

Putting Contrast on the Table

Jacopo Torregrossa

1. Introduction

In this paper I explore the semantic import of contrast as a category of information structure. It has often been noticed that contrast is associated with specific grammatical correlates and has an impact on sentence structure in different languages. However, it is still not clear how the semantic contribution of contrast differs from the one of focus, since both categories have the function of evoking alternatives in discourse. As a consequence, it has been wondered whether in modeling information structure these two notions should be distinguished or reduced to each other. This contribution aims to show that focus and contrast have two different functions. It will be conservative in arguing that both are involved in the process of alternative generation. However, it will be shown that these alternatives are generated in two different sentential domains. In particular, contrast evokes alternatives within the background of the sentence. This hypothesis builds on the structured meaning approach of sentence structure. Moreover, the proposal assumes the discourse model elaborated in Farkas and Bruce (2010), which will allow us to ascribe a uniform semantic representation to assertions and polar questions and to account for pragmatic effects triggered by contrastive interpretations.

The contribution is structured as follows. Section 2 reviews previous literature showing that contrast has specific grammatical correlates in different languages. Section 3 provides empirical evidence drawn from Italian that focus and contrast are two distinct notions in information structure. Section 4 introduces the structured meaning approach to sentence structure and the discourse model elaborated in Farkas and Bruce (2010). Finally, it will be shown how the semantic representation of contrast differs from that of focus.

2. Contrast in information structure

Throughout the literature on information structure, contrast has been considered as an autonomous informational notion, on par with topic and focus (see especially Molnár 2002). In favor of this idea, it has been observed that in several languages the expression of contrast has morphosyntactic and phonological consequences. For example, Vermeulen (2008) provides convincing evidence that in Japanese contrast is marked by the *-wa* particle – thus opposing to the mainstream view that *-wa* serves as a topic marker. The *wa*-marked *in-situ* constituents in (1) and (2) have the function of evoking a set of alternatives, and the speaker does not explicitly say whether the property *P* (holding for the *-wa* marked constituent) applies to these alternatives too.

- (1) John-ga *nanninka-wa* tasuketa
John-NOM some-people-wa helped
'John helped some people'
- (2) John-ga *Mary-wa* tasuketa
John-NOM Mary-wa helped
'John helped Mary'

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By (1) and (2), the speaker induces alternatives to *some people* and *Mary* respectively, and does not indicate whether the property ‘being helped by John’ holds of them. The speaker might not know the corresponding proposition (Hara 2006) or might be just coy and suspenseful (Tomioka 2010). As a result, sentences like (1) and (2) are associated with a sense of incompleteness and uncertainty. Note that it is impossible for the universal quantifier *minna* ‘everyone’ to be *-wa*-marked: it does not induce alternatives, nor does it express uncertainty (see Vermeulen 2008 on this issue).

A similar class of data is provided by Italian. (3B) is associated with the same interpretation as its Japanese counterpart (2). The continuation in parentheses makes explicit both the alternatives (*the others*) and the sense of incompleteness (due to the limited knowledge state of the speaker in this specific case).

(3) [context – A: Did he help his siblings?]

B: Ha aiutato *Veronica*. Non so se ha aiutato anche gli altri
 AUX.3SG helped V. NEG know.1SG if AUX.3SG helped also the other.PL
 ‘He helped Veronica. I don’t know if he helped the others too’

Torregrossa (2012) analyses the prosodic realization of contrastive constituents like *Veronica* in (3) as compared to that of their broad-focus counterparts (i.e., the same constituent occurring in a broad focus sentence answering a question of the type ‘What happened?’). The author argues that contrast is not expressed by means of a specific pitch accent, but correlates with an increased degree of phonetic prominence, which is realized by greater duration and higher pitch range of the stressed syllable in the target constituent. As is the case of the Japanese *-wa* particle, the same prosodic pattern cannot occur in association with the bare universal quantifier *tutti* (everybody). It should be pointed out that, from an interpretive point of view, contrastive constituents like *Veronica* in (3) are different from contrastive foci (CF) and contrastive topics (CT) – which however does not correspond to argue that contrast is not involved in the formal representation of CTs and CFs (see Torregrossa 2014 for a featural account of these two notions in Italian).

The CF in (4B) – in capitals – performs a corrective function with respect to the preceding assertion (4A).

(4) [context – A: Mario ha aiutato i suoi fratelli]

B: VERONICA ha aiutato, non i suoi fratelli.
 Veronica AUX.3SG helped NEG his brother.PL
 ‘He helped Veronica, not his brothers’

From a linguistic point of view, the constituent can be fronted to a dedicated projection in the sentential left periphery (Rizzi 1997 and related work) and is marked by a specific pitch accent (i.e., L+H*, see Bocci 2013), contrary to what has been argued for contrastive constituents.

The difference between contrastive constituents and CTs is more difficult to capture. Italian CTs are expressed by clitic left dislocation (CLLD) – as indicated in (5) –, which is accompanied by a specific tonal event (Bianchi & Frascarelli 2010).

(5) [context – A: Did he help his siblings?]

B: Veronica, l’ ha aiutata. (Non so se ha aiutato anche gli altri)
 V. CL AUX.3SG helped NEG know.1SG if AUX.3SG helped also the other
 ‘He helped Veronica. I don’t know if he helped the others too’

Since (3) and (5) share the same context, it could be claimed that contrastive constituents are *in-situ* CTs. This would be similar to what happens in English, where the B-accent marking CT can appear both *in-situ* and in left-dislocated position (see Büring 2003). However, Torregrossa (2012) shows that not all contrastive constituents can be CLLDed. CLLD is only licensed if the referent of the contrastive constituent is included in a contextually relevant set. For example, CLLD of the contrastive constituent *un professore* (a professor) in (6B) would result in infelicity. The continuation in parentheses has the function of blocking the interpretation that the referent belongs to the set of friends. Similar observations have been made for *in-situ -wa* marked phrases by Vermeulen (2008).

- (6) [context: Will he invite his friends to the party?]
 B: Pensa di invitare *un professore*, ma non so se è un amico.
 think.3SG to invite a professor but NEG know.1SG if be.3SG a friend
 ‘He wants to invite a professor, but I don’t know if he is a real friend’.

Within the typology of the encoding of contrast, the case of Finnish is worth mentioning. Finnish CFs (see (7)) and CTs (see (8)) occupy the same syntactic position in the sentential left periphery (Molnár 2002).

- (7) [context – A: Pekka flew to Stockholm]
 B: REYKJAVIKIIN Pekka lensi.
 ‘To Reykjavik Pekka flew’
 (8) *Tukholmaan* Pekka lensi Finnairilla. *Reykjavikiin* (Pekka lensi) Icelandairilla.
 ‘To Stockholm Pekka flew by Finnair. To Reykjavik (Pekka flew) with Icelandair’.

I also asked three Finnish informants whether they accept the fronting of the constituent in sentences like (6), in which *a professor* is neither a CT nor a CF. All of them consider the sentence felicitous. Although this preliminary data needs to be further investigated, it suggests the existence of a syntactic projection in CP dedicated to the encoding of contrast and unspecified for other interpretations (i.e., CT and CF), as shown by (9), taken from Molnár (2002).

- (9) [ForceP [KontrP [TopP* [FocP [TopP* [FinP[...]]]]]]]

Incidentally, notice that the structure of the Finnish CP differs from the Italian one, where CTs and CFs occupy two different syntactic positions (i.e., TopP and FocP respectively). As already noticed, contrast in Italian is expressed by means of prosody and does not trigger any syntactic effect (see Frascarelli and Hinterhölzl 2007 for a different analysis).

The data reported in this section provides evidence that contrast is associated with different linguistic correlates in different languages, and should thus be considered as an autonomous category of grammar. In the literature this conclusion has already been established and some attempts have been made to define the semantic import of contrast. Vallduví and Vilkuna (1998) argue that ‘(...) if an expression *a* is *kontrastive*, a membership set $M = \{...a...\}$ is generated and becomes available to some sort of quantificational domain’. For example, the contrastive constituent *Veronica* in (3) is construed as belonging to a contextually given set of alternatives, i.e., the set of siblings. According to this definition, the semantics of contrast corresponds exactly to the one that has been proposed for focus within the Alternative Semantics (e.g., Rooth 1985, 1992) and there is no way to keep the two categories separate. This has led some authors to reduce contrast as a pragmatic effect arising from the semantics of focus (see, e.g., Rooth 1992).

In this contribution, I will pursue a different line of investigation. After showing that focus and contrast are distinct notions in information structure (Section 3), I will give them a different formal representation (Section 4). The proposal will be assessed on the basis of Italian data.

3. Separating focus from contrast: a view from Italian

(10) and (11) exemplify two discourse contexts triggering a contrastive interpretation of the sentence constituent in *italics*. In (10B) *Sabrina* is an alternative to *Maria* in the preceding sentence. The speaker asserts that Sabrina has been invited and leaves open the possibility that Maria has been invited too (as asserted by the interlocutor). As expected, the sentence is associated with a sense of uncertainty. The same generalizations apply to the constituent *tedesco* (German) in (11B). In this case the sentence is preceded by a polar question.

- (10) [context – A: I have heard that Carlo invited Maria to the party]
 B: Ha invitato *Sabrina*. È strano che abbia invitato anche Maria.
 AUX.3SG invited Sabrina be.3SG strange that AUX.3SG invited also Maria
 ‘He invited Sabrina. It is strange that he invited Maria as well’.

- (11) [context – A: Does he speak any Romance language?]
 B: Parla *tedesco*. (È probabile che conosca anche qualche lingua romanza).
 speak.3SG German be.3SG possible that know.3SG also some language Romance
 ‘He speaks German. It is possible that he knows some Romance language as well’.

Sentences containing a contrastive constituent are also possible following a *wh*- question, as in (12), where the set of oranges is an alternative to the set of melons.

- (12) [context: at the greengrocer. A: When will they bring the melons?]
 B: I meloni non so, ma porteranno *le arance* domani.
 the melons NEG know.1SG but bring.3PP.FUT the orange.PL tomorrow
 ‘I don’t know about the melons, but they will bring the oranges tomorrow’.

Sentences like (12B) allow us to assess the difference between focus and contrast. Focus is identified with the constituent corresponding to the *–wh* phrase in the preceding question (Jackendoff 1972 as a main reference). *Domani* (tomorrow) corresponds to *when* in (12A) and provides a value for the variable in ‘They will bring the melons at time x’. It is thus the sentence focus. Contrary to contrastive constituents, foci in Italian are marked by a specific tonal event (i.e., H+L*, Bocci 2013). The two constituents (contrast and focus) can also appear in the reverse order, as shown by (13), in which *dopodomani* (the day after tomorrow) is contrastive, while *le arance* (the orange) is focused. Foci are marked by H+L* also in pre-final position.

- (13) [context – at the greengrocer. A: What will they bring tomorrow?]
 B: Domani non so, ma porteranno le arance *dopodomani*.

(14) shows that, if focus is related to a discourse-linked *wh*- constituent, it must be a member of the contextually given set corresponding to the restriction of the *–wh* operator: (14B’) is inappropriate, since *tedesco* (German) does not belong to the set of Romance languages. The comparison between (11) and (14) shows that contrastive constituents behave differently: they are not necessarily members of the contextually given set (which is given in the preceding polar question in the case of (11)).

- (14) [context – Which Romance language does he speak?]
 B: Parla spagnolo (He speaks Spanish)
 B’: ?? Parla tedesco (He speaks German)

It has been noticed that Italian does not allow for multiple *–wh* phrases in a sentence (see (15) and Calabrese 1984 on this issue) Therefore, there can only be one focus per sentence. On the contrary, multiple contrastive interpretations can occur in a clause, as witnessed by (16). That neither *l’orologio* (the clock) nor *ai suoi fratelli* (to his brothers) is a focus is confirmed by the possibility of clitic left dislocating both (see (16B’)). CLLD is incompatible with a focus interpretation.

- (15) A chi hai dato che cosa?
 To whom AUX.2SG given what
 ‘To whom did you give what?’
- (16) [context – A: Did the grandpa leave the chessboard to his cousins?]
 B: La scacchiera ai suoi cugini non so...
 the chessboard to the his cousin.PL NEG know.1SG
 ...ma ha lasciato *l’orologio ai suoi fratelli*.
 but AUX.3SG left the clock to the his brother.PL
 B’: ma *l’orologio ai suoi fratelli* gliel’ ha lasciato.
 but the clock to the his brother.PL CL(DAT+ACC) AUX.3SG left

All this data shows that focus and contrast are two different phenomena in information structure and one cannot be reduced to the other. Therefore, it seems reasonable to elaborate a model in which the semantic representations of focus and contrast are kept distinct. In line with previous literature, I will claim that both focus and contrast have the function of generating alternatives in discourse.

However, the operation of alternative generation occurs in two different domains, i.e., background and focus respectively. The proposal will be framed within the discourse model introduced in Farkas and Bruce (2010).

4. The proposal: focus and contrast on the Table

I follow Farkas and Bruce (2010) – F&B, henceforth – in arguing that discourse is structured in different components. The authors assume the Stalnakerian view of common ground (*cg*), according to which discourse unfolds against a set of propositions (already) accepted by the discourse participants, whose intersection is the context set (*cs*). If an assertion by speaker A is accepted by speaker B, the corresponding proposition is added to the *cg*. The resulting *cs* stems from the intersection between the current *cs* and the set of worlds in which the proposition is true. Therefore, the *cs* gets narrowed down as the discourse proceeds.

F&B integrate this model, introducing two other main components of discourse structure: the Table and the Projected Set. The Table is represented as a stack registering what is ‘at issue’ in a given conversation, i.e., the question under discussion. An (initiating) utterance (be it an assertion or a question) has the effect of placing an issue at the top of the Table and the immediate goal of the conversation is to empty it, i.e., to resolve the issue at stake. The Projected Set indicates the ‘default’ way of resolving the issue on the Table. For example, assertions project confirmation, namely a future *cg* including the asserted proposition, while questions project resolution, namely a set of *cgs* generated by adding to the actual *cg* each contextually possible answer to the question. Furthermore, conversational participants are associated with Discourse Commitment Sets (DCS), consisting of the propositions which the speaker has publicly committed to and are not (or not yet) included in the *cg*.

The elaboration of this discourse model has several advantages. First, it emphasizes the proposal nature of assertions. An assertion on the Table is not necessarily accepted by all discourse participants, but nevertheless may have an effect on the upcoming discourse. For example, by asserting *p*, speaker A commits to its truth (*p* belongs to her DCS) and raises the issue of whether *p* (i.e., *p* is placed on top of the Table). The speaker’s public commitments in the next discourse have to be consistent with *p*. Furthermore, the model accounts for the markedness of certain conversational moves. For example, moves that react to an assertion without confirming it or to a question without answering it are analyzed as marked. F&B consider denials as examples of marked moves. Sentences containing contrastive constituents broaden the inventory of conversationally marked moves. In (10), the sentence introduced by speaker A is not confirmed. Likewise, the polar question and the constituent question in (11) and (12) respectively are not answered. In all these cases, the issue on the Table is not resolved. This accounts for the sense of incompleteness and uncertainty triggered by this type of contexts, as claimed in Section 2.

In the next section I will show how contrast is represented in F&B’s discourse model, analyzing each context that precedes a sentence with a contrastive constituent (i.e., assertions, polar questions, constituent questions). In order to fully understand the proposal, a last remark is in order.

I propose that sentences are added to the Table as structured meanings. For example, questions can be represented as ordered pairs in which the first element is the background and the second the restriction, namely the set of values that are possible answers to the question (Krifka 2001, Neeleman and Vermeulen 2012 for a more recent proposal), as shown in (17) and (18), corresponding to (11) and (12) respectively.

(17) [Does he speak any Romance language?]

< λf [f (speak (he, RL)), $\{\lambda p[p], \lambda p[\sim p]\}$]>

(17') $ps_1 = \{s_1 \cup \{\lambda f$ [f (speak (he, RL)), $\lambda p[p]\}$, $s_1 \cup \{\lambda f$ [f (speak (he, RL)), $\lambda p[\sim p]\}\}$

(18) [When will they bring the melons?]

< λx [bring (they, melons, at x)], TIME INTERVALS>

(18') $ps_1 = \{s_1 \cup \{\lambda x$ [bring (they,m,at x)], tomorrow}, $s_1 \cup \{\lambda x$ [bring (they,m,at x)], day after tomorrow}\dots\}

This proposal accounts for the correspondence between the question on the Table and the associated Projected Set. As shown by (17') and (18'), the Projected Set (ps_1) is a set of *cgs* and is generated by adding to the actual *cg* (s_1) all the propositions that arise from the application of the

function (corresponding to the background) to each member of the restriction. These propositions are structured into a background and a focus (see Section 2) and represent all the congruent answers to the preceding question, according to the criterion in (19) – taken from Krifka (2001).

- (19) Criterion for congruent question-answer pair $Q - A$,
 where $[Q] = \langle B(\text{ackground}), R(\text{estriction}) \rangle$ and $[A] = \langle B'(\text{ackground}), F(\text{ocus}) \rangle$:
 $B=B'$ and $F \in R$.

As for assertions, F&B represent them as questions ‘in disguise’ (due to their proposal nature). Contrary to polar questions, assertions project only the positive answer. In the representation (20) – see also (10) – the background corresponds to the asserted proposition and the restriction is the singleton formed by the identity function.

- (20) [Charles invited Mary to the party]
 $\langle \lambda f [f(\text{invite}(c,m,\text{party}))], \{\lambda p[p]\} \rangle$
 (20') $ps_1 = \{s_1 \cup \{\lambda f [f(\text{invite}(c,m,\text{party}))], \lambda p[p]\}\}$

This brings me to the final proposal. In Section 2, I showed that contrast has the function of generating alternatives. This is exactly the same function that has been associated with focused constituents, which weakens the argument that focus and contrast are two independent categories of information structure. Let us consider again the exchange in (12), repeated here as (21).

- (21) [context: at the greengrocer. A: When will they bring the melons?]
 B: I don't know about the melons, but they will bring *the oranges* tomorrow.

The constituent *the orange* in (21B) is an alternative to *the melons* in (21A). (22) – modulo the formalization in (18) – shows that the process of alternative generation applies within the background of the question, which is the sentence on top of the Table within the current discourse model.

- (22) $\{\lambda x [\text{bring}(\text{they}, y, \text{at } x)] \mid y = \text{ALT}_{\text{Table}}(\text{the melons})\}$

Therefore, focus and contrast have both the function of evoking alternatives in discourse. However, they operate within two different sentential domains. In particular, contrast generates alternatives within the background of the at-issue sentence. The same reasoning applies to the other two types of contexts preceding sentences with contrastive constituents (i.e., assertions and polar questions). I consider the case of assertions here. Let us assume that (23) is uttered after (20).

- (23) He invited *Sabrina*. It is strange that he invited Maria too.
 (23') $\{\lambda f [f(\text{invite}(c,y,\text{party}))] \mid y = \text{ALT}_{\text{Table}}(\text{Maria})\}$

(23) is derived by alternative generation within the background of (20), as represented in (23'). In the discourse model corresponding to the exchange (20) and (23), (20) sits on the top of the Table and projects confirmation. (23) arises from alternative generation within the background of (20) and projects in turn confirmation. Since none of the issues on the Table is resolved, the discourse model will consist of both sentences on the top of the Table and the Projected Set (ps_1) indicated under (24).

- (24) $ps_1 = \{s_1 \cup \{\lambda f [f(\text{invite}(\text{he}, \text{sabrina}))], \lambda p[p]\}, s_1 \cup \{\lambda f [f(\text{invite}(\text{he}, \text{Maria}))], \lambda p[p]\}\}$

This analysis accounts for the discourse effects triggered by contrastive interpretations (e.g., the abovementioned sense of incompleteness or uncertainty).

5. Conclusions

On the basis of the discourse model elaborated in Farkas and Bruce (2010) and of the structured meaning approach to sentence structure, I proposed a uniform semantic representation of assertions, polar questions and constituent questions as background-restriction pairs. Contrast has the function of

generating alternatives within the sentence background. The semantic contribution of contrast has been kept distinct from the one of focus and, as a result, contrast emerges as an autonomous notion in information structure.

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