the Rhetorical Question was discussed as a potential discourse relation, but this clause-bound characteristic remains outside the Connectivity Model because it reveals nothing about the combination of segments. To incorporate

this relation would imply incorporating other relations like Modality, for example the wish in "That would be lovely." However, modality itself cannot constitute any discourse relation; instead, the discourse relation could be an evaluation of something stated in another segment. This would be similar to the following examples from the list used in Asher and Lascarides (2003, already cited in Section 8.3), in which a characteristic of a segment is also labeled as a characteristic of the discourse relation:

Asking for Explanation

(26) A: I want to go the party tonight.
B: Why?

In (26), B asks for an explanation. So, the label Explanation refers to the speech act character of the second segment. The relation between the segments is a kind of Causation or Motivation relation. If one wants to incorporate this relation of Asking for Explanation in the Connectivity Model, then one could open interactive subtypes within each type (asking for Elaboration, Clarification, etc.).

Plan – Correction

(27) A: Let's meet next Saturday.
B: I'm afraid I'm busy then.

The label here is again inspired by the content of the segments, not by the relation between them. This relation could be better characterized with Proposal – Refusal, which places it within the interordination possibilities of Interactional Pairs on the Adjunction level.

Now the second and third stage. If an analyst were to find a discourse relation which has not yet been accounted for, in what section of the taxonomy should it be placed? Here are two examples.

Parallel or Similarity

(28) John loves sport. Bill loves sport too.

Circumstance, Reason, Background, Justification …

(29) We have a whole evening free now. How about having dinner together?

The combination in (28) is labeled "Parallel" by Asher and Lascarides (2003) and "Similarity" by Wolf and Gibson (2006). These (sub)types are not accounted for in the Connectivity Model. Within the eight Adjunction categories, there are two possibilities: Sequence and Comparison. With the label Sequence the second segment is seen as an Extension of the first one, in a List relation. With the label Comparison the first segment is seen as a kind of Enhancement in the event frame of the second segment, where the statement that "Bill loves sport" is somehow

compared with "John loves sport," via the word "too." So, this discourse relation of Similarity could be listed as a new type under Manner. However, it is also reasonable to see this relation as a subtype of Comparison, at the same level as Proportion and Degree. This relation can be seen as a variety of Comparison, and hence can be placed as a subtype of it—preferably above the subtype Analogy because Similarity is stronger than Analogy.

The relation in (29) can be labeled in the Connectivity Model as a Circumstance or a Reason on the Adjunction level. However, the relation can also be characterized as a relation on the Interjunction level: the function of the first segment is to make the invitation more understandable or acceptable for the addressee. So, the labels Background (improving understanding) or Justification (increasing acceptation) would apply. Nevertheless, if an analyst thinks that these labels are too broad, then there is a problem. After all, these relationships are subsumed under the metatextual type Organizer. And the relationship in (29) is not metatextual at all. The Preparation or Orientation relation is meant in the same sense as the Orientation in story structures (see Section 8.3). A solution could be to refine the taxonomy with subtypes like Preparing Background or Orientating Justification.

Because the Connectivity Model only contains general labels, refinements within categories and (sub)types are always possible. Two further sets of examples with the connective "but" referring to the category Contrast and the type Concessive can illustrate this.

Contrast types

(30a) John goes to work, but Charles has a day off.
(b) She is not my English teacher, but she is in fact my aunt.
(c) He may be a villain, but we have to regard him as a colleague.

The clauses in these examples are connected by a Contrast. But only (30a) is a clear Contrast with two antonyms ("work – day off"). The relation in (30b) is a special type of Contrast, which could be called Replacement Contrast, and (30c) is another subtype of Contrast which could be labeled as a Concessive Contrast, in which the addresser dissociates him- or herself from the qualification in the first clause by making a sort of Concessive. The Connectivity Model allows an analyst to make specifications like these within a general category.

Concessive subtypes

(31a) He is an adult, but he acts like a child.
(b) He is a Democrat, but he is honest.
(c) He can say that we are crazy, but we want to take the risk.

In the Connectivity Model until now, the relations in (31) had to be labeled as Concessive, indicating a causation that is not expected. Example (31a) is a pure

Concessive based on the general knowledge that adults usually do not behave like children. The other examples reveal specific aspects of the denial of an expectation which is the criterion for a Concessive. Example (31b) does not counter a general expectation but some kind of implication that is presupposed by the speaker who wants to suggest that Democrats are usually dishonest. One can call this a subtype of Concessive, for example a Presuppositional Concessive. In example (31c), the first part of the Concessive has a special characteristic: it is a kind of admission. One could call this an Admissional Concessive. The Connectivity Model also allows an analyst to make more or finer distinctions within types.

This discussion of examples of relations which are not accounted for in the Connectivity Model shows that it meets an important criterion for taxonomies: the 'controlled increasability' criterion. If an analyst wants to incorporate a new relationship, the Connectivity Model offers clear criteria to be able to make a decision regarding its status as a category, type or subtype, and for its position on the level of Adjunction or Interjunction.

One final point should be discussed. An objection to the proposed taxonomy could be that it suffers too much from system pressure. Due to a penchant for pattern neatening, less relevant distinctions may be over-stressed. For instance, the category Place or the type Restriction, which are rather infrequent in overviews of discourse relations, have a significant place in the taxonomy. The only answer to this objection is that the Connectivity Model describes what discourse relations are possible after a given segment in a discourse; the taxonomy is not based on frequency.

A more serious objection would be that the system pressure prohibits the incorporation of new relations or dictates the wrong place for them in a taxonomy. Let us take again the examples of conversational pairs, question – answer, etc., which are only accounted for via interordination on the Conjunction level in a type of Sequence on the level of Adjunction, namely Interactional Pair. If an analyst prefers to place these interactional relations (offer – refusal, invitation – acceptance, etc.) on the level of Interjunction, this would seem, at first sight, impossible. After all, this level with its three families of Expressing, Processing and Impressing relations is based on Bühler's famous tripartition: symptom – symbol – signal (see Section 5.1). However, it is possible to expand the Interjunction level with a fourth component, 'Interacting,' under which the Interactional Pairs can be subsumed. This fourth component could not just be listed on a par with the other three. The relations of Expressing, Processing and Impressing refer to some aspect of the writer or speaker, whereas interacting relations involve both interlocutors. Thus, it would be better to have a division on a higher level between, for example, a class of one-way relations (subsuming the three families already included in the taxonomy) and a class of two-way relations with the family of conversational pairs.

With this last example I hope to have shown that the chosen tripartitions are not sacrosanct. In fact, Bühler's tripartition has been replaced into a four-partition in a very popular German approach of communication studies. See for more information Schulz Von Thun (2007, 45th reprint of 1981), who adds the so-called 'relational aspect' (the *Beziehungsaspekt*) to account for the attitude towards the addressee and the way interlocutors relate themselves to each other. The only reason that this aspect is not observed in the Connectivity Model is that it does not refer to intersentential but to suprasentential phenomena such as appraisal and conversation characteristics. However, if there are discourse relations which can only be accounted for via this relational aspect, it would be easy to expand the class of two-way relations with another family of 'attitudinal relations.' Thus, even this rather drastic operation falls within the criterion of controlled increasability.

CHAPTER 9

The representation of discourse

Het denken wil de werkelijkheid ordenen
en begrijpen, maar als het dat te gretig doet,
raakt het de werkelijkheid juist kwijt.

(Theodor Adorno, *Negative Dialektik*, 1966)[26]

Thought wants to order and understand reality,
but when it does so too eagerly, it loses reality instead.
[Author's translation]

9.1 The unit of analysis

In applying the Connectivity Model to discourse, it is not the sentences, but the clauses (whether main or subordinate) that have to be seen as the basic building blocks. There are two reasons for this. Syntactically, clauses are the smallest units organized around a verb. From a discursive point of view, clauses are the units to 'run on' a topic (see Section 2.3). And it is with a clause as a verb headed phrase that a constituent can be expanded into a discourse segment; see the following examples. These and the others in this section are derived from or inspired by the Mother Teresa text; see the last rendering in Section 7.2.

("Are you married?")

(1) "Yes," she replied, to their surprise.
(2) "Yes," she replied, and the audience was surprised.
(3) "Yes," she replied. And the audience was surprised because she had taken the vow of chastity.

In (1), there is one verb frame; this is one segment. In (2) the constituent "to their surprise" from (1) is expanded as another verb frame, another clause; this makes

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26. This quote is allegedly made by Adorno, but cannot be found as such in his book *Negative Dialektik* (Negative Dialectics). It does however nicely demonstrate the gist of Chapter 1 of his book; *Das ontologische Bedüfnis* (The ontological need).

two segments. From a dialogic point of view (see Section 2.4), one can argue that reactions from addressees are only possible at a clause boundary. In (1) the prepositional phrase "to their surprise" can be seen as a condensed clause, embedded in the clause: "'Yes,' she replied." But after "replied" a reaction of the addressee is hardly conceivable, unless the reaction is seen as an interruption. In (2) however, at this position a reaction of the addressee is more acceptable, for example: "To whom are you married?"

From (3) it is clear that we need to look at both sentence and clause boundaries. In this piece of discourse, two relationships can be distinguished: a Sequence or Result at the full stop, verbalized with "And," and a Reason within the second sentence, verbalized with "because." After the first sentence, an addressee's reaction like "Go on, what happened?" is conceivable. And after the first clause in the second sentence, the quaestio "Why" is plausible. In fact, clause boundaries are often more important than sentence boundaries. This can also be seen in (3), where the Reason relation, established by the third clause (after "because"), also refers to the first clause via the word "she." Thus, our deepest level of discourse analysis is a complete clause, containing a finite verb.

However, not in all cases is there a one-to-one relationship between a clause and a discourse segment. The reason for this is that a clause is a unit on the dimension of Conjunction, where main clauses and subclauses are combined. A discourse segment, however, can be seen as an information unit on the dimension of Adjunction (the linking of information), or on the dimension of Interjunction (the way the addresser joins with an addressee). Thus, in some cases an incomplete clause has to be seen as an information unit and in other cases a clause has to be regarded as only a part of another information unit. See the following examples:

(4) "Yes," she replied. And all the people who heard it were surprised.
(5) After a long time she answered, "Yes." And the audience was surprised.

In (4), the relative clause "who heard it" is not counted as a segment because it has no function on the level of discourse. In (5) however, the elliptical clause "Yes" can be seen as a stand-alone answer, which makes it a whole segment.

Generally speaking, there are two reasons to downgrade a clause to a part of another segment, and two reasons to upgrade an incomplete clause to a segment.

Downgrading complete clauses to segment parts

There are two cases in which a clause may not have the status of an information unit, and consequently is downgraded to a part of another segment. The first, the

complement clause, is a clause that has the function of subject or (indirect) object to another clause. See for examples the complement relations (10 – 13) in Section 8.3. In the Mother Teresa text, the complement sentences are not counted as discrete segments; see, for example, segments 4 and 5 in (6), which could be segmented otherwise, as is shown in (7).

(6) 4. "Smile at your wives," she told them. 5. "Smile at your husbands."
(7) 4. "Smile at your wives," 5. she told them. 6. "Smile at your husbands."

An argument for not counting the matrix subject clause ("she told them") in (6) as a segment is its low level of informativity or the small chance that a reader would ask: "Who said this?" In this story, it is obvious that it is a quote from Mother Teresa. However, there are arguments for counting subject and object clauses and their matrix clauses as separate segments. Examples (8) and (9) contain a subject complement and examples (10) and (11) an object complement. The matrix clauses are italicized:

(8) *It is said* that she considers herself as married.
(9) *It would be very nice* if you would ask her for some advice.
(10) *One of them thought* that she was not married.
(11) *After a silence Mother Teresa answered thoughtfully*: "I am a spouse."

In (8), the matrix clause "It is said" for the subject complement is rather 'empty.' Therefore, it would be reasonable to regard these two clauses together as one segment. However, other matrix clauses contain information that makes them good candidates for segmentation. The matrix clause in (9), for example, contains an evaluation about "asking advice" in the subject complement, namely: "nice." This makes it plausible to count (9) as two segments. Similarly, examples (10) and (11) with object complements reveal a strong difference in information load between the matrix clauses. In (10), the matrix clause only contains an aforementioned subject and the verb "think," whereas (11) contains aspects of relationships, namely Time ("After a silence") and Manner ("thoughtfully"). This makes it clear that a rule of thumb, saying that complement sentences are never to be counted as segments, may not be a good solution. A better procedure would be the following one: Do count a complement clause as a discourse segment if its matrix clause contains elements that indicate a discourse relation, such as in (9) where "nice" indicates an Evaluation, and in (11) with "After" as a Time indicator. Do not count a complement clause as a segment if its matrix clause only consists of a verb indicating a citation or thought (tell, ask, think, etc.) and an empty subject like "it" in (8), or a subject that has already been introduced in the discourse so far, generally a pronominal subject, like "one of them" in (10).

The second case in which a clause is not counted as a discourse segment is in the case of a *restrictive clause*, which describes a subset from a larger whole, as in the following examples:

(12) Some Americans visited Mother Teresa. Those who were in the teaching profession, asked her for some advice.
(13) Mother Teresa is still very influential. She often gives remarkable advice if people ask her something.

Example (12) contains three clauses: three verb headed phrases with "visited," "were," and "asked" respectively. However, the clause "who were in the teaching profession" is a restrictive relative clause. This type of relative clause (see for other types Section 11.2) is not counted as a separate segment because it only indicates a subset of a sample or "mass concept" which has already been introduced—here: "Some Americans." A same kind of restriction can be seen in (13). The last segment is an adverbial clause, which has a conditional relation with the second segment: Mother Teresa only gives remarkable advice if she is asked for it. This condition has the meaning of a Restriction: 'only if.' Hence a restrictive adverbial clause is not counted as a separate segment either.

Upgrading incomplete clauses to segments

There are also two cases in which an incomplete clause has in fact the status of a segment: non-finite clauses and contracted clauses. The *non-finite clause* is a clause lacking a finite verb. The difference between finite and non-finite clauses will be made clear by considering the following examples:

(14) They asked her for some advice, in order to take home wise words for their families.
(15) They asked her for some advice, wanting wise words for their families.
(16) They asked her for some advice, because they wanted wise words for their families.

The non-finite clause in (14) contains an infinitive: "to take." Thus, this clause does not satisfy the condition a segment should meet, because it has to contain a finite verb. The same goes for the clause in (15), containing only a present participle, "wanting." However, because non-finite clauses are regarded as elliptical formulations for a full clause, as in (16), they are counted as separate segments.

The second case is the *contracted clause*, in which some parts are omitted. See the following examples:

(17) They asked and begged her for some advice, went home, and smiled at their families.

(18) They smiled at their families and colleagues.
(19) They smiled at their families and colleagues, because they thought it was also a good advice for the workplace.

Sequence (17) contains three clauses of which two are elliptical: the subject "They" has been omitted before "went" and "smiled." Grammatically speaking, "They" has been contracted to the first occurrence of this word. Yet, these contracted clauses are to be seen as three separate segments. Only when the words before and after "and" are meant to be synonyms ("asked and begged"), or are an enumeration or fixed combination, like "trees and plants," can they be seen as part of one segment. One could argue whether the contraction of subject and verb as in (18) also results in a separate segment. In this case, the sole mentioning of "colleagues" could be conceived of as part of the object "families and colleagues." However, this is difficult to decide without context. If the discourse continues on a clause with a contracted subject and verb, as in (19), then even an elliptical clause of one word ("colleagues") should be counted as a segment. A good rule of thumb would be to count contracted clauses without a subject as segments, and only assign segment status to contracted clauses without both subject and verb if the remaining part plays a role in discourse, as in (19).

All in all, although there usually is a one-to-one relationship between clauses and segments, sometimes a confusing clause is encountered. There are several things to keep in mind when one wants to decide whether such a clause is to be seen as a segment or not. The guidelines to follow are listed in short below:

Type of clause	**Segment?**
Complement clause 1. *It is said* ***to be a difficult test***	No Unless the matrix clause contains elements indicating a discourse relation
Restricted clause 1. *Students* ***who have attended the lectures*** *will have a good chance to pass*	No
Non-finite clause 1. *I will need to study full-time for at least a week* 2. ***in order to pass for this test***	Yes
Contracted clause without a subject 1. *I have made the test,* 2. ***and passed it***	Yes Unless it contains an enumeration or synonym

In proposing this clausal-based approach to the segmentation of discourse, with two downgrading and two upgrading exceptions, it has to be emphasized that

there is no foolproof method for determining a unit of analysis which is appropriate in all instances. Four points are worth mentioning:

First, depending on the aim of analysis it could be appropriate to go deeper into a segment. This could not only be the case with the restrictive adverbial clause above, but also with so-called 'appositive noun phrases,' like the one in segment 2 in the Mother Teresa text:

(20) When a group of Americans, many in the teaching profession, visited her (…)

It could be necessary to count appositives, usually placed between commas, as separate segments. For example, if an analyst wants to compare grades of density in style and has to collect data on the relations between full non-restrictive clauses and condensed ways of formulation.

Second, depending on the aim of the research, there may be no need to analyze in depth the relationships between all subsequent segments. Of course, one can focus on discourse relations between paragraphs, or, more specifically, on 'moves' or 'acts' in discourse on the Interjunction level. For example: a span of segments functioning as an Orientation in a story, or an Evaluation of a measure or Evidence for a claim. Because such a move can consist of a span or a chunk of segments, for example a paragraph, it may be pointless to go into detail in analyzing the relations within the chunks.

Third, punctuation sometimes proves a useful tool for segmentation. But given that punctuation rules are not always obeyed and sometimes have high degrees of freedom, segmentation cannot be based on it. Here is example (1) again with other possible punctuations:

(21a) "Yes," she replied, to their surprise.
(b) "Yes," she replied. To their surprise.
(c) "Yes," she replied. To their surprise!

Normally, postponed remarks are considered to belong to the preceding clause. So there is no difference between the comma in (21a) and the full stop in (21b). Only in the case of a question or exclamation mark as in (21c) would there be an argument to see the postponed remark as a separate segment, because then the relation is much more like an Evaluation.

Fourth, in addition to the *syntactical* approach proposed in this study (with the clause as base), there are three other useful approaches to segmentation. First, there is the *intonational* approach, based on prosodic contours of discourse. This approach could be a good back-up when analyzing conversations; see Degand and Simon (2005) for some pro and con arguments. Second, there is the *conceptual* approach,

based on information units; see for example Schilperoord and Verhagen (1998), who introduce the criterion of 'conceptual independence' to rule out matrix clauses. This 'independence' implies that matrix clauses such as "he said admittedly," which can have a kind of concessive relation to what is said, would not count as a discourse segment because its interpretation depends on a complement clause. Third, there is the *functional* approach, based on the speech acts performed in a discourse. See for example Moser, Moore and Glendening (1996), and also Hannay and Kroon (2005) who distinguish between conceptual and strategic units. In this study, the only reason for adapting the syntactical approach is because it is much easier to apply than the other ones.[27]

9.2 Discourse trees

Analyzing a discourse, say a newspaper article or a doctor – patient conversation, should ideally result in a presentation of a discourse structure in which the relations between all segments have been made clear. A generally accepted way to visualize the discourse structure is the tree structure developed in RST.[28] Below is an example: the discourse structure of the Mother Teresa text. It is one out of three possible analyses, published on the RST website (Mann & Taboada, 2007). The labels used here are RST labels.

(22) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

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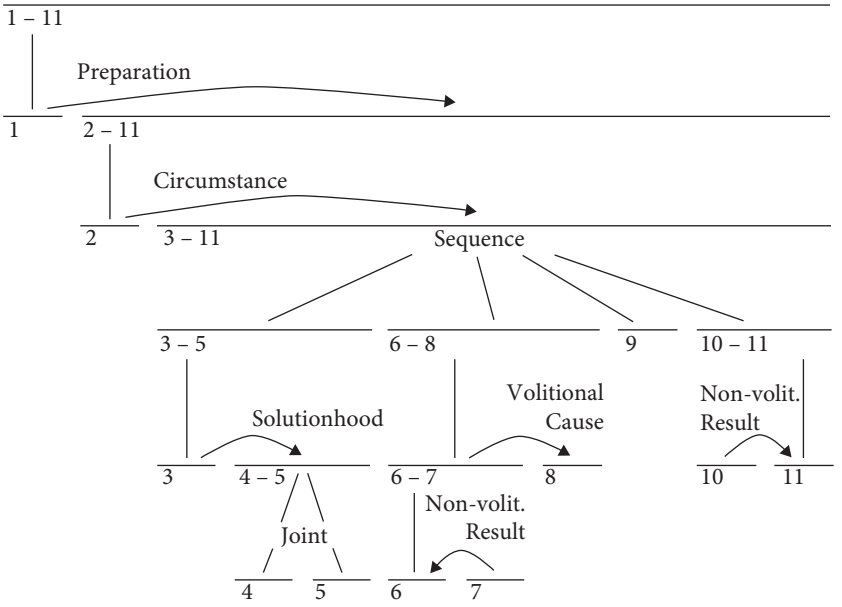
27. For an overview till 1998 of other proposals for **b**asic or **e**lementary or **m**inimal **d**iscourse **u**nits—BDU's, EDU's or MDU's—see: http://www.cs.umd.edu/users/traum/DSD/schemes.html. See Carlson and Marcu (2001) for some finer distinctions in complement clauses within the syntactical approach.

28. Trees are not the only possibility to visualize discourse structures. See for example Halliday and Matthiessen (2005: 389–391), who propose five other notation possibilities in box and dependency diagrams. However, these diagrams are difficult to represent without high quality drawing software.

(23) An RST analysis of the Mother Teresa text



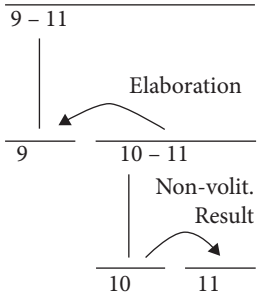
An RST tree is built up out of so-called schemas: structural descriptions of segment combinations. The three most frequent schemas are: satellite – nucleus, such as Circumstance; binuclear such as Contrast; and multinuclear, such as Sequence or Joint. These schemas can be applied recursively into a hierarchical structure, which makes it possible to represent discourse of arbitrary length. A discourse tree has to satisfy four conditions:

1. Completeness. The tree must contain one schema that covers all the segments of a discourse. In (23), it is the top relation Preparation, relating segment 1 to segments 2–11.
2. Connectedness. Every segment has to be connected to another, be it as a part of another combination (as in the segments 3–5 to 6–8), or as a single segment (as segment 3 to segments 4 and 5 on a lower level).
3. Uniqueness. Only one structure can be assigned for every piece of discourse, and each relation applies to a different combination of segments.
4. Adjacency. Segment combinations in a schema cannot be interrupted by other segments.

The first two conditions (completeness and connectedness) are self-explanatory: the first division into spans of segments must cover the whole discourse, and below this top level all segments have to be related. The third condition on uniqueness has proven to be hard to satisfy. In doing RST analyses, it turned out that often

more than one structure was possible, with other labels for relations, as in the RST-analysis of the Mother Teresa text. Below is another analysis of the last three sentences (also from Mann & Taboada, 2007):

(24) Another RST analysis of the last three segments



Here, the segments 9 and 10–11 of (23) are combined in one Sequence in another structure, using on a lower level the label Elaboration instead of Sequence.

The fourth condition, on adjacency, means that, for example, a Cause – Result combination such as in segments 6–8 cannot be interrupted by an Elaboration on that Cause. If that would be the case, then the Elaboration would have to be combined with the Cause first, before the Cause can be linked to the Result. However, as stated in Mann and Thompson (1988: 247), the adjacency condition is not essential for a tree structure. In fact, we can allow non-adjacency without disrupting the tree structure. Non-adjacency can occur in nested clauses, in parenthetical clauses and in source clauses. Some examples:

(25) They did not want to ask for further advice, because, after she gave her comment on Jesus, they were a little bit puzzled.

(26) Besides giving advice, Mother Teresa did many more things—for example, she once rescued children trapped in a front line hospital!—in addition to founding the Missionaries of Charity.

(27) "That advice," as I was told later on by a mediator, "is only seemingly very easy to follow."

(28) Her advice can only improve a marriage (but I still doubt it) if a smile is returned now and then.

(29) "Smile every day," she continued with enthusiasm. "Maybe tomorrow you won't have any chance to."

Non-adjacency refers to two different phenomena. First, there can be intermissions resulting in split or continued segments. In (25), a "because-segment" is interrupted by a segment in a Time relation. In (26), a segment is interrupted by an Exemplification, and in (27) an Attribution splits up a citation. Second, it is possible to place the intermission between two segments. In (28), an Evaluation interrupts the discourse relation Condition, and in (29) an Attribution interrupts

a combination of segments that form a Reason or a Justification relation. Below are illustrations of how the above examples would look in a discourse structure, in which the separate segments are represented by lines. The structures are without labeling, because it is the structure itself that is most important to explain here:

(30) Nested, parenthetical and source clauses within the same segment

(25) 1 2a 3 2b (26) 1a 2 1b

(27) "1a," 2, "1b"

In (25), the nested clause (3) is enclosed between two segments, 2a and 2b. Segment 2a consists of only the word 'because.' Nested clauses are divided into two segments, which cannot stand on their own.

(31) Interrupted, parenthetical and source clauses between two segments

(28) 1 (3) 2 (29) "1" 3 "2"

In interrupted clauses, a third segment interrupts the two that belong together. In order to number these segments, the two that belong together should be numbered subsequently. A third segment comes 'in between' and thus the numbers of the segments may seem out of order: "1–3–2."

9.3 Comments on trees

An important characteristic of discourse is the degree of importance of various segments. This aspect is often blurred in a tree structure. If one would ask a reader which segments are most important in the Mother Teresa text, a plausible answer would be: segments 3–5 and segments 8–9. Another answer could be: segments 8–11. In a tree, a span of segments is split up over lower levels following the labeling of relations. Hence it could be that important segments are also the most embedded ones, such as segments 4–5 in the tree structure in (23). Segments of equal importance could also be placed on different levels, as segments 8 and 9 are in the same tree. Thus, a tree does not present all the information that could be useful for discussing the discourse structure.

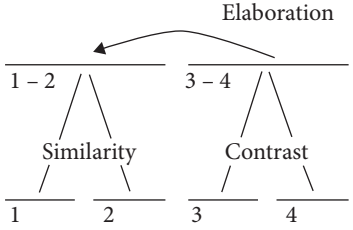
Apart from not indicating the degree of importance, discourse tree structures have been criticized on in literature for two other shortcomings. A tree structure can neither cope with cross-dependency, nor with multiparency. These

two serious objections were raised by Wolf and Gibson (2006). First, an example of cross-dependency:[29]

(32) 1. Schools tried to teach students history of science.
2. At the same time, they tried to teach them how to think logically and inductively.
3. Some success has been reached in the first of these aims.
4. However, none at all has been reached in the second.

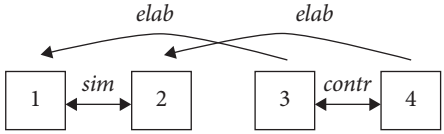
A tree structure of (32) would look like this:

(33) RST tree structure for (32)



As Wolf and Gibson also stated, the relation between segments 1 and 2 can have two different labels: Similarity and Contrast. The labeling depends on which constituent is considered more important. If the focus is on "tried to teach," then Similarity is more plausible. If, however, the focus is on the different topics that are taught, then Contrast is more plausible (see also example (9) in Section 8.2 and Chapter 10 on multilabeling). But this is irrelevant for the phenomenon Wolf and Gibson want to point out, namely the fact that segment 3 is an Elaboration on segment 1, crossing over segment 2, and that the same applies for segment 4 to 2. This cross-dependency cannot be shown in a tree structure in which the relations have to be adjacent. Therefore, Wolf and Gibson present a coherence graph to describe discourse structure:

(34) Coherence graph for (32)



Note: *sim = Similarity; contr = Contrast; elab = Elaboration*

29. Wolf and Gibson's original analyses are used here, including the discourse relations they propose. Each segment is presented on a new line in order to facilitate discussion.

However, this analysis can also be disputed. The cross-dependency can only be viewed as salient if one wants to focus on "the first" in segment 3 (to 1) and "the second" in segment 4 (to 2). If the focus were to be on "these aims," in segment 3, then this segment should be related to both segment 1 and 2. And even if the focus were to be on "the second" in segment 4, then it still is the second of two aims, which implies that segment 1 should be linked to segment 2 as a base for "the second." In fact, Wolf and Gibson describe the referential combination possibilities on the Conjunction level.[30] (See Section 3.4 on phoric and ground.)

It is difficult to find clear cases of cross-dependency, i.e., cases in which the labeling can only be explained by some cross-over combination. Compare these, also cited from Wolf and Gibson:

(35) 1. Susan wanted to buy some tomatoes
2. and she also tried to find some basil
3. because her recipe asked for these ingredients.
4. The basil would probably be quite expensive at this time of the year.

(36) 1. The flight Sunday took off from Heathrow Airport at 7:52 pm
2. and its engine caught fire 10 minutes later,
3. the Department of Transport said.
4. The pilot told the control tower he had the engine fire under control.

Following Wolf and Gibson, in both examples, segment 4 has an Elaboration relation with segment 2, so it is crossing over segment 3. In (35), however, there is not only a repetition of "basil," relating 4 to 2, but also a Part – Whole relation between "basil" in 4 and "these ingredients" in 3, making the Elaboration in 4 adjacent to 3. Thus, this is not a clear case of cross-dependency. It seems more clear in (36), where there is a repetition of "engine" in the non-adjacent segments 2 and 4 and no connection between segments 3 and 4. However, even here one could argue for a dependency between 4 and 3: One actor ("the Department of Transport") gives a statement, followed by a statement of another actor, "The pilot." Depending on the context, this relation could be labeled as a Contrast.

Be that as it may, representations of discourse structures should be able to cope with non-adjacent discourse relations. This can be done in the same way as was explained in the previous section with a notation convention for nested, parenthetical and source clauses. See Section 9.4 for further information.

The second objection to discourse trees refers to what is called multiparency: the phenomenon that a segment can have various relations with different other

30. See also Webber (2006), who argues that cross-dependency is, in fact, an anaphoric dependency.

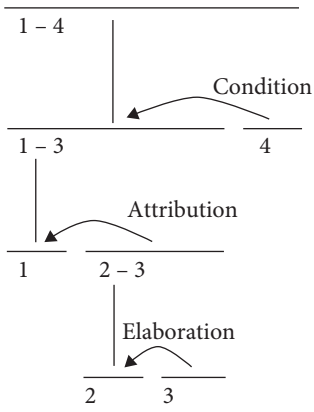
segments. See the following example, also containing a cross-dependency or non-adjacency relations between segments 1 and 4 and 2 and 4:

(37) 1. "Sure I'll be polite,"
2. promised one BMW driver
3. who gave his name only as Rudolf.
4. "As long as the trucks and the timid stay out of the left lane."

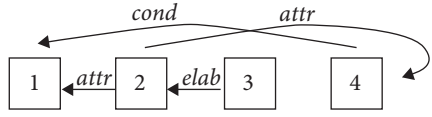
Here, segment 1 is linked via two discourse relations. It has, so to say, two parents: 2 as an Attribution and 4 as a Condition. More important however is that segment 2 also has two relations, but this is not a case of multiparency: segment 2 is a parent of 1 in an Attribution relation, and a parent of 3 in an Elaboration relation.

In an RST tree, a segment can also have different relations, but then the relations are on a different level, for example in the tree representation of the Mother Teresa text (see 23 above) in which two Joint segments (4 and 5) together have a Solutionhood relation with segment 3, and these three together have a Sequence relation with following spans of segments. Below the structure of (37) is visualized in both an RST tree from Mann and Thompson (1988) and in a coherence graph as proposed by Wolf and Gibson (2006):[31]

(38) RST tree for (37)



Coherence graph for (37)



Note: *cond* = condition; *attr* = attribution

It is obvious that the tree structure cannot capture the multiparency of segment 1. This is due to the uniqueness condition of the RST trees: that there is only one structure possible with one relation per structure (see Section 9.2). However, the uniqueness condition has already been weakened in admitting different structures

31. This coherence graph is presented here as it was in Wolf and Gibson's book. One could argue however that the direction of the Elaboration relation can also be the other way round.

to the same text with different labels, as was also shown in Section 9.2 with the Mother Teresa text. Therefore, it seems reasonable to weaken this uniqueness condition further in admitting two or more labels for the same segment, indicating different relations with various (spans of) segments.

9.4 Connectivity graphs

Apart from the comments made in the previous section, RST trees have another shortcoming which cannot be elegantly solved in coherence graphs: they do not indicate the degree of importance of a segment in combination with non-adjacency, cross-dependency and multiparency. This is the reason that I want to propose a new way of representing discourse structures: the connectivity graph. In this graph, which can be composed rather easily in a word processor, with lines and arcs on various levels, three shortcomings of existing proposals have been improved. First, it reveals more clearly the relative importance of the subsequent segments: the higher the segment, the more important it is. Second, it can deal with non-adjacency and cross-dependency, simply by pointing arcs to whatever segment. Third, it allows multiparency, by admitting two arcs connecting one segment to other segments (even if they are on a higher level).

The differences with the most frequently used RST tree can be illustrated with examples like the following. In (39), example (2) from Chapter 8 is expanded:

(39) He traveled to Aruba to see his friend.
(a) 1. He traveled to Aruba 2. to see his friend. 3. It was a turbulent flight.
(b) 1. He traveled to Aruba 2. to see his friend. 3. But he could not find her.
(c) 1. He traveled to Aruba 2. to see his friend. 3. And yes, she stood there at the airport!

The first two segments contain a Purpose relation. The continuations in segment 3 refer to different grounds. In (39a) the story continues on "traveled" in segment 1. In (39b), segment 2 is continued on, and in (39c) the third segment has segments 1 and 2 as its ground: "she" refers to friend in 2, and "there at the airport" refers to "Aruba" in segment 1.

In RST, the structures can only be visualized by dividing spans of segments into smaller spans ending in the segments. See the left column in (40) below. In RST, the segments always have an N – S or N – N relation. The arrow indicates an N – S relation; the arrow points to the N. The N – N relation is symbolized by two lines as in the Sequence in (39c), below in (40).

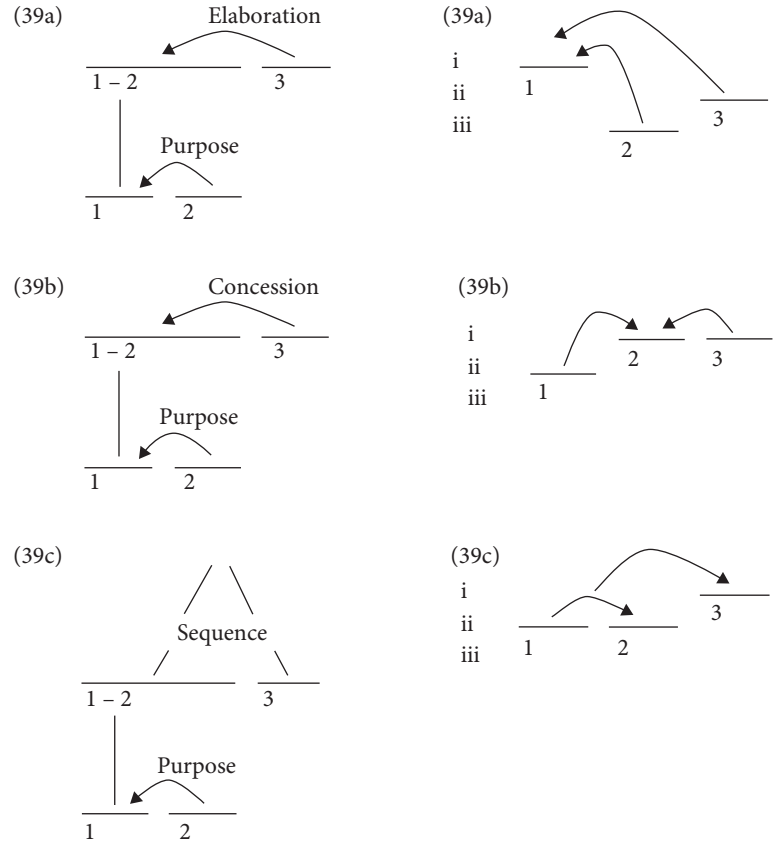
However, in this representation some aspects of non-adjacency cannot be accounted for. Take a look at the structure of (39a) below. The RST presentation

(left column) implies that segment 3 is an Elaboration on both segments 1 and 2. But segment 3 only elaborates on segment 1, not on 2. It is not possible to represent this in an RST structure, because one has to divide the larger spans into smaller ones, ending up with the separate segments. The second example (39b) poses the same problem: because RST structures do not allow non-adjacency, a text span sometimes includes a segment that does not belong to that relation. The relation between segments 2 and 3 is a Concession, but the tree in example (39b) below implies that segments 1 and 3 are also connected by a Concession relation, which is not the case. Only the third example, (39c) does not pose this problem, but instead raises another one: segment 3 is on the same level as segments 1 and 2.

In an RST tree, there are no other possibilities than the ones provided here. It would be better to have a notation convention in which relative importance can be indicated, for example that in (39c) segment 3 is more important than span 1–2.

(40) Structural representations for (39):

RST structures of (39) | Connectivity graphs of (39)



One way to cope with non-adjacency as in (39a), multiparency as in (39b) and relative importance in the structural presentation as in (39c) could be what I like to call a 'connectivity graph' in which the segments can be placed on different levels, indicating their relative importance, and in which segments can be labeled irrespective of their status as N or S. The advantage of this notation is that it creates the opportunity to connect any segment to any other segment(s) in the discourse. See the representations in the right column in (40) above, with the levels indicated by i, ii, iii, etc.

These graphs offer more possibilities to indicate which segments are linked to which others, and how. Either → or ← links the segment X to Y (asymmetrically). A ●—● links segments X and Y symmetrically (see the example on the next page). And an arrow placed in the middle upon another links the subsumed segments to the segment to which the arrow is directed (see 39c). The labeling is the same as in the left column, and is therefore not repeated. The positioning of segments at various levels depends on their function in the discourse. If for example in (39a) the discourse continues with a detailed description of the turbulence, then segment 3 must be placed higher.

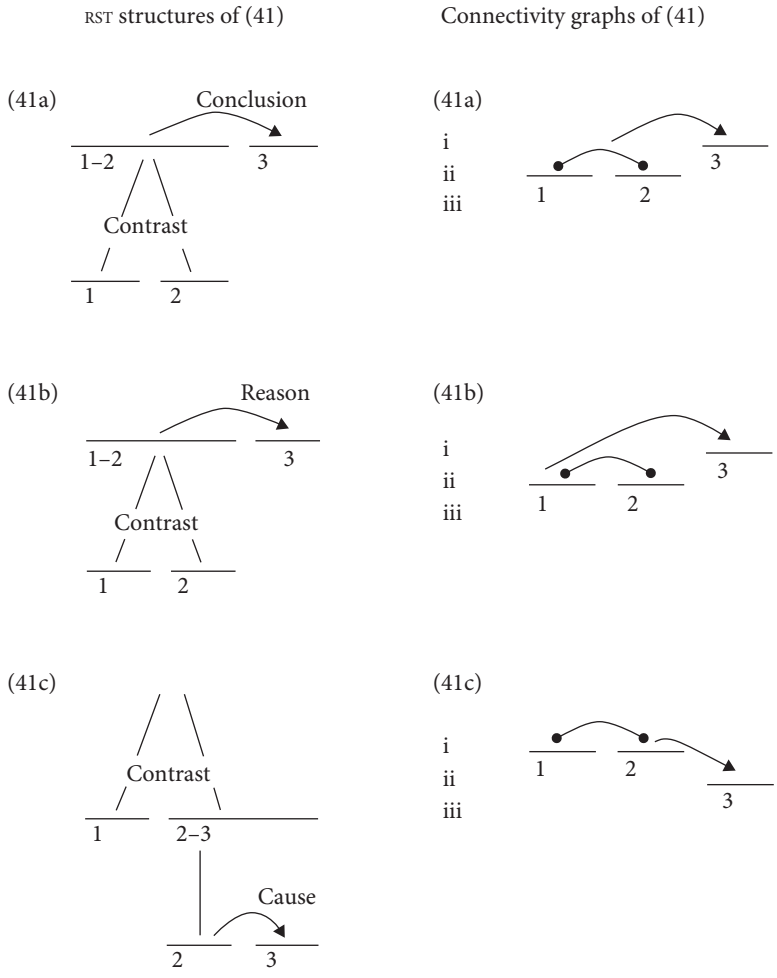
One could argue that an RST structure is only insufficient in N – S structures, but the following example with an N – N structure shows that here too the same problems arise.

(41) John likes candy; Mary likes swimming.
(a) 1. John likes candy; 2. Mary likes swimming. 3. She is fitter.
(b) 1. John likes candy; 2. Mary likes swimming. 3. He is fat.
(c) 1. John likes candy; 2. Mary likes swimming. 3. She is fit.

The relation between segments 1 and 2 can be described as a List relation or a Contrast relation. A List would simply sum up the 'likings' of John and Mary, but given the continuation in segment 3 the elements of the listing are somehow contrasted, hence a preference here for the label Contrast. In (41a), there is a relation between segment 3 and segments 1 and 2 as a ground, as can be deducted from the comparative "fitter." This relation can be labeled as a Result, an Interpretation or a Conclusion. Let us choose Conclusion, which does not belong to the original set of RST relations, but RST allows adding relations; see Mann (2005). In (41b) the discourse continues on the first segment; in (41c) on the second one. This relation can be described as Reason or Cause; let us choose Reason in (41b), indicating that John can stop his habit of eating candies, and Cause in (41c), indicating that one cannot gain fitness on one's will. Maybe some

analysts would prefer here the label Result or even an Elaboration, which causes, due to RST definitions, another N – S relation, but for the discussion here the problems remain the same. In RST, the structures of (41) have to be presented as the trees in the left column of (42):

(42) Structural representations of (41)



In (41a), the structure is presented adequately: segments 1 and 2 together lead to the Conclusion, which has its N-status indicated by the arc destination. In (41b), first also a division has to be made between 1–2 and 3, following the completeness criterion of RST trees (see Section 9.3). Only on a lower level the

Contrast relation between segment 1 and 2 can be represented. But in doing so, the RST tree implies that segment 3 is relevant for both segment 1 and 2, which is not the case, because segment 3 is only linked to segment 1. Figure (41c) seems to be more adequate; here segment 3 is rightly linked to segment 2 alone. But here another problem arises, because this representation also implies that segment 3 is part of the Contrast, which is not the case. The Contrast exists only between segments 1 and 2. Thus, in RST trees, the precise scope of a relation cannot always be clearly represented. In contrast, connectivity graphs offer more possibilities for a structural description, as can be seen in the right column of (42), with the same, and therefore not repeated labels as in the left column.

As said above, the placing of segments at various levels depends on their function in the discourse. The possibilities given here are only meant to be indicative. If, for example, the discourse in (41c) continues on the fitness of Mary, then segment 3 has to be placed at the highest level, as in (41b). Or, if the discourse in (41a) does not continue on the Conclusion, segment 3 has to be placed lower than the Contrast-segments 1 and 2.

With these two examples I hope to have shown that a connectivity graph, just as the coherence graph, discussed in Section 9.3, can cope with the problems raised against RST trees in which it is not possible to deal with non-adjacency (and cross-dependency) on the one hand and multiparency on the other hand. The connectivity graphs (39a) and (41b) clearly describe non-adjacency in connecting segment 3 over segment 2 with segment 1. The connectivity graph for (39b) shows how multiparency can be visualized, with segment 2 in two different relations to its surrounding segments. But there was another reason to introduce the connectivity graph. As can be seen in the RST tree in Section 9.2, a tree cannot cope with the relative importance of a segment in a discourse. This problem however can also be solved in a connectivity graph, as it offers the discourse analyst the possibility to place segments on different levels. How this works in a real discourse will be illustrated in the last section of this chapter.

9.5 An example of a connectivity graph

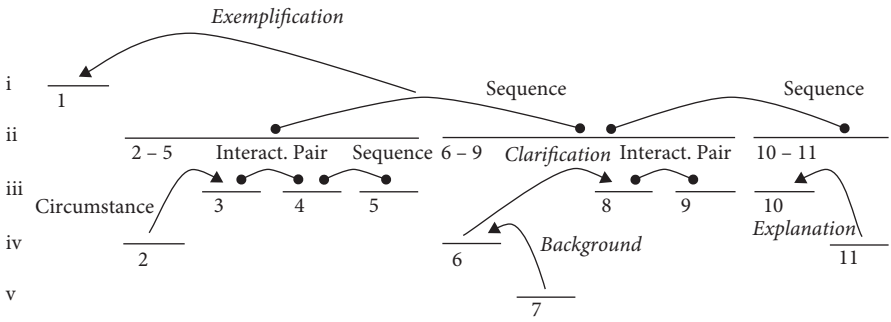
Below a possible connectivity graph is presented for a full text. Not surprisingly, it is the Mother Teresa text, which serves now for the seventh (and last!) time as a 'running example.' See for discussions that have led to this graph Sections 2.5, 3.5, 4.5, 5.5, 7.2 and 9.2.

(43) Mother Teresa

1. Mother Teresa often gives people unexpected advice. 2. When a group of Americans, many in the teaching profession, visited her in Calcutta, 3. they asked her for some advice to take home to their families. 4. "Smile at your wives," she told them. 5. "Smile at your husbands." 6. Thinking that perhaps the counsel was simplistic, 7. coming from an unmarried person, 8. one of them asked, "Are you married?" 9. "Yes," she replied, to their surprise, 10. "and I find it hard sometimes to smile at Jesus. 11. He can be very demanding."

In the analysis below the segmentation is followed as applied in the RST tree in Section 9.2, in order to allow easy comparison for the difference in structure. Just one remark needs to be made before presenting the connectivity graph. In analyzing discourse an analyst can simply go from segment to segment, an incremental or linear analysis. Another possibility is to first read the whole discourse and then make a top-down analysis, which can be combined with a bottom-up analysis from any point in the discourse. In the analysis below the different methods have been combined.

(44) A connectivity graph for the Mother Teresa text



In the connectivity graph three symbols are used: a line (—) to indicate a segment; an arrow with an arc indicating an asymmetric relationship (→ or ←), and a arched line with dots at both ends (●—●)to indicate a symmetrical relationship. In this connectivity graph five levels were needed to represent the relative importance of the separate segments. Of course, one could make finer distinctions within or between the levels, for instance with the (internal) attributive segments "she told them" and "one of them asked" in segments 4 and 8.

Segment 1 is placed on the top level, but it could also have been placed on the lowest level, serving as a Preparation. Here the top position is chosen because it is interpreted as the most central one. On the level of Adjunction the two sequences 2–5 and 6–9 can be labeled as an Elaboration. However, this relationship functions

on the level of Interjunction as an Exemplification of "unexpected advice." Hence this more informative label is chosen. See for this specification, and the others below, the disambiguation procedures in the next chapter. In this connectivity graph the Interjunction labels are italicized. Note that the third sequence, 10–11, has no link with segment 1, only with the preceding one.

The first Sequence has an Interactional Pair on its highest level, with another Sequence in the second part of the Pair: "Smile at your wives" and "Smile at your husbands." The first segment in this Sequence, segment 2, can be labeled as Time or Circumstance. Here the latter label is chosen, because then the situation of a visit is accounted for.

The second Sequence has another Interactional Pair, segments 8–9 on the same level as in the first Sequence, preceded by two segments, 6–7. Of the latter ones the most deeply embedded segment is 7, which cannot only be labeled as Circumstance, Reason or Cause, but also as the more informative Background. Segment 6 together with 7 can be linked to the Interactional Pair as Reason, or more preferably Clarification.

The third Sequence, segments 10–11, is linked via the second one to the first one, proceeding on the piece of advice about "smiling." Within this last Sequence, segment 11 is asymmetrically linked in a relation that can be labeled as a Reason, but also as Background or Clarification, or, if one would not want to choose between the latter two, as an Explanation. The label Justification is also possible here. This label, referring to the acceptability of the statement that it is sometimes hard to smile at Jesus, is not chosen because Justification has to do with one's behavior, and "finding it hard to smile sometimes" seems difficult to regard as behavior.

Closing this chapter I want to emphasize that in analyzing discourse relations often more structural analyses are possible, just as the three analyses in RST for this piece of discourse. However, using a connectivity graph, instead of an RST tree (Section 9.2) or a coherence graph (Section 9.4) can make it easier to discuss different interpretations of the structural position of a segment in discourse.

CHAPTER 10

The interpretation of discourse relations

Bien loin que l'objet precede
le point de vue on dirait que
c'est le point de vue qui crée l'objet.

(Ferdinand de Saussure, *Cours de linguistique générale*, 1916)

Far from it being the object that antedates
the viewpoint, it would seem that
it is the viewpoint that creates the object.

10.1 The coding procedure

Up till now an important problem in studying discourse relations has remained concealed. A reader could have detected it in the previous chapters where many examples have been presented which could have had different labels. Discourse segments, clauses, usually consist of many concepts and concept – event combinations (see Section 4.1). That these elements with so many linking possibilities prompt to often various labels is, after all, not surprising. But in connectivity theory one has to deal with it. So, after solving some problems of structural presentation in Chapter 9, this chapter is devoted to what can be seen as the most pervasive problem in discourse analysis: the phenomenon that discourse relations between two segments or spans of segments can be labeled in various ways. Here is an example (a textoid):

(1) They have been a couple for five years now. You really should ask them how they fell in love.

Possible relations between the two sentences here are: Reason, Conclusion, Justification and Motivation. In the Reason relation, a connective such as "because" is implicated: "Because they have been … you should ask …" In this relation the first segment is linked as a satellite to the second one as a nucleus. In the Conclusion relation, a word like "Therefore" is implicated in the second segment. This relation seems to be reasonable if both sentences are of the same importance: "A. Therefore B."

In the relations Justification and Motivation the focus is more on the communication situation. With a Justification, the addresser seems to be more on the front of the stage, using the first sentence to underpin a second one. In the Motivation relation, the addressee is more envisaged; in this interpretation the first sentence is used as an inducement via the word "really" in the second one.

To determine in real discourse the best possible label it should be clear what segment has to be related to which segment or span of segments, and what the precise link is. Therefore, this chapter starts with a coding procedure, which has eleven commandments: four for making a segmented connectivity graph, and seven for detecting discourse cues for labeling.

Four commandments for segmentation

1. Insert segment boundaries between clauses

Every clause, every subject-verb constellation with its constituents, is in principal a segment. Indicators in written text usually are (semi)colons, sentence periods or full stops and quotation marks. Commas can also be a boundary marker. However, punctuation is not always a decisive indicator (see Section 9.1). Clauses can be connected without punctuation, and colons and commas can also be used to structure information within a clause.

There are some exceptions to the clause-segment rule (see again Section 9.1 for more examples):

1a. Downgrade complement clauses and restrictive clauses to constituents of their matrix clause. Thus, the next combinations of clauses are counted as one segment (clause segments are marked with a "/"):

(2) /It's a long story how we fell in love! /
(3) /My wife, who was my high school sweetheart, moved to Paris after her graduation. /

In (2), the subject clause "how we fell in love" is considered to be a constituent replacing the subject "It" in the main clause. In (3), the relative clause "who was …" is considered to be a part of the constituent "my wife."

1b. Upgrade non-finite clauses and contracted clauses without a subject to full clauses. Do the same for source clauses added to citations, if the source contains more information than just the source. Thus, the next examples are to be seen as two segments:

(4) /So I went to Paris /just to see her face again. /
(5) /I took the train /and got off at Gare du Nord. /
(6) /"Good luck," /said a text message from my best friend. /

In (4), the non-finite clause "just to see her face again" counts as a full segment due to its infinitive, which can be seen as the centre of a full clause: "because I just wanted to …" In (5), the second clause has a contracted subject ("I"). Nevertheless, it counts as a segment. And in (6) the object of "said" is a citation. Following rule 1a on complement clauses it should be downgraded, but because the source gives more than "he said," it should be seen as a full segment.

1c. Consider context when encountering disputable cases. No coding procedure can provide a decisive answer in all circumstances. If the abovementioned decision rules do not provide sufficient clarity, then often arguments pro or con extra segmentation can be solved by looking at the context. To give an example:

(7) /I only had money for two days—some hundred Euros— /and an address on a piece of paper. /I gave this to the cab driver. /

In (7), "an address on a piece of paper" can be seen as a constituent in a clause and as an elliptical clause for "I only had an address." If, in an elliptical clause, the verb and the subject and another constituent ("only") are deleted, this can be a reason to see it as just a constituent in another clause. However, if the discourse continues with something related to that highly elliptical clause, then this is a good reason to count this constituent as a full segment. If, for example, the appositive noun phrase "some hundred Euros" in the first segment proved to be important in the story, then this would be a good reason for counting this noun phrase as a separate segment too.

2. Number the segments

Use a split number for parts of a split (interrupted) segment, for example: 1a, 2, 1b. Use a higher number for a segment that falls in between another segment combination, such as: 1, 3, 2.

(8) 1a. "What a surprise," 2. she exclaimed nervously, 1b. "to see you here!"
(9) 1. "Why didn't you call me earlier?" 3. she sighed with a strange look in her eyes, 2. "Because I have to go to work."

3. Compose a connectivity graph on a global level

In order to make the labeling more orderly, try grouping segments that belong to the same subtopic of a discourse together. In most cases, this will follow the paragraph structure. However, the paragraph structure does not always reflect the topic structure, as there are no fixed rules that tell a writer when to start a new paragraph.

In the story told in the examples until this point, the subtopic or paragraph structure could be as follows (the sign ¶ indicates a paragraph boundary):

(10) ¶ 2–3 ¶ 4–7 ¶ 8–9

In this division, the first paragraph is an orientation, the second one refers to the subtopic 'traveling', and the third one refers to the meeting. It is important to note that in many cases other analyses are possible. For example, the segments in (7) can also be the beginning of the third paragraph. Moreover, the last segment in (7) could even be the beginning of a new episode in the story. And if this story would continue with a long description of a lonesome day of the protagonist, then the second and third paragraph could be put together under a heading like "first disappointing encounter." It is important to choose a global structure, for the paragraph structure can influence labeling. If, for instance, the last segment in (7) ("I gave this to the cab driver.") is the end of a paragraph, then the label Elaboration would be plausible. But if it opens a new paragraph, then the label Sequence could be more conceivable.

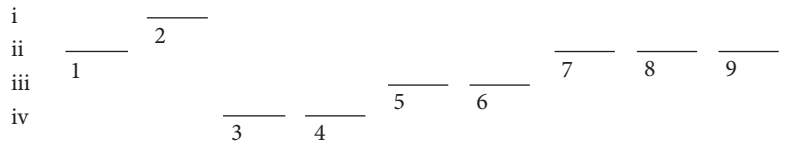
4. Compose a connectivity graph on a local level

Determine the structural relationship between the segments within a paragraph. On this level of discourse there often are more possibilities as well. Look, for example, at the second paragraph, the examples 4–7, here combined in one text, with segment numbers added:

(11) 1. So I went to Paris 2. just to see her face again. 3. I took the train 4. and got off at Gare du Nord. 5. "Good luck," 6. said a text message from my best friend. 7. I only had money for two days—some hundred Euros—8. and an address on a piece of paper. 9. I gave this to the cab driver.

The first or last sentence of a paragraph is often the kernel sentence. This sentence, including its segments, should be placed on a higher level than the others. In (11), the first sentence seems a kernel sentence, following the topic "Paris" that was introduced in the first paragraph. Here is a possible structural description in a connectivity graph (see Section 9.4 for more about this notation):

(12)



The segments are placed on different levels that refer to their relative importance. Segment 1 comes in lower than the more important segment 2. The segments 3 and 4 are placed lower than the segments 5 and 6, which are in turn placed lower than segment 1. Segment 2 is in this analysis supposed to be the most important segment of the discourse. The segments 7–9 are placed on the same level as segment 1.

It is also important to note here that often more local analyses are possible. If the story continues after (11) with an episode describing the city of Paris seen from the ride in the cab, then the last sentence could be the kernel sentence. However, it is important to choose a local structure here too, for this structure can also influence labeling. Look again at segments 3 and 4. These are placed on a lower level because they are interpreted as a means to meet the girl, just as segment 1. But how to assign a structure to a situation in which the protagonist took the plane to Paris? Actually, the first segment leaves this possibility open. In that case the train would have been taken after landing, and the segments 3 and 4 would be better labeled as a Time Sequence on the same level as segment 1, with again segment 3 as a Means for segment 4 on a higher level.

It is only after the most plausible connectivity graph is determined that the labeling of relations between segments can start. It is the most orderly approach to work from a more global to a more local level of analysis. So: first a graph, then the labeling of segments.

Seven commandments for labeling

Even for a sole connectivity graph, more than one label for the relation between two (spans of) segments is in many cases plausible. For a good discussion about the most appropriate label, it is necessary to determine which elements in the discourse can prompt a decision. The following seven commandments may be of help. They refer to the components on the level of Conjunction (see the schema in Section 6.1). For each component, examples are given to illustrate possible disambiguation of discourse relations within a possible connectivity graph.

5. Location (order): Check whether the order of the segments is a cue

The first step on the level of Conjunction is the order of segments. Between two segments, two orders of linking are possible; the line of reading can go from A to B, for example a Cause leading to an Effect, but also from B to A, for example giving Evidence for a Conclusion. In the following examples both orders are possible:

(13) 1. "Do you really want to see me? 2. Ask for me at the coffee shop at six."

In the forward linking, from 1 to 2, the most plausible label is Condition. In the backward linking, from 2 to 1, a plausible label is Solutionhood. Note that these two labels are possible in the same structure, either with both segments on the same level, acting as nuclei, or on different levels, in a nucleus – satellite (or satellite – nucleus) structure. In all three structures, the direction of the arrow can differ. Without further context, a decision about the label is not possible. If the story continues on the coffee shop, than maybe a Condition would be more plausible.

6. Location (contact): Delineate the constituents in a segment that prompt a label

Sometimes the phoric constituents and/or the ground of the linking (the scope or antecedent) can be helpful for choosing the right label. For example:

(14) 1. I pushed the door, 2. which to my amazement turned out to be locked.

Segment 2 can be labeled as an Elaboration of 1, because it continues on the constituent "door," via the relative pronoun "which." However, the label Evaluation is also plausible, given the constituent "to my amazement" in the second segment. The label Evaluation can be defended as more informative, as linking more constituents (including "amazement") in this piece of discourse. This example referred to phoric constituents. With the following one the cue value of ground constituents is illustrated:

(15) 1. Had she already left after her shift? 2. Did she not want to meet me in her new life?

Plausible labels here are List and Reason. In a List relation there must be some kind of parallelism, which can be seen here in the two questions of the same format. Then the ground for the relation is the complete first segment. If one would like to argue for the Reason relation, then the ground is more restricted: it contains only the words "already left." After all, the leaving can be seen as the result of the reason of her refusal to meet her 'husband-to-be.'

7. Ordination (grammar): Consider the grammatical status of the segment

The grammatical status of the segment can also be a cue for labeling. Look at the difference between coordination and subordination.

(16a) 1. I first explored the quarter where she lived. 2. Then I returned to the coffee shop.
(b) 1. After I had explored the quarter where she lived, 2. I returned to the coffee shop.
(c) 1. I returned to the coffee shop, 2. after I had explored the quarter where she lived.

It is clear that the relation between the segments is a Time relation. But for Time there are two possibilities: a Time Sequence as an Extension and a Relative Time relation as an Enhancement. The Ordination gives a clear cue here: the coordination in (16a) implies a Time Sequence, while the subordination in (16b) means a Relative Time relation. Example (16c) illustrates that Order (see 5 above) can also play a role: in the first segment the constituent "returned" prompts a backward linking of the second segment.

8. Ordination (content): Decide the relative importance of information by looking at the discourse

Segments differ not only in grammatical ordination, but also in content ordination. They can be of equal or different importance in the information flow, constituting a nucleus – nucleus relation or a nucleus – satellite relation. In many cases, a decision can be made by looking at the context:

(17a) 1. I was so embarrassed 2. that I did not hear the tripping steps behind me.
3. Otherwise I would have realized immediately that it was her!

(b) 1. I was so embarrassed 2. that I did not hear the tripping steps behind me.
3. Suddenly, I heard her soft whisper.

In (17a), the focus is on the embarrassment, which makes segment 1 nuclear with a Degree – Result in segment 2 as a satellite and a Negative Condition or Otherwise relation between segment 2 and 3. In (17b), the focus is on the coming closer of "her." In this constellation, segment 3 has a Sequence relation with segments 1–2. This makes segment 2 nuclear in the same Degree – Result relation with segment 1.

9. Combination (reference): Explore the referential linking between the constituents

(18a) 1. Her whispers were very soft. 2. Her face was turned away in shyness.

(b) 1. Her whispers were very soft. 2. Her face was beaming with confidence.

Because example (18a) mentions characteristics of the way "she" approaches the protagonist, the relation between the two segments can be labeled as a List. However, the lexical combination of "soft" with "confidence" in (18b) reveals a Contrast. This can be made explicit by inserting the word "but" between the two segments.

10. Combination (relation): Decide the precise meaning of a connective (if any)

(19a) 1. Suddenly I felt my knees go weak, 2. but after a few seconds it disappeared again.

(b) 1. Suddenly I felt my knees go weak, 2. but it made me feel even stronger.

The connective "but" usually refers to a Contrast. However, in (19a) it is more an indicator of an (unexpected) Sequence. In (19b), "but" indicates a Concessive, together with the cue "even."

11. Zero-linkage: If there are no cues, try to find any outside the discourse

Discourse relations can remain implicit; this is the Zero-linkage on the level of Conjunction. In those cases it can be helpful to look outside the discourse. There are two important outside cues: genre and general knowledge.

First the genre cues. The next example can occur in different situations or discourse types:

(20) 1. She had such a lovely smile, 2. it filled my heart with passion.

If this is the continuation of the story used in this section, the relation can be labeled as Effect or as Explanation. In this discourse situation, a person tells why he married his wife. However, if the discourse situation is a police interrogation in which a person tries to get away with the accusation of sexual harassment, the label Justification would be more preferable.

Second, there are general knowledge cues. If there are no genre cues, then general or encyclopedic knowledge could be a last resort:

(21) 1. To make a long story short: 2. she got pregnant 3. and we got married.

Between segments 2 and 3, the label Time Sequence would be applicable, but the label Reason is more conceivable due to our knowledge about why people can get married.

10.2 On the ambiguity of discourse relations

Even in the few cases in which there is only one plausible connectivity graph, segments in a discourse can maintain differing structural relations with various other segments. This sometimes confusing variety must be clearly distinguished from ambiguity in discourse relations itself. There are three possibilities.

First, the *family relation*. Segment A can be simultaneously a sister of segment B, a daughter of segment C and a granddaughter of segment D. And these relations can all be labeled differently:

(22) 1. This is what happened. 2. I took the train to Paris 3. and succeeded in finding her address. 4. I waited for hours at her door 5. till she would leave home 6. or would return after work.

In (22), the last segment has a Disjunction relation with its sister (5), together forming a relation of Purpose to segment 4. These three segments maintain a Sequence relation with segments 2 and 3. And these two sequences are daughters of segment 1 in an Explanation relation. Thus, one segment can have different labels at different levels in one connectivity graph.

Second, the *multiparent relation*, which we already saw in Section 9.3. A segment can be simultaneously a daughter of two other segments, in different relations:

(23) 1. "I really have to go to work," 3. she said with a strange look in her eyes.
2. "Otherwise I will be fired."

The numbering of the segments is reversed here—see Section 10.1—because segments 1 and 2 are discontinuous segments both related to the source indicator in between. Here segment 1 is 'parented' by two other segments in a different relation. It maintains an Attribution relation with 3 and an Otherwise relation with 2.

Third, the *shared parent relation*, the opposite of multiparency. Two segments can maintain different relations with the same parent:

(24) 1. "If you come over in the afternoon, 2. I will have time 3. to show you the city."

Here, the segments "If you come over in the afternoon" and "to show you the city" are daughters of the same parent "I will have time," but in a different relation, viz. Condition and Purpose. Note that this shared parent relation is different from two segments maintaining the same relation to a parent, as in (22) above: there segments 5 and 6 both have the relation of Purpose to segment 4 as their parent.

So far, the possibilities of structural combination are clear. In these cases, there is no dispute on the labeling of the discourse relations, only on the family aspects of the relations. However, there are many cases in which the connectivity graph and aspects of parency are clear, but in which more than one label is applicable. It is with reference to these cases that I want to talk about the ambiguity of discourse relations. In fact, we have already met this phenomenon in dealing with the Contingency relation in Section 4.4. ("When John was a student, he was often drunk.") The Contingency relation is the most general Enhancement relation in which the various aspects of Enhancement—Place, Time, Manner and Causation—can play a role simultaneously.

The ambiguity of discourse relations is addressed in Bateman and Rondhuis (1997), in which for the first time three approaches to discourse relations research are compared. One of their examples contains the last two sentences of a speech held by president Bush sr. in the days before the Gulf War in 1991:

(25) 1. For five months we've sought peace and waited for the Iraqi leader to see sense.
2. Whatever happens now there's only one man to blame—Saddam Hussein.

The relation between the two sentences (here with no further segmentation) has been labeled in three ways:

(25a) Discourse relations in (25)

Result	Lascarides and Asher (1991), Segmented Discourse Representation Theory
Conclusion	Martin (1992), Conjunctive Relations
Justification	Mann and Thompson (1988), Rhetorical Structure Theory

The difference between Result on the one hand and Conclusion or Justification on the other seems to be caused by the interpersonal factor, in which the focus is not on the content but on the communication. A Result relation seems more ideational, more focused on content. A Conclusion is an internal act of a speaker, and in a Justification, the speaker uses the first sentence as an underpinning of his claim in the second one. One could also argue that the status of the first sentence as a nucleus or satellite is responsible for the difference between Conclusion (N → N) and Justification (S → N). But it is difficult to find convincing arguments for this difference in Ordination following commandment 8 in Section 10.1.

However, even more confusing is that other labels are applicable. If an analyst would like to label this relation as a Contrast, then another analyst would have a difficult task to deny this possibility. After all, there is some kind of contrast between "seeking peace" and the Iraqi leader who is depicted here as aggressive. The label Background would also be tenable: the first sentence presents information which is already known in order to support the claim in the last sentence.

10.3 Approaches to disambiguation of discourse relations

In the literature, three approaches to cope with the ambiguity problem can be delineated. The first approach can be labeled as *acknowledging the problem*. This approach is practiced in RST. Of course, in RST references are made to the difficulties of choosing a label, but this difficulty is merely acknowledged, not solved. In RST analyses (Mann & Thompson, 1988), labeling a relation is a matter of plausibility rather than certainty: "every judgment of the completed analysis is of the form 'It is plausible to the analyst that …'" And after more than ten years of analyzing discourse relations, the role of the analyst has become even more diffuse. See Mann and Thompson (2002), where the subjectivity in labeling is explained by the fact that the recognition of discourse relations "depends on knowledge about authors, about social facts, and about purposes of texts." This is the reason for the resigned

assertion in Taboada (2005: 124) that: "Replication of the analyses is a thorny issue in RST, and other analysts may disagree with [this] interpretation (…)." In recent publications on RST (Taboada & Mann, 2006a, 2006b), there seems to be an opening in allowing more than one label for a discourse relation. Nevertheless, in RST the claim is currently that only one label can be the most plausible label. This claim fails to do justice to the confusing possibility of multilabeling without offering decisive arguments for a definitive choice.

The second approach to ambiguity, which can be named as *avoiding the problem*, is followed in, for instance, Wolf and Gibson (2006). After discussing the difficulties of labeling relations in RST, they propose a relatively small set of ten discourse relations. They are listed here more or less within the architecture of the Connectivity Model:

(26) The ten discourse relations of Wolf and Gibson (2006)

Adjunction	Interjunction
Elaboration	Generalization
Temporal Sequence	Exemplification
Contrast	Attribution
Similarity	
Cause – Effect	
Condition	
Violated Expectation	

The reason for having this small set of relations is, among other things, that "they are easier to code" than other ones. This is exemplified with segments such as the following ones in discussing why not to incorporate relations like Evaluation or Background.

(27) 1. [A story] 2. It was funny at the time.

This relation can be labeled as an Elaboration, but also as an Evaluation. This problem was solved like this: "We decided to call such relations elaborations, since we found it too difficult in practice to reliably distinguish elaborations from evaluations." In the next example the two labels Elaboration and Background are both applicable:

(28) 1. T is the pointer to the root of a binary tree. 2. Initialize T.

This ambiguity has been solved in the same way: "Similarly to the evaluation relation, we found the background relation too difficult to reliably distinguish from elaboration relations."

Of course, it can be useful to restrict oneself to clear cases, but to what purpose? In this approach the label Elaboration tends to become a 'net label' for other

disputable cases which makes it difficult to draw conclusions about the characteristics of this discourse relation. In addition, the question arises as to the number of existing clear cases in real discourse. Look again at (28). If an analyst would like to label this relation Conclusion, then it would be difficult to argue against the fact that "T is the pointer" is ground for a conclusion in the next segment that one has to initialize it.

In a theory about discourse relations, one cannot close one's eyes to such a pervasive phenomenon as ambiguity. Or, to say it more positively: the fact that it is often hard to decide what label is the most applicable should be a challenge for a theory on discourse relations, not an obstacle.

The third approach to the ambiguity of discourse relations can be labeled as *explaining the problem*. A first step in this direction has been taken by Moore and Pollack (1992), who used the following two examples to illustrate their view. (See for further discussion Sanders & Spooren, 1999.)

(29) 1. George Bush supports big business. 2. He's sure to veto House Bill 1711.

A plausible label for the relation between the two segments is Reason: because Bush supports big business, he will veto the bill. However, another plausible label is Evidence. The writer may increase acceptance for his claim that Bush is going to veto the bill, by giving an objective argument, namely that Bush supports big business. Of course, an analyst has to know in both cases that House Bill 1711 contains restrictions for big business. Otherwise the first segment cannot be interpreted as a Cause or an Evidence relation (see also commandment 11 in Section 10.1 about using cues outside the discourse).

Moore and Pollack account for this ambiguity of Reason and Evidence by introducing two levels of coherence: informational coherence and intentional coherence. In the Connectivity Model, these levels are accounted for by the level of Adjunction, including Reason, and the level of Interjunction, including Evidence. Given the fact that communication is intentional per se, an analyst who prefers the label Reason is reasoning from intentional to informational coherence, whereas an analyst who prefers Evidence is reasoning the other way round, from informational to intentional coherence.

In Moore and Pollack's second example, three labels are plausible, namely Condition, Motivation and Enablement:

(30) 1. Come home at 5:00 p.m. 2. Then we can go to the hardware store before it closes.

On the level of informational coherence, a plausible label is Condition: "If you come home by 5:00, then...," etc. On the level of intentional coherence, the label depends on the direction or the order of linking. If the linking is backwards with the focus on "coming home," the most plausible label is Motivation. If the linking

is forward, as it is in Condition, with the focus on "going to the hardware store," then the most plausible label is Enablement.

Within their "multi-level" approach, Moore and Pollack emphasize that there is no one-to-one mapping between informational and intentional coherence. A Condition, for example, can be used as a Motivation or an Enablement. Also, there is no isomorphy: a Condition with forward linking can be used as a Motivation in backward linking. Thus, the ambiguity problem in labeling, referring to the two levels, cannot be solved by giving more detailed definitions of informational and intentional aspects of discourse relations. And more important, in the multi-level approach no strategies are presented for deciding which label is most preferable.

10.4 Three strategies for disambiguation

In this section, I want to proceed in the way suggested by the multi-level approach above, taking it some steps further. I would like to introduce three disambiguation strategies that could be helpful in taking decisions about the most preferable label.

The three strategies are based on the general communicative phenomenon of underspecification in discourse production: that a contribution to communication can be less specific if there is no need for specification in the discourse situation. A good example is the use of relation markers. If an addresser can assume that a discourse relation like Reason is obvious for the addressee, the connective "because" can be skipped or can be made less specific by using "and," as in: "She got pregnant. (And) we got married." And similarly; if it is enough for the discourse situation to verbalize a Justification relation as a Reason relation, then there is no need to present specific justifying elements. Underspecification can be seen as an economic device in communication: be as parsimonious as possible. This is not only good for the addresser, who can act along the proverbial line "A nod is as good as a wink," but it is also profitable for the addressee, as in the proverb "Half a word is enough for a wise man." In fact, underspecification is an instantiation of Grice's well-known two maxims of quantity, of which the second one says "Do not make your contribution more informative than is required" (Grice, 1975).

To apply this maxim of quantity to discourse relations, a very important question has to be answered first: Is there a degree of informativity in discourse relations? In the Connectivity Model, this question is answered by assuming that the order of the discourse relations reflects the degree of informativity. This assumption could lead to several hypotheses which would have to be tested with empirical data. The sole claim here is that ambiguity problems could best be solved by taking the presented order as a starting point for the following disambiguation strategies.

1. Specification strategy (Adjunction level)

If there are more labels applicable on the Adjunction level, then the preference is from Elaboration via Extension to Enhancement. This strategy accounts for the fact that Elaboration is the most vague discourse relation, and is often combined with some kind of Sequence which makes the discourse relation more informative, or with an element of Enhancement which makes the relation more intricate and as such even more apt for bearing information. If there are possibilities within Extension and Enhancement, the labels with a higher number (see Section 6.1) are assumed to present more information.[32]

2. Adaptation strategy (from Adjunction to Interjunction)

If there are more labels applicable which belong to the Adjunction and Interjunction level, then a label on the level of Interjunction is preferred. This strategy takes into account the fact that Interjunction labels have a surplus above Adjunction labels, by adding an extra communicative aspect—how an addresser joins with an addressee—which makes them more informative.

3. Proximation strategy (Interjunction level)

If there are more labels applicable on the Interjunction level, then the preference is for the discourse relation in which the impact on the addressee is higher. This strategy is based on the idea that the impact on the addressee increases along with the amount of 'addressing' used. Expressing relations are closer to the addresser than Processing and Impressing relations. With Impressing relations, the addresser has approached the addressee as near as possible.

Below a figure is shown that might help in visualizing the three strategies. It shows a detail of the intertwined chord in Figure 5 (Section 6.1), where the wires of Adjunction and Interjunction cross each other, which may be of aid in showing the transition from one level to the next.

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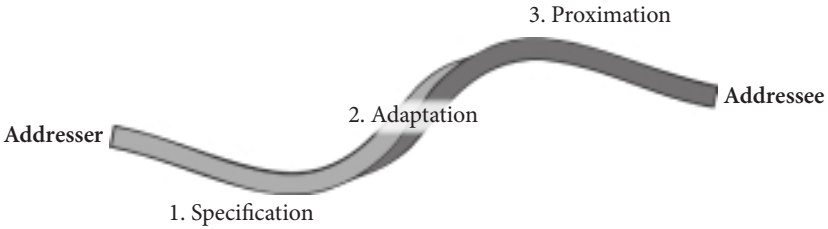
32. Maybe this is a good place to repeat what I said earlier in this study (Section 1.1 and note 3 in Section 2.4), that I do not claim to present new ideas, only new combinations of inspiring and sometimes old insights. The specification strategy is a good example of this. It is referred to as "The Penguin Principle" in Wolf and Gibson (2006: 18), which states: "Prefer a more specific coherence over a less specific one." The name of the principle refers to the fact that "bird" is an underspecification of "penguin." There is also some kind of 'old evidence' for the impact of the specification rule in research on text comprehension. See Schank (1975), who claimed that causally coherent texts are more memorable than causally unrelated texts. See also Sanders and Noordman (2000), who found that causal relations are processed better than additional relations.

(31) The three disambiguation procedures



10.5 Examples of disambiguation

How these disambiguation strategies function in the practice of analyzing discourse relations can be seen in the following six examples, of which three are also discussed in Gómez-González and Taboada (2005). I have chosen them because they contain unsignaled relations: relations with a zero-linking in connectives (to put it in terms of the Connectivity Model). The lack of clear connectives makes it rather difficult to assign labels. The examples below received one label in RST analysis, but in all cases other labels are defendable. The segmentation is only indicated insofar it is needed for discussion, and a [?] is inserted at the place of the disputed relationship.

(32) 1. In Psalm 31, David cried out to the Lord in his time of trouble. [?] 2. He knew that his only hope was to put his situation in God's hands and rely on Him.

The relation between the two segments has been labeled as Elaboration. However, the label Reason is also applicable: "Because he knew …" Following the specification strategy, the label Reason would be preferable, because it is more specific than Elaboration. Also, the label Explanation on the level of Interjunction would be applicable. Following the adaptation strategy, this label is more informative, because it adds to the content relation an extra communicative element. Thus, the label Explanation represents the richest interpretation of the discourse relation between these two segments.

(33) 1. Interest in underwater archaeology is on the rise, 2. while those exploring the seabed are going ever deeper to recover objects from shipwrecks. [?] 3. In the last issue, contributing editor James Wiseman reported on an MIT conference where a small group of scholars and scientists discussed new technologies for deep-sea exploration and recovery of objects. 4. A short time later, I attended a symposium entitled Ancient Mariners, sponsored by the Archaeological Institute of America, AIA's Houston Society, and several other organizations.

The relation between segments 1–2 and 3–4 has been labeled as Background, a Processing relation. The first two segments present information for what is explained in the following segments. But there is also another possible reading, in which the first two segments are presented as a statement for which proof is given in the last two segments. For this interpretation the label Evidence is more appropriate. Following the proximation strategy, the label Evidence has preference because it is an Impressing relation and as such contains more elements referring to the linking-up with the addressee.

(34) 1. The paper focuses on correlating the relations used in Rhetorical Structure Theory with the categories of function found in Systemic Linguistics. 2. The correlation employs descriptions of speaker's intentions in an essential way. [?] 3. A surprisingly strong correlation results.

The relation between segment 3 and segments 1–2 has been labeled as Interpretation. If another analyst would prefer a label like Result, with reference to the discourse cue "results" in segment 3, then the adaptation strategy would prevent this, because this strategy says that one has to jump from the Adjunction level to the Interjunction level whenever this is possible. However, there is another label on the Interjunction level which is also defendable with reference to the discourse cue "surprisingly," namely Evaluation. Following the proximation strategy this label has preference because it is situated nearer to the addressee.

The three strategies can also be applied on a lower level within the three families of both Adjunction and Interjunction. Here is one example:

(35) 1. Stir the powder slowly. [?] 2. The fluid will thicken.

The relation between the two segments in (35) can be labeled as Cause, Condition or Sequence. Sequence is less informative, because a 'post quem' relation is not as tight as a 'propter quem' relation. And within the five causation relations—Cause, Reason, Means, Condition and Concessive—Condition has a higher position than Cause, because it is assumed to be more specific. So, Condition is preferred here.

I cannot resist the temptation to report on a labeling exercise in which one of the examples of this chapter was used, (13) from Section 10.1, here repeated as (36). Ten students who possessed basic knowledge about RST labels were invited to give labels to the linking between the two segments. If they did not find a satisfying label in the taxonomies, they were invited to propose a new label themselves:[33]

33. The exercise was presented in a PhD course at the University of Lugano, in March 2009.

(36) 1. Do you really want to see me? [?] 2. Ask for me at the coffeeshop at six.

For the relation between the two segments, eight possible labels were suggested. Here they are in alphabetical order:

(36a) Labels presented for the discourse relation in (36)

Admission, Condition, Instruction, Invitation, Motivation, Prayer, Request, Solutionhood.

The first question for the students was: Which labels do really refer to the relation between the segments and not to the speech act character of one or both segments? The answer to which everyone could agree, was that Admission refers to both segments, and that Invitation, Prayer and Request only refer to the second segment. For the label Instruction, we could not reach consensus. Some analysts said they kept their interpretation that segment 2 is an Instruction in order to reach the goal in segment 1. Other analysts said that they preferred to use Instruction only as a speech act ordering the addressee to do something, like in a command, and that hence Instruction is no discourse relation but a speech act related to segment 2. We decided to expand the RST taxonomy with Instruction (see for the possibility in the Connectivity Model Section 6.3 under heading 9). So we approved of four possible labels.

(36b) Possible labels for the discourse relations in (36)

Condition, Instruction, Motivation, Solutionhood

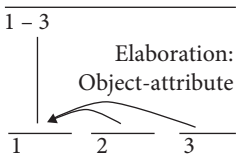
The second question for the analysts was to order these four relationships in a degree of specificity and, if possible, also to the impact they had on the addressee. All analysts agree that Condition was the most general label. In the Connectivity Model this is the only label of these four which is positioned on the level of Adjunction. The other three were ordered (for inclining impact) like this: Solutionhood, Motivation, Instruction. The order of the first two mirrors the proximation strategy. And of course, the Instruction, if seen as a discourse relation, could be seen as the one with the highest degree of proximation. So, the outcome of this labeling exercise is at least not in contrast with the principles underlying the disambiguation strategies.

The remainder of this section is devoted to the smallest piece of discourse with the highest number of interpretations I could find in literature. In Stede (2007), an inspiring contribution to multi-level analysis of discourse, an example of three segments is given in which all segments present more possibilities, resulting in nine analyses. I will use this example to show how the Connectivity Model can be of help in ordering the sometimes embarrassing number of possible interpretations. It also provides an opportunity to summarize the main thoughts

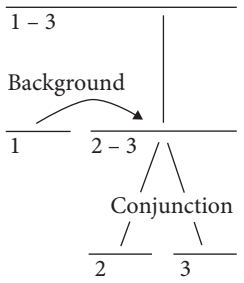
of this chapter. Here is the example, followed by the nine analyses in RST structure as presented by Stede:

(37) 1. We saw a two-months old polar bear cub at the zoo yesterday. [?] 2. It kept climbing on top of the keeper's shoulders all the time. [?] 3. With its teddy-like head it was the cutest thing I've seen in years!

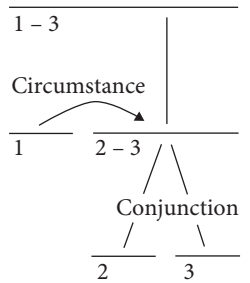
(37a)



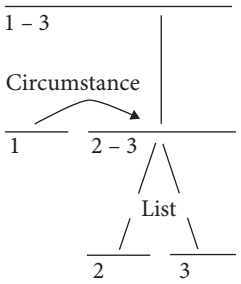
(37b)



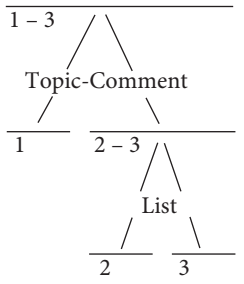
(37c)



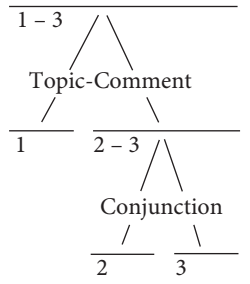
(37d)



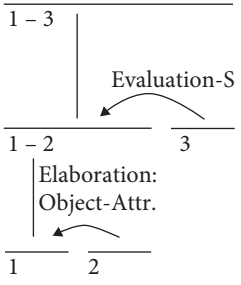
(37e)



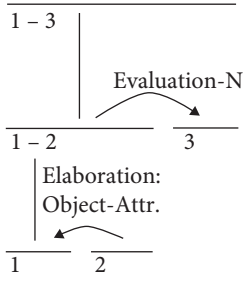
(37f)



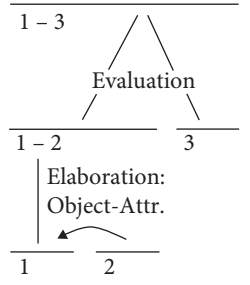
(37g)



(37h)



(37i)



Before going into detail, it has to be noted that even more analyses are possible. The first one, with two Elaborations at the same level, prompts the question why a structure is not presented with the two Elaborations on a lower level in a Sequence or Addition relation. Moreover, it is also conceivable to relate segment 3 as an Evaluation only to segment 2, leaving segment 1 as a kind of topic indicator. And still other labels are defensible. Segment 2, for example, can be labeled as a Reason

for segment 3: "Why it was so cute? Because it kept climbing all the time." But let us now concentrate on the nine analyses presented above.

In discussions about labeling possibilities, it can be helpful to first look whether possible ambiguity is due to the vagueness of definitions. For example, in this overview one possibility can be deleted with reference to the definition. In analyses 37d, 37e and 37f, two possibilities are given for the discourse relation between segments 2 and 3: List and Conjunction (here meant as another subtype of Sequence). The label List can be blocked here, because a List is characterized by its parallel structure. That would be the case if segment 2 was something like: "With its claws on top of the keeper's shoulders, it looked like a crow's nest" (3. With its teddy-like head...).

We also have to rule out a small flaw related to an application of a definition. In analyses 37e and 37f, segments 2–3 are labeled as Comment, whereas only segment 3 contains a discourse cue to that label, namely "the cutest thing I've seen in years." The label Comment remains an option for segment 3, leaving the possibility of Elaboration for segment 2. This creates a new structure, with segments 1 and 3 on the same level and segment 2 in between on a lower level, or even a structure with three different levels: segment 3 higher than segment 1, which in turn would be on a higher level than 2.

Let us now abstract from the structural possibilities and order the labeling possibilities which can be deduced from the nine analyses. There are two important ambiguities: segment 1 as Background (37b) or Circumstance (37c), and segment 3 as (part of a) Comment (37e and f), Conjunction (37b, c and f), Elaboration (37a) or Evaluation (37g, h and i). Application of the disambiguation strategies has the following result. The adaptation strategy prompts the analyst to choose a label on the Interjunction level whenever possible. So, the relations Circumstance and Elaboration or Conjunction can receive a surplus labeling via Background and Comment or Evaluation respectively. The ambiguity between Comment and Evaluation cannot be solved by a strategy. However, this ambiguity can be solved with reference to the definitions, Comment being a category for types, including Evaluation. Thus, the labeling Evaluation would be preferable, because it is more specific. All of this means that, based on the definitions presented in Chapter 6, the three disambiguation strategies can be applied in a highly polyinterpretable discourse, resulting in a more well-reasoned labeling.

CHAPTER 11

Starting the analysis

Alle weten en begrijpen
is betrekkelijk tot verlangen en beogen.
(Gerrit Mannoury, *Mathesis en mystiek*, 1978)
All knowing and understanding
is relative to desiring and aiming.
[Author's translation]

11.1 Choosing a heuristic approach

Analyzing discourse relations presupposes a certain view on discourse; an analysis has to be guided by principles and theoretical assumptions. Otherwise, the analysis tends to be open ended and, to a certain extent, a wild exploration without clearly defined phenomena to look for.

In this study of discourse relations the two principles introduced in Chapter 2, the discursive and the dialogic principle, help to guide this exploration, since they "color the vision" towards discourse: Discourse is seen as the discursive expansion of constituent relations over the clause or sentence border, and (written) discourse is seen as (half) a dialog, in which an addresser tries to deal with possible remarks and questions of an addressee. Based on these two principles, the theoretical framework described in this book has been built to contain three procedures for combining segments in discourse: Conjunction, Adjunction and Interjunction (Chapters 3, 4 and 5).

In Chapter 6, the Connectivity Model was presented, followed by two chapters on its characteristics. In Chapter 7, arguments were given for the three-by-three architecture and the ordering of discourse relations. In Chapter 8 the model was compared with other models, including a discussion of coverage completeness and increasability. The Chapters 9 and 10 were needed to discuss the problems of the representation of discourse structures and the interpretation of discourse relations.

Now it is time to start the analysis. However, before doing so, there is an important issue to address. Analyzing discourse relations not only presupposes a certain view on discourse (in this case the Connectivity Model), it also presupposes a goal for the analysis. In corpus studies, for instance, one could analyze discourse

to describe differences in the frequency of certain relations between genres, or to describe the acquisition of various discourse relations in texts from childhood to adulthood. For experimental research, a possible objective could be to collect data on differences in difficulty between discourse relations or to develop hypotheses as to why discourse relations can take various forms, like X – Y or Y – X. In my approach to the texture of discourse, the objective of analysis could be summarized as a search for form – function correspondences. In this section, this objective is discussed and explained.

Discourse relations are concepts and as such are 'pre-realizational' (see, for example, the RST-approach in Mann et al., 1992: 45). This means that discourse relations, like Elaboration or Evaluation, are seen as meanings, intentions or functions that are combined and structured without regard to their realization. However, it goes without saying that a discourse relation is only detectable by looking at its (formal) realization, i.e., some kind of link between discourse segments that 'does' something in communication. In other words: discourse relations are recognizable only by the manifestation of a function in a form.

In the Connectivity Model, the formal aspects are accounted for on the level of Conjunction. The form of a segment can be described in terms of Location, Ordination and Combination. Thus, a formal description of a segment can present data about three aspects: 1. the place of a segment (before or after another one); 2. the relative importance of a segment in syntactic terms (e.g., subordination) and content related terms like nucleus – satellite; and 3. the lexical cohesion of the segments (anaphors, synonyms, connectors, and the like). The functional aspects of segments are accounted for at the levels of Adjunction and Interjunction. A segment has an Adjunctional function as Contrast, Cause, etc. A segment can also have an Interjunctional function as Interpretation, Justification, and so on. For example, the Adjunctional function of Condition can have a 'metafunction' such as Motivation at the Interjunction level. A first glance at some pieces of discourse would suffice for the statement that there exists an overwhelming variety of form – function correspondences.

The search for form – function correspondences has already proven a rather successful starting point in other domains of linguistics, such as historical phonology and semantics, and in related domains like stylistics. In these domains a universal, named after its founder—'Humboldt's universal'—has proven to be a rich explanatory device.[34] It states that in language usage, there tends to be a one-to-one

34. Remarkably, one would look in Von Humboldt's work for this universal to no avail. Von Humboldt himself did not formulate a principle or universal, but chose his words more carefully: "Da die Wörter immer Begriffen gegenüberstehen, so ist es natürlich, verwandte Begriffe mit verwandten Laute zu bezeichnen" (Von Humboldt, 1836, VII: 73). Translation: "Because words always represent concepts, it is natural that related concepts be symbolized with related words."

relationship between form and function. A contemporary example of the working of this principle on word level would be the variety of words for "father": dad, daddy, my old man, etc. If the functions of these words vary—say, "daddy" with a childish connotation and "dad" with a more neutral meaning—then the forms will be adapted in the language system. The forms without a specific function, "my old man," will disappear. This one-to-one relationship dictates that pure synonyms, like "full stop" and "period," will only coexist for a short period of time. If there is more than one form for more or less the same content, then the forms must attract different functions, if not in some aspect of denotation then in connotation—for example "period!" with the more emotional meaning "This is all I have to say." Von Humboldt's universal can also be applied synchronically in stylistic research. If there are two distinctive forms for one piece of information, then the forms will collect (small) differences in function. An example on the level of syntax are the differences in function between the active and the passive form.

The notion about the tendency towards a one-to-one relationship between form and function I would like to use not as a universal but as a heuristic, guiding the search for form – function correspondences. Below, some examples are given to illustrate the way this heuristic works, beginning with a comparison of three formal varieties of a Cause relation.

(1a) Because young children are already beginning to show signs of concentration loss, parents' associations want to forbid the most aggressive computer games. (…)

(b) Parents' associations want to forbid the most aggressive computer games, because young children are already beginning to show signs of concentration loss. (…)

(c) Young children are already beginning to show signs of concentration loss. Therefore parents' associations want to forbid the most aggressive computer games. (…)

The forms (1a) and (1b) vary in the Order of the clauses: in (1a), the first clause is the subclause; whereas the second clause is the subclause in (1b). In (1c), the forms vary in terms of Ordination: both clauses are a main clause. The form – function heuristic says that if there are varieties in form, then it is plausible to look for varieties in function. In this case, a functional variety can be found in the aspect prominence or importance of a segment. As prominence has to do with the topic of a discourse, this phenomenon can be operationalized by asking: what would be the most likely continuation of the discourse? In (1a), with the order subclause – clause, the focus seems to be on the banning of "the most aggressive computer games." Thus, in the continuation of this discourse the "games" would most likely be the topic. In (1b), with the reversed order clause – subclause, the focus seems to be on the "loss of concentration," which makes continuation on this topic more plausible.

Thus, the differences in form between (1a) and (1b) could result in differences between the last words' prominence function. In (1c), the specific function could be related to the equal status of the two sentences as opposed to the different statuses of subclause and clause in (1a) and (1b), which makes continuation of both topics in (1c) more likely than in the other two realizations of the causal relation. So, the form – function heuristic guides our analysis by studying occurrences of these form varieties in relation to the context of the discourse, in this case the possible continuation of a discourse.

11.2 Detecting form – function correspondences

At first sight, it often seems that in discourse relations one form can have several functions or that one function can have several forms. The form – function heuristic, however, stimulates the analyst to look at a less superficial level. Given one form and several functions, a closer look will reveal subtle distinctions within that 'one form.'[35] In contrast, when we have one function and several forms, a closer look will reveal distinctions within that 'one function.' This is shown in the four examples (2–5) below. Examples 2 (a lexical phenomenon, the connective "but") and 3 (a grammatical phenomenon, the relative clause) refer to a single form with several functions. Both occur in discourse relations. Example 2 shows that the form "but" can have at least four functions (see for more information Hall, 2007):

Single form, several functions: "but"

(2a) It is dry over here, but over there it is wet.
(b) Pete is overweight, but he is strong as a bear.
(c) Hey Mary, don't stroll around but help John.
(d) But I told you not to buy anything! (upon receiving a birthday present from a friend)

The connector "but" in (2a) links two opposites in a Contrast relation. The same connective however, can be used to express a type of the Causation relation, namely the Concessive relation or denial of expectation in (2b), in which an average

35. I think this does not contradict the famous study of Lambrecht (1994), about the organization of the sentence within a discourse, where he says (p. 30): "Even with the marked patterns there is often no one-to-one relationship between a specific syntactic form and a specific communicative function." A classic example is the syntactic form 'inversion,' expressing the communicative function Question ("Is he hungry?") and the communicative function Exclamation ("Boy, is he hungry!"). In cases like these, the form – function heuristic prompts for a search for other additional formal differences, for example the intonation pattern.

reader's expectation—that people who are overweight usually do not have much strength—is countered. In (2c) "but" does not express a Contrast or Concessive; the relationship here can be labeled as an Instead relation, a subtype of the Manner relation. In (2d), "but" is not a connective between two segments. It functions as an indicator of mood aspects of irritation and/or amazement. Thus, one form, "but," has at least four functions: three as a connective and one as a mood indicator.

However, this conclusion only holds at a superficial level of analysis. A closer look reveals differences between the forms that accompany the word "but." A Contrast relation contains—or can be reduced to—lexical items that form a lexical-level contrast, like "dry – wet" in (2a). In a Concessive relation the opposition is based not on lexical items, but on our knowledge of causes and effects which can be countered, for example that "being overweight" is in this case—contrary to our general knowledge—not a reason for being weak. In many cases an extra lexical item like "still" is added to mark this relation. Note that adding "still" in (2a) would prompt the reader to interpret this relationship as a Concessive as well. The Instead relation in (2c) also only superficially has the same form as the others. In this relation, an extra word like "rather" can be filled in; in fact, it is almost inevitable to signal this relation. And the form "but" in (2d) can only appear at the beginning of an exclamation. In short, there is not the one connector "but," but a combination of a connector with a lexical opposition (2a), a combination with an entity lacking a feature that could have been expected (2b), a combination with an almost obligatory other lexical item (2c), and an obligatory position at the beginning of a segment with a special function. Thus, actually there seem to be four (slightly different) forms, related to four different functions.

In the following example, the syntactic phenomenon 'relative clause' appears in four functions:

Single form, several functions: the relative clause

(3a) He was only in charge of the children who fell asleep on the grass.
(b) My daughter wanted to play with the child who fell asleep on the grass.
(c) They laid out blankets to cover the children who fell asleep on the grass.
(d) After hours of driving, the parents let out the children who fell asleep on the grass.

The main distinction in relative clauses is 'restrictive' versus 'non-restrictive.' The restrictive relative clause, as in (3a), selects or defines a subset from a sample: not "all the children." The non-restrictive relative clause, as in (3c), often adds explanatory information: falling asleep is a reason to lay out blankets. In both types, however, there is a further functional distinction. The restrictive clause can also be used in a situation in which there is no subset, as in (3b). In this case the restrictive clause is neither selecting nor defining, but describes "the child" in an identifying clause.

The non-restrictive clause can also be used as a continuative clause, as in (3d), where the event in the relative clause (falling asleep) takes place after the event in the main clause (letting out the children). In the framework of the three Adjunction relations—Elaboration, Extension, Enhancement—one could list these examples as follows. The restrictive and identifying clauses in (3a) and (3b) function as an Elaboration, presenting only further information about the concepts "children" and "child." The non-restrictive clause in (3c) functions as an Enhancement, presenting a cause for the event of "laying out blankets"; this Adjunction relation can also be used as an Explanation at the Interjunctional level. The continuative clause in (3d) functions as an Extension in presenting a Time Sequence.

Thus it seems that one syntactical form can have four functions, but this again is only true at first sight. After all, the restrictive and non-restrictive clauses differ in prosody: the non-restrictive is pronounced with a lower intonation than its main clause, which is not the case for the restrictive clause. And in the identifying clause, the antecedent will often be singular. Moreover, only in a continuative clause can words such as "next" or "subsequently" be added. Note that if a continuative indication is added in (3c), like "in a few minutes," this non-restrictive clause would automatically change into a continuative one. Again, we can conclude that the forms related to the different functions are in fact not the same.

Now for the opposite direction: one function and several forms. In this constellation, the form – function heuristic prompts the analyst to look for differences in function, due to the differences between forms. Let us take two examples, the discourse relations Condition and Concessive, each with four out of many possible forms:

Several forms, single function: the Condition relation

(4a) If you have to compile this list, (then) you have to do a lot of work.
(b) Should you have to compile this list, you have to do a lot of work.
(c) For compiling this list, you have to do a lot of work.
(d) You want to compile this list? Then you have to do a lot of work.

The Conditional relation is normally expressed with the form "If," and this can be highlighted by adding "then" in the main clause as in (4a). But "If" can be expressed otherwise, e.g., in a verb like "Should," (4b), or in a prepositional/adverbial phrase as in (4c). It is also possible to put two main clauses in a Condition relation, as in (4d).

All these forms have the same function: Condition. However, there are differences. With a verb in (4b) the Condition functions more clearly as an irrealis. With an incomplete clause, as in (4c), the conditional part is more downgraded in favor of what comes after the Condition: the Consequence. In combining two main clauses (4d), the Consequence can have a much stronger focus. And, of course, often the order can be reversed in order to make better connections in discourse

or to emphasize focus by putting something at the end of the sentence; this is also a functional difference.

Several forms, single function: the Concessive relation

(5a) I am his best friend, but he didn't call me.
(b) I am his best friend but he didn't even call me.
(c) I am his best friend and he didn't call me.
(d) I am his best friend. He didn't call me.

These are four forms expressing a Concessive via main clauses. Of course, a Concessive relation can be expressed with "although," "notwithstanding" and other subordinating connectives. Concessive connectives also provide more possibilities than the ones used here with "and" and "but," such as "yet" and "though." But the four forms presented here will suffice as a final illustration of functional variety related to formal variety.

The most common connective is "but" in (5a). If one wants to stress amazement or irritation, this connective could be amplified with an adverb like "even" in (5b), or a change in intonation. With the most neutral connective "and" (5c) the addresser has the possibility to stimulate the addressee's mental activity, since the addressee would be obliged to interpret this additive as an adversative in order to make sense of this connection. Without a connective, as in (5d), the addressee is even more responsible for establishing a relationship. Thus, the form – function heuristic can also help us to detect differences in function between the clauses.

In sum, formal variety can entail functional variety and vice versa. Of course, this still has to be tested by corpus studies and experimental research. This heuristic is only meant to provide the analyst with a certain perspective and a clear objective in analyzing discourse relations.

11.3 The challenge of Conjunction analysis

The analysis of discourse relations must start on the level of Conjunction. However, there are many puzzling and confusing subtleties in Referential Combination or lexical cohesion, of which it is unclear how they contribute to the analysis of discourse relations. In Section 3.5, the Mother Teresa text was used to illustrate how the connectivity of a discourse can be described with the three modes of Referential Combination: repetition, substitution and collocation. These Conjunction phenomena were used in Sections 7.2 and 10.1 to illustrate how to make decisions when labeling discourse relations and/or assessing the relative importance of a segment.

The way a Conjunction analysis works in real research can be illustrated by taking a rather orderly problem. This problem was already raised in example (1) in this chapter. Segments in subordination can be presented in a different

order: "x because y" or "Because y, x," etc.[36] What does that mean for the relative importance of the status of the because-segment? And could that relative importance be proven via the way the information is organized in discourse, the lexical cohesion? In asking this question, in the module of Conjunction, we are interested in the way the phenomena marked with an asterisk act together in discourse:

(6) Relevant components (*) on the Conjunction level for "x because y/ Because y, x."

Location	**Ordination**	**Combination**
Order	*Grammar*	*Reference*
a X before Y*	c interordination	g repetition*
X after Y*	d coordination	h substitution*
	e subordination*	i collocation*
Contact	*Content*	*Relation*
b phoric	f nucleus*	j connection
ground	satellite*	
		Zero-linkage
		k elliptical linking
		l bridged linking

The question is, more generally stated: Does the order of two segments (a) in subordination (e) provide any cue for the status of the segments as nucleus or satellite (f), based on phenomena referring to repetition, substitution and collocation (g, h, i)? First, an example of a because-clause in real discourse.[37] The text is segmented according to the coding procedure introduced in Section 10.1. The segments under consideration are italicized with "because" in bold.

(7) Statue for Clinton in Kosovo

1. This summer a statue of the former US president Bill Clinton will be erected in the Kosovan capital, Pristina. 2. The municipality of the capital of the Serbian district has instructed sculptor Izeir Mustafa to make a three-meter tall statue.

3. "He is our savior", 4. Mustafa said Wednesday. 5. *With the statue, Kosovo Albanians want to express gratitude to Clinton,* 6. **because** *in 1999 he persuaded NATO to bomb the Serbian army in the district.* 7. That was after Serbian forces killed some 10,000 ethnic Albanians in the war against Albanian separatists.

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36. The ordering of main and adverbial clauses has received a great deal of attention; see the literature in Renkema (1996). See also the seminal paper of Diessel (2005) and the study of "although"-clauses in Mizuno (2007).

37. Text (7) is a translation from a Dutch news report in a small corpus of fifty B/because-sentences which have been analyzed with the schema below in a (Dutch) MA thesis by Nienke de Rooy, "The complexity of cohesion analysis and collocation" (Tilburg University, 2008). The news report was produced by the Dutch news agency ANP on May 23, 2007.

8. Ever since, Kosovo has been under immediate UN administration. 9. Western countries want the district to be independent. 10. This is a thorn in the flesh of Serbia, 11. which considers Kosovo to be the cradle of its culture.

12. The UN Security Council has not yet made any declaration on the future of Kosovo. 13. Russia, an old ally of Serbia, is vehemently against its independence 14. and threatens to prevent this by veto.

This example intuitively fits in the conjecture in the first section of this chapter, namely that in the "because" construction, the clause in postposition is more likely to be continued on. The next segments (7 and 8) are linked to "1999" in the postposed subclause. The discourse does not continue on, for instance, "statue" in the preposed main clause.

However, if one wants to make a decision about the relative importance of a subclause or a main clause as a nucleus or satellite, one has to do a closer reading. After all, there are plausible arguments for the nuclearity of the main clause, as well as for the subclause. One could argue that the news report is about a statue for Clinton, and that hence the main clause, containing that information, is the nucleus. But, one could also argue that the subclause is nuclear because the news report gives a lot of information about the position of the Serbian district Kosovo. Maybe this question does not seem so important. After all, there is no discussion about the Reason relation. Yet, a topic like this one is important in describing the structure of the discourse, and therefore, for example, in predicting what information readers would put in a summary. If the because-sentence is more nuclear, then the fact that Clinton persuaded NATO would be expected to appear in a rendering.

It seems fair to say that a nucleus will contain more topical lexical material, i.e., more of the content referred to in the discourse as a whole, or at least in the paragraph. Saying this more confidently means looking at a more detailed level, to see for each constituent in each clause how it is related to other constituents in the discourse. To do this, the clause combination has to be divided first into its constituents, indicated here with a " | ", and numbered in subscript per clause.

(8) The constituents in the "because" combination

5. | With the statue$_1$ | Kosovo Albanians$_2$ | want$_3$ | to express$_4$ | gratitude$_5$ | to Clinton$_6$ |, 6. (because) | in 1999$_1$ | he$_2$ | persuaded$_3$ | the NATO$_4$ | to bomb$_5$ | the Serbian army$_6$ | in the district$_7$ |.

There are some minor questions in this constituent segmentation. For example, "want" might or might not be a full constituent, and "to express gratitude" could also be counted as a single constituent, but this has no effect on the discussion below. There are 4 – 6 constituents in the main clause and 7 constituents in the subclause.

The relation between each constituent and the other constituents in the discourse can be counted using the following framework:

(9) Framework for Reference analysis

	backward		forward
Repetition	r		R
Substitution	s		S
Collocation	c		C
Non-bound		N	

Here too, some minor questions arise. For example, whether we have to make a subcategory of pronominal reference within substitution or whether we have to account for the various subtypes of collocation (semantic, situational, etc.). Of course, finer distinctions could be made in the non-bound category; for example, counting new constituents in the because-clause, with forward linking only. However, such refinements would not affect the discussion below. The complexity of Referential Combination in this cohesion analysis should be unfolded in four different ways.

First, there is the *quantity* aspect. One could simply count the constituents which have no relation at all with the discourse, the N-constituents. In the main clause, there are three constituents out of six: "want," "to express" and "gratitude." And in the subclause, the number of N-constituents is three out of seven: "in 1999," "persuaded" and "the NATO." Thus, there seems to be no big difference in the connectivity of the clauses. However, even if one wants to count the three N-constituents in the main clause as one constituent, resulting in fewer N-constituents in the main clause, a conclusion cannot be drawn. After all, the constituents themselves do not have the same information load, for example "he" in the subclause is more or less obliged, due to "Clinton" in the main clause. So, one cannot simply count related versus unrelated constituents.

Second, there is the *character* aspect. A cohesion through repetition like "Clinton – Clinton" (segment 1) or via substitution like "Serbian army – Serbian forces" (segment 7) has a completely different character than a reference via collocation, like "statue – sculptor" (segment 2) or "bomb – war" (segment 7). Referential Combinations via repetition and substitution seem to be stronger than via collocation. Thus, an analyst cannot simply count the total number of ties per main clause or subclause. Moreover, collocation is a very diffuse concept. It is not easy to decide whether "bomb – killed" (segment 7) is a collocation or not. After all, in wartime, "bombing" can be a reaction to "killing." Thus, it is difficult to decide how restrictive an analyst should be in describing collocation relations.

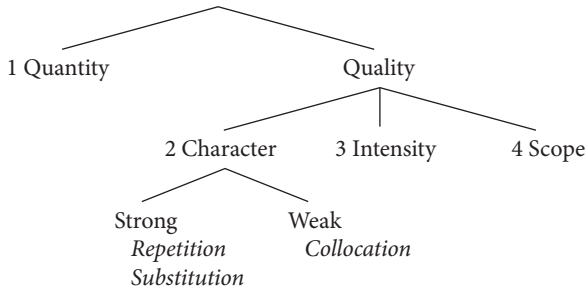
Third, there is the *intensity* aspect. Constituents can be related to one or more constituents in discourse. The more they are linked, the more intense the connectivity is. For example, the first constituent "With the statue," has an r-tie

(repetition-tie) with "a three-meter tall statue" in segment 2. But there is also another r-tie in segment 1. Would it be enough for each constituent to count only the first tie backward or forward? A positive answer is counterintuitive. After all, a constituent is more topical if it is repeated more times. This means that we have to introduce an 'intensity-parameter' in order to capture topicality.

Fourth, there is the *scope* aspect. Look again at the constituent "Clinton." There are two backward cohesion ties: "Clinton" in segment 1 and "He" in segment 3. Compare this to the cohesion ties for "district" with a backward repetition in segment 2 and a forward repetition in segment 9. The scope of the cohesion differs. "Clinton" is more locally present and "the district Kosovo" is mentioned throughout the discourse. An analyst has to deal somehow with this type of variety in cohesion ties. And there is no simple solution such as counting the distance in segments. After all, the segments themselves do not have the same weight, as can be seen in segment 4, "Mustafa said Wednesday," containing only a source clause.

In sum, all four of these aspects reveal something of the complexity involved in analyzing Referential Combination.

(10) Four parameters of Referential Combination



This example shows that even a seemingly orderly question about the relative importance of a segment cannot be answered with a simple algorithm such as counting related constituents or counting the most nearby Referential Combination. More generally, in doing justice to the complexity of Conjunction phenomena in discourse, an analyst has to weigh at least the four parameters in Referential Combination.

Finally, return to the question whether the main clause or the subclause in the Clinton text (7) is nuclear. A first trial could be to restrict oneself to clear aspects of Referential Combination. One could only take into account the well-defined repetition (including partial repetition) and substitution, and count the number of occurrences. Then, an additional criterion could be the degree to which these

occurrences are spread through the whole discourse. The result of this analysis is presented below:

(11) Aspects of Referential Combination of the segments 5 and 6 (with the number of the segment after the hyphen):

Main clause (5)	
With a statue	r-1, r-2
Kosovo Albanians	s-2 (municipality)
Clinton	r-1, s-3 (He)
Subclause (6)	
He	r-1, s-3 (Clinton)
in the district	r-2, S-10 (Serbia), 3xS (Kosovo) in 8, 11 and 12

The cohesion of "Clinton" in the main clause and "He" in the subclause cancel each other out, which means that the two other constituents in the main clause, together with three ties, have a more local cohesion, and the one remaining constituent in the subclause with five ties has a more global position in this text. This would support the conclusion that the subclause is more nuclear than the main clause.

11.4 Using other analyses

For the research analyst who wants to collect data on discourse relations it would be unwise not to stand on the shoulders of other researchers, by inspecting how they designed their research corpora, and what kind of results can be deduced from their analyses. Therefore, the last section of this chapter is devoted to some corpora that can serve rather easily as a starting point for future research. Over the past decades, several projects have been conducted in order to collect data about discourse relations. Here are three examples; two for the English language and one for German.

First, the RST Basic Corpus; see Mann and Taboada (2007). This is a collection of RST analyses of various short texts, including the Mother Teresa text which has been used so often in this study as a 'running example.' The corpus is a rather small one: 14 texts from different genres totaling about 2500 words and containing about 200 discourse relations. But it is a very important one because it functions as a reference corpus for most of the discourse analysts. The texts have been analyzed with 32 RST relations (see for an overview Section 7.3). The analyses are directly available via the web.[38] The discourse relations and their definitions are also presented on this website.

Second, the RST Treebank; see Carlson et al. (2002). This is a collection of Wall Street Journal articles. In fact it is a subset from a larger corpus, which is

38. See http://www.sfu.ca/rst/06tools/discourse_relations_corpus.html.

used for other linguistic research: the Penn Treebank, distributed by the Linguistic Data Consortium (see Marcus et al., 1999). The RST Treebank consists of 385 articles, totaling about 176,000 words. The texts have been analyzed with an expanded RST system, not the 32 relations but a system of 78 relations; see for this system Section 8.4. The analyses can, under certain conditions, be studied via the web.[39] An easier way to get insight in at least a part of this corpus is via Taboada and Renkema (2008), who presented a small part of this corpus for educational purposes: 21 texts, totaling 12,000 words, containing about 1600 relations. This corpus is presented as an open access file on the RST website.

Third, a German corpus; see Gruber (2007). This is a collection of RST analyses of seminar papers in social sciences at two Austrian universities. This corpus contains 19 rather long texts (ranging from 1800 to 7200 words). They have also been analyzed with the RST relations. However, due to their length, the analysis has been restricted to the relations between sections and paragraphs, resulting in the coding of 722 relations. This corpus is not available via the web; the results of the analysis are presented in Gruber (2007).

These three examples of corpus analysis have been chosen because the analyses and/or results are easy accessible.[40] In this section I want to address just one quantitative question about discourse relations, namely their relative frequency. Below some data for these three corpora is given. The data are presented in the framework of the Connectivity Model. Here only the categories and the most important types are dealt with.

This table contains percentages derived from different analysis schemes. Therefore, the figures can only serve as a first exploration of relative frequencies. Also important to note is that this overview has been constructed within the framework of the Connectivity Model. This means that other relations like Topic – Comment are neglected, and that some relations have been placed under the relation that was most akin, like Comment under Interpretation, and Consequence under Condition. Be that as it may, this table can serve as a stimulus for thinking about discourse relations, and starting further corpus linguistic research. Here are three considerations:

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39. See http://www.ldc.upenn.edu.

40. For further research the reader is also referred to other corpora: 1. Wolf et al. (2005), in which a portion of the articles in the RST Discourse Treebank has been annotated in a graph structure instead of a tree structure; 2. Stede (2004), who refers to a corpus of German newspaper editorials annotated in the RST framework; 3. Prasad et al. (2008), in which a new version of the Penn Discourse Treebank is presented; see http://www.seas.upenn.edu/~pdtb. This Penn Discourse Treebank, with an analysis based on connectives, will probably become the most important corpus with about 30,000 annotations of explicit and implicit connectives.

Table 6. Frequency distribution of discourse relations in three corpora

		I Basic Corpus	II The Treebank	III German Sample
	Adjunction			
Elaboration				
1	Elaboration	27.2	43	19.6
Extension				
2	Sequence	8.9	9.8	21.9
3	Contrast	3.1	1.7	2.1
4	Disjunction	-	0.2	-
Enhancement				
5	Place	-	-	-
6	Time	-	1.5	-
7a	Circumstance	4.7	3.9	1.4
7b	Restriction	-	-	-
8a	Cause	6.8	1.7	2.6
8b	Reason	3.6	1.4	1.4
8c	Means	2	4.1	-
8d	Condition	5.2	4.6	1.6
8e	Concessive	3.1	2.1	1.4
	Interjunction			
Expressing				
9	Solutionhood	6.3	-	2.4
10a	Interpretation	1	1.4	3.0
10b	Evaluation	-	0.7	6.2
10c	Conclusion	-	0.1	-
Processing				
11a	Background	6.3	1.7	22.5
11b	Clarification	-	3.7	-
12a	Restatement	1	0.5	0.3
12b	Organizer	7.3	-	7.8
12c	Summary	-	0.4	2.1
13	Attribution	-	15.7	-
Impressing				
14a	Climax	-	-	-
14b	Antithesis	4.2	-	0.6
15a	Evidence	5.8	1.4	3.4
15b	Justification	0.5	-	0.8
16a	Enablement	-	0.1	-
16b	Motivation	2.6	-	-

Note: The amounts are in percentages. Any inconsistencies in the sums per column are due to deviations caused by rounding off the percentages. The data are derived from: I. Mann and Taboada (2007); II. a sample of Carlson et al. (2002); III Gruber (2007).

First, some relations do not occur at all: Place, Restriction and Climax are mentioned in neither of the three corpora. For Place and Restriction an explanation could be that these relations are labeled as Elaboration. Climax could be hidden under Sequence. In order to say more about this, we need an in-depth analysis of the existing corpora and other ones before we can take decisions about skipping relations in the Connectivity Model.

Second, some relations only occur in one corpus, like Disjunction, Conclusion and Attribution in corpus II. As for the latter one an explanation can be found in the characteristics of this corpus, which consists of news paper articles only. This genre contains many Attributions, in which the source of a citation is given. As for Disjunction and Conclusion the corpora seem too small to arrive at a reasoned conclusion. To test hypotheses about occurrences, we need larger corpora.

Third, the frequency distributions of the relations show an odd picture. The top three of the relations seems to consist of three Adjunction relations, namely Elaboration, Sequence, and Causation (8a–8e). The second main part is represented by the Processing relations. Together they cover in these three corpora from 54 to 79 percent of the relations. However, these figures are based on first findings and one must be careful not to draw conclusions too hastily.[41]

The main function of this table is to show how corpus research can start if, for example, one wants to explore characteristics of genres (the frequency of Acceptance relations in persuasive discourse, etc.) or if one wants to explore the discourse competence of children (the diversification of Causation relations, etc.) or if one is in search of a parameter to describe the way in which a writer orientates himself to the reader (the relative frequency of Adjunction and Interjunction relations, etc.). For all these research questions there is a need for some kind of calibration point. For now, the data of these three corpora could fulfill this function until more data are available.

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41. The disproportionality in frequencies of elements in a taxonomy can be found in more taxonomies. One could argue that this disproportionality is a characteristic of nature itself. Two examples, of which the first one stems from chemistry: In popular scientific work about chemistry it is said that four types of atoms—H, O, C and N—cover 99,5 percent of all the atoms. In every 200 atoms there are 126 hydrogen, 51 oxygen, 19 carbon and 3 nitrogen atoms. The position of the one remaining atom can be occupied by all the other possible atoms. It seems that the frequency distribution of discourse relations is at least more balanced than the distribution of chemical elements. The second example is from botany. As grasses are far more frequent than orchids, the frequency differences between, say, Elaboration and Means should not amaze us. Moreover, it is perfectly conceivable that Elaboration types are as difficult to distinguish as grass types, with less overt distinctions than between more rare relations like Means and Motivation.

CHAPTER 12

Some research examples

The end of all our exploring will be
to arrive where we began,
and know the place for the first time.
(T.S. Eliot, *Four Quartets; Little Gidding*, 1943)

In Section 1.2, seven challenges were formulated for a connectivity theory. For convenience, they are repeated here:

1. Provide a framework for describing connectivity.
2. Describe the variety of forms in which discourse relations occur.
3. Explain the various functions that discourse relations can have.
4. Construct a taxonomy of discourse relations.
5. Formulate form – function correspondences.
6. Predict at any point in a discourse what discourse relations are likely to follow or what readers can reasonably expect as a continuation.
7. Evaluate judgments on discourse relations in the communication process.

The first one, providing a framework, has been answered in Chapter 2 with the presentation of the dialogic and discursive principle. The second, describing the variety of forms, and the third, explaining the variety of functions, have been dealt with in the Chapters 3, 4, and 5 on Conjunction, Adjunction and Interjunction. The fourth challenge, constructing a taxonomy, has received most of the attention and was discussed in Chapter 6 and in the comments in Chapters 7 and 8. After this taxonomy, two other topics had to be dealt with first, referring to the practice of analyzing discourse relations: how to structurally represent discourse relations (Chapter 9) and how to cope with discourse relations that can be labeled differently (Chapter 10). In the previous Chapter (11), something has been said about how to get started in analyzing discourse.

Now, finally, it is time to make a start with the last three challenges: the formulation of form – function correspondences (5), which can lead to predictions about occurrences of discourse relations (6) and evaluations of judgments on discourse

relations (7). As stated before, these three challenges can be accepted only if this outline of connectivity theory has been discussed and amended. However, it would be helpful in an academic debate if at least some indications are given of the way this proposal is going to work in actual research. Hence, this study ends with a kind of encore chapter: three sections with pilot research related to the last three challenges.[42]

12.1 Signposts in discourse

In the area of research into form – function correspondences, I have chosen a topic that has attracted more and more attention recently: the fact that discourse relations are sometimes signaled and sometimes not. This seems to be a free variation, but the form – function heuristic gives a stimulus for research, as a potentially promising way to explain at least some aspects of this Zero-linkage.

1. The phenomenon of signaling

In discourse, segments must contain, in one way or another, signals that can serve as an indication for a discourse relation. After all, since the discourse prompts the reader to establish links between subsequent segments, it would be fair to say that every discourse relation is signaled. Yet this does not cope with varieties such as the following:

(1a) The measures did not work. The next morning the computer program reported a final stop.
(b) The measures did work. The next morning the computer program reported a final stop.

Readers can easily see a Cause relation in both examples without the help of the connective "For." This may mean that other signals are hidden in the combined segments, so that something like a specific combination of words can prompt encyclopedic knowledge, here the fact that measures, either working or not, can cause a final stop. Or, if there are no hidden signals, we have to assume that without a clear cue the reader is automatically inclined to a causal interpretation, guided by

42. This chapter is partly based on data collected in pilot experiments presented in MA theses at Tilburg University in 2007 and 2008 by the following students: Eliza van den Anker, Ronella van der Burgt, Frank Dortmans and Elisa Quaden. The theses are in Dutch and are available via http://dbiref.uvt.nl/iPort?db=scr.

something like the classic maxim of relevance of Grice (1975). But let us first try the other way: the search for signaling.

Leaving aside the connectives for a moment, we can detect from Chapter 3 on Conjunction and the examples given in Chapter 6 that a variety of elements in segments can serve as cues. An almost too short a summary would state that cues can be found on each level of language: syntactic, semantic and pragmatic. (Of course, in spoken discourse intonation and gestures can also act as cues). Here are some examples:

(2) By doing so, he proved to be very clever.
(3) He likes Norway for its nature, I like Italy for its culture.
(4) Would you like to leave now? There is so much traffic.

In (2), the syntactic tense aspect, the progressive form, is a cue for a Reason relation. The plausible Contrast relation in (3) is based on the possible semantic opposition of "nature" and "culture." In the open category of pragmatic cues, all other phenomena are listed, but for those that are strictly grammatical or semantic. In (4), a cue for a Clarification relation is the implicature: "I ask you this because there is so much traffic."

Within the cues for signaling, the connection module in Conjunction has a very special position. Connectives between segments have been compared, in Section 3.4, with a kind of mortar between bricks. But connectives can also be seen as signposts for the addressee, indicating how to connect the incoming segment with the previous (or sometimes following) one(s). They can be divided in the following categories:

(5) Connection: the variety of seven connectives

1. relative pronoun	the house that …
2. anaphoric expression	the house … that building …
3. connective	and, if, for, etc.
4. adverbial connective	thus, however, etc.
5. adverbial phrase	on the other hand, to the contrary, etc.
6. cue phrase	the reason is, in sum, etc.
7. discourse particle	anyway, you know, etc.

Types 1 and 2 are normally used for Elaboration relations: relative pronouns and anaphoric expressions indicate that a concept is elaborated on. The other connections are clearly distinguished from the first two. First, they do add a new meaning, and second, they are not obligatory: in the examples (1a) and (1b) above, we do not need the connective "For." This last characteristic causes what are called unsignaled or implicit relations. Thus, the term is somewhat confusing. Segments contain many signals and are as such explicit. However, we call segment combinations without a connection in the categories 3–7 implicit relations, because the segment combinations contain no signposts connecting them to each other.

2. Some research data

Corpus linguistic research reveals that implicit relations are not exceptions. The largest available corpus, the Penn Discourse Tree Bank (see Section 11.4, note 37) contains about 20,000 annotations of discourse relations with explicit connectives and about 10,000 annotations of implicit connectives (see Webber, 2004). In smaller corpora (see Taboada, 2006), 69 percent of the relations in conversations and 56 percent in newspaper articles have shown to be implicit. And the standard RST corpus (Taboada & Mann, 2007) has a percentage of 72 when it comes to unsignaled relations.

There are more detailed findings, too. Adjunction relations tend to be more often signaled than Interjunction relations. For example, the Concessive is mostly explicitly expressed, whereas the Background is seldom signaled. There are also data referring to different modes of discourse. For example, connectives are much more frequent in spoken than in written discourse (Louwerse & Mitchell, 2003). At first sight, this seems counterintuitive. After all, in face-to-face communication we already have more signaling devices than in written discourse, since we can use intonation and gesture. An explanation could be that interlocutors in spoken discourse do not have the support of an overall structure, which compels them to use more devices on a local level. This is in line with another finding in Taboada (2006), that signaling is mainly used for relations between subsequent segments. There is hardly any signaling in relations between spans of segments on a more global level of discourse.

It should be noted that the percentages mentioned above cannot be compared directly, given the various definitions of implicitness. In some research, only connectives are taken into account, whereas in other research adverbial connectives and cue phrases are also counted as signals. However, the data so far suggest that unsignaled relations—relations without connectives—are omnipresent in discourse.

Other data are provided by experimental research. Two more or less conflicting results have been presented in two recent publications: Kamalski (2007) and Mulder (2008). In Kamalski, the research was based on short texts in which the signaling was manipulated. Versions with and without signaling were presented to readers who had to fill out questionnaires about ease of reading, appraisal, and so on. Here is an example of a text, with the manipulated elements stricken through:

(6) Fragment implicit/explicit text (Kamalski, 2007)

Consequences of genetic manipulation
~~Different points of view exist on the pros and cons of genetic manipulation.~~ The food industry says that genetic manipulations offers many advantages, ~~since~~ it

> enables us to start resolving world hunger. ~~Moreover~~ genetic manipulation can help us fight illnesses in the future that are now incurable. Environmental organizations say that genetic manipulation is an unacceptable change in nature, ~~because~~ it creates safety risks that the consumer is not fully aware of. ~~An example of~~ such a risk is public health (…)

As can be seen in this fragment, the notion of signaling is rather broad. Organizers like the entire first segment are also seen as signals. Other signals include connectives ("since"), adverbial connectives ("Moreover") and cue phrases like "An example of." Kamalski used two genres: the texts were presented in an informative and a persuasive context. And these texts were presented to two types of readers: readers with less and with more than average prior knowledge about the topic. Readers were confronted with implicit and explicit texts.

For the informative genre it proved to be the case that 'low knowledge' readers had a better understanding of explicit texts, whereas 'high knowledge' readers had a better understanding of implicit texts. Apparently, low knowledge readers use connections to establish a link with the incoming segment, whereas high knowledge readers are distracted by the connections, because they do not need them. However, the signaling in the persuasive genre proved to be profitable for the comprehension of both types of readers. For both genres the signaling also had a positive effect on evaluation and appraisal. And, interestingly, for low knowledge readers persuasive texts with signaled relations proved to be more persuasive than implicit texts, whereas the high knowledge readers were convinced better by the implicit texts. Thus, signaling affects—under certain conditions of genre and prior knowledge—the comprehension, appraisal and persuasive ability of texts.

Based on these results, it would be a safe choice to give this piece of advice for clear writing: use connections if you do not know the readers, at least in the persuasive genre. However, other research complicates such advice. Mulder (2008) focused on causal relations and used segment combinations in short texts such as the following. The target sentence is italicized:

(7) Example implicit/explicit text (Mulder, 2008)

> A Dutch tanker loaded with nitric acid has struck a leak near German Krefeld. During a collision with a German freighter the hull got damaged. Almost immediately a fierce fire broke out. *Local residents had to close windows and doors,* <u>because</u> *poisonous gas escaped during the accident.* The fire was under control after a few hours. There were no casualties.

In a reading time experiment, the time was measured for the various constituents in the target constituent, with the connective as separate constituent. After reading the text, readers had to verify some statements. Based on the findings in Cozijn (2000), it was expected that the presence of the connective would have a speeding-up effect

on reading the constituents directly thereafter, "poisonous gas escaped." After all, the connective is a signal on how to integrate the next incoming segment. It was also expected that the connective would have a delaying effect on the last constituent, because the reader has to wait until the end of the concerned segment in order to close the scope of the signal. The results, however, were rather disappointing. There were no effects for "because." Both the implicit and the explicit version performed the same in reading time and verification tasks. There was, however, a small positive effect for another causal connective, not the subordinating "because," but the coordinating "for." So, the advice on clear writing based on the first experiment should be made more precise. Or at least, explanations of the conflicting results have to be tested, before we can say more about the effects of (un)signaled causal relations.

3. A bypass way for analyzing (un)signaled relations

Another way to gain insight into signaling phenomena is by analyzing discourse and trying to discover the precise conditions for signaling, or the lack thereof. An appealing idea is that connectives are not necessary if other Conjunction strategies are exploited, as in examples such as the following:

(8a) If he calls, please don't say anything.
(b) Should he call, please don't say anything.
(9a) John is tall, but Mary is short.
(b) John is tall, Mary is short.

The difference between (8a) and (8b) is not only the absence of the connective "If." Example (8b) has a syntactic cue, namely inversion. This can also serve as a (less specified) signal for the Condition relation. And the absence of the connective "but" in (9b) could be explained by the overt use of a clear type of collocation, namely the antonymy between "tall" and "short," which would make the explicit and very frequently used indicator "but" superfluous for indicating the Contrast relation. So, the absence of connectives could be explained by replacement on a less specific level or by the occurrence of other overt signals, or possibly by other factors at the Conjunction level.

Designing examples at a research desk is one thing, but intuitions like these have to be proved in real discourse. In an attempt to find at least some evidence for specific conditions of implicitness, a small corpus was collected focusing on the occurrence (or lack of it) of the Dutch coordinating Cause or Reason connective *want* (usually translated as "for"). The corpus contained 25 texts with an implicit relation and 25 with an explicit relation.

In order to make comparisons as fair as possible, only news reports were searched for occurrences of "for." Thus, the factor 'genre' was neutralized. Also,

only segment combinations in the middle of short reports of about ten sentences were collected. Thus, the influence of the factor 'global discourse structure' was minimized. The explicit combinations were easy to find, just by looking for "for." The implicit combinations were found by close reading, and finding out whether subsequent segments without a connective could be made explicit with the connective "for." Here are two examples:

(10) Like no other, Romano knows what it's like to be overweight. (—) He used to be large himself during childhood.

(11) The clubs are struggling, *for* the number of visitors is ever decreasing.

Just to check whether the versions really could be compared, both versions were presented to readers of that newspaper. For the implicit versions, readers were asked to fill in a connective in the implicit version. If they did not choose "for" or a synonym, the text was omitted. The explicit versions were presented without the connective. If the readers rated the naturalness low, the text was also omitted. Thus, there are some guarantees that we are comparing minimal pairs, at least as minimal as possible. Below are four other examples of implicit and explicit versions.

Four implicit "for"-relations

(12a) Two other men, Taras K. and Angierpersad G., were sentenced to 231 and 179 days in jail respectively. (—) They were indirectly involved in the case.

(b) Olmert, prime-minister of Israel, has made clear that he isn't too excited about such a harbor. (—) He is afraid that it will become a smuggler's nest that will be used to get weapons and rockets in the area, Verhagen says.

(c) Moreover, the former football player from Ajax is faced with a dilemma. (—) His Spanish club Celta de Vigo still has two matches to play and could be relegated in a match against Atletico Madrid next Saturday.

(d) According to managing director Jos Faaij, the theme park has a big scoop with it's newest ride, (—) it is the first rollercoaster with a magnetic starting system that doesn't require an over-the-shoulder harness, but a lap bar.

Four explicit "for"-relations

(13a) The new drink allegedly only provides extra energy for a short time, *for* students are drowsy and tired in class again after twenty minutes.

(b) Moreover, Holleeder's attorneys have no right anymore to complain about the amount of time the trial takes, *for* the public prosecutor will immediately point out the delay caused by the explosion.

(c) It is a wise thing to make a reservation, *for* the all-star stand-up comedian show is very popular.

(d) Dutch television company RTL states that the international cooperation is an advantage, *for* the competition between the Belgians and the Dutch would give the program an extra dimension.

The combinations were analyzed using the framework presented in Section 11.3, looking for differences in repetition, substitution, collocation, unbound constituents,

and the like. The first search was disappointing. No differences could be detected with respect to the character, the intensity and the scope of Referential Combination. However, a closer look revealed some differences. Look first at the subjects of the combined segments. The implicit combinations often have the same subject in the second segment: "Romano – he" in (10); "Two other men – they" in (12a), and so on. The explicit combinations had different subjects in the segments: "The clubs – the number of visitors" in (11); "the new drink – students" in (13a). Of course, there are exceptions: look at example (12c). But here the new segment also starts with an anaphor referring to the subject of the first segment: "His."

Pursuing this difference, another deviation can be seen if we want to incorporate the second segment in the first one. In the implicit versions, it is possible to incorporate the second segment as a non-restrictive relative clause to the subject. Example (10) would then read as follows:

(14) Like no other, Romano, who used to be large himself during his childhood, knows what it's like to be overweight.

Here too, are some exceptions. Look at (12b) with the source segment "Verhagen says" at the end. This Attribution should be placed then at the beginning of the relative clause. But this exception does not influence the incorporation procedure. For the explicit version, the incorporation procedure is not possible. Thus, it would be plausible to defend the claim—with reference to the discursive principle presented in Chapter 2—that an implicit causal combination with the same subjects in both segments can be seen as an expanded relative clause. The lacking connective can be explained then by the fact that relative clauses do not start with a connective but with a relative pronoun that is repeated as a full (and same) subject in the second segment.

Of course, this is only a hypothesis based on a very small corpus. Also, it is important to note that the implicit condition can contain different subjects and that the explicit condition does not necessarily have different subjects. After all, readers would accept versions in both conditions. Moreover, this speculation says nothing about implicit combinations with other connections. The aim of this exercise was only to demonstrate how a hypothesis on a form – function correspondence can be formulated within the Connectivity Model, and what the position of this research could be in addition to corpus linguistic and experimental research mentioned in this section.

12.2 On discourse competence

An appealing idea is that children and adults differ in their use of discourse relations. It is perfectly plausible that the childish "and then" relation, the Temporal

Sequence, is acquired earlier than the more difficult Concessive. It is also conceivable that good and bad writers can be distinguished with respect to their use of discourse relations, for example, that the quality of an informative document has something to do with the way Backgrounds and Clarifications are used, and that a political speech is more convincing if a politician can use Evidence or Justification in a proper way. I will restrict myself to problems in acquisition.

The research on discourse competence is still in 'infanthood.' In Section 7.4, some central findings were referred to with respect to the acquisition of connectives. They can be summarized as follows:

(15) Acquisition of connectives in childhood

And < (And then) < Because < (And then) < (So) < But < (So)

The connectives in brackets can be placed at both the indicated positions. Two facts are not disputed: Addition comes before Cause (or Reason) and Temporal Sequence comes before Contrast. Below I will first present some recent findings focusing on the methodology of collecting data, and then indicate what can be contributed from a part of the sixth challenge to the Connectivity Model: predict at any point in a discourse what discourse relations are likely to follow.

1. Recent findings

Recent data has been presented in two experiments, conducted for the Dutch language, and presented by Spooren and Sanders (2008). They investigated the acquisition order of coherence relations within the framework of their basic taxonomy of discourse relations, which was discussed in Section 7.3. For convenience, the four primitives of their taxonomy are repeated here:

(16) The four primitives in Sanders et al. (1992)

1. basic operation	additive – causal
2. source of coherence	semantic – pragmatic
3. order	basic – non-basic
4. polarity	positive – negative

The first primitive divides discourse relations into additives and causals. In terms of the Connectivity Model, this means that Sequence and Causation are placed at the top, above the distinction Adjunction – Interjunction. The second primitive, semantic – pragmatic, operates on both Sequence and Causation. This distinction is not used in the Connectivity Model, in which the pragmatic aspect is narrowed down from the illocutionary goal (which can also be expressed 'semantically') to the way the addresser wants to link via the discourse relation to the addressee. This can be done in expressing attitudes, processing the information and impressing the addressee with a Motivation, a Justification, and so on. The third primitive—about

order—is only applicable to additives and is also not used to distinguish discourse relations in the Connectivity Model; it plays a role at the Conjunction level only. The fourth primitive, accounting for the role of negation, is not central in the Connectivity Model because it is seen there as a basic phenomenon in language, not especially one in discourse relations.

In their first experiment, Sanders and Spooren counted the frequency of discourse relations, used by children in two age groups (6–7 and 11–12 years old). They conducted a corpus research under experimental control by giving children two tasks: a description task and a conversation task. The children were asked to describe pictures and to formulate an opinion about a controversial topic such as the amount of pocket money they receive. The data were recorded and transcribed, and analyzed on the basis of the set of RST relations; see Section 7.3. This corpus contained for each age group about 550 discourse relations.

The research focused on the acquisition order of additive and causal relations and the aspect negation, and also on one aspect of the semantic – pragmatic distinction, namely the distinction 'content' versus 'non-content' relation. One of the hypotheses in this research was: children at the age of 11–12 produce more negative and causal relations, and more non-content ones than children at the age of 6–7. However, only partial evidence was found for this hypothesis. Consider these examples from their corpus.

(17) Additive relation
They were fishing and he was swimming.

(18) Negative relation
And mummy likes that, but I don't like that at all.

(19) Causal relation (content; referring to the real world)
Here a ship has sunk because they sailed against a buoy.

(20) Causal relation (non-content; referring to reasoning or a speech act)
News I don't find nice, because I don't like it at all.

For the different ages there proved to be no difference with respect to the use of negative and (content) causal relations. An explanation for this fact could be that the concepts of negation and causation have been acquired at an earlier age. If so, in fact this result does not contradict the prediction per se: additive may still come before causal at an earlier age; the same goes for the order positive – negative. The hypothesis was confirmed with respect to the difference between content and non-content causal relations: the more complex non-content relations had a higher frequency at the older age, so there is some justification in saying that relations that refer to reasoning or speech acts are more complex than relations referring to the real world.

In another experiment, Sanders and Spooren (2008) tested the competence of a subtype of the Concessive, namely the Presuppositional Concessive, which was dealt with in Section 6.2 in example (65) as a Denied Implication, and in Section 8.5 on the controlled increasability of the taxonomy in example (31b). The last one is repeated here with "Although" instead of "but":

(21) Although he is a Democrat, he is honest.

This relation can be seen as a negative causal relation, and is called, in this experiment, less specifically a Contrastive Cause – Consequence. In a sentence completion test, children in different age groups (8–10 and 11–13) had to choose two options from text items involving this relation and other relations that were considered to be more simple, like a List or a Contrast (without negation), as in (22) and (23). In the items, nonsense words were used in order to avoid the prompting of general knowledge.

(22) Negative Causation
People who are lok wear sweaters
Els is lok but she is …
a. not wearing a sweater
b. wearing a sweater

(23) Contrast
Jakki goes to ploef, but Boli goes to …
a. pluik
b. ploef

It appeared that the older children had a better score for negative causal relations than the younger ones. Thus, even between ages that differ slightly, differences can be found which supports the hypothesis that the Negative Causal relation is more complex than, say, Result and Contrast.

2. An exploration on continuation and expectation

In studying the acquisition of discourse relations one can analyze corpora that are sampled from already existing large corpora or collected under experimental control. One can also design experiments with sentence completion tasks. In addition, one can explore the sixth challenge of research: discourse continuation. One can ask children and adults to continue a discourse fragment or to formulate an expectation on how the discourse is to be continued. In fact, such tasks are related to the discursive and dialogic principle presented in Chapter 2. With a continuation task 'discursive competence' is explored: how readers expand a given piece of discourse. With the expectation task 'dialogical competence' is explored: what readers ask for as further information during the reading process.

However, the question remains if one could simply ask children and adults to continue a discourse fragment. Whether this is as 'simple' as implied is not that clear. This is why the pilot study described below was conducted.

The stimulus material consisted of eight single sentences that could be the beginning of a story or a message. In earlier pilots, discourse fragments of several sentences were used, but the fragments gave rise to such a huge variety of continuations that coding the discourse relations proved to be too problematic. Because discourse continuations are influenced by genre, discourse structure and knowledge about the topic (see Section 2.4), a more restricted discourse production experiment was designed in order to neutralize effects of superstructure, macrostructure and knowledge of the topic. The test sentences had a simple content in a ditto structure: a subject, a verb, an object, and a temporal and local adverbial phrase. The sentence length was about 10–12 words, the average for children of about 12 years old. Here are the translations of two examples from a set of eight, used in an experiment with Dutch participants:

(24) The coming year, Peter will give a concert on the island Paros.
(25) Some time ago, Barbara saw a shark near the seaside village Broome.

The constituents in the other test sentences had a comparable length and content: a name as subject, an unspecified object, an unfamiliar name in the adverbial phrase, temporal phrases of three words, etc. The variety of prepositions was also checked. The eight sentences were presented in various versions, because readers may be prompted to expect a continuation on the last constituent, following the given – new principle, or on the first as a topical presented constituent. In order to neutralize this factor of sentence structure, the test sentences were presented with the adverbial phrases at various places in the structure (which is possible in Dutch). The stimulus material also contained four filler sentences with another structure, in order not to give the suggestion that the research was about a special structure. The material was also pretested on naturalness of the sentences. Using a seven-point scale, sentences with scores lower than 5 were either removed or improved in a second pretest.

This material was used in two experiments: a continuation experiment in which the participants were asked to write a follow-up sentence, and an expectation experiment in which the participants were asked to write down a question to which they expected an answer in the following sentence. The instructions were designed in such a way that they were also easy for children to read. The only question was to write a follow-up sentence or question that came to mind first, without much thinking. A general example was given with five possible continuations or five possible questions.

Within the framework of the Connectivity Model, as a start only the Adjunction tripartition Elaboration – Extension – Enhancement (see Chapter 4) was explored. Elaboration as expansion of a concept was hypothesized to be less complex than Extension, as the addition of a new concept or event; Enhancement, as an adverbial addition to an event, was hypothesized as more complex than Extension. In this pilot, 20 children of about 12 years old and 20 university students were asked to write continuations. The children and adults had comparable IQs: the children were pupils in a preparatory higher education stream. This experiment produced about 150 continuations and 150 questions for each age. Here are some examples related to the sentences above:

(26) Continuations of:
"The coming year, Peter will give a concert on the island Paros."

1. Paros is only a small island. (Elaboration)
2. He is nervous about it already. (Extension)
3. The concert is given because of his new album. (Enhancement)

(27) Questions prompted by:
"Some time ago Barbara saw a shark near the seaside village Broome."

1. What kind of shark? (Elaboration)
2. Did the shark bite somebody? (Extension)
3. What was she doing there? (Enhancement)

The pilot experiments showed that children at the age of 12 can fulfill continuation and expectation tasks. After the experiments, the participants had to ask questions like "Do you have any idea of what this research is about?" (no right answers) and "Was it a difficult task for you?" (mostly not). Moreover, the data also revealed a tendency in the supposed degree of complexity in discourse relations. The children did use more Elaborations and fewer Extensions than adults. Enhancement relations, however, were seldom used by either group. Of course, more experiments would be needed to verify this tendency.

3. On coding reliability

The main reason to be very careful in drawing conclusions from these two pilot experiments is the coding reliability for the data. As analyzing discourse relations is to a certain extent subjective (see Chapter 10), research data can only be convincing if the coding reliability for the data is high. This is especially important in an approach in which new definitions of relationships are proposed on the base of the tripartition Elaboration – Extension – Enhancement. With this basic tripartition, many clear cases could be detected like the ones presented above,

but about 30 percent of the cases produced by the pilot experiment were disputable. Here are some examples.

(28) Elaboration (∋) or Extension (+)
"The coming year, Peter will give a concert on the island Paros."
1. Peter plays in a band. ∋
2. He is nervous about it already. +
3. It was sold out within an hour. ∋
4. It will be great fun. +

An Elaboration has been defined as a continuation on a concept. The four continuations in (28) present information about a concept (Peter, the concert) by giving a detail, an aspect or a characteristic, but there are important differences. In (1), the concept "Peter" is elaborated on without reference to other aspects of the sentence; the characteristic of Peter does not rely on information about the concert to be given; this is a clear Elaboration. But (2) also refers to the event of giving a concert. Therefore this continuation can better be labeled as an Extension. A coding rule for Extension could be the presence of a second anaphor, here "it," referring to another concept or event. The difference between (3) and (4) is less clear. In (3) the anaphor "It" seems to be only a reference to the concert, but in (4) the anaphor "It" refers more likely to the event of "giving a concert." So, detailed coding instructions have to be formulated in order to increase the coding reliability for the distinction between Elaboration and Extension.

Another intriguing phenomenon exists in the distinction between Extension and Enhancement, in continuations (the coding of the questions proved to be easier):

(29) Extension (+) or Enhancement (○)
"Some time ago Barbara saw a shark near the seaside village Broome."
1. She loved it. +
2. She would not go into the see again. ○
3. Now the seaside is closed. ○
4. She took beautiful pictures of it. + / ○

Example (29:1) is clearly not an Elaboration, because it does more than adding details to the concept "Barbara"; it also adds a new event: "loves." And it is not an Enhancement, because it adds no adverbial information to the event, for example a Reason as in (26:3) or a Manner as in (27:3). An Enhancement can add four types of adverbial information, referring to Time, Place, Manner or Causation. The slots for time and place are already filled: "some time ago" and "near the seaside village Broome." Causal information would be less conceivable here. Only Manner information can be an Enhancement follow-up; for example: "She was walking with her boyfriend there." It seems that the stimulus material provided

too little possibilities for Enhancement continuation, because two out of four types (Time and Place) were already filled in in the starting sentence, leaving only two options to continue with (Manner and Causation). To determine whether this was the reason so few Enhancement relations were detected, new test material will need to allow more possibilities for continuations of Time, Place and Causation. Thus, this analysis reveals a plausible flaw in the stimulus material of the pilot experiment.

But there is also another explanation: the coding procedure. Enhancement relations have only been coded in the segment combinations in which the second segment gives adverbial information about the first one, the so-called Backward Enhancement. However, based on the Conjunction phenomenon Order, there is also Forward Enhancement, and this seems to be the case in (29:2) and (29:3): the first segment can be seen as a Cause for the second segment. There can be some dispute about (29:4), in which the causation is somewhat awkward: "Because Barbara saw a shark, she took beautiful pictures of it." Anyway, in a new experiment it would probably be better to make a distinction between Backward and Forward Enhancement.

In sum, leaving aside the fact that in presenting data one has to give a clear account of the way the data have been coded, these pilot experiments, exploring continuation and expectation inspired by the discursive and dialogic principle, proved the feasibility of this kind of research. It also presents a framework for testable hypotheses about the complexity of discourse relations, for example that children, compared to adults, use more Elaborations than Extensions.

12.3 Discourse relations in the communication process

In a way it is remarkable that so little research has been done on the question how readers or listeners interpret discourse relations in the communication process. In literature, there is only some research available related to the topic of coding reliability. A good example is Den Ouden, Van Wijk, Terken and Noordman (1998), in which the structure of one text, a news report like the Clinton text in Section 11.3, is analyzed by six analysts, trained in the RST framework. There proved to be a high consistency among the analysts for the structural description, that means the RST tree without labels. The disagreements were small in number and could be nicely explained, referring to interpretation procedures which were influenced by topic knowledge or discourse structure. However, the exact labeling of ambiguities in the discourse relations caused many problems related to subjectivity. Often, various labels were possible and it was difficult to decide which one was correct. The picture that emerges, based on only some small research projects, is that the structural

aspects of discourse relations can be detected fairly reliably but that there is much discussion possible about the character of the discourse relations.

Investigating agreement between trained analysts is one thing. Equally, or perhaps more important, is what laymen would say if asked to label a discourse relation. After all, research into discourse relations is meant to get insight into the functioning of discourse relations in real communication processes. Hence this study ends with a report on a pilot experiment about laymen's assessments of discourse relations. In doing so, it makes a first attempt to answer the seventh challenge pointed out at the beginning of this chapter: the evaluation of judgments on discourse relations.

1. Three examples from the RST corpus

The material for the research was extracted from a small corpus that counts as the first reference corpus of discourse relations, the fourteen short texts on the RST-website (Mann & Taboada, 2007). In this corpus, several discourse relations can be found on which even well-trained analysts would not agree. Here are three examples in context. What is the discourse relation between the two segments indicated by "[?]"? The reader of this text can repeat a part of the pilot experiment, determining the labels by choosing one or more out of the labels given under heading 2 below.

(30) Lactose and Lactase
/ Lactose is milk sugar; [?] the enzyme lactase breaks it down. /For want of lactase /most adults cannot digest milk. / In populations that drink milk / the adults have more lactase, perhaps through natural selection. /

(31) True Brit
/ My wife and I are both British, [?] and we enjoy visiting America. / We're particularly attracted to the landscape and architecture of Arizona. / (Continues with a paragraph of eight segments about Arizona)

(32) Darwin: geologist?
/ [Darwin] tends to be viewed now as a biologist, [?] but in his five years on the Beagle his main work was geology, / and he saw himself as a geologist. / His work contributed significantly to the field.

2. An assessment experiment

These and seven other fragments were presented to persons who could be considered intended readers of the texts: adults with a more than average education. They received a short introduction about the fact that sentences in discourse are somehow connected. Then they were given a short explanation about twelve discourse relations. Examples are listed below with a laymen's explication based on the definitions in Mann and Taboada (2007). In this experiment, the RST definitions have been chosen because they are most frequently referred to by discourse analysts.

(33) Some discourse relations with laymen's definitions: examples

Contrast
A comparison between segments with respect to one or more differences.

Elaboration
A segment presents additional details about the content of another segment.

Evidence
A segment presents information that is meant to increase the reader's belief in the situation presented in another segment.

Interpretation
A segment sets a framework in which the reader has to interpret another segment.

Joint
Segments which have no other relation than simply be put together in a text.

List
Comparable segments that are linked together.

In an assessment experiment, 38 participants were asked to make a choice from a list of twelve alphabetically ordered labels. They could choose one or more labels. If they thought that more labels were applicable, they had to indicate the order by giving a number. Special questions of interest to researchers included 1. whether readers chose the label which was chosen by trained analysts in the RST corpus; and 2. whether readers chose more than one label. Here are the results for the three examples cited above. For each example, first the 'correct' RST label is given, followed by the number of participants who chose that label as the only one, as the first one in the presented set of possibilities, or just as a possible one. For the other discourse relations above, frequency is also given.

(34) / Lactose is milk sugar; [?] the enzyme lactase breaks it down. /

	only	first	possible
RST: Elaboration	5	23	10

Contrast (16), Interpretation (14), Joint (6), List (3), Evidence (0).

(35) / My wife and I are both British, [?] and we enjoy visiting America. /

	only	first	possible
RST: Joint	1	8	27

Elaboration (24), List (16), Contrast (6), Interpretation (6), Evidence (0).

(36) / [Darwin] tends to be viewed now as a biologist, [?] but in his five years on the Beagle his main work was geology. /

	only	first	possible
RST: Evidence	0	0	2

Contrast (33), Elaboration (31), Interpretation (6), Joint (3), List (1).

The overall results for 10 items were as follows. In 50 percent of the total of 380 assessments, the RST labels in the corpus were chosen as a possible label. In 17 percent, the label was chosen as the preferred label, and in 2 percent as the only label. Thus, the first example was a very positive one, with 5 participants choosing the label Elaboration as the only option and 23 as the first option, and 18 choosing it as a possible label. The other examples are more representative of the overall results. Readers often thought that more labels were applicable, on average choosing three relations from the set of twelve. Not surprisingly perhaps, the top position was for Elaboration, which was chosen as a possibility in 90 percent of the (380) assessments.

3. Discussion

The least one can say is that further research is needed to explain these striking results. In close reading, all possibilities seem plausible. To take just one example: for all three examples the label Interpretation makes sense, if a reader considers the first segment as a framework. Even the (not mentioned) label Condition for the first example makes sense: After all, there must be "lactose" before "lactase" can break it down.

However, more important here is the fact that there is a big gap between the analysts' labels and the laymen's assessments. To a certain extent, the results could be explained by factors in the experimental design. First, in order to avoid reading fatigue, the segments are not presented in full context. It could be that the disagreement would have been less if readers were able to choose a label with the help of possible context indicators. Second, the set of discourse relations could have been more informative by giving standard examples of the relations. Third, the definitions were based on RST definitions which were possibly not distinctive enough. In the explanation, the constraints on nucleus and satellite (see Section 8.3) were omitted as they were considered too difficult for laymen. However, for the relation Joint no further information is given in RST, and the relation List is defined rather circularly as "An item comparable to others and linked to it by the List relation" (see again 8.3).

Still, these factors together cannot account for all of the disagreement between analysts and laymen. There is a more general objection. Although these labels are given in the RST corpus (Mann & Taboada, 2007) without discussion, in this experiment, examples are used for which analysts could also disagree. It is thus unsurprising that laymen act alike. This means that this experiment does not prove that in general RST labels are difficult to apply per se. Only disputable examples were used.

At the same time, it is also possible to have a more positive interpretation of the results. Only the last example of the three presented above is dramatically different, with only 2 of the 38 participants choosing the intended label as a possible label. For the first example, all participants had the intended label Elaboration as one of their possibilities, and for the second a majority (27 out of 38) chose the intended label Joint as a possibility.

Nevertheless, what this experiment suggests is that even highly educated laymen with general definitions of labels come to different conclusions. This, in further, more detailed research, could be the starting point for detecting the cues in segments which prompt a certain label, and possibly also the start to test the more refined definitions presented in this study. So, finishing up this last chapter, several hypotheses remain to be tested after these three pilot experiments inspired by connectivity theory. And that is, in the end, what a theory is for.

With this chapter, an encore chapter to the proposed Connectivity Model and the strategies for visualizing structures and giving labels, only three possible ways of research have been dealt with. Now, first the merits or non-merits of the model will have to be discussed in future work of fellow researchers. Therefore, as all books must do, this one has come to and end. Finally, I can only reformulate the last sentence in the preface, containing the wish that all these pages striving towards an outline of connectivity theory will give impetus to new research into an area that yet has to be fully uncovered: the texture of discourse.

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