

CONTOUR TEMPLATES IN SYNTAX?
A NOTE ON THE SPREADING OF (IN-)DEFINITENESS
Henk van Riemsdijk
Tilburg University

In: Takeru Honma, Masao Okazaki,
Toshiyuki Tabata and Shin-ichi Tanaka
(eds.) *A New Century of Phonology and
Phonological Theory: A Festschrift for
Professor Shosuke Haraguchi on the
Occasion of his Sixtieth Birthday*. Tokyo:
Kaitakusha. 2003

1. Why syntax is not that different from phonology

Phonology is different from syntax. That much is clear. The position of the *auctores intellectuales* of the (generative versions of the) two subfields, Morris Halle and Noam Chomsky, has been clear enough, see for example Bromberger and Halle (1989) and Chomsky (1982). The real question, of course, is in what respects and to what extent they differ. In Halle's view, rule ordering is one of the crucial differences in that rule ordering is taken to be a central property of phonology, while there is general agreement that there is no such things as syntactic rules and hence *a fortiori* no rule ordering. For Chomsky, on the other hand, it is the absence of non-local phenomena in phonology that leads him to the same conclusion: "I don't really think you have non-local phenomena in phonology in the sense in which you do in syntax" (Chomsky, 1982:98). But on the other hand, phonology does have a variety of harmonic processes: vowel harmony, tone spread, nasal spread, etc. and syntax is full of truly local phenomena. And in both fields some of the major efforts have been directed towards the reduction of apparently non-local phenomena to local principles. By now the degrees of specialization of the two subdomains of grammar is such that most practitioners regard themselves as insufficiently competent in the other field to entertain any firm opinions on these matters.

Perhaps the above way of raising the question about the relationship between phonology and syntax is not overly helpful in this regard. After all, it might well be the case that phonology and syntax share some formal properties but not others. For example we might say that part of syntax is determined by phonology as a consequence of the PF-syntax interface, while other properties of syntax are determined by the LF-syntax interface. But in actual practice such issues have simply not been very prominent in the phonological and syntactic literature. On the contrary, at least in syntax, there is a tendency to shift badly behaved or otherwise atypical and inconvenient phenomena into the phonology. Chomsky (2000), (2001) has recently put forward suggestions to this effect for head movement and extraposition respectively.¹ As far as I am aware, the opposite – taking harmony out of the phonology and putting it in the syntax – has not been proposed by any phonologist, but who knows!

What I take to be a more sensible attitude to adopt when faced with this question is to ask whether there are any deep, abstract, formal properties of representations or of operations on representations that might hold both in syntax and in phonology. Investigation of such issues has, unfortunately, remained very limited, undoubtedly due, at least in part, to the factors described above. I remain convinced, however, that the representations and principles of syntax are not optimal in certain ways and that they could benefit if ideas from phonology are taken into account.

My plan in the remainder of this paper is to first present a very succinct overview of a number of proposals to introduce phonological formalisms or principles into syntax and then to examine in more detail a specific syntactic

¹ The intuition or suspicion as such is much older, however. The possibility that extraposition is part of the PF-component is raised, for example, in (Chomsky, 1986:40f). And I remember rather frustrating conversations with Chomsky in 1974 when my attempts to get him interested in verb clustering processes in Dutch were dismissed as being outside the realm of syntax.

The other topic I worked on then was Left Dislocation. I will never forget a long discussion with Shosuke Haraguchi, who was then a student at MIT, about whether or not Left Dislocation existed in Japanese. The next day Sho showed up with 90 typewritten pages on Left Dislocation in Japanese. I have been greatly impressed by him ever since.

problem, that of scrambling in Germanic OV-languages, that may become more tractable if we look at it from an autosegmental point of view.

2. Templates in Syntax

My first more or less serious attempt to interpret syntactic phenomena in terms of phonological principles was a study on the extreme form of scrambling found in some languages such as Warlpiri Van Riemsdijk (1982). More specifically, I argued that what standard syntactic theories regard as the very backbone of syntactic structure, the syntactic phrase, structured according to the principles of X-bar-theory, should profitably be reinterpreted, in these languages, as the derivational result of the projection of (case-)features onto separate tiers.² This approach yielded a solution to the otherwise difficult to understand problem of how scrambled orders could be derived from strict X-bar structures without violating the usual constraints on movement. Furthermore, it turned out that the assembling of phrasal coherence from scrambled orders actually obeyed certain locality constraints that seemed more reminiscent of the way phonological strings were thought to be structured some twenty years ago. If, in a string of words, there were three items bearing dative case, for example, it turned out to be impossible to assign the first and the third to some phrase but the middle one to another phrase.

In Van Riemsdijk (1988), some of these ideas were pursued further in a discussion about the range of possible complements that syntactic heads can select (or subcategorize for). The idea, among other things, was that the core case of the so-called Case Filter, the fact that nouns do not take noun phrases as their complement, had a natural counterpart in the verbal domain. In fact, Dutch syntax documents quite clearly that verbal projections cannot be (too) close to a governing verb and survive intact. If such a situation ([$V^{\max} - V^0$]) arises nevertheless, one of two things must happen. Either the verbal projection must be removed, which it can be by means of extraposition, or the verbal complement loses its independence by having its verbal head adjoined to or reanalyzed with the governing V, a process called Verb Raising in the Dutch syntactic tradition. Behavior of this type, where proximity of likes must be resolved by fusion, seemed very much like a reflex of the Obligatory Contour Principle (OCP) in Syntax.

Extending this type of approach to adjectival and prepositional structures, I concluded that the positive values of the two 'classical' categorial features ([$\pm N, \pm V$]) were the active ingredients in OCP-like behavior. Thereby, the result was obtained that prepositional structures are the most versatile in syntax. One way of putting things is to say that pre- or postpositions (subsuming oblique case forms) serve (among other things) to insert nominal or verbal structures in contexts where they would otherwise be excluded. The principle in question, called the Unlike Feature Constraint (UFC), is a direct syntactic counterpart of the OCP. In fact, it makes a lot of sense that syntactic objects, too, should be subject to some organizational principle that helps set off higher order units (such as phrasal constituents) from the surrounding context by requiring that they be substantially different from that context. Such a principle has obvious perceptual appeal.

Thinking further along such lines, it is natural to ask the counterpart question. If the integrity of a phrase within a broader context is guaranteed by a minimum of dissimilarity, what about the internal structure of that phrase? An obvious and appealing answer to that question is to say that it is a minimum of similarity that ensures cohesion within the syntactic phrase. This is the idea embodied in the so-called Categorial Identity Thesis (CIT), advocated in Grimshaw (1991) and Van Riemsdijk (1990), maintains that the lexical, semi-lexical and functional heads of an (extended) projection and the corresponding nodes on the main projection line must be categorially identical. And here again it turns out that it is the positive values of the categorial features, which the cohesion principle CIT is sensitive to. The fact of the matter is that pre- or postpositional elements may sometimes appear within what we would like to call a single (extended) projection

²

These ideas were later pursued in (Yip et al., 1987).

with impunity. Consider such examples as *drink a glass of wine*, where *wine* is the semantic object of *drink* and hence should be taken to be the lexical head of a single direct object noun phrase that in addition to the lexical head also has a semi-lexical container noun inside it: *glass*. Working out the details of the revised CIT (Riemsdijk, 1998), I concluded that the UFC and the revised CIT are mirror images of each other to such an extent that it was possible to unify them into a single principle, which I dubbed the Law of Categorical Feature Magnetism. The name, of course, intends to evoke the notion of elements attracting each other inside projections and elements repelling each other across phrasal boundaries. The Law is properly seen, then, as the core definitional property of the layered phrasal organization of syntactic structures.

In a brief summary like the one I am giving here I cannot hope to do proper justice to all the considerations relevant to a full assessment of the situation. What I did want to convey is how certain aspects of syntactic structure can be profitably understood in terms of considerations that are quite visible and central in phonology. This is so despite the fact that most syntacticians do not perceive or acknowledge the close bond between the two systems.³

With this much by way of background, let me turn to the issue of scrambling in languages like Dutch and German, which I believe may well provide us with another area in which ‘phonological thinking’ could yield some answers and insights that current syntactic approaches do not.

3. Adverbs, Definiteness, and Scrambling⁴

In the discussion about scrambling⁵, adverbs have played an important role, at least where the Germanic OV-languages are concerned. Many of the arguments in favor of the assumption that some movement process is involved in scrambling are based on the idea that a certain class of adverbs occupies a fixed position in clause structure. For example, negation is taken to mark the left edge of the VP. That being settled, we can observe that certain constituents typically located within the VP can occur to the left of the negation or the adverb in question, and hence movement is postulated. A definite NP, for example, typically occurs to the left of the negation in Dutch. The factors determining whether some NP occurs to the left or to the right of the negation are of a more or less semantic type: definiteness, specificity, D-linking (Pesetsky, 1987). The role of such factors was first extensively investigated for German, the language I will limit myself to below, by Lenerz (1977), and the interplay between (in)definiteness and adverbs is extensively discussed in Diesing (1992).

The typical way in which this type of approach is implemented is to assume that the adverbs in question have a fixed position in the architecture of the clause, that the NPs in question originate within the VP, and that there is some head higher than the adverb that attracts definite, specific, or d-linked NPs. Such an approach is not without its problems, in particular because scrambling can affect multiple constituents. Consider the following Dutch example.

- (1) Jan heeft zijn vrouw het geld nog niet gegeven
 Jan has his wife the money yet not given
 “Jan has not yet given his wife the money”

³ As a matter of fact, it seems to me that most syntacticians are more likely guided in their thinking by the intuition that syntax is the way it is because it must serve semantic interpretation. I am not denying that this is, sometimes, a useful intuition, but I am trying to argue that thereby important insights of the more phonological kind are easily missed.

⁴ The material presented in this section was published previously, in Dutch and in somewhat different form, as (Riemsdijk, 1996)

⁵ See (Corver and Riemsdijk, 1994, Grewendorf and Sternefeld, 1990, Tonoike, 1997) for general discussion of scrambling.

Deriving such examples by means of movement, triggered by some head carrying morpho-syntactic features would mean multiple checking, multiple specifiers or something along those lines. Alternatively, one may decide that such a definiteness head can be merged several times in a single structure, once for each NP-to-be-scrambled. I will not dwell on these difficulties that have their origin in the properties of the minimalist framework or rather, specific versions thereof.

Instead I will address one of the cornerstone assumptions that the original argument was based on, viz. the assumption that adverbs occupy a fixed position in the clausal architecture.⁶ What has been completely ignored, as far as I am aware, is the fact that adverbs themselves can often be definite or indefinite. It is, in fact, quite simple to show that adverbs are subject to the same ordering restrictions that NPs are subject to. The basic pattern that Lenerz described (Lenerz, 1977) was derived from the behavior of NPs in the double object construction. On the reasonable assumption that the order IO – DO is basic, he shows that in this order all combinations of definite and indefinite NPs are acceptable, while in the inverted order only two out of four of the possible combinations are grammatical, viz. those in which the first NP, the DO, is definite.⁷ In summary:

- (2) OK: IO_[±def] — DO_[±def]
 OK: DO_[+def] — IO_[±def] vs. *: DO_[-def] — IO_[±def]

My purpose here is to show that we find the same pattern showing up in the interaction between certain adverbials and noun phrases, and even in the interaction among adverbials. In doing this, I will limit myself to German, because German, as opposed to Dutch, for example, uses bare *w*-words as aggressively non-D-linked indefinites:

- (3) (irgend)wer (irgend)wem (irgend)wen
 (any)one.NOM (any)one.DAT (any)one.ACC
- (irgend)wo (irgend)wann
 (any)where (any)when

In my schematic presentation of the facts, I will be talking about the left-hand element and the right-hand element. I will use L/R to refer to the position of the elements in the base or neutral order. Hence the scrambled order will come out as R—L. In other words, IO—DO would be L—R, while DO—IO is R—L. Furthermore, I will use ‘ind’ and ‘def’ to refer to indefinite and definite respectively.

Let me start by illustrating the Lenerz paradigm given in (2).

- (4) a. Ich habe irgendwem irgendwas versprochen
 I have someone something promised
 ‘I have promised someone (whoever)⁸ something (whatsoever)’
- b. ?Ich habe irgendwem das Buch (‘the book’) versprochen

⁶ I am not addressing the vastly more elaborate proposals concerning the distribution of adverbs in (Cinque, 1999). While such a ‘cartographic’ approach to adverbs does permit the postulation of multiple adverb positions, the consequence of the argument to be presented in the text would be that those adverb positions that correspond with adverb classes that are sensitive to the (in)definiteness distinction would have to be doubled.

⁷ This formulation abstracts away from more fine-grained distinctions such as specificity, D-linking, etc. This I will do throughout the article because the main point is not affected by these distinctions. But I will use ‘aggressively non-d-linked NPs’ (Pesetsky, 1987) as indefinites, as these yield the clearest effects.

⁸ In the remainder of the text, I will refrain from attempting to make the aggressively non-D-linked character of these German NPs explicit in the English glosses or translations.

- c. Ich habe diesem Typ ('this guy') irgendwas versprochen
 d. Ich habe diesem Typ das Buch versprochen
- (5) a. *Ich habe irgendwas irgendwem versprochen
 b. *Ich habe irgendwas diesem Typ versprochen
 c. Ich habe das Buch irgendwem versprochen
 d. Ich habe das Buch diesem Typ versprochen

This paradigm summarizes as in Table 1.

L ind: (irgend)wem L def: dem Typ	R ind: (irgend)was R def: das Buch
<i>basic: IO—DO</i>	<i>scrambled: DO—IO</i>
1 L.ind—R.ind OK	5 R.ind—L.ind *
2 L.ind—R.def ?	6 R.ind—L.def *
3 L.def—R.ind OK	7 R.def—L.ind OK
4 L.def—R.def OK	8 R.def—L.def OK

Table 1

In the interest of economy, I will avoid the lengthy paradigms and just give the example corresponding to case 1, followed by the table from which the remaining seven examples can be constructed, in the remainder of this text.

Note that the question mark in field 2 is presumably due to the general tendency that indefinites have to follow definites. The same effect is presumably present in field 6, but there it cannot be detected due to the sharp ungrammaticality of the inverted case. The definiteness effect seen in field 2 is sharper when the prefix *irgend-* is dropped.

- (6) ??Ich habe wem das Buch versprochen

Consider now the case of adverbials. Locative and temporal adverbials can also be either definite or indefinite.

- (7) (irgend)wo ('somewhere') vs. hier ('here'), da/dort ('there')
 (irgend)wann ('sometime') vs. jetzt ('now'), dann/damals ('then')

Let us first consider the interaction between a direct object and a locative adverbial.

- (8) Sie hat irgendwo irgendwen aufgegebelt
 she has somewhere someone picked-up
 'She has picked up someone somewhere'

Table 2 shows that DO and LOC interact in precisely the same manner.

L ind: (irgend)wo L def: dort ('there')	R ind: (irgend)wen R def: den Typ ('the guy')
<i>basic: LOC—DO</i>	<i>scrambled: DO—LOC</i>
1 L.ind—R.ind OK	5 R.ind—L.ind *
2 L.ind—R.def ??	6 R.ind—L.def *
3 L.def—R.ind OK	7 R.def—L.ind OK
4 L.def—R.def OK	8 R.def—L.def OK

Table 2

Similarly for temporal adverbials:

- (9) Er musste irgendwann irgendwas verkaufen
 he must.PAST sometime something sell
 'He had to sell something sometime'

L ind: (irgend)wann ⁹ L def: damals ('then')	R ind: (irgend)was R def: sein Auto ('his car')
<i>basic: TEMP—DO</i>	<i>scrambled: DO—TEMP</i>
1 L.ind—R.ind OK	5 R.ind—L.ind *
2 L.ind—R.def ?	6 R.ind—L.def *
3 L.def—R.ind OK	7 R.def—L.ind OK
4 L.def—R.def OK	8 R.def—L.def OK

Table 3

Turning now to the case in which two adverbials interact with each other, notice first that while TEMP—LOC is basic, the other order is quite normal too. Accordingly, the effect derived from the inverted order is a weak one. And, presumably as a consequence of this, the definiteness effect, which was weak before, now becomes much stronger.

- (10) Ich musste irgendwann irgendwo pinkeln gehen
I must.PAST sometime somewhere pee go
'I had to go pee somewhere sometime'

L ind: (irgend)wann ¹⁰ L def: damals ('then')	R ind: (irgend)wo R def: dort ('there')
<i>basic: TEMP—LOC</i>	<i>scrambled: LOC—TEMP</i>
1 L.ind—R.ind OK	5 R.ind—L.ind ?
2 L.ind—R.def *	6 R.ind—L.def *
3 L.def—R.ind OK	7 R.def—L.ind ?
4 L.def—R.def OK	8 R.def—L.def ?

Table 4

The following observational conclusions seem warranted:

- there is a basic order
- deviations from that basic order can, but need not, lead to diminished acceptability
- even in the basic order, indefinites preceding definites cause a certain degree of unacceptability
- adverbials are just as mobile as direct and indirect objects
- adverbials are subject to the same ordering effects as direct and indirect objects

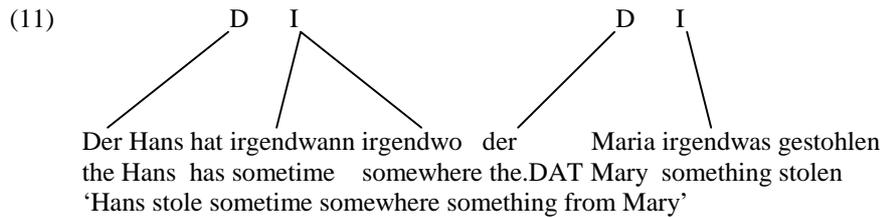
The main point to be derived from this is that the relative order of definites and indefinites is, in a sense, more autonomous from syntactic structure than generally assumed. Suppose, in fact, that the organizational principle, which says that definites precede indefinites, is expressed on a separate tier. Basic order is then a kind of contour, and the definite-precedes-indefinite template is another contour, call it the DI Contour. And somehow the two must be matched. Matching may be achieved if the syntactic structure deviates from the basic order, say as a result of movement. But where the syntactic structure per se does not conform to the DI Contour, matching must be achieved in some other manner. One way of thinking about that would be to say that when spreading of D and/or I is blocked because an element of the opposite type is encountered, a new 'DI-phrase' must be inserted,¹¹ imposing, in a sense, a number of informational subdomains on the sentence. Take

⁹ It should be noted that many speakers cannot use *wann* without the prefix *irgend-* unless it is used as a true question word.

¹⁰ It should be noted that many speakers cannot use *wann* without the prefix *irgend-* unless it is used as a true question word.

¹¹ This, I am told by Ben Hermans (p.c.) is how tonal contours work in Bantu languages.

for example a complex sentence with a definite subject, a definite indirect object, and a number of further indefinite constituents.



Needless to say, such speculations remain programmatic for the time being. It does seem clear to me, however, that current approaches, which encode all relevant types of information, and in particular all organizational principles, into a single syntactic representation, are on the wrong track. The example of definite and indefinite adverbials above shows this quite succinctly. It seems profitable, therefore, to further explore the 'autosegmental' approach suggested here. Such an approach would seem to fit in quite nicely with the central tenets of Williams' Representation Theory (Williams, forthcoming), a theory in which sentences have many different representations, one for each major syntactic or semantic (sub-) module: Theta Structure, Case Structure, Binding Theory, Focus Structure, etc. In Williams' book the different representations share a kind of skeleton structure. For example, these representations all have a head position. But there does not seem to be a principled reason why templates such as the DI Contour proposed here could not be accommodated.

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