

# Contrast: Dissecting an elusive information-structural notion and its role in grammar

*Sophie Repp*

Humboldt-Universität zu Berlin

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## 1 Introduction

Contrast is a much-studied phenomenon in linguistics. For many languages, linguists have identified prosodic and/or morpho-syntactic marking strategies that seem to be applied if a sentence is in a contrastive relation with another sentence. However, as we will see in this chapter, despite the apparent abundance of evidence for contrast playing a role in grammar, the question of whether contrast indeed plays a role in grammar – or, to approach the matter in a more cautious way – in the grammar of particular languages, is a rather tricky one and not easy to answer. The reason is an imprecise understanding of the notion of contrast, which more often than not is defined only intuitively. As a pre-theoretical term, *contrast* is understood as referring to differences between similar things. For instance, in the Oxford Dictionary of English (<http://www.oxforddictionaries.com>) contrast is described as "the state of being strikingly different from something else in juxtaposition or close association", and in the Merriam-Webster online service (<http://www.merriam-webster.com>) as "the difference or degree of difference between things having similar or comparable natures, [and] the comparison of similar objects to set off their dissimilar qualities". Applying these pre-theoretical notions to a discourse of two sentences  $S_1$  and  $S_2$ , we can say that  $S_1$  and  $S_2$  may be construed as being in a contrastive relation if  $S_1$  contains an element  $\alpha$  that can be construed as an *alternative* to an element  $\beta$  in  $S_2$ , where *being construed as an alternative* reflects the notions of *juxtaposition* and *comparison* in the dictionary definitions. A prototypical example for such a discourse is (1), a sequence of two sentences with two contrast pairs, which in addition to the contrastive elements contain identical material, i.e. display some parallelism, which we may assume helps "setting off the dissimilar qualities." Example (2) is less prototypical because there is no parallelism. Still, the subjects of the two sentences are overt alternatives to each other and therefore may be viewed as contrasting with each other. (3), from Rooth (1992: 80), illustrates contrast between elements within one sentence.<sup>1</sup>

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<sup>1</sup> In English, contrast is usually marked by pitch accents at least on the second contrastive element  $\beta$ . I do not indicate pitch accents in this chapter.

- (1) [Pete]<sub>contrast.1</sub> went to [Rome]<sub>contrast.2</sub>. [Marc]<sub>contrast.1</sub> went to [London]<sub>contrast.2</sub>.
- (2) [Pete]<sub>contrast</sub> slept for an hour. Then it was [Marc's]<sub>contrast</sub> turn.
- (3) An [American]<sub>contrast</sub> farmer was talking to a [Canadian]<sub>contrast</sub> farmer.

The alternativeness of elements – i.e. of constituents or their denotations – is only one angle from which the notion of contrast can be approached. Another is the role of discourse relations between two sentences – or more generally – between two discourse segments. If we compare (1) above and (4) below intuition tells us that (4), which contains *but*, feels 'more' contrastive than (1) – which illustrates the idea of *degrees of difference* in the dictionary definitions. We could also say that (4) has some additional contrastive meaning component, which, if not indicated by some special prosody, is absent in (1).

- (4) [Pete]<sub>contrast.1</sub> went to [Rome]<sub>contrast.2</sub> but [Marc]<sub>contrast.1</sub> went to [London]<sub>contrast.2</sub>.

In this chapter, I will argue that we need to look both at the way alternatives are construed, i.e. at the issue of contrastive constituents, and at the discourse relations that connect two discourse segments in order to gain a precise understanding of the notion of contrast (cf. Umbach 2004), and by consequence, a good understanding of the grammatical effects contrast may or may not have in particular languages. In order to do this I first discuss views from the literature on these two aspects of contrast, and I formulate three hypotheses which are to serve as a proposal for critical evaluations of existent findings about grammatical reflexes of contrast, as well as for future investigations on this topic. Then I report empirical findings from the literature against the background of these hypotheses.

## 2 Elements of contrast: Alternativeness of constituents

The examples in (1)-(4) all contain overt pairs of alternatives, i.e. the alternatives are all expressed linguistically, which often is considered to be necessary for applying the notion of contrast. Sometimes contextual or situational salience or predictability of an unexpressed alternative is considered sufficient, for example a strong accent on the subject in *PETE went to Rome* would signal that *Pete* contrasts with some implied alternative, i.e. a person that did not go to Rome, even if this sentence were uttered out of the blue (e.g. Halliday 1967; Chafe 1976; Pierrehumbert & Hirschberg 1990). Still, overtness of alternatives usually is viewed as a reliable indicator for the presence of contrast, and it is one of several conditions that have been proposed to be a necessary condition for contrast marking in grammar.

Quite similar to but subtly different from the overtness condition is É. Kiss's (1998) proposal, according to which there must be a *restricted* set of alternatives in the context (also Bolinger 1961; Chafe 1976) which are *clearly identifiable* by the discourse participants. For instance in (5), *John* in the second sentence would be marked for contrast in languages that mark contrast, because the first sentence provides a restricted alternative set such that the alternative chosen in the second sentence (*John*) as well as its complement set (*{Pete, Josie}*) are clearly identifiable.

- (5) John, Pete and Josie all offered help. I will ask John.

This view of contrast is not symmetrical in the sense that the first sentence contrasts with the second and vice versa. Rather the second sentence is assumed to contain an element for which there is an alternative set in the context. This element is assumed to be contrastive and consequently might be marked by specific prosodic or morpho-syntactic means in a given language. This reflects the observation that often only the second element in a pair of contrastive elements is marked grammatically (see below). È. Kiss applies her notion of contrast also to question-answer discourses, e.g. after the question in (6A) the focus in the answer (6B), *John*, would be contrastive, whereas after the question in (6A') it would not be contrastive because (6A) but not (6A') provides identifiable alternatives: two specific people in the situational context vs. an open set of people.

- (6) A: Who of you two lied?  
 A': Who lied?  
 B: John lied.

Another non-symmetric view on contrast is that the alternative set must *not* already be given in the context but is made available by the sentence containing the contrast-marked element (López 2009). For instance, a *wh*-question makes available an alternative set and therefore involves contrast, i.e. the *wh*-phrase is contrastive – even though there is no overt alternative in the left context. The answer to a *wh*-question, however, does not involve contrast because the alternative set has already been made available by the question. The second element of the contrast pairs in (1)-(4) would be contrastive on this view because it will be construed as being in an alternative set with an element in the context, i.e. the alternative set will be made available when the second sentence is uttered.

A very widely applied definition of contrast is that there must be an alternative to the element at issue such that substituting the original with the alternative results in a false statement (e.g. Halliday 1967; Chafe 1976; Kenesei 2006; Neeleman & Vermeulen 2012; many of the empirical studies discussed below). This captures the intuition that corrections, see (7), are a typical discourse type involving contrast (see section 3), as well as the intuition that *the sun* in (8) cannot be contrastive because – ordinarily – only the sun can shine through the clouds (Kenesei 2006). The exclusion of alternatives view therefore brings exhaustivity (roughly the meaning contribution of *only*) into the picture. Contrast on this view has also been implemented as a negative operator (Neeleman & Vermeulen 2012).

- (7) John didn't go swimming, Pete went swimming  
 (8) The sun is shining through the clouds.

As for (1)-(3) above, we find that they can be considered as not involving contrast on this view, e.g. (1) comes with the implicature that Pete did not go to London but this is only an implicature: the discourse can be continued with *and Pete went to London too*. Alternatively, one could argue that the contrastive reading of (1) is one with a silent *Exhaust* operator (Chierchia 2004), whereas in the non-contrastive reading this operator is missing, i.e. (1) is ambiguous. For (4), the reading without Exhaust is less easily available, i.e. the implicature is less easy to cancel. A weaker version of the exclusion view is that the speaker is committed to the chosen alternative but not to another (e.g.

Pierrehumbert & Hirschberg 1990), which would fit better with (1) involving contrast. As adherents of the exclusion view do not necessarily require the excluded alternative(s) to be overt this notion of contrast can be very broad but (2) and (3) above would still not involve contrast. Note that although I discussed the exclusion view in this section on alternatives it actually imposes conditions on propositions, i.e. meanings associated with discourse segments, rather than on alternative-denoting contrastive constituents. Such conditions are discussed in detail in section 3.

Another broad definition of contrast, according to which (1)-(4) would all be contrastive, is that alternatives always contrast with each other no matter what the alternative set looks like or what operators operate on it, simply because alternatives are different from each other (Vallduví & Villkuna 1998; Selkirk 2008; Katz & Selkirk 2011). This notion of contrast is virtually identical to the notion of focus in Alternative Semantics (Rooth 1985; 1992; Krifka 2008; Rooth this volume). Indeed, for (3) above, which Rooth (1992) pre-theoretically describes as involving contrast, Rooth argues that it is just one of several discourse types whose interpretation is best explained under the assumption that focus – as indicated by the presence of a pitch accent, which signals the presence of a syntactic F-feature on the focussed constituent – introduces a set of alternatives from which the focussed element is drawn. Other discourse types involving focus, and thus alternatives on the Roothian view, are e.g. question-answer sequences, or sentences with a focus particle like *only*. Proponents of the view that the presence of alternatives equals contrast assume that what is sometimes referred to as *new information focus* does not involve focus, at least not in the Alternative Semantics sense. In other words there is new information on the one hand, and 'contrastive' focus on the other (e.g. Katz & Selkirk 2011).

Finally, contrast has been related to the belief systems of the interlocutors in the sense that the alternative which the speaker selects is unexpected, or in some other way remarkable (e.g. Halliday 1967; Frey 2006, 2010). Other researchers view unexpectedness as only loosely connected with, or independent from contrast (e.g. Zimmermann 2008; Brunetti 2009a). These issues already touch on the role of discourse relations, which I discuss in section 3.

This brief overview shows that opinions on what contrast is differ dramatically even if one only looks at possible restrictions on the (set of) alternatives. This has of course consequences for the evaluation of observations concerning grammatical manifestations of contrast. Statements like *In language x contrast is marked in way y* might mean very different things depending on the definition of contrast applied. Importantly, *a priori*, languages might differ in their grammatical sensitivity to particular characteristics of the (set of) alternatives. For instance, the view that alternativeness equals contrastiveness might make the right prediction for the application of particular marking strategies in language *x* whereas in language *y* similar marking strategies might require the presence of a clearly identifiable alternative set. It is therefore necessary to take into account particular characteristics of the alternative set, and thus of the constituents denoting the alternatives, when making claims about contrast marking.

In hypothesis *C-Const* in (9) I define three semantic relations between constituents of two sentences<sup>2</sup> that according to the literature potentially turn these constituents into *contrastive constituents*. I describe these relations for overt constituents and ignore the issue of contextually salient but not linguistically explicit alternatives.

(9) **Hypothesis about contrasting constituents (C-Const)**<sup>3</sup>

An F-marked constituent  $\beta_F$  is a candidate for being a contrastive constituent in a sentence if one of the conditions in (a) – (c) holds:

(a) There is a constituent  $\alpha$  in a preceding sentence,  $\llbracket \alpha \rrbracket^\circ \neq \llbracket \beta \rrbracket^\circ$ , such that  $\llbracket \alpha \rrbracket^\circ \in \llbracket \beta_F \rrbracket^f$   
= *explicit alternative (ExplAlt)*<sup>4</sup>

(b) There are constituents  $\alpha_1, \dots, \alpha_n$  ( $n > 1$ ) in a preceding sentence or preceding sentences such that  $\llbracket \beta_F \rrbracket^f = \{ \llbracket \alpha_1 \rrbracket^\circ, \dots, \llbracket \alpha_n \rrbracket^\circ \}$   
= *explicit alternative set (ExplAltSet)*

(c) There is a constituent  $\alpha$  in a preceding sentence such that  $\llbracket \alpha \rrbracket^\circ$  corresponds to  $\llbracket \beta_F \rrbracket^f$ , where 'correspond to' subsumes relations between kinds and their representatives, plural individuals and their atomic parts, generalized quantifiers and elements of their witness sets.  
= *implicit alternative set (ImplAltSet)*

(9a) defines the basic case with an *explicit alternative* in the context. It borrows from Rooth (1992) who proposed that an F-marked constituent  $\beta$  is to be construed as contrasting with a constituent  $\alpha$ , if the ordinary semantic value of  $\alpha$  is an element of the focus-semantic value of  $\beta$ .<sup>5</sup> In other words, the denotation of  $\alpha$  must be in the set of focus alternatives of  $\beta$ . For instance, in a context where we are interested in what things John put in his new bowl, we might say *John put an apple in his new bowl. Then he put [a banana]<sub>F</sub> in the bowl* where  $\alpha = \text{an apple}$  and  $\beta = \text{a banana}$ . Examples (1)-(4) in the introduction are all of the explicit alternative type. Rooth points out that the relation between  $\alpha$  and  $\beta$  normally is symmetric: they are both F-marked. This captures the intuition that contrast is a relation between two elements and not a feature of just one

<sup>2</sup> That is I ignore examples like (3).

<sup>3</sup> I define contrastive constituents for denotations of expressions. We can also contrast the form of expressions, e.g. *I didn't buy [tə'ma:təʊz], I bought [təmeɪrəʊz]*. I assume that in such cases the words denote the expressions, and not their usual denotations (cf. Artstein 2002).

<sup>4</sup> (a) is a special case of (b) but since the presence or absence of  $\llbracket \beta \rrbracket$  in the context might make a difference for contrast marking (a) and (b) are listed separately here.

<sup>5</sup> Rooth (1992: 81; 85ff.) eventually dispenses with this definition and treats contrast as a subcase of focus. Note that I am making the generally accepted assumption that the focus-semantic value of an expression is restricted by context.

element. However, as I already pointed out above and as we will see in more detail later on, often only element  $\beta$  is marked grammatically for contrast. Therefore, I will consider symmetry not as crucial here. In the second kind of semantic relation, which is defined in (9b), the linguistic context contains several explicit elements that form a set of which  $\beta$  can be a member, as in *John bought a banana and an apple. He put [the banana]<sub>F</sub> in his new bowl*. This is the *explicit alternative set* type, and we encountered it in É. Kiss's (1998) definition of contrast. Finally, the focus-semantic value of  $\beta$  might correspond to the ordinary semantic value of  $\alpha$  but not vice versa: *John was choosing fruit for his new bowl. He picked [a banana]<sub>F</sub>*, where  $\alpha = \textit{fruit}$ . This is the *implicit alternative set* type, cf. (9c). It includes cases where  $\alpha$  is a *wh*-constituent, assuming that *wh*-constituents are indefinites. Hypothesis *C-Const* will be put to work in section 4.

### 3 Elements of contrast: Discourse relations

In the discussion of (4) in the introductory section I mentioned that contrast might be a gradable phenomenon, which is a view that is defended in a number of works, e.g. Molnár (2006), Paoli (2009), Calhoun (2010) (also cf. Bolinger 1961; Lambrecht 1994; Asher & Lascarides 2003). The idea is perhaps most intuitive for different discourse relations (as opposed to different notions of what contrastiveness means in terms of alternatives). Above I said that a discourse like (4) with *but* is probably more contrastive than its cousin (1) without *but*. Corrections are intuitively even more contrastive. If contrast comes in different degrees we may expect that these degrees correlate with the application of additional or different grammatical means. For instance the peak of a pitch accent may be raised higher and higher with an increasing degree of contrastiveness, or languages may differ as to how contrastive a discourse must be before certain marking strategies are applied. Many studies ignore this potentially important aspect and compare the grammatical realization of contrastive constituents in discourses which by hypothesis are highly contrastive to that of non-contrastive constituents in clearly non-contrastive discourses, i.e. they conflate the alternativeness of constituents with the discourse relation and do not compare e.g. contrastive constituents in non-contrastive vs. 'mildly' vs. 'highly' contrastive discourse relations (see section 6 for references). Consider (10), which is a stimulus that is used in many experimental studies of prosodic reflexes of contrast (see section 6.1). In these studies, participants are first asked a *wh*-question eliciting sentence focus, whereupon they read aloud a declarative that is presented to them in written form. Next, participants are asked a declarative question that replaces a constituent in the answer with a 'wrong' alternative, whereupon they read the declarative again, this time 'correcting' the question. The participants' utterances are analyzed prosodically, the critical element being the constituent that was replaced, in (10) the NP *banana*. In the first utterance, *banana* is new and non-contrastive because there are neither explicit nor implicit alternatives. In the second utterance, *banana* is given and contrastive because it is offered as a correction for *apple*.

- (10) Experimenter: What did Mario say?  
 Participant: That he finished the girl's banana.  
 Experimenter: That he finished the girl's [apple]<sub>contrast</sub>?  
 Participant: No. That he finished the girl's [banana]<sub>contrast</sub>.

All studies using this paradigm find prosodic differences between the two utterances, which is invariably interpreted as contrast having prosodic reflexes in the respective language. However, all that can be claimed on the basis of such findings is that the prosody differs for corrective contrast on a given constituent and a new non-contrastive constituent that is part of a broad focus. We cannot conclude from such findings that an F-marked constituent in an answer to a *wh*-question eliciting narrow object focus is marked differently from an object constituent within a broad new information focus, or from contrastive corrective focus. Neither can we conclude, for instance, that narrow non-corrective focus in a parallel structure like (1) produces the same effects as the focus in the corrective utterance. Consequently, we cannot claim that *contrast* is marked prosodically in the language of investigation. We can only claim that *a certain kind of contrast* is marked, where we do not know what 'a certain kind of contrast' is because we have not identified the exact ingredient that is responsible for the effects: Is it narrow vs. broad focus? Is it the presence vs. lack of the overt alternative? Is it the correction vs. the lack of it, i.e. the discourse relation?

The previous section already looked at the issue of alternatives, this section investigates the role of discourse relations in greater detail. Looking at the inventory of discourse relations in various discourse theories we find that all of them have a relation CONTRAST. How this relation is defined is – maybe unsurprisingly – quite different in each theory, which also has to do with the different overall number of discourse relations and the concomitant degree of specificity for the individual relations. For instance, CONTRAST in SDRT (Asher & Lascarides 2003) subsumes the RST relations CONTRAST, CONCESSION, and ANTITHESIS (Mann & Thompson 1988; Mann & Taboada 2014). Wolf & Gibson (2005), following Hobbs (1985), distinguish CONTRAST from VIOLATION OF EXPECTATION ( $\approx$  CONCESSION) but not from ANTITHESIS. The basic ingredient to the CONTRAST relation in all theories is that there must be similarities as well as dissimilarities between two discourse segments, much like in the dictionary definitions discussed in section 1. Additional meaning aspects like an incompatibility between the denoted states-of-affairs (ANTITHESIS, see (11) for a correction example), or a violation of expectation (see (12)) are either thought to be a possible additional aspect of the CONTRAST relation, adding to the degree of contrastiveness (Asher & Lascarides 2003), or they are assigned to a different discourse relation (ANTITHESIS, CONCESSION).

(11) [Miller]<sub>contrast</sub> got the job, not [Smith]<sub>contrast</sub>. (ANTITHESIS)

(12) Although [Miller]<sub>contrast</sub> is a good politician [Smith]<sub>contrast</sub> was chosen for the task. (CONCESSION)

The above-mentioned theories also have a discourse relation of similarity, which is called PARALLEL (Asher & Lascarides 2003, Hobbs 1985), SIMILAR(ITY) (Wolf & Gibson 2005) or, less transparently, LIST (Mann & Taboada 2014). I will use the term SIMILAR. In a SIMILAR relation, similarities between corresponding sets of entities or events are established. For instance (13) describes two similar – in fact, identical – actions carried out by different agents. The SIMILAR-typical marker *too* occurs. Examples like (14) also are often classified as SIMILAR. An event is described where various people are engaged in similar activities: they are all gardening. However, examples like (14) are also often classified as a CONTRAST relation: there are similarities and dissimilarities.

(13) John was mowing the lawn. Pete was too. (SIMILAR)

(14) John was mowing the lawn. Pete was pruning the roses. (SIMILAR/CONTRAST)

The problem with the similarity-dissimilarity rhetoric is that it is vague. I propose to classify (14) as SIMILAR because meaning components like an incompatibility of state-of-affairs or violation of expectation are absent. Whether or not SIMILAR discourses involve contrast beyond the level of contrastive constituents (*C-Const*), however, is doubtful. (15) is a minimal variant of (14) with a causal discourse relation, where the subjects contrast, and the VPs. Intuitively, (15) does not involve more or less contrast than (14). I suggest therefore not to view cases like (14) as contrastive discourse relations in a substantial sense, i.e. independently of constituent alternatives.

(15) John was mowing the lawn because Pete was pruning the roses.

In (17) further below I provide a definition of SIMILAR according to which the discourse segments in the relation must make the same contribution to the current question under discussion, which captures the intuition that we are dealing with smooth discourses without real or perceived incompatibilities. Contrastive meaning components like incompatibility and violation of expectation are often conveyed by discourse markers like *but*, *although*, *still* etc. In the literature, most expository examples for the CONTRAST relation – independently of the particular theory – contain the conjunction *but*,<sup>6</sup> which we already encountered. (16) is a minimal variant of SIMILAR (14), where *and* is replaced by *but*.

(16) John was mowing the lawn but Pete was pruning the roses.

*But* is usually assumed to signal that the first conjunct serves as an argument for some background assumption whereas the second conjunct serves as an argument against it (e.g. Anscombe & Ducrot 1977). In (16) the background assumption might have been that John and Pete would mow the lawn together. (16) tells us that this expectation is violated. More generally we may say that *but* signals that the two conjuncts make opposing contributions to the current question under discussion (e.g. Lang 1991; for recent refinements see Sæbø 2003; Umbach 2005). I will use the label OPPOSE for this kind of discourse relationship to avoid the term *contrast*, and to make it more general than *violation of expectation*. The definition is given in (17) further below. Intuitively, OPPOSE is more contrastive than SIMILAR, that is we are actually dealing with a truly contrastive discourse relation here. On the other side, OPPOSE is intuitively less contrastive than the ANTITHESIS relation, recall (11) above, because there is no correction involved. In this chapter, I use the label CORR for *correction* rather than ANTITHESIS to cover both monologic ANTITHESIS and dialogic rejections, as the latter

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<sup>6</sup> Spender & Lobanova (2009) show that the different contrastive relations defined in RST tend to come with different markers.

often are used in investigations of grammatical manifestations of contrast.<sup>7</sup> The definition of CORR is also given in (17).

The discourse relations I have looked at so far tend to involve discourse segments that are associated with declaratives. In section 1 we saw that sequences of interrogatives and declaratives, *interrogative discourses* for short, also have figured prominently in the discussion of contrast. If such a discourse consists of a question and a congruent answer (= Q-A in (17) below) we may assume that the discourse relation involved is not contrastive. If, however, the declarative sentence in an interrogative discourse is used to reject the question as in A: *When did Pete clean up?* B: *JOHN cleaned up!*, where B rejects a presupposition of the question, namely that Pete cleaned up, we have a CORR relation (see section 5 for further details).

Hypothesis *C-DRel* in (17) summarizes the discussion of discourse relations and their relation to contrast and to potential degrees of contrast. It covers the two non-contrastive discourse relations Q-A and SIMILAR because they have been used in empirical investigations of contrast unlike other non-contrastive discourse relations. *C-DRel* will be put to work in the next section. Note that the issue of degrees of contrast has also been discussed in relation to focus size, which I ignore in my hypotheses but discuss in section 5.

(17) **Hypothesis about contrastive discourse relations (C-DRel)**

The degree of contrastiveness of the discourse relation between two discourse segments  $d_1$  and  $d_2$  increases from (n) to (ii).<sup>8</sup>

- (n) Smooth discourses (= non-contrastive)
  - a. [Q-A<sub>(n)</sub>]:  $d_1$  is associated with a question meaning, i.e. a set of propositions; the proposition associated with  $d_2$  is an element of that set
  - b. [SIMILAR<sub>(n)</sub>]: the proposition associated with  $d_2$  and the proposition associated with  $d_1$  can both be true in the evaluation world;  $d_1$  and  $d_2$  make the same kind of contribution to the current question under discussion
- (i) [OPPOSE<sub>(i)</sub>]: the proposition associated with  $d_2$  and the proposition associated with  $d_1$  can both be true in the evaluation world;  $d_1$  and  $d_2$  make opposing contributions to the current question under discussion
- (ii) [CORR<sub>(ii)</sub>]:  $d_2$  rejects  $d_1$  because certain background assumptions for the felicitous use of  $d_1$  are not met, or because the propositions associated with  $d_1$  and  $d_2$  cannot both be true in the evaluation world

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<sup>7</sup> There is evidence suggesting that the monologique vs. dialogique nature of CORR might have syntactic reflexes in Italian (Bianchi & Bocci 2012). Also see Steube (2001) on different types of corrections.

<sup>8</sup> The abbreviations I use contain the subscripts as a mnemonic value for the potential degree of contrastiveness (*nihil* to *ii*).

#### 4 Contrast in grammar

Taking together our observations about potentially contrastive constituents and about potentially contrastive discourse relations, we may formulate the following hypothesis for the role of contrast in the grammar of a particular language:

(18) **Hypothesis about the role of contrast in the grammar (C-Gram)**

Contrast is a grammatically relevant notion in the grammar of a language  $L$  if in discourses consisting of two discourse segments  $d_1$  and  $d_2$ ,  $L$  uses grammatical means to mark  $d_2$  in the following way:

- A constituent that is a candidate for being a contrastive constituent in  $C-Const$  is marked differently from non-contrastive constituents and it is marked differently from candidate contrastive constituents in at least one class of  $C-Const$  (a)-(c) that is different from its own. The constituent is marked by the same means for all discourse relations in  $C-DRel$ .

*= contrast based on type of alternatives*

If  $L$  marks all the discourse types in  $C-DRel$  for all contrastive constituent types in  $C-Const$  by the same means contrast marking is F-marking in  $L$ , and 'contrast' is focus.

- The constituents that are candidates for being contrastive constituents in  $C-Const$  (a)-(c) are marked differently when they occur in  $OPPOSE_{(i)}$  or  $CORR_{(ii)}$  in comparison to when they occur in other discourse relations.

*= contrast based on discourse relations*

Contrast is a gradable notion if there are differences in the marking of  $OPPOSE_{(i)}$  and  $CORR_{(ii)}$ .

$C-Gram$  does not cover cases where a subset of the contrastive constituent types is marked in a subset of the discourse relations. There are many combinatorial possibilities (not all of which are equally plausible from a conceptual point of view). Languages might choose specific marking strategies for various combinations. Depending on the empirical situation, specific theoretical notions have to be defined to capture such licensing conditions. They cannot be captured by a general notion of contrast, and using a more specific terminology will help to highlight the specifics of individual cases. Even the two 'contrast options' in  $C-Gram$  leave room for flexibility. For instance, languages may differ in the choice of contrastive constituents they mark by grammatical means, so 'contrast' might mean something different in different languages. In my assumptions I deviate from much of the earlier literature, which has tried to come up with a notion of contrast that holds across languages. I think that this is essentially an empirical issue.  $C-Gram$  sets an agenda for a systematic investigation of contrastive constituents and discourse relations for individual languages, which ideally will lead to a better understanding of the notion of contrast and its potential role in grammar. Until we have more systematic data available claims about 'contrast' should only be made for individual languages, and in relation to the two dimensions of contrast suggested above: contrast based on the type of alternatives involved, and contrast based on discourse relations.

In the next sections I give a brief overview of the empirical research on contrast. Section 5 gives an overview of test paradigms that have been used in investigations of prosodic and morpho-syntactic reflexes of contrast, and relates them to *C-DRel* and *C-Const*. Section 6 reports a selection of concrete findings.

## 5 Test paradigms

The following discourse types have been used in tests for prosodic and/or morpho-syntactic manifestations of contrast – either as contrastive or as non-contrastive discourses, depending on the notion of contrast applied. OPPOSE<sub>(i)</sub> discourses have not been tested systematically so I will not discuss them.<sup>9</sup>

**Interrogative discourses with *wh*-questions** usually are Q-A<sub>(n)</sub> discourses. *Wh*-questions can license wide (= broad) focus in the answer, or different kinds of narrow focus (cf. Arregi this volume):

- (19) a. A: What happened?      B: [John called Mary]<sub>F</sub>. – *wide focus*  
       b. A: What did John do?    B: John [called Mary]<sub>F</sub>. – "*semi-narrow*"  
       c. A: Who did John call?    B: John called [Mary]<sub>F</sub>. – *narrow focus*

Whereas wide focus in Q-A<sub>(n)</sub> discourses unequivocally is considered to be non-contrastive, narrow focus in Q-A<sub>(n)</sub> is considered to be non-contrastive by some authors (many of those cited in section 6), and contrastive by others (e.g. Calhoun 2006, 2010; Lee & Xu 2010). Calhoun (2010) proposes that the size of the focus domain correlates inversely with the degree of contrast. If we implement 'size' in terms of the containment relation between constituents, the object focus in (19c) is narrower, and thus would be more contrastive than the VP focus in (19c) because an object DP is contained in the VP. The semantic relation between the contrastive constituents typically is the implicit alternative set *ImplAltSet* but the alternatives can also be explicit (*ExplAltSet*) as in *Who of Mary and Ann did John call?*, see section 6.2 for potential morpho-syntactic reflexes of this difference. In section 6.1 we will see that a narrowing focus domain in Q-A<sub>(n)</sub> discourses may indeed have prosodic reflexes. Note, however, that whether or not these reflexes should be related to the notion of contrast is not so clear: the focussed constituent always has the same relation with its antecedent in terms of alternative type. Looking at other discourse relations, we find that a wide focus can easily be contrastive, see the OPPOSE<sub>(i)</sub> example with sentence focus in (16) above, or the CORR<sub>(ii)</sub> example (28) further below.

**Interrogative discourses with polar questions** have mainly been used as CORR<sub>(ii)</sub> discourses. (10) in the introduction was a relevant example, (20) below is another. In (20), B does not answer A's question with a simple *yes* or *no*. Rather B seems to answer the implicit *wh*-question *Who sang last night?*. The subject in the question, *John*, is replaced by a different subject in the answer, *Pete*. Constituent  $\alpha$  is an explicit

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<sup>9</sup> But see Umbach, Mleinek, Lehmann, Weskott, Alter & Steube, (2004).



focus (e.g. Winkler 2005; Braun 2005) but they do not have to come with the rise-fall-rise contour or with the implicational pragmatics usually associated with the term *contrastive topic* (cf. Büring this volume). *Topic* in the description of these discourses is usually applied in the *aboutness* sense (Reinhart 1981). For clarity, I call such topics *non-implicational contrastive topics*. A (slightly adapted) example from a read-aloud production study by Braun (2006: 461), which in addition to *ExplAlt* constituents contains *ExplAltSet* constituents is (23). The context introduces a set of explicit alternatives, and two target utterances each contain an element from this set, i.e. the contrastive constituents have an *ExplAltSet* relation with the context, and an *ExplAlt* relation with each other.

- (23) [Malaysia and Indonesia]<sub>alternative.set</sub> are neighbouring countries in the South China Sea. Despite their geographical adjacency, the living and working conditions of the Malaysians and the Indonesians differ tremendously. [In Indonesia]<sub>contrast</sub>, tourism is very important and there are many jobs in this sector. [In Malaysia]<sub>contrast</sub> people live from agriculture. They have mainly focused on the cultivation of rice.

A related test paradigm with two kinds of alternative relations where the – this time interrogative – context provides an *ImplAltSet*, is (24) from Horvath (2010: 1357).

- (24) A: Do you know [what]<sub>alternative set 1</sub> they stole from [your classmates]<sub>alternative set 2</sub> in the gym?  
 B: [Mary]<sub>contrast2</sub> lost [her watch]<sub>contrast1</sub> [John]<sub>contrast2</sub> lost [his wallet]<sub>contrast1</sub>.

Another SIMILAR<sub>(n)</sub> paradigm is (25), modelled on Krahmer & Swerts (2001: 394). *ExplAlt* constituents occur as constituents of DPs in fragmentary utterances. In studies using this paradigm, participants describe scenes to each other that are visible only to themselves but not to their interlocutor (*Dutch*: Krahmer & Swerts 2001; Swerts 2007; Swerts, Krahmer & Avesani 2002; *English*: Speer & Ito 2011; *Italian*: Swerts, Krahmer & Avesani 2002).

- (25) A: [red] circle  
 B1: [red]<sub>contrast</sub> square  
 B2: blue [circle]<sub>contrast</sub>  
 B3: [red]<sub>contrast</sub> [circle]<sub>contrast</sub>

The major interest in these studies is the absence or presence of accents on the adjective and the noun depending on the alternatives in the context. There are also paradigms of this sort with full clause utterances (*Romanian*: Swerts 2007), which have also been used in psycholinguistic comprehension studies (*English*: Dahan, Tanenhaus & Chambers 2002; Chen, den Os & de Ruiter 2007; Ito & Speer 2008, Watson, Tanenhaus & Gunlogson 2008; *German*: Weber, Braun & Crocker 2006; *Japanese*: Ito, Jincho, Minai, Yamane & Mazuka 2012). The goal of the latter investigations is to find out if listeners who listen to instructions for finding objects in a virtual world, or in a real (laboratory) situation make use of prosodic signals potentially signalling contrast.

A fourth SIMILAR<sub>(n)</sub> paradigm is illustrated in (26). It is from Katz & Selkirk (2011: 774), who investigate prosodic effects of the presence vs. absence of F-marking.

The context introduces two elements, both of which can be construed as alternatives with an element in the final target sentence (= *ExplAlt*). The target sentence contains the focus particle *only* and hence is assumed to involve F-marking. Note that there also is an *ImplAltSet* relation with a constituent earlier in the context: *the paintings he buys*.

- (26) Gary is a really bad art dealer. He gets attached to [the paintings he buys]<sub>impl.alternative set</sub>. He acquired [a few Picassos] and fell in love with them. The same thing happened with [a Cezanne painting]. So he would only offer [that Modigliani]<sub>contrast</sub> to MoMA. ....

**Declarative CORR<sub>(ii)</sub> discourses** can be dialogues, see (27) and (28), and monologues, (29) and (30). (27)-(29) have *ExplAlt* constituents. (28) is an example where the contrastive constituent is a full sentence, which illustrates that contrast may involve wide focus<sup>10</sup>. In (30), which is modelled on Sudhoff (2010: 1462), the context introduces a set of students whose members are left implicit (= *ImplAltSet*). Something is claimed about this set, which then is corrected in the target utterance: the claim is reduced to a claim about one student in the set. For this discourse to be felicitous, the particle *only* is required, i.e. prosodic focus marking cannot signal the exhaustiveness.

- (27) A: John had [ice-cream].

B: (No.) He had [cake]<sub>contrast</sub>.

- (28) A: [It's raining outside.]

B: [The sun is shining!]<sub>contrast</sub> Look out of the window!

- (29) John didn't have [ice-cream], but [cake]<sub>contrast</sub>.

- (30) Three pupils of class 10a earned some money in the last week of the school vacation by now and then cleaning machines in the BMW factory. Unfortunately, Friday's attendance list went missing. The secretary told the head of department that [all three pupils] had worked on that day. But she was wrong. On Friday, only [Sabine]<sub>contrast</sub> came. The others weren't in the mood for working any longer.

Declarative CORR<sub>(ii)</sub> discourses have been tested for instance in *German* (Sudhoff 2010), *Mandarin Chinese* (Chen 2006); *Korean* (Jun & Lee 1998), and *Yukatec Maya* (Kügler & Skopeteas 2007).

## 6 Empirical findings

In this section I discuss a small selection of findings from the prosodic and syntactic literature on contrast, which illustrate the state of the art. Due to space limitations I only discuss prosody and syntax separately and ignore potential interactions.

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<sup>10</sup> As far as I know CORR<sub>(ii)</sub> discourses with wide focus have not been tested experimentally.

## 6.1. Prosodic reflexes of contrast

There are three kinds of prosodic reflexes that contrast has been claimed to have. The first is a special contrastive accent on the contrastive constituent, i.e. contrast is claimed to correlate with categorial differences and thus a special phonology. Depending on the language, the special contrastive accent has been claimed to be for instance a rising L+H\* accent rather than a high mono-tonal H\* accent (English), or a rising accent with an earlier high tone, for instance a L+H\* accent where the high tone (rather than the low tone as in non-contrastive L\*+H) is associated with the accented syllable and does not occur only after it (Spanish).

The second kind of prosodic reflex is gradual changes in acoustic features, i.e. a special phonetics. Relevant features are e.g. maximum pitch, mean pitch, pitch excursion (= difference between minimum and maximum pitch of the accentual tones that are associated with the accented syllable), pitch register (range between minimum and maximum pitch that a speaker uses in a given utterance), pitch compression (reduction of pitch register), pitch peak position (earlier or later peak), duration, and intensity. Many of these features show higher measurements (e.g. a longer duration) for the more contrastive discourse in particular comparisons. Sometimes the differences are very subtle in the sense that there are no statistically reliable differences between a contrastive constituent in one utterance and its counterpart non-contrastive constituent in a minimally different utterance, i.e. there is no *absolute difference*, but there are differences between differences. For instance, the difference in intensity between a contrastive constituent and other constituents in the same utterance might be larger than the difference in intensity between the counterpart non-contrastive constituent and other constituents in the non-contrastive utterance. Such a difference is called a *relative difference*.

The third prosodic reflex of contrast is rephrasing, such that phrase boundaries are removed or added, weakened or strengthened. The indications for such rephrasing are e.g. the presence or absence of segmental processes, durational changes or the presence or absence of boundary tones.

The following brief overview of findings in English, German, Spanish and Portuguese illustrates some of the central issues in the investigation of prosodic effects of contrast. For **English**, Pierrehumbert & Hirschberg (1990) proposed a special contrastive accent, a rising L+H\*, as opposed to H\*, which marks new information. The notion of contrast underlying this claim is very wide with L+H\* apparently indicating a salient, but not necessarily linguistically explicit, set of alternatives. The proposal has been extremely influential so that the existence of a contrastive accent often is taken for granted, also for languages other than English. However, none of the existing production and contextual appropriateness rating studies for English (e.g. Bartels & Kingston 1994; Welby 2003; Breen, Fedorenko, Wagner & Gibson 2010; Katz & Selkirk 2011) could support the existence of a special accent, see Table 1 for some of the paradigms that were applied to test for it. Some psycholinguistic comprehension studies report effects of accent type (L+H\* vs. H\*) in SIMILAR<sub>(n)</sub> discourses with vs. without *ExplAlt* constituents, e.g. quicker identification of referents (Ito & Speer 2008) or enhanced recall (Fraundorf, Watson & Benjamin 2010) but in the materials these studies used, accent type always correlated with acoustic measures like maximum and mean pitch, duration and/or intensity (all higher for L+H\*) so that the results cannot be taken as evidence for a special contrastive accent in English. Acoustic measures in English do differ in various test paradigms. For instance, Breen et al. (2010) found that

narrow focus contrastive constituents have different phonetic characteristics in CORR<sub>(ii)</sub> discourses than in Q-A<sub>(n)</sub> discourses. It is tempting to interpret this as an effect of discourse relation (*C-DRel*) but note that the discourse relation (CORR<sub>(ii)</sub> vs. Q-A<sub>(n)</sub>) is conflated with the alternative type (*ExplAlt* vs. *ImplAltSet*). Breen et al. also found an effect of the presence vs. absence of *ImplAltSet* constituents Q-A<sub>(n)</sub>: there were absolute and relative differences between narrow focus contrastive constituents and their counterpart non-contrastive constituents in a wide focus domain. This finding could be an effect of F-marking, which needs to be investigated in future research the different alternative types in *C-Const* without manipulation of the discourse relation. Katz & Selkirk (2011) found effects of F-marking in SIMILAR<sub>(n)</sub> discourses: if there are *ExplAlt* constituents these discourses have different characteristics than if there are no contrastive constituents. For reasons of space I cannot report the precise results but in most comparisons, the relevant constituent in the more contrastive discourse tended to be marked by a longer absolute or relative duration, higher mean or maximum pitch, and greater intensity.

In **German**, there is some evidence for different accents in some of the potentially contrastive discourse types. The results are somewhat preliminary because in several studies the findings were not statistically reliable, and there was great interspeaker variability. Still, the findings indicate that in CORR<sub>(ii)</sub> discourses contrastive constituents are realized with rising accents (L\*+H or L+H\*) rather than with H\* more often than in SIMILAR<sub>(n)</sub> discourses (Sudhoff 2010). In Q-A<sub>(n)</sub> discourses a narrowing focus domain seems to be accompanied with a categorial distinction between downstepped vs. unchanged H\*, and in CORR<sub>(ii)</sub> discourses upstepped H\* is found more often than in Q-A<sub>(n)</sub> with narrow focus (Baumann, Grice & Steindamm 2006; Baumann, Becker, Grice & Mücke 2007). Whether or not different alternative sets (*C-Const*) play a role for the choice of accent is unclear. As can be seen from Table 1, in several studies alternative type correlates with discourse relation. Still, there are some *C-Const*-relevant findings for SIMILAR<sub>(n)</sub> discourses with non-implicational topics, which are typically realized by rising accents. Braun (2005, 2006) found phonetic differences between discourses with vs. without *ExplAltSet/ExplAlt* constituents but she did not identify a special contrastive accent. Frascaralli & Hinterhölzl (2007), who analyzed a corpus of radio conversations, did identify a special accent in SIMILAR<sub>(n)</sub> with *ExplAlt* (L\*+H vs. L+H\* for a new aboutness topic). As for the gradual acoustic correlates of contrast in German, the findings resemble those for English.

**Table 1: Overview of the test paradigms used in some of the experimental studies discussed in the main text. The example numbers refer to illustrations of the test paradigms in section 5.**

Study	Task	Test paradigms compared
Bartels & Kingston (1994)	English contextual rating with two comparisons	<ul style="list-style-type: none"> <li>• SIMILAR<sub>(n)</sub>, <i>ExplAlt</i> &amp; <i>ImplAltSet</i>, (24)</li> <li>• declarative CORR<sub>(ii)</sub>, <i>ExplAlt</i> &amp; <i>ImplAltSet</i>, (27)</li> <li>• polar Q-A<sub>(n)</sub> broad focus</li> <li>• polar Q-A<sub>(n)</sub> narrow focus, <i>ImplAltSet</i>, (21)</li> </ul>
Breen et al. (2010)	English quasi-free production, dialogue	<ul style="list-style-type: none"> <li>• Q-A<sub>(n)</sub> broad focus, (19a)</li> <li>• Q-A<sub>(n)</sub> narrow focus, <i>ImplAltset</i>, (19c)</li> <li>• CORR<sub>(ii)</sub> with polar question, <i>ExplAlt</i>, (21)</li> </ul>
Katz & Selkirk (2011)	English read-aloud production, monologue	<ul style="list-style-type: none"> <li>• SIMILAR<sub>(n)</sub>, only new non-contrastive constituents</li> <li>• SIMILAR<sub>(n)</sub>, <i>ExplAlt</i> &amp; <i>ImplAltSet</i><sup>11</sup>, (26) with new contrastive constituent and new non-contrastive constituent</li> </ul>
Baumann et al. (2006) & Baumann et al. (2007)	German read-aloud production, dialogue	<ul style="list-style-type: none"> <li>• Q-A<sub>(n)</sub> broad focus, (19a)</li> <li>• Q-A<sub>(n)</sub> "semi-narrow" focus, <i>ImplAltSet</i>, (19b)</li> <li>• Q-A<sub>(n)</sub> narrow focus, <i>ImplAltSet</i>, (19c)</li> <li>• CORR<sub>(ii)</sub> with polar question, <i>ExplAlt</i>, (21)</li> </ul>
Braun (2005, 2006)	German read-aloud production, monologue	<ul style="list-style-type: none"> <li>• SIMILAR<sub>(n)</sub> without <i>ExplAltSet</i> or <i>ExplAlt</i></li> <li>• SIMILAR<sub>(n)</sub> with <i>ExplAltSet</i> &amp; <i>ExplAlt</i>, (23)</li> </ul>
Sudhoff (2010)	German read-aloud production, monologue	<ul style="list-style-type: none"> <li>• SIMILAR<sub>(n)</sub>, <i>ExplAlt</i></li> <li>• SIMILAR<sub>(n)</sub>, <i>ExplAltSet</i>, (26)</li> <li>• declarative CORR<sub>(ii)</sub>, <i>ExplAlt</i>, (29)</li> <li>• declarative CORR<sub>(ii)</sub>, <i>ImplAltSet</i>, (30)</li> </ul>
Chung (2012)	Spanish read-aloud production, dialogue	<ul style="list-style-type: none"> <li>• Q-A<sub>(n)</sub> narrow focus, <i>ImplAltSet</i>, (19c)</li> <li>• declarative CORR<sub>(ii)</sub>, <i>ExplAlt</i>, (27)</li> </ul>
Frota (2002)	Portuguese read-aloud production, dialogue	<ul style="list-style-type: none"> <li>• Q-A<sub>(n)</sub> broad focus, (19a)</li> <li>• Q-A<sub>(n)</sub> narrow focus, <i>ImplAltSet</i>, (19c)</li> <li>• SIMILAR<sub>(n)</sub>, <i>ExplAltSet</i>, (23)</li> <li>• CORR<sub>(ii)</sub> with polar question, <i>ExplAlt</i>, (21)</li> </ul>

<sup>11</sup> The use of *ImplAltSet* is not consistent in the materials. The focus of the study was on *ExplAlt*.

Many studies on 'contrast' in **Spanish** varieties compare contrastive constituents in CORR<sub>(ii)</sub> discourses to non-contrastive constituents in non-contrastive discourse relations, recall section 3, ex. (10) (Sosa 1999; Nibert 2000; Face 2001, 2002; Hualde 2002; Willis 2003; Face & Prieto 2007; Simonet 2010, O'Rourke 2012; Vanrell et al. 2013). Since – as discussed in previous sections – such comparisons are of limited value concerning the issue of contrast as it is approached here I restrict my discussion to more fine-grained comparisons. Narrow focus contrastive constituents have different phonetic characteristics in CORR<sub>(ii)</sub> than in Q-A<sub>(n)</sub> discourses in Castilian Spanish: in CORR<sub>(ii)</sub> there is a higher maximum pitch (García-Lecumberri 1995, Chung 2012), a longer absolute duration, an earlier pitch peak, and a greater pitch range (Chung 2012). The earlier pitch peak is argued by Chung to correspond to a phonological difference between L+H\* (CORR<sub>(ii)</sub>) vs. L\*+H (Q-A<sub>(n)</sub>). Thus, there seem to be prosodic effects of the discourse relation but as with the English findings there is the caveat that the discourse relation correlates with alternative type (*ImplAltSet/ExplAlt*) in the test materials. Future research must explore the precise role of alternative type vs. discourse relation.

For **Portuguese**, Frota (2002) identified a phonological reflex of the presence of contrastive constituents in two discourse relations: a narrowly focussed contrastive constituent in Q-A<sub>(n)</sub> and in CORR<sub>(ii)</sub> discourses is realized with H\*+L, whereas non-contrastive constituents in non-contrastive discourses are marked with H+L\*, i.e. in the contrastive case the peak occurs later. A perception study confirmed the phonological nature of this difference: listeners perceive the accents in a discrete way (Frota 2012). A phonetic effect of the presence of contrastive constituents is longer duration (Frota 2000). For SIMILAR<sub>(n)</sub> discourses with *ExplAlt* non-implicational topics, Frota (2002) found phrasing effects: topical subjects were mapped exhaustively onto an intonational constituent, non-contrastive new broad-focus subjects and Q-A<sub>(n)</sub>/CORR<sub>(ii)</sub> narrow focus subjects were not.

To summarize the prosodic findings, in some languages (English, German, Spanish) contrastive constituents are marked differently in discourses with contrastive discourse relations than in discourses with non-contrastive discourse relations. These results must be seen as preliminary, though, because in the relevant studies discourse relation correlated with alternative type. There is evidence that in non-contrastive discourse relations, the presence or absence of *ExplAlt/ExplAltSet* matters for prosodic marking (English, German). Since there are no findings yet with respect to differential reflexes of the different alternative types in *C-Const* this evidence so far 'only' reveals an influence of F-marking whose demarcation from contrast is still an open issue. There also are prosodic effects of a narrowing focus domain in non-contrastive discourses (German). Many effects are of a gradient phonetic nature rather than of a categorial phonological one (esp. English), but in some languages (Spanish, Portuguese), there seems to be a special accent.

## 6.2. Morpho-syntactic reflexes of contrast

Morpho-syntactic reflexes that contrast typically has been claimed to have are the movement of a contrastive constituent to a left-peripheral position in the clause, the use of specific constructions, e.g. clefts, and the use of specific morphological markers (e.g. Japanese *wa*, see Tomioka this volume; Hara 2006; Vermeulen 2013). Before I discuss concrete findings note that studies investigating syntactic reflexes of contrast also usually address the issue of how precisely an information-structural category like

contrast can have an effect on a syntactic derivation, which is a controversial issue that I cannot discuss here in any detail (see the relevant chapters in this volume, e.g. Aboh; Neeleman & van de Koot; Samek-Lodovici). The controversy revolves inter alia around the question whether there can be information-structural movement-triggering features in the syntax or whether syntax generally should be free of information structure. Contrast-relevant features are e.g. Molnár's 2006 C-feature, *C* for 'coherence', which has [+contrast] as one of its possible value specifications, or López's (2009) [+c] feature, *c* for 'contrast', which is assigned by the pragmatics to a constituent in the specifier of the Fin head at the end of a phase, when – according to López – pragmatics has access to the syntactic derivation. Alternative proposals such as Neeleman & Vermeulen (2012) assign the syntax-contrast association to mapping procedures at the interfaces.

Below I discuss a small selection of contrast-related findings about left-peripheral movement in Hungarian (also cf. É. Kiss this volume) and Italian. Both languages have figured prominently in the discussion of syntactic reflexes of contrast, and the discussion illustrates some of the intricacies of the issue. I start with Hungarian and É. Kiss's (1998) definition of contrast, which we encountered in section 2. For É. Kiss a constituent is contrastive if every member in the alternative set is clearly identifiable, i.e. if the constituent is of the *ExplAltSet* or the *ExplAlt* type. Now, according to É. Kiss's contrast is a subtype of one of two focus types, identificational focus, the other type being information focus. Information focus requires that the focussed information be nonpresupposed (cf. Szabolcsi 1981, 1994; Kenesei 1986; Horvath 1986, 2010). Identificational focus is specified for [ $\pm$  contrastive] and [ $\pm$  exhaustive], the particular specification, [+] or [–], being language-dependent. It is [+exhaustive] if there is a contextually given alternative set such that the focussed element denotes the proper subset of the alternative set for which the predicate holds. This is the exclusion view of contrast discussed in section 2.

Turning to the syntactic side of identificational focus, contrast and exhaustiveness, É. Kiss argues that Hungarian identificational focus is [+exhaustive] but [–contrastive]. She observes that both in Q- $A_{(n)}$  discourses with *ExplAltSet* constituents (*Who of you two broke the vase?*) and in Q- $A_{(n)}$  discourses with *ImplAltSet* constituents (*Who broke the vase?*), the focussed XP in the answer occurs in a designated left-peripheral position for identificational focus (cf. Brody 1990) if and only if it is interpreted as exhaustive, i.e. not after a mention-some question like *Where can I buy a newspaper?* (cf. Kenesei, 1986; Horvath 2000, 2010). So the availability of implicit vs. explicit alternative sets does not play a role in Hungarian, only exhaustiveness does. Horvath (2010) shows that in SIMILAR $_{(n)}$  discourses *ExpAlt* constituents and with *ImplAltSet* in the preceding context (see (24), section 5) none of the contrastive constituents occurs in the focus position. However, in declarative CORR $_{(ii)}$  discourses the contrastive constituent does occur in the focus position (e.g. Szabolcsi 1981). The latter fact can be put down to the exhaustive meaning contribution of corrections. Thus, Hungarian left-peripheral movement does not seem to be influenced by alternative type (*C-Const*) but the discourse relation is relevant because CORR $_{(ii)}$  typically goes along with exhaustiveness.

Comparing this situation to Italian, where so-called *focus fronting*, which is left-peripheral movement of an XP, has been argued to involve contrast (e.g. Rizzi 1997)<sup>12</sup>, we find that in Q-A<sub>(n)</sub> discourses the potentially contrastive constituent in the answer is not fronted with *ImplAltSet* (e.g. Rizzi 1997; Zubizarreta 1998; Belletti 2004) but with *ExplAltSet* it can be (É. Kiss 1998; Brunetti 2004). Thus Italian differs from Hungarian in its sensitivity to alternative type. In Italian SIMILAR<sub>(ii)</sub> discourses there does not seem to be focus fronting (Bianchi & Bocchi 2012)<sup>13</sup>. In CORR<sub>(ii)</sub> discourses with *ExplAlt* constituents, as in Q-A<sub>(n)</sub> with *ExplAltSet*, focus fronting has been claimed to be optional (Frascarelli 2000; Brunetti 2004; Samek-Lodovici 2006), although López (2009) maintains that the non-movement variant in CORR<sub>(ii)</sub> is only felicitous if the critical sentence is preceded by the answer particle *no* as in (31), which has a polar question as context:

(31) A: Have you given the winner a T-shirt? (*Italian*, Samek-Lodovici 2006: 837)

- B: a. No. Abbiamo dato al vincitore [una medaglia].  
       no have.3PL given to.the winner a medal  
    b. #Abbiamo dato al vincitore [una MEDAGLIA]. (López 2009: 56)  
    c. [Una MEDAGLIA] abbiamo dato al vincitore.  
       '(No.) We gave the winner a medal.'

López suggests that *no* expresses the contrast and that the in-situ focus is non-contrastive information focus (also Brunetti 2009b). But then Bianchi & Bocchi (2012) present quantitative experimental evidence from declarative CORR<sub>(ii)</sub> discourses, where speakers choose focus fronting in only 25% of the corrective sentences without *no*, which corroborates the optionality claim and even reveals a preference for the in-situ variant. Thus it seems that a contrastive constituent may, but need not, front with *ExplAlt/ExplAltSet*, and that it does not front with *ImplAltSet*.

There are various proposals to account for the optionality of focus fronting in CORR<sub>(ii)</sub>. Brunetti (2009a) argues that for a fronted focus, the alternative set can be identified more easily than for an in-situ focus because focus projection is impossible. Easier identifiability provides an advantage when the relevant set of alternatives is not clearly marked in the context, e.g. in dialogic corrections or when the speaker thinks that his/her utterance is in conflict with implicit beliefs of the interlocutor, or otherwise 'unexpected'. The proposal cannot account for the effect of explicit vs. implicit alternatives but the relevance of (un)expectedness for syntactic movement is also emphasized in Zimmermann (2008), Frey (2010), and Paoli (2009).<sup>14</sup> A different

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<sup>12</sup> In Italian, as in other Romance languages, the association of left-peripheral movement with contrast concerns *focus fronting* on the one hand, and *clitic left dislocation* (CLLD) on the other hand. See López (this volume) for CLLD.

<sup>13</sup> CLLD occurs in SIMILAR<sub>(n)</sub>, see fn.12.

<sup>14</sup> These authors differ in their view on how tightly (if at all) contrast is related to expectations.

account is proposed by Bianchi & Bocci (2012). They suggest that in CORR<sub>(ii)</sub> discourses the contrastive constituent always moves to the left periphery, the movement being licensed by an incompatibility presupposition (recall that *C-DRel* identifies incompatibility as essential for CORR<sub>(ii)</sub>). The crucial point is that at the syntax-phonology interface the lower rather than the higher copy in the movement chain may be realized, if that produces a less marked prosodic structure. According to Bianchi & Bocci focus fronting produces a marked prosodic structure so that the realization of the lower copy in CORR<sub>(ii)</sub> discourses is motivated by a prosodic constraint. The constraint is violable so that sometimes the prosodic preference gets overridden and we observe focus fronting.

This brief discussion has shown that two left-peripheral movement types in Hungarian and Italian are sensitive to two different 'ingredients' of contrast. Whereas Italian focus fronting is sensitive to alternative types, Hungarian focus movement is not. In both languages, the discourse relation seems to matter: CORR<sub>(ii)</sub> requires leftward movement in Hungarian, and allows it in Italian. The particular motivation for CORR<sub>(ii)</sub> having these effects might be different in the two languages, with Hungarian being sensitive to exhaustiveness, and Italian possibly being sensitive to the particular discourse relation.

## 7 Conclusion

In this chapter I have argued that contrast is a multi-faceted phenomenon, and that it is important to subject these facets to detailed investigation in individual languages. We saw that languages show similarities, e.g. in the probability with which the CORR<sub>(ii)</sub> discourse relation has prosodic or syntactic reflexes. We also saw, however, that languages differ in their sensitivity to discourse relations and/or alternative types. It is also worth pointing out that fine-grained comparisons of alternative types and/or discourse relations often yield rather subtle phonetic differences, and that contrast-related effects in the syntax may be optional, which provides challenges in the modelling of the effects. Overall, I conclude that grammars of individual languages are sensitive to aspects of contrast, and that which aspects these are requires careful specification.

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