

'Anyway' A Formal Approach to the Syntax and
Semantics of Discourse Markers

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ABSTRACT

This thesis explores the syntax and semantics of discourse markers. The definition of discourse marker is problematic since not all discourse markers share a single syntactic category, though a great number of them are adverbs. Syntactically, most discourse markers are detached from the rest of the sentence they appear in. Semantically, some discourse markers seem to convey meaning, while others seem to have a pragmatic function only.

The syntactic approach I employ to describe discourse markers is Head-Driven Phrase Structure Grammar (HPSG) which is relevant in a theory of discourse because it provides a framework in which all levels of grammar can be integrated. Since discourse markers operate at discourse level, a well developed discourse theory is required, in this case, I employ Segmented Discourse Representation Theory (SDRT). The first step taken in this thesis is to establish an integration of notation between HPSG and SDRT.

I exemplify the approach with an analysis of *anyway*. This particular adverb has two main uses: one as an adverbial, and another one as a discourse marker. We argue that the adverbial uses of *anyway* have a discourse connectivity property and particular characteristics in terms of their position in the sentence and their intonation. This type of use has four different secondary effects that affect the interpretation of the discourse. The discourse marker use, on the other hand, can indicate a pointer to the end of a discussion of a particular topic or a closing of a digression. This use shows no discourse continuity and a different position in the sentence as well as a distinctive marked intonation.

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1. INTRODUCTION

In this thesis, we will attempt to provide a syntactic and semantic formal analysis of discourse markers. In particular, we will focus on *anyway* and its functions. Discourse markers generally belong to the word class of adverbs. In chapter 2, we will observe that the adverb category is varied in meaning, and that there have been various attempts to classify different adverbs in different categories in regards to meaning. Authors have then related different meanings to different syntactic behavior. It seems that meaning affects where an adverb appears in a sentence, which other adverbs it can co-occur with, etc. In the case of *anyway*, it appears to have a general common meaning, however, it occupies different positions in the sentence, and due to this different occurrence it has a different effect in discourse. When it appears in initial sentence position, its function is to close a topic or digression. On the other hand, when it appears at the end of the sentence, it has different adverbial meanings that connect the utterance it appears in with a previous utterance. In chapter 2, we will also review types of classifications of adverbs in order to test which categories can co-occur with *anyway*. The conclusions of this possible co-occurrences will be drawn in chapter 8.

Anyway shares certain prototypical characteristics associated to discourse markers. (We will review relevant literature on discourse markers in chapter 3). Syntactically, it is integrated with the rest of the sentence; and it can be omitted without affecting the grammaticality of the sentence. Semantically, it does not affect the truth conditions of the proposition it appears in.

In regards to *anyway*, nearly all literature distinguishes between a discourse marker use and an adverbial or propositional meaning use. The number of functions and meanings *anyway* has is problematic. This is the reason why, we will discuss the functions and meanings of *anyway*.

The first set of examples here illustrate the dismissive aspect that *anyway* brings to discourse.

- (1) And we were coming in around the back side. The little trail that goes up there was around the back side of the two camps. *Anyway*, he got up there kind of between where our cabins were and all at once he yelled ‘Get back! Get back’.¹
- (2) I was in the fifth grade, or sixth grade, or something; and I was a Brownie. I was a Brownie at the time so I must have been like in the fifth grade. No. I was a girl scout. I can’t remember what I was now. *Anyway*, we went camping in February and it was cold.²
- (3) His dad walked in. His dad said we screwed up, and that we just lost our motorcycles. And Gardland starts crying. I could only think what I would say to my parents. I should say that I lost my motorcycle, it got confiscated. *Anyway*, we’re sitting there and I think that the other guy agrees with Gardland’s dad. I think they were screwing us. *Anyway*, they told us they would confiscate the bikes if we got caught again. And they gave us our motorcycles back.³
- (4) So the next day when I walked in; they didn’t realize that I was the same person. And so I started speaking to them. They had spent the whole day with me the day before; and I walk in the next day; and they didn’t know who I was ((laugh))

¹ Ferrara [1997]

² Ferrara [1997, 362]

³ Ferrara [1997, 362]

- Anyway*, they razzed me all week long about my Texas clothes.⁴
- (5) They got up early. That's rare for them. *Anyway*, they left at noon.⁵
- (6) a. **Joseph**: And I jumped out of bed. I was stark naked. I yelled at the top of my voice. And he fell out the window. And Edwina was jumping and kicking. She thought I'd gone nuts.
- b. **Don**: ((laugh))
- c. **Joseph**: *Anyway*, by that time it was almost daybreak. He'd chosen an odd our for his illegal entry. So I said 'I've killed a man'.⁶
- (7) a. **Nader**: We were going through customs. And some agents asked our nationality, because they saw our passports. They asked if we were Iranian. My mum and dad said 'yes'. I didn't answer cause I was a little kid.
- b. **Javier**: How old were you?
- c. **Nader**: I was eight. *Anyway*, they took us to their office.⁷

From all these examples, we can see that *anyway* dismisses a particular issue under discussion in order to introduce a new topic, or return to a previous topic. As can be observed, this happens both in monologue and dialogue. In (1), the speaker finishes a digression on a background description of the scenery. This digression is marked by the use of *anyway*. The following utterance is therefore considered the main story. The example in (3) is very similar in the sense that the inability to recollect the activity and age of the speaker is considered a digression by the same speaker when she uses *anyway* to continue retelling her story.

⁴ Ferrara [1997, 362]

⁵ Ferrara [1997, 355]

⁶ Ferrara [1997, 363]

⁷ Ferrara [1997, 364]

In example (4), the speaker is telling a story when he expresses an opinion in regards to that story (i.e., *I think they were screwing us*), this is regarded as a digression when the speaker utters *anyway* right after it, and he returns to the main topic of the story. The dismissed comment in (5) is the laughter that the story generates. This occurs in (6) as well. Finally, in (7), the dismissed comment, or aside to the story is the question asked by one of the participants in regards to the age of teller of the story when the events occurred.

The function of *anyway* appearing at the start of an utterance is clear. However, the largest discrepancies occur when *anyway* is used as an adverbial, that is, when *anyway* is used at the end of a sentence. There seems to be four different uses: question dismissive, dismissive, contrastive, and modificative.

A question dismissive *anyway* is used in questions, that is, when *anyway* appears in a wh-interrogative, and it is isolated from the rest of the text. That is, this type of *anyway* does not seem to be connected to any previous piece of discourse. The role of *anyway* in this case is to bring importance to the topic of the question. Example of *anyway* as a question dismissive are:

- (8) How is Kim *anyway*?
- (9) How's Des *anyway*?⁸
- (10) How did he get them *anyway*?⁹
- (11) Who owns the water *anyway*?
- (12) What is emo *anyway*?

The first three examples were uttered in an ongoing conversation, and the aim of these questions was to shift the topic. That is, to stop the issue under discussion up to that point, and change it to the topic of the question in itself. On the other hand, the last two

⁸ Owen [1985, 84]

⁹ Lenk [1998, 56]

examples were titles of blogs and/or web pages, therefore starting a topic after other issues had been discussed previously.

A dismissive *anyway* has been widely accepted and described by previous authors. This use always connects to previous discourse, as the previous piece of discourse is what is being dismissed, or considered an unimportant matter. This meaning is probably the closest to the discourse marker use. We dismiss a previous comment as not relevant for the matter in hand, or at the very least, not as important as the following utterance. A possible paraphrase of this use is *regardless* (as we will see in chapter 7, a possible synonym of the *anyway* as an adverbial). Examples of dismissive *anyway* are:

- (13) I couldn't go to the party cause I was on codeine. My mum wouldn't have let me *anyway*.¹⁰
- (14) The effects on astronauts of years in microgravity are the biggest mystery to researchers. Joe Sharp, director of space research at NASA's Ames Research Laboratory explains: 'Nobody has the foggiest idea of the effect of even 40 per cent or 20 per cent of gravity for extended periods. People will probably go *anyway*'.¹¹

In all these examples, *anyway* can be paraphrased with *regardless* preserving the meaning. In (13), the first reason for not going to a party is the fact that the speaker is taking codeine. By using *anyway* in the second utterance, the speaker is pointing out that even if she had not been taking codeine, the mother of the speaker would not have let her go to the party. Similarly, in (14), Joe Sharp admits that even if people do not know about the effect of low gravity for long periods of time, people will still go to space.

A contrastive *anyway* can be paraphrased by a typical contrastive marker such as *nevertheless*. This use also needs to refer to a previous piece of discourse or utterance since

¹⁰ Ferrara [1997, 355]

¹¹ Source BNC: New Scientist. IPC Magazines Ltd. London (1991-02-16)

it needs something to create the contrast with. Examples of contrastive *anyway* are:

- (15) She wasn't supposed to wear the necklace, but she did *anyway*.¹²
- (16) You don't look hurt, but you'd better go to the hospital *anyway*.¹³
- (17) He thought maybe he'd make some soup. It seemed absurd, everything ordinary did, but he made it *anyway*.¹⁴
- (18) 'Often men have hit me, but then at least they haven't hit their families. And they live to thank me, and praise God. I hope this young man does the same!' said Angel warmly. 'But it doesn't seem likely.' 'We'll hope *anyway*,' said Mr Clare.¹⁵

The contrast of the utterances can be observed in all these examples. In the majority, *anyway* appears in the same utterance as the contrastive conjunction *but*. It seems that *anyway* reinforces the contrast expressed by *but*.

A modificative *anyway* modifies a previous utterance and it can be paraphrased as *at least* (even though this would occupy a different position in the sentence). This type of *anyway* allows modification of the previous utterance by adding extra information to that utterance. Examples of modificative *anyway* are:

- (19) It's attracted a grant which is the largest amount, in this country *anyway*.
- (20) Here, it is called the three one one going into it, according to this map *anyway*.¹⁶
- (21) He does not fear police pursuit. Not for the drugs, *anyway*.¹⁷

¹² Ferrara [1997, 355]

¹³ Ferrara [1997, 355]

¹⁴ Source BNC: The five Gates of Hell. Thomson, Rupert. Bloomsbury Publishing Ltd. London (1991), 123-226.

¹⁵ Source BNC: Tess of the d'Urbervilles. Hardy, Thomas. Oxford University Press. Oxford (1989), 1-119.

¹⁶ Altenberg [1986, 36]

¹⁷ Source BNC: Deliria. Hall, Albyn Leah. Serpent's Tail. London (1993), 1-125.

In these three examples, the utterance where *anyway* occurs contributes to further specification of the first utterance. That is, in (19), we specify that the grant is the largest in that particular country. In (20), we specify that that road is called 311 according to that particular map. And, in (21), we specify that the character does not fear police pursuit for the drugs.

We have a discourse marker use of *anyway*; and four different uses of it as an adverbial: question dismissive, dismissive, contrastive, and modificative. First, a question dismissive *anyway* does not seem to be connected to any previous piece of discourse. The role of *anyway* in this case is to put importance in the question or issue at hand, and dismiss the rest as unimportant. Secondly, a dismissive *anyway* is always connected to a previous piece of discourse, as the previous piece of discourse is what is being dismissed, or considered an unimportant assumption. This meaning is the closest to the discourse marker use, as the discourse marker also dismisses a chunk of discourse. Thirdly, a contrastive *anyway* can be paraphrased with a typical contrastive marker such as *nevertheless*. Note that this use needs to refer to a previous piece of discourse or utterance since it needs it to make it a contrast with. Finally, a modificative *anyway* modifies a previous utterance and it can be paraphrased as *at least*. This type of *anyway* allows to modify the previous utterance by adding extra information to that utterance.

In this thesis, we will use the HPSG approach (see chapter 5) to syntax in order to give a lexical entry for *anyway*. This will allow us to express all levels of grammar in a single lexical entry. This also means that we can add the discourse effects of this particle inside its own lexical entry. For discourse, we will use SDRT (see chapter 4) as a discourse theory, and we will see that *anyway* as an adverbial allows for discourse continuity, and therefore adjacent discourse can be linked by different rhetorical relations. These rhetorical relations, however, are not monotonically inferred through the use of *anyway*, but through the content of discourse. We will also note that the typical discourse marker use of *anyway* prompts for

a closing of a point of attachment and it allows to use a previous point of attachment for rhetorical relations, or even, it can bring a new point of attachment in discourse. For that aim, we will review specific literature on *anyway* in chapter 6. We will also explore possible synonyms in chapter 7. And finally in chapter 8, we will analyze syntactic and semantic characteristics of *anyway*. In chapter 7 and 8, we will make judgments on pragmatic and grammatical anomalies. These judgments have been made by taking into account the judgments offered by various native speakers of English, in particular native speakers from the South East of England and the Midlands after they were presented with the data. We will conclude this thesis with a formal analysis of the different functions of *anyway* in chapter 9.

2. ADVERBS: LITERATURE REVIEW

This chapter reviews some major literature on adverb semantics and syntax.

2.1 Introduction

Adverbs are a lexical class characterized by its heterogeneity, making their classification and description a complex matter. There have been attempts to classify adverbs according to their type of modification, and their semantics. In this section, we start with a discussion of the semantic categorization of adverbs and we follow with a description of their syntax, reviewing various previous accounts. Despite the diversity of accounts, there seems to be some generalities among different classifications and descriptions. Due to the scope of this thesis, we will not attempt our own classification, or a deep evaluation of these approaches. On the other hand, we will explore how *anyway* fits in this classifications, and how the different syntactic accounts explain the behavior of *anyway*.

2.2 Adverb Semantic Classification

There have been various attempts to classify adverbs semantically. According to Quirk et al. [1985], adverbs can have 4 different grammatical functions: as adjuncts, subjuncts, disjuncts, and conjuncts. From one hand, adjuncts and subjuncts are integrated within the structure of the clause, as can be observed in the following examples:

(22) He talked *slowly*. ADJUNCT

(23) He has not eaten *yet*. SUBJUNCT

As we can see, both adverbs here seem to be modifying the verb or the whole verb phrase. In (22), the adjunct refers to the pace of the action of talking, therefore modifying the semantics of the verb. On the other hand, the adverb in (23) modifies the whole verb phrase by stating that the event of eating has not happened so far, but that there is a strong chance (or an intention) that it will happen in the future. This is done through the use of the adverb *yet*.

On the other hand, disjuncts express an evaluation of what is being said as far as the form of the communication or its meaning is concerned. An example is *happily* as in (24). On the other hand, conjuncts express the speaker's assessment of the relation of two segments (see (25) and (26)):

(24) Mary will *happily* understand everything.

(25) He admits it was very rude of him. *However*, he won't apologize.

(26) I didn't invite her. She wouldn't have come *anyway*. [Quirk et al., 1985, 441]

Example (24) is a typical example of a disjunct. *Happily* expresses an evaluation of what is being said. In (24), the adverb adds a probability to the fact that Mary will understand everything. It is not directly related to the event per se according to Quirk et al. (25) is a clear example of a conjunct. In the example, the speaker believes that there are two utterances in contrast, therefore s/he uses *however* to link them both.

Anyway in (26) is another example of conjunct according to Quirk et al. As pointed out the authors, *anyway* cannot be either an adjunct or a subjunct since these are believed to be syntactically integrated within the structure of a clause (at least in its discourse marker use). It would be reasonable to say that it is either a disjunct or a conjunct. It appears to be the latter since it expresses the speaker's assessment of the relation between the two segments; it is an evaluation of this relation between the segments. This is the

judgment made by Quirk et al. This classification does encompass all the five different uses of *anyway*, even though the type of relation between segments is different between these uses as highlighted in chapter 1.

Greenbaum and Quirk [1990] also believe that conjuncts can conjoin two utterances and they can be used as initiators too. The authors offer the following list of possible semantic roles for conjuncts:

- Listing adverbs list a number of utterances or topics. They are subdivided into the following categories:
 1. Enumerative adverbs, as the name explains, number the list aforementioned, e.g. *next, for one thing, secondly, etc.*
 2. Additive adverbs add a new topic to an ongoing list, e.g. *furthermore, above all, moreover, what is more, similarly, in addition, on top of that, etc.*
- Summative adverbs introduce a summary of ideas, for example: *all in all, altogether, overall, therefore, in sum, to sum up, etc.*
- Appositive adverbs precede exemplifications or rephrasings of ideas, e.g. *namely, that is (to say), i.e., for example, in other words, specifically, e.g., etc.*
- Resultive adverbs indicate that the following utterances offer some kind of result or consequence denied in previous discourse, for example: *therefore, so, as a result, accordingly, in consequence, of course, etc.*
- Inferential adverbs denote that previous discourse has helped towards inferring a result shown in the utterance following the adverb, for instance: *in that case, so, then, otherwise, else, etc.*
- Contrastive adverbs display contrast of ideas and they are subclassified as follows:

1. Reformulatory and replacive adverbs suggest that the following utterance is expressed in other words, or information is made more concise in respect to the previous discourse. This is the case of the following: *rather, better, more accurately, in other words, alias, worse, etc.*
 2. Antithetic adverbs contrast opposed ideas, for instance: *instead, on the contrary, by contrast, on the other hand, then, etc.*
 3. Concessive adverbs imply acknowledgment of previous discourse, e.g. *still, however, nevertheless, yet, all the same, of course, that said, anyhow, anyway, still and all, only, though, etc.*
- Transitional adverbs suggest some kind of change of progression in the following terms:
 1. Discoursal adverbs indicate a transition of topics, for instance: *by the way, incidentally, now, etc.*
 2. Temporal adverbs indicate a transition in terms of time, e.g. *meanwhile, originally, subsequently, eventually, etc.*

Greenbaum and Quirk offer a thorough classification of semantic roles for conjuncts, however, their classification might not appear to be very neat since there are a few overlaps, for example, *therefore* appears with two different semantic roles: as a summative and a resultive adverb. However, as we will see, this type of particles do often have several related meanings.

Greenbaum and Quirk claim that conjuncts can conjoin two sentences. This would explain the discourse connectivity effect of the adverbial use of *anyway* (as will be discussed in later chapters). As far as the discourse marker use, we argue that the connectivity is not directed to the previous utterance, rather *anyway* as a discourse marker is used to mark an end to a digression or a topic (to be discussed in later chapters).

Greenbaum and Quirk sub-classify *anyway* and its variants as having a contrastive-concessive meaning. Even though we will claim that the contrastive effect that *anyway* is marginal and secondary to its meaning, it is present in some occasions. For this reason and due to the nature of Greenbaum and Quirk study, we consider that their classification partially fits with our analysis, though it fails to explain the effects created by *anyway* fully. It is an acceptable definition even if it is not a sufficient explanation of the meaning of *anyway* and its variants: *anyhow*, *at any rate*, etc.

More recently, Huddleston and Pullum [2002] relate the semantic roles with the positions that an adverb can take in a sentence. There are three possible positions for adverbs: front, end (after the verb), and central (between the subject and the verb). The positioning of any adverb depends on the following classification according to [Huddleston and Pullum, 2002, 576]:

- VP-Oriented Adjuncts

1. Manner adverbs are gradable and they modify a verb phrase. Examples: *carefully*, *hastily*, *badly*, etc.
2. Means or Instruments are typically prepositional phrases indicating either the means or the instrument use to perform an action, e.g. *by bus*, *with a spanner*, etc.
3. Act-Related adverbs can be considered manner adverbs in some occasions. The former appear preceding the sentence, so they can be paraphrased as *the act of V* (V being the verb modified by the adverb). Manner adverbs, on the other hand can be paraphrased as *doing V* in a particular way. Examples of act-related adverbs are: *rudely*, *foolishly*, etc.
4. Degree adverbs have a central or final position in the sentence and they introduce some kind of quantification, e.g. *almost*, *enormously*, etc.

5. Temporal Location adverbs introduce some type of time constraint on the verb, for instance: *subsequently*, *earlier*, etc.
 6. Duration adverbs indicate the time duration of the verb as *temporarily* does.
 7. Aspectuality adverbs are polarity sensitive and give information on the aspect of the verb as the following adverbs do: *already*, *still*, etc.
 8. Frequency adverbs describe the frequency of the occurrence described by the verb, e.g. *often*.
 9. Serial Order introduce an order regarding events, e.g. *next*, *last*, etc.
- Clause-Oriented Adjuncts
 1. Domain adverbs restrict the domain of the clause, e.g. *politically*, *officially*, etc.
 2. Modality adverbs add modal meaning to the clause, for example: *necessarily*, *probably*, *surely*, etc.
 3. Evaluation adverbs start off the clause by offering a subjective evaluation of it, e.g. *fortunately*, *ironically*, *sadly*, etc.
 4. Speech Act-Related adverbs always appear at the start of a sentence and make reference to the speech act of the clause, e.g. *frankly*, *briefly*, *confidentially*, etc.
 5. Connective adjuncts connect utterances or chunks of discourse, for instance: *moreover*, *alternatively*, *on the other hand*, etc.

The generalization adopted by the authors is that VP-oriented adjuncts are closely associated with the VP constituents and this is the reason why they are more likely to appear closer or adjacent to the VP. On the other hand, clause-oriented adjuncts are less closely related to the VP and, in turn, they are less likely to be closer or adjacent to the VP.

VP-oriented adjuncts prefer end position where prosodic detachment is not normal unless it indicates an afterthought. These adjuncts tend to have an end position in the sentence, while an inter-sentential position is an alternative to this end position. Front position is very unusual for this type of adjuncts. On the other hand, clause-oriented adjuncts tend to prefer front position where prosodic detachment is common. And whilst end position is strongly disfavored, central position is an alternative.

Huddleston and Pullum's study of adverbs is in line with traditional grammarians, though they add a little more to traditional classifications including modal, evaluative, and speech-act-related adjuncts.

The classification that Huddleston and Pullum offer shows a syntactic behavior potentially applicable to the different functions that *anyway* has. This difference in syntactic behavior highlights the differences in its semantic role. *Anyway* occurs in two different positions, and it has different functions in the discourse which are marked by its syntactic behavior and a very distinctive prosody. *Anyway* can appear at the end of the sentence (and very rarely in mid-sentence position) and it is integrated in the prosody of the sentence. Huddleston and Pullum would argue that it is a VP-oriented adjunct. However, we argue that *anyway* is always attached to the sentence level of the syntactic tree. (This will be developed in future chapters.) On the other hand, *anyway* can appear at the start of the sentence with a clearly distinct prosody, and in this case it is a clause-oriented adverb. This position and prosody indicate a slight different function in discourse.

Ernst [2002] offers explanations on adverb scope from a semantic point of view. We first describe the conclusions of the author on Speech-Act adverbs, then Evaluative adverbs, Modal adverbs, Evidential adverbs, Subject-oriented adverbs, and finally, Exocomparatives.

Speech-Act Adverbs

Speech-Act adverbs make reference to the speech act of the clause, e.g. *frankly*, *briefly*, *confidentially*, etc. When Speech-Act adverbs occur with questions, they take the question operator in their scope because they request an answer of the sort indicated by the particular adverb. Observe the following example:¹

(27) *Honestly*, why would you want to leave him?

The utterance in (27) requires an honest answer in regards to the reasons of leaving that certain person. In this sense, the speaker requests the hearer to give an answer of an honest sort.

In addition, Speech-Act adverbs need to take an assertion operator as their argument. This explains why they cannot occur after auxiliaries. Observe the example:

(28) *Frankly*, they should have decided where to go earlier.

(29) *They should *frankly* have decided where to go earlier.

(30) *They should have *frankly* decided where to go earlier.²

Evaluative Adverbs

Evaluative adverbs examples are *unfortunately*, *strangely*, *curiously*, etc. The content of these adverbs is not part of the main sentential content. When evaluative adverbs occur with simple assertions, the speaker asserting p commits himself to the truth of p; in addition, the speaker commits himself to the proposition associated with the adverb, and it does not let the addressee evaluate the proposition.

Evaluative adverbs are one place predicates which take a proposition as their argument; most of them require their object to be a fact. Evaluatives must occur before a modal

¹ Note that the grammaticality judgments of examples (27) to (51) are conclusions drawn by Ernst [2002].

² As far as we are concerned, these last two examples would be acceptable if they had a parenthical, comma intonation. Some speakers might find it acceptable even without that parenthical intonation.

adverb since the latter do not require facts, just propositions. For example:

- (31) a. *The director *probably* will *unfortunately* give a speech.
 b. *Unfortunately*, the director will *probably* give a speech.

(31b) is grammatical because in this case *unfortunately* appears before the modal adverb *probably*.

Moreover, Evaluatives cannot follow negation or aspectual operators such as perfective or progressive auxiliaries.

- (32) *Peter did not *unfortunately* come to the party.
 (33) *James might have *oddly* watched the movie.³
 (34) *James has *oddly* watched the movie.

In addition, Evaluatives can take other predicational adverbs under their scope, for instance:

- (35) *Fortunately*, the students have cleverly answered all the questions.

Modal Adverbs

Modal adverbs (that is, adverbs expressing mood) are one place predicates, and their complement is a fact. The adverb assigns a degree of likelihood of truthness to the proposition.

Modal adverbs cannot be under the scope of subject-oriented adverbs since they would make the required event for the modal adverb unavailable, see the following example:

- (36) *The students *stupidly maybe* decided not to submit an essay.

Modal adverbs cannot follow negation or aspectual auxiliaries:

³ As far as we are concerned, these last two examples would be acceptable if they had a parenthical, comma intonation

- (37) *Peter did not *probably* come to the party.
- (38) *James might have *possibly* watched the movie.
- (39) *James has *perhaps* watched the movie.

Modal adverbs cannot take other modals or evaluatives within their scope since their complement would no longer be a fact:

- (40) **Probably* James has *maybe* watched the movie.

According to Ernst [2002], when modals and evaluatives co-occur, the two adverbs modify independently the same proposition:

- (41) *Surprisingly*, she had *probably* kissed the children.

In the example above, *surprisingly* and *probably* are both modifying the proposition *she had kissed the children*. They do not modify each other or affect each other semantically. Hence, both modify the proposition independently.

Evidential Adverbs

Evidentials such as *obviously* give an evaluation of the truth of the utterance they appear in. Evidential adverbs require a fact as a complement (as Modal adverbs do). This type of adverbs take the fact to form a stative event. Evidentials can be inserted in questions while modal or evaluative adverbs cannot:

- (42) Has she *obviously* gone to the party?
- (43) *Has she *probably/fortunately* gone to the party?

Evidentials can be under the scope of negation:

- (44) Peter was not *clearly* affected by the movie.

Evidentials cannot follow aspectual auxiliaries because they would not be able to find a propositional argument:

(45) *Peter would have *obviously* watched the movie.

Subject-oriented Adverbs

Subject-oriented adverbs are interpreted differently depending on whether the verb is active or passive. As the name indicates, these adverbs target the subject. This type of adverbs have a more restricted interpretation with an active verb than with a passive verb, observe the following example:

- (46) a. *Unwillingly* John hit Kim.
 b. *Unwillingly* Kim was hit (by John).
 c. *Unwillingly* the wall was hit.

In the active sentence (46a), the subject is modified by the adverb. But in the passive sentence (46b), either the subject or the oblique argument can be the item modified by the adverb. As can be seen in (46c), the subject *wall* is unable to be *unwilling*. Then, only the omitted hitter can be the item modified by the adverb.

According to Ernst, subject-oriented adverbs take events and the speaker as arguments. Evaluatives cannot be under the scope of subject-oriented adverbs since these need controllable events; and this is not the case of the events represented by evaluative adverbs:

(47) *James *stupidly* had *clearly* been talking nonsense with Jane.

Subject-Oriented adverbs have certain semantic requirements and this is why they cannot co-occur with the deontic modal *must*. This happens because the agent cannot control an obligation:

(48) *She must *wisely* start studying weeks before the exams.

The same thing happens with a Modal adverb:

(49) *She *probably* has *wisely* started studying weeks before the exams.

Exocomparative Adverbs

Correspondingly, accordingly, likewise, differently, equally, etc are Exocomparative adverbs according to Ernst. This type of adverbs make reference to some entity of the same type as their argument. This entity they make reference to is usually defined contextually.

Exocomparatives can take a broad range of arguments and impose hardly any requirements. They can co-occur with other types of adverbs with no restriction on linear order:

(50) *Similarly*, she has *probably* started studying weeks before the exams.

(51) *Probably*, she has *similarly* started studying weeks before the exams.

The analysis of Ernst is thorough but does not cover *anyway*, we cannot point out whether this is because the analysis is incomplete, or it simply did not take into account adverbs of this sort.

The view of adjuncts by Bonami et al. [2004] is that adverbs are used functioning as adjuncts and demonstrate a wide distributional freedom. According to the authors, there seems to be a consensus on the major semantic classes:

- Speech act adverbs: *honestly*
- Connectives: *however, firstly*
- Evaluatives: *unfortunately, suddenly*
- Modals: *maybe, probably*
- Agentives: *generously*
- Frames: *theoretically*
- Frequency adverbs: *sometimes*
- Duration adverbs: *for a while*

- Time adverbs: *immediately*
- Degrees: *completely*
- Manners: *kindly*

We will use the consensus drawn by Bonami et al. in order to see if *anyway* can co-occur with all these types of adverbs. As we will discuss in detail in Chapter 8, these co-occurrences are possible with all types of adverbs. There are restrictions in terms of sentence position (the discourse marker *anyway* needs to appear sentence initially, and the adverbial use sentence finally). There is a restriction in terms of what type of connective can occur with the discourse marker *anyway*; this connective cannot be linking pieces of immediately preceding discourse with current discourse. This is impossible since the discourse marker *anyway* ends a digression or topic. *Anyway* as a discourse marker can appear with other connectives that have a cataphoric nature (e.g. *first, to start with, etc.*) According to Greenbaum and Quirk [1990]’s classification, the discourse marker use of *anyway* can co-occur with enumerative and summative conjuncts.

There are some slight differences between all adverb classifications. Quirk et al. [1985] and Greenbaum and Quirk [1990] divided the study of adverbs into adjuncts, subjuncts, conjuncts, and subjuncts. On the other hand, Huddleston and Pullum [2002] and Bonami et al. [2004] categorize all adverbs as adjuncts. Some of the semantic roles appear in all these studies. However, in some studies there are differences in classification and definition of the semantic roles. This possibly means that some studies change the semantic role of particular adverbs. This is not surprising as to establish all possible semantic roles of all adverbs is an enormously difficult task due to the semantic complexity of each and every adverb.

In this section we have described different views on the semantics of adverbs. In the next section we will review previous literature on their syntax.

2.3 The Syntax of Adverbs

In this section we will review accounts on the syntax of adverbs, and adverb modification in particular.

McConnell-Ginet [1982] claims that adverbs can modify at different levels in the sentence or discourse structure. There are some verbs such as *behave* which always subcategorize for an adverb (see (52) and (53)); or have a more restrictive meaning if an adverb does not occur in the sentence (as in (54) where *behaves* has the meaning of behaving in a good manner):

- (52) Joanna behaves *rudely*.
- (53) Joanna behaves *rudely* to strangers.
- (54) Joanna behaves.
- (55) Jenny treats John *aggressively*.
- (56) # Jenny treats John.

There are some uses of certain verbs, such as *treat*, that always require an adverb (as in (55)). If *treat* only has a noun phrase as a complement, the result is an ungrammatical sentence as in (56). According to McConnell-Ginet, these VP-internal adverbs combine with a verb rather than a verb phrase.

VP-internal adverbs have two functions. One is that they augment the arity of the verb; in the example, *treat* initially would have arity two: subject and object, the increased arity is that of the adverb. The other function is that they specify the value or values of the added argument place/s, that is, *treat* will specify that the extra argument needed is that of an adverb.

VP-internal adverbs are semantically basic. In most of the cases, these adverbs are homonymous with higher-level adverbs. McConnell-Ginet names this kind of adverb *Ad-*

verb and the author argues that they are the first to combine with verb meaning, then, the subject combines with the verb meaning. As McConnell-Ginet [1982, p.170] says: ‘*Once the verb has taken a linguistically specified argument, we no longer ‘tinker’ with its meaning, at least not directly*’.

McConnell-Ginet classifies two other types of adverb: VP-external and *Ad-sentences*. The former can take scope over the whole verb phrase. At the same time, the author argues that they are *Ad-verbs* of *act*. *Ad-verbs* can modify the whole verb phrase if they are semantically suitable for modification of *act*, for example:

(57) Louisa acted *rudely* to depart.⁴ (McConnell-Ginet [1982, 173])

(58) Mary *reluctantly* was instructed by Joan. (McConnell-Ginet [1982, 174])

Ad-sentences are adverbs that modify sentences. Most adverbs of this sort are morphologically derived from an adjective or a verb which takes a sentential subject; for example, *possibly*, *obviously*, *unfortunately*, *allegedly*, etc. A large number of such sentence modifiers can not be analyzed as functions taking the intensions of their complement sentences as arguments. They seem to work as quantifying-type sentence operators. The dimension of additional specification of the sentence does not relate to truth-conditions, but to discourse properties of words such as *firstly*, *finally*, etc. The following would be examples of adverbs that are modifying sentences:

(59) *Honestly*, I don’t care.

(60) *Unfortunately*, John bought a very old car.

(59) and (60) are examples of *Ad-sentences*. In both examples, the presence of the adverb does not affect to the truth-conditions of the rest of the sentence. In (59), the fact that the speaker does not care is qualified by the speaker as an honest statement by the use

⁴ Some speakers find this sentence odd.

of the adverb *honestly*. Similarly, in (60) the speaker qualifies as unfortunate the fact that John bought a very old car. The adverb *unfortunately* is used to give an opinion about the sentence that follows.

Another set of examples of an adverb modifying sentences is the following:

- (61) a. Everyone answered *immediately*.
 b. *Immediately* everyone answered.
 c. It was *immediately* that everyone answered.

In the sentences in (61), McConnell-Ginet observes that an adverb such as *immediately* can be moved inside the sentence and the meaning does not change. This seems to indicate that it is modifying the whole sentence rather than just the verb or verb phrase. In all instances the adverb *immediately* is used to specify in what manner everyone answered.

The classification and arguments given by McConnell-Ginet supports the fact that it is possible for *anyway* to modify at the sentence level rather than at a VP level. The author classifies adverbs that modify sentences as Ad-sentences. *Anyway* does not fulfill all the characteristics that the author gives to this type of adverbs. For example, it does not derive morphologically from an adjective or a verb taking a sentential subject (as would be the case of *possibly*). On the other hand, it does have a flexibility of movement inside the sentence even though we get a slightly different discourse function, so overall we cannot say that *anyway* has all the characteristics of any of the types described by McConnell-Ginet.

Quirk et al. [1985] establish two main syntactic functions and each adverb will have one of the two functions. An adverb can be a clause element adverbial (as in (62) and (63) where the adverbs *almost* and *yesterday* are adverbials of the corresponding sentences); or it can be a pre-modifier of an adjective (as in (64) where *almost* is a pre-modifier of *happy*); or a pre-modifier of another adverb (as in (65) where *nearly* is a pre-modifier of the adverb *always*):

- (62) He *almost* forgot to bring me her documents.
- (63) He forgot to bring me her documents *yesterday*.
- (64) They are *almost* happy.
- (65) He is *nearly* always confused with what she says.

An adverb can function as an adverbial, then the adverb becomes an optional element, which is peripheral to the structure. According to Quirk et al., adverbs can modify the following apart from entire phrases (note that words in italics are adverbs and words in bold represent the items modified by the adverbs):

- Adjectives; e.g. *terribly* **handsome**, *deeply* **worried**.
- Other adverbs; e.g. *extremely* **well**, *unusually* **soon**.
- Particles in phrasal verbs, prepositional adverbs and prepositions. Examples:

(66) He knocked the man *right* **out**.

(67) They left her *well* **behind**.

(68) The nail went *right* **through the wall**.

(69) He made his application *well* **within the time**.

(70) Her parents are *dead* **against the trip**. [Quirk et al., 1985, 449]

- Pronouns, predeterminers, and numerals.

(71) *Nearly* **everybody** came to our party.

(72) They recovered *roughly* **half** their equipment.

(73) They will stay *fully* **ten** weeks.

- While some adverbs pre-modify nouns within the noun phrase as in *in after years*, some others can post-modify as it is the case for *else*.

(74) We had *quite* **a party**.

(75) Kim remembers **the promise of love and friendship** *in after years*.

(76) This present is for **someone** *else*.

Conjuncts are not gradable, for instance, we cannot say **very accordingly* or **moreover enough*. Though some conjuncts can be intensified by *quite*, this is a similar case to *better still* or *even worse*. As a conjunct, *anyway* cannot be modified by pre-modifiers such as *very* or *quite*. Note the ungrammaticality of **quite anyway* or **very anyway*.

As noted by Quirk et al., conjuncts (i.e., conjunct adverbs) cannot be the focus of cleft sentences; they cannot be the basis of contrast in negation or alternative interrogation; they cannot be focused by subjuncts; and they cannot come within the scope of ellipsis or of predication pro-forms; see the following examples:

(77) Peter might not be able to come. You should *nonetheless* invite him.

(78) **It is nonetheless* that you should invite him. CLEFT SENTENCE

(79) **Should you invite him nonetheless* or *likewise*? ALTERNATIVE INTERROGATION

(80) **You should only nonetheless* invite him. SUBJUNCT FOCUS

As a conjunct, *anyway* cannot be the focus of a cleft sentence. As can be demonstrated through the unacceptable **It is anyway that I tell you to fight hard*. Similarly, *anyway* cannot be the basis of contrast in negation or alternative interrogation. It is impossible to find acceptable examples of this sort. We get ungrammatical results in all instances such as the following: **Should I come anyway or nonetheless?*

Furthermore, conjuncts have a detached and superordinate role compared to other elements in the clause. They have the function of conjoining independent units. They do not function as a contribution to another facet of information of a single integrated unit. The units they connect may range from phrases to larger parts of text. As a conjunct, *anyway* has a detached and superordinate role in comparison with other elements of the clause. *Anyway* conjoins independent units.

Conjuncts can co-occur with conjunctions such as *and so, or else, but instead*, etc. The conjunct gives a more explicit orientation to the conjunction. Conjuncts can also co-occur with other conjuncts; for example in the following sentence, the conjunct *and so* co-occurs with the conjunct *all in all*:

(81) *And so all in all* you agree with me.

Even the same semantic class of conjunct can co-occur (and achieve emphasis rather than tautology). For instance:

(82) *But* she has achieved good results *nonetheless*.

In the above example, even though we find two contrast conjuncts, the contrast is maintained and emphasized and it does not create either confusion or tautology. This happens with the discourse marker *anyway* which can co-occur with conjunctions such as *and, but, so*, and even *well*. *Well* can perform the same function as *anyway*, that is, to close a digression or end a topic. In these cases, we achieve emphasis, but not tautology as can be seen in the following example:

(83) **Jan:** I don't know what he is ((Laughs)).

Jim: *Well, anyway*, so you were starting to think about the sex-money equation.⁵

⁵ Jones, Jim. (1999) *Use My Name: Jack Kerouac's Forgotten Families*. ECW Press, Canada, page 120.

In regards to position in the sentence, initial position is habitual for conjuncts and some are restricted to this position (this would be the case of the discourse marker use of *anyway*). But we can also find some of them in medial (e.g. *however*) or end position (this is the case of the adverbial use of *anyway*).

All conjuncts with the exception of *only* and *somehow* can occur in questions with the similar range of positions as they have in declarative sentences. The same happens with indirect questions and imperatives with the exception of conjuncts which are restricted to initial position. Observe the following examples:

(84) *So* will you come?

(85) She asked whether they must *nonetheless* call the police.

(86) *Anyway*, try to do a good job.

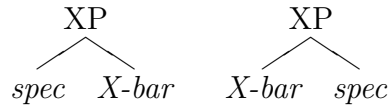
In these examples we find three different conjuncts that can appear likewise in declaratives, interrogatives, indirect questions, and imperatives. *So* appears initially in an interrogative sentence in (84) as it would appear likewise in a declarative. Similarly, the conjunct *nonetheless* in (85) appears in an indirect question as it could appear in any other type of structure. The conjunct *anyway* in (86) appears in an imperative sentence, again a conjunct that is possible in any of these structures: declaratives, interrogatives and indirect questions.

Conjuncts can indicate a relation between two clauses even when one is subordinate to the other, e.g.

(87) I trust him *because* I would *otherwise* go mad.

In the previous example, the first part of the clause *I trust him* subordinates the second part of the clause with the use of *because*. In the second clause, we find a conjunct, *otherwise* which indicates a relation between the first clause and the second. There is a

Fig. 2.1: Specifier Rule



condition relation between the two clauses, the whole sentence could be paraphrased as *I trust him because if I didn't trust him, I would go mad.*

To conclude, several authors have noticed that adverbs modify either a VP or a whole sentence. The syntactic behavior of an adverb has been linked to the adverb meaning. Generally, it has been noted that adverbs which modify a whole sentence tend to appear at the start of a sentence, while VP adverbs either appear mid-sentence or at the end.

2.3.1 Transformational Grammar

Transformational Grammar has its own particular approach to the syntax of adverbs. We will review this account in this section. Much early transformational work on adverbs was concerned with the relation of adverbs to adjectives (Jackendoff [1972]), a more recent focus of attention has been X-bar theory first proposed by Chomsky [1970] and developed by Jackendoff [1977].

X-bar theory attempts to identify syntactic features common to all languages. In fact, X-bar theory states that all languages share certain structural similarities, including one named as the X-bar. The letter X signifies an arbitrary lexical category; and then, once we analyze a specific utterance, we assign specific categories to this X. In this way, the X may be an N for noun, a V for verb, an A for adjective, a P for preposition, or an Adv for adverb.

There are three rules which form the basis of X-bar theory. Firstly, an X Phrase may consist of an optional specifier and an X-bar, in any order, observe the tree representation in (2.1).

Fig. 2.2: Adjunct Rule

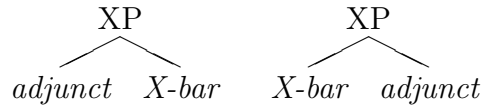
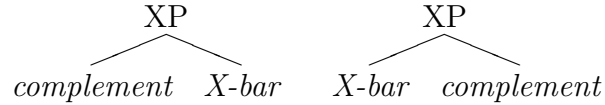


Fig. 2.3: Complement Rule



Secondly, an X-bar may consist of an X-bar and an adjunct, in any order. Observe the tree representations in (2.2).

Thirdly, an X-bar may consist of an X (the head of the phrase) and any number of complements (possibly zero), in any order. Observe the tree representations in (2.3).

Jackendoff [1972] states that there are three surface positions in which a *-ly* adverb can appear in: between the subject and the main verb (auxiliary position) (see (88a)); in initial position (see (88b)); and final position with no pause (see (88c)). However, they can appear in other positions in the sentence thanks to the transportability convention associated with them. This means that a constituent marked as being transportable can occupy any position in a tree as long as it is dominated by the same node.

From the three main surface positions, Jackendoff establishes various classes of adverbs depending on their occurrence in combinations of the three basic positions.

One class of adverbs can appear in any of the three positions, but the meaning is changed depending on the position it appears in. Note the following examples (Jackendoff [1972, 49]):

- (88) a. John *cleverly* dropped his cup of coffee.
 b. *Cleverly*, John dropped his cup of coffee.
 c. John dropped his cup of coffee *cleverly*.

- d. It was clever of John to drop his cup of coffee.
- e. The manner in which John dropped his cup of coffee was clever.

(88a) is ambiguous because it can either mean (88b) and (88c). (88b) has its paraphrase in (88d); and (88c) has its paraphrase in (88e).

Another class is that of those adverbs that can occupy the three basic positions, but in this case, the meaning does not change. Some adverbs of this class are *quickly*, *slowly*, *sadly*, etc. Observe the following:

- (89)
- a. He *quickly/slowly/sadly* came to the party.
 - b. *Quickly/Slowly/Sadly*, he came to the party.
 - c. He came to the party *quickly/slowly/sadly*.

A further class is formed by those adverbs that can occur only in auxiliary and initial position. These adverbs can also occur in final position only if separated from the rest of the sentence by a pause. Some adverbs of this class are *evidently*, *probably*, *certainly*, etc. Observe the following:

- (90)
- a. He *evidently/probably/certainly* will come to the party.
 - b. *Evidently/Probably/Certainly*, he will come to the party.
 - c. He will come to the party, *evidently/probably/certainly*.

The fourth class described by Jackendoff is that of adverbs which can only occur in auxiliary and final position. Some adverbs belonging to this class are *completely*, *easily*, *purposefully*, etc. Observe the following:

- (91)
- a. He *completely/easily/purposefully* forgot about his work.
 - b. He forgot about his work *completely/easily/purposefully*.
 - c. * *Completely/Easily/Purposefully*, he forgot about his work.

The fifth class of adverbs are those which occur in final position only. Some adverbs of this class are *early*, *fast*, *indoors*, etc. Observe the following:

- (92) a. He arrived *early/fast*.
 b. * He *early/fast* arrived.
 c. * *Fast/Early*, he arrived.

Finally, the sixth class of adverbs are those which can only occur in auxiliary position; the following are adverbs belonging to this class: *merely*, *truly*, *simply*, etc. Observe the following examples:

- (93) a. He *merely/truly/simply* loved her.
 b. * He loved her *merely/truly/simply*.
 c. * *Merely/Truly/Simply*, he loved her.

Jackendoff [1977] claims that adverbs take no complement as can be seen from the ungrammaticality of **fearfully of Bill*. However, some Prepositional Phrases can act as a complement of an adverb as in *unfortunately for our hero*. Jackendoff claims that this complement is attached to Adv". Evidence comes from the fact that the PP can prepose (as in (94)), or alternate with a complement of the verb that preposes (as in (95)) (Jackendoff [1977, 78]):

- (94) It was unfortunate for our hero that Rome burned.
 (95) For our hero, it was unfortunate that Rome burned.

Jackendoff believes that adverbial clauses introduced by words like *because*, *although*, etc. are prepositions rather than adverbs. Therefore, they are not adverbs taking a complement, but prepositions taking a complement. Thus, Adv' has a minimal phrase structure rule, and it takes no Adv' complements.

Jackendoff [1977] states that adverbs are dominated by VP, S, and Degree (e.g. words such as *so*, *as*, *how*, etc.). Transformational Grammar has its own approach to the syntactic behavior of adverbs, but does not deal with the semantics or meaning of any of these adverbs. This is one of the reasons why we have decided not to take into account this approach in our thesis.

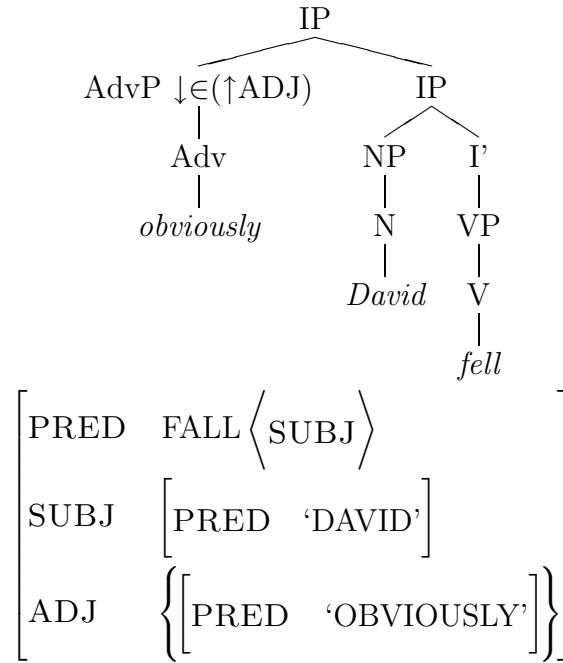
2.3.2 Constraint-Based Linguistic Approaches

Here we will briefly describe the views on adverbs by one constraint-based linguistic approach: Lexical Functional Grammar (LFG). (We will examine the treatment of adverbs in Head-Driven Phrase Structure Grammar (HPSG) in Chapter 4). LFG (Bresnan [2001]) uses phrase-structure rules and functional annotations to restrict adverb occurrence to those places where adverbs can grammatically occur.

LFG representation of syntactic structures links the concrete, linear and hierarchical aspect of language with an abstract level of functional organization using an inventory of grammatical function, such as subject and object. The concrete phrase structure is represented by the constituent or c-structure tree. The c-structure is related to the functional or f-structure by means of functional notation.

Dalrymple [2001] argues that adverbs are adjoined to the phrases they modify; for example, *obviously* or *skillfully* would be adjoined to the phrases in which they occur as these two adverbs modify the sentences. In regards to adverb f-structures, adverbs are members of the set of ADJ(ADJUNCT) modifiers like any other modifier in LFG. For example, *obviously* is a sentential adverb adjoined to IP (Inflectional Phrase, or sentence) (Dalrymple [2001, 269]) as in figure (2.4).

A manner adverb, as for instance *skillfully*, can be adjoined to VP instead to the whole sentence. The evidence is that the VP can appear in fronting position; and the adverb is also preposed with the rest of the VP (Dalrymple [2001, 269-70]):

Fig. 2.4: *Obviously* - Example of a sentential adverb

(96) David wants to play skillfully, and [play skillfully] he will.

The representation for manner adverbs is similar to sentential adverbs with a different point of attachment (Dalrymple [2001, 270]) as can be seen in figure (2.5).

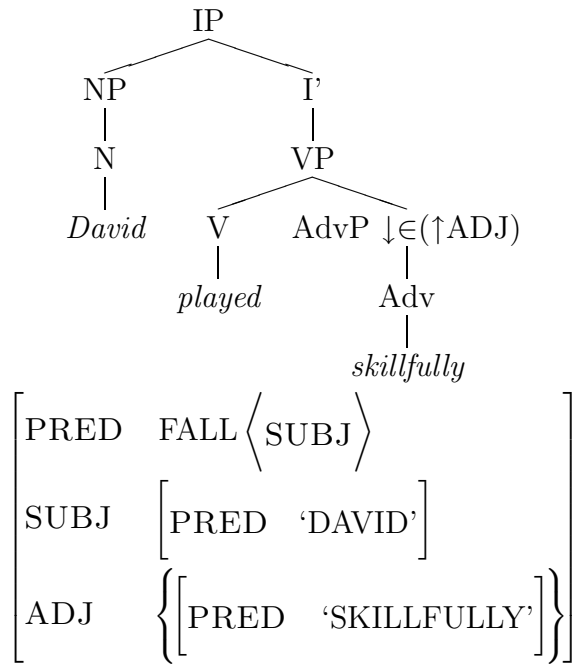
Semantically, sentential adverbs such as *obviously* or *necessarily* are proposition modifiers (Dalrymple [2001, 270]):

(97) Obviously David fell.

(98) obviously(fall(David))

The argument of the adverb in the proposition and the meaning is paraphrasable to *it is obvious that David fell*. On the other hand, manner adverbs modify the action that is performed, producing a new action that is performed in the manner described by the adverb, for example (Dalrymple [2001, 271]):

(99) David played skillfully.

Fig. 2.5: *Skillfully* - Example of a manner adverb

(100) $\text{skillfully}(\text{David}, \lambda X.\text{play}(X))$

(100) is a two place predicate, where the arguments are the person performing the action (that is, David in the example) and the action that is performed, in this case, the playing. In other words, adverbs that modify the verb phrase have two semantic arguments: the subject of the sentence, and the verb phrase or action that is performed.

This is a similar approach to HPSG (to be discussed in Chapter 4), however, we will not highlight the differences between LFG and HPSG in this thesis as it is not our main concern.

2.4 Conclusion

We have reviewed a previous literature on the semantics and syntax of adverbs. We have noted that the adverb category is varied in meaning, and that there have been several attempts to classify different adverbs in different meaning categories. Authors have then

related this different meanings to different syntactic behavior. It seems that meaning affects where an adverb appears in a sentence, which other adverbs it can co-occur with, etc.

It has also been widely noticed that adverbs tend to modify either a VP or a whole sentence. This issue has also been related to the adverb meaning and syntactic behavior: where in the sentence an adverb will appear in. Generally, adverbs which modify a whole sentence tend to appear at the start of a sentence, while VP adverbs either appear after the subject, or at the end of the sentence.

This fact has been reflected in various accounts such as Transformational Grammar and Lexical Functional Grammar. We will make use of an HPSG approach to syntax in order to give a lexical entry for *anyway*. This particle appears to be an adverbial when it appears in final position, and a discourse marker when occurring in initial position. As we have seen, previous literature describe these two uses as different types of adverb, we will see if we can overcome this difference in order to provide just one lexical entry for *anyway*.

3. DISCOURSE MARKERS: LITERATURE REVIEW

This chapter reviews major literature on the matter of discourse markers.

3.1 Introduction

In this introduction we will review a few of the issues related to the definition of discourse markers and their function; the rest of the chapter will review some of the most influential approaches to the study of discourse markers.

The notion of discourse marker is problematic in several ways: there is little agreed terminology and even the definition is controversial. However, the italicized items in the following examples would be generally accepted as relatively clear cases of discourse markers:

- (101) Train companies offer discount to students. *By the way*, have you booked your ticket?
- (102) I will not join you tonight. I have a lot of housework. *Besides*, if I get drunk, I won't be able to go to work tomorrow.
- (103) He was really tired. *However*, the noise did not let him sleep.
- (104) That wasn't much fun. *Well*, it is over and done with.

Among the terms used to describe such expressions are: discourse markers (Schiffrin [1987]), discourse particles (Schourup [1985]), pragmatic markers (Fraser [1996]), discourse connectives (Blakemore [1987]), cue phrases (Knott and Dale [1994]), etc. The difference

in terminology is a reflection of the wide range of linguistic approaches used to study these elements, as well as the multiple functions that these elements seem to fulfill.¹

Discourse markers are usually short, phonologically reduced, and they are usually part of a separate tone group. However, there are some discourse markers that are completely integrated prosodically as well as syntactically, and semantically:

(105) *However*, this is an issue under discussion.

(106) This is *however* an issue under discussion.

(105) shows that *however* belongs to a different tone group from the rest of the sentence. On the other hand, (106) shows that discourse markers do not necessarily have to be in a

¹ The study of discourse markers from a sociolinguistic and discourse analysis point of view has been very extensive. Among others we can cite those who have conducted quite general studies: Schiffrin [1987] and Brinton [1996] on discourse markers in general; Bazzanella [1990] on Italian discourse markers; Aijmer [2002] aided by a corpus study and followed by Aijmer and Simon-Vandenberg [2003], a more specific study on *well* and its Swedish equivalents; González [2004] focusing in English and Catalan discourse markers used in narrative. And there has been particular attention to certain discourse markers as in Svartvik [1980] and Owen [1981] on the use of *well*; Goldberg [1982] on *y'know*, *I mean*, *well*, and *actually*; Owen [1985] on *anyway*; Schourup [1985] dealing with *like*, *well* and *y'know* and a revision on *well* in Schourup [2001]; He and Lindsey [1998] on *you know*; Andersen [2000] analyzing *like* as a marker; Bonami et al. [2004] with a study of contrastive connectors in academic texts. This is just a small sample of literature in English, however, there is further literature on other discourse markers and languages.

The characteristics given to discourse markers in a sociolinguistic or stylistic level are the most problematic. They can hardly be taken as helpful in the diagnostic of discourse markers as a class.

Historical linguistics has also explored the phenomenon of discourse markers. It is clear that most of what falls into the category of discourse markers are derived from other word categories and have been later on pragmaticalised or grammaticalised depending on the theory one is using. Studies on that subject can be found in Traugott [1986], Thompson and Mulac [1991], Traugott [1995], Traugott, and Hopper and Traugott [2003]. This is not our aim of study, though we do agree that there has been a certain process of grammaticalisation in all discourse markers.

separate tone group. In this case, *however* is completely integrated into the sentence.

Syntactically, discourse markers proto-typically appear in sentence initial position. They usually appear outside the syntactic structure, or they are attached to it loosely. This is the reason why in writing we commonly find a comma after the discourse marker. They are not subcategorised by any part of the sentence or the sentence itself; hence, they can be omitted. Observing the previous set of examples, in (105), there is a clear example of a sentence initial occurrence of a discourse marker that is attached loosely to the rest of the sentence. This discourse marker can be omitted without making the sentence ungrammatical. However, (106) shows the same discourse marker not appearing in sentence initial position, though it is still not subcategorised and can therefore be omitted without affecting grammaticality; compare with (107):

(107) This is an issue under discussion.

Semantically, most of the uses of discourse markers seem not to affect the truth conditions of an utterance. It is apparent that this is not the case with all markers and all their uses. In the following examples, we find that (108a) is an example of a discourse marker that is not truth-conditional. On the other hand, (109a) illustrates a case of a discourse marker that affects the truth-conditions of the proposition.

(108) a. He was really tired. *However*, the noise did not let him sleep.

b. He was really tired. The noise did not let him sleep.

(109) a. John went to Paris and *therefore*, Mary went to Rome.

b. John went to Paris and Mary went to Rome.

In (108a), *however* occurs as an example of a discourse marker that does not affect the truth conditions of either the preceding sentence or the sentence it appears in. Most authors believe that (108a) means the same as (108b). Even though most researchers would

agree that *however*, as other discourse markers, does not effect the truth conditions, it is not clear that it is a boolean connective. Note that an example such as *He was really tired. However, he was sleepy* would be false in all circumstances as the semantic consequences denoted by *however* are not satisfied in this example. Moreover, the implicature conveyed by *however* is not always calculable. For instance, observe the pair *The stock market went up. However, the stocks for American Airlines rose more than others*. If *however* was removed from the pair, the result would fail to convey the same semantic relation between the two segments; that is, it would not convey a contrast between the two.²

On the other hand, in (109a), *therefore* is used as a discourse marker that can be paraphrased in this example as ‘as a result of this’. In this example, Mary may want to avoid meeting John on holidays; so she decides to go on holidays to a different country in order to avoid seeing him. In (109a), the discourse marker *therefore* makes a contribution to the truth conditions of the utterance. It expresses a causal connection between the two propositions. (109a) means something different from (109b).

While some discourse markers seem to convey meaning, other markers apparently have a only the function to structure discourse.³ This is related to the issue of integratedness: integrated items have a connecting or coherence function; on the other hand, unintegrated items have a role in the management of discourse, particularly in conversation.⁴ Examples would be the following:

(110) Some ideas were well presented. This *however* was not the case with yours.

(111) I finished all my work. *By the way*, did you buy any apples?

² Thanks to Alex Lascarides for pointing this out and for providing this pair of examples.

³ Shloush [1998]; Hakulinen [1998]; Maschler [2000]; etc. argue that discourse markers are functional words only, and Schiffrin [1987]; Fraser [1998]; Aijmer [2002]; etc. argue the contrary.

⁴ Authors who argue that discourse markers are integrated are Redeker [1990]; Rouchota [1996]; Fraser [1998]; Hansen [1998]; or Borderia [2001]. Some of the authors who argue that discourse markers are not integrated are Schiffrin [1987], Aijmer [2002], and Travis [2005].

The example in (110) shows the discourse marker *however* integrated inside the syntactic structure of the second sentence. The role of this discourse marker in this sentence would be to connect two pieces of contrasting information. On the other hand, the example in (111) reflects how *by the way* is used to structure discourse, introducing a new topic or an aside to the main conversation. Unintegrated discourse markers have a role in the management of conversation. Thus, their functions concern domains like speech management, interpersonal management, topic structure, sequential structure of the dialogue, and the turn-taking system.⁵

Those discourse markers that convey meaning appear to be polysemic.⁶ For example, *but* is believed to indicate contrast, and also denial of expectations as in the following two examples:

(112) John likes football; *but* Mary likes basketball.

(113) John is a lawyer; *but* he is honest.

In (112), we find a contrast between two people liking two different sports. On the other hand, in (113), we find that *but* means something different. When we hear that John is a lawyer, we create certain expectations, one of them, that he might be dishonest. By using *but* before the statement that John is honest, we deny this expectation. Therefore, *but* would appear to be polysemic: in some cases it would indicate contrast, and in other uses it would indicate denial of expectations.

On the other hand, those discourse markers that do not have meaning have several pragmatic functions. They show pragmatic ambiguity to a certain extent. That is, the pragmatic characteristics of a discourse marker could be applied in different ways depending on the pragmatic context.⁷

⁵ See Schiffrin [1987] and Travis [2005] for a detailed study.

⁶ Among those who argue in favor of polysemy are Hansen [1998], Borderia [2001], Aijmer [2002], etc.

⁷ Authors such as Schiffrin [1987], Redeker [1990], Fraser [1998], Fischer [1998], Travis [2005], etc. favor

Take the example of *well* that has multiple uses that do not seem to be related:

(114) That wasn't much fun. *Well*, that is over and done with.

(115) a. Can you explain what happened?

b. *Well*, it is not easy.

In (114), *well* is used with the intention to resume the topic or activity carried out up until that point. *Well* would be used to resume or summarize. On the other hand, in (115), *well* is used as a filler when the speaker has doubts on how to answer exactly what happened.

In this introduction we have reviewed several issues related to the study of discourse markers. In the following sections, we will review the most influential and relevant approaches to the study of discourse markers.

3.2 Schiffrin

In this section we will introduce the seminal work of Schiffrin [1987] because of her relevance in the description of discourse markers. Her approach is a bottom-up analysis using data collected from sociolinguistic interviews. The conclusions about discourse markers are grounded on what speakers and hearers do with these elements.

Schiffrin [1987, 31] defines discourse markers as: '*sequentially dependent elements which bracket units of talk*'. She uses *units of talk* as a more general term than terms such as sentence, proposition, speech act, and tone unit. For example, units of talk transcend the sentence, first of all because sentences are not easy to identify in everyday speech, but also because removing a discourse marker from a sentence leaves the sentence grammatical, compare the following:

this view.

(116) *Well*, when can I talk to him?

(117) When can I talk to him?

Moreover, units of talk transcend the sentence because discourse markers can occur freely within a sentence. Discourse markers are not restricted to any particular position in the sentence structure. Typically, they occur in sentence initial position, however, observe the following example where the discourse marker *like* occurs in mid-sentence position:

(118) She was *like* all over the place.

Schiffrin regards discourse markers as *brackets* because generally they are either cataphoric or anaphoric devices. Markers are anaphoric when they are terminal, i.e., closing a unit of talk. On the other hand, markers are cataphoric if they appear initially, i.e., opening a unit of talk. See the corresponding examples:

(119) He came home late *y'know*.

(120) *Y'know* he came home late.

Schiffrin defines discourse markers as *sequentially dependent* because they work on a discourse level. This means that they do not depend on the units of talk of which the discourse is composed, but the discourse as a whole. She supports this with arguments provided by Stubbs [1983] who argues that explanations drawn only upon syntactic characteristics of upcoming sentences do not account for elements such as conjunctions, adverbs, and connectors: conjunctions have a sequencing function of relating syntactic units, so it appears that sentence grammar cannot deal with conjunctions; adverbs such as *firstly* or *frankly* have a distribution that is only constrained by discourse and pragmatic facts, not syntax; connectors such as *well*, *now*, or *right* allow predictions about discourse content, but not about syntax.

Another reason to regard discourse markers as *sequentially dependent* is that some combinations and co-occurrences are allowed only because these elements are part of the discourse. For instance, *now* is a temporal adverb marking a reference in time of the proposition equal to the time when the sentence is produced. We would not expect to find *now* with indicators of past.

(121) *Now* these boys were Irish. (Schiffrin [1987, 38])

In (121), *now* appears to be a connector. Hence, *now* can cooccur with past tense because as a connector, it is part of the discourse, not only dependent on the unit of talk it appears in.

According to Schiffrin, the importance of analyzing discourse markers lies on the fact that they aid discourse coherence. Speakers use markers to integrate forms, meanings, and actions to make sense of what is being said. Conversational coherence is a result of a dynamic process between participants in conversation in which discourse markers play a very important role. This is a property of the use of discourse markers not exclusive to text.

Discourse markers are a cohesion device in a text that would be a simple group of sentences without them. They are cohesive devices because they reflect underlying connections between propositions. For example, *and* can be interpreted as a temporal connector, observe the following:

(122) We met. *And* we got on a bus.

In (122), *and* indicates that the meeting event took place before getting on a bus, therefore giving a temporal interpretation to the discourse.

In fact, all discourse markers have more than one function according to Schiffrin. If in (122), *and* had a temporal interpretation, we can find other examples where *and* can be interpreted as a causal connector:

(123) John talked to Mary, *and* he started disliking her.

In (123), *and* is interpreted as a causal connector: because John talked to Mary, he started to dislike her. Schiffrin argues that temporal and causal interpretations are two of the various functions that *and* can have.

The fact that discourse markers are multifunctional allows them to integrate different processes of the discourse to create coherence. However, a given discourse marker cannot have more than one function within a given discourse structure. This explains why we cannot re-use a marker inside one structure:

(124) ?*Now* this is a current issue right *now*.

In (124), *now* has two different functions. The first occurrence is an example of a connector use; and the second occurrence is of *now* as a temporal adverb. The sentence sounds odd using the same marker for two different functions inside one discourse structure.

Different discourse markers can have similar functions. However, there are no two markers that are precisely equivalent in terms of function.

In terms of meaning, Schiffrin proposes a model where discourse markers have different effects. The model focuses on local coherence, constructed through relations between adjacent units of discourse. This model can be expanded to take into consideration more global dimensions of coherence.

The model consists of five planes of talk: exchange structure, action structure, ideational structure, participation framework, and information state. Both exchange and action structures are non-linguistic. The units of talk in an exchange structure are called turns. They include relevant adjacency-pair parts, e.g., questions and answers, greetings. This structure only emerges in dialogue. Exchange structure is the result from the alternations between participants and their relation to each other. That is to say, a speaker defines an answer in relation to a question.

Action structures are defined by acts. These occur in constrained linear sequences and they are interpreted in the order of their occurrence. The constraints revolving around actions are concerned with the interpersonal requirements of talk. That is, the management of participants to sustain their relationships. An example of an action structure pair would be a pre-request and a request such as the following:

- (125) a. Do you have a spare minute?
b. Can you help me to fix the light?

In the ideational structure, the units are semantic. In fact, the units are propositions, or as Schiffrin calls them 'ideas'. There are three different relations that can exist between ideas that will contribute to the configuration of the ideational structure: topic, cohesive, and functional relations. (Schiffrin does not propose how to find topics or subtopics apart from the use of intuition.)

Cohesive relations are established when the interpretation of an element in a clause presupposes information from a previous clause due to a semantic relation underlying the text.

Functional relations concern the roles of the ideas in relation to one another. For example, some ideas might be used as background for other ideas.

Apart from the three structures: action structure, exchange structure, and ideational structure, Schiffrin adds the participation framework to her model of discourse. This participation framework reflects the various ways in which participants can relate to one another. It also reflects the ways in which participants can be related to their utterances, including propositions, acts and turns. For example, speakers can be either subjective or objective towards an idea. Also, speakers have different attitudes when performing actions. They might perform an action indirectly to avoid responsibility for its consequences. Speakers may fight for, claim or give up their turns. To sum up, the participation framework includes

speaker/hearer relations, and speaker/utterance relations.

The last plane of talk in Schiffrin's model is the information state. It involves the organization and management of knowledge and meta-knowledge of the participants. Information states are dynamic interactive processes between participants since both knowledge and meta-knowledge are constantly flowing over the course of a conversation. Information states can be internal states with the potential of being externalised.

In short, Schiffrin's model has two non-linguistic and one linguistic structure. Participants are related to each other and their utterances in a participation framework. Knowledge and meta-knowledge of participants is managed and organized in an information state.

Coherence is the result of the efforts of participants to integrate saying, doing, meaning, and knowing. Schiffrin does not describe exactly how this integration happens, but she asserts that discourse markers have a role in making this integration happen.

Schiffrin [1987, 316] offers a table where she summarizes the planes of talk where the markers that she analyses in depth function⁸. This table summarizes the possible effects that discourse markers have in the five planes of talk. Let us explore a couple of examples to explain this table.

In the case of *because*, it has a meaning of 'cause' that appears on three planes of discourse: ideational structure, information state, and actions. *Because* would have three different semantic realizations in discourse. In the ideational structure, it would have a 'cause' meaning as in (126). In the information state plane, it would have a meaning of 'warrant' as in (127). And on the action plane, the meaning of *because* would be that of 'motive' (the motive of the speech act) as in (128).

(126) John is home *because* he is sick.

⁸ In her study the primary functions assigned by the author are marked with an asterisk, here we used bold typeface.

Tab. 3.1: Discourse Markers and Their Plans of Talk

Information state	Participation framework	Ideational structure	Action structure	Exchange structure
oh	oh		oh	
well	well	well	well	well
		and	and	and
		but	but	but
		or		or
so	so	so	so	so
because		because	because	
	now	now		
then		then	then	
I mean	I mean	I mean		
y'know	y'know	y'know		y'know

(127) John is home *because* the lights are burning.

(128) Is John home? *Because* the lights are burning. (Schiffrin [1987, 202])

Discourse markers such as *now* and *then* have three different discourse functions in relation to their three temporal concepts: reference time, event time, and discourse time. *Now* has effects on two planes of talk according to the table: ideational structure, and participation framework.

(129) So Russia was split down the middle. *Now*, the reason why Catholicism was able to creep into Poland... (Schiffrin [1987, 237])

(129) is an example where *now* is used to introduce a reason within an explanation. *Now* is a discourse marker that creates an explicit ideational progression through a discourse. This is the reason why *now* can also be used to mark new idea units within a structure, or to mark the introduction of descriptive lists:

(130) They're using socialism to fight capitalism. *Now*, can you understand that? (Schiffrin [1987, 240])

(130) is an example where *now* has effects on the participation framework structure. In this case, *now* differentiates parts of discourse defined both by their sequential role in discourse; and also by the mode that relates the speaker and the information being presented. *Now* shows the stance that the speaker takes towards what s/he is saying. As in (130), there is a switch from declarative to interrogative mood which checks the understanding of other participants.

To conclude, Schiffrin asserts that discourse markers integrate structural, semantic, pragmatic, and social factors. Hence, discourse markers operate at different levels in discourse. The definition offered by Schiffrin is adequate, but it does not offer a formal semantic account of discourse markers.

Schiffirin [1987, 31] defined discourse markers as: ‘*sequentially dependent elements which bracket units of talk*’. As Schiffirin argues, we also believe that the units of talk that discourse markers are adjacent to include sentences, propositions, speech acts, and tone units. This is an acceptable unit of talk in the discourse approach that we will adopt: Segmented Discourse Representation Theory (SDRT). (We will review this approach in chapter 4). The fact that discourse markers are considered by Schiffirin as brackets is a fact that is compatible with our discourse approach. Discourse markers indicate a cataphoric or anaphoric link with another unit of talk. As Schiffirin, we agree that discourse markers are sequentially dependent elements of talk because they function at discourse level.

However, we will not consider the different planes of talk proposed by Schiffirin, as this is a model of discourse which is not as developed as SDRT. Similarly, we will not adopt the method of analysis adopted by Schiffirin because we do not intend to give a discourse analysis study of *anyway*, but its formal semantics.

As Schiffirin [1987] argues, we believe that *anyway* has more than one function, that is, it operates over one or over a group of utterances depending on its position and intonation. As the author notes such kind of discourse markers introduce conversational coherence. However, as we will note, this discourse marker does not always bracket units of talk, it can also close off a discourse which would involve several units of talk or utterances. Though *anyway* indeed helps to indicate a semantic relation between different topics, and thus creating a structured discourse that we structure using SDRT.

3.3 Relevance Theory

The framework of Relevance Theory (Sperber and Wilson [1986]) has produced quite a large amount of literature on discourse markers since it provides an interesting pragmatic

model for their analysis.⁹

Relevance Theory (RT) builds from Grice's ideas that speakers make use of principles or maxims in conversations. RT is a theory of pragmatics based on cognitive principles. In this cognitive model, the effects of new information are worked out by the hearers against the background of existing assumptions. Whilst a cognitive environment is shared by all members of a speech community, the work left for the hearers is to choose a context for an utterance so as to make the correct inferences about the speaker's meaning.

The choice of context is constrained by the principle of optimal relevance: '*Every act of ostensive communication communicates the presumption of its own optimal relevance*'. (Sperber and Wilson [1986, 158]) The conversational aim to be relevant is assessed with the principle that dispensable cognitive effort should be avoided. Less cognitive effort means greater relevance.

Discourse connectives (RT terminology) do not have a unitary semantic account. According to Blakemore [2002], some discourse connectives encode concepts, and others encode procedures. These two types of meaning echo Austin's distinction between describing and indicating, and/or Grice's distinction between saying and conventionally implicating. This distinction between conceptual and procedural meaning reflects a cognitive distinction between representation and computation.

A word with conceptual meaning contributes to the content of assertions. This type of word encodes elements of conceptual representations. The information on how these representations are to be used in inference is encoded by words with procedural meaning.

⁹ General accounts on discourse markers in English can be found in Blakemore [1987], Blakemore [1992], Rouchota [1996], Blass [2000], Blakemore [2002], and Hall [2006]. There is large literature on particular discourse markers in RT: Blakemore [1988] on *so*, Blakemore [2000] on *nevertheless* and *but*, Murillo [2004] and Blakemore [2007] on reformulation markers, etc. RT literature also covers discourse markers in other languages: Higashimori [1994] on Japanese, Ariel [1998] on Hebrew, or Zorraquino and Lázaro [1999] on Spanish among others.

Conceptual meaning forms part of the communicated message.

Most words encode concepts; for example *teacher* encodes the concept TEACHER, or *rich* encodes the concept RICH. An example of a discourse connective that encodes conceptual meaning would be the following:

- (131) What I think we need, you see is a room with a table, *that is to say*, a table which students could sit around. (Blakemore [2007, 328])

The encoded meaning of *table* in (131) could be recovered as a concept of something large for people to sit at, or the meaning could be recovered as the concept of something smaller. The function of the reformulation indicated by *that is to say* in the example helps the hearer to recover the first concept: a large item for students to sit at. The proposition explicitly communicated by the reformulation is a proposition about the conceptual representation that the hearer has to derive from the host utterance.

Procedural meaning cannot form part of the communicated message. The function of procedural meaning is to guide the hearer towards the interpretation of a message.

- (132) John is handsome, *but* he is always moaning.

In (132), *but* expresses that some aspect of the interpretation of the second utterance contradicts an implication derivable from the first. In the example, John has a good quality to be the speaker's love interest, that is, he is handsome. The fact that he is always moaning contradicts the implication that he is a good candidate to be the speaker's love interest. *But* is a discourse connective encoding procedures activating some kind of inference. The encoded meaning of discourse connectives of this type is not part of the communicated message. The communicated message is the result of the inferences triggered by these discourse connectives.

The function of discourse connectives is to guarantee that the correct context is selected at minimal processing cost. Discourse connectives are valuable means of constraining the

interpretation of utterances whilst complying with the principle of relevance.

According to Blakemore [1992], there are three ways in which the information of an utterance can be relevant: it may help to derive a contextual implication; it may reinforce an existing assumption; or it may introduce conflict to an existing assumption.

- (133) a. Max fell. David pushed him.
b. Pushing someone can cause the pushed item/person to fall.

(133b) is a contextual implication derived from (133a). Discourse connectives can introduce contextual implications as well:

- (134) A: You drink too much.
B: *So* (what)?

In (134), the answer of speaker B is supposed to question the intended relevance of what speaker A has just uttered. In fact, B is asking a rhetorical question since speaker B has already drawn a conclusion regarding the intentions of speaker A's utterance. Thus, a proposition introduced by the discourse connective *so* has to be interpreted as a conclusion.

The information of an utterance can be relevant because it may strengthen an existing assumption as in the following example:

- (135) a. David isn't here.
b. We shall have to cancel the meeting.
c. If David isn't here, we shall have to cancel the meeting. (Blakemore [1992, 135])

The information in (135a) is relevant to provide further evidence for the assumptions in (135b) and (135c).

Some discourse connectives are concerned with strengthening. For example, *after all* indicates that the proposition introduced by it is evidence for an assumption that has just been made accessible, as in the following example:

(136) You need to buy those shoes. *After all*, they are gorgeous.

Other connectives that are concerned with strengthening according to Blakemore are *besides*, *moreover*, *furthermore*, *also* (when utterance-initial), and *indeed*.

The information in an utterance can be relevant because it may contradict an existing assumption as is the case in the following set of utterances:

- (137) a. If Barbara is in town, then David will be here.
b. Barbara is in town.
c. David isn't here. (Blakemore [1992, 136])

The information in (137c) is relevant because it contradicts and eliminates the existing assumption in (137a) when (137b) is spoken by the hearer.

However is an example of a discourse connective which introduce denials:

(138) I am not busy. *However*, I cannot speak to you.

However indicates that the proposition it introduces, i.e., *I cannot speak to you*, is inconsistent with a proposition the speaker assumes the hearer has derived as a contextual implication from the first utterance. From the utterance *I am not busy*, the hearer would derive that the speaker can speak to him/her.

The study of discourse connectives in RT is extensive. However, most of the analyses so far have not been formalized in a syntactic or semantic manner. Moreover, this type of analysis is rather difficult to formalize. RT makes implicatures reliant both on individual memory organization and on indefinite principles of processing effort that possibly differ

across speakers and hearers. Achieving general rules and predictions is problematic for a Relevance theoretical account.

If RT were formalized (there have been a few attempts so far), it is uncertain whether the outcome would be insightful in a general theory concerning a variety of issues such as how context affects the interpretation of presuppositions, or explicate why there is wide agreement on their interpretations.

The first clash with this framework and our approach is that Blakemore [2002] argues that discourse markers do not have a function of markers of relationships or connections between units of discourse. In our analysis, we will establish that it is one of the crucial elements for the meaning of *anyway*, it relates two utterances or even a large group of them.

3.4 *Coherence Relations*

Sanders et al. [1992] (developed further in Knott and Dale [1994], Knott [1996], Knott and Mellish [1996], and Knott and Sanders [1998]) have developed what we will call a *coherence relations* approach to discourse markers, according to which discourse markers trigger coherence relations between discourse units.

Coherence relations model cognitive mechanisms operative in readers and writers when processing text. A relation is always made between two spans of text. A reader constructs a representation of the information contained in a text. This means that all the individual propositions are integrated into a whole.

From a psychological point of view, coherence relations model in different ways the integration between propositions. Thus, the establishment of coherence relations is the process required to understand a text. The processing of information should depend on the type of coherence relation. The linguistic marking of relations also affects the processing.

This idea is supported by the fact that casually related events are recalled better and read faster if there is a linguistic mark between them.¹⁰

Sanders et al. [1992] establishes four basic notions common to all coherence relations: basic operation, source of coherence, polarity and order of segments.

The notion of *basic operation* entails that every relation will have either a causal or an additive component. Causal relations have a relevant causal connection between spans or utterances. A causal operation exists if an implication relation $P \rightarrow Q$ can be deduced between two discourse segments, where P is the antecedent and Q the consequent, and P is relevant for Q. For example:

(139) If London is more polluted than New York, then New York is a better place to live in.

(140) If London is more polluted than New York, then Gordon Brown is more intelligent than George Bush.

In both examples above, we find an *If P then Q* relation. (139) appears to be a typical example of an implication relation because the fact that New York is less polluted than London makes New York a more pleasant place to live for that reason alone. However, most speakers would not agree on a causal operation in (140) because P, the fact that London is more polluted than New York, does not appear to be relevant for Q, the statement that the British Prime Minister is brighter than the American President.

If there is no causal relation between utterances, the relation is additive. An additive operation exists if a conjunction relation $P \& Q$ can be deduced between two discourse segments, that is, if both P and Q are true for the speakers. For example, the connector *and* indicates an additive operation.

¹⁰ Various studies suggest that the presence of a linguistic marker speeds up the reading time of a sentence.

The notion of *source of coherence* entails that every relation is coherent either on semantic or pragmatic grounds. It is semantic if the spans are related in terms of their propositional content. On the other hand, it is pragmatic if they are related through their illocutionary force. An example of a semantic relation is the following:

(141) I ate all the biscuits because I was hungry.

In this case, it is common knowledge that being hungry (P) can lead someone to eat (Q).

Observe the following example of a pragmatic relation:

(142) John did not go on holidays to the Seychelles because Jane saw him yesterday in Selfridges.

This is an example of a pragmatic relation because the coherence is achieved thanks to the writer's goal-oriented communicative acts. Jane seeing John in a department store (P) is not the direct cause of John not going on holidays (Q). Rather, it provides the grounds for the speaker's assertion of this proposition. The speech act of the speaker creates the coherence in this instance, thus there is a pragmatic relation between the two utterances.

The notion of *polarity* entails that a relation is negative if the link of content of one span negates the content of the other. The rest are positive relations. Negative relations are usually expressed by conjunctions such as *but* and *although*; positive relations are expressed by conjunctions such as *and* and *because*.

Finally, the notion of *order of segments* only applies to causal relations. The relations are basic if the antecedent is on the left; and non-basic if the antecedent is on the right. The difference could be seen in, for example, foreground against background relations where the order of segments of the former is the reverse of the latter.

(143) Jane went into the room. It was a bright Sunday afternoon.

(144) It was a bright Sunday afternoon. Jane went into the room.

In (143) we find a background the relation. The second segment gives information about the background of the first segment. On the other hand, in (144), the first segment is the foreground of the second segment.

These four primitives: basic operation, source of coherence, polarity, and order of segments are combined to produce different types of coherence relations. Sanders et al. [1992, 6] explains 12 types of relations portrayed in (3.2). Let us illustrate the table in (3.2) with an example of each type of relation:

(145) **Cause-consequence: causal, semantic, basic order, positive**

Because it is not raining, there will be water shortage this year.

(146) **Contrastive cause-consequence: causal, semantic, basic order, negative**

Although the chances of error were high, no one made a mistake.

(147) **Consequence-cause: causal, semantic, nonbasic order, positive**

There will be water shortage this year *because* it is not raining.

(148) **Contrastive consequence-cause: causal, semantic, nonbasic order, negative**

No one made a mistake *although* the chances of error were high.

(149) a. **Argument-claim: causal, pragmatic, basic order, positive**

The elderly may find a cold deadly. *Therefore*, they should get a jab against it.

b. **Instrument-goal: causal, pragmatic, basic order, positive**

We will give you enough evidence *in order to* write up a sensible report.

c. **Condition-consequence: causal, pragmatic, basic order, positive**

If you are ready, we can start our project.

(150) **Contrastive argument-claim: causal, pragmatic, basic order, negative**

Although we should watch carefully what we eat, a couple of biscuits a week will not do us any harm.

Tab. 3.2: Types of Relations

Basic Operation	Source of Coherence	Order	Polarity	Class	Relation
Causal	Semantic	Basic	Positive	1	Cause-consequence
Causal	Semantic	Basic	Negative	2	Contrastive cause-consequence
Causal	Semantic	Nonbasic	Positive	3	Consequence-cause
Causal	Semantic	Nonbasic	Negative	4	Contrastive consequence-cause
Causal	Pragmatic	Basic	Positive	5a	Argument-claim
				5b	Instrument-goal
				5c	Condition-consequence
Causal	Pragmatic	Basic	Negative	6	Contrastive argument-claim
Causal	Pragmatic	Nonbasic	Positive	7a	Claim-argument
				7b	Goal-instrument
				7c	Consequence-condition
Causal	Pragmatic	Nonbasic	Negative	8	Contrastive claim-argument
Additive	Semantic	#	Positive	9	List
Additive	Semantic	#	Negative	10a	Exception
				10b	Opposition
Additive	Pragmatic	#	Positive	11	Enumeration
Additive	Pragmatic	#	Negative	12	Concession

- (151) a. **Claim-argument: causal, pragmatic, nonbasic order, positive**
 (Many people seem to eat only the flower head of the broccoli). It is a pity, because the stalk tastes good too. (Sanders et al. [1992, 14])
- b. **Goal-instrument: causal, pragmatic, nonbasic order, positive**
 You can only buy a house at a high price nowadays. You need to save quite some money for it.
- c. **Consequence-condition: causal, pragmatic, nonbasic order, positive**
 Drinking wine can be beneficial for your heart, only if you drink it in small quantities.
- (152) **Contrastive claim-argument: causal, pragmatic, nonbasic order, negative**
 Cats are said to be very independent, *although* they can be a companion to lonely people.
- (153) **List: additive, semantic, positive**
 Exotic fruit has been introduced in European countries, *first*, kiwis arrived, *at present* passion fruit or mangos can be found in any supermarket.
- (154) a. **Exception: Additive, Semantic, negative**
 Everyone enjoys a surprise, *but* not an unpleasant one.
- b. **Opposition: Additive, Semantic, negative**
 Mary enjoyed all the gigs, *but* John did not.
- (155) **Enumeration: additive, pragmatic, positive**
 My friend's group gave a fantastic performance. Other great performances came from more famous artists.
- (156) **Concession: additive, pragmatic, negative**
 My friend's group gave a fantastic performance. *But* no great performances came from more famous artists.

This classification of coherence relations will not be used in this thesis because we believe it is not as complete and comprehensive as the coherence relations (or rhetorical relations) detailed in Segmented Discourse Representation Theory (Asher and Lascarides [2003]). Another reason to choose SDRT over Sanders et al. [1992] set is that SDRT is a well developed discourse theory.

Knott and Sanders [1998] language-based account relies on a test of substitutability to compare different discourse markers (cue phrases is the term used by the authors) and classify them. A simple classification by opinion proves to be rather unsatisfactory due to the subjectivity of the persons intending to classify the data. The authors tried to have data classified by different experts and they all came up with quite diverse classifications. Therefore, the authors looked for some principles to be applied in the process of substitutability. They found four possible substitutability relationships between two given discourse markers X and Y:

- a) X and Y are synonymous in any given context.
- b) X and Y are exclusive in any possible context.
- c) X is a hypernym of Y (and Y is a hyponym of X) if whenever Y can be used, so can X; but X can be used in some context in which Y cannot.
- d) X and Y are contingently substitutable if there are contexts in which they can be substituted and others in which they cannot.

In these substitutability tests, cue phrases can be moved inside the sentence structure in order to provide a plausible reading. The position of the cue phrase does not matter since the important point in the study is to find similarities between various cue phrases semantics. The relevance of the study is not cue phrase position inside the sentence or discourse.

The authors establish that the taxonomy of cue phrases has a hierarchical nature. And from the figures and data given in their study, it seems that every language has its own

hierarchy due to the different cue phrases in any language. Though the hierarchy bears the same features in the studied languages: English and Dutch.

Cue phrases signal some features of a relation while leaving other features undefined. This can be applied to the previous classification:

- X and Y are synonymous in any given context if they share all common features.
- X and Y are exclusive in any possible context if they do not have any common feature. For example, *because*, *also*, *nevertheless*, and *whereas* do not have any common feature, therefore they are exclusive and can never appear in the same context.
- X is a hypernym of Y, when X and Y have some common features; though X has some features undefined and it can therefore be applied in contexts in which Y cannot appear. In this case, *but* would be an hypernym of *whereas* because *but* can appear in any context where *whereas* appears, but not the other way around.
- X and Y are contingently substitutable if they have some common features, but others are left undefined.

Hence, the similarities between Sanders et al. [1992] basic notions of coherence relations and the linguistic test of substitutability share similarities in their hypothesis and results. Moreover, the conclusions extracted both from Knott and Sanders [1998] anterior models were drawn from different sets of data and even from two different languages.

Coherence relations approaches believe that cue phrases trigger coherence relations. The coherence relation approach we have reviewed in this chapter proposes its own set of discourse relations, however, we will use the discourse relations proposed by SDRT.

We intend to use this approach in order to check possible synonyms of *anyway* so we can create a category of words with similar meaning and function. Moreover, the use of this set of substitution tests can help to shed some light into the semantics of *anyway*.

3.5 Lexicalized Grammar

TAG, a lexicalized grammar that shows how clause-level syntax and semantics project from the lexicon, offers a different and interesting view on discourse connectives (TAG terminology). For Webber et al. [1999] (developed further in Webber et al. [2000], Webber et al. [2003], and Forbes-Riley et al. [2005]) discourse connectives are words and phrases whose use requires at least two clauses to be connected and whose meaning involves the discourse within these clauses.

In TAG, syntax contributes to both discourse and individual clauses in a similar way. Syntax specifies how predicate-argument structures and modifiers can be realized; and syntax leads the mechanisms of interpretation. A lexicalized grammar can be extended to discourse and use the same semantic mechanisms as clause-level grammar to infer discourse semantics: composition, anaphoric links, and general inference.

Webber et al. [2003] claim that the function of discourse connectives cannot be accounted for by discourse relations only. This can be seen in examples where there are multiple discourse connectives. To explain how discourse connectives function in discourse, the authors make use of anaphoric relations, which are already a part of the machinery in TAG.

The authors argue for a distinction between two types of discourse connective: clausal and discourse adverbials. Only discourse adverbials need anaphoric links to account for their function.

We will illustrate Webber et al.'s approach to discourse connectives with a full description of the adverbial discourse connective *for example*. The logical form of this connective is that of a two-place predicate; the first argument is a set of eventualities; and the second argument is the interpretation of the clause it is adjoined to (which is an eventuality). The interpretation of the second argument is that the second argument is a member of the

first argument. The first argument of *for example* is resolved anaphorically. Observe the following example:

- (157) a. Customers always follow the rules in this club.
b. *For example*, they never dive.

The second argument of *for example* in (157) is the interpretation of ‘*they never dive*’ as an eventuality. The first argument of *for example*, which is a set of eventualities, is derived anaphorically. The relevant set of eventualities abstracts from the eventuality of the second argument. The set of eventualities made possible by following the rules of the club is that customers do not dive in the swimming pool of the club. The locality of anaphors antecedents may be influenced by structure, but the anaphoric link does not create any additional structure in itself. Webber et al. maintain that the relation between the antecedent of the first argument of *for example* and the clause that it adjoins to is not a structural relation. Since anaphoric relations are part of TAG, there is no need to have any additional machinery apart from the already existing for clause-level syntax and semantics.

The authors are concerned in particular with instances in which a clause or a sentence include multiple discourse connectives. For example:

- (158) He was walking slowly down the street as if nothing had happened. *But then* he started sobbing uncontrollably.

In the above example, the words in italics indicate two different discourse connectives. These two markers would normally occur separately. However, they can easily be used together.

The same approach used to analyze single occurrence discourse connectives can be used to deal with multiple discourse connectives. This poses a real challenge to a discourse structure relations framework. Observe the following pair of examples:

- (159) a. Open a text editor.
 b. *Then* you can write a new document.
- (160) a. Open a text editor.
 b. *Then, for example*, you can write a new document.

A discourse relation account would not be able to deal with example (160) because two different informational relations would appear to hold — in RST terms (Mann and Thompson [1987]): exemplification and sequence. In RST this is not possible.¹¹

In TAG, the work is done through the semantics of the two discourse connectives. *Then* has the logical form of a two-place relation whose first argument is a completed event. This first argument is inferred anaphorically from the preceding discourse. The second argument is inferred through the interpretation of the clause to which it is adjoined. The interpretation of this two-place predicate is that the second eventuality follows from the first completed eventuality, i.e., telic event. In (159) and (160), the first argument of *then* is the telic event of opening a text editor. The second event is the possibility of writing a new document once the first event has been completed.

In (160), the second argument of *for example* is the eventuality associated with writing a new document. The first argument of the two-place predicate associated with *for example* is the set of possible worlds compatible with that consequent state. This set depends on the modality and tense of the first clause, as well as depending on the presence of *then* in the current clause. Without *then* there would not be a possible anaphoric link; thus, the discourse would be unacceptable:

- (161) a. Open a text editor.
 b. * *For example* you can write a new document.

¹¹ However, in SDRT terms (Asher and Lascarides [2003]), this is not a problem. Adopting SDRT we would overcome the problem that RST poses.

If the tense was any different, the discourse is also unacceptable:

- (162) a. We opened a text editor.
b. * *Then, for example* we wrote a new document.

Due to the change of tense, (162b) would only make sense if we gave a different interpretation to *for example*. That is, if we gave it the meaning *among other things*.

So far we have noted that a discourse structure relations account such as RST is not sufficient to explain multiple discourse connectives. The anaphoric relations used by Webber et al. overcome this problem through the use of TAG without using any extra machinery.

Webber et al. distinguish between two types of discourse connectives: discourse adverbials, and clausal adverbials. In the following lines we will explain what characterizes these two classes. Discourse adverbials such as *then, otherwise, etc.* require the use of anaphoric relations because they are bound by the discourse context. However, not all discourse connectives require the use of anaphoric relations. Clausal adverbials such as *and, or, so* or *but* are bound to the sentence they belong to. Webber et al. claim that clausal adverbials require adjacent or conjoined discourse units. Then, the relations between the adjacent discourse units are inferred because of their adjacency condition.

Clausal adverbials can stretch predicate-argument dependencies; and they cannot cross those dependencies. This is the case of subordinate conjunctions such as *although* and coordinate conjunctions such as the pair *on the one hand* and *on the other hand*. This type of behavior is quite similar to the one of verbs in which the dependency of object argument of a verb can be preposed (or stretched) without breaking dependency, as in the example of topicalisation: *Mary, John kissed*. In this example, the dependency of the verb and the object has been stretched. The following example given by Webber et al. [2003, 549-550] illustrates the possibility of stretching dependencies of a clausal adverbial and its arguments:

- (163) a. *On the one hand*, Fred likes beans.
 b. Not only does he eat them for dinner.
 c. But he also eats them for breakfast and snacks.
 d. *On the other hand*, he's allergic to them.

In (163), we find an example with a pair coordinate conjunctions. The initial predicate, i.e., (163a) indicates that there are two arguments following. In this case, we find that we can elaborate the first conjunct (163a) by another paired conjunction (163b) and (163c) with *not only...but also*. This paired conjunction is embedded within the first conjunct. Thus, even though we introduce new items between the two conjuncts, namely (163a) and (163d), the dependency between them still prevails.

Clausal adverbials and discourse adverbials have only one thing in common: they can head a predicate-argument construction and their arguments are always independent clauses.

On the other hand, as previously mentioned, discourse adverbials contribute to meaning thanks to an anaphoric connection with previous discourse, however, it does not need to be immediately adjacent to the discourse adverbial.

Discourse adverbials can take implicit material as their referents in the same way as anaphors such as definite or demonstrative NPs do. Note the following:

- (164) Melt chocolate, butter, and syrup, then add crushed biscuits and dried fruit. Spread *the mixture* in a tray.

The NP *the mixture* refers to the result of melting different ingredients and adding some others. This happens with discourse adverbials:

- (165) Are you going to order desert? *Otherwise*, we can have desert elsewhere.

The situation in which you have desert elsewhere is one in which you don't order desert in that particular restaurant, i.e., where your answer to the first question with a negative answer. However, this answer is only inferred, it is not there structurally.

Discourse adverbials are not so constrained by the right frontier as is the case with clausal adverbials. For example in Webber et al. [2003, 553]:

(166) If the light is red, stop. *Otherwise* you'll get a ticket.

(If you do something other than stop, you'll get a ticket.)

(167) If the light is red, stop. *Otherwise* go straight on.

(If the light is not red go straight on.)

Example (166) can be paraphrased using an adverbial such as *or*; that is, *If the light is red, stop or you'll get a ticket*. On the other hand, example (167) cannot be paraphrased using *or* since it would have a completely different meaning: *If the light is red, stop or go straight on*. Hence, discourse adverbials have access to information that clausal adverbials cannot access.

Discourse adverbials are similar to other anaphors in that they may need semantic representations where their arguments are bound variables ranging over discourse entities. For example, *although P, Q* can be represented by using a binary modal operator such as *although(p, q)*. Formulas *p* and *q* translate the sentences *P* and *Q* that *although* connects.

In regards to the distinction of two different types of discourse connectives found in Webber et al. [2003], we argue that both instances of *anyway* seem to fit in the discourse adverbial category described by Webber et al.

Webber et al. claim that particles such as *and*, *but*, *or*, and *so* (typical clausal adverbials) connect adjacent discourse units. However, this would not be true of the following example:¹²

¹² Thanks to Alex Lascarides for pointing this out and providing the example.

- (168) a. Max fell.
b. John pushed him.
c. But Max didn't break his leg.

In this example, (168b) is an explanation of (168a). The utterance in (168c) contrasts with (168a), which is not adjacent. This would indicate that this approach is not strictly adequate.

Similarly, *anyway* as a discourse marker usually ends a particular topic, therefore it does not connect directly adjacent discourse units. In the same way, the adverbial use of *anyway* could connect non-adjacent units. (See following chapters for a full description and examples of both uses.)

While particles such as *and*, *but*, *or* are clausal adverbials always bound to the sentence in which they occur, discourse adverbials are bound to discourse context. Examples of discourse adverbials would be particles such as *then* or *otherwise*. These are described as a type of anaphor since they indicate a relation between the interpretation of their matrix clause and some entity in the discourse context. This seems to be a very good explanation of what both the discourse marker and the adverbial uses of *anyway* do.

Anyway, as other discourse adverbials, has an argument which is an independent clause, see the following pair:

- (169) a. *Anyway*, we'll think about it.
b. We'll think about it *anyway*.

The argument of both instances of *anyway* in (169) is the independent clause *we'll think about it*. It would appear that both the discourse marker and the adverbial uses of *anyway* are instances of the discourse adverbial described by Webber et al.

To sum up, in Webber et al., syntax makes similar contributions to both individual clauses and discourse. The authors show that lexicalized grammar can be extended to

discourse using the same three semantic mechanisms used in clause-level grammar: composition, anaphoric links, and general inference.

There are two main advantages of this approach. Firstly, there is no need for extra machinery, clause level semantics and syntax are enough to provide a full analysis. Secondly, multiple discourse connectives can be dealt with by using the same mechanisms used for single occurrence discourse connectives. This overcomes the problem posed by discourse relations which do not allow for more than one relation holding between two segments.

Webber et al. offer an alternative model of discourse which we will not adopt. Their approach tries to account for multiple discourse connectives through discourse and anaphoric relations. Since SDRT allows for multiple discourse relations, we do not believe that adopting this new framework is necessary.

3.6 *Conclusion*

We started this chapter by highlighting some of the issues discussed in relation to discourse markers. We noted that there is no agreed terminology; this reflects different linguistic approaches.

There are certain prototypical characteristics associated to discourse markers. Phonologically, they are short and reduced. Syntactically, they are not integrated; and they can be omitted without affecting the grammaticality of the sentence. Semantically, discourse markers do not usually affect the truth conditions of the proposition they appear in.

While there is some dispute in regards to discourse markers conveying meaning, we agree that there is some discourse markers that do convey meaning. Other discourse markers might just have a discourse structuring function.

We then looked at different approaches of study of discourse markers and we pointed out their relevance. We will consider these frameworks in order to analyse the formal meaning of

anyway. However, each of these approaches adopts their own model of discourse, however, we will use Segmented Representation Theory (SDRT) instead.

4. SEGMENTED DISCOURSE REPRESENTATION THEORY

In this chapter we will explain the discourse structure framework used in this thesis, Segmented Discourse Representation Theory (SDRT), starting with a short summary of its predecessor, Discourse Representation Theory (DRT). We will present alternative approaches to DRT, reviewing frameworks which involve Discourse Structure and the use of relations in particular.

4.1 Discourse Representation Theory

Discourse Representation Theory (DRT) was presented by Kamp [1981] and Heim [1982] (and continued in Heim [1990], Kamp and Reyle [1993], Kamp and Rossdeutscher [1994], Kamp and Reyle [1996], among others). DRT introduces a level of mental representations, called discourse representation structures (DRSs). These are built by the hearer; a mental representation of the discourse is built as it develops. Every new sentence triggers additions to that representation.

DRT is a theoretical framework that deals with issues in the semantics and pragmatics of anaphora, presupposition, and tense. It is a mentalist and representationalist theory of interpretation. It is a theory of the interpretation of both individual sentences and discourse.

A DRS consists of two parts: a universe of *discourse referents*, and a set of *DRS-conditions*. Discourse referents represent the objects under discussion; DRS-conditions encode the information added on the discourse referents of the universe.

The information in (170) is represented in the DRS in (171). This DRS expresses that there are two individuals, Mary and Laura; and that the former hates the latter:

(170) Mary hates Laura.

(171)	x, y
	$Mary(x)$
	$Laura(y)$
	$x \text{ hates } y$

The universe of this DRS contains two discourse referents, x and y , and its condition set is $\{Mary(x), Laura(y), hates(x,y)\}$.

In DRT, the semantic aspects of a discourse are related to the meaning of a discourse. However, they are not related to the meaning of a particular situation in which the discourse is uttered (this includes time, location, common ground, etc.).

Semantic representations are built without using any external context of the utterance. They are built up from the contents and the structure of the discourse. Once a semantic representation is constructed, it can be evaluated with a logical representation of some world (in DRT terms, a *model*). Then, through this evaluation, we can determine whether the discourse is true in regards to that particular model.

DRT consists of the following elements:

- A formal definition of the representation language that consists of:
 - A recursive definition of the set of all well-formed DRSs.
 - A model-theoretic semantics for the members of this set.
- A construction procedure that spells out how to extend a particular DRS when a new sentence has to be processed.

According to Asher and Lascarides [2003], the procedure used to construct DRSs hides the relational character of dynamic semantics since it merges two separate tasks in one step. It indicates how the syntax contributes to logical form and it specifies how context affects meaning. The modularity of SDRT resolves this issue as it separates how syntax contributes to the logical form and how context affects meaning (we will explain this further in the following section).

DRT also fails to answer how the semantic contribution is supplemented or filled in by information from the discourse context in the case that the semantic contribution is incomplete. This is also resolved in SDRT thanks to its modularity.

DRT does not contemplate the notion of semantic underspecification. Semantic underspecification is used to represent linguistically specified semantic ambiguities. For this, we need to separate context and grammar. On the other hand, SDRT allows for the representation of underspecification.

In addition, DRT does not add pragmatic information into its structures. Pragmatic information completes an incomplete representation of content to make it more complete. In SDRT, we also add pragmatic information into the structure.

Finally, the use of rhetorical relations complement the logical forms for discourse so as to enrich discourse structure. This is probably what is the most outstanding difference between DRT and SDRT.

4.2 *Segmented Discourse Representation Theory*

4.2.1 *Introduction*

Segmented Discourse Representation Theory (Asher and Lascarides [2003]) is a theory of discourse which attempts to model the semantics and pragmatics interface of discourse using rhetorical relations.

Asher and Lascarides main concern is how discourse or rhetorical structure affects phenomena such as anaphora, presupposition, and lexical inferences among other issues.

In contrast with traditional theories of pragmatics, Segmented Discourse Representation Theory (SDRT) is incremental and dynamic viewing content in terms of change potential in the semantic representation of the discourse context. The focus of SDRT is the way in which the interpretation of utterances involves the supplementation of compositional and lexical semantics of utterances with additional content.

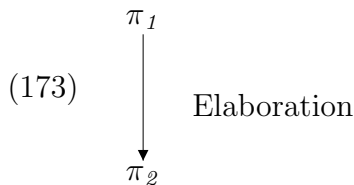
The set of rhetorical relations defined in SDRT describe the rhetorical roles that utterances play in the discourse context. A text is coherent when all the propositions are connected to other bits of discourse and all anaphoric expressions have been resolved.

Syntactically, an SDRS is composed of a set of labels plus a function that maps the labels to formulae. The labels have a hierarchical structure. For example, if π_0 is a label tagged to $R(\pi_1, \pi_2)$, then π_0 immediately outscopes both π_1 and π_2 . (From here on we introduce a convention whereby π_1 is always the first sentence, and π_2 the second sentence in a pair.)

Let us look at an example, *Elaboration* is a rhetorical relation that relates two propositions where the second proposition gives more detailed information about the event described in the first proposition. Observe the following instance of an *Elaboration* relation. The discourse in (172) has the SDRS represented in (173).

(172) a. π_1 : Max had a lovely meal last night.

b. π_2 : He ate lots of salmon.



The formulae in the SDRS represents the content of a clause and any rhetorical relations

between labels. In (172), the proposition π_2 gives detailed information about the event described in π_1 . That is, the fact that Max ate a great deal of salmon details the event of him having a good meal the previous night. In the SDRS (173), the labels associated with the propositions appear in the universe; and the rhetorical relation is part of the conditions of the SDRS.

SDRT makes use of rhetorical relations to induce a richer conception of discourse structure compared to other dynamic semantic theories. Asher and Lascarides [2003] believe that the set of rhetorical relations must be justified on the basis of truth conditional semantic interpretation.

Rhetorical relations have various uses. First, the semantics of rhetorical relations provide relevant information about linguistically-implicit temporal relations. For example, let us observe a rhetorical relation such as *Explanation* holding between two utterances like the following:

(174) π_1 : Max fell. π_2 : John pushed him.

The proposition that John pushed Max accounts for the truth of the proposition of Max falling. This rhetorical connection has truth conditional effects on the events. That is, that the second proposition temporally precedes the first proposition. This temporal relation is a fundamental part of the meaning, but it is not derivable from the syntax. Asher and Lascarides encapsulate this temporal information through meaning postulates on rhetorical relations, in this case, for the rhetorical relation of *Explanation*:

(175) a. $\phi_{Explanation(\alpha,\beta)} \Rightarrow (\neg e_\alpha \prec e_\beta)$
 b. $\phi_{Explanation(\alpha,\beta)} \Rightarrow (event(e_\beta) \Rightarrow \neg e_\alpha \prec e_\beta)$

By the temporal consequence of *Explanation* described in (175), this rhetorical relation only holds if the event of the second proposition (i.e., John pushing Max) preceded the

event of the first proposition (i.e., Max falling). (As in DRT, e is a discourse referent for events.)

The formula $\text{Explanation}(\alpha, \beta)$ glosses the illocutionary effects of performing the relational speech act of explaining α by uttering β . The constraints on the meaning of this formula must be satisfiable in order to infer that an Explanation speech act has been performed. And if an Explanation has been performed, then $\text{Explanation}(\alpha, \beta)$ is true.

Rhetorical relations can effect cognitive states. For instance, rationality. This is the case of *Sincerity* that says that if the constructed SDRS has a condition $R(\alpha, \beta)$, then one can assume that the speaker of β believes that the content of his/her speech act was $R(\alpha, \beta)$. Thus, an utterance is sincere if the intended rhetorical function is believed by the speaker.

Cognitive axioms such as *Sincerity* (as well as *Cooperativity*) predict certain expected discourse relations. SDRT update requires that the new information is attached to the context with the expected discourse relation. This leads to inferences about content. This content is a conversational implicature because it is derived with cognitive reasoning.

- (176) a. A: I'm out of gas. (π_1)
 b. B: There's a filling station around the corner. (π_2)

According to Grice, (176) seems to violate the maxim of Relation. In SDRT, the maxim of Relation is incorporated; and SDRT update computes a rhetorical connection between (176a) and (176b). In fact, (176b) connects with *Plan-Elaboration* to an implicit request *Help me get gas*. This request is connected to the proposition in (176a) with the meta-talk relation of *Result**. However, the *Plan-Elaboration* relation is only consistent if there is a possibility of the garage being open. The byproduct of computing discourse update is the implicature. Thus, the maxim of *Relation* is not violated because we can compute a well-defined SDRS.

The way in which rhetorical relations connect new information to old information is through discourse update. A rhetorical relation that connects two utterances does not always follow monotonically from the information that the interpreter has access to. This is the case of utterances where discourse markers such as *but* and *because* are absent. That is to say that discourse markers permit a monotonic inference of rhetorical relations. So, with *but* we would monotonically infer a rhetorical relation of *Contrast*; or with *because* we would monotonically infer a rhetorical relation of *Explanation*. However, in some instances, to compute rhetorical connections, non-monotonic reasoning is needed.

SDRT has a modular architecture in which each knowledge source has a different language and a different logic. This modularity helps with discourse analysis. Knowledge sources are domain knowledge, cognitive states and compositional and lexical semantics. SDRT provides a logic to represent and interpret logical forms of discourse and a logic to construct logical forms. The former is the logic of information content and the latter is the glue logic.

The logic of information content is the starting point of discourse semantics in SDRT. The logic of information content involves the compositional semantics of clauses represented by logical forms. It allows for underspecification as semantically ambiguous sentences have multiple representations of content. In order to supplement the underspecified logical forms with information, some interaction with pragmatics is required. Let us observe an example without semantic ambiguity:

(177) a. Max fell. John pushed him.

b. $\langle A, F, LAST \rangle$ where:

$$A = \{ \pi_0, \pi_1, \pi_2 \}$$

$$F(\pi_1) = \text{max}(x), \text{fall}(e1,x), e1 \prec n$$

$$F(\pi_2) = \text{john}(y), \text{push}(e2,y,x), e2 \prec n$$

$$F(\pi_0) = \textit{Explanation}(\pi_1, \pi_2) \textit{ LAST} = \pi_2$$

In the example, A represents the set of speech act discourse referents. \textit{LAST} is a member of A , it is the label of the content of the last clause added to the logical form. F is a function that assigns each member of A an SDRS-formula.

The logic of information packaging in SDRT is different from the logic of information content. It is easier to build the logical form rather than interpreting it. Separating the two logics makes the process of building the logical form decidable. The logic of information packaging is nonmonotonic and it has limited access to information sources. This logic consists of the glue logic, notions of discourse update and discourse revision.

The glue logic provides background theory to express certain semantic consequences of different rhetorical relations. It includes spatio-temporal effects, temporal effects, effects on lexical choice, effects on binding and antecedents. For example, the glue logic adds temporal consequences to the rhetorical relation of *Explanation*. The glue logic is where axioms such as the one described in (175) are integrated into the discourse structure.

The lexicon plays a very important role building discourse update and constructing rhetorical relations (and it also helps with word disambiguation). The language used to represent the lexicon is Typed Feature Structures (making SDRT compatible with HPSG). The lexicon should be a body of syntactic and semantic information about words and their relationship with other words as well as possible causal relations. It needs to provide the basis for computing lexical contributions to the logical form.

4.2.2 *Rhetorical Relations*

In this section, we define and exemplify the list of rhetorical relations described by Asher and Lascarides [2003]. It is important to present the full range of relations, partly for reference, but also because the meaning of some relations is only clear in the context of the full set. However, the result is somewhat indigestible, and the reader may prefer to skim

some parts on a first reading. (Observe the table (4.1) with a full list of relations.)

Content Level Relations

Elaboration and Explanation

Consider the following examples:

(178) π_1 : Jane answered the phone. π_2 : It had been ringing for an hour.

(Explanation(π_1, π_2))

(179) π_1 : Jane was laughing. π_2 : She was nearly crying with laughter.

(Elaboration(π_1, π_2))

The fact that the telephone had been ringing for an hour explains why Jane answered the phone. The fact that Jane was nearly crying with laughter elaborates on the fact that she was laughing. *Explanation* involves temporal precedence while *Elaboration* means that there is temporal inclusion. The temporal relations are not derivable from the syntax of the propositions. Therefore, we must establish different temporal consequences over these two types of rhetorical relations. Moreover, *Elaboration* is transitive which means that if an *Elaboration* relation holds between two labels π_1 and π_2 and another *Elaboration* relation holds between π_2 and π_3 ; then, an *Elaboration* relation will also hold between π_1 and π_3 .

Elaboration requires an axiom to reflect that the relation is structural; this axiom is *distributivity*, a coherence prerequisite on discourse structures. It involves that attachments to other subordinate constituents hold the equivalent discourse function as regards to superordinate constituents. In the case of *Elaboration* it means that any element attached to a constituent of an elaboration should be part of the same elaboration.

Narration

Observe the following example, which exemplifies an instance of *Narration*:

(180) π_1 : Jane answered the phone. π_2 : She received bad news. (Narration(π_1, π_2))

Tab. 4.1: SDRT Rhetorical Relations

Content-Level Relations	Elaboration Explanation Narration Continuation Background FBP Result Alternation Consequence Def-Consequence Question Answer Pair (QAP)
Text Structuring Relation	Contrast and Parallel
Cognitive-Level Discourse Relations	Acknowledgment Indirect Question Answer Pair (IQAP) Not Enough Information (NEI) Partial Question Answer Pair (PQAP) Plan-Elaboration Question-Elaboration Request-Elaboration Plan-Correction
Divergent Relations	Correction, Counterevidence, and Dispute
Meta-talk Relations	Result*, Consequence*, and Explanation*

The temporal structure of *Narration* makes that one proposition temporally ends when the following proposition starts. In the example, just after Jane answered the phone, somebody gave her bad news. Another relevant constraint on the *Narration* relation is that the propositions must have a common topic. This relation is scalar in the sense that the more the propositions share, the more coherent is the discourse.

To infer the rhetorical relation of *Narration* extra information is required. That is, the event mentioned in the first proposition has to occasion the event mentioned in the second proposition. In other words, the first event might lead to the second one.

Therefore, the first example (181) is an example of a *Narration* relation, while the second one (182) is not. This is because Maria cooking does not occasion Maria knitting; in other words, the event of Maria cooking does not lead to the event of Maria knitting.

(181) π_1 : I stayed home all night. π_2 : And my parents went out. (*Narration*(π_1, π_2))

(182) π_1 : Maria cooked soup. π_2 : She knitted a jumper. (*Continuation*(π_1, π_2))

There are certain cue phrases or discourse markers that can convey a *Narration* relation monotonically. This would be the case of markers such as *and* (as in (181)), *and then* (as in (183)), etc.

(183) π_1 : Maria watched TV. π_2 : *And then* she went out. (*Narration*(π_1, π_2))

The second clause in (183) features the anaphoric discourse marker *and then*. This discourse marker is anaphoric because it relates the content of the clause it outscopes in syntax with the content of the antecedent. It then establishes a rhetorical relation of *Narration* between the antecedent and the outscoped clause; namely, between Maria watching TV and Maria going out.

Narration can also be inferred using another strategy. That is, if we do not have enough information to attach a first sentence with the second sentence with a rhetorical relation,

but the second sentence is attached to a third by *Narration*, then we can infer this same rhetorical relation between the first and the second sentence. We can use such an axiom in examples like the following:

(184) π_1 : I looked. π_2 : I listened. π_3 : Then, I took a decision.

(Narration(π_1, π_2), Narration(π_2, π_3))

Continuation is similar to *Narration* with the only difference that it lacks its temporal effects. It is also a veridical relation and it has the same topic constraint as *Narration*.

Explanation and Result

If a second utterance is the cause of the first utterance, there is an *Explanation* relation between the two utterances. If this order is reversed, we infer a *Result* relation. For example, the following sentences are examples of these two relations.

(185) π_1 : I went to the supermarket. π_2 : I didn't have any food. (Explanation(π_1, π_2))

(186) π_1 : I didn't have any food. π_2 : So I went to the supermarket. (Result(π_1, π_2))

In (185), the reason why I went to the supermarket is the lack of food. These two sentences could easily be connected by *because* which is a trigger of an Explanation relation. On the other hand, the sentences in (186) are reversed in order. Therefore, they are connected by a Result relation. Moreover, in this particular instance, we have a trigger of such relation, the discourse marker *so*.

Background

Background gives temporal constraints to its arguments. For example, the following structures have different temporal structures.

(187) a. π_1 : I went to the shops in the town center. π_2 : It was crowded.

(Background(π_1, π_2))

- b. π_1 : Everybody had to buy presents at the last minute in the town center. π_2 :
It was crowded. (Narration(π_1, π_2))

The first sentence has a temporal overlap of eventualities as required by the *Background* relation. On the other hand, the second sentence is a narrative with temporal precedence of eventualities.

Another requirement for *Background* relations is that the propositions connected need to have a common topic, as is the case of *Narration* or *Continuation*.

If a relation *Background* holds between two propositions π_1 and π_2 , the fact that one is the main topic should be encoded in the rhetorical relation. In an SDRS containing a *Background* relation, the text segment containing the main topic is constructed by repeating the contents of both π_1 and π_2 . This topic relates to the background proposition through a *Foreground-Background Pair* (FBP) relation.

Asher and Lascarides [2003] distinguish between two *Background* relations because these affect discourse update in a different way. From one hand, *Background₁* can introduce a special and complex structure with a special kind of topic which imposes constraints on discourse update. On the other hand, *Background₂* might be a simple coordinating relation. Examples of these two types of *Background* are the following:

(188) π_1 : I got his notes. π_2 : They were unreadable. (Background₁(π_1, π_2))

(189) π_1 : I tried to read his notes. π_2 : They were unreadable. (Background₂(π_1, π_2))

Consequence and Alternation

These relations are not veridical. Observe the following examples of this relations:

(190) (π_1 :) If it rains, (π_2 :) we won't play football. (Consequence(π_1, π_2))

(191) (π_1 :) Either it is raining (π_2 :) or she took a shower before coming.
(Alternation(π_1, π_2))

Consequence holds in cases where if an event takes place, then there is another event as a consequence of the former. *Alternation* means that either one event or another can happen, but not both. (190) is an example of a Consequence relation in which it is established that a group of people would not play football in the event of rainy weather. Hence, the event of raining has the consequence of not playing football by this specific group of people. In (191), we find an Alternation relation since we are given two options to explain why a woman appears to have wet hair. The two alternatives are either the rain, or it could be that she has taken a shower. This means that only one of this alternatives holds.

Def-Consequence stands for defeasible consequence. This relation is capable of dealing with constructions like the following:

- (192) $(\pi_1:)$ If Mary plays football, $(\pi_2:)$ she will bring her boots.
 (Def-Consequence(π_1, π_2))

A *Def-Consequence* relation is presupposed since we need to presuppose that Mary has a pair of football boots if she plays football.

Text Structuring Relations

Structural relations hold between two propositions whose content has certain structural constraints. This type of constraint is not needed in content level relations such as those described above.

Parallel and Contrast

Both rhetorical relations involve a similarity between the constituents they relate. While *Parallel* has semantically similar constituents, *Contrast* has semantically dissimilar constituents. These relations are scalar.

Even though there are two types of *Contrast*; i.e., formal contrast and violation of expectation; they are group together in this type of relation. For example:

(193) (π_1 :) John likes Eastenders (π_2 :) and his wife enjoys Coronation Street.

(Parallel(π_1, π_2))

(194) (π_1 :) John likes Eastenders (π_2 :) but his wife hates it. (Contrast(π_1, π_2))

While (193) shows the parallel of a couple liking television soaps, even if not the same one, (194) contrasts the fact that the husband enjoys a particular soap, and his wife detests it. With discourse markers such as *but, however, in contrast, etc.* *Contrast* monotonically follows. There are instances in which this relation also occurs without the presence of the discourse markers and then, the relation is inferred nonmonotonically. The same happens with *Parallel* with discourse markers such as *too, also, etc.*, which express a similarity between the themes rather than the contrast expressed in *Contrast*.

Cognitive Level Discourse Relations

Acknowledgment

It is a subordinating relation which holds when an utterance entails that a previous utterance has been accepted or achieved. For example:

(195) a. π_1 : You understand this.

b. π_2 : I do. (Acknowledgment(π_1, π_2))

π_2 is an acknowledgment of the previous utterance.

Indirect Question Answer Pair (IQAP)

Indirect Question Answer Pair is a relation which holds even if the response is not a direct answer, an answer can be inferred from it. For example:

(196) a. π_1 : Were your holidays to New York expensive?

b. π_2 : The flight, hotel and meals were altogether 500. (IQAP(π_1, π_2))

So, even if the speaker of π_2 has not given a yes/no answer, s/he has offered a full detailed explanation of the costs of the holidays. This gives the speaker of π_1 the chance to infer whether that was an expensive figure. This type of examples involve an *IQAP* relation. The indirect answer subsumes a direct answer according to the informal semantics used by Asher and Lascarides [2003]. Both *QAP* (Question Answer Pair) and *IQAP* hold only if the answer is veridical. Therefore, both are called *right-veridical* relations. These relations share the fact that they indicate transitions on information states within the model theory with all rhetorical relations. But their anaphoric potential is different since the first argument is a question.

The semantic definition of *IQAP* is more complex than *QAP* since it must express the questioner's beliefs.

Not Enough Information

NEI is a subordinating relation which holds when a second utterance implies that the speaker of this utterance does not know the answer to the question that the first speaker has asked. For instance, the following self-explanatory question answer pair:

- (197) a. π_1 : Do you know who kissed Frances?
 b. π_2 : I don't know. ($NEI(\pi_1, \pi_2)$)

Partial Question Answer Pair

PQAP is a subordinating relation which holds when a speaker cannot give a true direct answer to a question that another speaker has asked. Observe the following:

- (198) a. π_1 : When does the next bus to town leave?
 b. π_2 : They are quite regular. ($PQAP(\pi_1, \pi_2)$)

In this case, the answer given in π_2 does not directly answer the question in π_1 . The fact that the buses to town are regular does not answer when is the next bus due. However,

the speaker of π_2 does not want to give incorrect information to the speaker of π_1 , so the answer just reveals what s/he knows. The speaker of π_2 says what s/he believes is relevant to the question and more importantly, true.

Other Cognitive-Level Rhetorical Relations

Q-Elab, *Plan-Elab*, *R-Elab* (standing for Question Elaboration, Plan Elaboration and Request Elaboration) are all subordinating relations. Examples of these relations are the following:

- (199) a. π_1 : When should we go on holidays?
 b. π_2 : September? (Q-Elab(π_1, π_2))
 c. π_3 : Yes, it will be cheaper. (QAP(π_2, π_3))
- (200) a. π_1 : I want to cook lasagna tonight.
 b. π_2 : There's mince in the freezer. (Plan-Elab(π_1, π_2))
- (201) a. π_1 : I want to go to town tonight.
 b. π_2 : Get the bus! (R-Elab(π_1, π_2))

Plan-Elab and *Q-Elab* differ in that the second argument of the former labels a proposition instead of a question. *R-Elab* and *Plan-Elab* are different because the second argument of the former is a request. *Plan-Elab* is veridical while *Q-Elab* is not veridical; *R-Elab* might or might not be veridical depending on the semantic type of its arguments. (199) shows that π_2 is not a direct answer to the question π_1 about the ideal time to go on holidays, π_2 suggests a month, but by saying π_2 , the speaker does not want to impose this idea, hence the rising intonation. The first speaker then continues agreeing with the suggestion made in π_2 and offers a reason to agree with the choice of month. This is a clear example of Q-Elab relation between utterances π_1 and π_2 in (199).

(200) shows an example where π_2 provides further information to π_1 in order to achieve the plan in π_1 . In this particular instance, the speaker in π_1 intends to cook a lasagna

dish and the speaker of π_2 suggests that one of the main ingredients of this dish can be found in the freezer so the speaker of π_1 can cook the dish, hence, achieve the target. On the other hand, in (201), the speaker of π_2 offers a request to the speaker of π_1 in order to fulfill his/her goal: π_2 requests π_1 to take the bus so as to go to town on that night.

Plan-Correction

A *Plan-Correction* relation occurs when one agent declines the speech act related goals (SARGs) related to another agent's speech act. This rhetorical relation is right veridical and subordinating. For example:

- (202) a. π_1 : I am going to cook curry tonight.
 b. π_2 : I have a stomach-ache. (Plan-Correction(π_1, π_2))

In this example, π_2 wants to put the speaker of π_1 off cooking curry because the speaker of π_2 reveals that s/he is not feeling well, therefore correcting the cooking plan of the speaker in π_1 .

Divergent Relations

Correction

Correction is a subordinating relation which holds when two utterances are incompatible; or when an utterance implies that the previous utterance is non-veridical. An example of this relation would be the following:

- (203) a. π_1 : John is madly in love with Jane.
 b. π_2 : No, Mary is the one he goes after. (Correction(π_1, π_2))

Here π_2 is a direct correction of the utterance in π_1 by saying that John is not in love with Jane but with Mary.

Counterevidence

It is a subordinating relation in which the second utterance entails that the first utterance is false or not believable. For instance:

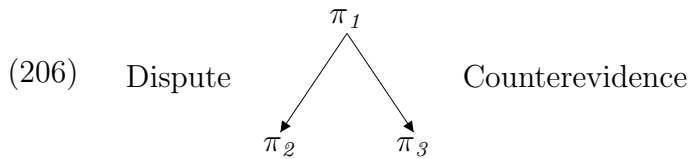
- (204) a. π_1 : John is madly in love with Jane.
 b. π_2 : He is sleeping with Mary. (Counterevidence(π_1, π_2))

In this case, the utterance in π_2 points out that the utterance in π_1 is not believable since John cannot be madly in love with Jane if he is sleeping with Mary.

Dispute

Dis means that a relation which was part of the discourse context is currently under dispute.

- (205) a. A: Peter is so kind and patient. (π_1)
 b. I really like him. (π_2)
 c. B: He shouts at people for arriving late! (π_3)



In this example, speaker A explains that he/she likes Peter because he is patient and kind. Speaker B disagrees with A in the fact that Peter is not that nice arguing that he shouts at people, hence, B disputes A's reasons to like Peter.

Meta-talk Relations

Meta-talk relations connect the content of one utterance to the performance of uttering another rather than to its content. For example:

- (207) π_1 : I am hungry. π_2 : Can you make me a sandwich? (Result*(π_1, π_2))

These utterances are linked by a *Result** relation which is part of *meta-talk* relations. It is a meta-talk relation since the speaker gives a reason to request somebody else to make him/her a sandwich; and the reason given is that the speaker is hungry. Other ways to express *meta-talk* relations are with an indirect speech act, a conditional, etc. *Meta-talk* relations have a common feature: the content of one of the arguments in the relation states that the speaker of the other utterance has the SARG of that utterance. Other *meta-talk* relations are *Consequence** and *Explanation**.

4.2.3 *Concluding Remarks*

SDRSs can be used to analyze and predict discourse coherence and incoherence as well as other semantic phenomena. SDRSs are necessary to interpret discourse too. There are three levels of interpretation. First, compositional and lexical semantics which is drastically underspecified and it gives us fragmentary logical forms. Second, we build a coherent and connected SDRS discourse structure. We complete information packaging for content using lexical and compositional semantics. SDRT is mostly concerned with this level of interpretation. Third, discourse participants reason about mental states. This is where cognitive modeling takes place; and SDRT offers defaults to capture this stage that finds the motives behind utterances.

SDRT is different from other dynamic semantic theories because it enriches logical forms to include rhetorical relations. These are assigned their semantics in SDRT making them complex update operators. All logical forms in SDRT are interpreted compositionally and dynamically.

Now let us review alternative discourse models to SDRT.

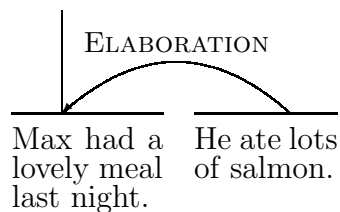
4.3 Alternative Formal Discourse Models

In this section we will review a number of discourse structure theories alternative to SDRT, namely, Rhetorical Structure Theory, Hobbs [1990]’s approach, and the Intentional Approach. We will describe how these approaches work and we will evaluate them in comparison with SDRT. (The reader may want to consider TAG and Relevance Theory as other possible discourse approaches. Please refer to Chapter 3 for that purpose.)

4.3.1 Rhetorical Structure Theory

Rhetorical Structure Theory (RST) (Mann and Thompson [1987], Mann and Thompson [1988], Mann et al. [1992], among others) is a theory of text structure extended to provide a theoretical basis for computational text planning.

In RST, text structures are hierarchic and they are built on patterns. These patterns are called schemas, which describe the functions of the parts of a text. Schemas show how a unit of text structure is formed by other units. There is a pointer to a nucleus which is linked by relations to its satellites. Usually, a schema is defined in terms of one or maybe two relations, an essential part of the text in RST. Observe the following example:



Here, we have a simple schema. We can see that the pointer is on the nucleus, which in this example is the first sentence *Max had a lovely meal last night*. This pointer is linked by a relation of *elaboration* to its satellite, which in the example is the sentence *he ate lots of salmon*.

The example shows how RST describes a text by assigning a structure to it. In the example, the structure is quite simple as it only consists of two sentences. Since units are

the terminal nodes in an RST structure, the two sentences in the structure are two different units for that schema. As new utterances are added to the discourse, they are structured in a similar fashion, and the RST structure ends up as a tree covering the whole text.

There are four points to be considered to define relations in RST terms:

- constraints on the nucleus;
- constraints on the satellite;
- constraints on the combination of nucleus and satellite;
- and the effect.

The constraints on the nucleus for an *elaboration* relation, as the one exemplified above, are empty; as the example is a statement of basic information. In the example, the constraint on the satellite is to give additional information. The constraints on the combination of the nucleus and the satellite are that the additional information of the satellite needs to complement the information given on the nucleus. Both pieces of information need to be connected, the nucleus being a more general statement than the satellite. The effect is whatever is intended by the speaker when using this relation. As with this example, every relation in RST has a definition containing information about these four points.

One of the drawbacks of RST is that the set of relations described in RST is an open set. This means that the purposes and each type of text will add new relations. The text can be subdivided and relations manipulated. We believe that this might create a surplus on the number of existing relations. Asher and Lascarides [2003] argue that some of the relations given by Mann and Thompson [1987] do not yield different linguistic meaning though they might convey a slightly different communicative intentions. This means that they should not be different relations.

Apart from this, in RST, only one rhetorical relation can hold between two segments, in SDRT more than one rhetorical relation can hold between any two segments.

Finally, another drawback of RST is that the units or spans are not defined, they are not always a whole sentence or a whole clause, this is established by each example or text type. In SDRT, units are speech act discourse referents.

4.3.2 Hobbs [1990]

Hobbs [1990]'s argues in favor of discourse structure because coherence relations such as elaborations, explanations, contrasts, temporal sequencing, etc. appear in discourse.

According to Hobbs, a message is coherent if it refers to coherent events in the world. Temporal succession is not enough to establish coherence. Observe the example given by Hobbs [1990, 86]:

- (209) a. At 5:00 a train arrived in Chicago.
 b. At 6:00 George Bush held a press conference.

Temporal succession is not sufficient in order to determine what type of coherence relation exists between the two fragments in (209). The possible coherence relation to be extracted from this example is that one event might *occasion* the other in the sense that George Bush might have been on that particular train and the conference took place in Chicago. The *occasion* relation is defined as follows considering that S_1 is the current clause or larger segment of discourse and S_0 is an immediately preceding segment:

1. 'A change of state can be inferred from the assertion of S_0 , whose final state can be inferred from S_1 .
2. A change of state can be inferred from the assertion of S_1 , whose initial state can be inferred from S_0 .' (Hobbs [1990, 87])

The relations that Hobbs describes rely on the thoughts of Hume [1748]. Hobbs classifies relations into four categories depending on the requirements of the discourse situation: *occasion*, *evaluation*, *ground-figure* and *explanation*, and *expansion*.

The first class of *occasion* relations includes *cause* and *enablement* as special cases. (Refer to the *occasion* definition and example given above).

The second class, *evaluation* relation arises from the need to relate what has been said to a goal of the conversation. In Hobbs [1990, 89], it is defined as: ‘*From S_1 infer that S_0 is a step in a plan for achieving some goal of the discourse.*’ For example:

- (210) a. Something very odd happened yesterday on the bus.
 b. The bus driver suddenly stopped, got off the bus, and started shouting abuse to a car driver.

In (210a) (or S_0) the speaker evaluates the content of (210b) (or S_1). From the story in (210b), we can infer that (210a) is a step in a plan to achieve a particular goal of the speaker, that is, to entertain by telling a strange story which happened to the speaker on the previous day.

Evaluation relations can also be reversed, then from the first utterance we can infer that the second utterance ‘*is a step in a plan for achieving some goal of the discourse*’ (Hobbs [1990, 89]). For example:

- (211) a. Did you bring your car today?
 b. My car is at the garage. (Hobbs [1990, 89])

From (211b) we can infer that the speaker cannot resort to the normal plan to get somewhere with the car as it is in the garage. Therefore, (211b) is a step towards an alternative plan to achieve the goal of getting somewhere without a car.

Ground-figure and *explanation* relations relate a segment of discourse to the listener’s

prior knowledge. This class consists of two relations: *ground-figure* (called *background* in other work) and *explanation*.

The definition of *ground-figure* given by Hobbs [1990, 91] is: ‘*Infer from S_0 a description of a system of entities and relations, and infer from S_1 that some entity is placed or moves against that system as a background*’. Observe the example given by the author in Hobbs [1990, 90]:

- (212) a. And one Sunday morning about ohhhh five o’clock in the morning I sat down in the Grand - no no, not in the Grand Central, in the Penn Station.
- b. and while I was sitting there a young cat came up to me, ...

From (212a) (or S_0) we infer a background or system of entities and relation. Also, from (212b) (or S_1) we infer that there is a previous background to that situation. So, the story told in (212b) is set in a time and location background.

Hobbs [1990, 91] gives the following definition of *explanation*: ‘*Infer that the state or event asserted by S_1 causes or could cause the state or event asserted by S_0* .’ In Hobbs [1990, 92] we find a double example of *explanation*:

- (213) a. He was in a foul humor.
- b. He hadn’t slept well that night.
- c. His electric blanket hadn’t worked.

The cause of the state described in (213a) is given in (213b). That is, the reason for being in a bad mood is that he had not slept well. (213c) gives the cause of the state described in (213b). That is, the reason why he had not slept well is that he was not warm because his electric blanket was not working.

The last type of relations is the largest class belonging to the group of *expansion* relations. These relations expand the discourse. They involve inferential relations and can be classified depending on the move from specific to general or vice versa.

We will use examples given by Hobbs to illustrate these relations. Let us start with *parallel* given in Hobbs [1990, 93]:

(214) Set stack A empty and set link variable P to T.

The two entities in (214) are similar because they share a reasonably specific property. *set stack A empty* and *set link variable P to T* are similar because they are data structures.

An example of *elaboration* is found in Hobbs [1990, 95]:

- (215) a. Go down First Street.
b. Just follow First Street three block to A Street.

We can infer the same proposition for the assertions in (215a) and (215b), even if the latter adds crucial information. Both assertions give the same set of directions. That is, if two speakers were given each one of these two, they would end up following the same directions.

An example of *exemplification* is given in Hobbs [1990, 97]:

- (216) a. This algorithm reverses a list.
b. If its input is ‘A B C’, its output is ‘C B A’.

(216b) is an example of (216a). In other words, (216b) is a member or subset of (216a).

An example of *contrast* is given in Hobbs [1990, 98]:

- (217) a. You are not likely to hit the bull’s eye.
b. but you are more likely to hit the bull’s eye than any other equal area.

We can infer from (217a) that the probability to hit the bull’s eye is not as high than any probability that counts as likely. We can infer from (217b) that the probability is higher than the typical probability associated with hitting other equal areas. In this example,

Tab. 4.2: Hobbs relations

occasion: cause and enablement
evaluation
ground-figure and explanation
expansion: parallel, elaboration, exemplification, contrast, and violated expectation

similar entities give contrasting predications. Another type of contrast is when contrasting entities give the same predication.

The final coherence relation defined by Hobbs is the *violated expectation* relation. An example is given in Hobbs [1990, 99]:

- (218) a. John is a lawyer,
 b. but he's honest.

From (218a) we can infer that John is dishonest. However, from (218b) we infer the contrary, that is, that John is honest. The second clause directly contradicts the inferred proposition of the first, which subsequently gets overridden.

To sum up, we give the table in (4.2) summarizing Hobbs list of relations.

Hobbs analyses discourse in four steps:

1. First, the text must be cut into one or two major breaks. This is done intuitively. Then, this is done again with each segment and the process stops when we reach the level of single clauses. We end up with a tree structure for the whole text.
2. The non-terminal nodes of the tree must be labeled with coherence relations. Also, we need to devise accounts of what is being asserted in each segment bottom-up.
3. Simple English explanations or formal logical language is used to choose coherence relations between clauses.

4. Finally, we require a validation of the hypothesis made in the previous step.

In this theory of discourse interpretation, to solve the interpretation problems presented by discourse, knowledge is used in the following way. Firstly, first-order predicate calculus is used to translate texts sentence by sentence into logical notation. Then, the knowledge of the world is encoded in a huge knowledge base. (Knowledge will be generally encoded through logical notation as axioms.) To use this stored knowledge, we need a deductive mechanism to manipulate axioms and infer adequate conclusions.

Hobbs [1990] follows a monotonic principle that prefers interpretations requiring the least costly assumptions. The biggest issue is that the notion of cost is not constrained. Another of the great differences between SDRT and Hobbs' approach is that the former separates the glue logic from the logic of information content. Moreover, SDRT also separates the task of building a discourse interpretation with that of integrating contents of the discourse in the speakers' belief states. Hobbs' approach is unmodular while SDRT has one language and one logic for each knowledge source.

4.3.3 *An Intentional Approach*

In the Intentional Approach (Grosz and Sidner [1986]; Grosz and Sidner [1990]; Pollack [1990]; Lochbaum [1994]; Grosz and Kraus [1996]; Grosz and Kraus [1999]; Louchbaum et al. [2000]; etc.), the structure of a discourse is constructed by the way the utterances of that discourse group together and interrelate.

This approach maintains that it is impossible to determine the discourse structure by only establishing relations between discourse segments. It argues that discourse structure depends on the reason why the participants are engaged in a particular conversation/discourse and its segments. The central role of segmentation of a discourse is given by the intentions of the speakers. These intentions also determine the meaning of the utterances on any given context.

The intentional approach involves a theory of discourse structure comprising three interrelated elements. One of the elements is the linguistic structure. This is the structure of the sequence of utterances that are part of a discourse. In a segment, utterances have specific roles in regards to that segment in the same way that words have particular roles in the phrase they appear in. Additionally, discourse segments have specific functions in regards to the discourse as a whole in the same way that phrases have particular functions inside a sentence. The linguistic structure consists of both the discourse segments and an embedding relationship which can hold between these segments.

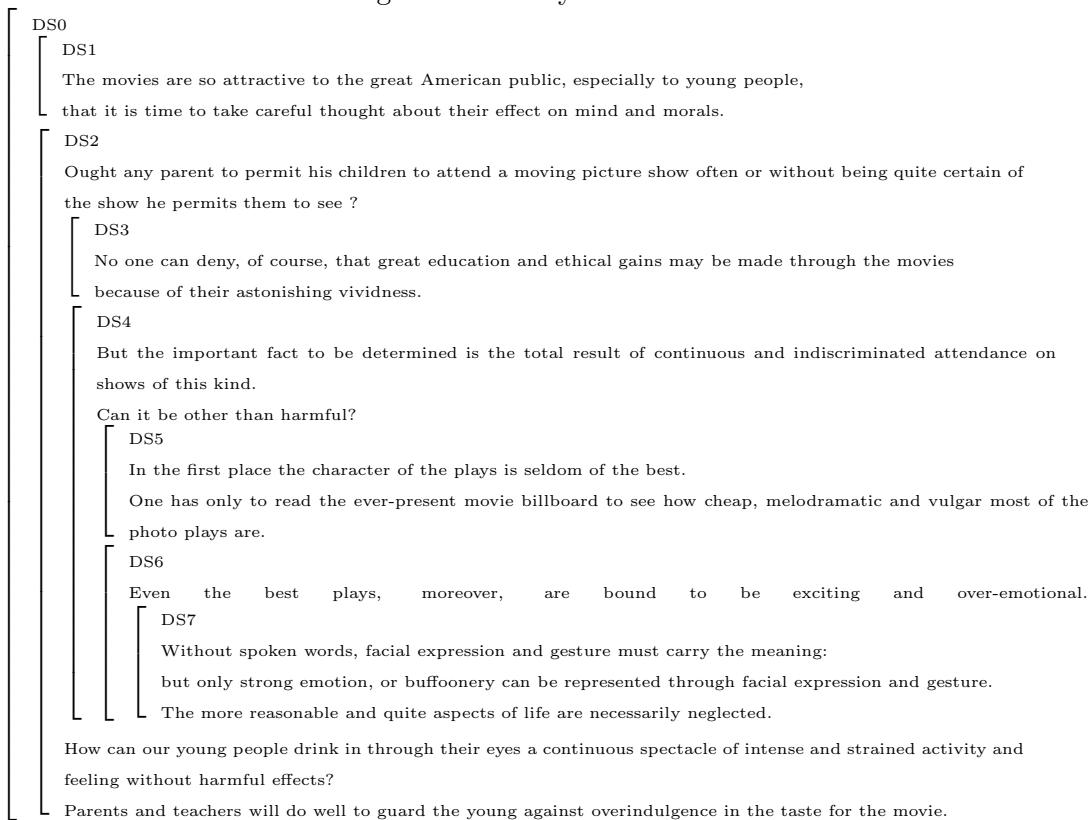
The second element is the intentional structure which consists of the purposes of the discourse segments and their interrelations. These purposes (DSP) are intentions to be acknowledged. There are two kinds of relations that can hold amid DSPs: dominance and satisfaction-precedence. Any one DSP dominates another if the second offers part of the satisfaction of the first. Specifically, the second DSP establishment of state of affairs contributes to the first DSP establishment of state of affairs. An analogous embedding relation in the linguistic structure displays this relation. A DSP satisfaction precedes another if the former must be satisfied before the latter. An equivalent sibling relation in the linguistic structure reflects this relation.

The text analyzed in (4.1) gives us an analysis of Grosz and Sidner [1986, 184] showing how the approach is put into practice. In (219) we have the primary intentions of the DSPs of the example (4.1) expressed in a shorthand notation and plain English as according to Grosz and Sidner [1986, 184]:

(219) **I0: (Intend ICP (Believe OCP P0))** where P0 = the proposition that parents and teacher should guard the young from overindulgence in the movies.

I1: (Intend ICP (Believe OCP P1)) where P1 = the proposition that it is time to consider the effect of movies on mind and morals.

I2: (Intend ICP (Believe OCP P2)) where P2 = the proposition that young

Fig. 4.1: Primary Intentions of the DSPs

people cannot drink in through their eyes a continuous spectacle of intense and strained activity without harmful effects.

I3: (Intend ICP (Believe OCP P3)) where P3 = the proposition that it is undeniable that great educational and ethical gains may be made through the movies.

I4: (Intend ICP (Believe OCP P4)) where P4 = the proposition that although there are gains, the total result of continuous and indiscriminate attendance at movies is harmful.

I5: (Intend ICP (Believe OCP P5)) where P5 = the proposition that the content of the movies (i.e., the character of the plays) is not the best.

I6: (Intend ICP (Believe OCP P6)) where P6 = the proposition that the stories (i.e., the plays) in movies are exciting and over-emotional.

I7: (Intend ICP (Believe OCP P7)) where P7 = the proposition that movies portray strong emotion and buffoonery while neglecting the quite and reasonable aspects of life.

As can be seen in (219), all the primary intentions of the movie essay are intentions to make the reader (OCP) believe a particular proposition. Some of these are more direct than others.

The dominance relationships for the DSPs of the text in (4.1) are the following:

IO DOM I1

IO DOM I2

I2 DOM I3

I2 DOM I4

I4 DOM I5

I4 DOM I6

I6 DOM I7

The third element comprised in discourse structure is the attentional structure which operates as evidence of those units that are significant at any point in the discourse. This is modeled by a stack of focus spaces. With each discourse segment, a new focus space is pushed onto the stack. The relevant objects, properties, and relations are entered into the focus space. Any information from spaces lower down on the stack is available to those above, but not vice versa. Focus spaces are popped from the stack as their related segments are completed. Hence, the main purpose of attentional state is to restrict the scope of information that must be measured in dealing out with new utterances.

In (220) we have an example given by Grosz and Sidner [1986, 192] where a piece of discourse contains an interruption, that is, in which the flow of the discourse is broken by another piece of discourse. In the example, the discourse returns to the main thread after the interruption. D1 represents the main part of the discourse and D2 the interruption:

(220) D1: John came by and left the groceries.

D2: Stop that you kids.

D1: and I put them away after he left.

The focus space for D2 is pushed onto the stack on top of the focus space of D1. At this point, the focus space for D2 is more salient than the one for D1. This changes once D2 is completed. As we can see in the second structure, D1 will be on top of the stack once D2 is completed, and in turn, D2 is pushed out of the stack.

The Intentional approach has a problem according to Asher and Lascarides [2003]: it gives a primary role to plans and intentions. In the Intentional approach, in order to treat indefinites and intersentential anaphora, it is required to enquire into the nature of the discourse entities on the stack. The meaning of an utterance which is computed without knowing the antecedents to its anaphora must give way sufficient informative underlying goal so the position in the intentional structure can be inferred. There is no proof that

this can actually work.

Another problem for this approach is that the relationship between the purpose of the discourse and the DSP does not fit into a plan structure. For instance, their relations of dominance do not fit with a possible relationship between speech acts conveyed in dialogue. Mainly, the problem is that the rhetorical functions that propositions have in context are not reflected by the satisfaction of precedence and dominance; for example, they cannot reflect temporal structures.

In the Intentional Approach, relations are excessively unconstrained. Moreover, it is simpler to use compositional semantics in utterances rather than the underlying goals. The semantics of the context can be used instead of domain plans to identify discourse segmentation. Moreover, logical structure of the context affects the interpretation of the anaphora. On the other hand, goals do not always reflect the logical structure.

Plan recognition approaches rely on the fact that inferences about the current speech act are based on information about the context goals instead of its compositional and lexical semantics. The Intentional Approach does not log how little alterations in the surface form have an effect on constraints on anaphora.

4.4 *Conclusion*

In this chapter we have reviewed the discourse approach used in this thesis, SDRT, as well as the discourse theory from where it develops, DRT. We have also reviewed alternative discourse structure theories and we have compared them to SDRT validating the latter as a more positive approach to discourse with more capacity to resolve issues revolving around discourse.

5. HEAD DRIVEN PHRASE STRUCTURE GRAMMAR

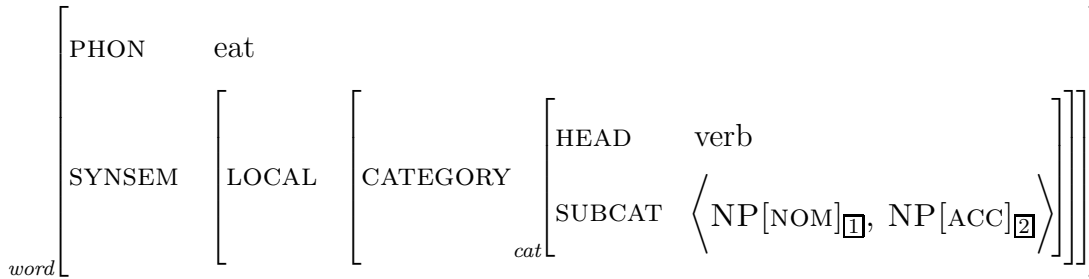
This chapter gives an overview of Head-Driven Phrase Structure Grammar (HPSG) as a syntactic and semantic theory. This approach is an adequate framework for the development of a formal semantics account of discourse markers. In this chapter, we overview a formal semantic representation compatible with HPSG, namely MRS.

5.1 HPSG: A System of Signs

Ginzburg and Sag [2000] (first developed in Pollard and Sag [1994]) define Head Driven Phrase Structure Grammar (HPSG) as a system of signs containing structured information about their phonological, syntactic, semantic, discourse, and phrase-structure features.

Formally, feature structures are used in HPSG. These are *sorted* in the sense that each node is labeled with a sort symbol which says what type of object the structure models. So, *word* or *phrase* are a subsort of *sign*, or *singular* is a subsort of *number*.

In HPSG, feature structures need to satisfy completeness if they serve as total models of linguistic entities. They need to be totally well-typed and sort-resolved. A feature structure is totally well-typed if it is both well-typed and if all features in all nodes have appropriate values of the assigned sort. For example, *word* has attributes of SYNSEM (syntax and semantics) and PHON(ology). The values given to these attributes must be appropriate for that sort and attribute. In this case, PHON has information regarding the phonetic and phonological characteristics of the particular sign. SYNSEM contains linguistic information about the attributes of the syntax and semantics of the sign as well

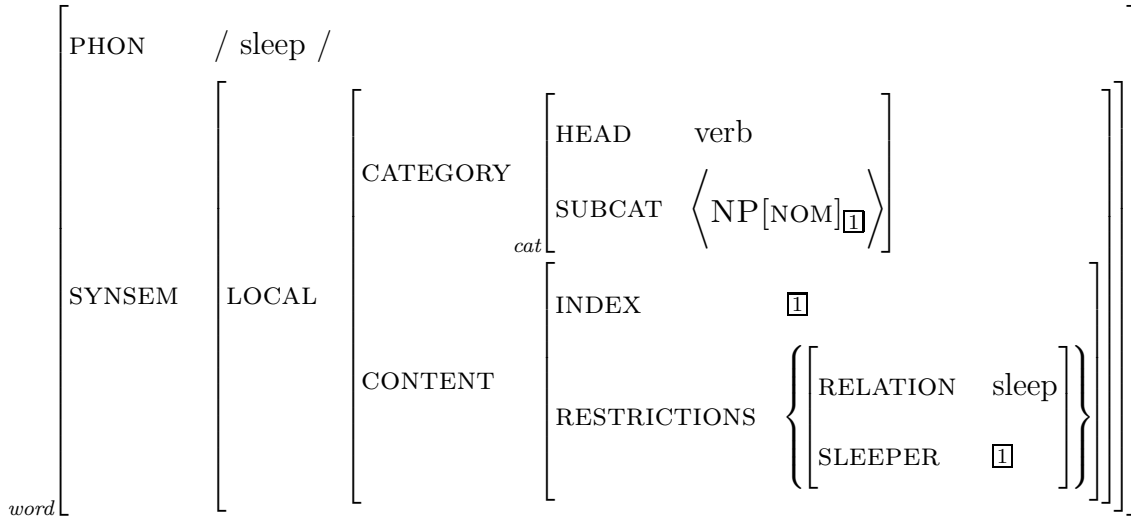
Fig. 5.1: Transitive verb *eat*

as information on how the sign can combine with other signs.

Inside the SYNSEM, a node with the label *local* must have the following appropriate feature labels: CAT(EGORY), and CONT(ENT). CAT includes information about the syntactic category of the word and the grammatical arguments this particular category requires. CAT is an object of sort *category* (*cat*), and it contains the attributes HEAD, and SUBCAT(EGORISATION). HEAD is the part of speech type of the word. And, SUBCAT is a list of other signs that need to combine with that part of speech so as to become saturated. For example, a transitive verb has two noun phrases in its SUBCAT list, i.e., its subject and its object.

Observe (5.1) for an example of the transitive verb *eat*, where the attribute value of HEAD of the sign *eat* is a verb, and it subcategorises for a subject in nominative case, and an object in accusative case. In Attribute Value Matrixes (AVMs) such as the one in (5.1), sets are represented by curly brackets (if they are empty, the empty set is represented); and lists are indicated with the use of angle brackets.

CONT represents the contribution of the word to aspects of semantic interpretation within the phrase in which the word occurs. For example, nominals have a feature structure sort called *nominal object* with an attribute called INDEX. The value of INDEX is similar to a reference marker in Discourse Representation Theory. Indices in HPSG have agreement features of PERSON, NUMBER, and GENDER. Semantic restrictions on the index are represented as a value of RESTR(ITION). For example, RESTR is an attribute

Fig. 5.2: Intransitive verb *sleep*

of a nominal object. The value of **RESTR** is a set of parameterized state-of-affairs (psoas). In turn, **RESTR** has the attribute of **REL(ATION)** whose value can either be referential indices or psos. A feature structure that details a relation and its argument attributes is a parameterized-state-of-affairs or psos. The values of these attributes represent contributions to truth-conditional meaning.

An important feature of HPSG is structure sharing, which can be seen in the common intransitive verb in (5.2). Structure sharing is seen through the common occurrences of boxed numerals such as $[1]$. Structure sharing is how attributes of linguistics structure are related in HPSG. That is, there is a token identity between substructures of a given structure following grammatical principles, or lexical specifications. The token identity in (5.2) can be seen through the co-indexing of the subject noun phrase that the verb subcategorises for.

Ginzburg and Sag make the hypothesis that the grammar of natural languages has a rich network of constructions with associated constraints. As we have already noted, signs have two immediate subtypes, i.e., *word* (lexical entries) and *phrase* (phrases). Phrases are classified into subtypes. This hierarchy shows that the sign *phrase* has an immediate subtype

of *headed-phrase* (*hd-ph*). In turn, this type has at least four subtypes: *head-subject-phrase* (*hd-subj-ph*), *head-complement-phrase* (*hd-comp-ph*), *head-adjunct-phrase* (*hd-adj-ph*), and *head-filler-phrase* (*hd-filler-ph*). The type hierarchies only have generalizations specified for the supertype. Thus, all shared properties are just spelled out once.

Immediate dominance schemata are partial descriptions of feature structures of subtypes of *phrase*. There are only a few that are directly concerned with this thesis, and we will explain them here.

Head-subject phrases have the following constraint:

$$(221) \quad hd\text{-subj-ph} \rightarrow \left[\begin{array}{l} \text{SUBJ} \quad \langle \rangle \\ \text{HD-DTR} \quad \left[\begin{array}{l} \text{SUBJ} \quad \langle \langle [1] \rangle \rangle \\ \textit{phrase} \end{array} \right] \\ \text{NH-DTR} \quad \langle \left[\begin{array}{l} \text{SS} \quad [1] \end{array} \right] \rangle \end{array} \right]$$

(221) says that a head-subject phrase has a SUBJ feature with an empty list as its value; it has a head daughter, which is a phrase; and the non-head daughter SYNSEM value is the *synsem* object in the SUBJ list of the head. SUBJ (together with COMPS) is a feature that substitutes SUBCAT as an attribute of feature structures in some approaches to HPSG.

Head-complement phrases are subject to the following constraint:

$$(222) \quad hd\text{-comp-ph} \rightarrow \left[\begin{array}{l} \text{NH-DTRS} \quad \langle \left[\begin{array}{l} \text{SS} \quad [1] \end{array} \right], \dots, \left[\begin{array}{l} \text{SS} \quad [N] \end{array} \right] \rangle \\ \text{HD-DTR} \quad \left[\begin{array}{l} \text{COMPS} \quad \langle \langle [1], \dots, [N] \rangle \rangle \\ \textit{word} \end{array} \right] \end{array} \right]$$

The constraint in (222) says that a head-complement phrase has a head daughter that is a word, and non-head daughters with SYNSEM values identical to the *synsem* objects of the COMPS list of the head. The head daughter of a phrase is referred to by

the HEAD-DAUGHTER (H-DTR) feature. The non-head daughters are referred to by the NONHEAD-DAUGHTERS (NH-DTRS) feature. The tags (or the integers in square brackets) show that the same object appears in the representation in more than one position. In (222), the tags indicate that the *synsem* objects in the COMPS list of the head daughter have the same value as the SYNSEM values of the non-head daughters.

Head-adjunct phrases have the following constraint:

$$(223) \quad hd\text{-}adj\text{-}ph \rightarrow \left[\begin{array}{l} NH\text{-}DTRS \quad \left\langle \left[\begin{array}{l} MOD \\ \left[\begin{array}{l} 1 \end{array} \right] \end{array} \right] \right\rangle \\ HD\text{-}DTR \quad \left[\begin{array}{l} SS \\ \left[\begin{array}{l} 1 \end{array} \right] \end{array} \right] \end{array} \right]$$

The constraint in (223) states that a head-modifier phrase has both a head-daughter and a non-head daughter. The MOD value of the non-head daughter is identical to the SYNSEM value of the head-daughter.

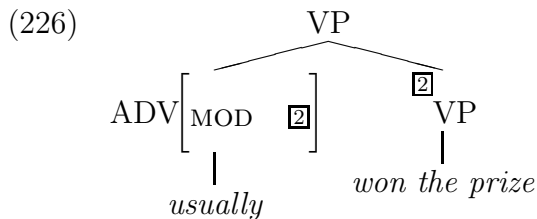
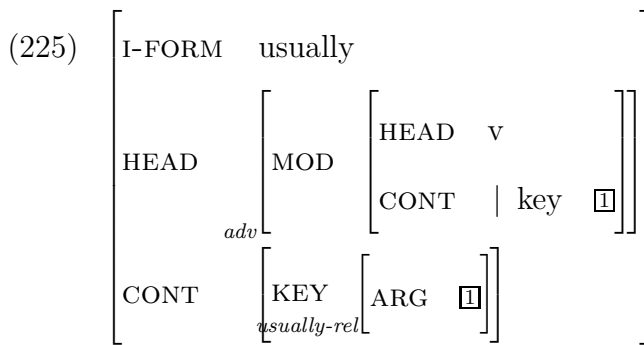
In HPSG, it is argued that adjuncts combine syntactically with the phrases they modify semantically. They form modifier-head structures such as in (224):

$$(224) \quad \begin{array}{c} XP \\ \swarrow \quad \searrow \\ ADV \quad XP \end{array}$$

Semantically, the adverb takes the phrase it modifies as its semantic argument.

In HPSG, adjuncts have a feature MOD whose value has to be identified with the SYNSEM of the head daughter in a head-modifier structure as in (224). This way of treating adjuncts covers adjectives modifying nominal expressions, adverbials modifying verbal expressions, etc.

Observe the lexical entry given for *usually* in [Bouma et al., 2001, 39] in (225) which gives us the tree structure in (226):



This AVM structure says that the adverb *usually* is a modifier of a verb phrase, and the content of this phrase is modified by the content of the adverb in itself. In the tree representation we can see how an adverb such as *usually* is a modifier of a verb phrase, in this case of *won the prize*. Therefore, the content of the VP also gets modified by the adverb.

HPSG is an adequate syntactic theory to deal with discourse as it covers all levels of grammar. There have been previous attempts to integrate HPSG with DRT, namely UDRT and MRS explored in the following sections.

5.2 Classical Approach to Semantics in HPSG

The semantics approach in Pollard and Sag [1994] has an important drawback regarding the concern of this thesis. Normally, adjuncts such as quantificational and modal adverbs, have the possibility of introducing scope ambiguities. If we wanted to capture these scope ambiguities, the meaning of adjuncts would need to be included into store (QUANTIFIER-STORE or QSTORE).

The Semantic Principle in Pollard and Sag results in fully specified analyses since this

principle specifies the inheritance of QSTORE to the higher levels of structure. In these higher levels, if a value of QSTORE is instantiated to RETRIEVED, this value is taken out the store and becomes a value of QUANTIFIERS (QUANTS) in the CONTENT feature. The relative scope is fixed by the order in which the semantic value of quantified NPs are retrieved.

Let us illustrate with an analysis of a sentence with a quantifier. The analysis of the sentence *I know a poem* is illustrated in figure (5.3). As we can see, the quantifier *a* (part of the noun phrase *a poem*) starts as a value of the QSTORE in the noun phrase. It is then retrieved at a higher level of the structure, that is, it is retrieved at the top sentence level where the quantifier *a* becomes the value of QUANTS.

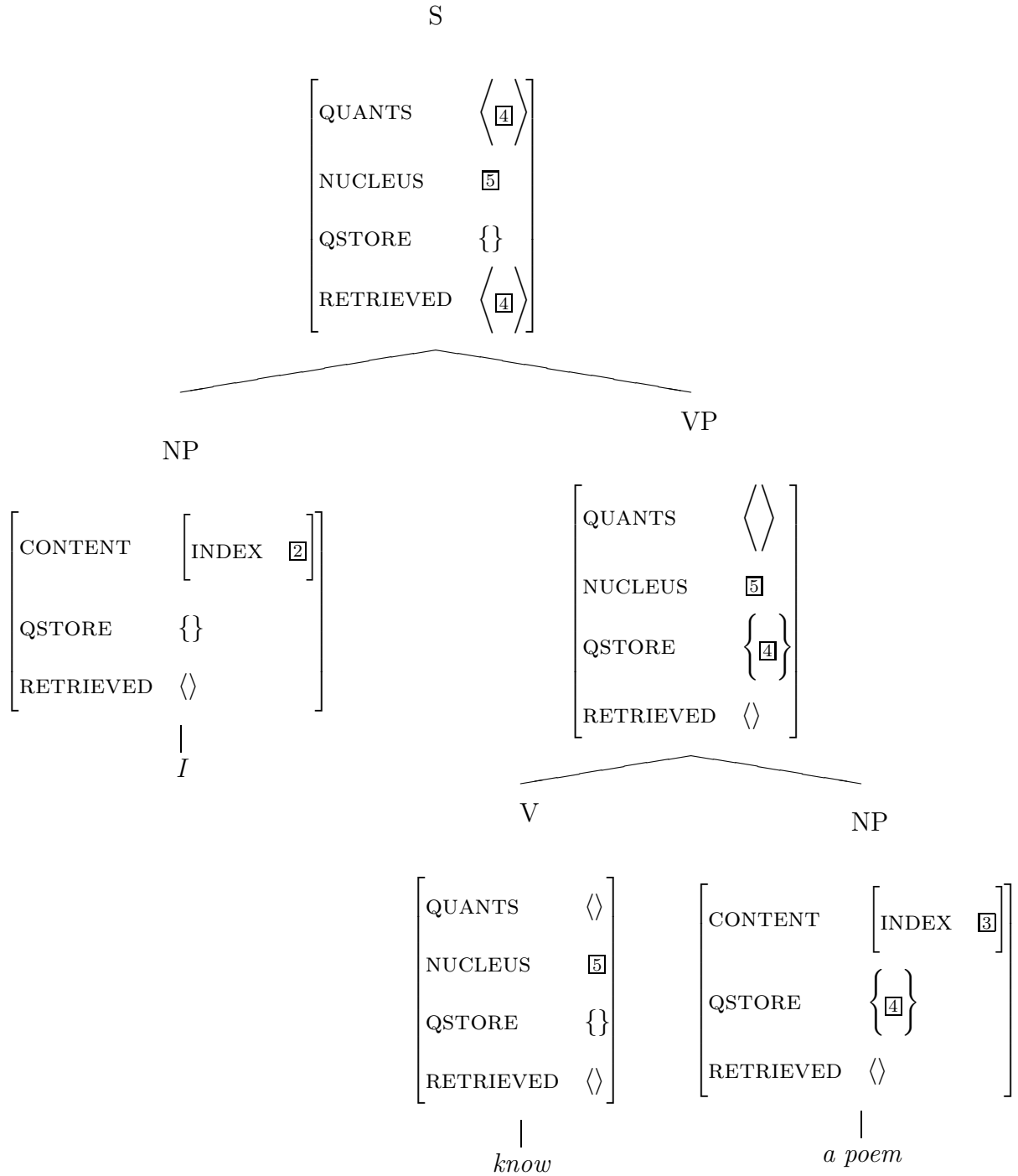
In Pollard and Sag, the treatment of adjunct structures is similar to the treatment of other types of structure (as the one we have illustrated above). In this approach, the adjunct structure treatment has to be modified in order to take into consideration the possible scope ambiguities caused by an adjunct. As it stands, Pollard and Sag approach to semantics cannot reflect the scope ambiguities that adjuncts can introduce. In this approach, adjuncts are not arguments, meaning that they cannot access the QSTORE, and ultimately they cannot become a value of the QUANTS in the CONTENT feature.

For example, this approach would not be able to contemplate the ambiguity of the following sentence:

(227) A unicorn probably walks.

This sentence can have two different meanings: one is that there is a unicorn among all unicorns in the world that may be walking; and the second interpretation is that if a unicorn exists, then it may have the ability to walk. The adjunct *probably* introduces ambiguity into the sentence. However, this semantics approach to HPSG does not allow for an analysis displaying the ambiguity since *probably* is not an argument that can access the

Fig. 5.3: I know a poem



QSTORE. Thus, *probably* cannot become a value of QUANTS in the CONTENT feature. The structure given in Pollard and Sag cannot reflect the scope ambiguities of the sentence.

The syntactic analysis of adjuncts in HPSG is our preferred choice. That is, adjuncts are functions that take heads as arguments. HPSG enables adjuncts to select their heads through the head feature MODIFIED (MOD). Then, in a head-adjunct structure, the content of the mother and the content of the adjunct are token-identical. The content of the head is incorporated by structure sharing.

However, the classic approach to semantics in HPSG needs to be reconsidered. Frank and Reyle [1995] pointed out that the treatment of adjuncts is not the only case in which HPSG cannot deal with underspecified structures (others include negation, plural NPs, or indefinite NPs). Bouma et al. [2001] point out that Pollard and Sag [1994] semantic approach fails to provide a unified account of extraction dependencies. Alternatively, Copestake et al. [2001] offer a version of HPSG that covers underspecification; Asudeh and Crouch [2001] modify HPSG semantics into glue semantics with a different treatment of modifier scope; and Ginzburg and Sag [2000] use situation semantics, an approach conceptually similar to event semantics.

A DRT approach as a semantic formalism overcomes the issue posed by this traditional semantics approach in HPSG. In the following section, we will summarize and analyze one approach which tried to integrate HPSG with a DRT approach. That is, we will review MRS.

5.3 Minimal Recursion Semantics

Minimal Recursion Semantics (MRS) is an approach of semantic representation for underspecification designed by Copestake et al. [2001]. MRS is not a semantic theory in itself, it is a meta-language that describes semantic structures. MRS has been integrated with

HPSG.

The MRS object language is predicate calculus with generalized quantifiers and it aims to flatten the representation for the benefit of semantic transfer in machine translation and other natural language processing applications.

The fundamental assumption in MRS is that the primary units are elementary predications or EPs. An EP is a single relation with its own arguments. Generally, an EP represents a single lexeme; and since the semantics are flat, one EP never embeds another one. An EP has four components: a handle, a label, a relation, and a list of zero or more variable arguments of the relation. The handle represents the label of the EP. Handles allow us to evaluate any node for a given tree separating it from its parents or daughters. Handles are tags that correspond to scopal argument positions. They are called handles because they allow us to have a point to grab an EP. The label identifies the particular tree node. If EPs share a label, they are on the same node, hence, there is an EP conjunction. Let us look at an example:

(228) Every big white horse sleeps.

(229) h0: every(x,h1,h2),
 h1: big(x), h1: white(x), h1: horse(x),
 h2: sleeps(x)

(230) h0:every(x)
 $\begin{array}{c} \diagup \quad \diagdown \\ h1 \quad h2 \end{array}$

In the tree above we see that the top handle is h0, part of the EP for *every*. This EP is outscoping two other handles, that is, it is outscoping two bags of EPs represented by the handles of h1 and h2 which are spelled out in (229).

The second element of an EP is the relation, an instance in the above example is ‘white’. The third element of the EP is a list of zero or more ordinary variable arguments of the

relation, for instance, the ‘x’ in horse(x). And the fourth element of the EP is a list of zero or more handles corresponding to scopal arguments of the relation, such as h1 and h2 in every(x,h1,h2).

An MRS structure is a tuple $\langle GT, R, C \rangle$. GT is the Global Top which corresponds to a handle whose label is the highest in an EP conjunction; there is no other handle that outscopes GT. R represents the bag of EPs; and C is the bag of constraints on the outscopes partial order. This bag can be empty if there are no constraints.

An MRS is scope-resolved if it satisfies two conditions. The first condition is that the MRS structure forms a tree of EPs in which the outscopes ordering on EP conjunctions decide the dominance. The second condition is that all handle arguments and the top handle are identified with an EP label. Consequently, all EP labels in a scoped MRS structure must be identified with a handle argument in some EP; with the exception of the top handle, which is the label of the top node of the tree structure.

Copestake et al. define a qeq constraint (also represented as $=_q$) in order to resolve any underspecifications. The acronym of this constraint stands for *equality modulo quantifiers*. This constraint makes semantic composition possible. qeq constraints relate handles in an argument position to a label. An argument h is either directly filled by a label l, or one or more quantifiers fill the argument position. For example, the argument of a quantifier could be filled either by the label l or by the label of another quantifier which has the label l in its body. The qeq constraint is either an equality relationship or a specific form of outscopes relationship in which the first element of the equation either outscopes or is equal to the second element of the qeq relation.

The MRS structure requires another element for semantic composition. This extra attribute is the local top, that is, the topmost label in an MRS (which is not the label of a floating EP). In the case of phrases that only contain floating EPs, the local top is not bound to any variable. Hence, the MRS structure is a tuple $\langle GT, LT, R, C \rangle$ where LT

is the local top.

Each lexical item has a single distinguished main EP referred as the key EP. Other EPs might share a label with the key EP, or in any other case, they are equal to or qeq to some scopal argument of the key EP. There are three scenarios to consider. Firstly, the case in which the key is a non-scopal EP or a fixed scopal EP. In this situation, the ltop handle of the MRS is equal to the label of the key EP. The example offered by Copestake et al. [2001, 19] is the following:

(231) $\langle h_0, h_1, \{h_1:\text{dog}(x)\}, \{\} \rangle$

where h_0 is the global top, h_1 is the local top, $\{h_1:\text{dog}(x)\}$ is the bag of constraints, and there are no handle constraints.

Secondly, the key could be a floating EP in which case the ltop handle of the MRS is not equated to any particular handle. For example:

(232) $\langle h_0, h_3, \{h_4:\text{every}(y,h_5,h_6)\}, \{\} \rangle$

where h_0 is the global top, h_3 is the local top, $\{h_4:\text{every}(y,h_5,h_6)\}$ is the bag of constraints, and there are no handle constraints.

Thirdly, a lexical entry might have an empty EP bag, in which case there is no key EP and the MRS structure of the lexical entry has an unequated local top handle: $\langle h_0, h_1, \{\}, \{\} \rangle$.

The bags of EPs of all the daughters are appended to construct the bag of EPs of a phrase. All handle constraints on daughters are kept. The global top of the phrase is identified with the global top on each daughter. Two classes of phrase formation and a root condition have to be taken into account to determine the local top of a phrase and any other qeq constraints.

One type of phrase formation consists of an intersective combination. In this class, local tops of the daughters are equated with each other with the local top of the MRS phrase.

This covers both modification and verb complementation. For example, the phrase *red watch* has the following MRS structure: $\langle h0, h1, \{h1 : red(x), h1 : watch(x)\}, \{\} \rangle$; *red* having the MRS structure $\langle h0, h1, \{h1 : red(x)\}, \{\} \rangle$; and *watch* $\langle h0, h2, \{h2 : watch(y)\}, \{\} \rangle$. As can be seen from this example, the handles of both daughters have been equated to *h1*, and the list of relations in the mother node is a union of the relations of the daughters; i.e., both the relations of *red(x)* and *watch(x)*. The global top of the mother is the same one as the global top of the daughters. Since there are no constraints in either of the daughters, there are no constraints on the mother.

As far as verb complementation, we can see that intersective combination also works in the following example:

(233) $\langle h0, h1, \{h1 : write(y, z), h2 : fiction(x)\}, \{\} \rangle$

(234) $\langle h0, h1, \{h1 : write(y, x)\}, \{\} \rangle$

(235) $\langle h0, h2, \{h2 : fiction(z)\}, \{\} \rangle$

In (233), we have the mother node of the VP *write fiction*. This example shows that the mother node has the same global top as both daughters. The bag of relations in the mother is the union of relations of the daughters plus the fact that the verb has found its complement. Therefore, the value of *x* has been equated to the value of *fiction(z)*.

The other class of phrase formation is a scopal combination which involves a binary rule in the most clear cases: one daughter has scope over another if the former contains a scopal EP. The daughter that contains the scopal EP is the semantic head daughter. The argument that takes the handle of the scopal EP is qeq to the local top handle of the argument phrase. The local top handle of the MRS containing the scopal EP is the local top handle of the phrase. For instance:

(236) a. The MRS for *fight* is $\langle h0, h1, \{h1 : fight(x)\}, \{\} \rangle$

b. The MRS for *probably* is $\langle h0, h2, \{h2 : probably(h3)\}, \{\} \rangle$

- c. The MRS for the phrase *probably fight* is

$$\langle h0, h2, \{h2 : probably(h3), h1 : fight(x)\}, \{h3 = {}_q h1\} \rangle$$

In the case of quantifiers, the scopal argument is at all times the restriction of the quantifier; and the body of the quantifier is at all times left unconstrained. For instance:

(237) a. The MRS for *every* is $\langle h0, h1, \{h2 : every(x, h3, h4)\}, \{\} \rangle$

b. The MRS for *citizen* is $\langle h0, h5, \{h5 : citizen(y)\}, \{\} \rangle$

- c. The MRS for the phrase *every citizen* is

$$\langle h0, h1, \{h2 : every(x, h3, h4), h5 : citizen(x)\}, \{h3 = {}_q h5\} \rangle$$

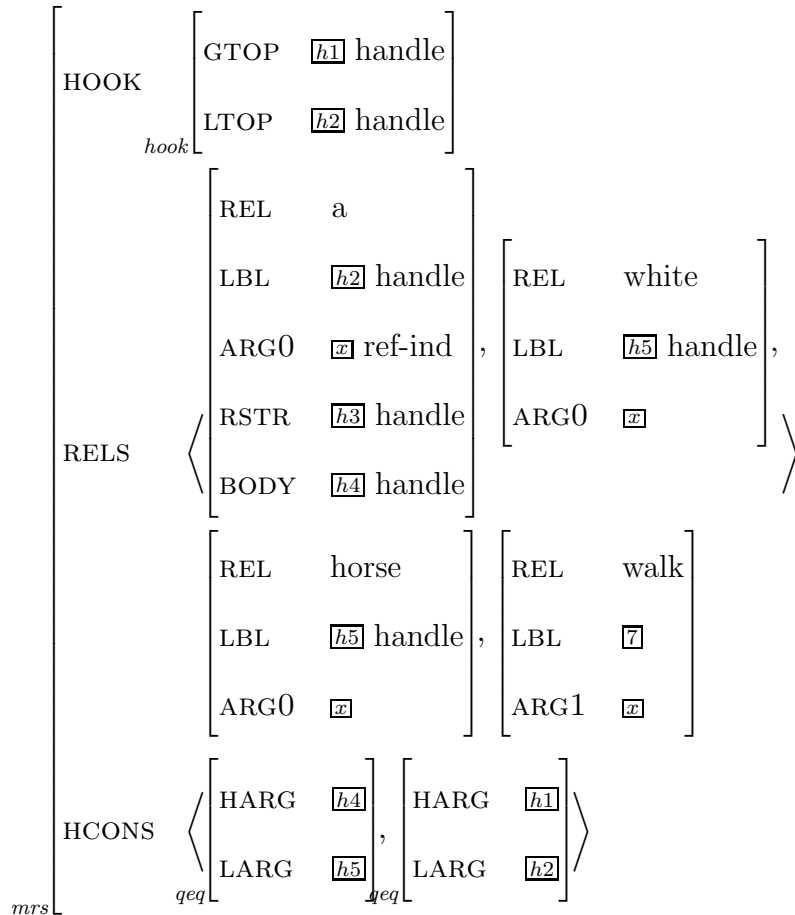
Finally, the root condition says that the global top is qeq to the local top of the root phrase. Thus, the bag of constraints of the phrase must include that $GT = {}_q LT$.

MRS structures have features corresponding to the HOOK, RELATIONS (RELS), and HANDLE-CONSTRAINTS (HCONS). The value of the HOOK is of type *hook* and it defines the features of both GLOBAL TOP (GTOP) and LOCAL TOP (LTOP), which in turn has the values of the global and the local top. HOOK also includes the INDEX, which value is a distinguished normal variable; i.e., not a handle. HOOK is used to put together the features specifying the parts of an MRS visible to semantic functors. RELS has the bag of EPs in the form of a list as its value. HCONS value are the handle constraints also in a list form. Any individual qeq constraints is of type *qeq* and has the corresponding features for the handle of the argument position; i.e., HARG; and the corresponding features for the label handle; i.e., LARG. In figures (5.4) and (5.5), we can see a couple of representations of MRS.

5.4 Conclusion

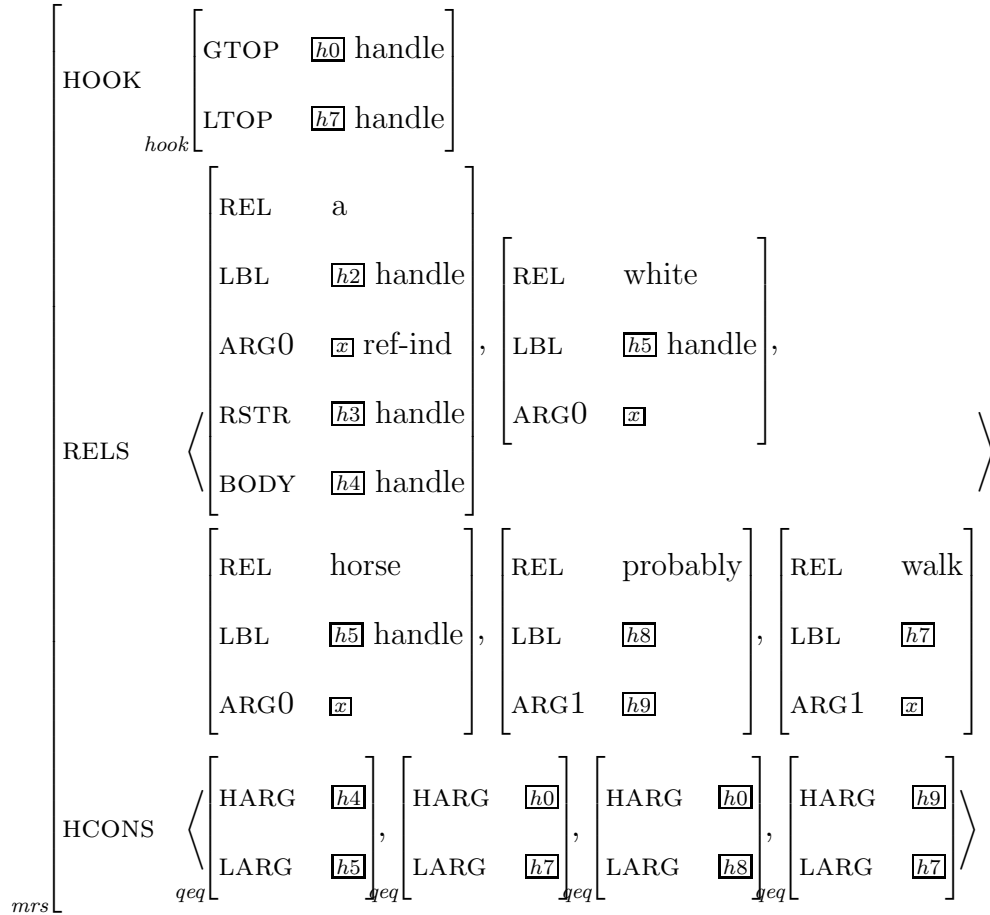
In this chapter, we have reviewed the syntactic theory used in this thesis, namely HPSG. Head-Driven Phrase Structure Grammar is a generative grammar with the goal of build-

Fig. 5.4: A white horse walks



$\langle h1, h2, \{ h2:a(x,h3,h4), h5:white(x), h5:horse(x), h7:walks(x) \},$
 $\{ h4=_q h5, h1=_q h2 \} \rangle$

Fig. 5.5: A white horse probably walks



$\langle h0, h1, \{ h2:a(x,h3,h4), h5:white(x), h5:horse(x), h8:probably(h9), h7:walks(x) \},$
 $\{ h4=_q h5, h0=_q h7, h0=_q h8, h9=_q h7 \} \rangle$

ing a theory of the knowledge in the mind of the speaker that makes language possible. HPSG is a non-derivational, constraint-based, surface oriented grammatical architecture. It is non-derivational because HPSG has no notion of deriving one structure or representation from another. On the other hand, in HPSG, different representations are parts of a larger structure related by constraints. Therefore, it is a constraint-based approach. It is surface oriented because it gives a representation of the surface order of elements in a sentence. In addition, HPSG is lexicalist because it uses a rich and complex lexicon in its representations. As we have seen, HPSG representations use feature structures, written as attribute-value-matrixes (AVMs) in order to represent grammar principles, grammar rules and lexical entries.

We have also reviewed an approach formalising the semantics of HPSG, namely MRS. MRS semantic composition uses unification. We will use MRS for the semantic representation of *anyway*, as MRS is the approach used by Asher and Lascarides [2003].

6. ANYWAY: A LITERATURE REVIEW

This chapter reviews major literature research on anyway.

6.1 Introduction

In this chapter, we will review previous literature about *anyway*. We will review several articles which come to very different conclusions. First, we will take a look at Owen [1985] who gives four different uses to *anyway* following a conversational analysis study. Then, we will review Altenberg [1986] approach who proposes that *anyway* has two different meanings: transition or concession. Although some authors believe that *anyway* was a push-pop device, Ferrara [1997] argues that there are three different uses of *anyway*, two of which are adverbial and one has discourse marker use. On the other hand, Lenk [1998] argues that *anyway* has two uses as a discourse marker (to mark the end of a digression, and to mark an end of topic), and three uses as an adverb (explanation, modification, or intensifier). Takahara [1998] only considers *anyway* when it has a meaning of topic dismissal. In contrast, González [2004] argues that there are three different uses of *anyway* with three different discourse marker functions: one introduces a conclusion, a second function would be a boundary marker, and the third would have the function of a resumption cue.

6.2 *Literature Review: Various Approaches to Anyway*

First of all, we will quickly survey some short notes on *anyway* appearing in a variety of literature.

Halliday and Hasan [1976] state that *anyway* is a morphologically compound adverb as *nevertheless* or *therefore* are. (This is a matter we will review in chapter 8 by discussing both the meaning of *any* and *way*.)

Halliday and Hasan argue that *anyway* may have a diversity of meanings. First, *anyway* can have an additive meaning comparable to *and then* when it appears with the conjunction *and*. Secondly, *anyway* can have a resumptive meaning, rather, it can assume such an internal relation comparable to *to resume* or *to come back to the point*. Thirdly, *anyway* can show an adversative relation, which is contrary to the expectation. This meaning may be derived from the content, or the environment of the participants. Then, *anyway* can also have a dismissive meaning corresponding to *no matter which*. Also, *anyway* can brush the preceding sentence aside; and it can also function as a resumptive synonym to *anyhow* or *at any rate*.

In conclusion, Halliday and Hasan maintain that *anyway* is used for either adversative or dismissal meaning. In the latter case, it is synonymous to *in any case*, *in either case*, and *whichever way it is*. It can also be open-ended as *in any case*, *anyhow*, *at any rate*, and *however it is* are. The authors conclusion are close to the conclusions drawn by Altenberg [1986] discussed in this chapter.

Knott and Dale [1994] argue that *anyway* is a relational phrase that may be used as a motivating device for coherence relations. It is a conjunction adverb similar to *by the way*. Though both *by the way* and *incidentally* are classified by the authors as antonyms of *anyway*; all of them are markers of digression.

Knott and Dale classify *anyway*, *in any case* and *in any event* as interruptions to

return to a previous point. We agree with this view. However, they completely disregard the adverbial use of these particles (we will be using Knott and Dale approach in order to test for synonyms of *anyway* in chapter 7, both as a discourse marker and as an adverbial).

Now we will proceed with an exploration of literature on *anyway* which has been a bit more extensive than that of the previous authors mentioned.

6.3 *Literature Review: Owen [1985]*

Owen [1985] views *anyway* as a conversational device or expression to organize discourse. Owen claims that the particle indicates some kind of boundary though not necessarily a boundary between topics. *Anyway* indicates a boundary that structures conversational activities; that is, *anyway* can indicate that a conversational activity is being changed.

The author claims that *anyway* has four major functions: as a closing initiation and return to main topic, i.e., a resumption activity (see (238)); as an offer to close (see (239)); as an indication of a misplaced activity, a replacement or a contradiction (see (240)); and as a set-aside of a previous assertion or an implication that the previous assertion is seen as unnecessary or irrelevant (see (242)). All these functions structure conversational activities. The author uses her own judgment on real conversation examples in her approach.

The first function as a closing initiation and return to main topic (a resumption activity) is distinguishable through its separate tone group from the rest of the utterance; and it always appears at the beginning of a sentence.

In this use, *anyway* can be seen as a topic marker: a right hand parenthesis closing off an inserted topic; it can also be seen as if *anyway* is initiating closing sequences. Therefore, *anyway* does not indicate a shift of topic boundary, but it indicates the conversational activity of closing. After uttering *anyway*, the intervening matter of the conversation is set aside, and it is seen as subordinate or inessential. Observe the following example (Owen

[1985, 77]):

(238) R: Yes, I think it's probably quite interesting. Yes.

C: Mm.

R: Yup.

C: *Anyway*, um, oh well, I'll see you tomorrow.

In (238), *anyway* precedes an utterance with no propositional content (this includes hesitation or hedges). As can be seen in the example, *anyway* is used to initiate the closing sequence of the conversation between speakers C and R.

The second use of *anyway* described by Owen is a conversational unit representing an offer to close. Because there is an offer to close, it offers the floor to other participants to introduce a new topic if desired. This use has a separate tone unit; and it appears at the start of an utterance. An example of this use given in Owen [1985, 82] is the following:

(239) M: You feel as if you don't want to stay in the same place.

J: No.

M: that where you've been with your parents.

J: Yes. Yes.

M: Mm.

J: But uh *anyway*

M: By the way Jenny, did you get my anniversary card?

In the above example, J concedes the turn to M to close off the conversation or alternatively, to start with a new topic. This is done by using *anyway*. In this case, the utterance is usually followed by a pause. This would indicate that the speaker does not have intention to continue speaking; and in this case speaker J has offered speaker M the chance to start a new topic: whether or not Jenny has received an anniversary card.

The third function of *anyway* described by Owen marks a misplaced remark on the conversation; for example, asking for someone's health half way through a conversation may be regarded as a misplaced remark, as it would seem to be off topic. In this function, *anyway* has a separate tone unit to the rest of the sentence and it appears at the end of a sentence.

An example of this third use comes after a discussion between two speakers regarding a meeting for the following day and the possible activities that they could do on that day; after speaker I has agreed to all of what has been said, participant J says the following (Owen [1985, 84]):

(240) So that was it. How's Des *anyway*?

Owen argues that this is a misplaced remark since you would expect to hear it at the start of the conversation and not nearly at the end of it. The utterance is not related to the previous topic. However, the meaning of *anyway* permits to place this remark at this point in the discourse.

The fourth use of *anyway* does not have any apparent discourse function apart from setting aside some prior assertion or giving the implication that the phrase preceding *anyway* is unnecessary or irrelevant. This fourth use does not have a separate tone unit; and it appears at the end of the sentence.

This use of *anyway* could be paraphrased as *even if* or *despite*. This use adds extra reasons to something that had a reason already. An example of this is the following (Owen [1985, 87]):

(241) I shall come down there tomorrow at three *anyway*.

The author does not give us any background in regards to where in the discourse this sentence appears. Following Owen's description of this fourth use, what the sentence in (242) would be implying is that is unnecessary or irrelevant for the rest of the discourse.

Owen argues that *anyway* is a conversational device or expression to organize discourse. In this sense, Owen believes that *anyway* has slightly different functions in discourse, but at the same time, those different uses have a commonality. In particular, Owen claims that *anyway* indicates some kind of boundary that structures conversational activities; that is, *anyway* can indicate that a conversational activity is being changed.

We believe that Owen's classification is not sufficiently precise. If we offered this classification to various annotators to use it in a variety of examples, it would be highly unlikely that all the annotators would come up with different results. For example, in the instances of *anyway* in (238) and (239), both seem to be closing a conversation; it would be very hard to tell if it is an offer to close or a conversational activity of closing. Besides, it is doubtful whether a question such as in (240) is actually a misplaced activity.

Moreover, Owen's classification does not observe other possible uses of *anyway*, for example, when *anyway* is used as *besides* would be; e.g. *I could eat anything. Anything that is edible anyway.*

In the next sections, we will now introduce other views on *anyway*, and we will compare Owen's approach as we review other authors.

6.4 *Literature Review: Altenberg [1986]*

According to Altenberg [1986] *anyway* can be classified into two main functions: concession and transition. Both functions have their own sub-classification. Concession can be sub-classified into an unrestricted use, and a restricted use. Transition can be sub-classified into dismissal only, and both dismissal and resumption of the previous topic. Altenberg uses examples from other authors as well as examples extracted from real data.

In the case of concession unrestricted, *anyway* is prosodically marked by a nucleus of a long tone group and it is positioned at the end of the clause. The scope of *anyway* in this

case is the whole clause.

This concession unrestricted *anyway* can be used as a preamble to a contradiction or argument. It is marked by a pause before it and it prefaces an explicitly-made hedge on the assertion that has just been uttered.

An example of an unrestricted concessive relation is the following:

(242) I shall come down there tomorrow at three *anyway*. (Owen [1985, 87])

According to Altenberg, in (242), *anyway* indicates a sense of contradiction with a prior utterance. On the other hand, this example corresponds to the fourth use of *anyway* for Owen [1985] where *anyway* would be an instance where we are setting aside some prior assertion; or *anyway* would imply that the argument set is somehow unnecessary or irrelevant.

In the case of a restricted function, *anyway* points to a phrase or word which is marked by contrastive stress. The particle is unmarked and normally stressed. The scope of *anyway* in this case is a phrase or a word. This function of *anyway* can be paraphrased as *at least*, as can be seen from the following pair (Altenberg [1986, 36]):

- (243) a. Here, it is called the three one one going into it, according to this map *anyway*.
 b. Here, it is called the three one one going into it, *at least* according to this map.

As we can see from the example, the paraphrase with *at least* has the same meaning as that particular use of *anyway*. This use described by Altenberg is not equivalent to any of the uses of *anyway* described by Owen [1985].

The following is an example of the transition dismissive use of *anyway* as described by Altenberg (Svartvik and Quirk [1980, 76]):

(244) *Anyway*, be that as it may.

In this example, the speaker has dismissed the topic, but s/he has not resumed to the previous topic as would be the case in the following example (Altenberg [1986, 37]):

- (245) But that didn't happen until long after the British and the French and American armies had really sort of...*Anyway*, I'm sorry I was digressing but what I mean is that the German General staff was very impressive in its hay day.

In (245), *anyway* is used to dismiss a topic, in the example an unfinished topic related to the British, French, and American armies; also, *anyway* is used to resume to the previous topic, and this is clearly marked by the speaker as he adds the phrase *I'm sorry I was digressing*.

The last two uses described by Altenberg correspond to the first use described by Owen [1985] where *anyway* is used to close an initiation, and resumption to a previous topic. Owen does not make the difference that Altenberg does, that is, Owen does not differentiate between dismissal only and dismissal and resumption. However, Owen distinguishes between an end of a topic marker use, and an offer to close. This distinction is not made by Altenberg.

We consider that the classification of *anyway* drawn by Altenberg is precise in the sense that different annotators would be able to reach the same results with this classification. Altenberg highlights that there are two sets of uses that are closely related, namely, two transition uses, and two concession uses. The former are the discourse marker uses: dismissal and both dismissal and resumption. As we will see, Altenberg is not the only author to create such a distinction. Concession uses are equivalent to adverbial uses. One reflecting the contrastive use of *anyway*, and the other the modificative use of *anyway*. However, Altenberg does not relate these four uses; that is, he does not point out whether there is any relation among classes.

The classification drawn by Altenberg does not cover all possible uses of *anyway*. In

particular, Altenberg does not cover a dismissive *anyway* that would be paraphrasable with *regardless*. Besides, Altenberg does not consider possibilities in which *anyway* appears in wh-interrogatives.

In regards to example (242), Altenberg argues that *anyway* indicates a sense of contradiction with a prior utterance. Rather, we argue that in examples such as this, *anyway* corresponds to whatever the truth value of the prior utterance, the content is both the prior utterance and the utterance where *anyway* appears. In this sense, we do not see any contradiction between prior and current utterance.

6.5 *Literature Review: Ferrara [1997]*

Ferrara [1997] describes three uses of *anyway*, two of which are adverbial, and the third is a discourse marker. The first subtype, named *Anyway*₁, is additive and it carries the meaning of *besides*. *Anyway*₂ is a dismissive *anyway* and it carries the meaning of *nonetheless*. *Anyway*₃ is the discourse marker use and it is labeled by the author as the resumptive *anyway*. This particle reconnects sentences to chunks of discourse. It supports an organisational continuity with the main topic or the main aim of the discourse.

6.5.1 *Anyway*₁

This type of *anyway* is syntactically positioned at the end of a clause though it can also occur clause-medially. The typical sentence pattern of *Anyway*₁ presented by Ferrara [1997, 349] is the following:

- r: P Q *besides*; where:
 - r represents some kind of conclusion;
 - P is an argument to justify this conclusion r;
 - and Q is an argument presented as not necessary to the argumentation of r; the

speaker pretends not to utilize it but does evoke it regardless.

Ferrara [1997, 355] gives the following example to illustrate the use of *Anyway*₁:

- (246) a. r: I couldn't go to the party
 b. P: cause I was on codeine.
 c. Q: My mom wouldn't let me *anyway*.

Here we have r as a conclusion, the fact that the speaker could not go to the party. Then, we have P, an argument to justify this conclusion. In the example, the conclusion is the fact that she could not go to the party because she was taking codeine. And finally, we have an extra argument Q to justify that conclusion. In the example, the fact that the mother of the speaker would not have let her go out even if she had not been taking codeine is the supporting or extra argument Q.

Ferrara [1997] describes this type of *anyway* as having a particular type of intonation. It shows a flat or level intonation contour; in the Pierrehumbert notation represented as L^*L .¹

¹ Pierrehumbert [1980] describe intonational contours or tunes as sequences of low (L) and high (H) tones in the fundamental frequency (F0) contour (the physical correlate of pitch). The domain of these tunes is the intonational phrase. The intonational phrase is described through the following terms: pitch accent, phrase accent, and boundary tone.

Pitch accents are aligned with the stressed syllables of lexical items and they appear as peaks or valley in the F0 contour. Thus, the stressed syllable is the most prominent. However, not all potential stressed syllables are actually accented, then, we need to distinguish between lexical stress and pitch accent. Accented lexical items bear pitch accents while deaccented lexical items do not. The nuclear stress is the most prominent accent in a phrase. These accented syllables also tend to be longer and louder than deaccented ones.

Pierrehumbert describes six types of pitch accent in English. All of them are composed of either a single high (H*) or a single low (L*) tone or a combination of the two: L+H*, L*+H, H*+L, or H+L*. The

There are no apparent similarities between the first use of *anyway* described by Ferrara and any of the four uses described by Owen [1985]. However, this first use described by Ferrara is very similar to the unrestricted concession use described by Altenberg [1986] in the previous section.

6.5.2 *Anyway*₂

According to Ferrara, dismissive *anyway* usually co-occurs with a negative observation followed by *but* and a positive or neutral evaluation. The structure of the sentence in which the adverb occurs is provided by Ferrara [1997, 350]:

- S *but* E *Anyway*₂; where:

S is a negative observation;

but introduces E which is a positive or neutral evaluation; and in E we find an instance of *Anyway*₂

A couple of examples of *Anyway*₂ are given in Ferrara [1997, 355]:

tone aligned with the stressed syllable of an accented lexical item is indicated by the star (*). All these types of pitch accent are associated with an information status.

H* is used to indicate the introduction of new information. L* is used to show that an item is salient in the discourse, but shouldn't be added to the mutual beliefs of the speakers (e.g. yes/no interrogatives). H*+L accents are marked as inferable from the mutual beliefs of the speakers. H+L* accents are inferable, but not to be added to the mutual beliefs by the hearer. L*+H accents are used to convey uncertainty or incredulity. And finally, L+H* accents evoke a scale and add new information for the mutual beliefs of the hearer.

Prosodic phrasing has two levels according to Pierrehumbert: the intonational phrase and the intermediate phrase. An intonational phrase has more than one intermediate phrases and a boundary tone, which may be high (H%) or low (L%). A well-formed intermediate phrase has one or more pitch accents and a high or a low phrase accent. The phrase accent basically controls the pitch between the last pitch accent of the present intermediate phrase and the end of the utterance.

- (247) a. S: She wasn't supposed to wear the necklace,
 b. E: but she did *anyway*.

- (248) a. S: You don't look hurt,
 b. E: but you'd better go to the hospital *anyway*.

In these examples, S are sentences containing a negation particle. In (257), there is a certain woman who was not supposed to wear a piece of jewelry; and in (248), the sentence is addressed to someone who appears not to be hurt. Then, we find an evaluation E in both cases, which is introduced by the conjunction *but*. This evaluation E represents a positive or neutral evaluation over the negative observation made in sentence S. In (257), the fact that the woman wore the necklace despite not being supposed to; and in (248), the fact that the person should go to the hospital despite not looking hurt.

According to the author, *Anyway*₂ has distinctive intonation, different from *Anyway*₁. It shows a gentle rise followed by a gentle slope down; in the Pierrehumbert notation represented as H*L.

Ferrara's *Anyway*₂ is similar to the fourth type of *anyway* described by Owen [1985]. Owen believes that this use of *anyway* can be paraphrased as *even if* or *despite*. According to Owen, there is an addition, as Ferrara describes for *Anyway*₂. However, this classification would not bear any resemblance to the types classified by Altenberg [1986].

6.5.3 *Anyway*₃

The discourse marker *anyway* is always sentence initial. Ferrara [1997, 351] says that '*this discourse marker connects more than two sentences; it connects two levels of representation, and the resumptions can span large passages of intervening text in personal narrative.*' An example is given in Ferrara [1997, 355]:

- (249) They got up early. That's rare for them. *Anyway*, they left at noon.

In (258), the speaker starts a narration of what a group of people did on a particular day. The first thing the speaker mentions in the first sentence is the fact that the group of people got up early. Then, the speaker offers a personal comment on the fact that the group of people got up early, that is, that it is somehow unusual for them to do such a thing. Since this is a comment or personal opinion, it cannot be considered part of the main narration. At least, the speaker believes that the personal opinion is not part of the main narration. This is the reason why when the speaker wants to continue with the story by saying that the group of people left at noon, the speaker uses *anyway*. By using the discourse marker, the speaker resumes the comment previously made; and s/he continues with the main thread of the story.

Anyway₃ is a marker of digression. Digression is a deviation from the main topic, central theme, or purpose of a discourse. Digression is common and frequent but not trivial. It can be either conscious or not conscious, and it can be used strategically. Thus, it appears both in planned and unplanned speech.

The pitch contour for the discourse marker use is very distinct in comparison with the other two adverbial uses. It shows a sharp rising peak followed by a low drop. The discourse marker has the most dramatic and attention-getting contour because the rise and sharp fall create a very noticeable contrast. The representation for this in the Pierrehumbert notation is L*+HL(L%).

According to the study conducted by Ferrara, Anyway₃ is more frequent than the two adverbial uses of *anyway*. Ferrara divides the different occurrences of Anyway₃. The author characterizes different occurrences of Anyway₃ in regards to who the speaker is and how the information is organized around *anyway*. (Observe table (6.5.3) for a summary of this classification.)

- A 74% of occurrences of Anyway₃ in the data analyzed by Ferrara were teller-triggered cases of the discourse marker. These mark digressions by the speaker.

Tab. 6.1: Subtypes of Anyway₃ in Ferrara [1997] Data

Teller Triggered Cases	Self-digression
	Statement of non-remembrance
	Description of Mental State of Affairs
	Shift from the Paralinguistic
	Hesitation or Word Search
Listener Triggered Cases	Acknowledgment
	Inserted Comments

1. A 40 % of these teller-triggered cases are self-digression management cases. From this self direction arrangements of the speaker, some occur preceding orientational detail given by the speaker. For example (Ferrara [1997, 362]):

(250) We had a flashlight ourselves, so we didn't think we needed any; but he had a flashlight; and led us up the little trail up the little hill there. And we were getting up pretty close to the place where our camps were. And we were coming in around the back side. The little trail that goes up there was around the back side of the two camps. *Anyway*, he got up there kind of between where our cabins were and all at once he yelled 'Get back! Get back!'

In this monologue, the speaker is telling a story that happened to her. While the speaker narrates the story, the speaker introduces a digression framing the landscape in which the action occurred. This is a point besides the story; it is not a central part of the story. Therefore, the speaker resorts to the use of *anyway* in order to restore her story after the little framing digression.

2. In some occurrences, *anyway* is used as an explicit statement of non-remembrance,

for instance (Ferrara [1997, 362]):

(251) I was in the fifth grade, or sixth grade, or something; and I was a Brownie. I was a Brownie at the time so I must have been like in the fifth grade. No. I was a girl scout. I can't remember what I was now. *Anyway*, we went camping in February and it was cold.

As can be seen in (251), the speaker is trying to tell a story which happened in her childhood, but the speaker cannot recall the exact period of time in which it happened. After wondering about her age and recalling the kind of activities she was enrolled in to establish some kind of time frame, she admits that she cannot remember. It is after this acceptance of non-remembrance that the speaker needs to pick up the main thread of her story, and in order to do so, she uses *anyway* to continue with her main story.

One could argue that this is not really different from the cases of digression seen above, therefore, due to the small number of occurrences, this subtype of *anyway* would not deserve its own category.

3. A 20% of the occurrences are after verbs such as *think*, *know*, etc., which are used to discuss the mental state of affairs of the speaker; observe the following (Ferrara [1997, 362]):

(252) His dad walked in. His dad said we screwed up, and that we just lost our motorcycles. And Gardland starts crying. I could only think what I would say to my parents. I should say that I lost my motorcycle, it got confiscated. *Anyway*, we're sitting there and I think that the other guy agrees with Gardland's dad. I think they were screwing us. *Anyway*, they told us they would confiscate the bikes if we got caught again. And they gave us our motorcycles back.

In (252), the speaker uses *anyway* in two different occasions. In both instances, the discourse marker is used after the speaker has introduced some of his own thoughts or/and ideas into the main story. First, he wonders how to explain the story to his parents; and then, he wonders about the intentions of the people who were trying to confiscate his bike. On both occasions, since the reflections of the speaker over the actions do not form a direct part of the narrative, the speaker recurs to the use of *anyway* to continue with the main description of events.

Once again, we may argue that this use is no different to the main digression case. According to our views, this subtype does not really deserve its own category.

4. Speakers may use *Anyway*₃ after laughing during their story telling. According to Ferrara, speakers use *Anyway*₃ when they shift from the paralinguistic (e.g. laughing) to the linguistic. This can be seen in the following example in which the speaker re-takes her story after some laughter. This laughter is taken to be a paralinguistic interruption. The laughter is taken as a digression from the main story, therefore the speaker uses *anyway* on such circumstances; observe the following (Ferrara [1997, 362]):

(253) So the next day when I walked in; they didn't realize that I was the same person. And so I started speaking to them. They had spent the whole day with me the day before; and I walk in the next day; and they didn't know who I was ((laugh)) *Anyway*, they razzed me all week long about my Texas clothes.

5. *Anyway*₃ can be used after a hesitation and/or word search in the same manner as it is used after a paralinguistic interruption.

- Another 26% of the cases are listener-triggered cases. These mark departures by the listener such as asking for clarification or giving a reaction to the speaker.

1. The hearer laughed or gave any other sort of appreciation, and that triggered the speaker to utter *anyway* in 16% of the listener-triggered occurrences. This is the case in the following example where Don interrupts Joseph's story with some laughter; and then, Joseph continues the story by first using *anyway* (Ferrara [1997, 363]):

- (254) a. **Joseph:** And I jumped out of bed. I was stark naked. I yelled at the top of my voice. And he fell out the window. And Edwina was jumping and kicking. She thought I'd gone nuts.
- b. **Don:** ((laugh))
- c. **Joseph:** *Anyway*, by that time it was almost daybreak. He'd chosen an odd our for his illegal entry. So I said 'I've killed a man'.

2. *Anyway*₃ can be used when there has been an insertion sequence caused by a query from the listener (in 10% of the cases of *Anyway*₃ in Ferrara's data). The following example shows how after Javier asks Nader about his age at the time of the events, Nader answers the question in order to comply with the Cooperative Principle; and then, Nader re-takes the line of his story indicating this return with the use *anyway* so as to continue with the narration of events. This way, the speaker not only closes the answer given, but also the question posed by Javier (Ferrara [1997, 364]):

- (255) a. **Nader:** We were going through customs. And some agents asked our nationality, because they saw our passports. They asked if we

were Iranian. My mum and dad said ‘yes’. I didn’t answer cause I was a little kid.

b. **Javier:** How old were you?

c. **Nader:** I was eight. *Anyway*, they took us to their office.

Ferrara’s *Anyway*₃ corresponds to Owen [1985]’s first use of *anyway*. That is, Ferrara describes this use of *anyway* as a discourse marker. Similarly, Owen describes this use as a topic marker, a right hand parenthesis closing off an inserted topic. Ferrara’s *Anyway*₃ embraces the second use described by Owen as well, a use of *anyway* offering to close, and giving the other participant the chance to introduce a new topic.

In contrast with Ferrara, Altenberg [1986] defines only two main uses of *anyway* instead of three. He describes a concession use which would cover both *Anyway*₁ (see (256) repeated here for convenience) and *Anyway*₂ (see (257) repeated here for convenience). The second kind of use according to Altenberg is a transition use which would correspond to *Anyway*₃ in Ferrara’s approach (see (258) repeated here for convenience).

(256) I couldn’t go to the party cause I was on codeine. My mom wouldn’t let me *anyway*.

(257) She wasn’t supposed to wear the necklace, but she did *anyway*.

(258) They got up early. That’s rare for them. *Anyway*, they left at noon.

(256) is an example of *Anyway*₁ given by Ferrara. Altenberg would argue that this is an example of a concession use. While Ferrara believes that *anyway* in this case is presented in order to provide a further unnecessary argument, Altenberg would argue that it is a case of unrestricted concession.

(257) is an example of *Anyway*₂ as described by Ferrara, that is, an example in which *anyway* is offering an evaluation of a statement. Altenberg would argue that this is a case of restricted concession use of *anyway*. The scope of *anyway* in (257) would be the phrase

she did. *Anyway* in this example is used as a preamble to a contradiction. Altenberg argues that this use is marked by a pause before it and prefaces an explicitly-made hedge on the assertion that has just been uttered, that is, *she did*.

In (258) we find an example given by Ferrara of *Anyway*₃ (the discourse marker use) that marks the end of a digression in the vast majority of cases. According to Altenberg, the use of *anyway* in (258) is an example of a transition use, in particular one that indicates both dismissal and resumption of the previous topic. Ferrara does not account for the cases in which Altenberg classifies *anyway* as a marker of a dismissal only.

Ferrara offers a useful and exhaustive classification of *anyway*. The author is very precise with the use of examples extracted from real conversation. Any annotator would have a clear set of guidelines to annotate different uses of *anyway* in a text.

However, not all uses of *anyway* have been covered in Ferrara's study. We lack a review of uses of *anyway* in wh-interrogatives, most probably due to the nature of the data used by Ferrara. Moreover, Ferrara defines a contrastive use of *anyway* without taking into account that in certain uses, *anyway* can be used to dismiss a previous utterance in the way that *regardless* does.

Ferrara does not establish any relations between the different uses of *anyway* that she describes. In that way, we do not know if, for the author, these three uses are related.

We have reviewed Ferrara [1997] on the different uses of *anyway*. In the next sections, we will explore three other views on *anyway*, a corpora study conducted in Lenk [1998]; a study of *anyway* from the point of view of its Japanese counterparts; and a more recent account again explored through the use of corpora by González [2004].

6.6 *Literature Review: Lenk [1998]*

Lenk [1998]'s classification of the uses of *anyway* is based on the analysis of British and American data from which the author describes the discourse marker functions of *anyway*.²

Lenk distinguishes mainly between discourse marker uses of *anyway*, and what the author calls propositional meanings of *anyway*. These propositional meanings are explanation, modification, and intensifier. The interpretations were drawn by the author.

The propositional meaning of explanation is illustrated by the following example (Lenk [1998, 55]):

(259) I mean, I don't know how I got any food down me at all. I mean, I'm not used to drinking *anyway*.

The speaker of (259) is half way through a long narration regarding her visit to Scotland. She first describes the seating arrangements for an evening meal. She does not approve of these arrangements and she wonders how she could eat anything at all considering those particular sitting arrangements. She supports this with an inserted argument *I'm not used to drinking anyway*. In this argument, *anyway* supports her statement of her non-existing drinking habits.

The propositional meaning of modification is where *anyway* indicates a correction or modification of something said immediately before. In this type of use, *anyway* appears at the end of the sentence. This function is illustrated by the following example (Lenk [1998, 56]):

² Lenk [1998] collection of British data includes 317 uses of *anyway*, 123 of which are examples of *anyway* as a discourse marker after a digression, 18 tokens mark the end of a topic, 122 tokens are uses in an explanatory function, and 48 tokens have other adverbial functions. In the American data there are 73 occurrences of *anyway*, of which 57 are discourse marker uses, and 16 tokens have adverbial functions.

(260) It's attracted a grant of a hundred thousand pounds from the Heinz Foundation, which is the largest grant given to educational research in this country *anyway*.

According to Lenk, in (260), *anyway* indicates that *in this country* modifies a general statement regarding the size of grants given to educational research. This modification defines the generality of the statement to a smaller area. Thus, modifying the previous statement.

Anyway can also be used as a question intensifier as in the following example (Lenk [1998, 56]):

(261) How did he get them *anyway*?

The use of *anyway* at the end of a question intensifies the performative act of questioning according to Lenk.

As a discourse marker, Lenk attributes two main different functions to *anyway*: to indicate the end of a topic, and to close a digression. The author then subclassifies the closing of digressions into five subcategories: after situational digressions; after word search digressions; after digressions supplying additional background information; after clarifying digressions; and after a general digression. (See table (6.6) for Lenk's classification of *anyway*.)

Anyway can be used as a signal to indicate the end of a topic. This is similar to the function of closing a digression. The only difference is that when *anyway* is used to indicate the end of a topic, there is no return to a previous topic, instead, a new topic is introduced. In some occasions, *anyway* is used to close a topic adding a concluding remark that summarizes the topic closed; for instance in the following example speaker B uses *anyway* to end one topic with a concluding remark, and then introduces a new topic (Lenk [1998, 80]):

(262) B: But I don't think there's any problem on that. I'm just mentioning it.

Tab. 6.2: Lenk [1998]’s Classification of *Anyway*

Propositional Meanings	Explanation	
	Modification	
	Intensifier	
Discourse Marker	End of Topic	
	End of Digression	Situational Digressions
		Word Search Digressions
		Additional Information Digressions
		Clarifying Digressions
		General Digressions

A: Yeah, yeah.

B: *Anyway*, there’s that. Now, what about this. I’m worried about this security thing.

Anyway can be used to indicate the end of a digression. In particular, when *anyway* is used after situational digressions, it has the function to indicate that the interruption is not a threat to the conversational situation. An instance of a situational digression occurs when the digression that *anyway* closes is short and not related to the present topic. This instance is triggered by the situational context of the conversation; for example (Lenk [1998, 60]):

(263) A: Wouldn’t it be easy to live there?

B: That’s cos you don’t like the Parisians.

A: It isn’t. It’s because it’s a very big hustly city; and you’d have to live in an apartment. Oh Gordon!

C: Sir.

A: Thank you very much. *Well anyway*, we brought the little sprog next door as

an awful warning to you.

According to Lenk, the current topic of the conversation in (263) is living arrangements and locations. The situational digression in the example is when speaker C offers a drink to speaker A. After the drink, speaker A changes the topic and teases the hosts telling them that they brought the child from next door along. By using *well anyway*, speaker A changes the topic.

A situational digression can also occur when a person who is not a participant of the conversation interrupts. Similarly, a situational digression can occur through an event which is outside the conversational situation; for example, the interruption that a telephone call could cause.

Anyway can close digressions after a speaker struggles to remember a fact, a name, or similar. These retrieval difficulties are the topic of a brief digression. In this type of digressions, the content of the digression is not relevant to the conversational interaction, as is the case with situational digressions. In the context of word search, *anyway* is used to indicate that the conversational situation is stable and coherent despite the occurrence of a small disturbance. Let us observe an example (Lenk [1998, 64]):

(264) C: There is one expensive German kind that is really said to do virtually everything, isn't there? The Barleys have got one.

A: Yes.

C: What is it? Miele?

A: I think it is. *Anyway*, we haven't got one and we're unlikely to have one.

In (264), the main topic of the conversation is dishwashers. Speaker C mentions *one expensive German kind*; and then, together with speaker A, both speakers get into a short digression around the name of the brand. This digression is closed by *anyway*, and speaker A goes back to the topic of dishwashers, in particular to the subtopic of having a dishwasher.

Anyway can close a digression supplying additional background information to facilitate the comprehension of an utterance. So here, the digression is somehow relevant to the main topic, but it is disturbing the smoothness of the conversation. The prior topic is re-adopted after the digression; for example (Lenk [1998, 67]):

(265) Miles: Well I don't know if I told you that story about that woman who went after that guy there. I told you that story, right? I was there Sunday three, four weeks ago, after class is over with. I'm sitting down at a table, there's a woman who was in the class and two men. Sitting to my right is a table with two women there. They had apparently just come from Oba Oba on the last night.

Jamie: I think you told me.

Miles: The last night.

Jamie: Yeah.

Miles: And like, well, they were attractive women, the one had on a real real short skirt. *Anyway*, there was this guy in his fifties out there dancing by himself.

In (265), Miles starts telling a story about a woman he saw going after a guy at a dance club. Miles gives the situational frame first by describing the sitting arrangements and where the characters came from. Miles then offers additional background information regarding the type of skirt one of the women was wearing. Miles closes off this digression using *anyway*; and continues the story by introducing the guy the woman was after.

Content clarifying digressions are similar to the digressions supplying additional background information since they are both relevant to the development of the main topic. In particular, *anyway* can close a digression inserted to clarify a specific item, or a particular aspect of an item that appears in the conversation; for example (Lenk [1998, 69]):

(266) C: Could you sack a man for leading a strike?

A: I should think so.

B: No, I don't think you would. You wouldn't have a hope of sacking him.

A: You'd probably have some other reason. I don't know. *Anyway*, he feels discriminated against. This is all I can tell you.

In (266), speaker C cannot believe that someone can be sacked for leading a strike. While speaker A says that it is possible, speaker B denies the possibility. Speaker A then says that other reasons would be found to sack that person. Speaker A then closes the digression of the possibilities and reasons of sacking a person by using *anyway*; and speaker A returns to the main topic and describes what an outsider to the conversation has expressed about his personal situation.

Finally, *anyway* can also be used to close general digressions, and to indicate a return to a previous topic. Digressions closed by *anyway* are declared digressions because of the use of *anyway* alone; and it is rarely the case that digressions are marked a priori according to Lenk. The type of digressions that fit in this category are the following: after a self-correction; when a speaker does not remember what the prior topic was about; and, when a speaker wants to reclaim his turn and the continuation of a prior topic. In all these cases, *anyway* retrospectively highlights the importance of the continuity of a previous topic over a digression.

The sub-types of digression closed by *anyway* do not seem to be much different between them. This is the reason why we find this classification useful for a discourse analysis study. However, we do not find it useful for a formal semantics account.

The discourse marker function described by Lenk is similar to the one described by Ferrara [1997], and even closer to the one described by Altenberg [1986] who distinguishes between dismissal only (or signal of end of a topic according to Lenk) and dismissal and resumption (or signal of end of a digression according to Lenk).

However, the two adverbial meanings of *anyway* that Ferrara describes are not equivalent to the description offered by Lenk. Ferrara believes that the adverbial use of *anyway*

can either have a *besides* meaning, or be used as a neutral evaluation modifier. On the other hand, Lenk believes that the adverbial use of *anyway* can have propositional meanings of explanation, modification, and intensifier. This classification does not have much in common either with Owen [1985], or Altenberg [1986].

Lenk offers a clear classification that any annotator could use in order to distinguish different uses of *anyway*. However, the author does not use the best examples to illustrate the different uses of *anyway*. Besides, two of the propositional meanings of *anyway*, namely, explanation and intensifier, do not seem to be justifiable. Indeed, we do not think that *anyway* can provide an explanation. As we have pointed out, *anyway* can modify an utterance; it can introduce contrast; and it can dismiss a previous utterance. Only the first has been described by Lenk, while the other two uses have been ignored, and a meaning of explanation has been introduced instead.

It is true that when *anyway* appears in a wh-interrogative, it has a different meaning. However, we do not think that it is intensifying the speech act of questioning. On the other hand, we believe that, this use of *anyway*, can be viewed in SDRT terms as a trigger of a metatalk relation between the question and some anaphorically determined part of the context. That is, *anyway* essentially triggers $\text{Contrast}^*(\pi_1, \pi_2)$ where π_2 is the question where *anyway* appears, and π_1 is determined anaphorically. Essentially, this means that taking into account the context of π_1 , performing the speech act π_2 is violating the expectations. Thus, this use is related to the contrastive use of *anyway*.

6.7 Literature Review: Takahara [1998]

From a Relevance Theory point of view, Takahara [1998] analyses *anyway* in comparison to its Japanese equivalents *tonikaku*, *doose*, *sorewasooto*, etc. The author offers the table in (6.3) as a classification of *anyway* and its equivalent Japanese expressions in regards to

Tab. 6.3: Classification of *anyway* and its Japanese equivalents

Anyway(Anyhow)	Corresponding Japanese expressions
Initial position with a comma as a bridging device (=at any rate, in any case)	toni (tomo)kaku, sorewasooto (shite), ichioo, izureniseyo
At the end without a comma before <i>anyway</i> (=even so) (=in any case)	soredemo, (sore) nimokakawarazu doose, dotchimichi, (soredemo) toni (tomo)kaku
Initial and middle - first syllable lengthened and falling intonation with a long pause (=in any case)	The sorewasooto (shite)
In a question with a comma as in (i) speaker dismissal and return to a previous topic (=in any case)	sorewasooto (shite)

their position in the sentence.

According to Takahara, *anyway* can be used to signal a change of topic, to dismiss an intrusive topic, or an offer to close sequences. Ultimately, the main function of *anyway* is to close a digression or return to a previous topic. This function has two sub-functions: one to mark an end of a digression; and two to signal a return to a main topic. In both sub-functions, *anyway* is clause initial, preceded by a pause and prosodically marked with a falling tone.

However, Takahara claims that the basic function of *anyway* is to signal topic dismissal

rather than topic resumption. Takahara states that the thread of the discourse is not always picked up after the parenthetical topic has been dismissed by *anyway*.

Takahara remarks that the fact that *anyway* combines with other particles (such as *but*, *so* or *and*) reinforces its meaning. This duplication phenomenon is also found in Japanese. If it combines with *but*, there is a reinforcement of the shift of topic. Both *anyway* and *but* may be used to indicate a contrast between the importance of the current topic with the following topic. *Anyway* can also co-occur with *so*; according to Takahara, this shows a conclusion based on concrete evidence. Takahara believes that whenever *anyway* combines with *well*, this marks a shift in topic focus.

Takahara does not consider the uses of *anyway* in which it is not sentence initial. The author considers that these occurrences are not discourse marker uses; and therefore, they are not relevant to his study.

The analysis offered by Takahara is very similar to the one by Altenberg [1986]; the only difference is that Takahara does not take into account occurrences of *anyway* which appear at the end of the sentence as Altenberg, Owen [1985], Ferrara [1997], and Lenk [1998] do. In comparison to the previous authors, Takahara only describes the discourse marker use of *anyway*. In fact, the same distinction of *anyway* marking end of digression or return to previous topic is made in this is also the case with Altenberg [1986] and Lenk [1998]; but not the case of Owen [1985]; or Ferrara [1997].

6.8 *Literature Review: González [2004]*

González [2004] claims that *anyway* has three primary functions as a pragmatic marker. Firstly, the most common function of *anyway* is to act as a conclusion or summing-up pragmatic device. Secondly, *anyway* can have a key role structuring discourse by acting as a segment boundary marker (because it frames the opening of an action unit). Thirdly,

anyway is frequently used as a resumption cue after a digression. These three functions are illustrated by the author through the following examples (adapted from González [2004, 198]):

(267) Because he couldn't hold on any longer. And it was sort of like he had to make a decision whether to let go or to hold on, which must be awful, to have to make that sort of a decision. *Anyway*, he let go.

In (267), the narrator is making a judgment on how awful it must be to have to take a decision as hard as the one the character in her story has to take. The speaker resumes this line of thought by using *anyway* to continue her narration of the main story.

The concluding and evidencing roles of *anyway* are shown in the following example (a continuation of the discourse presented in (267)):

- (268)
- a. And then they ran down to the bottom
 - b. to where the waterfall came down into the lake.
 - c. And they couldn't see her *anyway*.
 - d. And oh my god! She's drowned you know.
 - e. Because all that water falling,
 - f. if you get trapped
 - g. because of the weight of the water coming down.
 - h. It stops you from coming up to the top.
 - i. And eventually, *anyway*, they found her.
 - j. She bobbed up somewhere.

The first use of *anyway* (268c) is an example of a concluding and evidencing role of the pragmatic marker according to González when the narrator comes to a conclusion after the first two utterances. On the other hand, the second *anyway* (268i) in this passage illustrates

 Tab. 6.4: González [2004]’s Classification of *Anyway*

Primary Functions	Conclusion or Summing-up Pragmatic Device
	Segment Boundary Marker
	Resumption Cue
Secondary Functions	Relevance Marker
	Personal Comment Marker

the recovery of the narration thread. The narrator elaborates on the issues arising when falling down a waterfall before recovering the narration at the point where they found her body.

Besides the three primary functions of *anyway* (a conclusion or summing-up pragmatic device; segment boundary marker; or a resumption cue), *anyway* can have two secondary functions. First, *anyway* can indicate that the information given is extremely relevant for the interpretation of the story. Second, a speaker might introduce a personal comment or evaluation. (See table (6.8) for a summary of functions according to González.)

González claims that *anyway* can act either as a right-hand or as a left-hand discourse bracket. This mobility results in different meanings and the author concludes that as a left-hand bracket, the illocutionary force carried by *anyway* is much stronger. As a left-hand bracket, it involves a text structural and cognitive boundary. As a right-hand bracket, it involves a conclusion that can be interpreted as a summary or evidence of a situation.

The three uses of *anyway* described by González (conclusion or summing-up introduction, boundary marker, and resumption cue) are not any different depending on the position in the sentence, as the position in the sentence does not seem to have any important role according to the author. Moreover, the author says that there is no indication that intonation has a particularly relevant role either.

We believe that these matters disregarded by the author are of key importance as

previous research has shown, looking at all previous reviews in this chapter, we note that all authors have attributed a particular sentence position and intonation for each of the functions of *anyway* that they describe.

We agree with González [2004] in the sense that *anyway* can act as a boundary marker depending on the use; in one case, it starts or re-starts a discourse thread; and on the other hand, another use indicates or helps towards discourse continuity. (We will discuss these issues in chapter 8.)

The functions described by González are similar to the ones attributed to *anyway* by all the previous authors reviewed. The major difference is that González does not seem to consider adverbial functions of *anyway* as previous reviewed authors have done. It seems that for the author, all uses of *anyway* are discourse marker uses. Indeed, all uses of *anyway* have a function in discourse, however, traditionally, the integrated uses of *anyway* have been considered adverbials.

González study is similar to the study conducted by Takahara who only considered the discourse marker use of *anyway*. The main difference is that Takahara only attributes it a function of topic resumption or topic dismissal to *anyway* as Altenberg [1986] and Lenk [1998] do.

6.9 Discussion

Not all authors agree on how many functions and meanings *anyway* has. However, nearly all authors distinguish between a discourse marker use and an adverbial or propositional meaning use (Altenberg [1986], Ferrara [1997], Lenk [1998], and Takahara [1998]).

Within the discourse marker use, some authors make further distinctions, for example, Altenberg, Takahara, Lenk, and González [2004] distinguish between a discourse marker that ends a topic and a discourse marker that ends a digression and goes back to a previous

Tab. 6.5: Literature review table summary

Author	Classification	Subclassification
Owen [1985]	Closing initiation and return or activity resumption Offer to close Misplaced activities or replacing and contradicting Setting aside a prior assumption or implications as unnecessary or irrelevant	
Altenberg [1986]	Transition Concession	Dismissal Dismissal and Resumption Unrestricted Restricted
Ferrara [1997]	<i>Besides</i> meaning (Anyway ₁) Neutral evaluation (Anyway ₂) Discourse marker (Anyway ₃)	Various sub-functions
Lenk [1998]	Propositional meaning Discourse marker	Explanation Modification Intensifier End of digression End of topic
Takahara [1998]	Topic dismissal	Dismissal Dismissal and resumption
González [2004]	Boundary marker Conclusion or summing up Resumption cue	

topic. Some authors such as Ferrara make then a further distinction within the discourse marker use (Lenk also does this), however, we do not consider this subclassifications to be useful in a formal semantics account. On the other hand, they are valuable observations for a discourse analysis study.

The discrepancies start on the uses of *anyway* as an adverbial. All authors give those uses a different name, however, we can see that even though there are some differences, these classifications can be grouped into four different uses: question dismissive, dismissive, contrastive, and modificative.

A question dismissive *anyway* is equivalent to the use described by Lenk who described this *anyway* as used to intensify a question. This use is not described by any other author with the exception of Owen [1985] who argues that *anyway* in a question is used in order to mark a misplaced activity. It is true that when *anyway* appears intensifying a question, it is isolated from the rest of the text; however, we see that Owen also classifies sentences to mark misplaced activities in which *anyway* seems to be carrying out a different role (we will explain this further in the contrastive use of *anyway*). A couple of examples of this type of *anyway* are:

(269) How is Kim *anyway*?

(270) How did he get home *anyway*?

We argue that this use of *anyway* can be viewed in SDRT terms as a trigger of a metatalk relation between the question and some anaphorically determined part of the context. That is, *anyway* essentially triggers $\text{Contrast}^*(\pi_1, \pi_2)$ where π_2 is the question where *anyway* appears, and π_1 is determined anaphorically. Essentially, this means that taking into account the context of π_1 , performing the speech act π_2 is violating the expectations. Thus, this use is related to the contrastive use of *anyway*.

A dismissive *anyway* has been widely accepted and described by previous authors.

Owen called this use as a setting aside a prior assumption. This is exactly the function done by this type of *anyway*. Altenberg called this use a concession unrestricted use. Ferrara classified it as her *Anyway*₁. And Lenk called this use an explanation propositional meaning of *anyway*. A couple of examples of dismissive *anyway* are:

(271) I will come tomorrow at three *anyway*.

(272) I couldn't go to the party cause I was on codeine. My mum wouldn't have let me *anyway*.

(273) I don't know how I ate any food. I'm not used to drinking *anyway*.

This use is always connected to a previous piece of discourse, as the previous piece of discourse is what is being dismissed, or considered an unimportant assumption. This meaning is the closest to the discourse marker use, as the discourse marker also dismisses a chunk of discourse. However, here the function in discourse is different. We are not closing an SDRS (speaking in SDRT terms), we are just dismissing a previous comment as unimportant, or at least, not as important as the following utterance. If we had to paraphrase this use, the paraphrase would be the adverb *regardless*.

A contrastive *anyway* has also been described by previous authors. Owen includes this use as a misplaced activity (we said that she also used what we called intensifier use in this category). However, the difference in her examples is apparent:

(274) It is a bit boring in a way. We'll think about it *anyway*.

This example does not seem to mean the same as when *anyway* appears in questions. In this case, we can paraphrase *anyway* with a typical contrastive marker such as *nevertheless*. This is not possible in questions such as *How's Des anyway?*

Ferrara also describes a contrastive *anyway* in her *Anyway*₂, where her instances are also paraphrasable with *nevertheless*:

- (275) a. She wasn't supposed to wear the necklace, but she did *anyway*.
 b. She wasn't supposed to wear the necklace, but she did *nevertheless*.

Note that this use also needs to refer to a previous piece of discourse or utterance since it needs this previous utterance in order to create a contrast with it.

A modificative *anyway* has been observed in literature too. Altenberg calls it a concession restricted use:

- (276) It is called the 311 going into it, according to this *anyway*.

This type of *anyway* modifies a previous utterance and it could be paraphrased as *at least* (even though *at least* would occupy a different position in the sentence). Lenk calls it a propositional meaning of modification and offers the following example:

- (277) It's attracted a grant which is the largest amount, in this country *anyway*.

This type of *anyway* allows to modify the previous utterance by adding extra information to that utterance. As we can see in (298) where the speaker is giving extra information to the fact that the grant attracted is the largest; and in particular, it is the largest grant in the country.

6.10 Conclusion

In this chapter we have reviewed various authors' views on *anyway*. We have concluded that nearly all agree in mainly two different uses: adverbial and discourse marker. We will see if this discourse marker use deserves two different functions: end of topic, and end of resumption in terms of discourse structure and formal semantics. We have also established that there seems to be four different adverbial uses described in the literature (not all included in all studies) with different names, but that we have called: question dismissive,

dismissive, contrastive, and modificative *anyway*. We will analyze this formally in chapters 8 and 9 of this thesis.

7. ANYWAY: POSSIBLE SYNONYMS

This chapter explores the possible synonyms of anyway to highlight whether its analysis can extend to other words.

7.1 Introduction

We will observe a variety of expressions thought to be synonymous to *anyway* in order to extend our analysis of the word; and possibly to shed some light over the real meaning of *anyway*. In order to establish what words are real synonyms of *anyway*, we intend to use the tests offered by Knott and Mellish [1996] that establish four possible substitutability relationships between two cue phrases X and Y:

- A cue phrase X and a cue phrase Y are synonymous in a given context if they can be substituted without changing the meaning.
- If a cue phrase X and a cue phrase Y are exclusive in any possible context, they are not synonymous.
- A cue phrase X is a hypernym of a cue phrase Y (and consequently, Y is a hyponym of X) if whenever Y can be used, so can X, but X can be used in some context in which Y cannot.
- A cue phrase X and a cue phrase Y are contingently substitutable if there are contexts in which they can be substituted and others in which they cannot.

It is acceptable to move a cue phrase within the sentence to achieve an acceptable result.

The table in (7.1) shows the synonyms of *anyway* given by the following thesauri: Roget [1962], Daintith and et al. [1993], Chapman [1995], and Manser [2004]. Next to each synonym, in the second column, we have the number of instances of the word found in the BNC; and in the third column, we have the number of instances found on a Google search carried out on the 17th of March 2006. (We have ordered the results according to the frequency found in the Google search.) We have also included the frequency of use of *anyway* in order to compare.

As can be seen from the number of occurrences found in both the BNC and Google, there are a couple of expressions with a low number of occurrences. We will not study in detail *anywise* because most of the hits found in Google were just dictionary definitions or names given to companies or web pages.

We also have not looked at the expressions *at all* or *no how* since their meaning is very diverse, and in several instances it corresponds to a completely different meaning and structure compared to their synonym use of *anyway*, e.g. *he was not at all bothered*. With *no how* we find that most instances are actually an alternative spelling to *know how*.

Besides, we have noted that even though some of these expressions were given as synonymous in some thesauri, they are clearly not in all uses. These are *nevertheless*, *nonetheless* and *however*. (These, according to our analysis, would only be synonymous to the adverbial contrastive *anyway*).

Tab. 7.1: Number of potential synonym instances of *anyway*

WORD	BNC	Google
however	59730	2,000,000,000
at all	16980	650,000,000
regardless	1532	371,000,000
anyway	11652	306,000,000
in any way	1328	188,000,000
nevertheless	7045	148,000,000
nonetheless	1297	94,400,000
no matter what	2	92,600,000
in any case	2218	65,900,000
anyways	28	42,700,000
by any means	192	36,100,000]
in any event	684	27,200,000
anyhow	460	22,200,000
at any rate	668	17,600,000
no how (dialectal)	2	2,120,000
anywise	0	225,000
leastways	13	147,000
by any manner of means	5	16,900

7.2 *Adverbial Use*

Some of the synonyms given in the thesauri are only equivalent to *anyway* in its adverbial use¹. We have used a similar substitutability test used in Knott and Mellish [1996] where they tried to create a taxonomy of discourse relations triggered by particular cue phrases². Observe the following pair of examples:

- (278) a. I'm rather lame people in the village say you've caught arthritis, and I caught it a year or two ago but my brain hasn't entirely given out. I haven't lost my interest in politics *by any manner of means*.³
- b. I'm rather lame people in the village say you've caught arthritis, and I caught it a year or two ago but my brain hasn't entirely given out. I haven't lost my interest in politics *anyway*.

As we can see from the above example (278), substituting the expression *by any manner of means* with the adverbial use of *anyway* maintains grammaticality. However, in (278), the two sentences are not equivalent in meaning. The adverbial expression *by any manner of means* in (278a) can be paraphrased with the expression *at all*, or rather *far from*. On the other hand, in (278b), *anyway* can be paraphrased with *despite this*. The conclusion that we can extract is that there might be some uses in which *by any manner of means* and *anyway* are synonymous, but that is not always the case. In other words, these two adverbs are contingently substitutable.

This is quite similar to the expression *by any means*, as we can observe in the following example:

¹ These equivalences have been contrasted with anonymous informants

² In this chapter we will use examples found in the BNC and we will give their individual references in footnotes.

³ Source BNC: Northern Echo: Foreign news pages.

- (279) a. David, we want you to come forward *by any means*.
 b. David, we want you to come forward *anyway*.

As we can be seen, the pair of sentences are grammatical. However, these two sentences do not necessarily have the same meaning. *Anyway* in (279b) introduces a sense of contrast that is not present in (279a) with *by any means*. Moreover, in (279a), David is supposed to come forward even if the circumstances are not favourable. On the other hand, (279b) expresses that David must come forward despite the circumstances. Hence, these two expressions are contingently substitutable.

The same ambiguity exists with the expression *in any way*, as can be observed in the following example. Whilst an interpretation with *anyway* is possible, it is also possible to interpret the expression as *in any plausible way*, similarly to the examples found in the expressions above. It is clear that if the examples were oral rather than written, the different intonation would clarify which of the two interpretations is the correct one. Above all, this ambiguity indicates that *in any way* and *anyway* are not always synonymous. That is, *in any way* and *anyway* are contingently substitutable.

- (280) a. He'd taken her to church, he'd taken her to lunch and she hadn't been particularly gracious about any of it. She hoped she hadn't let him down *in any way*.⁴
 b. He'd taken her to church, he'd taken her to lunch and she hadn't been particularly gracious about any of it. She hoped she hadn't let him down *anyway*.

So, while (280a) could mean that she hoped she had not let him down in any possible way by which she could have let him down; (280b) seems to indicate that she hoped she had not let him down despite her not having been gracious about it.

⁴ Source BNC: A season for murder. Granger, Ann. Headline Book Publishing plc. London (1991), 21-134.

The adverb *regardless* seems to be synonymous to the dismissive adverbial use of *anyway*, though not synonymous in all instances of *anyway*. This leads us to believe that these two adverbs share some meaning but they are not a perfectly synonymous in all instances. The following examples show discrepancies observed between the two adverbs. In some uses, *regardless* differs completely to *anyway* in the sense that a particular syntactic structure with the former is impossible with the latter. In (281a) and (282a), *regardless* takes a Prepositional Phrase as a complement, this is absolutely impossible for *anyway* (see (281b) and (282b)). *Anyway* can only modify a sentence, and can never take any complements or modifiers. Moreover, the meaning of both sentences is different to the meaning of *anyway*.

- (281) a. *Regardless* of which statistical model was applied, however, the main conclusion was the same namely, almost a 50% reduction in sperm concentration from 1940 to 1990.⁵
- b. * *Anyway* of which statistical model was applied,...
- (282) a. Brook dispenses contraceptives to all, *regardless* of age or status, and including under-age girls.⁶
- b. * Brook dispenses contraceptives to all, *anyway* of age or status, and including under-age girls.

On the other hand, in the following example, *regardless* is quite similar to *anyway* in the sense that they can be substituted by each other and keep the same meaning:

- (283) a. It's a very strong local tradition and I think it'll stay that way. So we have to hope for a fine day for this on Sunday, obviously. What happens if it is a really

⁵ Source BNC: British Medical Journal. British Medical Association, London (1975-19-19), 8-453.

⁶ Source BNC: Madness and Modernity: a Study in Social Psychoanalysis. Badcock, C R. Basil Blackwell Ltd. Oxford (1984), 1-134.

bad day? Has it ever been, in your memory, postponed or canceled, or do they just carry on *regardless*?⁷

- b. It's a very strong local tradition and I think it'll stay that way. So we have to hope for a fine day for this on Sunday, obviously. What happens if it is a really bad day? Has it ever been, in your memory, postponed or canceled, or do they just carry on *anyway*?

The expression *carry on regardless* seems to be a very common collocation. At the same time, the adverb *regardless* can be substituted by the adverb *anyway* without any change in meaning in certain occurrences. This is the case of the example above. The meaning of the utterance with *regardless*, as with *anyway*, is that the local tradition carries on even if they have bad weather. If there is bad weather, it would be expected to cancel or postpone the event, but they go forward with the tradition despite the bad weather conditions.

In the case of *leastways*, most of the hits found in Google were dictionary definitions, repetitions of song lyrics, and names of companies. A sample of the results found in the BNC follows:

- (284) a. I don't hold any foreigners, he exclaimed, *leastways* not here in King's Magnum Parva.⁸
- b. I don't hold any foreigners, he exclaimed, not here in King's Magnum Parva *anyway*.
- (285) a. Yeah mate, the trouble with Manu is that there's no cheap way to get there, *leastways* this time of year.⁹

⁷ Source BNC: Orkney Sound Archive tape.

⁸ Source BNC: A classic English crime. Heald, Tim. Pavilion Books Ltd. London (1990), 96-216.

⁹ Source BNC: A classic English crime. Heald, Tim. Pavilion Books Ltd. London (1990), 96-216.

- b. Yeah mate, the trouble with Manu is that there's no cheap way to get there, this time of year *anyway*.

The adverb *leastways* occurs in a different position in the sentence compared to the one the adverbial use of *anyway* would occupy in these examples. While *anyway* always, or nearly always, appears at the end of the sentence, *leastways* appears just before the sentence it modifies (compare the alternatives in (284a) with (284b), and (285a) with (285b)). Apart from its position in the sentence, it seems that the meaning is the same using *anyway*. Of course, it sounds more natural if that insertion occurs at the end of the utterance. This indicates that *leastways* and *anyway* are synonymous in the environments we have found so far. However, this is not sufficient evidence to claim that *leastways* and *anyway* are absolute synonyms.

Other expressions given as synonymous such as *anyhow*, *at any rate*, *in any case*, and *in any event* have a parallel with *anyway* both in its adverbial and its discourse marker uses (even though we will not make the claim that they are perfect synonyms). Here we will give some examples of all of these expressions in their adverbial use.

- (286) a. I promised Marie I wouldn't go out with Fullblast again. Nicks things, and if I did that, the police would come and take me away. So I promised I wouldn't go out with him again. I wouldn't nick things *anyhow*, cos it's wrong.¹⁰
- b. I promised Marie I wouldn't go out with Fullblast again. Nicks things, and if I did that, the police would come and take me away. So I promised I wouldn't go out with him again. I wouldn't nick things *anyway*, cos it's wrong.

In (286), the speaker states that he would not steal even though he went out with a guy called Fullblast. If the speaker did go out with this particular man who actually steals things, he would then be expected to steal just like this character. However, he claims

¹⁰ Source BNC: Billy Bayswater. Watts, Nigel. Stoughton Ltd, Sevenoaks, Kent (1990)

that even if he went out with this dubious character, he would not steal; and he gives the reason behind him not stealing: he believes it is the wrong thing to do.

- (287) a. So the idea of making something which is not physically created by the artist, which simply stems from choices he has made, that is, something already created like the ready-mades, was valid personally speaking, *at any rate*.¹¹
- b. So the idea of making something which is not physically created by the artist, which simply stems from choices he has made, that is, something already created like the ready-mades, was valid personally speaking, *anyway*.

In (287), *at any rate* could be substituted by *anyway* without changing the meaning of the utterance. In both cases, the sentence means that an artist can consider valid to create a piece which is not physically created by the same artist.

- (288) a. The processes that have been described will go on *in any event*.¹²
- b. The processes that have been described will go on *anyway*.

In (288), we get an example of the expression *in any event*, which can also be a synonym of the adverb *anyway*. In this instance, we can substitute one expression by the other preserving the same meaning. Basically, the sentence states that the processes described previously (not present in this particular example, but made reference to) will go on despite the inconvenience.

- (289) a. I am disappointed that none of those hon. Members is in his place, because I had been looking forward to their contributions and should have liked to address the odd remark to them, but I shall do that *in any event*.¹³

¹¹ Source BNC: The Art Newspaper. Allemandi, Umberto. Company, London (1993-19-19)

¹² Source BNC: Utopia, Community Care and Retreat. Tomlinson, D. Open University Press, Milton Keynes (1991), 5-83.

¹³ Source BNC: Hansard extracts 1991-1992. HMSO, London (1992)

- b. I am disappointed that none of those hon. Members is in his place, because I had been looking forward to their contributions and should have liked to address the odd remark to them, but I shall do that *anyway*.

The speaker in (289) asserts that he will address members of the Democratic Unionist party even if they are not present. The expression *in any case* in (289) can be substituted by *anyway* and it has not only the same meaning, but also the same syntactic behavior and intonation.

In (290), we find another example of the synonym *in any case*. In the example we can see that *in any case* and *anyway* share syntactic behavior and meaning. In the example, a claim is made about Mr Stevenson who decides or claims that he had no plans to join the family firm in the past.

- (290) a. Yet Stevenson claims the company was founded by accident and that he had no plans to join the family firm *in any case*.¹⁴
- b. Yet Stevenson claims the company was founded by accident and that he had no plans to join the family firm *anyway*.

To sum up, we have found that several expressions are contingently substitutable, that is, *by any manner of means, by any means, in any way, and regardless*. On the other hand, other expressions such as *leastways, anyhow, at any rate, in any case, and in any event* are potentially synonymous to the adverbial use of *anyway*.

7.3 *Discourse Marker Use*

Now we will observe some examples of the words which can be considered synonymous to the discourse marker use of *anyway*. First of all, we will take a look at the adverb

¹⁴ Source BNC: The Scotsman: Leisure pages.

anyhow (Lenk [1998] explored the synonymy of these two saying that they were perfect synonyms). In the previous section, we saw that *anyhow* can be synonymous to *anyway* in its adverbial use. Now, we will take a look at some examples in which it is used as a discourse marker. This word behaves in the same fashion in terms of syntax as well as intonation. We can note in the following discourse that the particle *anyhow* could be substituted by *anyway* leaving the same effect of digression closure.

- (291) a. So the novel strikes me, and at one time Dostoevsky thought so too. At least he said he did. One can't be sure. He was at his most two-faced in his dealings with Turgenev. *Anyhow*, he praised *Fathers and Children* to its author, and in his own *Winter Notes* he remarked Bazarov's greatness of spirit, in spite of all his nihilism.¹⁵
- b. So the novel strikes me, and at one time Dostoevsky thought so too. At least he said he did. One can't be sure. He was at his most two-faced in his dealings with Turgenev. *Anyway*, he praised *Fathers and Children* to its author, and in his own *Winter Notes* he remarked Bazarov's greatness of spirit, in spite of all his nihilism.

We find a sub-discourse or digression regarding Dostoevsky's opinions of the novel *Fathers and Children* and his attitude towards Turgenev to whom he was known to be two-faced. After discussing his possible hypocrisy, the speaker uses the discourse marker *anyhow* to resume the discussion over the possible hypocrisy and the speaker continues with Dostoevsky's written opinions of the novel *Fathers and Children*. In this case, *anyhow* and *anyway* share the function of digression closure; hence, they appear to be synonymous.

Similar to *anyhow*, *at any rate* can work in the same manner as *anyway* does:

¹⁵ Source BNC: Dostoevsky. Jones, John. Clarendon Press, Oxford (1983)

- (292) a. There were a number of clues available to Robson: if West had still held the guarded queen of clubs he would almost certainly have kept and exited with his last spade; if he had held both the king and queen of clubs he would have been equally likely to win the first club with the queen; and, from what had happened so far, it looked as though West had started with more clubs than his partner. *At any rate*, declarer went up with dummy's ace to drop the queen and land his slam.¹⁶
- b. There were a number of clues available to Robson: if West had still held the guarded queen of clubs he would almost certainly have kept and exited with his last spade; if he had held both the king and queen of clubs he would have been equally likely to win the first club with the queen; and, from what had happened so far, it looked as though West had started with more clubs than his partner. *Anyway*, declarer went up with dummy's ace to drop the queen and land his slam.

In (292a), the speaker gives a list of number of clues available to a man called Robson who was playing a game of cards. After listing a few possibilities, the speaker uses *at any rate* to stop what he considers a digression and to continue with a more relevant topic. This is exactly the same role that *anyway* takes when it behaves as a discourse marker, and it also appears at the start of a sentence as expected in the case of *anyway* (compare (292a) with (292b)).

As can be seen from (293), there is another perfect match between the discourse marker use of *anyway* and *in any event*:

- (293) a. I could have been any little old lady waiting for a relative to arrive from Holland.

¹⁶ Source BNC: Independent, electronic edition of 1989-10-12: Gazette section. Newspaper Publishing plc. London (1989-19-19)

Nobody was quite sure. *In any event*, I was a little old lady so I was left in peace.¹⁷

- b. I could have been any little old lady waiting for a relative to arrive from Holland. Nobody was quite sure. *Anyway*, I was a little old lady so I was left in peace.

In the example above, the little old lady narrating the story introduces a comment about people not being sure of her identity and her intentions. Since this is just an aside and not the main point of the story, the narrator can re-take her story by using *in any event*, as she would be able to use *anyway* to conclude or resume a digression, comment or aside.

In any case is another example of suitable substitution with *anyway*, both in its discourse marker and adverbial uses. Here we will have a look at one example of its discourse marker use:

- (294) a. On the bathroom shelf, Alida's special salts for rheumatism were prominently displayed. She hoped Miss Cress would ask to use the bathroom. *In any case*, Alida intended to make a clear point of lifting.¹⁸
- b. On the bathroom shelf, Alida's special salts for rheumatism were prominently displayed. She hoped Miss Cress would ask to use the bathroom. *Anyway*, Alida intended to make a clear point of lifting.

In the above example (294a), the narrator describes the feelings and thoughts of the character Alida who wants to impress Miss Cress. After describing how she wants Miss Cress to go to the bathroom to note the special salts for rheumatism. Later, the narrator uses the discourse marker *in any case* to indicate that the discourse above is a digression

¹⁷ Source BNC: Part of the furniture. Falk, Michael. Bellew Publishing Company Ltd, London (1991), 1-146.

¹⁸ Source BNC: Gentleman and ladies. Hill, Susan. Hamish Hamilton Ltd. London (1969), 5-138.

Tab. 7.2: Substitutability Test Results

WORD	Synonym	Exclusive	Hypernym	Contingently Substitutable
by any manner of means				✓
by any means				✓
in any way				✓
leastways				✓
regardless				✓
anyhow	✓			
at any rate	✓			
in any case	✓			
in any event	✓			

and now is discussing a matter of importance, in this case the fact that Alida wants to make a point of her not being able to lift weight. The meaning of *in any case* in (294a) is the same of *anyway* in (294b).

To sum up, it seems like *anyhow*, *at any rate*, *in any case*, and *in any event* are potentially synonymous to the discourse marker use of *anyway*.

7.4 Conclusion

In this section, we have surveyed possible synonyms of *anyway*. From the synonyms given in various dictionaries, we have found that there is a large part that only share one meaning of *anyway*. (See our table of summary (7.2) of the substitutability tests offered by Knott and Mellish [1996] in regards to the word *anyway*.) For those that appear to be synonym, we cannot conclude that they are perfect synonyms to *anyway* as this would require to explore a great range of examples to be able to state whether that was the case. Some authors such as Lenk [1998] have said that words such as *anyhow* are synonymous to

anyway, but we will not make such a claim here, this is a matter for future research.

8. ANYWAY: KEY ISSUES

This chapter sets out the basis for our formal analysis of the syntax and semantics of anyway.

8.1 Introduction

As we have seen, previous literature is not homogeneous in regards to the functions and meanings *anyway* can have. Despite this, we find a commonality, nearly all authors distinguish between a discourse marker use and an adverbial or propositional meaning use (Altenberg [1986], Ferrara [1997], Lenk [1998], and Takahara [1998]). This is what we will intend to capture in our analysis. In this chapter, we will also point at the differences of these two main uses.

The largest discrepancies in the literature start on the uses of *anyway* as an adverbial. We have seen that some of these classifications offered by other authors can be grouped into four different uses: question dismissive, dismissive, contrastive, and modificative.

A question dismissive *anyway* is used to start a new topic and dismiss previous topics or issues as unimportant. When *anyway* appears in a wh-question, it is isolated from the rest of the text. This type of *anyway* does not seem to be connected to any previous piece of discourse. The role of *anyway* is to start a new conversation. An example of this type of *anyway* is:

(295) How is Kim *anyway*?

A dismissive *anyway* has been widely accepted and described by previous authors. This use always connects to a previous piece of discourse, as the previous piece of discourse is what is being dismissed, or considered an unimportant matter. This meaning is probably the closest to the discourse marker use. However, here the function in discourse is different. We are not closing an SDRS, we are just dismissing a previous comment as not relevant for the matter in hand, or at the very least, not as important as the following utterance. A possible paraphrase of this use is *regardless* (as we have seen a possible synonym of the *anyway* as an adverbial).

An example of dismissive *anyway* is:

- (296) I couldn't go to the party cause I was on codeine. My mum wouldn't have let me *anyway*.

This use of *anyway* seems to introduce a hypothetical situation, that is, the situation that the speaker was not on codeine. And then, it says that even in this hypothetical situation, there is alternative evidence for the fact of not going to the party being true. Then, *anyway* is analyzed in terms of a combination between a rhetorical relation of Consequence and the contextually determined relation in the context, in this case, Explanation. That is, Explanation(*I couldn't go to the party, I was on codeine*) and Consequence (*not being on codeine, Explanation(I couldn't go to the party, my mum wouldn't have let me)*). This makes clear how the adverbial *anyway* is syntactically modifying a single clause, but semantically, it denotes a relation between that modified clause and some anaphorically determined content.

A contrastive *anyway* can be paraphrased by a typical contrastive marker such as *nevertheless*. This use also needs to refer to a previous piece of discourse or utterance since it needs something to create the contrast with. An example of contrastive *anyway* is:

- (297) It is a bit boring in a way. We'll think about it *anyway*.

A modificative *anyway* modifies a previous utterance and it can be paraphrased as *at least* (even though this would occupy a different position in the sentence). This type of *anyway* allows modification of the previous utterance by adding extra information to that utterance. An example of modificative *anyway* is:

(298) It's attracted a grant which is the largest amount, in this country *anyway*.

In this chapter we will explore several issues which we find relevant to both adverbial and discourse marker uses of *anyway*. First of all, we will look at discourse continuity and discontinuity, the first occurs in nearly all instances of the adverbial *anyway* (the exception being the *anyway* used as a question dismissive), while discontinuity happens in occurrences of the discourse marker *anyway*. This discourse continuity and discontinuity is the key difference between the two main uses of *anyway*. Then, we will observe the syntax of both the discourse marker and the adverbial *anyway* taking into consideration constituency tests and word order. Semantically, we will observe whether discourse marker and adverbial affect the truth conditions of the utterance, and whether they are part of what is being said. Since both the syntax and semantics of an adverb influence its possible co-occurrence with other adverbs, we are going to look at the possibilities of co-occurrence of *anyway* as a discourse marker and as an adverbial with other types of adverbs. Finally, we will explore both the meaning of *any* and *way* since *anyway* is morphologically composed by these two lexemes.

8.2 *Discourse Continuity vs Discourse Discontinuity*

Discourse continuity is a relevant issue when discussing the formal semantics of *anyway* since it seems to be related in some way to all uses. We propose that the adverbial use of *anyway* shows discourse continuity as it seems that for most of the adverbial uses there is a need for a previous utterance or chunk of discourse. In other words, we propose that the

adverbial use of *anyway* is used as a cohesive device. In order to show this, we will make use of various examples:

- (299) The effects on astronauts of years in microgravity are the biggest mystery to researchers. Joe Sharp, director of space research at NASA's Ames Research Laboratory explains: 'Nobody has the foggiest idea of the effect of even 40 per cent or 20 per cent of gravity for extended periods. People will probably go *anyway*'.¹

In the previous example, there seems to be ellipsis in the complement of *go* which is probably allowed by the presence of *anyway*. Compare to the following:

- (300) The effects on astronauts of years in microgravity are the biggest mystery to researchers. Joe Sharp, director of space research at NASA's Ames Research Laboratory explains: 'Nobody has the foggiest idea of the effect of even 40 per cent or 20 per cent of gravity for extended periods. ? People will probably go'

Here we have omitted *anyway*, and the sentence *people will probably go* sounds odd without the adverbial *anyway*. This indicates that *anyway* here is used as a cohesive device. This is an example that shows that *anyway* helps with coherence. In fact, *anyway* seems to be kind of anaphoric since it is linking what is being discussed. Let us observe another example of *anyway* as an adverbial:

- (301) He thought maybe he'd make some soup. It seemed absurd, everything ordinary did, but he made it *anyway*.²

In this example, we have a pronoun *it* in the sentence *he made it* that needs to have an antecedent. It would be possible to say the same sentence without the use of *anyway*, but it would be more difficult to understand. Compare with the following:

¹ Source BNC: New Scientist. IPC Magazines Ltd. London (1991-02-16)

² Source BNC: The five Gates of Hell. Thomson, Rupert. Bloomsbury Publishing Ltd. London (1991), 123-226.

- (302) He thought maybe he'd make some soup. It seemed absurd, everything ordinary did, ? but he made it.

So in this case, *anyway* facilitates discourse coherence.

- (303) Please don't look at me like I'm a fool. I suspect I'll feel enough of one *anyway*.³

In this example, *anyway* helps with the connection of *one* to *fool*. It seems to be a tool of coherence once again and it would sound odd without *anyway*, compare with the following:

- (304) Please don't look at me like I'm a fool. ? I suspect I'll feel enough of one.

Here is another example in which the adverbial *anyway* shows discourse continuity:

- (305) 'Often men have hit me, but then at least they haven't hit their families. And they live to thank me, and praise God. I hope this young man does the same!' said Angel warmly. 'But it doesn't seem likely.' 'We'll hope *anyway*,' said Mr Clare.⁴

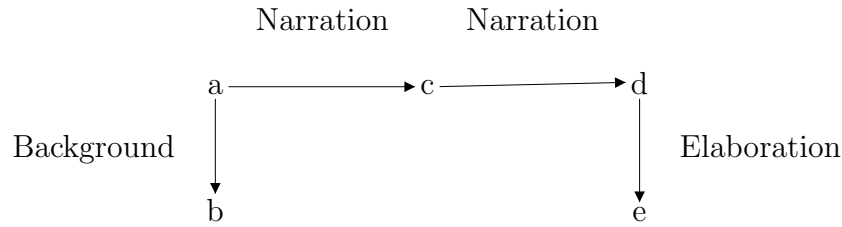
In the example above, the adverbial *anyway* seems to connect two utterances: *but it doesn't seem likely* and *we'll hope*. It is another example of discourse coherence. In this case, *anyway* can be paraphrased as *regardless of that*, therefore bringing some contrast against the previous statement *but it doesn't seem likely*, that is, that it does not seem likely that this young man would change. In this example, if we omit *anyway*, we also get an odd result:

- (306) 'But it doesn't seem likely.'? 'We'll hope'

³ Source BNC: Chimera. Gallagher, Stephen. New English Library. Sevenoaks (1991), 133-250.

⁴ Source BNC: Tess of the d'Urbervilles. Hardy, Thomas. Oxford University Press. Oxford (1989), 1-119.

Tab. 8.1: SDRS for (308)



In the following example, it seems that a feasible paraphrase is *he might fear police pursuit, but not due to the drugs*. Hence, being another example in which *anyway* helps to achieve discourse continuity. The sentence sounds odd without the use of *anyway*, compare (307a) with (307b):

- (307) a. He does not fear police pursuit. Not for the drugs, *anyway*.⁵
 b. He does not fear police pursuit. ? Not for the drugs.

In these previous examples, we have seen that *anyway* contributes to discourse coherence and therefore, discourse continuity. We have also seen that elision of *anyway* can cause infelicitous results.

On the other hand, the discourse marker *anyway* breaks discourse continuity as in the following example offered by Ferrara [1997] (repeated here for convenience):

- (308) a. And we were coming in around the back side.
 b. The little trail that goes up there was around the back side of the two camps.
 c. *Anyway*, he got up there kind of between where our cabins were
 d. and all at once he yelled
 e. ‘Get back! Get back!’

⁵ Source BNC: Deliria. Hall, Albyn Leah. *Serpent’s Tail*. London (1993), 1-125.

The example in (308) contains the discourse marker *anyway* that signals the end of a digression. (308) is represented in the SDRS in (8.1). The most important thing to note is that *anyway* seems to indicate that the point of attachment of the sentence (308h) following the discourse marker is not the preceding sentence (308g), but a previous point of attachment (308f). Therefore, *anyway* does not indicate discourse continuity as such since it does not link the utterance it occurs in with an immediately preceding sentence.

While adverbial *anyway* denotes discourse continuity, discourse marker *anyway* denotes discourse discontinuity. A key issue to note in regards to discourse continuity and the different effects that an adverbial and a discourse marker use of *anyway* have is easily demonstrated by the impossibility of co-occurrence of both uses in one same sentence. Even if we used a synonym of the particle, the utterance is odd. Note that we have not been able to find any examples where the two senses of the particle co-occurred. Observe the contrast in the following examples:

(309) Please don't look at me like I'm a fool. *Anyway*, I suspect I'll feel enough of one *anyway/anyhow*.

This set of sentences are an alteration of previous example (303), where we have seen an example of the adverbial use of *anyway*. Here we have inserted the discourse marker *anyway* initially, this would indicate the closing of a digression. We can change the adverbial *anyway* for the synonym *anyhow*, but we see that the result is still odd. This happens because the discourse marker indicates discontinuity in discourse and the adverbial continuity. Observe this other pair of examples:

(310) a. This is all very interesting. *Anyway*, I have to go.
 b. This is all very interesting. *Anyway*, I have to go *anyway/in any case*.

In this pair of examples we observe a feasible occurrence of the discourse marker *anyway* (310a). However, if we try to make it co-occur with *anyway* (or with a synonym such as

in any case), the result is odd because we are trying to put together a signal of discourse discontinuity, that is, the discourse marker, with a signal of discourse continuity, that is, the adverbial (see (310b)).

To conclude, in this section we have indicated that the adverbial use of *anyway* aids with discourse continuity and consequently, with discourse coherence. On the other hand, the discourse marker use of *anyway* does not show a direct discourse continuity, rather a point of discontinuity in the narration of events. As previous authors have noted, this discourse marker marks a closing of a digression or an end of a topic.

8.3 *Ambiguity vs. Vagueness*

In order to show if a word is polysemous, or whether it a word has different senses, the zeugma test proves extremely useful. If a word is polysemous, there are no zeugma effects or oddity. For example, in the following sentences, we find that the word *glass* is polysemous: *Pick up that glass, and pour it into the sink*. The first occurrence of *glass* refers to the container, while the second occurrence refers to the content. On the other hand, if a word has more than one sense, we get a zeugma effect, or oddity. For example, *The company serves London and pharmacies* is odd because the two complements of *serve* correspond to two different senses of the verb.

For the zeugma test, we need two coordinated constructions with ellipsis. There are a syntactic and a semantic constraints in regards to the coordination. The syntactic constraint is that both units of the coordination need to belong to the same syntactic category. The semantic constraint is that if the second coordinated unit is ellided, it must be interpreted in a parallel fashion to the first unit of the coordination. That is, *Bill saw the movie and so did Peter* means that Peter saw the movie just like Bill did.

We can apply this test to *anyway* so as to see whether the word is either polysemous, or

whether it has different senses. Note that *anyway* is preferable at the end of the utterance when it appears in a coordinated conjunction:

(311) He smokes and (he) drinks *anyway*.

(312) He smokes *anyway* and drinks.

In the examples above, *anyway* is modifying two predicates, and both bear the same type of meaning in respect to a previous utterances. In order to test for the zeugma effect, we need to see if *anyway* can modify two utterances where this *anyway* is supposed to have different senses. Observe the following utterances:

(313) a. She wasn't supposed to wear the necklace, (but) she wore it *anyway*.

b. She wasn't supposed to wear the necklace, she didn't like it *anyway*.

c. She wasn't supposed to wear the necklace, her mother told her *anyway*.

In (313a), we find an example of *anyway* involving a sense of contrast that can be reinforced by using *but*. In (313b), *anyway* is used to dismiss the previous utterance; here there is no contrast as can be noted, if we tried to use *but* here, the result would be odd: *She wasn't supposed to wear the necklace, but she didn't like it anyway*. Finally, in (313c), the sense of *anyway* is modificative, or equivalent to *at least*.

Now, note the oddness when we try to coordinate these structures:

(314) a. She wasn't supposed to wear the necklace, she wore it and she didn't like the necklace *anyway*.⁶

b. She wasn't supposed to wear the necklace, she didn't like it and she wore it *anyway*.

⁶ If we had not changed the pronoun *it* for its true referent *the necklace*, we would have a different interpretation for the pronoun.

-
- c. She wasn't supposed to wear the necklace, her mother told her and she didn't like the necklace *anyway*.⁷
 - d. She wasn't supposed to wear the necklace, she didn't like it and her mother told her *anyway*.
 - e. She wasn't supposed to wear the necklace, her mother told her and she wore it *anyway*.
 - f. She wasn't supposed to wear the necklace, she wore it and her mother told her *anyway*.

Here we have all possible combinations of coordination of utterances, and we can see that the results are odd, hence, we have zeugma effects. This leads us to believe that *anyway* is not polysemous, but has three different senses. Note that we have not added the question dismissive use of *anyway* that always appears with wh-interrogatives. As we have expressed previously, we argue that this type of *anyway* corresponds to other uses of *anyway*, but used in interrogatives instead.

8.4 *The Syntax of Anyway*

8.4.1 *Constituency Tests*

Here we want to observe where in the sentence the discourse marker and adverbial uses of *anyway* attach syntactically. We make use of constituency tests to establish where in the syntactic tree *anyway* is attached. These sentences have been contrasted with various native English speakers to check for grammaticality or/and oddness. First, we start with the adverbial use of *anyway*.

⁷ If we had not changed the pronoun *it* for its true referent *the necklace*, we would have a different interpretation for the pronoun.

An adverb which modifies a VP syntactically as well as semantically can occur in clarification questions as still part of the VP, note the following:

- (315) a. John eats cakes *greedily*.
 b. What does John eat *greedily*?

The fact that the adverb can appear in the clarification question signals that the adverb is part of the VP. On the other hand, observe the result when we try this test on *anyway*:

- (316) a. It is a bit boring in a way. We'll think about it *anyway*.
 b. What will you think about *anyway*?

The fact that *anyway* is odd when it appears in the clarification question seems to indicate that *anyway* is not part of the VP but of the whole sentence instead. Now let us try echo questions, again possible for an adverb modifying a VP, but not for *anyway*:

- (317) a. John eats cakes *greedily*.
 b. John eats what *greedily*?
- (318) a. It is a bit boring in a way. We'll think about it *anyway*.
 b. You will think about what *anyway*?

This test indicates that *anyway* modifies the whole sentence rather than just the VP because of the oddness in the echo question where *anyway* appears. Finally, let us observe cleft constructions in which we can cleft the adverb if it is part of the VP. This gives an odd result with *anyway*:

- (319) a. It is *greedily* that John eats cakes.
 b. It is *anyway* that we'll think about it.

These three tests seem to indicate that *anyway* is modifying the whole sentence rather than just the VP. This differs to other adverbs typically occurring sentence finally.

We now need to find out whether the discourse marker *anyway* modifies the sentence it appears in as the adverbial does, or whether it is any different. Observe the following pair:

- (320) a. *Anyway*, if he went, he had won.
b. *Anyway*, he won if he went.
c. He won, *anyway*, if he went.

It is generally agreed that *if A then B* is equivalent to *B if A*. We can see from this group of sentences that when the discourse marker *anyway* forms part of the discourse, this needs to appear at the start of both utterances, therefore not being associated with a particular sentence, namely A. This indicates that the discourse marker *anyway* modifies a well formed sentence.

Observe that the discourse marker *anyway* can appear as the complement clause of declarative verbs:

- (321) And then he said that *anyway*, he did not want to go home.

This indicates that the discourse marker *anyway* is attached syntactically to the sentence.

To sum up, syntactically, both discourse marker and adverbial uses of *anyway* are attached to the sentence node of a tree.

8.4.2 *Word Order*

It seems that the position that the word *anyway* takes in the sentence helps to determine the kind of function it has in the discourse. If it is at the start of a sentence, it is used as a discourse marker, and it has a distinctively marked intonation. On the other hand, if it is used at the end of a sentence, it is used as an adverb. These are two very different marked

uses. There are hardly any examples in which *anyway* is used other than at the start or at the end of an utterance.

The position in the sentence of an adverb has been highlighted as it seems that different adverbs may occupy different positions in the sentence. Scholars divide possible zones related to the distribution of adverbs; we want to see where *anyway* as a discourse marker and as an adverbial fits in this type of distribution. Bonami et al. [2004] define 4 zones in finite clauses and 3 in infinitives. In finite clauses, zone 1 is the zone before the subject (the adverb is the set of words in bold and the subject has been italicized):

(322) **Frankly/Therefore/Unfortunately** *I* do not care about the results.

Zone 2 is the zone immediately before the verb (the adverb is the set of words in bold and the verb has been italicized):

(323) The shop **hardly/often/never** *opens* on Saturdays.

Zone 3 is after the verb (the adverb is the set of words in bold and the verb has been italicized):

(324) The shop *opens* **always/promptly/early** on Saturdays.

Finally, zone 4 is among the complements (the adverb is the set of words in bold and the complements have been italicized):

(325) He eats *cakes* **greedily/quickly/frequently**.

In infinitival clauses, there is only one preverbal zone, as can be seen from the following example:

(326) **Hardly/Often/Never** *opening* on Saturdays, the shop still manages to make money.

Tab. 8.2: Integrated adverb classes

Pre-infinitive	Post-verbal	Among complements
% connective	connective	
% evaluative	evaluative	
modal	modal	
agentive	agentive	
frequency	frequency	frequency
negation	negation	negation
% degree	degree	degree
time	time	time
	%frame	% frame

Bonami et al. [2004, 11] offer the table in (8.2) describing integrated occurrences of adverb classes. According to this table, connectives and evaluatives are allowed post-verbally, while only some speakers find a pre-infinitive position for connectives and evaluatives possible. These two as well as modals and agentives do not occur among complements. Frequency, negation and time adverbs are possible in all zones, while degree is possible in pre-infinitive position for only some speakers.

Anyway as a discourse marker not only appears exclusively in zone 1, unlike other discourse markers, but it is never integrated; it always has an incidental intonation. On the other hand, as an adverb, *anyway* only appears in zone 4.

- (327) a. *Anyway*, the shop opens on Saturdays.
 b. The shop *anyway* opens on Saturdays.

- c. ? The shop opens *anyway* on Saturdays.⁸
- d. The shop opens on Saturdays *anyway*.

Note that (327a) has an instance of *anyway* as a discourse marker; while (327d) contains an instance of *anyway* as an adverbial. It is apparent that these two sentences (327a) and (327d) do not mean the same. (327a) would be closing a digression started previously in the discourse; and (327d) would be connecting the sentence it appears in with a previous utterance. However, (327b) and (327c) are both odd.

We have said that the discourse marker *anyway* appears at the very start of an utterance. This is not always the case. It appears to be different when it forms part of certain discourse marker compounds. In fact, the discourse marker *anyway* can occur after the conjunctions such as *but*, *and*, *so*, as well as the interjection *well*. (These instances were discussed as collocations by Lenk [1998] and Takahara [1998].) The collocation *but anyway* occurs both at the beginning of a sentence and also at the beginning of a new phrase. They seem to have the same meaning in both instances:

- (328) When I saw that I wanted to be him, or one of them, or both of them, *but anyway* I was just so happy to watch them together.⁹
- (329) Father didn't even send the car. It was humiliating. Of course I was sent to bed without any supper. What else would you expect after the rotten day I'd had? *But anyway*, the foreigners wouldn't have left much.¹⁰

In the first example of this set, the speaker is hesitating over who he wants to be. This hesitation does not conclude, but the speaker decides that the conclusion might not be

⁸ We might find contexts in which this utterance is possible, for example, in *The shopkeeper usually struggles to wake up after heavy drinking on Friday nights. But his shop opens anyway on Saturdays.* (Example provided by Alex Lascarides.)

⁹ Source BNC: Ready to catch him should he fall. Bartlett, Neil. *Serpent's Tail*. London (1990), 9-114.

¹⁰ Source BNC: A Classic English Crime. Heald, Tim. *Pavilion Books Ltd*. London (1990), 96-216.

relevant for the point that he really wants to make. That is, that he was really happy to see that the couple were together. The contrast is between the hesitation and the real feelings of happiness of the speaker. The hesitation is ended by *anyway*, and contrasted with the conclusion by *but*.

In the second example, the speaker mentions that her father had not sent the car and that she found it humiliating. She also says that she did not have any supper before going to bed. And then, she complains about her rotten day. Then she resumes the comment about having a bad day with the use of *anyway*. Then, she mentions that the foreigners would not have left much food for her to eat. This idea is contrasted to the fact that she had not eaten with the use of *but*.

In both instances *anyway* is used to end a digression. At the same time, it also expresses a contrast thanks to the conjunction *but*. This contrast is between the conclusion, i.e., the utterance after *anyway*, and what has been previously said.

Here are some examples of the collocation *and anyway*:

- (330) But don't expect a sudden wholesale change from the one architecture to the other, warns Parker; a number of commercial applications are not amenable to parallelisation, *and anyway* IBM's Sysplex clustering will ensure that the existing and new architectures should work together happily.¹¹
- (331) Twins have a lesser chance of good pre-birth life since they must share the available food and oxygen supplies. *And anyway*, if I monitored two babies, I would be creating the same environment for both of them, wouldn't I?¹²

The expression *and anyway*, whether it appears after a full stop or a comma, seems to mean the same thing. It closes an explanation and introduces a conclusion that follows from

¹¹ Source BNC: Computergram international.

¹² Source BNC: The meddlers. Rayner, Claire. Michael Joseph Ltd. London (1991), 15-110.

this explanation. Because there is a part of an elaboration, we can use *and*; and because it is a conclusion, and therefore the explanation is seen as closed, we can use *anyway* to indicate that somehow we reach a more important point in the dialogue. This is the case of both examples above. In the first case, there is an explanation about machines not varying all of a sudden, the conclusion is that a particular application will make sure that the new architectures or add-ons will work. In the second example, the speaker is establishing some difficulties on the monitoring of twins, when the speaker offers a conclusion, the expression *and anyway* is used to conclude that the same environment would be used for the twins if they were monitored.

The first example of the collocation *so anyway* starts after the speaker has been interrupted being asked the age of a girl that a couple had to babysit:

- (332) Four, five, some place around there. I can't remember ever. Cause it's just...She's such a nightmare to me. *So anyway*, they had to cancel their plans. (Lenk [1998, 85])

As can be seen, this collocation still has been used by the speaker to close a digression regarding the age of the child a couple had to babysit. Then, after *so anyway*, the speaker resumes to the topic of her main story. See another example of *so anyway*:

- (333) And these three guys walk in and, one guy was so geeky, he's in a suit. Who the hell do you know goes to a party in a suit? I mean, who is this geek? *So anyway*, the other guy had a real nice shirt on. (Lenk [1998, 86])

In this particular example, we find that the collocation *so anyway* also ends a digression created by the same speaker. She is asserting that one of the guys in her main story was a geek, and she justifies the fact that he was a geek through some rhetorical questions in regards to people wearing suits in parties. Then, once she has finished her digression, she resumes to the main topic using *so anyway*.

The expression *well anyway* is generally used in conversation, and rarely in written discourse. The expression could be used when *well* actually means *in a good way/manner* as for example in: ‘*he did his work well anyway*’. In these instances *anyway* is used as an adverb.

When *well* is used as a discourse marker, it strengthens the discourse marker *anyway*, or vice versa. It is widely accepted that *well* has, among many other functions, the function of resumption or digression closure, as *anyway* does. In the following example we can see that the speaker resumes some requests by suggesting to take some kind of action.

- (334) Put the rest of your spel, er your stage set the other side. Or I might get some card and stick to it. To the back and, and then paint on that. *Well anyway*, shall have to go and put that up.¹³

Previous literature has suggested that *well* can indicate a digression closure, and as we can see from the example, it has been used to strengthen the digression closure expressed by *anyway*. It seems that the discourse marker *anyway* can appear after other particles forming a collocation, rather than appearing sentence initially strictly speaking. However, these collocations always appear at the start of the sentence, and as with the discourse marker *anyway* alone, they close a digression and have an incidental intonation.

In summary, this section has pointed out that the adverbial *anyway* appears at the end of a sentence. However, it is not a typical sentence final adverb in the sense that it is syntactically attached to the sentence rather than the VP alone. On the other hand, the discourse maker *anyway* is sentence initial and has an incidental intonation. But, like the adverbial use of *anyway*, the discourse marker is syntactically attached to the sentence.

¹³ Source BNC: 41 conversations recorded by ‘Arthur’ (PS03S) between 10 and 13 January 1992 with 7 interlocutors.

8.5 *The Semantics of Anyway*

8.5.1 *Semantic Arguments of Anyway*

Scholars agree that discourse markers such as *anyway* modify the whole sentence; and that discourse markers take two arguments: preceding and following pieces of discourse. On the other hand, some authors believe that adverbs occurring post-verbally, namely in either zone 3 or 4, modify the verb or verb phrase. The adverb *anyway* is different from other adverbs appearing in zone 4 (e.g. *greedily*, *frequently*, *quickly*, etc.). These type of adverbs only take one argument, which is usually the verb, for example:

- (335) a. John eats cakes *greedily*.
 b. John eats cakes *frequently*.
 c. John eats cakes *quickly*.

In the set of sentences above, the corresponding adverb is modifying the verb *eat* both syntactically and semantically. In other words, these adverbs only take one semantic argument, that of the verb, observe:

- (336) a. greedily(eat)
 b. frequently(eat)
 c. quickly(eat)

On the other hand, *anyway* does not take only one argument but two. (Observe that sentences with adverbial *anyway* only can be fully understood if we have a preceding sentence.) Let us repeat here some examples given in the literature:

- (337) I don't know how I ate any food. I'm not used to drinking *anyway*.
 (338) It is a bit boring in a way. We'll think about it *anyway*.
 (339) She wasn't supposed to wear the necklace, she did *anyway*.

In the previous examples, the utterance containing *anyway* modifies semantically not only the utterance it appears in, but also the previous utterance. Here we do not give our fully developed semantic account of *anyway*, but a simplified version:

(340) *anyway*(I don't know how I ate any food, I'm not used to drinking)

(341) *anyway*(It is a bit boring in a way, We'll think about it)

(342) *anyway*(She wasn't supposed to wear the necklace, she did)

As we can see, *anyway* takes two semantic arguments which correspond to the utterance where *anyway* occurs (appearing as the second argument), and the utterance preceding *anyway* (appearing as the first argument). It seems that adverbial *anyway* is not a typical example of an adverb appearing in zone 4 as described by previous authors.

8.5.2 *Truth Conditions*

In regards to the semantics of *anyway*, both the discourse marker and the adverbial, we need to establish if they are part of what is being said in order to figure out whether they potentially are truth conditional.

An expression is part of an utterance if this expression can occur in the complement clause of a declarative verb. First, let us observe if that is possible with the adverbial *anyway*:

(343) Mary laughed/shouted/claimed that John is incompetent *anyway*.

As can be seen, the adverbial *anyway* can occur in the complement clause of a declarative verb, in the example, *laughed*, *shouted*, and *claimed*. This would indicate that *anyway* is part of what is being said. Let us now turn to the discourse marker:

(344) The Captain suggested that some charge be made, but Richardson wouldn't hear

of it. He said that, *anyway*, he was in a hurry, and went away.¹⁴

As can be seen from the example above, the discourse marker *anyway* can also be part of the complement of a declarative verb, in this particular case, the verb *say*. In the example, it seems that the reported speech follows the content and structure of the speech actually reported. That is, we guess from the reported speech that Richardson actually used *anyway* as a discourse marker in his original speech. This indicates that the discourse marker *anyway* is part of what is being said.

If both the adverbial and the discourse marker *anyway* are part of what is being said, both of them could affect the truth conditions. This is a matter we explore here. We will first observe whether the four subtypes of the adverbial use of *anyway* affect the truth conditions, and then, we will observe the discourse marker use.

Let us start with a question dismissive use of the adverbial *anyway*. Observe the following pair:

- (345) a. How's Kim *anyway*?
 b. How's Kim?

Any answer to (345a) is also a possible answer for (345b). This means that both interrogatives have the same truth conditions. Then, we can say that the question dismissive use of the adverbial *anyway* is not truth conditional. Even if *anyway* in such kind of examples does not affect the content of the question itself, it is providing information about the speech act of asking the question. For example, observe the following pair:

- (346) a. π_1 Kim graduated last month.
 b. π_2 How is Kim *anyway*?

¹⁴ <http://query.nytimes.com/gst/abstract.html?res=FA0917F6355512738DDDAC0A94DE405B898CF1D3>

In this example, *anyway* is contributing to a metatalk relation such as Contrast* between π_1 and π_2 . That is, having been told something about Kim, B is not expected to ask a basic question about Kim.¹⁵

Observe the following pair for the dismissive use of the adverbial *anyway*:

- (347) a. I could not go to the party cause I was on codeine. My mum wouldn't have let me *anyway*.
- b. I could not go to the party cause I was on codeine. My mum wouldn't have let me.

Both utterances in (347) have the same truth conditions, therefore indicating that the dismissive use of the adverbial *anyway* does not affect the truth conditions of a sentence. That is, both sentences, the one modified by *anyway*, and the previous sentence, both need to be true for the entire discourse to be true. Whatever the discourse relation *anyway* denotes, it is going to be a veridical relation.

Now, observe the following pair for the contrastive use of the adverbial *anyway*:

- (348) a. It is a bit boring in a way. We'll think about it *anyway*.
- b. It is a bit boring in a way. We'll think about it.

There is a difference between (348a) and (348b). The difference between the two utterances is that in (348b) we have a contrast which is not present in (348a).

Finally, observe the following pair for the adverbial use of *anyway*, in particular, a modificative instance:

- (349) a. It's attracted a grant which is the largest amount, in this country *anyway*.
- b. It's attracted a grant which is the largest amount, in this country.

¹⁵ Thanks to Alex Lascarides for providing this example.

(349a) differs from (349b) in that (349b) contains an implicature not present in (349a). This implicature is that there are largest grants in other countries. This implicature is cancelable as we can see in the following example:

(350) It's attracted a grant which is the largest amount, in this country *anyway*. Or anywhere else really.

In (350) we see how the implicature in (349b) is cancelable, therefore, the only difference between (349a) and (349b) is the implicature, but not the truth conditions. This means that modificative adverbial uses of *anyway* are not truth conditional.

Now let us turn to the discourse marker use of *anyway*. Observe the following pair of examples:

- (351) a. And we were coming in around the back side. The little trail that goes up there was around the back side of the two camps. *Anyway*, he got up there kind of between where our cabins were and all at once he yelled 'Get back! Get back'.
- b. And we were coming in around the back side. The little trail that goes up there was around the back side of the two camps. He got up there kind of between where our cabins were and all at once he yelled 'Get back! Get back'.

The truth conditions of (351a) are no different to the truth conditions of (351b). This means that the discourse marker *anyway* does not affect the truth conditions of discourse.

In summary, both adverbial and discourse marker uses of *anyway* have two semantic arguments. All uses of *anyway* are part of what is being said; but none of them affect the truth conditions of discourse.

Tab. 8.3: Classification co-occurrence chart of adverb types (Ernst [2002]) with *anyway*

Adverb type	Discourse Marker <i>anyway</i>	Adverbial <i>anyway</i>
Speech-Act	✓	✓
Evaluative	✓	✓
Modal	✓	✓
Evidential	✓	✓
Subject-oriented	✓	✓
Exocomparatives	✓	✓

8.6 *Co-occurrence with Other Adverbs*

Some authors, among them Ernst [2002] and Bonami et al. [2004], argue that the classification of adverbs and their co-occurrence is relevant to understand the syntactic behavior and the meaning of these adverbs.

In order to explore this issue, we observe what kind of adverbs *anyway* can combine with both as an adverb and as a discourse marker. We base the adverb classification on the authors mentioned above, the results are summarized in table (8.3) for Ernst [2002]. In this case all types of adverbs can co-occur with both discourse marker and adverbial *anyway*. The results for Bonami et al. [2004] are summarized in table (8.4) where discourse marker uses cannot co-occur with connectives.

We now offer examples that correspond to these tables in order to show how *anyway* can co-occur with almost all types of adverbs. The two uses of *anyway* must occupy the same position in declarative, interrogative, and imperative clauses; that is, the discourse marker must always be sentence initial, and the adverbial must always occur sentence finally. Notice that there is a restriction: any other adverb co-occurring with *anyway* as a discourse marker has to appear after *anyway* (as in (352a)). If it appears elsewhere, the sentence is odd; for example, (352b) or (352c).

Tab. 8.4: Classification co-occurrence chart of adverb types (Bonami et al. [2004]) with *anyway*

Adverb type	Discourse Marker <i>anyway</i>	Adverbial <i>anyway</i>
Connectives		✓
Speech-act	✓	✓
Evaluatives	✓	✓
Modals	✓	✓
Agentives	✓	✓
Frames	✓	✓
Habituals	✓	✓
Frequency	✓	✓
Duration	✓	✓
Temporal location	✓	✓
Locatives	✓	✓
Manner	✓	✓
Degree	✓	✓

In the case of adverbial *anyway*, it always appears at the end of the sentence and can co-occur with any type of adverb. Observe an example such as a speech-act adverb as *frankly* appearing at the beginning of the sentence in (352d):

(352) Speech-Act

- a. *Anyway*, I frankly believe in his ideas.
- b. Frankly *anyway*, I believe in his ideas.
- c. Frankly, *anyway* I believe in his ideas.
- d. Frankly, I don't want to see him *anyway*.

As can be seen from the example above, the word order matters for speech-act adverbs, but it also does for any other type of adverbs. Note the following list of acceptable utterances related to the adverb types described by Ernst:

(353) Evaluative

- a. *Anyway*, he stupidly gave his speech.
- b. He stupidly gave his speech *anyway*.

(354) Evidential

- a. *Anyway*, she obviously likes you.
- b. She obviously likes you *anyway*.

(355) Modal

- a. *Anyway*, he probably watched movies all night.
- b. He probably watched movies all night *anyway*.

(356) Subject-oriented

- a. *Anyway*, she wisely chose to stay home.
- b. She wisely chose to stay home *anyway*.

(357) Exocomparatives

- a. *Anyway*, she similarly chose to stay home.
- b. She similarly chose to stay home *anyway*.

We only give examples for the different types of adverbs classified by Bonami et al. [2004] in order to avoid repetition.

(358) Frame

- a. *Anyway*, legally he must pay his fees.
- b. Legally, he must pay his fees *anyway*.

(359) Habituals

- a. *Anyway*, generally he admits his errors.
- b. Generally, he admits his errors *anyway*.

(360) Frequency

- a. *Anyway*, he never goes to the bar.
- b. He never goes to the bar *anyway*.

(361) Duration

- a. *Anyway*, he stood there a long time.
- b. He stood there a long time *anyway*.

(362) Temporal location

- a. *Anyway*, he recently sold his car.
- b. He recently sold his car *anyway*.

(363) Manner

- a. *Anyway*, he gently wrapped all the presents.
- b. He gently wrapped all the presents *anyway*.

- (364) Degree
- a. *Anyway*, he absolutely refuses to come.
 - b. He absolutely refuses to come *anyway*.
- (365) Locatives
- a. *Anyway*, he is waiting for you in the bar.
 - b. He is waiting for you in the bar *anyway*.
 - c. He is waiting for you *anyway*, in the bar.
 - d. He is waiting for you *anyway* in the bar.

We have previously said that the adverbial use of *anyway* needs to occur sentence finally. However, the sentence in (365c) seems to be acceptable. It seems that in this sentence, the locative *in the bar* is a kind of afterthought. In this case, the locative might be outside the scope of *anyway*. It is the incidental intonation of the locative *in the bar* that makes (365c) possible. Without an incidental intonation, the locative is not possible in sentence final position (see (365d)). This indicates that the locative in (365c) is not under the scope of *anyway*.

The position of the adverbs co-occurring with *anyway* is quite restricted; and the discourse marker needs to appear always at the start of the utterance, and the adverb at the end of the sentence. When co-occurring, the other type of adverb can appear in any other available position.

The only remaining issue is that the discourse marker *anyway* cannot occur freely with a connective (see (366a)) as contrasted with various native speakers.¹⁶ This supports the fact that this discourse marker breaks discourse continuity. On the other hand, the adverbial can freely occur with a connective. This supports the fact that the adverb allows discourse

¹⁶ Connective is the terminology used by Bonami et al., and we have adopted this terminology in this section.

continuity (see (366b)). There is only a certain type of connectives that can co-occur with this discourse marker. This type of connectives are not necessarily connected with a previous piece of discourse, but may be connected to discourse that is to follow (see (366c) and (366d)). Observe the following examples:

(366) Connective

- a. *Anyway*, (however/on the other hand), he decided to come.
- b. (However/in fact/etc.), he decided to come *anyway*.
- c. *Anyway*, first, he decided to come.
- d. *Anyway*, in fact, he decided to come.

In summary, *anyway* as an adverb can combine with any other type of adverb with the preference of *anyway* appearing at the end of the sentence, and the other adverb occupying any other available position. Even though there appears to be a number of collocations of the discourse marker *anyway* with other conjunctions, there is a restriction with the combination of the discourse marker *anyway* and any other adverb. The restriction affects connectives. Only connectives that somehow link the discourse in a cataphoric manner, e.g., itemizers, can co-occur with *anyway* because they do not conflict with the role of *anyway* of closing of a digression. Other kind of connectives are unacceptable if they co-occur with the discourse marker.

8.7 *The Meaning of Any and Way*

It seems reasonable to discuss the meaning of *any*; and then, continue with the meaning of *way* as Halliday and Hasan [1976] noted that some discourse markers are morphologically composed by other free morphemes. The meaning of these two particular words combined to form an adverb is bound to help us understand the meaning of *anyway*.

8.7.1 *The Meaning of Any*

It seems that *any* has two possible uses: one as a free choice item, and the other as a negative polarity item. Observe the following sentences:

- (367) a. Take *any* apple.
 b. I don't have *any* potatoes.

The sentence in (367a) is an example of free choice *any*, where someone is given the free choice to select at least one apple from a group of apples. On the other hand, (367b) is an example of negative polarity *any*. A polarity item is an expression that requires a licensing expression appearing in the same sentence. In particular, negative polarity items must co-occur with a negative word. Negative polarity *any* is ungrammatical if it occurs in a sentence without a negative expression such as *not*; note the following:

- (368) a. I don't have *any* potatoes.
 b. *I do have *any* potatoes.

In the literature, some view Negative Polarity Item (NPI) *any* and Free Choice (FC) *any* as two different items, the former being an indefinite, and the later being a universal. On the other hand, some authors believe in the possibility of a unified account of both NPI and FC *any*, considering *any* either a universal or an existential. The remaining issue that the authors encounter is how to explain the cases in which *any* has an existential or a universal reading respectively.¹⁷

Our issue is how such accounts influence an interpretation of *anyway*. Some of the evidence used to determine whether *any* behaves like a universal or an existential does

¹⁷ Authors who argue *any* is a universal are Davison [1980], Saebo [2001], Jayez and Tovenà [2005], Dayal [2005], among others; authors arguing that *any* is an existential are Kadmon and Landman [1993], Giannakidou [2001], Horn [2005], among others

not help us to determine the meaning of *anyway*. The fact that the word *anyway* does not occur in structures as a partitive, or that it is not affected by subtrigging are facts unusable for our account of the semantics of *anyway*. As a whole, *anyway* cannot be modified by a PP or a relative clause, hence the impossibility of it appearing in a subtrigging or partitive constructions.¹⁸

In the same manner, the distribution of *anyway* is quite different to that of *any*. For example, free choice *any* is incompatible with adverbs of quantification such as *usually*, *rarely*, *hardly*, *generally*, *sometimes*, etc. Note the ungrammaticality of the following:

- (369) a. * Any lion is usually majestic. (Dayal [2005, 4])
 b. * Any lion is rarely majestic.
 c. * Any lion is hardly majestic.
 d. * Any lion is generally majestic.
 e. * Any lion is sometimes majestic.

On the other hand, *anyway*, both as an adverbial and as a discourse marker, can appear with adverbs of quantification:

- (370) a. Lions are usually majestic *anyway*.

¹⁸ Partitives are expressions in which *any* is modified by a PP. In partitives, the definiteness of the noun phrase limits the interpretation to a contextually specified set of individuals. Note the following example:

- (1) You may take any of these apples.

Any requires a post-nominal modifier to be felicitous in episodic sentences. The licensing offered by a modifier is called subtrigging. Note the following examples:

- (2) a. *Any cat purred.
 b. Any cat that was stroked purred.

- b. Lions are rarely majestic *anyway*.
 - c. Lions are hardly majestic *anyway*.
 - d. Lions are generally majestic *anyway*.
 - e. Lions are sometimes majestic *anyway*.
- (371)
- a. *Anyway*, lions are usually majestic.
 - b. *Anyway*, lions are rarely majestic.
 - c. *Anyway*, lions are hardly majestic.
 - d. *Anyway*, lions are generally majestic.
 - e. *Anyway*, lions are sometimes majestic.

In (8.5) we can find the collocation frequency of *anyway* and its synonyms with a list of adverbs of quantification with a window of 6.

Free choice *any* cannot appear freely with modals, see the following examples:

- (372)
- a. You might choose *any* card.
 - b. You may choose *any* card.
 - c. You can choose *any* card.
 - d. You could choose *any* card
 - e. * You must choose *any* card.
 - f. * You would choose *any* card.
 - g. * You will choose *any* card.

On the other hand, *anyway*, both as an adverbial and as a discourse marker can freely occur with any modal:

- (373)
- a. You might choose a card *anyway*.
 - b. You may choose a card *anyway*.

Tab. 8.5: *Anyway* and adverbs of quantification (Source: BNC)

Particle	usually	hardly	generally	rarely	sometimes
ANYWAY	22	14	5	4	6
ANYHOW	0	0	0	0	2
IN ANY WAY	0	0	0	0	0
IN ANY EVENT	0	0	0	0	0
IN ANY CASE	2	3	4	0	0

- c. You can choose a card *anyway*.
- d. You could choose a card *anyway*.
- e. You must choose a card *anyway*.
- f. You would choose a card *anyway*.
- g. You will choose a card *anyway*.
- (374) a. *Anyway*, you might choose a card.
- b. *Anyway*, you may choose a card.
- c. *Anyway*, you can choose a card.
- d. *Anyway*, you could choose a card.
- e. *Anyway*, you must choose a card.
- f. *Anyway*, you would choose a card.
- g. *Anyway*, you will choose a card.

In table (8.6), we find the collocation frequency of *anyway* and various synonyms with a list of modals with a window of 6.

Because it is apparent that the adverbial or the discourse marker *anyway* are not negative polarity items (they do not require any negative expression to be licensed), we are

Tab. 8.6: *Anyway* and modals (Source: BNC)

Particle	might	must	may	would	will	can	could
ANYWAY	45	16	25	363	117	110	116
ANYHOW	3	0	0	17	3	0	2
IN ANY WAY	4	7	7	31	22	53	31
IN ANY EVENT	4	6	10	34	26	6	3
IN ANY CASE	10	10	25	96	29	18	22

only interested in free choice. This is the reason for us to turn to the underlying philosophic ideas of Vendler [1967] who defined the concept of free choice. We need to look into detail to see what free choice actually means; and also to be able to determine whether this concept helps us towards a definition of *anyway*.

Vendler analyses the meaning of *any* by giving it a few key characteristics. First of all, *any* shows a lack of determination. This lack of determination goes beyond the indefinite article *a* since as Vendler argues, it is not the same to offer *an apple* than *any apple*, the second offer being more generous.

Any, according to Vendler, grants free choice, if a person is offered an apple, he can choose the apple he likes the most if the offer is *Take any apple*. This tone of freedom connoted by *any* excludes coercion since *Take any apple* is by no means an order, it is just an offer. Hence, saying *I order you to take any* or something of the sort does not make sense. *Any* blends indeterminateness with generality and that is what Vendler calls freedom of choice. Note the contrast between the following (Vendler [1967, 80]):

(375) I can beat one of you.

(376) I can beat some of you.

(377) I can beat any one of you.

While in the first two the individuals who I can beat are a determined and limited group, in the last case *any* allows me to say that I could beat each one of you, no matter who these individuals are.

This freedom of choice is an essential feature, thus, if we exclude that freedom of choice, the use of *any* becomes nonsensical. So, in past events it does not make sense to use *any* since that freedom of choice does not exist anymore. Something that has already been done does no longer have freedom of choice since the choice has already been taken. Also, facts are not free, so *any* cannot be used in reports of fait accompli, for example:

(378) *He took *any* apple.

(379) *He ate *any* apple.

According to Vendler, *any* shows an indifference in size since *Take any* is an offer which gives you freedom to decide both which item to choose and how many of them to choose. This indifference has a limitation in that there is an upper limit to the generosity to any offer. If I have four apples and I ask you to take any, my offer only goes up to taking 3 of them since if you took the 4, you would no longer have freedom of choice and the use of *any* would not make sense. Thus, the immediate scope of *any* cannot consume the total population. That is to say that *any* never comes to be just like *every*. So, completeness clashes with *any*. This last property is called *incompleteness* by Vendler.

As we have mentioned in previous sections, the meaning of *anyway* has two arguments. In particular, the previous utterance (or group of utterances in the case of the discourse marker) is the first argument, and the utterance that *anyway* is syntactically attached to is the second semantic argument. This could be represented as *anyway(a,b)* where both a and b are messages (in the sense described by Ginzburg and Sag [2000]).

The meaning of *anyway* seems to be *choose any resolution for 'a', not every, not a particular one, and let b be the main issue*. In the event that 'a' created doubts on their

truth values, the speaker of *anyway* is not concerned with those and allows the addressee to have free choice. Therefore, the addressee is asked by the speaker to *choose any resolution*.

This meaning explains the discourse marker effect of closure of discourse. In these cases, the speaker is asking the addressee to resolve any issues arising from the digression. This explains the adverbial too, in the sense that message b takes relevance over message a. Of course, with the four different uses of the adverbial, we have four different secondary effects, this is represented via rhetorical relations. These rhetorical relations do not form part of the meaning of *anyway* in itself, they are a secondary effect brought on by the context in which adverbial *anyway* is licensed to appear. (This is similar to the discourse marker as we cannot establish what kind of rhetorical relation it implies unless we take into account the context.)

Hence, the properties of *any* have been inherited by *anyway*. That is to say, the freedom of choice of *any* is part of the meaning of *anyway* both as a discourse marker and as an adverbial. There is a freedom of choice since the speaker of *anyway* shows both indifference and incompleteness. It shows indifference because the speaker does not intend for the addressee to choose a particular resolution. It shows incompleteness because the speaker does not want the addressee to choose all possible resolutions. There is also a lack of determination in the sense that the speaker does not want the addressee to choose a particular resolution.

8.7.2 *The Meaning of Way*

The same way we have discussed the meaning of *any*, we will also briefly discuss the meaning of *way* that has been derived into other adverbials over time, note the table in (8.7).

According to the Oxford English Dictionary, *way* has adopted a variety of meanings listed below:

Tab. 8.7: Adverbials derived from *way* (www.oed.com)

Adverb	Meaning
Always	every time, at all times, all along, after all, perpetually
Everyway	in every manner or way, in every respect
Noway	in no way or manner, not at all, by no means, under no circumstances
Someway	in some way, somehow, by some means
Crossway	transversally
Straightway	by a direct course, immediately
Needway	necessarily
Edgeway, endway,	denoting direction of movement
sideway, sunway	denoting direction of movement

- Road, path.
- Course of travel or movement.
- Course of life or action, means, or manner.

These are the possible meanings of *way* when it is a noun. As we can see in table (8.7), *way* has derived into various adverbs, including the combination between *any* and *way*. In some of these adverbs, a *way* does not seem to denote the meanings of *way* as given by the OED, namely *always*, *everyway*, *noway*, *someway*, and *anyway*. When *way* forms part of an adverb, we suggest that *way* denotes an issue. This issue can be mapped to a message. Then, if *way* appears with *any*, we have free choice over this message. Having free choice over a message seems to indicate that we have free choice on resolving the truth value of this message.

8.8 *Conclusion*

In this chapter we have discussed some issues regarding the classification of uses of *anyway* which help determine the meaning of this word. We have suggested that there is one use of *anyway* which aids discourse continuity: the adverbial use; while another use indicates discourse discontinuity: the discourse marker use. We have discussed the relevance of word order and we have exemplified two clearly different kinds of distribution. The discourse marker use always appears at the start of a sentence; and the adverbial use always or nearly always appears at the end of a clause. This distinction has also been supported by the very few limitations on the co-occurrence of these two uses with other adverbs.

We have also pointed out that the meaning of *anyway* is compositional, and that it inherits the properties of free choice from *any*. In the next chapter, we will try to capture these intuitions formally. We will provide a lexical entry for *anyway* which will reflect its two uses: a discourse marker that indicates a discourse pop, or end of topic; and an adverbial that has four different secondary effects but similar underlying semantics.

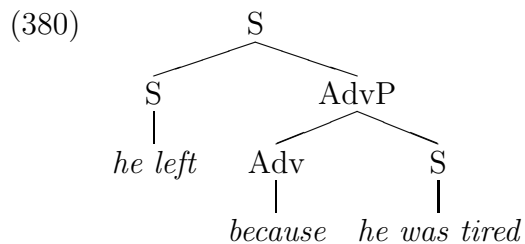
9. ANYWAY: OUR ANALYSIS

This chapter gives our account of anyway and it shows how it works as an adverbial and as a discourse marker taking into account various examples.

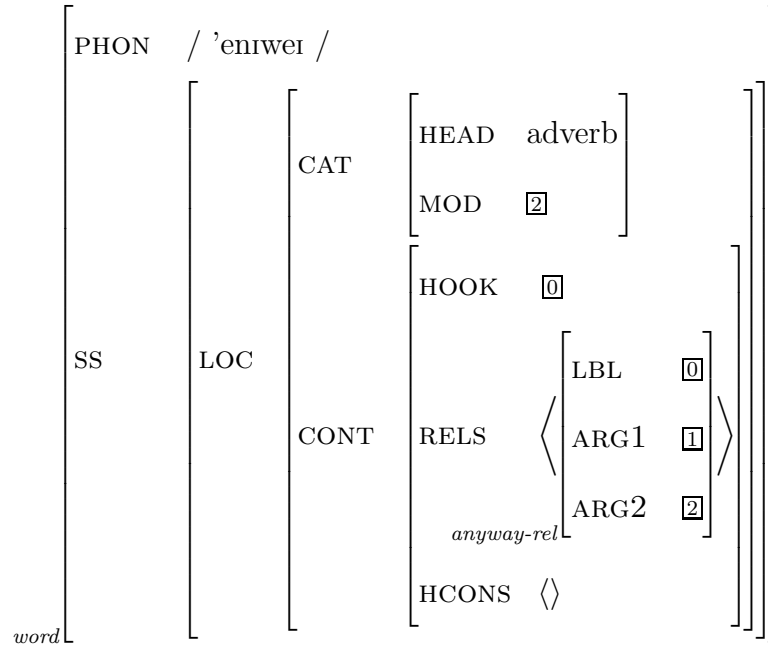
9.1 Anyway: Formal Lexical Entry

Now we will proceed with an attempt to capture formally the syntax and semantics of *anyway*.

The lexical entry of *anyway* is represented in (9.1). We can see that *anyway* is an adverb modifying syntactically a sentence, but semantically, it is a relation between two arguments [1] and [2]. It is important to note that there is only one message that *anyway* modifies syntactically, that is, a sentence with index [2]. This sentence is where *anyway* occurs. The antecedent of this sentence is not modified syntactically by the adverb. Even if it has semantic effects on both, syntactically it only modifies one sentence. This would be in some way similar to the behavior of the adverb *because*. Observe the following tree:



In this instance, the head of the sentence is the first part of the sentence, that is, *he left*, this is modified by the adjunct *because he was tired*. The abbreviated lexical entry for *because* would be the following:

Fig. 9.1: Lexical entry for *anyway*

$$(381) \left[\begin{array}{l} \text{HEAD} \\ \text{COMP} \end{array} \left[\begin{array}{l} \text{MOD} \quad [1] \text{ s} \\ \langle \text{S} [2] \rangle \end{array} \right] \right]$$

As can be seen from the lexical entry, *because* usually is the modifier of one sentence [1]; and it takes a complement [2], which is also a sentence. However, semantically it connects both sentences.

Anyway differs in the sense that it does not take a complement and syntactically, it only modifies the sentence in which it appears in. On the other hand, *anyway* has semantic effects on the previous sentence, that is, *anyway* is an adverb with two semantic arguments.

So far, we have not explained the difference in effect of the discourse marker and the adverbial use of *anyway*. They both have the same basic lexical entry in the lexicon. However, the difference arises when the lexeme gets a special intonation, and it is placed at the beginning a sentence as a discourse marker. The change of intonation and word order triggers a further effect on the discourse: it closes a point of attachment; that is, rhetorical

relations are no longer attached to the immediate preceding utterance. That is not to say that there is no rhetorical relation present between the message that *anyway* syntactically modifies. On the contrary, the content of the sentence *anyway* is modifying can be either start a new discourse, or it can pick up from a previous point in discourse. Thanks to the content of the utterance *anyway* modifies, we know if the discourse starts a completely new SDRS, or whether it picks up from a previous point in discourse. Obviously, we have to take into account which available attachment sites there are. (These can be found thanks to the definitions given in Asher and Lascarides [2003].)

The differences in phonology are represented in the PHON value of the feature structure. They can be represented in the Pierrehumbert notation in the following manner: H*L or L*L for the adverbial use of *anyway*. This indicates that there is either a low rise (H*L) or a flat tone (L*L). For the discourse marker, L*+HL(L%) denotes a sharp rise and fall followed by a different intonation phrase (indicated by |).

The difference in word order can be represented augmenting each sign with a list-valued feature representing the sign's (WORD) ORDER DOMAIN. Mapping the phonology of the domain elements onto the phonology of the phrase is what determines linear order here. Hence, the adverbial use of *anyway* has the linear order representation in (382a), and the discourse marker use of *anyway* has the linear order representation in (382b):

$$(382) \quad \begin{array}{l} \text{a.} \\ \text{b.} \end{array} \left[\begin{array}{c} \text{DOM} \\ \text{S} \end{array} \left\langle \left[\begin{array}{c} \langle \langle \text{HE DID IT} \rangle \rangle \\ \text{S} \end{array} \right], \left[\begin{array}{c} \langle \langle \text{ANYWAY} \rangle \rangle \\ \text{ADV} \end{array} \right] \right\rangle \right]$$

$$\left[\begin{array}{c} \text{DOM} \\ \text{S} \end{array} \left\langle \left[\begin{array}{c} \langle \langle \text{ANYWAY} \rangle \rangle \\ \text{ADV} \end{array} \right], \left[\begin{array}{c} \langle \langle \text{HE DID IT} \rangle \rangle \\ \text{S} \end{array} \right] \right\rangle \right]$$

Here we need to give the context change potential of the relation any(p1,p2) first. When

p_1 is a proposition, then the semantics when p_1 is a proposition are the following:¹

$$(383) \quad C_i [any(p_1, p_2)] C_o \text{ iff } C_i [p_2 \& \Box(p_1 \rightarrow p_2) \& \exists p_3 (\Box(p_1 \rightarrow (p_3 \& \Box(p_3 \rightarrow p_2))))] C_o$$

(383) says that the input context should be updated with p_2 , and the context that results from it should satisfy the two conditionals that p_2 necessarily follows both if p_1 is true, as well as if p_1 is false. That is, p_2 will hold regardless of the value of p_1 because another linguistically implicit factor p_3 would cause that p_2 in case that p_1 was false.

Note that if p_2 is a question, then C_o will invoke a refined partition that distinguishes among the different possible answers to the question p_2 whatever the truth value of p_1 . Then, the two conditionals would be essentially saying that the answer to the question is important regardless of whether one is in the actual world, a possible world where p_1 is true, or a possible world where p_1 is false.

On the other hand, if p_1 is a question, then the definition given in (383) does not say what is required. As it stands, it says that p_2 holds, and regardless of whether the input context cares about the answer to the question posed in p_1 or not, p_2 holds. Actually, what we want $any(p_1, p_2)$ to mean when p_1 is a question is that regardless of which possible answer to p_1 is true, p_2 holds. In this case, we need to amend the definition in cases where p_1 is a question to say the following:

$$(384) \quad C_i [any(p_1, p_2)] C_o \text{ iff:}$$

- a. $C_i [p_1 \& p_2] C_o$; and
- b. if $C_i [p_1] C'$ then for every equivalence class c within C' , $c[p_2]c''$ where $c'' \in C_o$

In the following section, we will use the formal lexical entry created to analyze some examples. We will try to use this lexical entry for different meanings and functions of

¹ I need to thank Alex Lascarides for this idea.

anyway to establish if it can be applied to all, or if there are any discrepancies, or issues arising.

9.2 *Adverbial Examples*

Here we are going to put our proposal into practice by analyzing a variety of key examples and observing how they work in regards to our analysis. We are going to start with the so called adverbial uses. In particular, we are going to look into detail a case in which we have two propositions, and in which *anyway* has a meaning of contrast similar to *nevertheless*, this is what we have previously called a contrastive *anyway*.

(385) John_i fought hard. He_i lost *anyway*.

First, observe the corresponding analyses of the two sentences in (385) (excluding the particle *anyway*):

(386) a. John_i fought hard.

b. $\langle h1, \{l_j : john(j), l_2 : fight(e1, j), l_2 : hard(e2, e1)\}, \{\} \rangle$

(387) a. He_i lost.

b. $\langle h2, \{l_3 : lose(e3, j)\}, \{\} \rangle$

In (386), we can see the MRS representation of *John fought hard*. We find a handle for the whole clause, namely h1. This handle contains the following set of predicates: that there is an individual named John, i.e., john(j) with its own label. Then, the second predicate represents that John participated in a fighting event. The third predicate says that that fighting event in which John participated was a hard event. These last two predicates share the label l₂. As we can see, there are no qeq constraints in this representation. This also happens in (387). This MRS represents *He lost* taking into account that the anaphora *he*

refers to John. This representation contains a predicate stating that John participated in an event of losing.

The only scope resolved version of the two utterances as a discourse that does not introduce extra predications, apart from the conjunction shown by label sharing, is the fully-specific logical form that is described by $h1=l_j=l_2=l_3$, that is:

(388) $\text{john}(j) \ \& \ \text{fight}(e1,j) \ \& \ \text{hard}(e2,e1) \ \& \ \text{lose}(e3,j)$

This can have the same $h1$ label to be used at the SDRS level as it can be an argument to rhetorical relations in the logical form of discourse.

If *anyway* is present in the discourse, then, the relation $\text{any}(p1,p2)$ needs to be included in the MRS representation:

(389) a. He lost anyway.

b. $\langle h2, \{l_3 : \text{lose}(e3, j), l_a : \text{any}(p1, \text{lose}(e3, j))\}, \{\} \rangle$

In (389), we can see how the relation conveyed by *anyway* takes two arguments. The first argument is still unknown, whilst the second argument is the sentence where *anyway* appears, namely, it is the predicate labelled as l_3 , or the fact that John participated in an event of losing. The only scope resolved version of the two utterances as a discourse without introducing extra predications, is the fully-specific logical form that is described by $h1=l_j=l_2=l_3=l_a$, that is:

(390) $\text{john}(j) \ \& \ \text{fight}(e1,j) \ \& \ \text{hard}(e2,e1) \ \& \ \text{lose}(e3,j) \ \& \ \text{any}(\text{hard}(e2,e1),\text{lose}(e3,j))$

If we take into account the context change potential associated to the relation $\text{any}(p1,p2)$, we will know that the fact that John lost independently on whether John fought or did not fight hard. As it is not part of the grammar, the rhetorical relation of Contrast will then be introduced in the logical form of discourse between the two utterances.

Let us return to the following example to provide a full analysis:

(391) It_i is a bit boring in a way. We'll think about it_i anyway.

The MRS representation of the two utterances would be the following:

- (392) a. $\langle h1, \{l_x : x, l_2 : boring(x), l_3 : in - a - way(boring(x)), \{\} \rangle$
 b. $\langle h2, \{l_w : we(w), l_4 : think(w, x), l_a : any(p1, think(w, x))\}, \{\} \rangle$

We can resolve p1 as the previous utterance, and the only scope resolved version of the two utterances is where we equate all the labels with the following result:

- (393) $l_x:x \ \& \ boring(x) \ \& \ in-a-way(boring(x)) \ \& \ l_w:we(w) \ \& \ think(w,x) \ \& \ l_a:any(in-a-way(boring(x)),think(w,x))$

Note that the anaphora of *it* has not been resolved yet, we would need access to previous discourse in order to resolve it. As with the previous example, there is a rhetorical relation of Contrast between these two utterances.

Now let us observe an example in which *anyway* has a dismissive meaning as in the following:

(394) I shall come down there tomorrow at three *anyway*.

(395) I don't know how I got any food down me at all. I'm not used to drinking *anyway*.

(396) I couldn't go to the party cause I was on codeine. My mum wouldn't have let me *anyway*.

To draw a similarity to the previous analysis, we will choose an example and we are going to place it in context, that is, we are going to add a prior sentence.

Now, we are going to analyze the following simplified pair: *John didn't need a guide. He bought one anyway*. Observe the discourse representation for these pair of utterances first excluding *anyway*:

(397) a. John_i didn't need a guide_j.

$$\langle h1, \{l_j : john(j), l_2 : \neg need(e1, j, g), l_2 : a - guide(g)\}, \{\} \rangle$$

b. He_i bought it_j.

$$\langle h2, l_3 : buy(e2, j, g), \rangle$$

In the MRS representation of (397a), we find a handle for the whole clause, namely h1. This handle contains the following set of predicates: an individual named John, i.e., john(j) with its own label. Then, the second predicate represents that John is part of an event of not needing a guide. The third predicate makes reference to the guide. These last two predicates share the label l₂. As we can see, there are no qeq constraints in this representation. This also happens in (397b). This MRS represents *He bought it* taking into account that the anaphora *he* refers to John and *it* refers to the guide. This representation contains a predicate stating that John participated in an event of buying a guide.

The only scope resolved version of the two utterances as a discourse that does not introduce extra predications, apart from the conjunction shown by label sharing, is the fully-specific logical form that is described by h1=l₂=l₃, that is:

(398) john(j) & ¬ need(e1,j,g) & guide(g) & buy(e2,j,g)

This can have the same h1 label to be used at the SDRS level as it can be an argument to rhetorical relations in the logical form of discourse.

If *anyway* is present in the discourse, then, the relation any(p1,p2) needs to be included in the MRS representation:

(399) a. He bought it anyway.

$$b. \langle h2, \{l_3 : buy(e2, j, g), l_a : any(p1, buy(e2, j, g))\}, \{\} \rangle$$

In (399), we can see how the relation conveyed by *anyway* takes two arguments. The first argument is still unknown, whilst the second argument is the sentence where *anyway*

appears, namely, it is the predicate labelled as l_3 , or the fact that John participated in an event of buying a guide. The only scope resolved version of the two utterances as a discourse without introducing extra predications, is the fully-specific logical form that is described by $h_1=l_j=l_2=l_3=l_a$, that is:

(400) $\text{john}(j) \ \& \ \neg \text{need}(e_1,j,g) \ \& \ \text{guide}(g) \ \& \ \text{buy}(e_2,j,g) \ \& \ \text{any}(\neg \text{need}(e_1,j,g), \text{buy}(e_2,j,g))$

If we take into account the context change potential associated to the relation $\text{any}(p_1,p_2)$, we will know that the fact that John bought a guide happened independently on whether John did or did not need that guide. As it is not part of the grammar, the rhetorical relation of Narration will then be introduced in the logical form of discourse between the two utterances. Notice that the rhetorical relation in these two sentences is that of Narration instead of Contrast as in the previous use of *anyway*. This would be the case even without the presence of *anyway*. Apart from the difference in rhetorical relation, nothing else differs in terms of our analysis between a contrastive and a dismissive *anyway*.

Now let us analyse a more complex example:

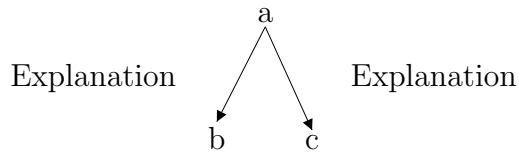
(401) I couldn't go to the party cause I was on codeine. My mum wouldn't have let me anyway.

The only scope resolved version of these three utterances as a discourse without introducing extra predications is the fully-specific logical form described by equating all labels, that is:

(402) $l_i:\text{speaker}(i) \ \& \ l_1: \neg \diamond \text{go}(i,\text{party}) \ \& \ l_p: \text{party}(p) \ \& \ l_2: \text{because}(\neg \diamond \text{go}(i,\text{party}), l_3: \text{taking-codeine}(i)) \ \& \ l_m: \text{my-mum}(m), l_4: \neg \text{let-go}(m,i,\text{party}) \ \& \ \text{any}(\neg \diamond \text{go}(i,\text{party}), \neg \text{let-go}(m,i,\text{party}))$

As we have previously noted, p_1 is always resolved anaphorically via glue logic. Taking into account the context change potential of the relation $\text{any}(p_1,p_2)$, this means that the

Tab. 9.1: SDRS for (401)



main reason for the speaker not being allowed to go to the party is that her mother would not have let her. The rhetorical relations associated to the discourse is represented in (9.1). Note that there are two rhetorical relations of Explanation. This is different to the previous case. Hence, we can argue that *anyway* does not trigger any particular rhetorical relation in this type of use.

Now let us analyze a case in which *anyway* appears to be modifying the content of a previous utterance as in the following examples:

(403) Here, it is the 311 going into it, according to this map *anyway*.

(404) It's attracted the largest grant, in this country *anyway*.

In both these examples, *anyway* is modifying the content of the previous utterance by adding extra information about that utterance. These instances of *anyway* can be paraphrased as *at least*. The second part of the utterance is added as an afterthought, and it is meant to complement the first part of the utterance. In the first example, the road is described as the number 311, and the speaker then modifies this content by adding that it is road 311 according to the map.

In the second example, the speaker is saying that the project has attracted the largest grant, and then, the speaker modifies the content of this utterance by restricting the content: the project attracted the largest grant in this particular country, not in the whole wide world.

Like we have done with the previous adverbial uses of *anyway*, we will now analyze a simplified example of such use: *John eats everything. He eats everything that is edible anyway.* And first, we are going to analyse the example without *anyway*:

(405) a. John_i eats everything.

$$\langle h1, \{l_j : john(j), l_2 : eat(e1, j, x), l_2 : everything(x)\}, \{\} \rangle$$

b. He_i eats everything that is edible.

$$\langle h2, \{l_3 : eat(e2, j, y), l_3 : everything - edible(y)\}, \{\} \rangle$$

In the MRS representation of (405a), we find a handle for the whole clause, namely h1. This handle contains the following set of predicates: an individual named John, i.e., john(j) with its own label. Then, the second predicate represents that John is part of an event of eating everything. The third predicate makes reference to everything. These last two predicates share the label l₂. As we can see, there are no qeq constraints in this representation. This also happens in (405b). This MRS represents *He eats anything that is edible* taking into account that the anaphora *he* refers to John. This representation contains a predicate stating that John is part of an event of eating anything that is edible.

The only scope resolved version of the two utterances as a discourse that does not introduce extra predications, apart from the conjunction shown by label sharing, is the fully-specific logical form that is described by h1=l_j=l₂=l₃, that is:

(406) john(j) & eat(e1,j,x) & everything(x) & eat(e2,j,y) & everything-edible(y)

This can have the same h1 label to be used at the SDRS level as it can be an argument to rhetorical relations in the logical form of discourse.

If *anyway* is present in the discourse, then, the relation any(p1,p2) needs to be included in the MRS representation:

(407) a. He eats anything that is edible anyway.

b. $\langle h_2, \{l_3 : eat(e_2, j, y), everything - edible(y), l_a : any(p_1, eat(e_2, j, y))\}, \{\} \rangle$

In (407), we can see how the relation conveyed by *anyway* takes two arguments. The first argument is still unknown, whilst the second argument is the sentence where *anyway* appears, or the fact that John participated in an event of eating everything edible. The only scope resolved version of the two utterances as a discourse without introducing extra predications, is the fully-specific logical form that is described by $h_1=l_j=l_2=l_3=l_a$, that is:

(408) $john(j) \ \& \ eat(e_1, j, x) \ \& \ everything(x) \ \& \ eat(e_2, j, y) \ \& \ everything-edible(y) \ any(\$
 $eat(e_1, j, x), eat(e_2, j, y))$

If we take into account the context change potential associated to the relation $any(p_1, p_2)$, we will know that the fact that John eats everything that is edible is true independently on whether John does or does not eat everything in general. As it is not part of the grammar, the rhetorical relation of Elaboration will be introduced in the logical form of discourse between the two utterances. Notice that the rhetorical relation in these two sentences is that of Elaboration instead of Contrast or Narration as in the previous uses of *anyway*. This would be the case even without the presence of *anyway*. Apart from the difference in rhetorical relation, nothing else differs in terms of our analysis between a contrastive, a dismissive, or a modificative *anyway*.

We are now going to look at how our analysis works with the last adverbial meaning of *anyway*, when it acts as a question dismissive as in the following examples:

(409) How's Des *anyway*?

(410) Why do you have a website *anyway*?

(411) Who owns the water *anyway*?

(412) How did he get them *anyway*?

There are two issues to note when looking at these examples. The first is that it might appear that in this type of use, *anyway* has no direct relation with an immediately preceding utterance. This is the only case in which *anyway* in end sentence position does not signal some kind of discourse continuity. So, should it be regarded as a special kind of discourse marker use in which it signals the end of a resumption or topic? If we observe the same examples in which *anyway* occupies the typical discourse marker position, i.e., sentence initial, we can see that the meaning is quite similar:

(413) *Anyway*, how's Des?

(414) *Anyway*, why do you have a website?

(415) *Anyway*, who owns the water?

(416) *Anyway*, how did he get them?

With these sentences extracted out of context, it is difficult to explain how similar the meaning is depending on the position of *anyway*. Both uses clearly indicate an end to a digression or topic. Moreover, all of these would be odd if there was no preceding text. The questions with final *anyway* and no preceding text at all happen in titles of blogs. However, they are to be understood into an ongoing conversation between bloggers for example. They seem to be the starting or resuming point of a discussion rather than linking two utterances, so similarly to the discourse marker, they seem to be closing digression or topic.

The second observation is that most of the examples in which *anyway* acts as a question intensifier, the type of question used is always (as far as we have been able to observe) a wh-question. However, we cannot make the assertion that this type of *anyway* is always linked to a wh-question since we might find an example to contradict such statement.

In all these instances, we would still have a relation $\text{any}(p1,p2)$. And in all these cases, $p2$ would be the question where *anyway* appears. On the other hand, $p1$ would have to be resolved anaphorically taking into account the preceding discourse. In these instances, $p1$

will be matched to the immediately preceding utterance or group of utterances, and the context change potential introduced by the relation $\text{any}(p1,p2)$ is extremely relevant here. We do require a previous conversation, as we clearly could not start a new conversation with a new participant with such questions. Hence, this so called adverbial use is in fact exactly the same as a discourse marker use of *anyway*.

9.3 *Discourse Marker Examples*

We argue that the discourse marker use of *anyway* shares the lexical entry with the adverbial use; and in this particular case, *anyway* has a different discourse function added onto it. The special intonation and the place of occurrence of the word determines if this has extra effects or not over the discourse. Let us observe an example extracted from Ferrara [1997]:

(417)

a. **Nader:**

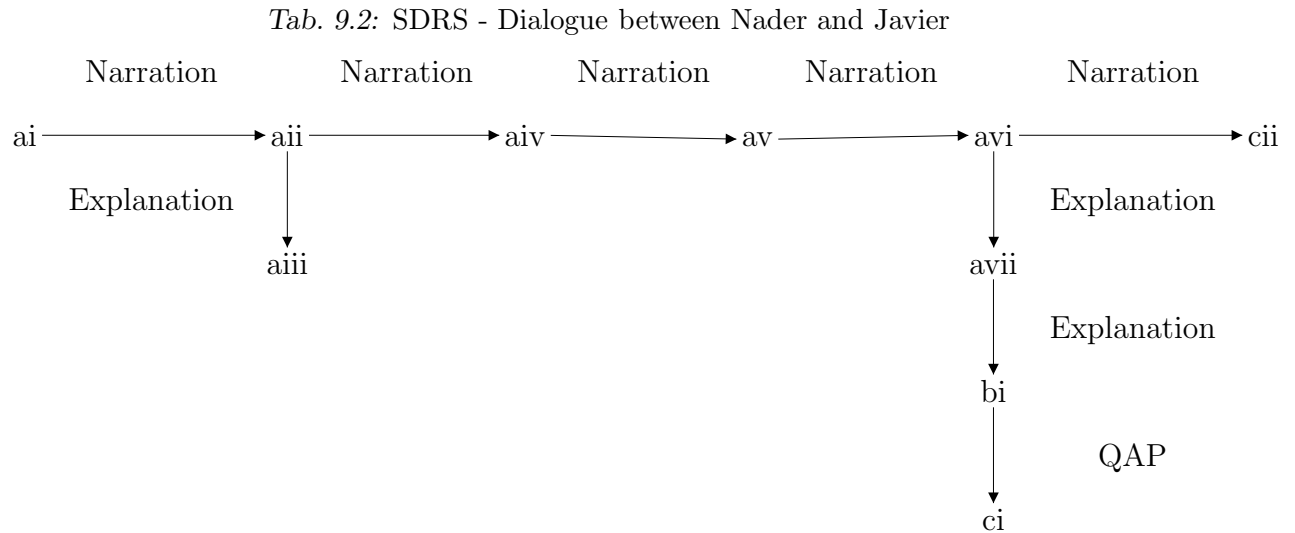
- i. We were going through customs.
- ii. And some agents asked our nationality,
- iii. because they saw our passports.
- iv. They asked if we were Iranian.
- v. My mum and dad said 'yes'.
- vi. I didn't answer
- vii. cause I was a little kid.

b. **Javier:**

- i. How old were you?

c. **Nader:**

- i. I was eight.



ii. *Anyway*, they took us to their office.

In the conversation, Nader is recounting a story that happened to him some years ago while he was going through customs in an airport with his family. Some security agents seem to have been concerned about their nationality and they were stopped for that reason. Nader comments on the fact that he did not answer the questions of the agents because of his young age. Then, Javier asks a question to Nader which can be considered as a digression to Nader's story. Complying with Grice's Cooperative Principle, Nader answers the question. After the direct answer to Javier's question, Nader closes the digression with *anyway* before continuing his story about being detained at customs since he seems to consider the question of his age as an aside to the main narration. The SDRS for that piece of discourse can be seen in (9.2).

The first two utterances, which we have labeled (ai) and (aii), are connected through a rhetorical relation of Narration. One of the indicators is the connector *and*, on top of that, both events take place sequentially in time and have a common topic, these two are characteristic of a Narration relation. The connector *because* connects its complement utterance to the previous one with an Explanation relation since the connector itself is a

trigger of that relation. Explanation is a subordinating relation, this is the reason why it is inserted in its own SDRS. Then, Narration relations continue up to (avi) since they contain events that took place in a temporal sequence (as the relation requires), and they share a common topic. We open a new SDRS when we get another subordinating relation, in this case, another Explanation relation triggered by ‘*cause*. This, in turn, makes Javier ask a question, which relates (avii) and (bi) with an Explanation_q relation. Javier requires further explanation on Nader’s age, therefore it is a question rather than a proposition; and because it is a question, it is a rhetorical relation of type *q*. There is a Question Answer Pair between (bi) and (ci) since it is obvious that the latter is the answer of the question that Javier asked. With the use of *anyway* in (cii), we know that the SDRS must be closed since an explanation or a digression is being understood as ended. Now, we need to find an available attachment point for the utterance containing *anyway*. We note that there seems to be a possible Narration relation between (avi) and (cii), and since (avi) is still available after closing off one SDRS, we relate these two utterances with a rhetorical relation of Narration.

The MRS representation for the sentence where *anyway* appears in is the following:

$$(418) \quad < h1, \{l_a : any(p1, take(e1, x, y), l_1 : they(x), l_2 : take(e1, x, y), l_2 : to - the - office(y)), \} \} >$$

Taking into account that we need to solve the anaphora, and using the glue logic, we will map the pronoun *they* to the agents. And even though the utterance (cii) is related to (avi) via a rhetorical relation of Narration, p1 is going to be the immediately preceding utterance. Here, the context change potential means that the previous utterance is true, however, dismissed from being the main issue.

This analysis reflects the resumption cue nature of *anyway* pointed out in previous literature. It has the effects of closing off a digression, coming to a summarizing point, and

it can indicate the start of a new topic of conversation. In this later case, we do not find any available site to attach the utterance where *anyway* appears via a rhetorical relation. This closes off all SDRSs and starts a new one. However, the relation *any* still relates adjacent utterances.

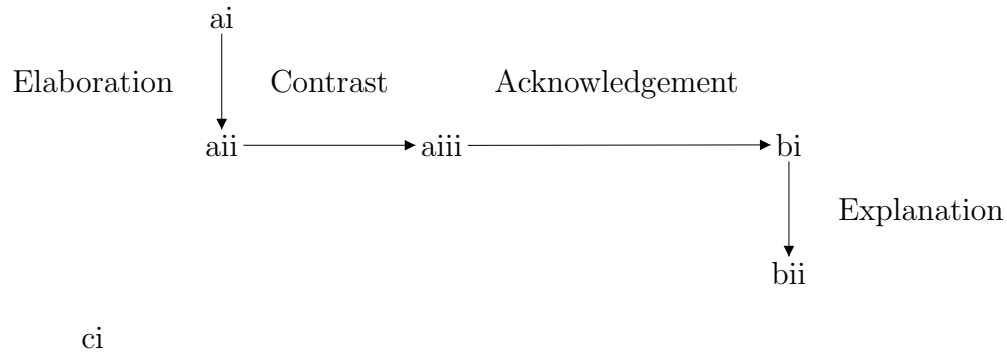
Altenberg [1986], Lenk [1998], and Takahara [1998] suggested that *anyway* had a different function apart from closing off a digression: it can also end a topic. Let us now look at one example to see if the effects of these two supposedly different functions differ in a formal semantics account. Note the following modified example from Lenk [1998, 84] in which speaker A uses *anyway* to close the topic of the possibility of acquiring new staff for the department, and what they should be able to teach. A suggests that the conversation topic changes to the actual position applicants. According to Lenk, the function of *anyway* is to close a topic:

(419)

- a. **A:**
 - i. Well, we were saying when you arrived that
 - ii. Tom Walker's combination of drama and the eighteenth century might be something to be looked for among these applicants.
 - iii. but I don't suppose anybody feels a certain absolute necessity for that.
- b. **B:**
 - i. No.
 - ii. It's very unlikely.
- c. **A:**
 - i. *Anyway*, shall we return to the applicants now?

In this particular case, Lenk argues that speaker A is closing a topic. However, if we take into account the utterance after *anyway*, we can argue that this speaker is actually

Tab. 9.3: SDRS for dialogue between A and B



intending to return to a previous topic of conversation. Therefore, we believe that closing a topic or closing a digression are in fact two different ways to describe the pragmatic function of the discourse marker *anyway*. In the SDRS for this discourse, however, we do not have the previous point of attachment as we lack previous discourse, though the fact that speaker A uses the verb *return*, makes it clear that there must be a previous point to which attach this utterance to. Because we do not have this previous utterance, we cannot know for sure, not even guess what kind of rhetorical relation is going to link these two utterances; see (9.3).

Therefore, here we are arguing that there is only one main function for the discourse marker *anyway*: that of closing off a topic or a digression.

9.4 Conclusion

In this chapter, we proposed that *anyway* is syntactically attached to a sentence. In terms of its semantics, the adverb has mainly two arguments: the sentence where it occurs, and a preceding message in the discourse. This message includes propositions, facts, outcomes, and or questions. Obviously, the sentence where *anyway* appears can also be any type of message.

In conclusion, we find that *anyway* has a common meaning in both the discourse and

adverbial uses. The same lexical entry can be applied to a variety of examples: from all the four different adverbial uses to the discourse marker. This suggests that the underlying meaning is the same for all uses.

Certain contexts allow for the use of *anyway* as an adverbial, and those contexts are the real triggers of different rhetorical relations. *Anyway*, neither as an adverbial or as a discourse marker can monotonically trigger a rhetorical relation in the same way as *because* or *but* do.

The main difference between the discourse marker use and the so called adverbial uses is that in the discourse marker use, *anyway* has an extra function: closing off SDRSs with the possibility of returning to a previous point in the discourse.

10. CONCLUSION

In this thesis, we have seen that the adverb category is varied in meaning, and that there have been various attempts to classify different adverbs in different categories in regards to meaning. Authors have then related different meanings to different syntactic behavior. It seems that meaning affects where an adverb appears in a sentence, which other adverbs it can co-occur with, etc. In the case of *anyway*, it appears to have a general common meaning, however, it occupies different positions in the sentence, and due to this different occurrence it has a different effect in discourse. When it appears in initial sentence position, its function is to close a topic or digression. On the other hand, when it appears at the end of the sentence, it has different adverbial meanings that connect the utterance it appears in with a previous utterance.

Anyway shares certain prototypical characteristics associated to discourse markers. Syntactically, it is integrated with the rest of the sentence; and it can be omitted without affecting the grammaticality of the sentence. Semantically, it is always a relation between two utterances.

In regards to *anyway*, even though nearly all authors distinguish between a discourse marker use and an adverbial or propositional meaning use (Altenberg [1986], Ferrara [1997], Lenk [1998], and Takahara [1998]), not all authors agree on how many functions and meanings *anyway* has. This is the reason why, we have tried to cover all the functions and meanings previously described in the literature, and we have tried to unify those accounts.

We have a discourse marker use of *anyway*; and four different uses as a so-called adver-

bial. However, as we have seen, all these uses have a role in discourse, hence, they can all be considered discourse markers. These different uses are: question dismissive, dismissive, contrastive, and modificative. First, a question dismissive *anyway* does not seem to be connected to any previous piece of discourse. However, because it cannot be used in a new conversation with a new participant, we argue that it is always indeed connected to a previous discourse, and it has a similar role of resumption as the discourse marker widely discussed in the literature.

Secondly, a dismissive *anyway* has been widely accepted and described by previous authors. This use is always connected to a previous piece of discourse, as the previous piece of discourse is what is being dismissed, or considered an unimportant assumption. This meaning is the closest to the discourse marker use, as the discourse marker also dismisses a chunk of discourse. However, here the function in discourse is different. We are not closing an SDRS, we are just dismissing a previous comment as unimportant, or at least, not as important as the following utterance. Thirdly, a contrastive *anyway* has also been described by previous authors. In this case, we can paraphrase *anyway* with a typical contrastive marker such as *nevertheless*. Note that this use needs to refer to a previous piece of discourse or utterance since it needs it to make it a contrast with. Finally, a modificative *anyway* has been observed in literature too. This type of *anyway* modifies a previous utterance and it can be paraphrased as *at least*. This type of *anyway* allows to modify the previous utterance by adding extra information to that utterance.

We have used the HPSG approach to syntax in order to give a lexical entry for *anyway*. This allows us to express all levels of grammar in a single lexical entry. This also means that we can add the discourse effects of this particle inside its own lexical entry. For discourse, we have used SDRT, and we have seen that *anyway* as an adverbial allows for discourse continuity, and therefore adjacent discourse can be linked by different rhetorical relations. These rhetorical relations, however, are not monotonically inferred through the

use of *anyway*, but through the content of discourse. We have also noted that the typical discourse marker use of *anyway* prompts for a closing of an SDRS and it allows to open up a new SDRS. This is the same function that the question dismissive has.

We have established that all uses of *anyway* involve a relation $\text{any}(p1,p2)$. We have argued that this relation has a context change potential. When $p1$ is a proposition, then the semantics when $p1$ is a proposition are the following:

$$(420) \quad C_i [\text{any}(p1, p2)] C_o \text{ iff } C_i [p2 \& \Box(p1 \rightarrow p2) \& \exists p3(\Box(p1 \rightarrow (p3 \& \Box(p3 \rightarrow p2))))] C_o$$

That is, the input context should be updated with $p2$, and the context that results from it should satisfy the two conditionals that $p2$ necessarily follows both if $p1$ is true, as well as if $p1$ is false. That is, $p2$ will hold regardless of the value of $p1$ because another linguistically implicit factor $p3$ would cause that $p2$.

We have also seen that we need to amend the definition in cases where $p1$ is a question to say the following:

$$(421) \quad C_i [\text{any}(p1, p2)] C_o \text{ iff:}$$

- a. $C_i [p1 \& p2] C_o$; and
- b. if $C_i [p1] C'$ then for every equivalence class c within C' , $c[p2]c''$ where $c'' \in C_o$

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