Degrees of Contrast and the Topic-Focus Articulation

Eva Hajičová and Petr Sgall, Prague
{hajicova,sgall}@ufal.mff.cuni.cz

Abstract.

The aim of the present contribution is to present several hypotheses that may help to characterize and identify contrast as such and degrees of its intensity, and to point out how the phenomena connected with contrast can be handled in a descriptive framework that uses a dependency based syntax and includes a description of the topic-focus articulation (TFA) as one of the aspects of the underlying sentence structure. We also illustrate how the chosen descriptive framework is tested in a syntactic annotation of a large corpus. First we examine the chosen description of TFA (Section 1), then the means of expression of contrast are discussed (Section 2), as well as issues of contrast in focus (Section 3), and especially in topic (Section 4).

1   Topic-focus articulation

1.1   Topic, focus, and contextual boundness in a linguistic description

In the theoretical framework of the Praguian Functional Generative Description (FGD, see Sgall et al. 1986, Hajičová et al. 1998), the semantic basis of the articulation of the sentence into **T**(opic) and **F**(ocus) is understood as the relation of **aboutness**: a prototypical declarative sentence asserts that its F holds (or, with negation, does not hold) about its T. Thus, the core of the semantico-pragmatic interpretation of a declarative sentence might be based on a formula such as F(T) or, for a negative sentence, as non-F(T), if for the aim of the present discussion issues such as those of intension, lambda calculus and type theory are put aside. Within both T and F, an opposition of **contextually bound (CB)** and **non-bound (NB)** nodes is distinguished, which is understood as a grammatically patterned opposition, rather than in the literal sense of the term. In the underlying left-to-right order, NB dependents follow and CB dependents precede their heads.

In unmarked cases, the main verb (V) and those of its direct dependents that on the surface follow it belong to F, and the items preceding V are parts of T. In marked (non-prototypical) cases, V can be CB, i.e. in T, or (a part of) F may precede V; usually the intonation centre

(sentence stress) then marks F, occupying a marked position. The dependents of nouns primarily are NB.

Let us illustrate this view by a typical example (we understand the intonation center, in the prototypical case expressed by a falling pitch, to be placed at the end of the sentence; in other, marked positions it is denoted by capitals (which we use also in some other cases, to avoid a possible misunderstanding); let us recall that, in our underlying representations, the counterparts of function words are just indices of node labels, not occupying independent syntactic positions:

(1) My.t brother.t was visiting.t/f one.f of his.t friends.f yesterday.t.

       focus: (*was visiting*) *one of his friends* (intonation center on *friends*)

Here and in the sequel, t denotes a CB item, f denotes a NB one, and c is used to denote a contrastive CB item.

The verb in (1) is ambiguous in that it is NB (and thus a part of F) on one reading and CB (a part of T) on another; while the former is an appropriate "full" answer to (2), the latter answers (3).

(2) What was your brother DOING yesterday?

(3) Whom was your brother VISITING yesterday?

This view, the motivation of which has been published several times, makes it possible to analyze similar sentences (with an ambiguous part that may contain other words, not only verbs) with a **single opposition** of T and F. Thus the discrepancy between the single relationship of aboutness and two dichotomies assumed to constitute the information structure (e.g. by Junghanns and Zybatow 1997, ex. (2), p. 290) can be avoided and the T-F articulation (TFA) of the sentence can be assigned a specific position within the system of language (de Saussure's *langue*, Chomsky's *linguistic competence*), namely that of one of the basic aspects of the underlying, **tectogrammatical** representations of sentences (TRs). No separate level of information structure is needed.

The TRs contain no nonterminal symbols; each of their nodes is labelled by a complex symbol composed of a **lexical** and a **morphological** part (values of morphological categories such as number, tense, modalities), and each edge is labelled by the symbol indicating a **syntactic** relation (i.e. the type of the dependency relation).

1.2   TFA and contrast in a large corpus

The approach of FGD makes it possible to capture TFA and contrast in sentences of most different degrees of complexity. The chosen descriptive framework, FGD, is being checked with examples taken from the **syntactically annotated Prague Dependency Treebank** (PDT), in which sentences from running text, from the Czech National Corpus (CNC, which contains hundreds of millions of word occurrences in journalistic fiction and other texts) are analyzed by a semi-automatic procedure.

In the PDT scenario, three layers of annotation are present, with TFA and contrast being represented (together with underlying dependency relations) on the underlying syntactic level. The resulting sentence representations have the form of tectogrammatical tree structures (TGTSs), with the following characteristic properties:

(a) only autosemantic words are represented as separate nodes, with the exception of the coordinating conjunctions (in this point, TGTSs differ from the theoretically based TRs),

(b) nodes deleted on the surface are restored,

(c) the condition of projectivity is met (i.e. no discontinuity of sentence parts is allowed),

(d) tectogrammatical functions ('functors'), i.e. kinds of the dependency relation such as (i) arguments: Actor/Bearer, Patient, Addressee, Origin, Effect and (ii) different kinds of adjuncts (temporal, local, condition, manner, etc.) are assigned as labels of the edges of the tree (or, equivalently, as indices in the labels of the dependents),

(e) basic features of TFA are introduced (f, t, c, see Sect. 1.1 above).

Let us note that in the present experimental phase 2000 sentences have been annotated in what concerns their underlying syntactic structure itself ('**large** collection'), with only 200 sentences having been annotated in full detail (the so-called '**model** collection'), and the annotations of 2000 sentences contain a treatment of TFA.

In the sequel, after a more general discussion of the phenomena of contrast, the checking of our descriptive framework on the material from PDT is illustrated by the Czech examples (30), (31), (33) and (34).

2   The means of expression of contrast

Several typical means of expression of contrast can be distinguished:

(i) E.g. in Czech, **strong pronominal forms** are used with certain pronouns; the typical cases of oppostion of weak and strong forms are:

Czech *ho – jeho* 'him-Gen,Acc'*, mu – jemu* 'him-Dat'*,*

tě – tebe 'you-Gen,Acc' *, ti – tobě* 'you-Dat',

se – sebe 'Refl.Gen,Acc'*, si – sobě* 'Refl.Dat'.

The strong forms are used to express NB pronominal forms, or CB contrastive forms as *ona* and *jeho* in (4)(a), respectively; they are also used in prepositional case forms and in coordination, cf. *tebe* in (5) and *tobě* in (6).

(4)(a) (Petr ji nazval konzervativcem.) Potom.t jeho.c urazila.t ona.f.

(Petr called her a conservative). Then   him   insulted she.

Then he was insulted by HER.

(b) (Petr ji nazval konzervativcem.) Potom.t ho.t opustila.f.

(Petr called her a conservative.) The she LEFT him.

(5) Na tebe jsem   se   celý   týden těšil.

for you I-have-been Refl (the) whole week looking-forward

I have been looking FORWARD to you for the whole week.

(6) Tobě   nebo Martinovi to pošlu   zítra.   .

to-you   or   to-Martin it I-will-send tomorrow

I will send it to you or to Martin tomorrow.

The corresponding weak ("short") forms are used only as CB, without contrast, cf. *ho* in (4)(b); it should be noted that Czech, a pro-drop language, has a zero form in the Nominative of all the personal pronouns, which occurs as their weak form (this is the case of the

counterpart of *she* in (4)(b) or of *I* in (5)and (6)), although the „strong" forms *já, ty, on, my*, etc., may also occur without contrastive function, esp. in colloquial speech.

In German, English and many other languages (and also in Czech with pronominal forms such as *je* 'them.Acc', *ji* 'her.Acc'), only an opposition of accented and unaccented forms is present as expressing that of contrastive (and NB) vs. non-contrastive use.

Following up Koktová's (1999) observation that weak forms of pronouns in Czech cannot be used in certain positions in T, we use the opposition of strong and weak personal pronouns as an **operational test** for the contrastive use in T. Thus, *jeho* in (4)(a) is contrasted with *she*; there is no such contrast in (b). However, the application of this test is limited, since not only in coordination or with a preposition, but also when used as NB, in **focus**, the pronominal form is similar to that expressing a contrastive (part of) topic (marked with c), as is the case of *ona* in (4)(a), and also of *jeho* in (7)(b):

(7)(a) Jeho.c jsme viděli včera.f. – Him we saw yesterday.

   (b) Včera.c jsme viděli jeho.f – Yesterday we saw HIM.

(ii) Rising stress (or, perhaps, falling-rising), having the form of L*H, falls – perhaps optionally – on a contrastive (part of) topic in examples such as *jeho* in (7)(a) or *včera* in (7)(b); cf. also *jeho* in (4)(a). In the sequel we indicate such a "phrasal" or contrastive stress by italics. It would be interesting to check to what extent such examples can be characterized as bearing a **hat contour**, and under which conditions can the hat contour be taken as a criterion for contrastive T.

Steube (2001) examines similar examples in relation to the concept of I-topic, cf. also Jacobs (1997). Specific pragmatic properties accompany such accentuation at least in German (bound with specific illocutionary types and scope effects). If observations of this kind are valid for other languages as well, this would be significant for a further analysis of relationships between TFA, contrast, illocution and scopes of operators (now cf. also Umbach (2001). It would be important to check also examples such as the following, known from preceding dicussions:

(8) An *American*.c farmer met a CANADIAN.f farmer.

However, it has to be noticed that such (or a similar) rising stress (marked by italics) is

used also for an **open continuation** in various cases:

(a) This stress can occur in the middle of a longer sentence (without contrast, marking the ends of certain segments):

(9) Naši mladší   kolegové,   kteří nedávno *dostudovali*,   dokončují   své
      disertace.

   Our   younger colleagues, who recently finished-studies, are-completing their
   dissertations.

   Perhaps this is the case also in coordinated clauses, e.g. in some languages, cf. the Slovak ex. dented here as (10) (presented by Adamíková and Fehrmann 2001 without distinguishing the two kinds of accentuation, the presence of which we would assume):

(10) Robert nie je HLÚpy, ale LEnivý. – Robert is not stupid, but lazy.

    Slovak is far from isolated in such issues. Not only the situation in Czech is similar, but, e.g., also the English equivalent sentence probably can be pronounced as given in (11):

(11) Robert is not *stupid*, but LAZY.

   It would be difficult to speak of hat acccentuation in such examples. Rather, we would understand them as cases in which the two kinds of accent express the focus (an NB item), since it is often supposed (appropriately, as we are convinced) that each of the coordinated clauses in a compound sentence has its own TFA. The NB value of the rising stress in a non-final clause under coordination might then be understood as beig marked, non-prototypical.

   (b) Rising stress also occurs at the **end** of the sentence, similarly as with a *yes/no* question:

(12) Here are my *documents*... (... is there everything you are looking for in them?)

   We differ from M. Steedman (2000), who has analyzed such sentences, in understanding this kind of stress (often indicated by „...“ and having something in common with the intonation prototypically marked by a semicolon) as expressing **focus**, although a marked means of expression is used in such cases.

3   Contrast in focus

Focus as such has been characterized as a choice from **a set of alternatives**, esp. by M. Rooth (1985). This can only be understood so that F as such has a contrastive value. It might be claimed that if a sentence contains a single contrastive item, then this item constitutes the F. Only if more than one contrastive items are present, they get distributed among T and F. Thus, while a single contrast may be seen in sentences such as (13), both *Mike* and *Mary* are contrastive in (14).

(13) Mike met Mary.

(14) (Jim and Mike were looking for their classmates.)   *Mike* met MARY. (*Jim* found ROBIN.)

This would mean that every F is contrastive. However, esp. in German studies, linguists often distinguish between contrastive and non-contrastive focus; perhaps it would be more exact to speak about two degrees of contrast, which are distinguished by the structure of German, as the following observations indicate:

Sentences such as (15) are appropriate only for contexts which can be characterized by questions similar to (17), rather than by (18), i.e. in (15) *das Buch* is contrastive. On the other hand, (16) is acceptable both after (19) and (20), i.e. in (16) *Schüler* is either contrastive or not; cf. e.g. (in the framework of Optimality Theory) Hye-Won Choi (1996), discussed in Hajičová (2000).

(15) Hans hat das BUCH dem Schüler gegeben .

(16) Hans hat dem SCHÜLER das Buch gegeben .

(17) Hat Hans dem Schüler das Buch oder das Bild gegeben?

(18) Was hat Hans dem Schüler gegeben?

(19) Hat Hans das Buch dem Schüler oder dem Lehrer gegeben?

(20) Wem hat Hans das Buch gegeben?

It seems that in Czech it is well possible to use (15) as well as (16) as an answer to (17); this would mean that in Czech contrastive (part of) F does not constitute a specific

grammatical value. It would than be interesting to investigate what the situation in English and in other languages is.

4   Contrast in topic (on a CB item)

Hajičová et al. (1998, 151) introduce the notion of **contrastive (part of) T** in connection with the occurrences of the so-called focussing particles in T, cf. (21):

(21) (Who criticized even MOTHER TERESA as a tool of the capitalists?) JOHN criticized even Mother Theresa as a tool of the capitalists.

To see how our criterion with the use of strong pronominal forms works, cf. a parallel Czech sentence with a corresponding noun of the masculine gender, (22). Note that the wording with the weak pronominal form is excluded: **I ho kritizoval Martin*.

(22) (Kdo kritizoval i PAPEŽE jako nástroj kapitalismu?) I *jeho* kritizoval MARTIN.

(Who criticized even the POPE as a tool of the capitalists?) MARTIN criticized even *him*.

The notion of contrastive T, however, should not be restricted to cases with focalizers, as we have seen with (4)(a), and as (23) confirms (with (23') as its simplified underlying representation).

(23) (Mluví se česky v Česku nebo na Slovensku?) *Česky* se mluví v ČESKU, *na Slovensku* se mluví SLOVENSKY. (Is Czech spoken in Czechia or in Slovakia?) Czech is spoken in Czechia, (while) in Slovakia, SLOVAK is spoken.

(23') Česky.*t* se-mluví.*t* v-Česku.*f*, na-Slovensku.*c* se-mluví.*t* slovensky.*f*.

Let us note that (23) is a compound sentence, in which each of the coordinated clauses exhibits its own TFA; *Česky*, as a part of the topic of the first conjunct, is contrasted as being chosen from the set of the two languages, and, in the second conjunct, *na-Slovensku* is contrasted with the focus part of the first conjunct.

It is possible to find two contrastive parts in T of a sentence:

(24) (Rodiče odjeli na dovolenou a děti svěřili příbuzným.) *Syna*.c ve *čtvrtek*.c zavezli.f DO PARDUBIC.f, a *dceru*.c *v sobotu*.c DO HRADCE.f

Lit.: (The parents left for a leave and entrusted their children to their relatives.) Their *son* on *Thursday* they-brought to P. and their *daughter* on *Saturday* to H.

(25) (Včerejší utkání bylo dramatické.) Po *gólu*.c SIEGLA.f se *Sparta*.c už.f ve třetí.f minutě.f

dostala.f hladce.f DO VEDENÍ.f.

Lit.: (Yesterday's match was dramatic.) After *goal* SIEGL'S *Sparta* already in third minute got smoothly to LEAD.

If the **degrees** of intensity of contrast are examined, it is possible to see that different dimensions are to be distinguished:

A. The **narrower** F is, the stronger the contrast:

The highest degree of contrast can be seen in the cases of **correction**, cf. Steube (in press). It may be asked whether correction differs from "second instance," as discussed for a long time especially in Czech linguistics. Another question is whether there are sentences occurring only as corrections; as was discussed already in Sgall et al. (1973, 36f), this may concern sentences with stressed items that cannot bear regular stress. However, at least in Czech, two degrees have to be distinguished:

(i) endings or affixes can only bear stress in corrections:

(26) He carried out the analySES (not just one analysis).

(27) Er sagt er hätte die Nachricht ERfasst, nicht VERfasst.

(ii) function words may bear stress not only in corrections, but also as constituting a narrow focus; thus, in (29), the tense value is in F, everything else belongs to T:

(28) Er WIRD das tun.

Such an extremely **narrow F** can be seen as bearing a strong contrast.

B. The **set of alternatives** underlying the contrast in T is conditioned by most different factors, both cotextual and contextual (situational). A scale (or a partial ordering) concerning the **explicitness** of the set of alternatives underlying the contrast, which appears to be weaker in case the set is not delimited explicitly.

The set of alternatives is **explicitly** enumerated:

(29) (Jakým jazykem se mluví v Rakousku a jakým na Moravě?) *V Rakousku*.c se mluví.t NĚMECKY.f, *na Moravě*.c se mluví.t ČESKY.f.

(Which language is spoken in Austria and which in Moravia?) *In Austria*, GERMAN is spoken, *in Moravia*, CZECH is spoken.

The following relevant examples have been found in a set of sentence sequences from running texts in the Prague Dependency Treebank (PDT, see Sect. 1.2 above), examined by K. Veselá:

(30) (Včera se hrál zápas mezi Brnem a Ostravou.) Ze začátku.b se dařilo.f DOMÁCÍM.f. *Hosté*.c se začali.f prosazovat.f až.f ve DRUHÉM.f POLOČASE.f. – (Yesterday, the match between B. and O. took place.) At the beginning, the LOCAL TEAM was successful. The *guests* started to succeed only in the SECOND HALF.

In (30), the set of alternatives is clearly delimited. However, the contrast is felt even stronger in case the sentences (clauses) are structured as parallel:

(31) *Domácím*.c se dařilo.f ZE ZAČÁTKU.f. *Hostům*.c se povedl.f až.f DRUHÝ.f. POLOČAS.f. – *The local team* was successful AT THE BEGINNING. The *guests* succeeded only in the SECOND HALF.

In other cases, the alternatives are not quite clearly delimited, being determined just by the **set** being referred to:

(32) (Terry has many friends.) My.t *brother*.c is.f one.f of his.t closest.f SCHOOLMATES.f.

There is also a possibility for the alternatives to stay **implicit**, just inferred from context. This can be illustrated by two subsequent sentences from PDT (from a newspaper article describing the feelings of the journalists when they saw and tested a new type of Toyota car, which was supposed to be suitable both for drive on roads and in terrain):

(33) Už.f   první.c pohled.t na atypickou.f karosérii.f potvrzuje.f, že   se   jim.t jejich.t
  Lit. Already first   glance   at atypical   body   confirms   that Refl. them their
      záměr.t   podařilo.f naplnit.f.
      intention managed to-accomplish

Already the first glance at the atypical body confirms that they managed to accomplish their intention.

(34) Pro pohon.c byl zvolen.f dvoulitrový.f motor.f osvědčený.f v   Toyotě.f. Cari.f. E.f ...
  Lit. For drive   was chosen two-liter   engine well-tried   with Toyota Cari E …
      As for the drive, a two-liter engine was chosen well-tried with Toyota Cari E …

In (33), *první* 'first' is chosen among different possible steps of observation (more or less thorough); in (34), *pohon* 'drive' is chosen among the attributes of the car.

C. A third dimension concerns the **range** of the set: it may be a (i) **pair** – cf. (4), (23), (29), (30), (31) above, – which is connected with a relatively strong strong contrast, or (ii) **larger** – cf. (32) above, – with a weaker contrast, or (iii) it has a **single** member, as is the case in the following cases:

(a) the contrastive item is coreferential with an item of the F of the preceding utterance, rather than with one of its T, i.e. a "new T" is present; it seems that the opposition between "new" and "old" T (i.e. between a (part of the) T that has not occurred in the T in the preceding co-text and a (part of the) T that has, respectively, comes close to the opposition of T proper and temporal or local setting):

(35) (Kde se mluví česky?) Česky.c se mluví.t v Česku.f.

    (Where is Czech spoken?) Czech is spoken in Czechia.

(b) cases with a focussing particle in T, as in (21) above,

(c) the contrast is being newly established, as in (36), in which *já* 'I' is presented as being in contrast to other individuals.

(36) Přiznám.f se, že já.c osobně.f to.t dost.f prožívám.f.

  Lit.:   I-admit that I   personally it   quite live-through.

   I admit that I personally live this through quite intensively.

    To be more exact, we should note that in example (36) the contrastive item is not in T, but, rather, it is a **CB item in F**. Typically, CB items stand in T while NB ones are in F; however, elements deeply embedded (i.e. dependent on an item that differs from the main verb) may occur as NB (contrastive or not) items within T, or as CB items in F of the whole sentence. In (36), the subject of the main clause, having a zero form, is CB and constitutes the T (the values of its grammatemes are expressed, on the morphemic level, by the agreeing personal ending of the verb). The verb together with the embedded clause constitute the F. The subject of this clause, expressed by the pronoun in its strong form, is a contrastive CB item, and together with the CB pronoun *to* 'it' it belongs to the F, since both the pronouns depend on an item in Focus different from the main verb (namely on the embedded verb).

    If the patterning of a discourse is eaxmined taking into account the TFA of the subsequent sentences, then the **prototypical** case may be found in those sequences of two sentences S_0

and S_1 in which the T of S_1 is referentially identical to T of S_0, and the F of S_1 is chosen among the altenatives of what can be asserted about T; cf. Weil's (1844) *la marche parallèle,* and Daneš's (1974) first alternative of 'thematic progression', $T_2 = T_1$.

In **marked** cases, there are the folowing possibilities for the choice of T_1 :

(a) associative relations with accommodation are present, rather than the referential identity of T_0 and T_1,

(b) T_2 is coreferential with F1, rather than to T1 (Weil's *progression,* Daneš's **$T_2 = F_1$,**

(c) T_1 is chosen from another part of the set of established items than from those referred to in S_0 or from those associated with these referents.

While case (a) is directly related to the protoypical situation, in cases (b) and (c) T_1 is **chosen** from a set of alternatives, i.e. a may be seen as a contrastive item. Since T may include more than one item, it is more precise to speak of **CB items.**

Thus, often also (a part of the) topic can be considered as a choice from a set of alternatives (cf. Steedman's 2002 'theme alternative set', with 'theme' marked by the L+H* pitch accent, cf. R. Jackendoff's 'B contour'). It should be noted that in a compound sentence the focus stress (intonation centre) in the non-final coordinated clause(s) primarily is rising, rather than falling. A similar kind of pitch probably can be observed in the middle of longer sentences of other types, without expressing focus or even contrast, see Sect. 1.2.(ii) above.

Other interesting examples, known from older discussions without such an interpretation, were analyzed as containing a contrastive (part of) T by Hajičová et al. (1998, 155-157):

(37) Farmers.t that.t grow.c rice.t often.t only.f eat.f rice.c.

Here the focusing particle *only* is connected with the CB occurrence of *rice* at the end of the sentence, and a hat contour (rising pitch on *grow*) is present.

(38) (Niemand liest Goethes Gedichte heute.) Sogar.f Peter.f kennt.t nur.f einen Roman.c von Goethe.t.

5   Conclusion

The view presented and illustrated in the present paper makes it possible to analyze the information structure of sentences with the use of a **single opposition** of T and F, if also the difference between contextually bound and non-bound items is observed, as well as that

between contrastive and non-contrastive items in T. Thus the discrepancy between the single relationship of **aboutness** and two dichotomies often assumed to constitute the information structure can be avoided and the T-F articulation of the sentence can be assigned a specific position within the system of language, namely that of one of the basic aspects of the underlying, **tectogrammatical** representations of sentences. No separate level of information structure is needed.

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