3 Connectives: Meanings and Functions

3.1 INTRODUCTION

In this chapter, we dig into the semantics of discourse connectives. In other words, we aim to give an overview of how the meaning of discourse connectives has been described. Before turning to specific studies, we need first to give a more precise definition of what we mean by discourse connectives. What lexical items are included in the category we aim to describe from a semantic point of view? In Section 3.2, we will tackle this question reviewing how discourse connectives and discourse markers relate to one another and what differentiates them. We then turn to several accounts of the notorious ambiguity of discourse connectives. While there is general consensus that in (most) discourse connectives one form can receive different meanings or readings, there is much more discussion on how to account for this polyfunctionality. Proponents of the polysemous view consider that the different related meanings of the connective are encoded as part of their conceptual meaning (see below). In contrast, the monosemy approach considers that a connective basically conveys a single invariant meaning, and that the individual interpretations of this invariant meaning are retrieved in context. These different views are developed in Section 3.3. The semantics of connectives, be it from a monosemy or polysemy perspective, has been studied mainly following a semasiological, bottom-up approach in which one or more specific connectives are analyzed in context to uncover their semantic and syntactic distribution. Several case studies in a variety of languages are presented in Section 3.4.1. Finally, we turn to onomasiological studies, where the point of departure is a given (relational) meaning and how this is expressed through connectives in a given language. This approach is then extended to a categorial perspective in which the functional distribution of discourse connectives as a category is developed (Section 3.4.2).

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3.2 DISCOURSE CONNECTIVES AS A SUBCATEGORY OF DISCOURSE MARKERS

In Chapter 1, we described connectives as a "functional category of lexical items used to explicitly mark discourse relations holding between discourse segments". This is a categorial definition demanding that in order to be a member of the discourse connective class, the item in question should encode the notion of "connectivity" as belonging to their core meaning. In other words, a necessary condition to be a discourse connective is to have a relational meaning. Yet, this is not a sufficient condition as other lexical items do also encode this notion. Strikingly, Schourup (1999: 230) considers connectivity as a necessary characteristic of discourse *markers*, a class of linguistic expressions that is notoriously difficult to describe in a consensual way (Fischer, 2014; Maschler & Schiffrin, 2015). Pons Bordería (2001: 226–27) rightly observed that connectives are generally viewed as a subclass of the discourse marker category and at the same time they "are the best studied subset (. . .) Therefore, the specific properties of connectives are mixed up with those of discourse markers. It is sometimes hard to know if a given characterization of discourse markers is valid for all discourse markers or if it is only applicable just for the subclass of connectives." A number of authors share this idea that discourse connectives should be subsumed under the wider umbrella of discourse markers (Degand, Cornillie & Pietrandrea, 2013; Crible, 2018) or pragmatic markers (Aijmer & Simon-Vandenbergen, 2011). Yet, others explicitly posit two distinct categories, with connectives on the one hand, and discourse markers or particles, on the other (for an overview, see Maschler & Schiffrin, 2015). Here, we will consider discourse connectives as a (well-studied) subcategory of discourse markers. We base this position on the observation that connectives and discourse markers share many (key) features. To make our point, we will review Schourup's (1999) list of "characteristics of discourse markers" and evaluate to what extent they apply to the subset of discourse connectives. These characteristic features are:

   i. connectivity
   ii. optionality
   iii. non-truth-conditionality
   iv. weak-clause association
   v. initiality
   vi. orality
   vii. multi-categoriality

According to Schourup, connectivity is the most characteristic feature of discourse markers and is considered by most authors as a necessary feature. It is also the defining characteristic of discourse connectives, whose primary function is to signal a relationship between a host unit and the previous or following discourse. Yet, the relational function of discourse connectives is defined more strictly as establishing a relation between two textual units. Thus, Mauri and van der Auwera (2012: 377) simply define a connective as "a linking device establishing a given relation *between two clauses or phrases*" (our emphasis). Discourse markers are not restricted to strictly relating two segments of texts. They may also link the host utterance to "the context in a wider sense" (Hansen 1997: 1260, cited in Schourup, 1999: 231), thus including their bracketing function referred to in Schiffrin's seminal definition of discourse markers "as sequentially dependent elements which bracket units of talk" (1987: 31), that is, occurring at the boundaries of units. These "units of talk" are (deliberately) vaguely defined "because this is where [the markers] occur – at the boundaries of units as different as tone groups, sentences, actions, verses, and so on" (Schiffrin, 1987: 36). Discourse connectives differ from discourse markers in that the bracketing function is strongly determined by their grammatical function. Thus, Schiffrin observes that markers such as *and, but, so*, in other words discourse connectives, behave differently from other discourse markers such as *oh* and *well*, because the former "have a role in the grammatical system" (Schiffrin, 1987: 128). It follows that "in addition to characterizing the discourse slot(s) in which they occur, we need to consider the possibility that grammatical properties of the items themselves contribute to their discourse function" (p. 128). The strictly relational status of discourse connectives as well as the syntactic constraints that, at least partially, influence their use, both at the local and the global level (see below) distinguish discourse connectives from discourse markers and seem to justify their status as subcategory.

The second discourse marker characteristic is optionality, which is described from two perspectives: (i) syntactic optionality refers to the fact that the removal of the marker "does not alter the grammaticality of its host utterance (Schourup, 1999: 231), (ii) semantic optionality refers to the observation that the (discourse) relation remains accessible even if the marker is left out. In other words, omitting the marker "renders the text neither ungrammatical nor unintelligible" (Brinton, 1996: 267, cited in Schourup, 1999: 231). The syntactic optionality has, to our knowledge, not been investigated *per se*, while the semantic optionality of discourse connectives has been studied extensively. Very briefly, it seems that the possibility of syntactically leaving out a

discourse connective is strongly restricted by the grammatical category of the connective at hand (see Chapter 4). For instance, coordinating conjunctions that work as connectives can often be left out syntactically, even if semantically some specific meanings might get lost (see below). In example (1), leaving out the coordinating conjunctions 'and' or 'but' does not hinder the grammaticality of the complex sentence, even if the semantic relation is less clear without than with one or the other connective. In contrast, leaving out the subordinating conjunctions 'if' in example (2) or 'although' in example (3) not only blurs the intended relational meaning, it also renders the complex sentence syntactically awkward or incorrect, because the syntactic dependency is lost in the absence of the subordinating conjunctions. Discourse markers being syntactically independent from their host clause, they are in all cases syntactically optional.

(1)   The whole family joined the dance floor after dinner (and/but) the kids seemed to have more fun than the adults.

(2)   We would not brag about it, (if) we were rich.

(3)   (Although) his father was very rich, Jimmy never bragged about it.

[constructed examples]

Semantic optionality has been investigated extensively in discourse connectives studies, where a contrast has been made between so-called explicit relations, signalled by a connective, and implicit ones, where the connective is missing (see Chapter 1). Two strands of research have investigated this topic more in particular: natural language processing and experimental pragmatics.

In natural language processing, many efforts have been made to meet the challenge of automatically identifying implicit relations in corpus data (see, e.g. Braud & Denis, 2014; Bai & Zhao, 2018). Most of this work is based on (manually) annotated corpora, most notably the Penn Discourse Treebank (PDTB) (see Chapter 2), where implicit discourse relations have been annotated when the relation was 'signalled' by an 'implicit connective', that is, a connective that is compatible with a given non-signalled discourse relation. More precisely, a relation is said to be implicit when a 'missing connective' can be identified (Miltsakaki et al., 2004). On the basis of the PDTB discourse annotations, Asr and Demberg (2012a) found that some discourse relations are "more strongly" marked than others and that some cues are more strongly associated with specific discourse relations. For instance, it appeared that conditional relations are nearly always explicitly marked

(mostly with the connective *if*), while the relations of list, instantiation or restatement are more often left implicit. In addition, some connectives appear to be "stronger" cues for a given relation, than others. For instance, *though* and *although* are highly reliable cues for the counter-expectation relation, *so* for the result relation and *for example* for the instantiation relation. On the other hand, the frequent connectives *and* and *but* are less strongly associated with specific relations.

In further work, Asr and Demberg (2012b) did find that marking of relations is strongly linked with the expectedness of the underlying semantic relation. More precisely, corpus evidence was found that causal and continuous relations are more often left implicit, which has received a cognitive (processing) explanation: readers tend to expect a continuous or a causal relation between non-cued contiguous sentences, making the linguistic marking superfluous. This is in line with both the Continuity Hypothesis (Murray, 1997; Levinson, 2000) "that comprehension difficulty ensues when a text event is discontinuous without this discontinuity having been explicitly marked" (Asr & Demberg, 2012b: 2672) and with the Causality-by-default Hypothesis according to which "experienced readers aim at building the most informative representation, [therefore] they start out assuming the relation between two consecutive sentences is a causal relation" (Sanders, 2005: 9; see also Mak & Sanders, 2013). Experimental pragmatic research has further confirmed that the presence of a connective helps the reader establish the underlying discourse relation, with faster reading times and better recall (see, e.g. Degand, Lefèvre & Bestgen, 1999; Sanders & Noordman, 2000); even if the type of underlying discourse relation and the adequacy of the discourse connective play a major role in the way they are processed. These studies are reviewed in more detail in Chapter 6.

Regarding the contrast between implicit and explicit relations and the underlying idea that (some) discourse connectives or discourse markers would be semantically optional, Taboada (2009) points out that there are many alternative signalling mechanisms beside discourse markers or connectives, like tense, mood, embedding, verb semantics or implicatures that may (help) establish discourse relations. In Taboada's view, "[i]t may be the case that all relations are indeed signalled, that is, that they are all explicit. The challenge lies in finding what the particular signal is in each case" (p. 128). She pursued this line of research in later corpus work, showing that a vast majority of the discourse relations are marked by more than one explicit signal, most often a discourse marker/connective and some other referential, lexical, syntactic or graphical cues (Das & Taboada, 2019), in particular

when the discourse marker used is ambiguous or generic on its own (Das & Taboada, 2018; see also Crible, 2020). Furthermore, Crible and Demberg (2020) in an offline crowdsourcing experiment showed that "non-connective cues" such as lexical verbs or antonyms do have a positive disambiguating role on inferring implicit relations of consequence or contrast, respectively. In other words, "a coherence relation is less ambiguous and more easily disambiguated when the S2 [second segment] contains clear linguistic features associated with the conceptual meaning of the relation" (Crible & Demberg, 2020: 328).

It appears that the feature "optionality", in particular semantic optionality, has been studied much more extensively for the particular category of discourse connectives than for discourse markers, overall. Much fewer studies have focused on the impact of the presence of specific discourse markers on discourse processing (but see Fox Tree & Schrock, 1999; Bosker, Badaya & Corley, 2021). On the other hand, studies investigating positive or negative attitudes towards discourse marker use do not seem to exist for the subcategory of discourse connectives, while they do for specific markers such as *like* (Daily-O'Cain, 2000; Hesson & Shellgren, 2015) or for discourse markers overall (Blanchard, 2021). This difference in the types of studies regarding the optionality of connectives or discourse markers seems (again) to confirm that discourse connectives form a distinct subset with proper syntactic and semantic constraints.

Non-truth-conditionality is the third in Schourup's (1999) list of characteristic discourse markers features. It refers to the fact that discourse markers "are generally thought to contribute nothing to the truth-conditions of the proposition expressed by an utterance" (Schourup, 1999: 232). It is a feature that distinguishes them from so-called content words, which do affect truth conditions.

The concept has been developed within the relevance-theoretic framework establishing a dichotomy between conceptual meaning and procedural meaning (Sperber & Wilson, 1986; Blakemore, 2002). Discourse connectives are generally seen "as encoding procedural meaning which contributes to the computational rather than the representational side of comprehension" (Wilson, 2011: 5). A number of scholars defend the idea that (potentially all) linguistic expressions, including discourse connectives, may encode conceptual and procedural meaning at the same time (Lee, 2002; Moeschler, 2005, 2016; Fraser, 2006; Pons Bordería, 2008), while others defend the dichotomous view (Hall, 2007; Saussure, 2011). Starting with Wilson and Sperber (1993), discourse connectives have been described as "notoriously hard to pin down in conceptual terms", which leads them to plead that

"a procedural analysis of discourse connectives would explain our lack of direct access to the information they encode" (p. 14). In other words, discourse connectives are better accounted for in procedural terms than in conceptual terms. It is noteworthy mentioning here that Wilson and Sperber use the generic term 'discourse connectives' to refer to expressions like 'so', 'now', 'well', 'moreover', 'however', and so on, even if later studies have focused mainly on discourse connectives in the more restricted, relational sense.

Since then, many scholars have tried to disentangle what makes discourse connectives more procedural than conceptual or a combination of both. Moeschler (2005, 2016), for instance, puts forward the hypothesis that there is "a correlation between the strength of the encoded meanings and their range (i.e. their possible values): a connective C encodes a weak meaning if it is not restricted to one interpretation, whereas it is strong if its meaning is restricted to one specific one (like the CAUSE relation for because)" (Moeschler, 2016: 126). He furthermore proposes that this distinction between strong and weak meaning applies to conceptual meaning, not to procedural meaning. In other words, connectives have a relational conceptual meaning, while their procedural meaning instructs the hearer/reader on the interpretation to be given in context. Hall (2007), on the other hand, working out Blakemore's (2002) analysis of the connective *but* pleads for a strong procedural account, which in her view "can cope better with the variety of uses that it ['but'] can have" (p. 172). In particular, she argues that a procedural analysis of the so-called ambiguity of *but* between contrastive and concessive meanings "offers a better explanation of the meaning and interpretation of discourse connectives than accounts on which they map directly onto conceptual representations" (p. 172).

Lee (2002), then, seems to take an in-between position proposing a cline from conceptual to procedural meaning that allows to account for both conceptual aspects of sentential (logical) connectives and procedural aspects of more inferential connectives. In his words, "rather than assuming that connectives are either conceptual or procedural, I claim that all connectives occupy places on a scale which ranges from logical connection to inferential connection. There is no clear-cut boundary between the conceptual part and the procedural part (. . .). Instead, there are two directions: towards the conceptual end on the one hand, and towards the inferential end on the other" (Lee, 2002: 852). This proposal is worked out for both English and Korean connectives. In contrast, de Saussure (2011) claims that no linguistic expression is expected to bear both conceptual and procedural information. Rather,

in his view, linguistic expressions, including connectives, are conceptual by default. Only under specific circumstances can an expression be categorized as procedural, namely "when it triggers inferences that cannot be predicted on the basis of an identifiable conceptual core to which general pragmatic inferential principles are applied" (p. 67). Thus, the connective *parce que* ('because') is conceptual (and not procedural) in that it encodes a loose concept of causality which it serves "as a solid basis to predict all possible inferences obtained on the basis of *parce que*" (p. 68), including so-called meta-textual or epistemic uses based on abductive reasoning (Sweetser, 1990; see Section 3.4.1 and Chapter 6). The connective is also "easy to translate, to spell out and paraphrase, and is truth-evaluable" (de Saussure, 2011: 68), criteria that belong to conceptual expressions according to Wilson and Sperber (1993).

After having listed the three first characteristics above (connectivity, optionality, truth-conditionality), Schourup concludes that they "are all frequently taken together to be necessary attributes of DMs [Discourse Markers]", the remaining features being "less consistently regarded as criterial for DM status" (p. 232). We would rather defend the position that the above features are typical of the subcategory of discourse connectives, while the remaining four of his list (weak clause association, initiality, orality and multicategoriality) are actually typical of the discourse marker class overall, not of the specific subcategory of discourse connectives.

Briefly, weak clause association refers to the observation that discourse markers are "either outside the syntactic structure or loosely attached to it" (Brinton, 1996: 34). In Chapter 5, we will see that this syntactic detachment generally results from a diachronic development from sentence-internal to sentence-initial position. It seems that this feature applies to so-called adverbial connectives, like *after all, moreover, however*, that are syntactically more loosely integrated with broader positional freedom, than 'conjunctive connectives' that are most often restricted to initial position and are syntactically more constrained (see Chapter 4). Initiality, then, is indeed strongly associated with most discourse connectives, even if other syntagmatic positions are possible too. According to Schourup, this tendency "to appear initially is probably related to their 'superordinate' use to restrict the contextual interpretation of an utterance: in general it will make communicative sense to restrict contexts early before interpretation can run astray" (p. 233). This is a property both discourse connectives and discourse markers seem to share.

Finally, orality as a defining feature of the discourse marker class is probably the characteristic that applies less to discourse connectives.

Although discourse connectives do of course occur in speech, it is not the case that they occur *primarily* in speech. It has however been shown that discourse connective types are different in speech and in writing, with higher-register, lower-frequency connectives in (planned) written language or written-to-be-spoken discourse than in spontaneous spoken interaction (see Chapter 7). The final feature discussed by Schourup (1999) is multicategoriality, that is, the fact that discourse markers/connectives form a heterogeneous category with respect to the syntactic class. While this is specifically true for the overall discourse marker category, with source syntactic forms that may be as diverse as nouns, prepositional phrases, conjunctions, interjections, adverbs or verbal phrases (see, e.g. Bolly, Crible, Degand & Uygur-Distexhe, 2017), the connective subset itself is also syntactically multicategorial, be it in a more restricted sense drawing primarily on (coordinating and subordinating) conjunctions and adverbs. This is a matter that we will develop in more detail in Chapters 4 (synchronic perspective) and 5 (diachronic perspective).

Summing up the overview in this section, we would like to conclude that connectives are best described as a subset of the category of discourse markers. Thus, a connective is a discourse marker, but not every discourse marker is a connective. More precisely, a connective is a type of discourse marker that signals a discourse relation between two spans of discourse. Syntagmatically, a connective follows the syntactic constraints of its source category, with a strong tendency to occur in initial position of its host clause. Semantically, a connective encodes both conceptual and procedural meaning. The conceptual meaning is relational, while the procedural meaning encodes instructions on the interpretation to be given in context. In the following section, we will dig deeper into these semantic descriptions.

3.3 POLYSEMY AND POLYFUNCTIONALITY OF DISCOURSE CONNECTIVES

Regarding the meaning of discourse connectives, a notorious characteristic missing from Schourup's overview in the previous paragraph, shared by discourse markers and discourse connectives alike, is their polyfunctionality and polysemy, where polyfunctionality refers to the fact that discourse connectives can fulfil different functions (derived from the particular context in which they occur) and polysemy refers to their different encoded senses or meanings. Thus, one form can receive different meanings or readings.

In lexical semantics, such one-form-to-many-meanings cases have been treated generally as cases of homonymy or polysemy. Homonymy refers to lexical ambiguity in which two (or more) linguistic expressions have the same form instantiating different, unrelated meanings. Typical examples are *rock* to refer to *a genre of music vs. a stone*; *bat* for *a tool to hit a ball vs. a nocturnal flying mammal* or *to lie* meaning either *to recline* or *to tell a falsehood*. Polysemy, on the other hand, refers to a single lexical item with different, related senses. Lexical examples include *dish* as a *a kind of plate* or *a meal; wing* to refer to *part of a bird for flying* or to *part of a building*.

To our knowledge, in the area of discourse connectives, there are hardly any proposals for treating such one-to-many relations in terms of homonymy (see also Fischer, 2006a). An exception is Freywald (2016), who argues on distributional grounds that adverbial subordinators used with "deviant" V2-order in German (such as *obwohl* 'although', *wobei* 'whereby', *weil* 'because', *während* 'while') should be considered as paratactic homonyms belonging to a separate class within the German inventory of clause linkers. To our knowledge, this is however a minority position in the literature. On the other hand, polysemy accounts are many. In particular, numerous studies aim to explain today's polysemy as the outcome of general meaning extension mechanisms, such as metaphorical or metonymic relations, or pragmatic inferences through implicatures, especially in diachronic accounts, but not only (see Chapter 5).

In contrast to the polysemy approach where the different related meanings of the lexical item are viewed as encoded, the monosemy approach considers that a single form is associated with a single invariant meaning. "This invariant meaning may describe the common core of the occurrences of the item under consideration, its prototype, or an instruction. Individual interpretations arise from general pragmatic processes and are not attributed to the item itself." (Fischer, 2006a: 13). In this view, the discourse connective is not polysemous *per se*, it does not encode several (related) meanings. Rather, individual interpretations of an invariant meaning are retrieved in context. More strongly, the apparent differences in meaning would simply be an artefact of the different contexts in which the expression appears (see Fodor, 1998, as cited in Falkum & Vicente, 2015). The latter approach has been advocated mainly in the framework of Relevance Theory.

Hansen (2006: 24) acknowledges that such a monosemic approach offers the advantage of simplifying the semantic description, "leaving the burden of interpretation to pragmatics." Yet, descriptively, she sees

two main problems. "Firstly, because the descriptions offered may, depending on the multiplicity of concrete uses of the marker in question, end up being so abstract and general that they neither exclude nonexistent uses nor distinguish adequately between different markers. Secondly, postulating monosemy leaves the researcher at a loss to explain how the range of uses of a given item can vary systematically, both diachronically and in language acquisition" (Hansen, 2006: 24). The same view is shared by Waltereit (2006: 71), according to whom "[o]nly with a polysemy approach are we able to account for the rise of the various functions in terms of discrete historical steps." In the same volume, Pons Bordería (2006: 82) holds that in the area of discourse connectives "monosemy is the exception and polysemy is the rule."

Describing the meaning of discourse connectives in terms of polysemy (or monosemy) entails that we are able to describe the core meaning of a given discourse connective (in context), *viz.* that we are able to describe the core meaning of such items as *because, nevertheless, until, in addition* or *yet*. Following Hansen (2006: 21), such an approach would consider as its "most fundamental guiding hypothesis (…) that any item capable of functioning as a discourse marker [or a discourse connective] will be endowed with inherent, specifiable meaning, which restricts the possible interpretations of utterances in which that item appears." Like other lexical items, discourse connectives' meanings should be discrete, identifiable and limited in number of interpretations in order to follow general "principles of learnability, interpretability, and plausibility (…). The criterion of identifiability includes that the conditions for a given particle to receive a particular interpretation should be clear" (Fischer, 2006a: 3). In other words, semantic (and pragmatic) information regarding the meaningful use of a given connective, its adequacy in a given context, including the discourse relations it is compatible with, are part of our linguistic knowledge. Knowing the meaning of *nevertheless* entails that we know that it is used correctly in example (4), because it is compatible with an underlying concessive relation, while *therefore* or *because* would not be compatible in this context.

(4)   The number of people who died in terrorist attacks around the world had dropped 15.2% in 2018. **Nevertheless**, the number of countries that are under risk of terrorist attacks has only increased since then, as reported by the Institute for Economics and Peace on Tuesday, 20 November.

[SketchEngine, English Web 2020]

This approach is however explicitly rejected by Rossari (2006: 300), according to whom

> the lexical semantics we are dealing with consists in sorting out the factors determining the compatibility of a marker with specific linguistic structures. It does not consist, as one might think, in seeking the coded meaning of an item by analysing the possible interpretations of the utterances in which it may occur.

In other words, we do not derive the concessive meaning of *nevertheless* in example (4) from all contexts it occurs in, rather it is the connective that "imposes restrictions on the formulation of the right and left linguistic context" (Rossari, 2006: 302), that is, it is the connective that determines which textual segments it can conjoin. Evidence for this claim comes from the observation that marked and unmarked discourse relations do not impose the same constraints on the segments they connect, that is, a connective is not a mere explicit signal of an underlying discourse relation. Moreover, the constraints on these segments are specific to the connective at hand. For instance, in (5) the inferential relation may be signalled both by *alors* and *donc*, while in (6) *donc* is not acceptable because the left segment is an accomodated proposition, that is, an *if*-clause which is incompatible with *donc*, but natural for *alors*. In other words, *donc* and *alors* impose different constraints on their left context.

(5)   a. J'ai été voir Marie. J'ai compris ce qui s'est passé.
       b. J'ai été voir Marie. Donc/Alors j'ai compris ce qui s'est passé.
           'I went to see Mary. Donc/Alors I understood what happened.'

(6)   a. Tu dois aller voir Marie. Tu sauras ce qui s'est passé.
       b. Tu dois aller voir Marie. ??Donc/Alors tu sauras ce qui s'est passé.
           'You have to go and see Mary. ??Donc/Alors you will find out what happened.'

[Adapted from Rossari, 2006]

Finding out which of the above accounts is theoretically more plausible or descriptively more adequate requires confrontation with actual language use. From a methodological point of view, the study of the (polysemous) meaning of connectives has often been either semasiological, focusing on specific connectives, or onomasiological, aiming at more generic descriptions applying to the whole connective category or a semantic subset. These studies will be presented in the following section.

3.4 SEMASIOLOGICAL AND ONOMASIOLOGICAL APPROACHES TO DISCOURSE CONNECTIVES

In the area of discourse connectives, the semasiological and onomasiological approaches coexist, be it with different purposes. Semasiological studies typically identify a number of uses for one or more particular connectives and illustrate them with corpus examples. The aim may be to account for the relationship between the various senses, to describe their diachronic evolution through semantic paths and/or grammaticalization (see Chapter 5), or to define contextual clues that may help disentangling the different uses. As Pons Bordería (2008: 1412) observes, such "particular descriptions of single markers can be used not only to describe isolated elements, but also to check whether the predictions made by a theoretical approach may be falsified or not." In other words, the semasiological approach very often combines a case study with theory building. More precisely, the detailed study of one or more discourse connectives serves to illustrate more general linguistic phenomena, such as grammaticalization, argumentation, syntactic scope, discourse segmentation, subjectivity, etc. Several of these case studies are crosslinguistic, striving to map the meaning potential of a connective in one language to that of its counterpart in another (see Chapter 7). Onomasiological studies, then, aim at uncovering sometimes subtle meaning distinctions between discourse connectives expressing a given relational meaning, typically causal, adversative or temporal connectives. What these studies have in common is that they focus on a set of connectives that are categorized together on the basis of a shared relational meaning, trying to disentangle their similarities and differences, within and across languages. Some studies take an even broader view trying to describe the semantics underlying the discourse connectives category as a whole. Such categorial approaches are most often related to discourse annotation trying to uncover how discourse connectives are at work in actual contextualized language (see Chapter 2). In the two following sections, we will illustrate the semasiological and onomasiological approaches with studies in different languages.

3.4.1 Semasiological Studies of the Semantics of Discourse Connectives

Semasiological studies for the semantic description of discourse connectives are widespread. In a nutshell, the point of departure is to take a specific linguistic form, say *because, nevertheless, until, in addition* or *yet*, already mentioned above, and to study the list of functions these forms

may fulfil. The approach is thus inductive and interpretive (Hansen, 2006: 22), involving fine-grained analyses of the context of occurrence in order to identify the range of specific functions that are typically expressed by a given form. Such an approach has sometimes been described as "bottom-up" in that it takes as its starting point the empirical data, that is, the context from which different readings and functions are derived (see e.g. the contributions in Celle & Huart, 2007). As already mentioned, the aim is mostly broader than the "simple" description of a polysemous connective. Several studies establish a direct link between today's polysemy of given markers and their diachronic evolution; for example, the evolution of final *though* in English (Barth-Weingarten & Couper-Kuhlen, 2002) and a very similar process for final *kuntey* ('but') in Korean (Kim & Sohn, 2015), or the semantic evolution of adversative *anzi* ('rather') and *invece* ('instead') in Italian (Musi, 2016). Further details concerning the theoretical and methodological underpinnings of such diachronic studies will be presented in Chapter 5.

Other studies aim at uncovering the discourse connective functions from the discourse marker functions of a given marker, thus contributing to the theoretical discussion regarding differences between discourse connectives, discourse markers and other pragmatic expressions (see Section 3.2). An example is Bolly and Degand's (2009) study of the French connective *donc* ('so/then/hence'), which they describe as "polyfunctional" distinguishing four additional more discursive functions that derive from its semantic consequential core. They show that this discursive evolution goes at least partially hand in hand with a loss of its syntactic distribution characteristics. Still other studies take a clear cross-linguistic approach combining a semasiological approach with translation to uncover systematic differences in the polysemies of connectives' equivalents in different languages. For instance, Bazzanella et al. (2007) assess convergences and divergences of Italian *allora* and its French translation equivalent *alors* to show that the connectives, while etymologically going back to the same Latin source form *illa hora*, are used differently in the two languages. In particular, they show that the two connectives have the same meaning potential with temporal, inferential and metatextual uses, but that the temporal use is more central in Italian than in French (referring to different paces of grammaticalization between the two languages). In the same vein, Degand (2009) investigates the same French connective *alors* showing that translation (into Dutch) not only confirms its polysemy with temporal, consequential, conditional and metadiscursive meanings, but can also be used as a heuristic to

disentangle the different related senses. Using translation as a heuristic to disambiguate discourse connectives also underlies the work by Cartoni, Zufferey and Meyer (2013a). Further cross-linguistic studies will be discussed in Chapter 7.

On the basis of the annotations in the PDTB (see Chapter 2), Asr and Demberg (2013: 87) distinguish three types of ambiguities that connectives may encode:

(i) A connective can express different relations, but not the different relations at the same time. A typical example is *since* (temporal vs. causal, belonging to different relation types in the PDTB taxonomy).

(ii) A connective expresses one class of relations in the PDTB taxonomy, but is ambiguous in the subclasses. For example, *but* always expresses a relation of COMPARISON but can express any subtype (concession, contrast, similarity).

(iii) The relation itself is ambiguous and several relations can hold at the same time.

Most semasiological case studies are concerned with the first and second types of ambiguity, which covers both polysemic and monosemic studies of individual markers (see the contributions in Fischer, 2006b). The third type of ambiguity is discussed nearly exclusively in discourse annotation projects (see Section 3.4.2). For purposes of illustration, we will focus here on studies investigating the ambiguity of adversative connectives.

Fraser (2009) is a monosemic study of the English connective *but*, for which he distinguishes more than ten different uses. His study of this connective is presented in support of his claim that discourse connectives[1] are to be treated "as monosemous, since most [connectives] have a single meaning relationship and for those which have more than one, it appears at this point that they can be dealt with by pragmatic interpretation" (Fraser, 2009: 307). According to the author, *but* has a core meaning of contrast, thus signalling "a direct or indirect contrast between [Segment]1 and [Segment]2" (p. 300), where direct contrast involves all the uses of *but* conveying a contrastive comparison between the explicit contents of the related segments and indirect contrast establishes a relation between one or two implied propositions. Based on a literature review, his aim is to show that all uses of *but* can be related to the connective's core meaning. His study is based on

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[1] Fraser (2009) uses the term discourse marker (DM), but for reasons of clarity we will use the term connective, as this is the subclass he is concerned with.

illustrative examples and focuses explicitly on English only so that (semantic) distinctions made in other languages are not considered in his account. This contrasts with Anscombre and Ducrot's (1977) analysis of the connective *mais* ('but') in which the authors specifically consider evidence from other languages to analyze the semantics of the French connective. In particular, the distinction between contrast and correction relations which in French may both be conveyed by the connective *mais* (7–8) is compared to languages in which two distinct connectives are used, namely *aber* and *sondern* in German (9–10), and *pero* and *sino* in Spanish (11–12), respectively.

(7)   Tu aimerais aller à Paris, mais tes parents ne sont pas d'accord.
You would like to travel to Paris, mais ('but') your parents do not agree.

(8)   Nous ne partons pas en vacances cette année, mais allons rénover notre maison.
We're not going on holiday this year, mais ('but') we'll renovate our house.

(9)   Du möchtest nach Paris fahren, aber deine Eltern sind damit nicht einverstanden.

(10)   Wir fahren dieses Jahr nicht in Urlaub, sondern werden unser Haus renovieren.

(11)   Te gustaría ir a París, pero tus padres no están de acuerdo.

(12)   Este año no nos vamos de vacaciones, sino que vamos a reformar nuestra casa.

                                                    [constructed examples]

From the comparison of the semantic and syntactic behavior, Anscombre and Ducrot conclude that *mais* has two distinct meanings. "Thus, even though this distinction is not lexicalized in two different connectives in French, it is still observable from the fact that the two uses of the connective *mais* are associated with different syntactic patterns" (Zufferey & Degand, forthc.). The theoretical consequences of these semantic and syntactic distinctive patterns are further worked out for adversative markers (in Spanish) by Schwenter (2002).

Very often, two or more connectives of the same semantic domain are involved in the analysis. While one might want to argue that the study of more than one linguistic expression belonging to the same semantic domain belongs to the area of onomasiological studies (Section 3.4.2), the focus on specific connectives, their syntagmatic

distribution and the different senses they convey are in line with the bottom-up approach that is typical of the semasiological method. For instance, Zeyrek (2014) analyzes the similarities and differences between two contrastive-concessive discourse connectives in written Turkish, namely *ama* ('but/yet') and *fakat* ('but'). The connectives are analyzed quantitatively and qualitatively considering the characteristics of their arguments, their position in the sentence, the senses they convey, and how they are distributed across genres. Differences between the two connectives are related to genre distribution and to available pragmatic inferences. Similarly, Wang and Tsai (2007) find that the Chinese contrastive connectives *zhishi, danshi, buguo*, and *keshi* (corresponding to English 'but/yet/however'), while expressing similar discourse functions of opposition do not distribute equally across different discourse types (narratives, casual conversations, formal lectures and formal interviews), and differ from one another in terms of frequency and contextual effects. Combining frequency distribution and experimental data, Asr and Demberg (2020) conclude that fine-grained meaning distinctions between English *but* and *although* may be predicted from the connectives' relational distribution. In other words, a connective's meaning is probabilistic: it is their typical context of use in production data more than the connectives' alleged core meaning that influences how speakers will evaluate their ambiguity. Next to the semasiological studies just described, a number of studies take an onomasiological approach to the contrastive-adversative domain. We will describe some of them in Section 3.4.2.

Case studies of connectives exist in different languages with the explicit objective of uncovering particular (semantic) aspects of the linguistic system and the role connectives play therein. Among these studies, one particular area stands out, namely the idea that connectives would be markers of objective or subjective discourse relations (see Chapter 2). This strand of research has gained increasing attention in the last decade with studies in diachronic and experimental linguistics (see Chapters 5 and 6, respectively), but also in synchronic (corpus-based) descriptive studies in different languages. It is to the latter studies that we will devote some attention here focusing on causal connectives, which have been at the center of researchers' attention in this context.

In Chapter 2, we defined objective relations as relations at the level of propositional content, in which real-world events are connected as in example (18) in Chapter 2, here repeated as (13) for convenience.

(13)   The door slammed because there was strong wind outside.

[constructed example]

Subjective relations, then, involve a reasoning speaker, who interprets or reinterprets external states of affairs for purposes of argumentation, as in (14) (example (19) in Chapter 2), where the speaker argues on the basis of the fact that the neighbors' lights are always out, that they must be on holiday.

(14)   The neighbors must be on holiday, because their lights are always out.

[constructed example]

The expression of objective and subjective relations by means of connectives has been worked out most extensively in the area of causal relations. Many of these works go back to Sweetser's (1990) seminal distinction between three different domains of discourse in which (causal) connectives may operate: the content domain, the epistemic domain and the speech-act domain, illustrated with her examples in (15–17), respectively. Thus, the content use is based on the cause-and-effect relationships in the real world; epistemic use introduces the speaker's reason for making a conclusion, and speech act use expresses the motivation for the speaker's performing a particular speech act, for example, asking a question in (17).

(15)   John came back because he loved her.

(16)   John loved her, because he came back.

(17)   Since you are so smart, when was George Washington born?

[from Sweetser, 1990: 77–78]

Many studies demonstrate that the systematically different patterns of meaning and use of connectives like *because* can be brought back to their use in these three different domains. In many works on discourse relations and connectives, Sweetser's distinction between three discourse domains has been brought back to the distinction between objective (content use) and subjective (epistemic and speech-act uses) relations and/or discourse connectives or to a scale from low speaker involvement (objective) to high speaker involvement (subjective) (Pander Maat & Degand, 2001). In the latter approach the interplay between discourse relation and connective are put to the fore, in the sense that a

> connective encodes a certain speaker-involvement level, which it contributes to the interpretation of its discourse environment. When this level is too low or too high to be combined with the level allowed for by the discourse environment, the use of the connective is inappropriate. (Pander Maat & Degand, 2001: 230)

In other words, some connectives specialize in more objective uses, others in more subjective uses, while still others may not impose any subjectivity constraints at all. Many studies have shown that these constraints are language-specific. While the English connective *because* can be used to express both subjective and objective causal relations, other languages have specialized connectives to express different types of causal relations.

In Dutch, several corpus-based studies have established a systematic relationship between the different types of causal relations and the connectives used to express these relations. More specifically, the connective *want* ('because') is a typical marker of subjective relations, and the connective *omdat* ('because') typically expresses objective relations. These are strong tendencies which have been confirmed both for spoken, spoken-like and written data (Pit, 2006; Sanders & Spooren, 2009, 2015; Spooren, Sanders, Huiskes & Degand, 2010; Sanders, Sanders & Sweetser, 2012), even if there is no one-to-one relation between the connective and the type of causal relation (see Sanders & Spooren, 2013). A similar division of labor between objective and subjective connectives is found in the consequential domain (or forward causal connectives), with the connective *dus* ('so') specializing in subjective uses and *daarom* (similar to 'therefore/that's why') in objective ones, which explains their distinct distributional behavior (Pander Maat & Sanders, 2001; Pander Maat & Degand, 2005). Compared to other languages, Dutch stands out with this strong division between objective and subjective connectives, to such an extent that the connectives themselves are seen as encoding objective or subjective meaning and could be used as a heuristic to determine the subjectivity of equivalents in other languages, such as the connective *because*, which does not encode this meaning (Levshina & Degand, 2017).

In French, three connectives are predominantly used to express causal relations, namely *parce que* ('because'), *car* ('because/for'), and *puisque* ('since') (see Groupe lambda-L (1975) for their seminal theoretical analysis and Zufferey (2012) for an empirical reinterpretation). Regarding the distinction between *car* and *parce que*, the main argument is that *car* conveys more subjective relations and it is also used in a higher (written) language register, while *parce que* is equally well suited to both types of relations, gaining ground on *car* in contemporary French (Debaisieux, 2002; Simon & Degand, 2007; Degand & Fagard, 2012; Zufferey, 2012; Zufferey et al., 2018). In contrast to the "division of labor" view suggested in Stukker and Sanders (2012), corpus-based and empirical work have shown that the distinction between the two connectives is not clear-cut. For example, Zufferey

(2012) notes that *car* and *parce que* are interchangeable in many objective and subjective contexts in writing, and Véronis and Guimier (2006) find that *car* is used in Internet chat-type conversations. This is confirmed in recent work by Blochowiak, Grisot and Degand (2020), who showed that *car* is actually not confined to subjective uses and can also be used to express objective relations (even more frequently than *parce que*), both in formal and informal writings. The connective *puisque* plays a specific role in the causal connective trio. While it is also described as subjective in most studies, it is different from *car* and *parce que* in that *puisque* introduces a cause presented as being part of the common ground between speaker and hearer, that is, as given information (Ducrot, 1983; Nazarenko-Perrin, 1992; Zufferey, 2014).

Similar (corpus-based) studies investigating the relation between subjectivity and causal connectives exist for Spanish (Santana et al., 2018), Mandarin Chinese (Xiao, Sanders & Spooren, 2021), Turkish (Çokal, Zeyrek & Sanders, 2020), including cross-linguistic studies in Germanic and Romance languages (Degand & Pander Maat, 2003; Pit, 2007; Fagard & Degand, 2010; Stukker & Sanders, 2012; Zufferey & Cartoni, 2012). This different encoding of subjectivity in (causal) connectives leads to differences in processing as will be shown in the studies presented in Chapter 6, but also to different syntagmatic distributions, which will be further developed in Chapter 4.

3.4.2   Onomasiological Studies of the Semantics of Discourse Connectives

In contrast to the bottom-up semasiological approach, the onomasiological one is top-down with a predefined set of discourse functions as a starting point for which one would try to determine how these functions might be expressed linguistically. Staying in the causal domain, an example is the study by Ibáñez et al. (2020), whose aim is to identify the variety of markers used to signal causal relations in Spanish and to describe what (semantic) features distinguish these markers from one another. From the 40 different linguistic devices identified to signal causal relations, it was found that the 8 most frequent are the most polyfunctional, while the others specialize in signalling specific relations. Again, in the contrastive-adversative domain, different studies exist, very often combining different languages. They differ from the semasiological studies presented above in that the focus is more on the meaning potential languages display in expressing a type of discourse relation, rather than on the fine-grained distributional differences between the different connectives of that domain. For instance, Izutsu (2008) proposes a "unifying analysis of opposition relations" (p. 646), aiming to unify all the

semantic categories of opposition. On the basis of linguistic evidence (mainly English, but also Romanian, French, Spanish, German, Swedish and Hebrew), she proposes a classification of opposition relations into three semantic categories (contrast, concessive and corrective) that can be distinguished from one another through explicit semantic features. Thus,

> contrast designates a mutually exclusive relation between two or more propositional contents; concessive designates a mutually exclusive relation between an assumption and a propositional content or between two assumptions; and corrective designates a mutually exclusive relation between a rejected semantic content and an asserted semantic content.
>
> [Izutsu, 2008: 673]

In a more explicit cross-linguistic perspective, Cuenca, Postolea and Visconti (2019) classify and compare the main contrastive markers of Spanish, Catalan, Italian and Romanian "with the aim of providing a cross-linguistic description of the way in which this class of discourse relations is signalled in these four different Romance languages". The approach is top-down starting from two general meanings of contrast (non-exclusive *vs* exclusive, in their terms) which are expressed in divergent connective paradigms in the four languages. Also cross-linguistic is the study by Mortier and Degand (2009), who make use of a "combined corpus approach", including written and spoken comparable data and translation corpora, to address the polysemy of a set of French and Dutch adversative discourse markers. Focusing on French *en fait* ('in fact') and Dutch *eigenlijk* ('actually') within this set, they establish semantic profiles for the two markers showing how they fit within the complex semantic network of opposition, reformulation and deviation. Going beyond discourse connectives and discourse markers is the onomasiological study of Andorno, Benazzo and Dimroth (2023) in which the authors aim to uncover how the notion of contrast is expressed in Germanic (Dutch/German) and Romance (Italian/French) languages. Using an experimental elicitation task, it is shown that the two language families differ in the way they express contrastive relations, "both in terms of the preferred information units selected to mark a contrast (. . .) and their sensitivity to the degree of contrastiveness involved" (p. 15). Linguistic expressions of contrast considered include discourse connectives, but also word order, (contrastive) pronouns, prosodic focus or lexical resources.

Next to the semantically driven onomasiological approaches presented above, there is an alternative top-down approach of discourse connectives that aims to describe the category as a whole. Crible and Degand (2019a, b) propose a model for the identification and

annotation of the functions of discourse markers in spoken languages. Rather than focusing on a restricted set of markers, the "model targets the whole DM category (as opposed to fine-grained case studies), covers functions that apply to both speech and writing, and aims at high reliability, even though annotation remains a challenging and somewhat subjective task" (Crible & Degand, 2019a: 4). One of the specific outcomes of the model is to describe the semantics of discourse markers as a combination of polyfunctionality (different contexts of use) and polysemy (different senses). The model is different from the discourse relations taxonomies that were presented in Chapter 2, but it shares with PDTB its focus on the lexical expressions. The main innovative feature of the model is to distinguish between two independent layers of semantico-pragmatic information, which, once combined, provide a fine-grained disambiguation of the discourse markers' polyfunctionality and polysemy. On the one hand, the layer of domains corresponds approximatively to the speaker's global communicative intentions when using a given discourse marker: ideational (relating real-world events), rhetorical (expressing the speaker's subjectivity and metadiscursive effects), sequential (structuring local and global units of discourse) and interpersonal (managing the speaker–hearer relationship). These four domains reflect different broad functions language in use can fulfil (see also Schiffrin, 1987; Redeker, 1990; Sweetser, 1990). A marker is polyfunctional when it can be used in more than one domain. The second layer of annotation refers to fifteen "discourse functions", that is, the specific semantic meaning a marker may convey, such as addition, alternative, cause, concession, condition, etc. A marker is polysemous, when it may express more than one function. The specificity of the model lies in the fact that, in principle, any function can combine with any domain resulting in 60 (4 x 15) potential domain-function combinations (see Table 3.1).

So far, the model has been applied (successfully) to spoken data in French, English, Spanish and Polish, uncovering both similarities and divergences in the way languages put their discourse markers to use

Table 3.1 *Two-dimensional domains-functions model of discourse markers (based on Crible & Degand, 2019a)*

Ideational	Rhetorical	Sequential	Interpersonal
Addition – Agreeing – Alternative – Cause – Concession – Condition – Consequence – Contrast – Disagreeing – Hedging – Monitoring – Quoting – Specification – Temporal – Topic			

for the expression of relational and discursive meanings (Degand et al., 2022). More specifically on the topic of polysemy and polyfunctionality, Degand's (2023) study of discourse marker use in different spoken French discourse types (N=1872 DMs, 103 DM types) reveals that high frequency goes hand in hand with high polyfunctionality (use in all four domains) and high polysemy (more than 7 different senses). It appears that these markers are actually the discourse connectives *et, mais* and *alors*. Yet, polyfunctionality and polysemy do not always follow from another. The connective *parce que*, for instance, is highly polyfunctional (occurring in the four discourse domains) and monosemous at the same time, only expressing the causal function. The study furthermore uncovers the situational features that favor or disfavor polyfunctional or polysemous discourse markers. In particular, it is shown that discourse markers are not distributed randomly across discourse genres (see Chapter 7). The most polyfunctional markers are mainly at use in highly prepared and formal monologues, while spontaneous, informal dialogues resort more often to domain-specific expressions. Similarly, high polysemy markers are also overrepresented in formal, highly prepared settings while spontaneous conversation resorts to discourse markers which express fewer different functions. The categorial approach is interesting because it gives a beginning to the question "Why and when do speakers use discourse markers (including discourse connectives)?", yet the approach is too coarse-grained to disentangle fine-grained semantic features that are better accounted for in semasiological case studies.

3.5 SUMMARY

This chapter set off with an overview of semantic features defining discourse connectives and how these are different from discourse markers. On the basis of three central features (connectivity, optionality and truth-conditionality), we concluded that discourse connectives are best considered as a subcategory of discourse markers. We then turned to a major semantic characteristic of discourse connectives, namely their polyfunctionality and polysemy. Polyfunctionality refers to the fact that discourse connectives can fulfil different functions depending on the context in which they are used, while polysemy refers to their different encoded senses or meanings. Whether the connective encodes one specific core meaning from which all others are derived in context (monosemy) or whether it encodes several (related) meanings which it brings to different contexts (polysemy) is

still not clear cut. Methodologically, both the monosemy and polysemy accounts heavily rely on fine-grained analyses of contextual features. As to whether one or the other perspective gets the upper hand seems to be determined mainly by the theoretical framework in which researchers host their work. When it comes to describing the semantics of particular discourse connectives, two approaches are put forward. In the semasiological approach the study is bottom-up, starting from the connective and unravelling its different meanings in context. In the onomasiological approach, the perspective is top-down starting from a given semantic domain or relation to investigate how a given language (or given languages) express this general meaning through specific connectives.

DISCUSSION POINTS

- Regarding the semantics of connectives, what kind of arguments could be decisive in the monosemy vs. polysemy debate?
- On the basis of the overview of studies in Section 3.4, what are in your opinion the advantages and disadvantages of semasiological and onomasiological approaches to discourse connectives?
- Are there (semantic) reasons to keep the categories of discourse connectives and discourse markers as separate categories of linguistic expressions?

FURTHER READING

Fischer (2006b) presents an overview of works on discourse connectives and discourse markers making explicit whether preference is to be given to a monosemous or polysemous account of their (ambiguous) meaning. Celle and Huart (2007) is a good illustration of the variety of theoretical approaches to the study of discourse connectives. Fedriani and Sansó (2017) present state-of-the-art work regarding the form, meaning and functions of pragmatic markers, including discourse markers, modal particles and discourse connectives from a variety of perspectives. Explicitly tackling the categorial distinction between discourse connectives and discourse markers is Pons Bordería (2001). On the notions of polysemy and ambiguity proper, Tuggy (1993) is a strong position paper. Also going beyond discourse connectives is the special issue edited by Falkum and Vicente (2015) presenting current perspectives and approaches to polysemy.