CHAPTER 26: GRAMMAR AND DISCOURSE

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1. Introduction

In this chapter we review the relationship between grammar and discourse. A discussion of this kind needs to elaborate both the notion of grammar and the notion of discourse itself. We will assume simply that grammar refers to regularities of linguistic structure (typically morphological and syntactic). Discourse has a range of definitions. Here we will present those that seem most relevant for our discussion. The term 'discourse' can be used to refer to regularities of language above the level of the sentence, i.e. regularities and patterns in the construction of spoken or written texts. It can also refer to the general domain of language use and interaction in various contexts and modalities. 'Discourse' can also be used to refer to 'representations', i.e. how entities and events are represented in language in some particular situation of use, what perspectives, viewpoints, and ideologies are expressed in particular texts in particular situations of use (for more detailed discussion see, for example, Gee (2018, 20-21)).

Just as there are a number of ways of viewing discourse, there are a number of ways of exploring the relationship between discourse and grammar. We can test our grammatical models against actual language used in actual communicative situations, interrogating discourse to see how it exhibits speakers' knowledge of grammar. We can ask whether our grammatical models should or can include the level beyond the sentence. We explore this in Section 2. Another way of approaching the relationship is to enquire what role different grammatical choices play in specific situations of language use, i.e. how grammatical choices align with communicative aims and intentions. One aspect of this question relates to how grammatical choices can support a particular representation of reality, or help build a particular perspective, viewpoint, or ideology. We discuss this in Section 3. Yet another perspective is to explore how language use, that is, the production of texts in a range of situations, can drive changes in the grammatical system, i.e. we can approach the relationship from the point of view of language change or grammaticalization. We take this perspective in Section 4.

It is important to point out that discussions of grammar and discourse are often linked

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to particular theoretical conceptualizations of language structure. Cumming, Ono, and Lauri (2006), for example, focus their discussion of grammar and discourse on the so-called discourse-functional approaches to grammar, which view grammar as fluid, constantly changing in response to the communicative needs of the language user, and ultimately emerging from discourse. In a similar vein, Hopper (2012) outlines the basic properties of his emergent grammar approach in contradistinction to what he calls 'fixed-code', or formal grammar. Whereas the former traces language design ultimately to its functions, the latter sees it as autonomous of use. Functional approaches give priority to usage data, where fixed-code grammars mostly rely on introspection. Functional approaches take into account and consider important the larger context of use, formal (generative) approaches focus on the sentential level and consider sentence structure an independent domain. Whereas for the formal approaches grammar exists a priori and is deployed in discourse, for emergent or usage-based approaches grammar comes into being in discourse, in interaction. Most of the approaches that concern themselves with discourse are therefore functionalist and usage-based in orientation[2]. We refer to a number of them in the following sections.

2. Grammar beyond the sentence

Standard grammatical analyses tend to focus on the written ideal of a sentence, taken as comprising a complete main clause or a coordination of main clauses (where a main clause may or may not contain an embedded subordinate clause as a component). The domain of grammar is usually held not to apply beyond the sentence. For instance, Huddleston and Pullum (2002: 44) write: 'The sentence is the largest unit of syntax ... the study of the relations between sentences within a larger text or discourse falls outside the domain of grammar. Such relations are different in kind from those that obtain within a sentence'.

However, while there are good grounds for distinguishing the domains of grammar and discourse, the boundary between them is not always clearcut. In this section, we will look at some of the problems encountered in drawing the boundary, and consider what grammarians can learn from looking at the way grammar is deployed in building discourse. First, in 2.1, we will look at how grammatical resources contribute to making a text 'coherent', a central topic in text linguistics, which has focused mainly on written texts. Then, in the remainder of section

[2] See, however, Guéron (2015) for recent work on the interaction between grammar and discourse within a generative grammar framework.

2, we will turn to interactive spoken discourse, as this poses the greatest challenges for grammatical analysis.

2.1 Grammar and text coherence

While syntactic principles determine what is a structurally well-formed sentence, it is generally agreed that the 'well-formedness' of a discourse or text is mainly to do with its 'coherence' (e.g. Sanders and Sanders 2006): the connectedness between parts of text which makes for a unified whole. This involves global constraints such as relevance, in contrast to the local constraints imposed by syntax (Ariel 2009).

The connectedness of text has been an important topic in the field of text linguistics (e.g. de Beaugrande and Dressler 1981; Sanders and Pander Maat 2006) and within functional approaches which concern themselves with text analysis, notably Halliday's Systemic Functional Grammar (e.g. Halliday 1985, 2014; see Mackenzie, this volume). Connections between textual elements may be explicitly marked by linguistic forms, but can also be left implicit, requiring inference to make the connection. For instance, consider (1):

(1) Sam Jenkins was knocked off his bicycle by a bus. He broke his collarbone.

We are likely to infer from this sequence of sentences that it was the accident described in the first sentence that caused Sam's collarbone to break, even though the causal relationship is not explicitly expressed (it could have been expressed, for instance, by adding *as a result* to the second sentence).

Because connections between textual elements are often implicit rather than explicitly expressed, it has become widely accepted that coherence is more appropriately viewed as a cognitive phenomenon than as an inherent property of a text: 'Language users establish coherence by relating the different information units in the text' (Sanders and Sanders 2006: 599). The use of explicit linguistic devices to indicate connectedness is often labelled 'cohesion' in distinction from coherence as a cognitive phenomenon. An early, seminal work on this topic is Halliday and Hasan's *Cohesion in English* (1976), which considers how grammatical (as well as lexical) resources are used to contribute to cohesion. The grammatical resources surveyed include anaphora, conjunction, ellipsis, and substitution. Quirk et al. (1985) include in their English grammar a chapter 'From sentence to text', which focuses on the

contribution to textual cohesion made by a broad range of grammatical devices (also including, for instance, adverbials, tense, and aspect).

As an example of the cohesive role played by grammatical resources, consider the use of anaphora in (2), a paragraph from a personal letter. The source of the example is ICE-GB, the British component of the International Corpus of English (Nelson et al. 2002), which comprises one million words of British English from the early 1990s.

(2) [Context: the writer has recently moved from the UK to Brussels]
Paul was due to come out this weekend but, has ~~had~~ decided not to now. That's a shame – I had been looking forward to his visit. I daresay he may make the trip sometime in April now.
(ICE-GB, W1B-002 #82–85; the strike-out indicates a deletion by the writer)

Referential continuity contributes to the cohesion of this passage. For example, *his* in the second (orthographic) sentence and *he* in the third are anaphors which relate back to the antecedent *Paul* in the first sentence. *That* in the second sentence is also interpreted anaphorically as referring to Paul's decision, described in the first sentence.

As noted by Huddleston and Pullum (2002: 1454, 1456), many kinds of anaphoric relation can hold both within and across sentences — including various kinds of ellipsis which can also be treated as anaphoric relations. For instance, there is an anaphoric gap in the first sentence of (2) following *not to* which relates back to the antecedent *come out this weekend* (we understand 'Paul has decided not to come out this weekend now'). This can be compared with a parallel example where the same kind of relationship holds across a sentence boundary, as in (3) — or indeed, if we extend our discussion to dialogue, across different speakers, as in (4):

(3) Paul was due to come out this weekend. However, he has decided not to now.
(4) A: Isn't Paul due to come out this weekend?
B: No, he has decided not to now.

The fact that such relations hold both within and across sentences creates some difficulties in drawing the boundary between grammar and discourse, as pointed out by Ariel (2009). A further issue is that delimiting the sentence as a syntactic unit is in fact 'quite problematic', as noted by Huddleston and Pullum (2002: 1728) in their chapter on punctuation. For instance,

clausal coordination need not be marked by any formal device. Consider their example, reproduced in (5):

(5) Some went to the concert, some stayed at home.

The chosen punctuation makes this a sentence in orthographic terms, but the syntax here does not distinguish between a coordination of clauses and a sequence of separate main clauses.

Grammatical descriptions have tended to show a bias towards written language (see Linell 1998, 2005 for discussion), and work in text linguistics has tended to focus mainly on written monological texts (Sanders and Sanders 2006). However, it becomes even more difficult to draw the boundary between grammar and discourse when we consider interactive spoken discourse. This area of study is especially valuable and challenging for grammarians. It is valuable in providing a source of evidence about speakers' knowledge of grammatical structures, as we can observe how they build these structures in real time and respond to the structures being built by others. It is challenging as a testing ground for our grammatical models. For instance, such data is notoriously difficult to divide into grammatical units such as 'sentence' and contains frequent instances of 'fragmentary' structures which, although not integrated into sentential units, make complete and coherent contributions to the discourse.

The remainder of section 2 will focus on the value and challenges to the grammarian of looking beyond the sentence in studying interactive spoken discourse. In 2.2 we will briefly discuss several different lines of relevant research on spoken discourse. We will then look at initial problems in the delimitation of grammatical units such as 'sentence' in spoken data (2.3) before focusing in more detail on the challenges posed by 'clause fragments' (2.4).

2.2 Strands of research on grammar and spoken discourse

Various lines of research have investigated the grammar of spoken English. Some of this research has been stimulated by the increasing availability over recent decades of computerized English corpora which include spoken data. Such research has often included some comparison of written and spoken genres in terms of the frequency of particular grammatical features (see Dorgeloh and Wanner, this volume, for more on this line of work). For example, the *Longman Grammar of Spoken and Written English* by Biber et al. (1999) draws on corpus data to compare the four genres of fiction writing, news writing, academic writing, and conversation. Leech (2000), one of the authors of that grammar, notes that 'conversation ... stands out clearly

as being frequently very different, in terms of grammatical probabilities, from the written varieties. Some grammatical features (such as dysfluency phenomena, in so far as they are grammatical) are almost entirely restricted to the spoken variety, but in general the same descriptive framework applies to all four registers' (p. 690). Nonetheless the differences are not restricted to those of frequency of particular grammatical features; there are also differences in the way grammar is deployed in spoken interaction, more relevant to the topic of this chapter. Some of these are described in the chapter on 'the grammar of conversation' in the *Longman Grammar*; see also Miller and Weinert (1998), Miller (2006), and Quaglio and Biber (2006).

A growing field of research is that of interactional linguistics (IL), surveyed in a recent textbook by Couper-Kuhlen and Selting (2018). IL gives serious consideration to spoken interaction as the natural 'home environment' in which knowledge of grammar is deployed. IL has developed from earlier functional approaches to linguistics, especially 'West Coast functionalism' (e.g. Chafe 1994, Du Bois 1987, Givón 1979), and has also drawn heavily on conversation analysis (CA), a strand of sociological research that focuses on conversation as a form of social action (see e.g. Sidnell and Stivers 2013). CA has made important contributions to the understanding of various aspects of conversational organization, including turn taking (see Sacks et al. (1974) for a seminal early discussion) and the advancement of social action through sequencing patterns (including 'adjacency pairs' such as request–acquiescence but also more complex multi-turn sequences). Whereas speech act theory (see König, this volume) has tended to focus on particular types of social action carried out by single utterances, CA examines how actions unfold in conversational sequences and covers responsive as well as initiating actions (see Levinson 1983, 2017 for discussion).

While IL focuses more on linguistic form than CA, it has continued CA's strongly empirical methodology: attending carefully to audio or video recordings, making transcriptions which include considerable prosodic detail, and often engaging in quite detailed analysis of unfolding interactions. This kind of methodology tends to be extremely 'bottom-up': generalizations emerge slowly, as researchers gradually build up collections of instances of similar phenomena encountered in the data. This contrasts with much corpus linguistic research, where recurrent formal patterns are often readily identified by computerized searches across a large database of spoken extracts, but where less attention is often paid to the extended contexts within which these patterns occur.

Also unlike much corpus linguistic work, IL and CA work has tended not to be quantitative. However, some quantitative work in this line has started to be carried out. An example is the large cross-linguistic study of question–response sequences in conversation

reported in Stivers, Enfield, and Levinson (2010), which includes a study of American English by Stivers (2010). A coding system was systematically applied to the data to allow quantitative analysis of the formal and pragmatic properties of questions and responses.

Another, very different line of work that also stresses the real-time unfolding of dialogue is that oriented towards language processing. Research in this field often involves the computational modelling of dialogue for the practical purpose of developing dialogue systems (see e.g. Ginzburg and Fernández 2010). This has presented huge challenges in dealing, for instance, with ellipsis and the incorporation of contextual information. Researchers in this field have also contributed theories of human language processing (e.g. Ginzburg 2012). A notable theory is dynamic syntax (e.g. Kempson, Meyer-Viol, and Gabbay 2001; Cann, Kempson, and Marten 2005; Kempson 2016). This is a formal model which aims to capture the real-time progression of language processing, with hearers incrementally building a semantic representation from the linguistic input and contextual information. In this model, knowledge of language amounts to knowing how to parse spoken language in context – a radical departure from most formal models since Chomsky where such 'knowing how' would be regarded as 'performance' and separate from the language system ('competence').

2.3 Delimiting grammatical units in dialogue

In this section and the next we use examples from English dialogue to illustrate some of the challenges it presents for grammatical analysis. The source, except where otherwise identified, is ICE-GB. As noted earlier, ICE-GB comprises one million words of British English from the early 1990s. It includes written material and spoken monologues, as well as spoken dialogues. The spoken dialogues comprise around 376,000 words drawn from a range of text categories, with private face-to-face conversation being the largest. All texts in the corpus are fully parsed; they are divided into 'parsing units': sentences of written text or their rough equivalents in spoken texts. In the cited examples, a short pause (of a syllable's beat) is marked by the symbol <,> and a longer pause by <,,>, while self-corrections are indicated by a strikeout on text considered not to form part of the 'finally achieved' grammatical unit. Occasionally a slight amendment has been made to a transcription after listening to the audio recording. We give identifying codes for the source text and specific units cited, but in multi-unit examples we have added simple sequential numbering of speaker units for reference purposes (retaining the letters used in the corpus to identify speakers, e.g. A, B, C). As examples in the literature often

use different conventions, citations of these have been adapted, with some of the details of pronunciation and delivery omitted for simplicity.

This section discusses some initial problems concerning the delimitation of grammatical units in spoken dialogue. The division of such data into sentences is notoriously difficult. Consider (6), uttered by a single speaker, C, who is discussing (with two others) her involvement in a dance group for both able-bodied and disabled dancers.

(6) C1: There has to be ~~a l~~ a greater sensitivity <,> to that person because it's very easy <,> uhm to hurt ~~someonedy~~ somebody who has a disability because they haven't got so much control

C2: So you have to be very very sensitive to their particular <,> uh disability in order to ~~s~~ stop them from damaging themselves

C3: And I think that really brings you closer <,>

(ICE-GB, S1A-002 #42–44)

The three units shown follow the division into parsing units (the rough spoken equivalent of 'sentences') in the corpus, where *so* and *and* (the initial words of C2 and C3) are treated as markers of discoursal links that introduce new grammatical units. However, they might alternatively be analysed as coordinators that link the clauses they introduce to preceding material to form a larger grammatical construction, a clausal coordination. While prosodic factors such as pauses and intonation can be taken as a guide, they often do not provide clearcut criteria. It can also be hard to distinguish subordination and discoursal linkage in some instances: for example, the relations marked by *because* (or its shortened form *cos*) seem to range from tighter subordinative relationships (as in the two instances in C1 above) to much looser discoursal links to preceding stretches of conversation (e.g. Burridge 2014).

Such difficulties have led some analysts to abandon the sentence as a unit for the analysis of spoken language (e.g. Biber et al. 1999: chap. 14; Miller and Weinert 1998). Clausal structures often seem easier to identify. Consider (7), which follows the line divisions used in the source; the full stops indicate a falling, or final, intonation contour.

(7) [Context: A moves towards ending a long phone conversation with B, his girlfriend]

A1: Okay. I sh- I shall leave you.

A2: to get on with your hard studying.

A3: that I know I interrupted.

A4: rather rudely

B1: (Oh yes.)

(cited in Couper-Kuhlen and Ono 2007:521; adapted; parentheses indicate uncertain transcription)

Here speaker A utters a syntactically complete clause with final intonation in A1, only to expand this initial structure several times on receiving no response from B, who finally responds in overlap with *rudely* in A4. Despite the prosodic breaks, the clear grammatical dependencies here support a (retrospective) analysis of A1–A4 as a unitary clausal structure (*I shall leave you to get on with your hard studying that I know I interrupted rather rudely*) – albeit one whose production was incremental and responsive to interactional contingencies.[3]

However, there are also difficulties in delimiting the clause. One reason is that various elements are often loosely attached at the start or end (discussed by Leech 2000 as 'pre-clause and post-clause satellites'), or interpolated within it. Examples (8) and (9) below show loosely attached nominals in final and interpolated positions respectively, each serving to clarify the reference of a preceding nominal (*they* in (8), *this girl* in (9)), while (10) shows an interpolated interrogative tag.

(8) They've got a pet rabbit <,> **Laura and her boyfriend Simon**

(ICE-GB S1A-017 #128)

(9) Apart from that he tried to smuggle this girl back **Vera** in the train ~~com~~ compartment where you're supposed to shove the luggage

(ICE-GB:S1A-014 #168)

(10) I mean ~~your mother~~ there was a large picture of your mother's mother **wasn't there** in a sort of (wig) looking as fierce as anything

(ICE-GB S1A-007 #167; parentheses indicate uncertain transcription)

Some loose attachments involve recurrent structures which are recognized as constructions in standard grammars, for instance 'left dislocation' and 'right dislocation' (see Kaltenböck, this volume), the latter of which is arguably exemplified in (8) and (9). Dislocations are often

[3] This unitary clausal structure is a main clause which incorporates subordinate clauses at several levels of structure. The infinitival clause added in A2 is arguably a second complement of *leave*, so we might see this addition as not simply extending the structure in A1, but changing it from a monotransitive to a complex catenative construction (to use Huddleston and Pullum's (2002: chap. 14) term).

treated as involving extended clausal structures, though Leech (2000), for example, prefers to see them as involving discoursal rather than grammatical links. It is probably best to acknowledge a fuzzy boundary between these two types of links. Note that in (8) there is a clear intonational break, as well as a pause, before the addition of the final nominal as a kind of 'afterthought'; however, we have already seen in (7) that 'standard' elements of clausal structure can also be added as 'afterthoughts' following prosodic breaks. Example (9) shows that a dislocated NP need not occur at the right periphery of the clause but can be interpolated.

Various kinds of loose attachments such as parentheticals, afterthoughts, and dislocations have been discussed in the literature, and are grouped together by Kaltenböck et al. (2011) as 'theticals' which show special properties not adequately captured in standard grammatical accounts (see also e.g. Dehé and Kavalova 2007 and Dehé 2014 on parentheticals). Huddleston and Pullum (2002: 1350–62) call such loose attachments 'supplements': 'elements which occupy a position in linear sequence without being integrated into the syntactic structure of the sentence' (p. 1350) in that they do not function as dependent to any head. For them 'supplementation' is a type of construction contrasting with both coordination and dependency constructions, and they take supplements to include a very broad range of formal types. It should be noted that loose attachments are by no means restricted to spoken discourse – some types (such as appositives and unintegrated relative clauses) are frequent in written texts.

Thus, we have seen some initial difficulties in delimiting 'sentence' and 'clause' in spoken interaction. Nonetheless, the clause has generally been considered a useful unit in the analysis of spoken discourse. Of the 43,818 parsing units in the ICE-GB spoken dialogues (each of which is spoken by a single speaker), 58% take the form of a main clause while 35% are 'non-clauses' (with most of the remaining units being coordinations of clauses, or subordinate clauses parsed as independent units). Biber et al. (1999: 1069–72) found similar proportions in a much smaller sample of conversational data from British and American English that they divided exhaustively into 'syntactically independent' clausal and non-clausal units (treating coordinated main clauses as separate clausal units because of the practical difficulties we discussed earlier concerning the identification of clausal coordinations as units); of the 1,000 units they identified, 61% were clausal and 39% non-clausal.

The data from these studies underlines the importance of non-clausal or non-sentential units (NSUs) in dialogue. There are different kinds of NSU. Frequently found are 'free-standing' single-word constructions (e.g. *Hi*, *Oh*, *Okay*, *Uh-huh*, *Wow*). Many of the words involved can either stand alone, or be prosodically attached to other structures without being

syntactically integrated into them (as in *Oh that's wonderful*). They have a range of pragmatic functions. The boundaries of this group of words are hard to draw and various terms are used in the literature. For instance, such words are discussed by Biber et al. (1999: 1082–99) as 'inserts' and by Couper-Kuhlen and Selting (2018: chapter 8) as 'particles'. They are sometimes subsumed under the heading of 'discourse markers', a category whose ascribed membership varies widely in the literature, often including also formulaic multi-word expressions such as *in fact* or *you see* (see e.g. Heine 2013).

NSUs also include free-standing multi-word utterances such as *How about Friday afternoon after the meeting?*; *The more questions, the better*; *What a disappointing set of results!* This type involves a range of conventionalized structures that do not conform to canonical sentence form (see e.g. Culicover and Jackendoff 2005: 236–7). They are sometimes labelled as 'minor sentences' or 'irregular sentences'.

Of more interest here, however, is another type of NSU that we label 'clause fragments', to be discussed in the next section. We will see that these pose even more severe problems in the delimitation of grammatical structures, as well as difficulties in distinguishing between grammatical and discoursal links.

2.4 Clause fragments in dialogue

Clause fragments are of particular interest here because they involve elements which have the grammatical potential to be clausal constituents (e.g. noun phrases, preposition phrases) but which are not integrated into any clause. Again, terminology varies; for example, Biber et al. (1999: 1099–1104) refer to this type as 'syntactic non-clausal units'. They can involve single words, phrases, non-embedded subordinate clauses, or combinations of those. Like clausal structures, they can include more peripheral elements such as the 'inserts' mentioned above or vocatives.

The discussion in this section draws on examples from a study of clause fragments in ICE-GB by Bowie and Aarts (2016). Consider first B4 in the following sequence uttered by a single speaker:

(11) B1: My sister and I were going to get a picture of of she and I done
B2: Well we've been meaning to do it through this friend of mine who's a photographer for about <,,> four years
B3: Just never got round to it

B4: **For my mum and dad**

(ICE-GB, S1A-015 #48–51)

Following B4, which takes the form of a prepositional phrase, we understand the speaker to have conveyed something like 'My sister and I were going to get a picture of she and I done for my mum and dad', with the PP functioning like an adjunct which extends the clause uttered in B1. There is considerable intervening material, so speaker and hearer are probably unlikely to have retained the exact form of B1 in their memories by the time B4 is uttered, but nonetheless a similar meaning is conveyed. We also find examples where a speaker adds to an initial structure after intervening material from another speaker, which may be a short response (e.g. *Oh*; *Yeah*) or a longer contribution. The amount of intervening material varies, so where do we draw the line between grammatical and discoursal links? The PP in B4 is certainly not presented as integrated into the clause in B1, but our ability to interpret it in context seems to draw on our knowledge of how such PPs function within larger structures.

An even greater challenge to standard analyses is posed by the phenomenon of co-construction by speakers (see e.g. Szczepek 2000a, 2000b, Sidnell 2012). Examples from the literature often involve 'co-telling' by two speakers who share knowledge of something to another who lacks that knowledge, as in (12):

(12) Cathy: She had this big hairy mole you know those kinds really gross ones
Cindy: **on her neck**
Terri: Oh how disgusting

(Lerner 1992: 263; some transcription details omitted)

Here Cindy's contribution is a PP which extends Cathy's initial clause so that we understand 'She had this big hairy mole on her neck.' Even core elements of a clausal structure can be supplied by another speaker, as in extract (13) (where two speakers, A and C, each utter two numbered units):

(13) [context: discussion of recording equipment]
A1: That looks [unclear word] if somebody comes down and starts <,,>
C1: What
C2: **Swearing and cursing**
A2: Which is ~~the~~ the off switch

(ICE-GB, S1A-007 #185–188)

Here, A pauses after the utterance of *starts*, without supplying the complement that one would expect. C then supplies a complement (*swearing and cursing*), using present-participial verb forms to fit this grammatical context. Speaker A appears in A1 to be expressing concern about the recording equipment being on (a concern further pursued in A2), and C evidently offers her completion as a guess about the nature of his concerns or to ridicule his concerns (her tone is dismissive). The units *on her neck* in (12) and *swearing and cursing* in (13) would in many analyses (including that of ICE-GB) be considered as non-clausal units uttered by their respective speakers, since each speaker's contributions are treated separately; but a possible alternative analysis would see them as parts within a larger jointly built grammatical structure.

The clause fragments described above link to other units in the sequence of turns, and it is these sequential links that enable them to be interpreted as making complete contributions to the discourse. Analysis of data from the ICE-GB dialogues suggests that fragments recurrently exploit just a few broad kinds of grammatical link to serve a wide range of discourse purposes (Bowie and Aarts 2016). The examples in (11) to (13) above involve linkage on the syntagmatic dimension, with fragments that extend or complete preceding structures. We also find fragments which link on the paradigmatic dimension, as 'matches', whereby the fragment is interpretable as an alternative constituent of an antecedent structure in context (to which it 'matches'). (The distinction between 'matches' and 'extensions' draws on partially similar distinctions made by Culicover and Jackendoff (2005: 257) and Couper-Kuhlen and Ono (2007), but generalized to cover links across both same-speaker and other-speaker utterances.)

A common use of matches is to answer open (or *wh*-) questions, which involves a semantic relationship of 'filling in' the value of a variable. (14) shows a straightforward example; the underlining indicates the constituent to which the fragment matches, and we understand 'It is twenty past eight.'

(14) A: <u>What time</u> is it <,>
B: **Twenty past eight**
(S1A-047 #1–2)

However, matches can fill many other discourse functions. Some examples are seen in (15):

(15) [Context: A has mentioned some family photos that were left behind when a former family house was sold; B is his wife and C their daughter]

B: I don't want great big life-size photographs of relatives hanging on the wall thank you
C: Especially not **that side of the family** <laugh>
A: **Any side of the family** thank you **from that era**
(ICE-GB, S1A-007 #160–162)

Here, following B's statement with clausal form, C and A respond by uttering non-clausal units. C expresses agreement with B's evaluation of the photographs of relatives, but indicates that she finds it especially applicable to a particular side of the family. C's contribution combines matching with extending: her NP *that side of the family* matches back to B's *relatives*, her *not* matches B's negation, and *especially* acts as an extension. Speaker A then gives the contrasting assessment that B's point is applicable to any side of the family from that era: his NP *any side of the family from that era* (produced with an intervening discourse marker, *thank you*) can be seen as part of a chain of matching links, matching in the first instance to C's *that side of the family* which links back to B's *relatives*.

The occurrence of numerous units with non-clausal form is problematic for theories which adopt a 'strict ellipsis' account of clause fragments, which hold that there is a 'sentence' or tensed clause underlying all such fragments and that the 'missing' material can be recovered directly from the preceding context. The correct analysis has been debated within the generative literature.[4] For instance, Culicover and Jackendoff (2005) argue against the strict ellipsis account and propose an alternative whereby 'the unexpressed parts of the fragment's interpretation are supplied not through underlying syntactic structure but via direct correspondence with the meaning of the antecedent sentence' (*ibid*.: 234–5). They use a mechanism of 'indirect licensing' to account for the semantic and syntactic relationship of the fragment to its antecedent. They point out that a strict ellipsis account runs into problems when the interpretation of the fragment requires 'adjustment' of aspects of the antecedent (e.g. illocutionary force, the use of *you* vs *I*/*me*, the embedding of clauses). These ellipsis debates

[4] We cannot offer detailed discussion of the ellipsis debates here. See for example van Craenenbroeck and Merchant (2013) and chapters in van Craenenbroeck and Temmerman (forthcoming).

rarely consider authentic examples, but an examination of spoken data readily provides examples requiring such 'adjustment', such as (16) and (17).

(16) B: I don't know if it would be cheaper to do it in her name but I don't think
A: No ~~not if~~ **not if we're using your no claims bonus** <,,>
(ICE-GB, S1B-080 #278–282)

(17) [Context: two friends are discussing plans for an outing.]
A: Well Xepe seems to love this idea of having a picnic but I'm not too sure about this
B: **Not if you've had lunch**
(ICE-GB, S1A-006 #28–29)

In (16) B indirectly expresses a question in a subordinate interrogative *if*-clause which functions as the complement of *know*. To arrive at the correct interpretation of the fragment, a strict ellipsis account would require considerable 'adjustment': 'extracting' this subordinate interrogative clause to make it a declarative main clause, and changing its polarity from positive to negative: 'It would not be cheaper to do it in her name if we're using your no claims bonus' (with the fragment, a conditional *if*-clause, functioning as an added adjunct within the main clause). Example (17) requires even greater adjustment, pragmatic as well as syntactic. Here B seems to be supporting A's objection to Xepe's idea: the intended meaning is not 'You're not too sure about this if you've had lunch', but rather something like 'Having a picnic is not a good idea if you've had lunch'. When considering examples of fragments in spoken data, the sheer number of instances and the variety of ways in which they relate to their 'antecedents' make a 'strict ellipsis' account seem very hard to sustain.

This section has explored the challenges of looking at grammar beyond the sentence, suggesting that we have much to learn from how grammar is deployed in building discourse, especially interactive spoken discourse. In the next section we point to some quite different research, which looks at discourse not with the aim of refining our understanding of grammar, but rather with a view to discovering how speakers and writers exploit grammatical resources when using language in order to construct a particular view of reality.

3. Grammar shaping discourse

Grammar is relevant to any use of language, but researchers' foci can be different: when dealing with spoken data the focus is often on grammatical choices made by speakers in relation to the development of the interaction and the communicative aims of the participants. We saw some of this above and we return to some aspects of grammar in spoken interaction in Section 4 below. In contrast, other discussions of discourse (very often written, but what is said below applies equally to spoken discourse) often take as a starting point the central observation that language supplies alternative ways of describing the same situation. Choosing amongst these different ways could be related to different representations of social reality and therefore to different systems of thinking and beliefs, or ideologies. This link between discourse and the representation of reality has been a central preoccupation for those working in the tradition of Critical Linguistics (Fowler, Hodge, Kress & Trew 1979, Kress and Hodge 1979) and later, Critical Discourse Analysis (CDA; work by Fairclough, Van Dijk, Wodak and others).

Since making choices about how to present situations also relates to how information is packaged, and often correlates with the genre or style of a given text, we should point out that what we discuss here has many overlaps with the discussion in the chapters in this volume on information structure, the relationship between grammar and genre, and grammatical variation in literary texts (Kaltenböck, Dorgeloh and Wanner, and Jeffries respectively). This section should be read as complementary to those three chapters. Any aspect of language can potentially be seen to have some ideological effects, but in practice major areas of enquiry in critical linguistics and CDA have been transitivity, modality, and nominalizations. A wider area of study related to modality – stance – has emerged more recently. We will provide some brief illustrations of how these aspects of grammar have been brought to bear on critical analyses of discourse.

When constructing a text, speakers/writers choose linguistic structures that allow them to control how events are construed, e.g. what verbs (typically) are used to encode them, and which participants are included/excluded or foregrounded/backgrounded as a result. Verb valency[5] and how the arguments of verbs are linked in particular sentences are some of the aspects of grammar that are frequently invoked in discourse analyses that focus on how texts present the social world. This can be illustrated briefly with a few examples taken from different news items published recently in a range of newspapers, paying specific attention to the verb *separate* and its nominalization *separation*:

[5] For a discussion of verb valency see Herbst, this volume.

(18) Mexico's foreign minister Luis Videgaray Caso, who has branded the policy 'cruel and inhuman', last night claimed **US immigration agents had separated a Mexican mother and her ten-year-old daughter with Down syndrome**. (*Daily Mail*, 20 June 2018)

(19) "**Other governments have separated mothers and children**," he wrote on Twitter, above a photograph of Birkenau, part of the Auschwitz death camp complex. (*The Times*, 18 June 2018)

(20) When journalists were briefly admitted to the facility, one teenager explained how she had been looking after a toddler — no relation to her — **who had been separated from her family for three days**. (*The Times*, 19 June 2018)

(21) Parents are now being convicted through the criminal system, which means **that they are imprisoned and separated from their children**. (*The Times*, 19 June 2018)

(22) President Donald Trump urged House Republicans to pass broad immigration legislation in a Tuesday evening meeting, but he stopped short of telling them he would immediately reverse a widely condemned policy **that has separated thousands of migrant children from their parents**. (*Wall Street Journal*, 19 June 2018)

Separate in this kind of use is a transitive verb which creates an expectation that there will be three participants: one participant who does the separating, and two (or more) participants who are being separated from each other. This is exactly what the bolded clause in (18) delivers, placing the NP *US immigration agents* in subject/agent position and placing the two entities being separated from each other, a Mexican mother and her ten-year-old daughter, in a coordinated object NP, thus giving them equal prominence. This clause makes clear who, according to the foreign minister's claim, has undertaken (and potentially should be held responsible for) the action of separating, and who has been affected by it. We see a similar structure in the bolded clause in (19): the agent (*other governments*) is explicitly expressed as subject and so made more prominent, and the affected entities are expressed in a coordinated object NP: *mothers and children*. By contrast, in (20) the verb *separate* is used in a passive relative clause. The clause modifies a noun which represents one of the participants subjected to separation (the toddler), while the other participant (the toddler's family) appears in a prepositional phrase which is a constituent of the relative clause. Crucially, the participant who is the agent of the separation remains unexpressed. Similar points can be made about (21): the focus is on the participants subjected to separation, but the agents of the separation act remain backgrounded.

Different verbs are associated with different types of situations. Some place specific requirements on their subjects or objects (e.g. they may admit only animate or sentient subjects or objects). Discourse analysts consider such properties important in terms of how the world is construed by language speakers, especially since language allows alternatives. The verb *separate* allows for an inanimate abstract subject. For example, in (22) above we see the NP *a widely condemned policy* as the understood subject of *separate*. Whereas (18) and (19) placed the agency of the separation with sentient agents, in (22) the agency is placed with an abstract entity, a policy, which allows the author not to name those responsible for the policy.

A similar effect of deleting or backgrounding agency can be achieved via nominalization (Fowler et al. 1979, Fowler 1991, Fairclough 1992; see also Billig 2008 and van Dijk 2008 for some recent debates and further references). The events mentioned in the news reports above can also be referred to as follows:

(23) Even better would be for Congress to pass the leadership's compromise that legalizes Dreamers, ends the family **separation** fiasco, and gives Mr. Trump some of his priorities. (*Wall Street Journal*, 18 June 2018)

(24) The **separations** were not broken down by age, and included **separations** for illegal entry, immigration violations or possible criminal conduct by the adult. (*Irish Independent*, 16 June 2018)

In (23) and (24) the events previously named with the verb *separate* are now referred to with the nominalization *separation*. Again, this allows the writer(s) more choice of which participants to name and which to background or leave out. In (25) similar flexibility is afforded by using modification with a participial adjective.

(25) Dona Abbott, Bethany's refugee program director, said that these newly **separated** children frequently have nightmares, anxiety and stomachaches. (*The New York Times*, 9 June 2018)

Of course, such choices become significant only if they are a part of a consistent pattern in a particular text or collection of texts. Where such consistent patterns are spotted, they are seen as patterns of representations of social actors and practices that can be thought to reflect and construct coherent systems of values and ways of thinking.

One further area of grammar that merits mention in the context of discourse analysis of this kind is modality. Modality, discussed in this volume by Ziegeler, is a resource which allows the expression of speakers' attitudes, states of knowledge, or relationships of obligation or permission between participants in the discourse. Modality can be linked to power and authority. For example, powerful and authoritative speakers can use some modal forms (e.g. conferring obligations upon others, expressing high degrees of certainty) to a greater extent than others. Modality is important for the construal of events, their participants, and the relationships between participants in discourse. For example, the use of the modal *must* in (26–29) below in statements that come from two sides of a current debate shows that on both sides there are strong perceptions of what are the morally and ethically valid positions to take.

(26) The issue animated their weekly lunch and a consensus emerged that Congress **must** act, possibly as early as this week, leaders said. (*The Guardian*, 19 June 2018)

(27) U.N. Secretary-General António Guterres said on Monday in a statement that "…Children **must** not be traumatized by being separated from their parents. Family unity **must** be preserved." (*Wall Street Journal*, 18 June 2018)

(28) …Border Patrol officials say they **must** crack down on migrants and separate adults from children as a deterrent to others trying to get into the US illegally. (*The Telegraph*, 19 June 2018)

(29) They also **must** prove that their home government is either participating in the persecution or unable or unwilling to protect them. (*Wall Street Journal*, 11 June 2018)

Here we have illustrated just some of the grammatical features of sentences in a text that might be highlighted as significant by researchers whose interest is in the link between discourse and ideology. (We gave examples from written discourse, but similar points can be made about speech.) This isn't to say that all instances of such grammatical features have ideological effects, and of course an analysis will explore not just these properties of the data, but many other aspects, such as vocabulary choices and genre characteristics, and will look for patterns rather than single instances.

Another research strand related to subjectivity more generally is the study of how grammatical (as well as lexical and paralinguistic) devices can be used to express attitudes, emotions, as well as judgements and assessments of the validity of propositions, and so on. We will use the cover term *stance* for these (for references to relevant scholarship, including that using different terminology, see Biber (2006) and Gray and Biber (2016), for instance). A range

of grammatical constructions used to express stance are laid out in the *Longman Grammar of Spoken and Written English* (Biber et al. 1999, Chapter 12). Biber (2006) illustrates some common grammatical devices used in spoken and written academic discourse. Stance can be expressed with the help of adverbials (30a and 30b) which express some attitude or assessment towards the proposition expressed in the main clause.[6] Another relevant grammatical structure is the so-called stance complement clause, a construction comprising a complement clause controlled by a stance verb or adjective, for instance, which indicates what stance is being expressed with respect to the proposition contained within the clause (see (30 c-g)).

(30) a. Obviously you don't have to come to class on May eighth.
b. Maybe someone mentioned this in speaking about it.
c. I know a lot of people avoid Sacramento because of the deathly smog there.
d. We are becoming increasingly certain that the theory has far reaching implications…
e. You think I did a bad job.
f. They needed to rebuild the entire government system.
g. It seems fairly obvious to most people that Watson tremendously oversimplified the learning process.

As (30c) and (30d) show, sometimes stance is explicitly ascribed to the speaker; it could also be explicitly ascribed to the addressee (30e), or possibly a third person (30f), or it can be left implicit (30a, b).[7] Modality, which we touched on already, is of course another grammatical manifestation of stance.

A number of studies have shown not only the variety of grammatical and lexical resources for the expression of stance, but also how the expression of stance can respond to the physical mode (i.e. whether a text is spoken or written) and to the different communicative purposes of different registers. For example, in his study of university registers within both speech and writing Biber (2006) finds that stance is expressed more frequently in speech, but also more frequently in what he calls the 'management' registers (i.e. interactions and texts relating to classroom management and course management), whether written or spoken; see

[6] The examples and analysis in (30) are from Biber (2006: 99-100), underlining in the original.
[7] The attribution of stance is a complex matter, which unfortunately, we can't give the attention it deserves. See remarks in Ziegeler (this volume) as well as discussions of stance in the literature for some of the issues.

Biber and Finegan (2004), Biber (2006), as well as Gray and Biber (2015) for further examples and references.

Stance and modality, like other areas of language, can of course be studied in their own right, or in relation to aspects of social structure. Scholars whose aim is to uncover relationships between language use and power or ideology frequently deploy the conceptual tools of Systemic Functional Linguistics (SFL), associated with M. A. K. Halliday (see for example Halliday 2014). SFL is a functional approach to the study of language, which prioritizes attested data and the study of texts. An important aim of any investigation in SFL is to show how linguistic structure (conceived as one module, i.e. without a strict separation between the lexicon and grammar) contributes to the meaning of a text. Linguistic structure is conceptualized as a network of choices, and is linked to linguistic functions of reference (the ideational function), of relationship management (the interpersonal functional), and of managing the information flow (the textual function). A detailed introduction to this framework is outside the scope of this work, so the reader is directed to Halliday (2014), or for shorter presentations see, amongst many others, Coffin et al. (2010), Schleppegrell (2014), Martin (2011), Martin (2016); see also Mackenzie and Schönefeld, this volume.

Recently, some researchers have extended CDA to link it to cognitive processes implicated in the interpretation of texts. To achieve this aim, they have adopted a Cognitive Linguistic approach (e.g. Langacker 1991) to the grammatical features of a text. Language is seen as a process of construal of events, experiences, etc. that can have an ideological basis or effect. This construal, as evidenced in the language forms used, is linked to cognitive processes of interpretation. Some extensions seek to demonstrate this link experimentally (for points along these lines and implementations of such approaches see Chilton 2004 and 2005, Li 2011, Hart 2014, 2016 and references therein; see also Harrison et al. 2014). Other extensions have sought to provide CDA with sounder empirical coverage by looking for significant patterns in extended collections of discourse with the methods of Corpus Linguistics (e.g. Baker and Levon 2015, Gabrielatos and Baker 2008). The focus on the process of subjective construal is not confined to studies of language and ideology or studies of written discourse. Subjectivity in language can be seen as a foundational property that affects language structure and function, as well as language change (see, for example, volumes like Athanasiadou et al. (2006) or Davidse et al. (2010); see also some of the remarks in the next section).

4. Discourse shaping grammar

In the previous section our main aim was to show that grammatical resources are exploited in discourse by giving speakers choices that allow them to present reality in different ways and express their subjective attitudes and beliefs about reality. Here we will refocus the discussion to highlight research which suggests that language use shapes and enriches grammatical resources, or influences how they can be used. For example, some research has shown interactions between discourse and clausal grammatical structure. Du Bois (2003, see also references therein) demonstrates that across speakers and in a number of languages in spontaneous face-to-face interaction there is a tendency to find no more than one full lexical NP per clause. What is more, such full lexical NPs, which tend to express new information, i.e. referents not previously introduced in the discourse, are much more likely to be found in the position of either the subject of an intransitive verb, or the direct object of a transitive or ditransitive verb. Conversely, the subject in a clause with a transitive/ditransitive verb and the indirect object in a clause with a ditransitive verb tend to be realized as reduced NPs, e.g. pronouns. This generalization, which Du Bois links to the relative cognitive costs of processing new vs. old referents, he takes to show that information management in discourse, i.e. discourse pragmatics, ultimately shapes grammar: this discoursal pattern could be seen as the basis of an argument structure patterning like ergativity (see Du Bois 1987).[8] In a somewhat similar vein, Engebretson (1997) links the distribution of attributive vs. predicative adjectives to their discourse function: attributive adjectives tend to help introduce new referents, whereas predicative adjectives tend to add information about already established referents (he follows observations by Thompson 1988 and Ferris 1993). Hopper and Thompson (1984) argue for a more general link between lexical categories like nouns and verbs and their discourse functions, e.g. introducing discourse participants or events, respectively; see also Hollmann's chapter on lexical categories in this volume.

The role that discourse (i.e. the interactive use of language) plays in enriching the functional potential of language is also often discussed in the field of grammaticalization (Heine, Claudi and Hünnemeyer 1991; Traugott and Heine 1991; Heine and Kuteva 2002, Traugott and Dasher, 2002; Hopper and Traugott 2003; Kuteva 2004; Narrog and Heine 2011, Smith et al. (2015) and references therein). Grammaticalization relates to a set of language changes that create grammatical/functional elements out of lexical ones. It is often associated

[8] See Haig and Schnell (2016) on some of the debates around ergativity and information management.

with a development presented on a cline like the one in (31) below (from Hopper and Traugott 2003: 7):

(31) content item > grammatical word > clitic > inflectional affix

This shows that the emphasis in studying grammaticalization is often on the structural transformation from an independent lexical item to a syntactically more dependent or tightly fused function word, clitic, or morpheme, and the concomitant change from lexical meaning to (grammatical) function. Various semantic, pragmatic, and structural changes have been observed along the way. This can be exemplified with the English *a bit of*, given as a case study in Traugott (2010). The source of *a bit of* is a nominalized expression meaning 'biting'. This was reinterpreted to mean not the act of biting, but the amount being bitten off, as in *a bite of bread*, i.e. it became a partitive. The partitive was extended further so that it could be used in expressions like *a bit of a fool*. Traugott (2010) notes that this stage involved a pragmatic expansion, or enrichment of the meaning of the expression during its use, since the partitive was associated with negative speaker evaluations, that is at this stage we can see subjectification in the development of *a bit of*. A semantic/pragmatic expansion accompanied by a reduction can also be seen in the next move to a quantifier, as in *a bit wiser, a bit richer*. Further development allows *a bit* to be used as an adjunct (as in *I don't like it a bit*) (for further details and examples see Traugott 2010: 46-49).

As we can see, grammaticalization is driven by a number of semantic processes of reinterpretation, which happen in language use. Traugott (2010) uses the pragmatic subjectification in the history of the development of *a bit of* and other examples to argue that theories of language change cannot ignore the role of the speaker and, more generally, the role of speaker/hearer interactions. The speaker innovates in the flow of speech, in the course of an inherently subjective speech event. In other words, if language change is seen to happen incrementally in language use, then it becomes intrinsically linked to discourse. This view of language change is contrasted with theories that attribute change to child language acquisition (Lightfoot 1999, see also Waltereit 2011 and references therein; for a comparison and an attempt to reconcile the two views see also Öhl 2014). Some processes of grammaticalization, and language change more generally, have also been linked to frequency, both type and token (e.g. Bybee 2003, 2007). Frequency effects, which can be taken to be responsible for phonological reduction, for example, or the entrenchment of some patterns, can only be understood when language in use, i.e. discourse, is taken into account. Thus grammaticalization

research aligns more generally with functionalist and usage-based approaches to language (see Mackenzie this volume).

Not only can language change be seen to happen within language use, i.e. discourse, but languages also develop resources expressly for the purpose of discourse management: discourse particles or markers, i.e. elements like *well*, *but*, *however*, *though*. These markers are discussed in the literature as functional elements that help speakers and hearers manage interaction (e.g. express the relationships between different chunks of discourse, or express their attitudes to propositions expressed in discourse). As functional elements, they are considered by many researchers in the field to be part of the grammatical resources of the language — this is, however, a debated issue as such scholars are adopting an 'extended' view of grammar relative to more traditional approaches (see e.g. Degand and Evers-Vermuel 2015 for discussion).

There is also a considerable literature concerning how these functional elements arise in discourse. Barth-Weingarten and Couper-Kuhlen (2002), for example, discuss the development of *though* from a conjunct of concession to a discourse marker with concessive and (increasingly) textual uses (e.g. as a topic shifter, i.e. as a marker which contrasts two chunks of discourse in terms of topic). (32) can be used as an example (their example 3 on p. 350, with some adaptations, emphasis ours). It comes from an American English radio phone-in. The caller, Jim, praises his lesbian neighbours for helping with childcare whilst he was a single parent. Freddy Merts, the moderator, asks him whether he felt sexually attracted to them.

[Copy-editor: key to (32) could be put in a footnote, if necessary]

(32)

1	J:	i was too bUsy for women bUt,
	FM:	yeah RIGHT,
	J:	yeah I WAS.
	FM:	[what an exCUSE,
5		[(you know if you are) takin CARE of a kId and stuff
		[(it'll keep you) BUsy.=
	FM:	[that's TRUE yEAh,
		but the kId can be a great PROP **though**.

		i know a lot of single Fathers who bring their
10		kids to the pArk,
		(.)
		like a MAGnet,
	J:	oh(h)(h) ye(h)ah(h) [h, tha/
	FM:	[or a MAGgot.
15	J:	thAt's kind of sIck somehow though don't you think?
		[((laughs)) (h) (h) (h)
	FM:	[we:ll
	J:	Using your kid to dAte-

Key to symbols:				
	ACcent	primary accent	:	lengthening
	Accent	secondary accent	(h)	laugh particle
	.	final intonation falling to low	(.)	pause
	,	final intonation rising to mid	/	break-off
	-	final level intonation	()	suggested transcription
			[	overlap

In line 7 FM concedes the points Jim has made so far, and in line 8 he puts forward a counterclaim. The *though* at the end of this turn both marks the concession and signals the move to a new topic (from the difficulties of being a single father to dating strategies for single fathers). The development of *though* with the function illustrated above does not match the understanding of grammaticalization in all respects – for instance, it does not meet some of the criteria laid down by scholars like Lehmann (1985), e.g. there is no reduction of scope, phonological reduction, or move to an obligatory marker. The authors argue, however, that if grammaticalization is conceptualized as a phenomenon exhibiting prototypicality, then the development of *though* as a discourse marker can be treated as non-prototypical grammaticalization. In the case of *though*, what we see is a bleaching of the concessive semantics (what is contrasted are not propositions, but shifts of topic) and a concomitant increase of abstractness.[9] There is also an increase in textual meaning, i.e. conveying the relationship between two chunks of text, which the authors designate as pragmatic strengthening. On the syntactic level there is an increase in scope (textual *though* connects

[9] For an earlier seminal discussion of semantic and pragmatic changes accompanying grammaticalization see Brinton 1996, for example.

larger chunks of text). Couper-Kuhlen (2011) discusses *though*, as well as other phenomena like left dislocation and extraposition, as arising from conversational routines collapsed into single conversational turns. For debates in the literature over whether the development of discourse markers should be considered as grammaticalization, see for instance Degand and Simon-Vandenbergen (2011), Heine (2013), and Degand and Evers-Vermuel (2015).

Mulder and Thompson (2008) argue that grammaticalization processes similar to those described above can be seen in the development of *but* from a conjunction to a discourse particle in American and Australian English. Mulder, Thompson, and Perry Williams (2009) argue that this process is fully completed in Australian English only. We illustrate the use of final particle *but* in Australian English with their example (12) (p. 351) which we reproduce in (33) below. The example shows a football coach ending a practice session.

(33)

1	Coach:		That'll do it,
2			lads.
3		→	Good work **but**.

Used in this way, *but* is uttered with a final prosody, completes a turn, and marks contrastive content. In the example above the coach signals that the session is over but that he is satisfied with progress made.

Some of the processes visible in the development of *though* have also been traced in the development of negative mental verb constructions like *I don't know*, for instance, discussed in Lindstrom, Maschler, and Pekarek (2016) amongst others. In a paper with a cross-linguistic perspective the authors point out that *know* and similar verbs in similar 1SG constructions have moved away from their traditional transitive use with epistemic meaning to become discourse markers, which have interactional meaning (e.g. heading off sensitive topics) or indicate speakers' stance (e.g. casting a contribution as a guess, or hunch). In the case of *I don't know* in English, when used as an intransitive verb in a discourse marker-like construction there is often also morphophonological reduction: *dunno*.

Studies of grammatical change like the ones we summarize above often focus on language used interactionally in speech. Recently some scholars have argued, however, that change can also originate in writing (see introductory chapters in Biber and Gray 2016, as well as the concluding remarks in Fox (2007)). In a study of the historical developments in academic writing, Biber and Gray (2016) find that specialist science writing has moved away from a style

characterized by its reliance on verbs and dependent clauses, typical of the 18th century, and has evolved a new discourse style with innovative use of grammatical features. This discourse style is characterized by complex phrasal syntax, namely by the increased use of nominalizations (*consumption*, *comparison*, *sustenance*), attributive adjectives (*gradually expanding cumulative effect*), nouns as nominal pre-modifiers (*baggage inspection procedures*), prepositional phrases as nominal post-modifiers (*a high incidence of heavy alcohol consumption amongst patients*), and appositive noun phrases (*Dallas Salisbury, CEO of the Employee Benefit Research Institute*) (examples from Biber and Gray 2016: 132). Such structures lead to greater compression of information. Biber and Gray illustrate the possible degrees of compression with the following examples (*ibid.*: 208), underlining in the original):

(34) a. And if his Computation, which was made for Greenwich, had been reduced to the Meridian of London, the Difference would have been still less.

b. And if his Computation made for Greenwich had been reduced to the Meridian of London, the Difference would have been still less.

c. And if his Computation for Greenwich had been reduced to the Meridian of London, the Difference would have been still less.

d. And if his Greenwich Computation had been reduced to the London Meridian, the Difference would have been still less.

In (a) above the first underlined NP is modified using a finite relative clause; in (b) the same information is expressed with a non-finite relative; in (c) it is compressed further into a post-modifying *for*-PP; and in (d) the compression is maximal: the information is now expressed via the noun pre-modifying another noun. The move away from clausal embedding resulting in this compression enables writers to give as much information as possible in as few words as possible; however, it also comes with a cost: loss of explicitness. In (a) we are told what the semantic relationship is between *his Computation* and *Greenwich* (the computation was made for Greenwich), whereas in (d) we can recover this semantic link only if we have the necessary background knowledge.

The development of such a phrasal discourse style, especially in specialist science writing characterized by the increased use of complex phrasal structures, can be explained by adopting a functional linguistic perspective and relating it to the changing requirements of the respective linguistic community. The developments in science in the last centuries have led to increased communication within a greatly increased number of sub-disciplines and

increasingly specialized fields. Compression responds to the need for economy of communication prompted by the sheer information explosion since the 18th century and especially in the course of the 20th century. The lack of explicitness can be tolerated because specialist science writing is by and for experts in narrow domains (see Biber and Gray 2016 and references therein).

Biber and Gray (2016) argue, however, that the developments they trace via quantitative corpus-based studies are not simply a matter of variation in the rate with which available grammatical resources are used. Rather, the increased use of some resources, e.g. nouns modifying other nouns (or NN structures), is accompanied by shifts in the grammatical characteristics of these structures, the range of elements that can enter into them, and the semantic relations that are possible between them. Thus NN structures which in the 16th century are attested with only very restricted semantic relations between the two nouns (mostly titles in expressions like *King David* or *Master George*) gradually expand and in the course of the 20th century come to be used very widely with almost any noun being able to modify any other noun (see Chapter 5 of Biber and Gray 2016 for detailed descriptions of the functional extension of a range of structures).

The examples discussed in this section illustrate a view of grammar and discourse that sees the relationship between them as mutual and dynamic. Speakers and writers avail themselves of linguistic resources in order to show their understanding of the social action being undertaken in a particular interaction and to achieve their interactional goals. In doing so, however, speakers (re)shape the grammatical tools at their disposal and create new ones. Where such uses are repeated by a number of speakers on a number of occasions, the new use may become part of the linguistic code. The studies we have noted try to capture the creation and remodelling of grammatical resources, and thus strive for a usage-based perspective on grammar.

5. Conclusion

In this chapter we have reviewed the relationship between grammar and discourse from three different perspectives. First, we focused on the value of looking beyond the sentence to investigate how grammatical structures are used in building discourse. We noted problems in drawing a strict grammar–discourse boundary: in delimiting the sentence as a grammatical unit, and in analysing cohesive relationships of ellipsis and anaphora that can hold both within and

across sentences. We illustrated particular challenges posed by spoken interaction, including the co-construction of grammatical units by different speakers, and the frequent use of clause fragments that are not syntactically integrated into sentential units.

Our second perspective concerned the effect grammatical choices have on discourse. Here we highlighted some research in the tradition of discourse analysis that sees grammatical (as well as an array of other) choices as instrumental in presenting situations and events in different ways, including to suggest different ideologies and value systems, or to express different appraisals of and attitudes towards what is being talked about. Our discussion focused on choices that allow the foregrounding or backgrounding of participants, as well as on modality and the wider area of stance.

Finally, our third perspective considered how discourse can shape grammar. Scholars adopting this perspective see grammar as malleable and responsive to the contexts in which language is used. In this approach, grammar is not something that speakers simply deploy – on the contrary, it can change in response to (frequent) patterns of use.

Given that generative grammatical theories have drawn a sharp distinction between competence and performance, and have prioritized introspection over usage data (see Sprouse and Schütze, this volume, for discussion and developments), our brief review here has focused on those theories and approaches that see structure as bound up with function and use. By considering a range of frameworks and perspectives, we have tried to show some of the richness of recent work at the interface of grammar and discourse.

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