

Prosodic and Morphosyntactic Aspects of Discontinuous Noun Phrases: a Comparative Perspective*

Gisbert Fanselow & Caroline Féry

University of Potsdam

Contents:

0.	Introduction and Overview
1.	The distribution of discontinuous noun phrases
1.1.	Basic notions
1.2.	Discontinuous noun phrases in different language families
2.	The prosody and tonal pattern of split and other types of discontinuous noun phrases
2.0.	Overview
2.1.	Cohesive and non-cohesive discontinuous noun phrases
2.2.	Positional preferences for elements of discontinuous noun phrases.
2.3.	Typology of intonation and discontinuous noun phrases
3.	Morphosyntactic factors in the licensing of discontinuous noun phrases
3.1.	Factors blocking/licensing discontinuous noun phrases
3.2.	Simple vs. inverted discontinuous noun phrases.
4.	Inverted and incohesive discontinuous noun phrases
4.1.	Basic issues
4.2.	Adjustments
4.3.	Case Constraints
4.4.	Free topics
4.5.	Phrase fracturing
5.	Simple and cohesive discontinuous noun phrases
6.	Conclusion
	References
Appendix:	Questionnaire List of languages and external contributors

0. Introduction and Overview

In this paper, we will present the basic results of our comparative research on grammatical aspects of discontinuous noun phrases as exemplified by examples from German (1a) and Russian (1b-c).

- (1) a. *Schlösser* hat Peter schon *viele* *besichtigt*. (German)
castles has Peter already many visited

* The research reported here has been supported by DFG grant FA 255/5-1. We are indebted to Konstantin Kazenin and Ruben Stoel for their help in collecting, analyzing, and interpreting the data. We would also like to thank Daniela Lentge, Dinah Rottmann, Antje Saueremann, and Katrin Wrede for technical support. Thanks also to Anja Arnhold for checking the final version of this paper. Finally, a deep thank goes to the numerous researchers who shared their intuitions on their languages with us. Their contribution is acknowledged in detail in the appendix.

“Peter has already visited many castles.”

(Canonical: *Peter hat schon viele Schlösser besichtigt.*)

- b. *Chja* vyshla *kniga?* (Russian)

whose.nom came.out book.nom

“Whose book came out?”

(Canonical: *Chja kniga vyshla?*)

- c. *Stuljev(-to)* Katja vzjal *skol'ko?* (Russian)

chairs-gen Katja took how.many.acc

“How many chairs did Katja take?”

(Canonical: *Skol'ko stuljev Katja vzjal?*)

Our research has not mainly focused on the details of the theoretical analysis of discontinuous noun phrases for individual languages. Quite diverse grammatical models have been proposed for discontinuous noun phrases, and one often has the impression that the evidence offered by a single language does not suffice for arriving at an empirically motivated decision between the various theories. A comparative perspective that takes prosodic, morphological and syntactic facts from many languages into account yields generalizations that further constrain the choice of theoretical models. We think that our research has uncovered such generalizations, which we attempt to present in a theoretically unbiased way (yet we will draw some conclusions concerning possible theories of discontinuous noun phrases once in a while).

The results presented in this paper are based on an analysis of more than 120 languages, for 86 of which we have (partially) completed versions of the questionnaire given in the appendix. For the other languages, the evidence comes from the published literature (which we also consulted for the questionnaire languages).

The paper is organized as follows. Section 1 introduces some basic syntactic notions that are relevant for the study of discontinuous noun phrases, and characterizes their distribution among the world’s languages in terms of their genetic affiliation. Section 2 is devoted to prosodic aspects of discontinuous noun phrases, both from a typological and a theoretical point of view. In Section 3, we return to the morphosyntactic conditions that seem to play a role in determining whether a language has discontinuous noun phrases or not. Sections 4 and 5 focus on a survey of more detailed grammatical aspects of the two/four basic types of split noun phrases.

1. The distribution of discontinuous noun phrases

1.1. Basic notions

After a long period of close to absolute neglect in the generative literature, **discontinuous noun phrases**¹ have now been thoroughly investigated in an already considerable number of

¹ The construction is also discussed under labels such as “split topicalization”, “partial fronting”, “incomplete category fronting”, “left branch extraction” in the literature.

languages². Discontinuous noun phrases³ such as (1) or (2a) are often contrasted with **extractions from DP**⁴ as exemplified in (2b). In classical examples of constructions involving the extraction of an element out of DP such as (1b), an XP which is thematically dependent on the lexical noun (either as an argument or as an adjunct) is moved to the left and thereby leaves the DP. In contrast, the dislocation of elements in a discontinuous noun phrase involves the separation of the head noun from its determiner, article, quantifier, or an adjective modifying it.

- (2) a. Bücher über Logik hat er viele gekauft. (German)
 books about logic has he many bought
 “He has bought many books about logic.”
 b. Über Logik hat er viele Bücher gekauft.

The importance of this descriptive difference between discontinuous noun phrases and extractions out of DPs may have been overestimated in the early period of generative syntax. At first, it seemed impossible or at least very difficult to generate (2a) and (2b) by the same mechanism (*viz.*, movement). Movement to specifier positions such as the pre-auxiliary position in (2) was assumed to be possible for maximal projections only (a view still valid nowadays). Furthermore, it was held that (3) was a fair representation of the structure of noun phrases: they were projections of the noun, with the determiner occupying the specifier position of the NP.

- (3) [NP [D *viele*] [N' Bücher [pp *über Logik*]]]

Relative to (3), (2b) can be analysed as an instance of movement (*viz.*, as the extraction of the maximal PP *über Logik*). *Bücher über Logik*, on the other hand, only forms a submaximal N'-projection in (3), which is immobile if only maximal projections can move. This fact made the

² Among many others, Bailyn (1995), Gouskova (2001), Kazenin (2005a), and Sekerina (1997) may be cited for Russian, Fanselow (1988), Fanselow & Ćavar (2002), Kniffka (1996), Kuhn (1998), Nolda (2005), Riemsdijk (1989), Roehrs (2006), Puig-Waldmüller (2006) for German, van Hoof (1997) for Dutch, Bašić (2005), Bošković (2005), and Ćavar (1999) for Serbo-Croatian, Hastings (2003) for Quechua, Nthelitos (2004) for Modern Greek, and Agbayani & Golston (2005) and Devine & Stephens (2000) for Ancient Greek. Butler & Mathieu (2004) and van Hoof (2005) provide general discussions.

³ From a theoretical point of view, it would be more adequate to speak of “discontinuous DPs” or of “discontinuous extended projections of the noun”, but we refrain from changing a well-established terminology.

⁴ Extraposition from noun phrases as in (i) is a third type of noun phrase discontinuity which is, however, not considered here. Extraposition (=movement of a dependent element to the right) differs from extraction (movement of a dependent element to the left) in a number of respects (see, e.g., Culicover & Rochemont 1990), and may have more in common with discontinuous noun phrases than with extractions.

- (i) a. A man came in who had a beard.
 b. A book came out about logic.

analysis of (2a) quite a mystery. (2a) was either not analysed in terms of movement (i.e., the two underlined segments in (2a) were analysed as two NPs structurally independent of each other, see, e.g., Haider 1985, Fanselow 1988 for German), or a number of complications (reapplication of phrase structure rules after movement) were added to syntactic theory in order to make an extraction analysis possible (see Riemsdijk 1989 for German). Either way, it seemed obvious that discontinuous noun phrases and (simple) extractions from NP were theoretically quite different constructions.

It is surprising that no attempt was made in this debate to use (2a) and similar sentences as evidence for a richer structure of the noun phrase such as (4), in which the determiner and noun (and, possibly, further functional heads) each project maximal XPs of their own, so that the noun and its complement PP form a maximal projection together, which should be able to undergo movement. Of course, once (4) had been argued for on independent grounds (see, e.g., Abney 1987), the new option for capturing (2a) in terms of extracting an NP out of a DP was soon recognized (see, e.g., Tappe 1989).

(4) [DP [D *viele*] [NP *Bücher* [PP *über Logik*]]]

Relative to (4), (2a) and (2b) *can* in principle be analysed along the same lines, and that the literature often sets discontinuous noun phrases apart from constructions with a PP extracted from DP could therefore merely have historical reasons. However, the new analytic options that came with the reanalysis of the noun phrase as a cluster of functional (DP) and lexical (NP) projections do not as such eliminate the empirical differences between (2a) and (2b), and one of the purposes of our comparative survey was to find out whether such differences are an ubiquitous property of natural languages.

Discontinuous noun phrases do not necessarily constitute a uniform phenomenon. As far as their prosodic properties are concerned, they may be **cohesive** or **non-cohesive**. Cohesive discontinuous noun phrases are integrated into a single Intonation Phrase (henceforth i-phrase) whereas the two parts of a non-cohesive discontinuous noun phrases are separated into two i-phrases. In German at least, sentence types such as (2a) and (2b) do not differ much prosodically. Both are non-cohesive patterns.

The distinction between cohesive and non-cohesive constructions is partially mirrored by a distinction between **simple** (see Ukrainian (5b))⁵ and **inverted** (5c) discontinuous noun phrases proposed by Fanselow & Ćavar (2002): in the normal cases, a simple discontinuous noun phrase preserves the order of elements of the corresponding continuous noun phrase, while an inverted discontinuous noun phrase does not. Of course, this serialization difference is just a side-effect

⁵ A common term for simple split noun phrases is “left branch extraction”, which we chose to avoid because of the theoretical connotations it has.

of a more profound structural difference: in a simple split construction, the structurally highest head of the extended projection of the noun (normally: the quantifier, or the demonstrative, etc.) is displaced to the left, whereas the same holds for the lowest head of the extended nominal projection (usually, the noun itself) in inverted splits. The prosodic and the hierarchical distinctions often go hand in hand: simple discontinuous noun phrases tend to be cohesive, and inverted discontinuous noun phrases tend to be non-cohesive. There are, however, exceptions from this rule to which we will return later (see Féry et al. 2007 for Ukrainian). Here, it suffices to observe that deaccenting may have a drastic effect on prosodic phrasing.

- (5) a. *Marija maje bahato krisel.* (Ukrainian)
 Mary has.got many chairs.gen.pl
 “Mary has got many chairs.”
 b. *Bahato maje Marija krisel.*
 c. *Krisel Marija maje bahato.*

The prosody of discontinuous noun phrases will be discussed in much more detail in section 2. We propose that discontinuous noun phrases (normally⁶) involve two different pragmatic patterns (narrow focus⁷ on the left part with givenness on the right part, and contrastive topic on the left part with focus on the right part) that usually go along with two different prosodic realizations: cohesive splits are spanned by a single i-phrase, while the pragmatically more complex type is realized with two i-phrases (non-cohesive splits). Non-cohesive splits are usually *inverted* in the sense introduced above, while cohesive splits are often *simple*, but the correlation is imperfect. For example, deaccenting of the second part of a split construction may

⁶ Noun phrases may also become discontinuous when rules of the placement of certain prepositions, pronominal clitics, auxiliary clitics, etc. imply that such elements intrude into the serialization territory of a noun phrase. See Agbayani & Golston (2005) for a discussion of such phenomena in Ancient Greek. That noun phrase discontinuity may be due to clitic placement rules has furthermore been proposed for Serbian and Croatian. See Čavar (1999) for a discussion of such claims. In the spirit of terms proposed by Pinkster (2005), we might call such constructions “passive splits”, contrasting them with the “active splits” on which we focus here. See section 5 for a few remarks on the phenomenon.

As Mattissen (2003) observes, the Nivkh nominal complex is confined to a very restricted structural grid. Noun phrases become discontinuous not only when there is an informational asymmetry, but also when the nominal grid does not offer enough positions for the material that modifies the noun. E.g., a discontinuous noun phrase must be formed when the determiner and the possessor of a noun phrase are to be marked simultaneously.

⁷ Fanselow & Lenertová (2006) and Puig-Waldmüller (2006) point out that sentences such as (i) allow a wide focus interpretation in Czech as well as in German. Since we lack pertinent evidence for other languages, we refrain from entering a discussion of this phenomenon.

- (i) *Bier ham's welches bracht.* (German, dialectal)
 beer have-they some brought
 “They delivered some beer.”

erase an entire prosodic phrase, both in an inverted and in a simple split. The syntactic distinction between discontinuous noun phrases and extractions of arguments/adjuncts from noun phrases is not mirrored by any pragmatic or prosodic distinction.

1.2. Discontinuous noun phrases in different language families

Let us first address the question of which languages allow discontinuous noun phrases, and which languages do not. In this subsection, we will not go much beyond a classification of the languages we have studied in our empirical research, but we will specify and defend the criteria we have used for this classification. As a first approximation, one can say that a sentence contains a discontinuous noun phrase if there are at least two heads which (a) are linked to the same argument position or adjunct role but which (b) appear in different structural slots of the sentence, although (c) they can also (and normally would) be assembled in such a way that they form a single DP in a single structural slot. In practice, we chose to interpret condition (b) such that it excluded constructions in which one of the heads was incorporated into the verb (rather than filling an autonomous structural slot in the sentence). This decision was motivated by the need of keeping the amount of data to be collected manageable.

Many (if not most) generative grammar textbooks ignore the existence of discontinuous noun phrases, and they play a minor role in current theorizing only. This may give the impression that discontinuous noun phrases are a rare phenomenon, but our survey revealed that this impression is incorrect: discontinuous noun phrases can be found frequently, but they are uncommon among the Western European languages, on which generative studies often focus.

English in particular has no discontinuous noun phrases of the type exemplified in (5). **Quantifier float** constructions as exemplified in (6a) involving a definite DP and the quantificational expressions *all* and *both* are the only structures in English that resemble a discontinuous noun phrase. They are often analyzed as a stranding phenomenon arising from A-movement dependencies (see Sportiche 1988, Deprez 1989), in which the movement of a DP such as *they all* to Spec,TP may or may not leave the quantified part (*all*) of the DP *in situ*. However, the stranding approach does not successfully explain the distributional properties of *all* (see Baltin 1995), which appear to be identical to the ones of adverbs like *ever*. It may thus make more sense to analyse *all* in (6a) in terms of adverbial quantification, as suggested by Baltin.

- (6) a. *They have all bought a cat.*
b. *They all have bought a cat.*

Vater (1980) had established very early that discontinuous noun phrases such as (2a) (involving an indefinite left nominal element) and the German counterpart of (6) exemplified in (7) (with a fronted definite NP) are different constructions. E.g., quantifier float is quite unrestricted in the sense that the left part of the construction may appear in Spec,CP (7a) or in various positions

within TP (the German ‘middle field’) (see (7b-c)), probably because the projections in TP offer many different A-positions for noun phrases, while discontinuous noun phrases seem to require that their left part occupies an A-bar-position, i.e., it must typically appear in Spec,CP and nowhere else (see Frey 2004 for a more precise characterization). (7) a. *Die Bücher hat die Mutter den Kindern alle öfter vorgelesen.*

the books has the mother the.dat children all more.often read
 “The mother has quite often read all the books to the children.”

- b. *dass die Mutter die Bücher den Kindern alle öfter vorgelesen hat*
 c. *dass die Mutter den Kindern die Bücher öfter alle vorgelesen hat*

Arguments against equating quantifier float constructions with discontinuous noun phrases have also been brought forward by Baker (1995) in his analysis of Mohawk and other polysynthetic languages.

From a theoretical point of view, it seems to make most sense to confine the concept of discontinuous noun phrases to constructions in which at least one of the heads involved appears in an operator (A-bar-) position⁸: quantifier float constructions occur in A-movement contexts only⁹, while at the same time we have not found any convincing case of discontinuous noun phrases in such A-movement contexts. However, it is difficult to apply this criterion practically¹⁰, so we decided to not include constructions in which only quantifiers like “all”

⁸ If the concept is defined in this way, “passive splits” in the sense of footnote 6 do not represent discontinuous noun phrases. If Baker (1995) is correct in claiming that NPs never occupy A-positions in polysynthetic languages, noun incorporation constructions could still be considered discontinuous noun phrases if necessary. In Old Occitan, relative clause formation leads to discontinuity (see Pinkster 2005). Depending on one’s theory of relative clause formation, this construction (exemplified in (i)) would also involve a discontinuous noun phrase.

- (i) *la justícia que grant áig a mandar* (Old Occitan)
 the legal power which great I have to dispose
 “The great legal power which I have at my disposal”

⁹ See, e.g., Deprez (1989) for this claim, which may, however, not be tenable under all circumstances, as Irish English data such as (i) (see McCloskey 2000) and German data such as (ii) suggest. We cannot enter a discussion of this problem here.

- (i) *What* did he tell him *all* that he wanted?
 (ii) *Was hat er alles gesagt dass sie mitgebracht hat?* (German)
 what has he all said that she brought has
 “What all did he say that she had brought?”

¹⁰ The first difficulty lies in the absence of a detailed structural analysis for the clause structure of some or many of the languages we have investigated. Even for a language like German there is no consensus as to whether the topic position following Comp is an A- or an A-bar-position (see Frey 2004 for a discussion). The second difficulty stems from the fact that A-bar-movement can often be preceded by A-movement, so that many separation data could be analysed in many ways.

could be detached from their DP into our collection of discontinuous noun phrases. Indeed, the separation of a definite DP from a universal quantifier ‘all’ is sometimes the only way in which a DP may appear discontinuous in a language. This may, e.g., be true for Lezgian (see Haspelmath 1993), and it may also hold for the ‘inverted’ type of discontinuous noun phrases in Ossetic, according to our questionnaire data. Such constructions were thus not classified as discontinuous noun phrases. Danish, Icelandic¹¹ and Norwegian¹² are Germanic languages without discontinuous noun phrases.

The situation is less clear for the Western European Romance languages¹³. They are often characterized as not allowing discontinuous noun phrases, or only in a very restricted way. In French, we find the construction (8a), which is reminiscent of simple split constructions in Slavic, such as (5b). The prosody of (8a) comes close to what holds for (5b), as we will see in section 2. This prosodic similarity, however, may merely illustrate that the prosodic realization of a sentence is strongly influenced by the informational properties of the construction, and therefore does not imply that sentences with identical prosody have an identical syntax. Indeed, the alternation between the construction in (8a) and continuous noun phrases such as *combien de livres* is confined to very few words like *combien* and *beaucoup*, while there are many adverbial quantifiers (*assez, peu, énormément*, etc.) that pattern with *combien/beaucoup* in the sense of (8a). It may thus make sense not to consider (8a) as an instance of a discontinuous noun phrase¹⁴, but nothing crucial hinges on that decision. See Butler & Mathieu (2004) for an opposing view.

- (8) a. Combien as-tu lu de livres? (French)
 how.many have.you read books
 “How many books have you read?”
- b. Des livres Marie en a lus trois. (French)
 of books Mary there has read three
 “As for books, Mary has read three.”

¹¹ In contrast, Old Icelandic allowed discontinuous noun phrases (see Rögnvaldson (1995)).

¹² In addition to having the questionnaire completed, we asked a number of Norwegian linguists for judgements. Only one colleague marginally accepted a discontinuous noun phrase.

¹³ We have questionnaire data for Catalan and Italian, and data from the literature for French and Spanish.

¹⁴ In addition, the construction also seems fine in A-movement contexts, as (i) illustrates, making it different from standard types of discontinuous noun phrases.

- (i) Personne n’est entré de connu. (French)
 nobody not-is entered of famous
 “Nobody famous has entered.”

We were also reluctant to classify (8b) as a discontinuous noun phrase, because of the unclear status of the partitive preposition *des* heading the left XP and because of the obligatory presence of the clitic *en*, but again, not much seems to depend on the classification of (8b).

While our Catalan informant rejected all types of discontinuous noun phrases, and while we are not aware of any deep discussion of noun phrase discontinuity in Castilian Spanish, structures such as (9) are acceptable in Spanish (see Leonetti 2004). Such an NP discontinuity was not accepted by our Italian informant. In contrast, discontinuous noun phrases can be found in Latin, Old French, and Old Occitan (see, e.g., Pinkster 2005).

- (9) *Ejercicios, los estudiantes no han leído ni siquiera dos.* (Castilian Spanish)
exercises the students not have read not even two
“The students have not even read two exercises.”

Geographically embedded among the Romance languages, Basque has no discontinuous noun phrases either. They have also not been reported for the Celtic languages.

In Europe, the situation changes dramatically when one crosses the river Rhine or the Isonzo: one enters “split country”, which extends to the Pacific Ocean. Discontinuous noun phrases exist in the “Eastern” Germanic languages (Dutch¹⁵, German, Swedish), Romanian, all Slavic languages¹⁶, the Baltic languages Lithuanian and Latvian, the Finno-Ugric languages¹⁷, Albanian, Ancient and Modern Greek, and the Altaic languages¹⁸. Discontinuous noun phrases are also rather frequent in the Caucasus (Georgian, Avaric, Circassian, Lak, Mingrelian, Nogai, Ossetic, and Tsakhur all have the construction¹⁹), and they are a characteristic of the Indo-

¹⁵ See van Hoof (1997). The variation we observe in Dutch (some speakers fail to accept the construction) probably has no geographical basis. At least this is suggested by the results of our informal survey among Dutch phonologists and syntacticians.

¹⁶ We have questionnaire data for Bulgarian, Croatian (Burgenland), Czech, Macedonian, Polish, Russian, Serbian, Slovak, Sorbian and Ukrainian, and evidence from the literature concerning Croatian as spoken in Croatia itself. The situation is not totally clear for Bulgarian: our informant and the informants of Bašić (2005) show a pattern of judgment that is close to what we observe in the other Slavic languages, while Bošković (2005) takes Bulgarian to be much more restrictive.

¹⁷ We have collected data for Estonian, Finnish, Komi, and Hungarian.

¹⁸ We have data for Turkish, Kirgiz, Nogai, and Yakutian, and also for Japanese and Korean.

¹⁹ We have collected data for all these languages except Tsakhur, for which we rely on Kazenin & Testelec (1999). As remarked above, the construction seems absent in Lezgian, for which we have evidence from the literature only.

European languages in Iran and India (but see also below)²⁰. At least the Dravidian languages of India are not much different in this respect²¹.

As for the other parts of Asia, the languages in our small sample of Sino-Tibetan languages (Burmese, Cantonese, Mandarin Chinese, NaXi, Prinmi, Tibetan) all allow one sort of discontinuous noun phrase or the other. The same holds for Japanese and Korean, and the only Austroasiatic language we have studied, *viz.* Vietnamese. A discontinuous noun phrase from Korean is illustrated in (10). The construction presupposes that the left-peripheral element bears topic marking, and, more importantly, that the nominal pro-form *kes* is present in the right part of the construction.

- (10) *Chayk-un Peter-ka caymiiss-nun kes-ul han kwen(-ul) ilk-ess-ta.* (Korean)
book-top Peter-nom interesting-rel thing-acc one cl(-acc) read-past
“As for books, Peter read an interesting one.”

A sentence such as (10) could also be analyzed as a structure with a free topic (*chayk-un*), which is semantically linked to an argumental DP in the clause (*caymiiss-nun kes-ul han kwen(-ul)*) that happens to be projected from the pro-form *kes* rather than a lexical noun. Under this perspective, (10) would not involve one discontinuous noun phrase, but two (syntactically unrelated) complete noun phrases, *i.e.*, it would not be much different from (11).

- (11) *Sav-nun ku-ka nightingale-man a-n-ta.* (Korean)
bird-top he-nom nightingale-only know-pres-dec
“As for birds, he only knows nightingales.”

One reason for not (immediately) excluding (10) from consideration lies in the absence of a clear-cut division between free topic structures on the one hand, and discontinuous noun phrases, on the other. The morphological shape of the parts of a discontinuous noun phrase is often different from the one they have in a continuous noun phrase (see section 4.2), and the changes range from very small alternations in the type of the Case marker used to the addition of a nominalizing morpheme or the use of a nominal pro-form. There is no *a priori* reason for drawing the division line between noun phrase discontinuity and free topics at a specific point in this continuum rather than at another. However, the interaction of adjectives and nouns in the Sino-Tibetan languages and in Korean, Japanese, and Vietnamese discussed in section 3.2 may suggest that sentences such as (10) do not really involve a discontinuous noun phrase. If the argument is correct, the status of discontinuous noun phrases in the Indian languages could also be disputed.

²⁰ We have collected data for Assamese, Gujarati, Hindi, Maithili, Nepali, and Oriya. Furthermore, we have records for Persian, and the Aril dialect of Romani.

²¹ We have found discontinuous noun phrases in our data for Malayalam and Telugu, but not for Tamil.

In the Far East, Chuckchee (at least for some speakers), Nivkh and probably also Kolyma Yukaghir show discontinuous noun phrase phenomena, while Ainu does not. The evidence from the Austronesian languages is mixed. The majority of languages in our sample (Chamorro, Indonesian, Malagasy, Maori, Niue, Tagalog) have discontinuous noun phrases or discontinuous noun phrase-like constructions, while Nalik and Rotuman forbid them (just as Tok Pisin). Only when we move to the South West of Asia we find a language family, viz. the Afro-Asiatic group that is not very discontinuous noun phrase-friendly: Hebrew and Oromo show no discontinuous noun phrases, but Taschlehit Berber and perhaps also Palestinian Arabic do.

Australian languages are notoriously rich in discontinuous noun phrase phenomena, as exemplified by Gooniyandi, Gunwinjguan, Kalkatungu, Kayardild, Jingulu, Jiwarli, Maung, Nungubuyu Wardaman, Warlpiri and Yidiñ. (We have collected data for Maung only.) The overview in Austin & Bresnan (1996) reveals, however, that a few languages on the Australian continent (Martuthunira) are stricter concerning the scattering of the parts of an NP across the sentence.

Recall that Hale (1983) and Jelinek (1984) proposed an analysis for Warlpiri working with multiple independent modifications of a single argument slot by different autonomous nominal expressions rather than with discontinuous noun phrases in a strict sense. On the other hand, Legate (2002) argues for a configurational analysis of Warlpiri, in the spirit of Rizzi (1997), in which the language would allow discontinuous noun phrases just like German does. The limitations of our data do not permit us to settle such issues.

Discontinuous noun phrases are not hard to find among the American languages. They exist in the four Algonquin languages for which we found data in the literature (Cree, Fox, Ojibwe, Passamaquoddy), Tono O'odham, in Greenlandic, in two Carib languages (Hixkaryana, Panaré), in Yagua, Mosestén, Quechua and Yucatec Maya, but according to our informant not in Lakota, and, as Baker (1995) argues, not in Mohawk²². For the Algonquin languages, the question arises whether the structures should be considered 'passive splits' in the sense of note 5, see section 3.1 for a discussion.

Nama, a Khoisan language, requires NPs to be continuous, while Kanuri, a Nilo-Saharan language, has discontinuous noun phrases. All other languages from Subsaharan Africa in our sample are from the Niger-Congo family, many of which have discontinuous noun phrases (Agni, Baoulé, Chichewa, Ega, Guere, Kitharaka, Limbum, Moghamo, Saari, Wobe) while others do not (e.g., Ewe (own records) and Aghem (Hyman, p.c.))²³.

²² We have collected data for Yucatec Maya and for Greenlandic.

²³ Apart from Aghem, all our evidence for languages from Subsaharan Africa comes from data we have collected.

Summing up the discussion, it seems fair to conclude that discontinuous noun phrases are not a rare phenomenon: they occur in almost all of the language families we have looked at, but our language sample is far from being representative.

2. The prosody and tonal pattern of split and other types of discontinuous noun phrases

2.0. Overview

In this section, we consider the role prosodic properties of languages play in the formation of discontinuous noun phrases. As mentioned above, the similarity between discontinuous noun phrases and extraction structures in terms of prosody suggests a somewhat broader perspective, so that we will consider other discontinuous constructions for the sake of comparison.

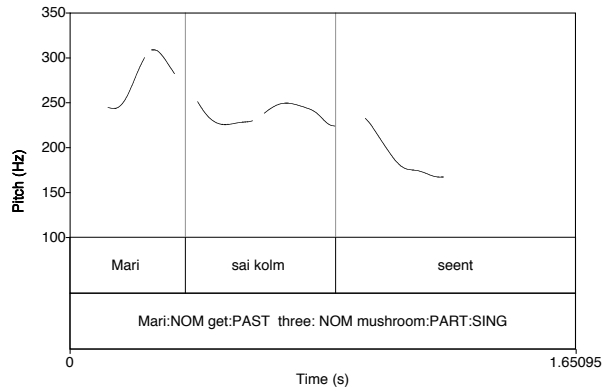
2.1 Cohesive and non-cohesive discontinuous noun phrases

In order to study the phonological properties of discontinuous noun phrases, it is crucial to vary the information structure of the sentences in which these constructions appear. As mentioned already, discontinuous noun phrases are very often formed under the pressure of realizing a marked information structure on the two parts of the discontinuous construction (De Kuthy 2002, van Hoof 2005, Fanselow & Ćavar 2002, Féry 1993 and also Russell & Reinholtz 1995, Reinholtz 1999 for Swampy Cree, Kathol & Rhodes 1999 for Ojibwe, and Payne 1993 for Panare). The motivation for fronting one part of an NP usually is to topicalize or focus it. The other part may remain *in situ*, but does not have to. It can as well be located in a position of the sentence in which it is more apt to get a special accent, as will be demonstrated below. Besides this crucial property of split constructions, the prosodic structure displays a difference in the number of intonation phrases (i-phrases) appearing in the sentence, which can be one or two. A discontinuous noun phrase involving only one i-phrase is called ‘cohesive’, whereas a discontinuous noun phrase with two i-phrases is ‘non-cohesive.’ The distinction is illustrated in (12) to (14) with examples from Estonian. As is typical for an intonation language (see section 2.3 for a typology of the tonal properties of languages), the high tone in each prosodic phrase (p-phrase) is downstepped relatively to the preceding one, and each high tone is consequently lower than the one before. This downstep contour is clearly visible in the sentence with canonical word order in (12). In this sentence, *Mari* is topicalized and has a rising pitch accent (L*H), and the remaining of the sentence is the focused part and is intonationally associated with falling tones (H*L). The verb and the following argument are phrased together. Both the numeral and the noun get a pitch accent.²⁴

- (12) Canonical word order in Estonian
 L*H H*L H*L L₁

²⁴ All pitch tracks have been created with the help of the software Praat (Boersma & Weenink 2006).

[[*Mari*]_P [*sai* *kolm* *seent*]_P]_I
 Mari.nom get.past three.nom mushroom.sg.part
 “Mari got three mushrooms.”

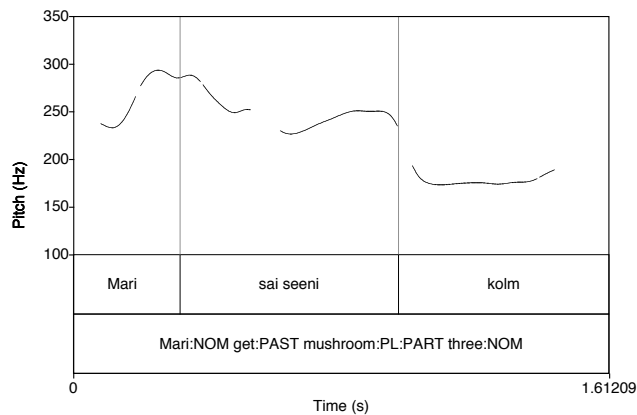


The cohesive discontinuous noun phrase in (13) inverts the order of *kolm* ‘three’ and *seent* ‘mushroom.’ As a result these two words are now prosodically separated from each other, and *kolm* is prominent, but still the whole sentence is integrated into a single i-phrase.²⁵ The pitch accent on *kolm* is extra-low which gives even more prominence to this word (see Asu 2004 for a comprehensive account of Estonian intonation and very accurate remarks about this extra-low tone, a typical feature of Estonian intonation).

²⁵ As will be explained in more detail in section 4.2, the number of the head noun differs in the continuous and discontinuous versions of this sentence.

(13) Cohesive discontinuous noun phrase construction in Estonian

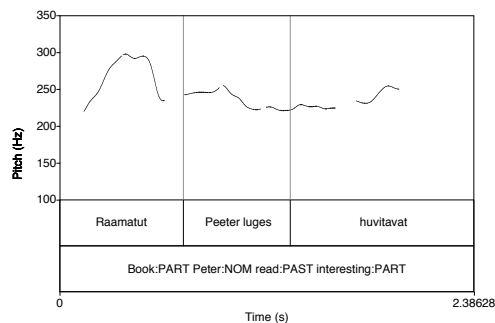
L*H H*L L* L₁
 [[*Mari*]_P] [*sai* *seeni*]_P [*kolm*]_P]_I
 Mari.nom get.past mushroom.pl.part three.nom
 “Mari got three mushrooms.”



In the non-cohesive discontinuous noun phrase illustrated in (14), the fronted element *raamatut* ‘book’ is separated from the rest of the sentence with a larger prosodic break than in the cohesive sentence. The fronted element *raamatut* is topicalized and forms its own i-phrase. The end of this word is much lower than the end of *Mari* in the other pitch tracks and is terminated with a low boundary tone L₁. The remaining of the sentence is pronounced at a lower pitch than *raamatut*, but this is not universally obligatorily the case in non-cohesive constructions. Very often, a non-cohesive split construction consists of two i-phrases of which the second one is subject to F₀ reset, which means that the speaker’s voice returns to the level it had at the beginning of the sentence. The last word of this sentence, *huvitavat* ‘interesting’ is focused, and has a small final rise. The boundary tone is annotated with a low boundary for i-phrase, L₁, since perceptually this sentence ends at a low level.

(14) Non-cohesive discontinuous noun phrase in Estonian

H*L L₁ H*L L*H L₁
 [*Raamatut*]_I [*Peter*]_P *luges* [*huvit*]_P]_I
 book.part Peter.nom read.past interesting.part
 “Peter read an interesting book.”

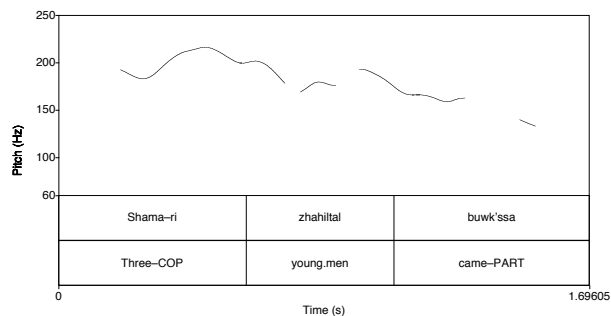


2.1.1 Cohesive discontinuous noun phrases

As noted above, the distinction between cohesive and non-cohesive discontinuous noun phrases is related to the distinction between simple and inverted discontinuous noun phrases. Simple discontinuous noun phrases often are cohesive, whereas inverted discontinuous noun phrases are mostly non-cohesive. Further examples for cohesive split constructions appear for Russian in (2b), Lak in (15), and Ukrainian in (16). The example in (15a) from Lak,²⁶ a Daghestanian language of the Caucasus, is the canonical version of a sentence of which the cohesive split version is illustrated in (15b), see Kazenin (2005b). As in Estonian, the canonical version of this sentence consists of several p-phrases in which the high tones are downstepped relatively to each other. In the cohesive split version of this sentence, the prosodic phrasing is preserved, but comparing the two pitch tracks, it is conspicuous that the discontinuous version realizes each p-phrase with a clearer accent pattern than the canonical version.

(15) a. Canonical word order in Lak

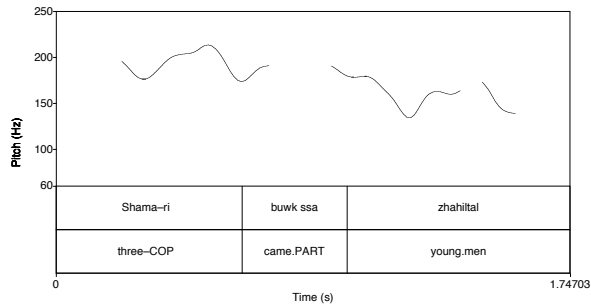
L*H	H*L	H*L L ₁
[[<i>shama-ri</i>] _p]	[<i>zhahil-tal</i>] _p	[<i>buwk'-ssa</i>] _p] ₁
three-cop.3sg	young.man.nom.pl	came-part
“Three young men came.”		



²⁶ Many thanks to Ansar Mazaev who patiently provided these data, as well as to Kostya Kazenin for assistance during the recording sessions.

(15) b. Cohesive split construction in Lak

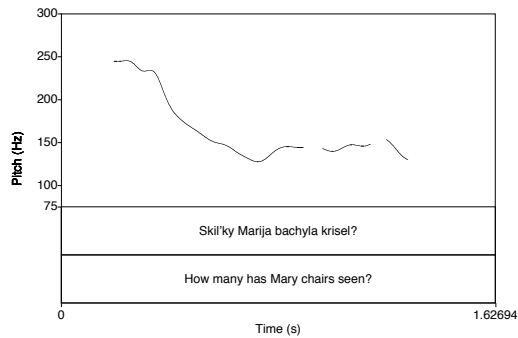
H*L H*L H*L L₁
 [[*shama-ri*]_P] [*buwk'-ssa*]_P [*zhahil-tal*]_P]_I
 three-cop.3sg came-part young.man.nom.pl
 "Three young men came."



The Ukrainian sentence in (16) shows focusing of the wh-word, and deaccenting of the remainder of the sentence, a common realization of a simple splits involving a wh-word (see Féry et al. 2007 for discontinuous noun phrases in Ukrainian). Of course, the nominal part of the construction may be focused itself. As mentioned above, a restriction concerning most discontinuous noun phrases is that both parts of the construction have to carry different information structural contents, but it does not specify which functions must be associated with which part of a discontinuous noun phrase.

(16) Cohesive discontinuous noun phrase in Ukrainian

H*L L₁
 [[*Skil'ky* _____ *Marija bachyla* *krisel?*]_P]_I
 how many Marija has.seen chairs?
 "How many chairs has Marija seen?"



A cohesive discontinuous noun phrase, thus, only changes the order of the p-phrases, or, alternatively, forces the emergence of a new p-phrase. The number and structure of the i-phrases is not touched. This is illustrated schematically in (17). The cohesion of the discontinuous noun phrase is expressed by the intonation. The discontinuous parts of the constructions under consideration are separated from each other by morpho-syntactic material, but intonationally, they cohere by belonging to a single i-phrase. If more than one p-phrase separates the two parts, the discontinuous noun phrase becomes unnatural and may be incomprehensible. From the point of view of the prosody, such intervention effects are explained by the increasing difficulty of reconstructing the two parts of a discontinuous noun phrase when they are separated by more p-phrases²⁷.

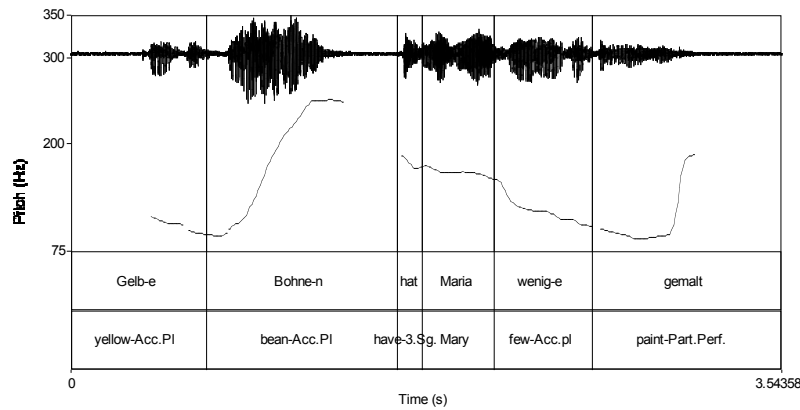
- (17) Cohesive discontinuous noun phrase
 [[A]_P [B]_P [C]_P [D]_P]_I → [[B]_P [A]_P [C]_P [D]_P]_I

2.1.2 Non-cohesive discontinuous noun phrases

Non-cohesive splits appear in two different i-phrases. The fronted part forms its own i-phrase and can be separated from the remaining of the sentence by a short break. It also possesses correlates of finality, like a boundary tone. The second part of the sentence may start at the same F₀-level as the first part. In other words, it may show reset. Non-cohesiveness is illustrated in (18) with a German example. The first part of the discontinuous noun phrase *gelbe Bohnen* ‘yellow beans’ is a topic, and the second part of the discontinuous noun phrase, *wenige* ‘few,’ is a focus. The whole sentence has the structure of a typical hat pattern. Each part forms its own i-phrase (see Féry 1993, 2006).

- (18) Non-cohesive discontinuous noun phrase in German
 H*L L*H H_I H*L L_I
 [[Gelbe Bohnen]_P]_I [[*hat* *Maria* wenige *gemalt*]_P]_I
 yellow beans has Maria few painted
 “Mary painted few yellow beans.”

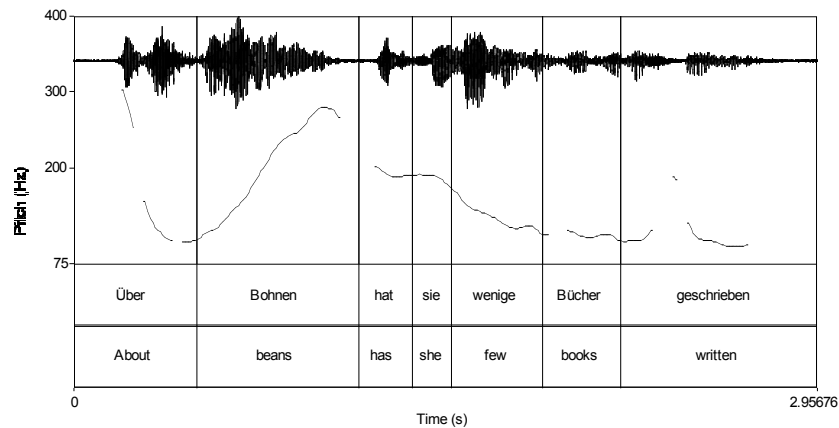
²⁷ The same reflection could explain why cohesive discontinuous noun phrase usually respect the order of the constituents. In terms of processing, it is more economical and efficient to hear the constituents in their canonical order. This explains why most cohesive discontinuous noun phrases are syntactically simple splits.



We are now in a position to compare a non-cohesive split construction, like the one in (18) with a sentence containing an extracted PP, as shown in (19). In this case, two i-phrases are formed as well, and the tonal contour is similar to the sentence with an inverted split.

(19) PP Extraction in German

L^*H H_I L^*H H^* H^*L L_I
 [[Über Bohnen]_P]_I [[*hat Maria*]_P [drei Bücher geschrieben]_P]_I
 about beans has Mary three books written
 “Mary wrote three books about beans.”



Sentence (18) can also be realized with a single focal accent on *gelbe Bohnen*. In this latter case, the remaining of the sentence is deaccented and only one i-phrase is formed. This is illustrated

in (20). But still, the topicalized part is accented and forms an independent p-phrase. As a result, there are two p-phrases²⁸.

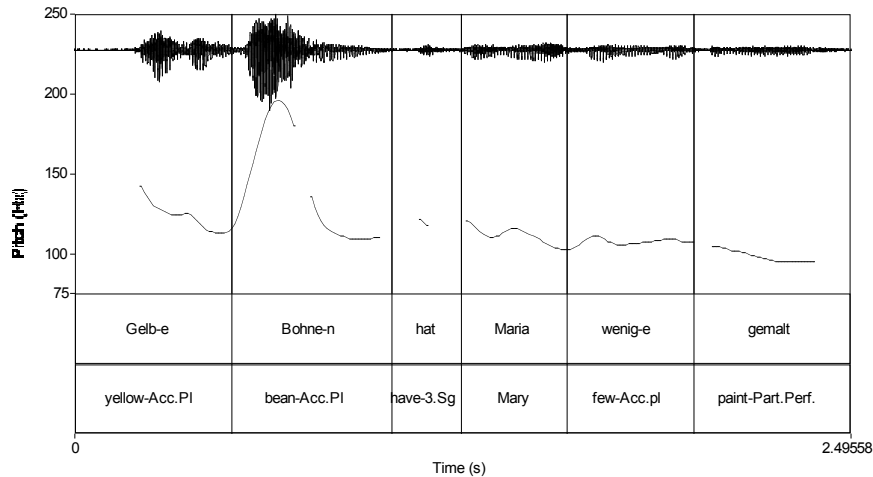
(20) Cohesive discontinuous noun phrase in German

H* H*L L₁

[[Gelbe Bohnen]_P] [hat Maria wenige gemalt]_P]_I

yellow beans has Mary few painted

“Mary painted few yellow beans.”



The decision to let the prosodic phrasing at the level of the p-phrases depend entirely on the syntax may be subject to debate. In a number of approaches (Truckenbrodt 1999, Büring 2001), a p-phrase has to carry at least one accent. If it does not, like the second p-phrase in (20), the boundary between the first and the second one is erased and only one p-phrase remains. In the present approach, however, syntax is crucial in determining the prosodic phrasing, and accents are triggered by default prosody or by pragmatic and information structural needs (see Féry & Ishihara 2006). That this choice is at least not completely erroneous may be linked to repair and adjustment phenomena, see below.

(21) Repair in German

a. *Maria hat kein Geld.*
 Mary has no money

b. L*H H_I H*L L_I

[[Geld]_P] [[*hat Maria keines*]_P]_I

c. H*L L_I

²⁸ The fronted element may thus be the narrow focus in a cohesive construction. Recall, however, that wide focus interpretations are also available in cohesive constructions of German (see note 6).

[[Geld]_p [hat Maria keines]_p]_i

In the canonical version (21a), the quantifier *kein* ‘no’ is inflected in its weak form. In the inverted discontinuous noun phrase (21b-c), by contrast, *keines* is inflected in its strong form. It does not matter whether the second phrase carries an accent or not. The important factor is that *keines* appears in an inflection form which allows it to be a full DP. If it was integrated into the same p-phrase as *Geld* ‘money’, no repair would be expected. The suggestion here is that the i-phrase boundary is erased, but not the boundary of the p-phrase: there is thus a difference in prosodic phrasing between (21b) and (21c), but only at the level of the i-phrases and not at the level of the p-phrases.

In sum, the two parts of the discontinuous structure in (21) are not only independent syntactic nominal or prepositional phrases, but they are also prosodically independent. A further example from Ukrainian, with a regenerated PP (see section 4) is illustrated in (22).

- (22) [U harnyx budynkax]_i [žyv vin u bahat'ox]_i (Ukrainian)
in nice houses lived he in many
“He lived in many nice houses.”



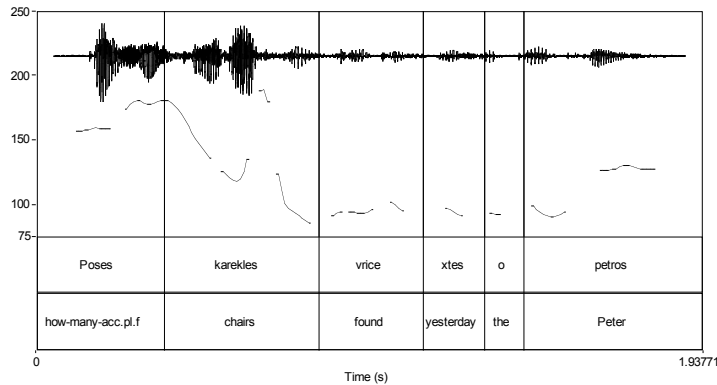
If ‘cohesive’ is defined as an intonational construction in which both parts of a discontinuous noun phrase appear in a single i-phrase and ‘non-cohesive’ as a construction split into two i-phrases, then sentences with postponed wh-words are non-cohesive. An example from Greek (see Arvaniti & Baltazani 2005 for a review of Greek intonation) illustrates a discontinuous noun phrase with postponed wh-word.²⁹ This construction also appears frequently in Georgian, but seems to be rare in other intonation languages, and is not considered in the morpho-syntactic part of this survey. A comparison between the canonical order in Greek (23a) and the construction in (23b) shows that the sentence in canonical order has properties of a unique i-phrase. The non-cohesive construction, by contrast, is parsed into two i-phrases. The first i-phrase ends at a very low level, appropriate for the end of a declarative sentence, and the wh-

²⁹ Thanks to Stavros Skopeteas for his help with Greek.

word at the beginning of the second i-phrase starts at a pitch level similar to the one of the canonical sentence.

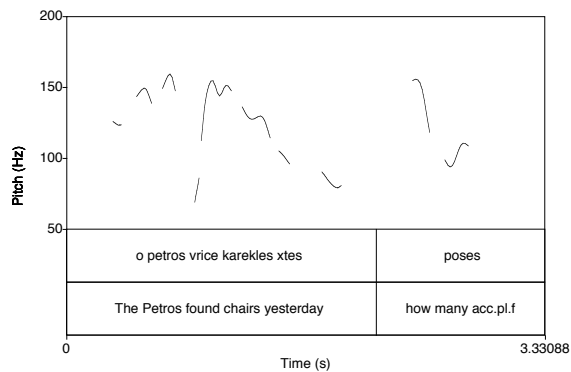
(23) a. Canonical word order in Greek

[Poses karekles vrice xtes o petros]_{IP}
 How-many.acc.pl.f chairs found yesterday the Peter
 “How many chairs did Peter find yesterday?”



(23) b. Non-cohesive discontinuous noun phrase with a postponed wh-word in Greek

[O petros vrice karekles xtes]_{IP} [poses]_{IP}
 The Peter found chairs yesterday how-many.acc.pl.f
 “How many chairs did Peter find yesterday?”



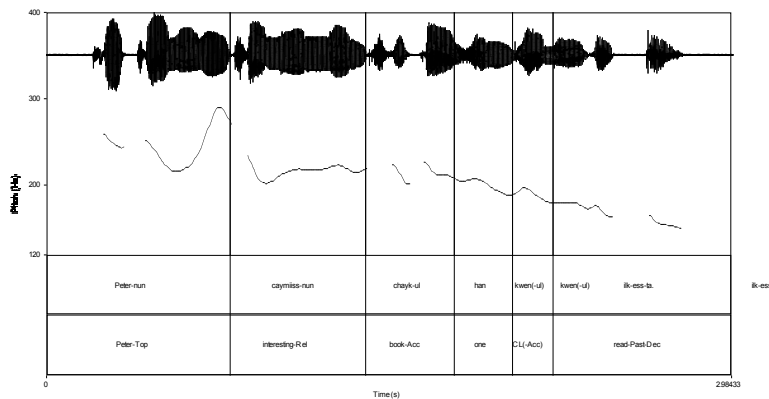
Examples (24) and (25) are from Korean.³⁰ (24) is a transitive sentence in its canonical order. There are two p-phrases, or Accentual Phrases in Jun’s (1993) terminology, the first one on the topicalized subject *Peter-nun* and the second one consisting of the remaining of the sentence.

(24) Canonical noun phrase in Korean

[[*Peter-nun*]_P [*caymiiss-nun* *chayk-ul* *han kwen(-ul) ilk-ess-ta*]_P]₁

³⁰ These examples come from Shin-Sook Kim. Many thanks to her.

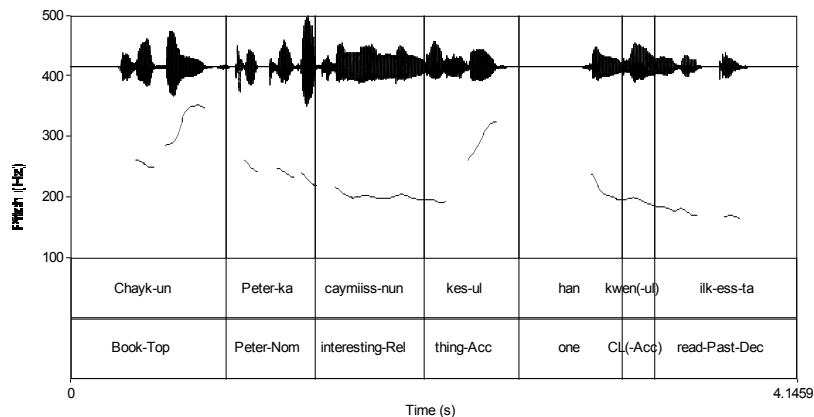
Peter-top interesting-rel book-acc one cl(-acc) read-past-dec
 “Peter read an interesting book.”



(25) shows the same sentence but with *chayk-un* ‘book’ topicalized and forming a separate i-phrase. The dependent adjective appears after the subject. As mentioned above, the adjective cannot appear alone, but it is obligatorily accompanied by the nominal pro-form *kes*. As far as the intonation is concerned, there is an additional p-phrase ending with *caymiiss-nun kes-ul* ‘interesting one.’ The high boundary tone which ends this p-phrase is nearly as high as the one on the topicalized noun.

(25) Non-cohesive discontinuous noun phrase in Korean

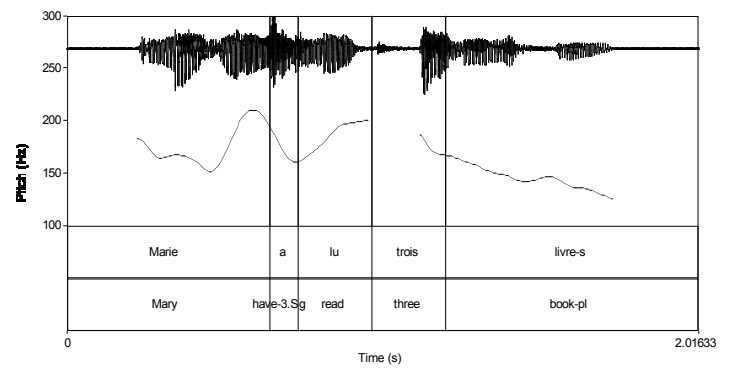
[[*Chayk-un*]_P]_I [[*Peter-ka* *caymiiss-nun kes-ul*]_P [*han kwen(-ul) ilk-ess-ta*]_P_I
 book-top Peter-nom interesting-rel thing-acc one cl(-acc) read-past
 “Peter read and interesting book.”



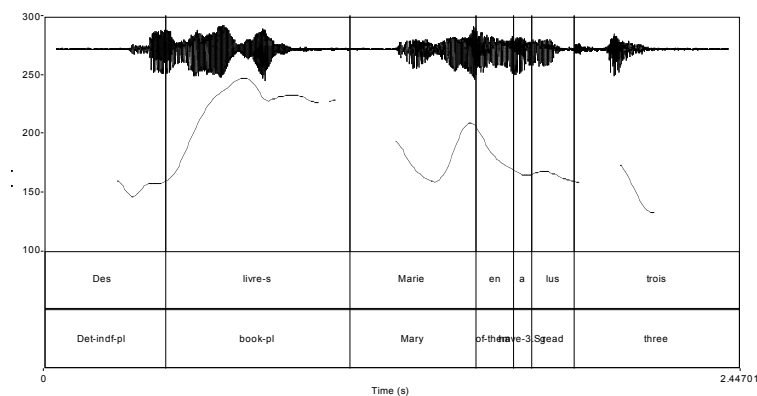
The intonational separation of one constituent from the rest of the sentence by realizing it in an independent i-phrase is not limited to discontinuous noun phrases, but is found in a number of other constructions. Many languages have PP extractions, or allow topicalization of a constituent while repeating it as a clitic. French illustrates that a language without non-cohesive

discontinuous noun phrases still has the possibility to topicalize parts of a nominal phrase. When the noun is topicalized and the dependent is not, the dependent numeral, quantifier or adjective may not appear alone but needs a clitic, a partitive *en* (in French). See also Morimoto et al. (2005) for Chichewa which uses an object marker *wá*. A construction of the type *hanging topic* is extremely common in the languages of the world.

- (26) a. *Marie a lu trois livres.*
 Mary has read three books
 “Mary read three books.”



- b. [*Des livres*]_P1 [[*Marie en a lus trois*]_P1
 Det.indf.pl books Mary of-them has read three
 “Mary read three books.”



Non-cohesive discontinuous noun phrases, thus, require the formation of two i-phrases. The two parts of the split are loosely connected prosodically (and also syntactically, see section 4), but they are tightly connected by the semantics. Schematically, non-cohesive discontinuous noun phrases can be illustrated as in (27).

(27) Non-cohesive discontinuous noun phrases

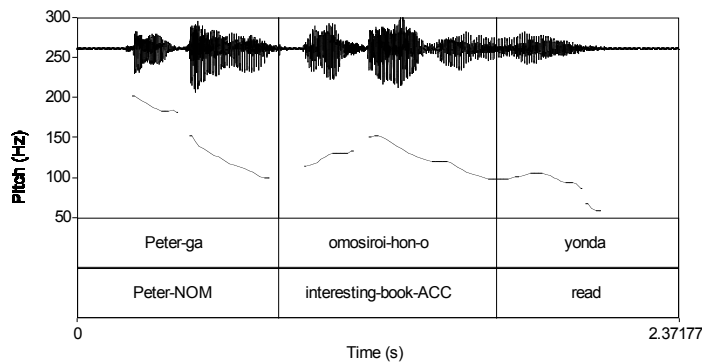
$[[A]_P \dots [B]_P [C]_P \dots [D]_P]_I \quad \rightarrow \quad [[B]_P]_I [\dots [A]_P \dots [C]_P \dots [D]_P]_I$

2.2. Positional preferences for elements of discontinuous noun phrases

Most languages have strong preferences for locating the elements of discontinuous noun phrases in special positions in which they can easily get the necessary accent or the prosodic structure rendering them more or less prominent. A topic is fronted in most languages, for example in German, English, Turkish, Persian, Indonesian, Mandarin Chinese, Slavic and Romance languages, Georgian etc., see also many examples from above, and this is also true in a language like Japanese, which marks its topics with a special morpheme *-wa*,³¹ as illustrated in (29). But first, (28) shows the canonical order of the sentence.

(28) Canonical word order in Japanese

$[[Peter-ga]_P \quad [omosiroi-hon-o \quad yonda]_P]_I$
 Peter-nom interesting-book-acc read
 “Peter read an interesting book.”

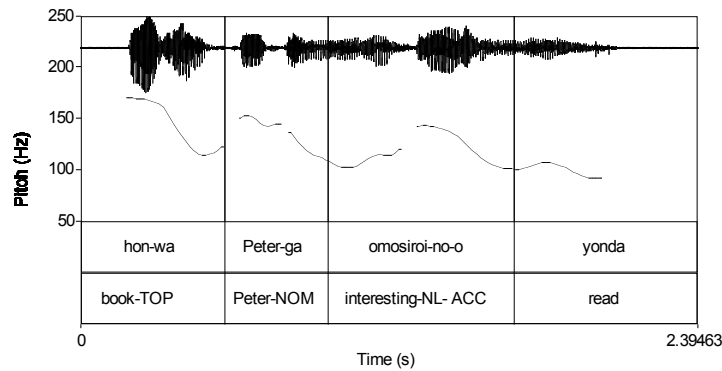


Topicalization, as in (29), favors the emergence of an additional i-phrase on *hon-wa* ‘as for books’. The subject *Peter* forms its own p-phrase, and the remaining of the sentence is in a single p-phrase.

(29) Topic in Japanese

$[[hon-wa]_P]_I \quad [[Peter-ga]_P \quad [omosiroi-hon-o \quad yonda]_P]_I$
 book-top Peter-nom interesting-NL-acc read
 “As for books, Peter read an interesting one.”

³¹ Thanks to Shinichiro Ishihara who provided the examples and discussions.



Some of the languages examined in our survey do not have a topic position, like Niue and Mohawk. A larger number of languages have a topic position, but the topic may be best characterized as a ‘free’ topic, as the relation between the topic and the argument expression in a discontinuous noun phrase construction is relatively loose. Vietnamese, Mandarin Chinese and Japanese are such languages (see below), as are Moghamo and Ewe. As mentioned above, some of these languages do not have split constructions, but there does not seem to be a necessary relationship between the absence of a topic position and the absence of splits.

But what about focused elements? Do they prefer a certain position, as well? In some languages, this question can be readily answered. In Hungarian, for instance, except for the topic which is always initial, an all-new sentence begins with the verb (30).³² As soon as the sentence contains a narrow focus, it is realized preverbally, too. In (31), *diák* ‘student’ is a topic.³³ It is phrased in a separate i-phrase, with a rising contour and a short final break. *Sok* ‘many’ is the focus, located in the preverbal position. It is realized at the beginning of the second i-phrase of the sentence, and carries the falling pitch accent. This pitch accent starts at a level of F_0 comparable to the one of the topic. Verb and object are deaccented and are realized at a low F_0 level.

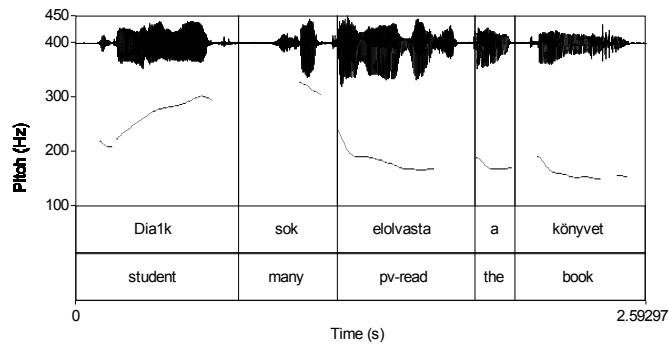
(30) All-new sentence in Hungarian
 [[*Olvasott sok könyvet*]_i]_i
 read-1sg many book.pl.acc
 “I read many books.”

(31) Topic and focus in Hungarian discontinuous noun phrase³⁴
 [[*Diák*]_i]_i [[*sok elolvasta a könyvet*]_i]_i
 student many pv-read the book
 “Many students read the book.”

³² Thanks to Beata Gyuris and to Katy E.Kiss for help with Hungarian.

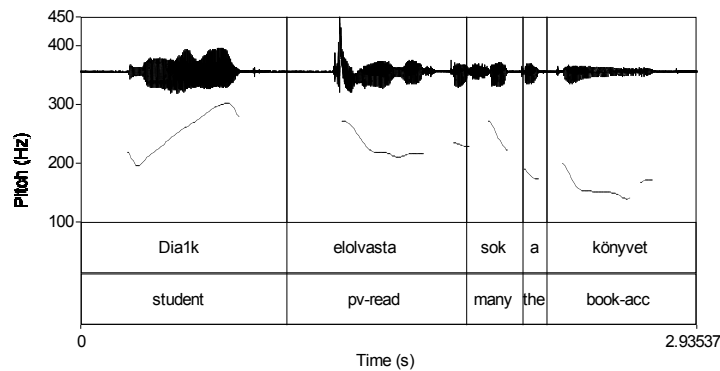
³³ The canonical word order is SVO: *Sok diák elolvasta a könyvet* ‘many student particle-read the book’

³⁴ In the pitch tracks, the number 1 after the *a* of *diák* stands for the accent.



In (32), *students* is the topic, and *many* is focused, as indicated by the position of the verbal particle after the verb, and its falling pitch accent. The tonal structure of this sentence differs from the one in (31) in the second focus accent on *sok*. However, this postverbal second accent, if present at all, is always realized much lower than the first one.

- (32) [[*Diák*]_P]_i [[*olvasta el*]_P] [*sok a könyvet*]_P]_i
 student read pv many the book-acc
 “Many students read the book.”



In Hungarian, the motivation for discontinuity of an NP is transparent. If there are focus and topic in a sentence, both have to occupy their special positions: the topic sentence initially, and the focus just behind it (Brody 1990, Horvath 1986, É. Kiss 1998, Szendrői 2001)³⁵. The intonation arising from this information structural pattern is a hat pattern consisting of the topical rise and the adjacent focusing fall.

Hungarian has free word order, but a rigid tonal pattern. Both the rising accent and the falling one have to be located early in the sentence, barely leaving tonal place for a second focal accent.

³⁵ Interestingly, Hungarian seems to pattern exactly like Yucatec Maya in this respect, see Skopeteas et al. (in prep.).

Other languages have different places for their focus. In French, for instance, a focus is located at the right edge of a clause and given constituents are topicalized or extraposed to the right of the sentence, in a extra i-phrase without accent. Italian and Catalan behave similarly to French. The syntactic restructuring serves the needs of the intonation (see Samek-Lodovici 2005 for Italian, Szendrői 2001 for Hungarian, Hyman & Watters 1984 for Aghem, Vallduví 1992 for Catalan).

Some languages do not have any focus position and do not change word order for the needs of information structure, or, if they do so, then only for the needs of topicalization. In our survey, Mandarin Chinese behaves like that, as do Mawng, and Vietnamese, among others. There appears to be a correlation between the absence of a special focus position and the absence of splits, which relates to prosody. It would seem that moving a constituent to a special focus position only makes sense if this position goes hand in hand with a special prosody, which is related to a special tonal contour. But if the tonal option is lacking, any word order will do, and it is more economical to always use the same word order. The next section will address the question of the typology of intonation, and formulate some hypotheses about the correlation between types of languages and the existence of split constructions. Tone languages, and to a lesser extent, pitch accent languages have no simple discontinuous noun phrases, and it will be proposed that this is due to their tonal structure.

To sum up this section, discontinuous noun phrases can be considered as partially motivated by the intonational needs of a language, since they usually consist of a topicalized part, followed by a focused part. The rising tone that one very often finds on topics primarily expresses that the sentence needs a continuation. It signals that the sentence is open, that something is missing. The focused part which is realized with a falling tone in many cases provides the missing information. This is the schema present in intonation languages, but it is not universal.

2.3 Typology of intonation and discontinuous noun phrases

This section addresses the role of the tonal structure of languages for the distribution of discontinuous noun phrases. Most languages which have illustrated some property of the discontinuous noun phrases in the preceding sections are intonation languages. But languages may be divided into four main categories as far as their intonational properties are concerned, and the question arises whether intonation languages are more tolerant for discontinuous noun phrases than other types of languages, or whether the imbalance observed is due to the fact that intonation languages are better studied. This issue cannot be settled here, but some pieces of information can be provided which may bear on this issue in several ways. The typology of intonation (Ladd 1996 and Gussenhoven 2004) usually distinguishes between three types of languages as far as their prosodic and tonal properties are concerned: intonation languages, pitch

accent languages and tone languages.³⁶ A fourth type of languages seems to be needed that is tentatively called ‘phrasal languages’ and that regroups languages which organize the intonation around the tonal properties of the prosodic phrase, like Greenlandic Eskimo, Korean, Indonesian and possibly a number of Indian languages. Based on the modest survey of the tonal properties of discontinuous noun phrases in some 30 languages, it is conspicuous that the groups of languages just defined vary a great deal as to their propensity to form DPNs. A hypothesis is formulated in (33).

(33) Intonation and discontinuous noun phrases

In order to allow discontinuous constructions, a language should not only have morpho-syntactic well-formedness conditions on the preposed or postponed constituent, but also prosodic ones.

Let us consider the four types of languages in turn and focus on how specific facts about the intonation of languages or groups of languages can help to disentangle the intricate issues at play.

2.3.1 Intonation languages

Intonation languages have an inventory of pitch accents and boundary tones at their disposal to express different kinds of pragmatic meanings (Pierrehumbert 1980, Gussenhoven 1983, Pierrehumbert & Hirschberg 1990, Bartels 1997, Gunlogson 2001). The alignment of excursions, peaks and valleys relatively to the segmental material can also play a role for the conveyance of meanings (Kohler 1990). Pitch accents can be assigned at the level of words (in languages with lexical stress) or of larger domains (in languages without lexical stress): this distinction amounts to a difference between lexical and post-lexical accents (Jun 2005). Most European languages belong to this group.

Intonation languages have discontinuous noun phrases, simple and inverted, and in fact they are extremely rich in discontinuous constructions, but they show important differences as to how tolerant they are. Romance languages have virtually no discontinuous noun phrases, as already hinted at above, whereas some Germanic and all Slavic languages are much more permissive. The richness may be explained by the plasticity in both word order and tonal structure. Accents are realized in different ways just by varying the F_0 , and phrasing may be changed as well. As far as Romance languages are considered, topicalization, and extraposition are very frequent, and display a special intonation (Vallduví & Engdahl 1996), so that the source of the paucity of discontinuous noun phrases cannot be located in the prosodic part of the grammar. Based on the observations about discontinuous noun phrases in intonation languages, it may be observed that

³⁶ However, this classification is criticized by Jun (2005) who argues for a much finer classification.

plasticity in accenting and varying the tonal structure, as well as the phrasing in general favors the formation of discontinuous noun phrases.

2.3.2 Discontinuous noun phrases in pitch accent languages

Pitch accent languages differ from intonation languages in that the lexical representation of words or affixes may include a phonological tone feature, like H*L, or just H*. In Bruce's (1977) and Gussenhoven's (2004) analysis, tones in these languages come from lexical specifications: the lexicon has accented words (*arbóla* 'tree', *léku* 'place' in Lekeitio Basque) and unaccented ones (*sagar* 'apple', *ama* 'mother'...), and from phrasal tones, which are assigned at the level of prosodic phrases. In these languages, tones are not as freely assigned as in intonation languages, though, as demonstrated by the Franconian dialects (see Gussenhoven 2004 and Gussenhoven & Peters 2004), pitch accents and intonation are not completely incompatible. Examples of pitch accent languages are Swedish, Norwegian, Lekeitio Basque, Japanese, Franconian dialects and some dialects of Serbo-Croatian. This group of languages is smaller than intonation languages and tone languages.

Pitch accent languages may not have discontinuous noun phrases to the same extent as intonation languages. In fact, Basque does not have them at all, although it has left or right dislocation with or without clitic doubling. For this reason, it is tempting to correlate the absence of discontinuous noun phrases with the inflexible prosody of these languages. Accented words are always pronounced in the same way, and, at least in Basque, unaccented words must be phrased together with an accented word, which severely restricts the formation of independent p-phrases.

In (34), a Basque example from Gussenhoven (2004), citing Elordieta et al. (1999) and Elordieta (2006), speaker A asks about a whole DP (*black cat*). Speaker B corrects just the noun *dog*, which is thus narrowly focused. The noun is the first word of a p-phrase, and it is unaccented. But this word, being unaccented, is unable to get any intonational prominence. In a p-phrase, it is always the last word which gets the accent, and an intrinsically unaccented word has to be integrated into the p-phrase formed by the next accented word. Because of this property, the answer in (34) is ambiguous in three ways: I saw the BLACK dog, I saw the black DOG, I saw the BLACK DOG.

- (34) A: (*Katu BALTZÁ*)_p (*ikusi dozu*)_p (Lekeitio Basque)
 cat black see AUX
 “Did you see the black cat?”
 B: (*Txakur BALTZÁ*)_p (*ikusi dot*)_p
 dog black see AUX
 “I saw the black DOG!”

The lack of prosodic flexibility as a response to narrow focus can explain the absence of discontinuous noun phrases in this language. A tentative explanation for the absence of split

constructions is along the following line: A noun like *txakur* ‘dog’ can never form a p-phrase by itself when it is modified by an adjective. In particular, it cannot be moved to another place in the sentence to become more prominent, since it would necessarily be integrated into the following phrase. But this process is contrary to the need of topicalization which requires from the topic that it is phrased individually and gets a pitch accent. To put it differently, an unaccented word can never form a prosodic phrase on its own, and this prohibition goes against the needs of splitting. Integration of a split part into the following p-phrase creates a mismatch between semantics and prosody, which would lead to processing difficulties. It could be the case that the general ban against splitting a DP in Basque is a generalization of this special ban.

Other pitch accent languages are different, however. Japanese has no problem in creating a p-phrase on an unaccented word (Pierrehumbert & Beckmann 1988, Kubozono 1993, Selkirk & Tateishi 1991). The restricted nature of discontinuous noun phrase formation in this language (e.g., there are no simple discontinuous noun phrases) may be of a purely morpho-syntactic nature. This assumption is supported by the similarity between Japanese and Korean, as far as discontinuous noun phrases are concerned (see above), despite the fact that these two languages belong to two different tonal groups. Korean is not a pitch accent language but is better classified as a phrasal language. Other pitch accent languages, like Swedish and Norwegian, despite of being Germanic languages, do not tolerate discontinuous noun phrases (Norwegian) or restrict them (Swedish), so that, again, morphosyntactic properties must play an important role in explaining the acceptability of discontinuous noun phrases.

The absence (Basque) or restricted distribution (Japanese, Swedish, Norwegian) of split constructions in pitch accent languages may not be explained globally by their tonal characteristics, as they differ from each other, but it is worthwhile to further examine the tonal features of these languages in relationship with their syntactic restrictions. Whether the relative scarcity of split constructions correlates with the pitch accent nature of these languages, is something to investigate in the future.

2.3.3 Discontinuous noun phrases in tone languages

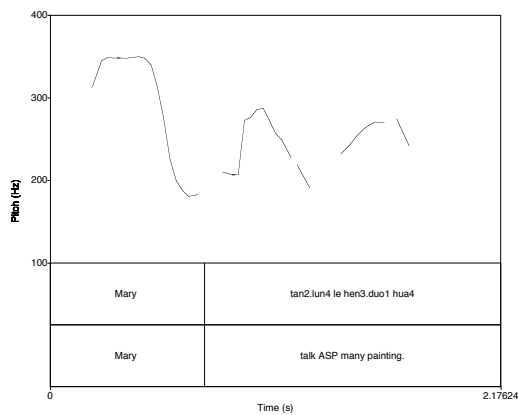
In tone languages, as well, some intonation is marginally possible, though it is rather limited and is usually restricted to register scaling and phrase formation. ‘Tone language’ characterizes a vast amount of languages, that share the fact that most of their lexical items are specified tonally as well as lexically. Lexical tones vary between one and five, according to the language under consideration. In principle, Asiatic languages have more lexical tones than African languages (see Yip 2000 for an excellent review). Some tone languages do not use prosody for focusing or backgrounding, but rely entirely on morpho-syntactic means. According to Yip, 60 to 70% of the world’s languages are tone languages. The group of tone languages is

heterogeneous, and accordingly, it varies a great deal as to the use of prosody, as well as in its syntactic and morphological properties.

At least for Mandarin Chinese, it has been shown that information structure raises or lowers pitch excursions, but does not change the direction of tones (Xu 1998, 1999). This is only natural, as melodic contours of words are lexical properties. The use of F_0 is thus largely restricted to the expression of lexical contrasts, and cannot be used to convey pragmatic meanings. It is possible to have discontinuous NPs, as illustrated in (35) to (37) for Mandarin Chinese, but the difference in contour reflects a difference in the linear alignment of the tones. Wang (2005) indeed finds for Chinese that the difference in information structure is not reflected in a difference in pitch contour, as shown in (38). Whether the object is a focus or a topic in sentences like (37), and the numeral is either focused or part of the background, the pitch contour remains identical. (35) shows a sentence with a canonical word order.

(35) Canonical word order in Chinese

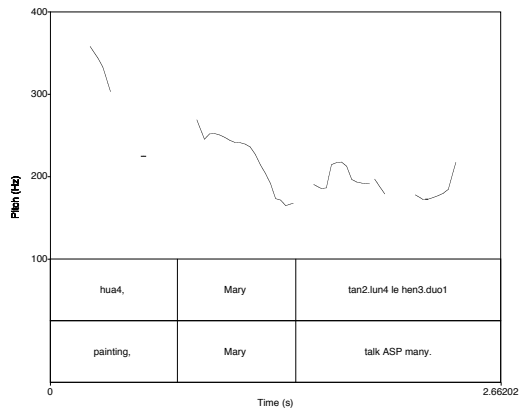
Mary tan2.lun4 le hen3.duo1 hua4.
 Mary talk ASP many painting
 ‘‘Mary talked about many paintings.’’



The same sentence is reproduced in (36), but the noun *hua4* ‘painting’ is now topicalized. Chinese speakers are reluctant to qualify these constructions as true discontinuous noun phrases, they have a feeling of ‘aboutness’ or of ‘special focusing’ when confronted with these sentences.

(36) Non-cohesive discontinuous noun phrase in Chinese

hua4. *Mary tan2.lun4 le hen3.duo1.*
 painting Mary talk ASP many
 ‘‘Mary talked about many paintings.’’

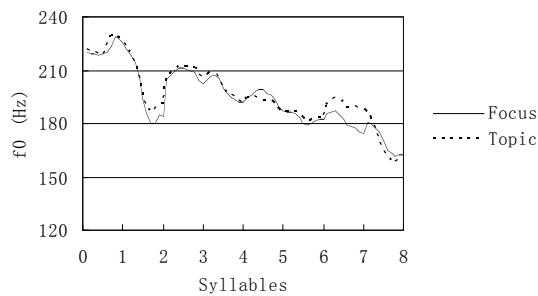


The fronted noun in (36) and (37) may play the role of a focus or of a topic. Wang (2005) has examined whether the two readings lead to different tonal patterns with the help of production experiments with sentences like the one in (37). Her results are shown in (38). There is virtually no difference in tonal pattern.³⁷

(37) Discontinuous noun phrase construction in Chinese

shuqian BaoXin diu le san zhang.
 bookmarks BaoXin lose asp 3 class
 “BaoXin lost three bookmarks.”

(38) Pitch tracks of sentences like the one in (37) in which the topicalized object can be a topic or a focus (Syllables 1 and 2: object, 3 and 4: subject, 5 and 6: verb and 7 and 8: numeral)



Many African languages do not allow split constructions at all: Aghem, Ewe, and Wolof are languages without discontinuous noun phrases. Other African languages allow simple discontinuous noun phrases, but more investigation is needed in order to understand the prosodic properties of these languages. Overall, the available evidence suggests that tone languages have inverted/non-cohesive discontinuous noun phrases only (see section 3).

³⁷ The same experiment with German reveals a large difference, as narrow focus on the noun induces deaccenting of the remaining of the sentence, as was illustrated in (12) and (13).

2.3.4 Discontinuous noun phrases in phrasal languages

In a phrasal language, the peaks and valleys of the intonation pattern do not link to specific syllables in a word, but rather to their location in a phrase (see for instance Jun 2003 for Korean). These languages do not have lexical or post-lexical accents, and they do not have lexical tone. But their phrasal tones can be realized to different degrees, with clearer excursions or with a larger register, so that emphasis and focusing can be expressed in a prosodic way. The tonal structure is a phrasal one, and the adjustment of the size of the phrases can also be used for a better communication of information structure. This fourth category is a tentative proposal which has to be assessed by future studies. It could turn out to be useful in the description of polysynthetic languages, of which until now only few intonation surveys exist. Some Indian languages and Korean could probably also better be classified as phrasal languages, although it remains to be shown whether the intonational properties of these Asian languages do not require an independent classification.

In West Greenlandic, a prototypical phrase language,³⁸ a focused phrase may be initial or final in its larger domain (the i-phrase) and is realized more clearly than its neighbors. In a sentence, a sequence of p-phrases is organized as an i-phrase, in which downstep applies. A non-final p-phrase starts with a rise and ends with a fall-rise, as illustrated in (39).³⁹ The last p-phrase is only falling, see (40). It must be observed that West Greenlandic parses nearly every word in a separate p-phrase, which sometimes renders the separation into phrases and words difficult.

(39) Non-final p-phrase []_P
 LH HLH

(40) Final p-phrase:
 []_P
 LH HL

Depending on the number of moras in a phrase, more or less tones can be associated with segmental material and syllables.

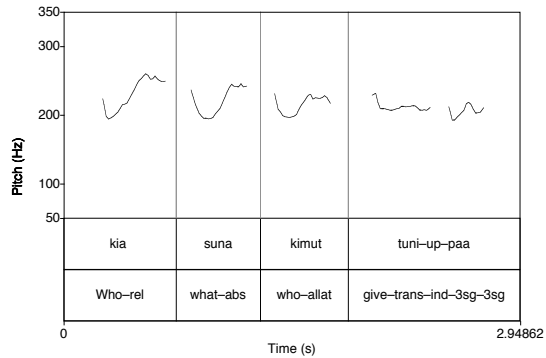
³⁸ Thanks to Naja Blytmann Trondhjem for sharing her native speaker intuitions.

³⁹ See Rischel (1974) and Nagano-Madsen (1993, 1995) for the same observation for the final part of the phrase. Nagano-Madsen (1993) proposes that only the last H is a property of the phrase, whereas the preceding HL sequence is a property of the word. In Nagano-Madsen (1995), the word-final fall HL is analyzed as a pitch accent related to the word boundary, while the phrase-final H plays the role of a phrase accent.

Sentence (41) illustrates that in a series of wh-words, every one has the typical final fall-rise intonation just illustrated. The initial tones are deleted here, as there are not enough moras to bear all tones.

(41) Several wh-words in West Greenlandic

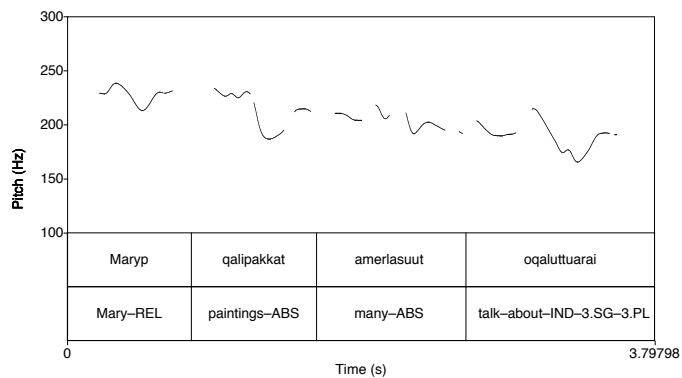
[[*Kia*]_P [*suna*]_P [*kimut*]_P [*tunni-up-paa?*]_P]_I
 who-rel what-abs who-allat give-trans-ind.3sg.3sg
 “Who has given what to whom?”



As for discontinuous noun phrases, every p-phrase has its own tonal pattern, which seems to be unchangeable. The illustrations show that the intonation of each phrase does not change, but that the register differences between the phrases provide the most important clues about whether the phrases are prominent or not. In (43), the word *amerlasuut* ‘many’ is realized with a boosted pitch. However, and in contrast to what happens in intonation languages and in pitch accent languages, it is not just one syllable which is boosted, but the whole phrase is altogether occupying more space in the pitch register. (42) first shows the sentence in its canonical order.

(42) Canonical word order in West Greenlandic

[[*Maryp*]_P [*qalipakkat*]_P [*amerlasuut*]_P [*oqaluttuarai*]_P]_I
 Mary-rel paintings-abs many-abs talk-about-ind-3.sg-3.pl
 “Mary talked about many paintings.”

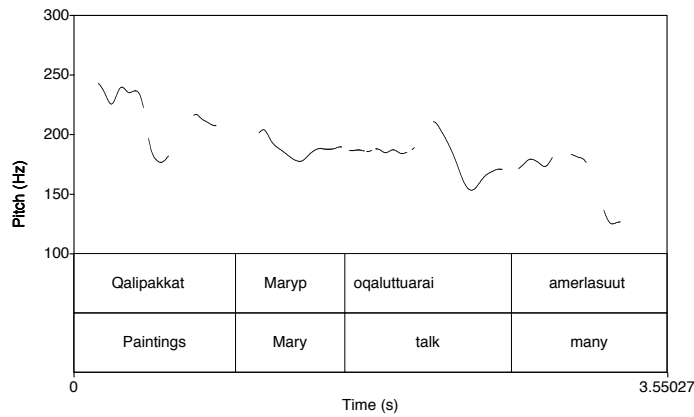


(43) shows the corresponding discontinuous noun phrase construction with a fronted noun. Figure a. shows that all p-phrases are in a downstep relation to each other, whereas Figure b. displays upstep on *amerlasuut* ‘many’. The discontinuous noun phrase is analyzed as cohesive here, though more study is needed.

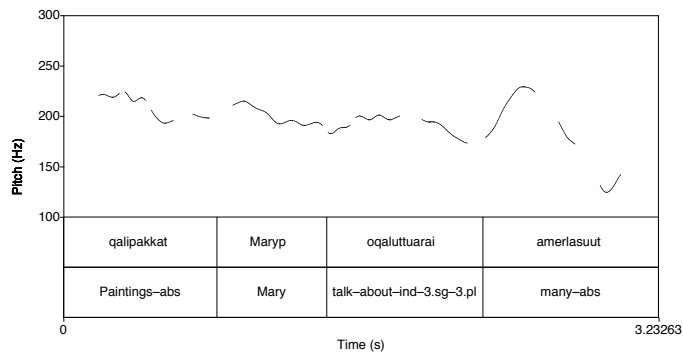
(43) Non-cohesive discontinuous noun phrase in West Greenlandic

[[*Qalipakkat*]_P [*Maryp*]_P [*oqaluttuarai*]_P [*amerlasuut*]_P]_I
 Paintings-abs Mary-rel talk-about-ind-3.SG-3.pl many-abs
 “Mary talked about many paintings.”

a.



b.



At least for polysynthetic languages – for the discussion whether West Greenlandic is a truly polysynthetic language, see section 3 - it has been argued that non-verbal constituents are adjuncts, and that the arguments are realized as possibly empty inflectional morphemes of the verb. Such a view is compatible with the intonational categorization of such languages as phrasal languages. The tighter cohesion between verbs and arguments that is expressed by

accent scaling in intonation languages, and to a lesser degree in pitch accent languages, is not necessary here.

As already mentioned above, Korean, Indonesian, Bengali and other Indian languages are also phrasal languages. In these languages, tones appear to be mostly phrasal at the level of the p-phrase (also called Accent Domain, Major Phrase, Intermediate Phrase and so on), and have been shown to play an important role. Moreover, in these languages, evidence for the existence of lexical stress is weak (see Hayes & Lahiri 1991 for Bengali).

However, it seems to be an unwelcome move to categorize this kind of languages and polysynthetic languages as a single group. Obviously, further investigations are needed in order to refine the proposal. It is important to study intonation and discontinuous noun phrases in Indian languages on the one hand and polysynthetic and phrasal languages on the other hand.

To sum up section 2, discontinuous noun phrases are excellent constructions to study intonation with. Because of the comparison between canonical order and discontinuity, phrasing and tonal features of languages are observable which remain concealed if only all-new sentences are examined. By their very nature, discontinuous noun phrases force the formation of topical and focused phrases, which display clear pitch accents, and clear boundary tones. We have examined the prosodic properties of languages which have discontinuous noun phrases, and have provided elements for a typology of intonation from the point of view of these constructions. We have also looked at languages which do not have discontinuous noun phrases and have pointed at the properties at play in both cases.

3. Morphosyntactic Factors in the Licensing of Discontinuous Noun Phrases

3.1 Factors blocking/licensing discontinuous noun phrases

After having considered the prosodic factors that play a role in licensing discontinuous noun phrases, the question arises whether one can identify morphosyntactic conditions for the presence and absence of discontinuous noun phrases, as well. Potential factors besides prosody are related to the expression of information structure, the treatment of DPs without an overt nominal head, Case and agreement in NPs, and polysynthesis.

Since discontinuous noun phrases are normally used in **special informational constellations** (a part of a noun phrase with a narrow focus is preposed in cohesive/simple splits, while the left peripheral element is a contrastive topic in inverted/incohesive splits) one expects to find discontinuous noun phrases primarily in those languages in which word order is sensitive to information structure. In languages such as English or Tok Pisin with their very limited set of constellations in which topicalization can be applied, the basic prerequisites for creating discontinuous noun phrases might turn out to not be available at the pragmatics-syntax

interface. Note, however, that PPs *can* be extracted from object noun phrases in English in topicalization structures. Given the prosodic and informational parallels between PP-extraction and discontinuous noun phrases noted above, it is rather unlikely that the absence of discontinuous noun phrases in English can be explained in terms of information structure at all.

We would not expect to find discontinuous noun phrases when the movement linked to information structure is accompanied by a change in grammatical functions (as it is in passive, or in the Bantu reversal constructions), and indeed we have not yet come across any data in which only a part of a noun phrase is promoted to subject status while the rest remains a direct object, for example. The distinction between simple and inverted splits seems relevant for direct vs. inverse agreement in Panaré, however (see Payne 1993): the fronting of object material triggers the shift to inverse agreement (typical for object-initial sentences) with inverted splits only. Simple and inverted splits thus have different effects on the overall syntax in this language.

Quite a number of the languages (nearly) lacking discontinuous noun phrases have informationally triggered word order alternations such as topic or focus fronting for continuous noun phrases. This is true for Ainu, Avaric, Basque, Hebrew, Icelandic, Nama, and Norwegian, among others. The absence of discontinuous noun phrases in these languages thus cannot be reduced to the absence of informationally licensed movement. The existence of word order alternations due to informational distinctions is thus not a sufficient condition for the licensing of discontinuous noun phrases (as one might have expected in any event).

It has been proposed that the grammaticality of discontinuous noun phrases is related to the acceptability of **DPs without a nominal head**. Thus, the difference between English and German with respect to discontinuous noun phrases could be related to the simpler difference in acceptability between (44) and its word-by-word counterpart (45a).

- (44) *Ich kaufe ein gutes.* (German)
 (45) a. *I buy a good.
 b. I buy a good one.

A relationship between the two phenomena might exist for different reasons. Fanselow (1988) argues that the left-peripheral nominal projection must bind an empty pronominal in the remnant DP sitting *in situ* for discontinuous DPs to be possible, as illustrated in (46). The relation between (44) and DP discontinuity is thus established very directly.

- (46) *Bücher hat er keine pro_i gelesen.* (German)
 books has he none read
 “He did not read any books.”

At least for inverted splits, it seems to hold that the right part must always have the formal properties of an independent autonomous DP. By definition, the noun appears in the left rather

than the right part of an inverted discontinuous DP, so that (44) and (46) are also indirectly related by the autonomy requirement for right parts of discontinuous noun phrases.

In the model proposed by Ntelitheos (2004), there is no empty pro-form for nominal projections. Rather, (44a) arises by moving a topical projection of the noun out of the DP, and by deleting this topicalized DP.

Ainu and the two Austronesian languages in our sample lacking discontinuous noun phrases (Nalik, Rotuman) also disallow noun phrases without overt nominal heads. The relation between (44) and (46) thus extends beyond the Germanic languages. In our survey, we also found many languages in which both (44) and (46) are grammatical.

The omission of an overt noun in a DP may trigger morphological changes. Very often, adjectives must be augmented by some nominalization suffix in DPs lacking an overt noun. This nominalizing suffix then also shows up in discontinuous noun phrases in many languages. Japanese (47) is a case in point. Yucatec Maya, Cantonese, and Telugu behave in the same way, see also section 4.2.

- (47) *hon-wa Peter-ga omosiroi-*(no-o) yonda.* (Japanese)
 book-top Peter-nom interesting-noml-acc read
 “Peter read an interesting book.”

Not all languages transfer the use of nominalizing suffixes that make nounless DPs possible to discontinuous noun phrases. In this case, the right part of the (inverted) discontinuous noun phrase can only be a determiner or quantifier, but never an adjective. This is true for Avaric, Assamese, Malayalam, and Oriya, perhaps also for languages like Chuckchee and Telugu for which speakers disagree concerning the wellformedness of (adjective-stranding) discontinuous noun phrases. Lezgian also prescribes the nominalization of adjectives in DPs without overt nominal heads, but it forbids discontinuous phrases quite in general.

It is not clear to us whether we are confronted with a uniform phenomenon in this context. Given that a nominalizer makes a noun out of an adjective, sentences such as (47) may be argued to involve two elements functioning syntactically as nouns (*hon, omosiroi-no*), and they are thus more reminiscent of sentences such as (48), i.e. free topic constructions with two lexical nouns.

- (48) *omotya-wa kare-wa aoi booru-dake(-o) sitteru.* (Japanese)
 toy-top he-top blue ball-only-acc know
 “As for toys, he only knows blue balls.”

The idea suggests itself, then, that languages which require nominalized adjectives in nounless DPs in fact disallow discontinuous noun phrases in the narrow sense. Apparent counterexamples such as (47) would have to be reanalyzed as free topics, as in (48). Attractive as this idea may be, it cannot be upheld in the light of empirical evidence. Structures similar to (48) occur in

Assame and Oriya (although these have no adjectives in discontinuous noun phrases), while they are unacceptable in Yucatec Maya, which uses nominalized forms of adjectives in discontinuous noun phrases. It thus appears as if the usability of nominalized adjectives in discontinuous noun phrases is subject to independent parametrization. If nominalized adjectives are banned from discontinuous noun phrases, but if nominalization must occur in nounless DPs, then discontinuous noun phrases cannot be formed at all, or not when they would involve the stranding of an adjective.

Lezgian (and, to a certain extent, the other languages just mentioned) illustrates the observation that the grammaticality of a DP without an overt noun may fail to also license the presence of discontinuous noun phrases. The same is true for Basque, Hebrew, Icelandic, Nama, Norwegian and Tok Pisin; these languages forbid discontinuity for noun phrases, but tolerate DPs without nominal heads. Nounless DPs are thus at most a necessary, but not a sufficient condition for the presence of discontinuous noun phrases.

Basque, Hebrew, Icelandic, Nama, and Norwegian pose a special challenge, since they possess informationally licensed movement operations. For the pro-theory of nounless DPs, they show that discontinuous noun phrases do not simply arise when a pro-constituent in a DP could in principle be A-bar-bound by a nominal element sitting in a topic position – the grammatical derivation of discontinuous noun phrases must be more complex (see Fanselow 1988 for a proposal). The movement-and-deletion theory of nounless DPs (Ntelitheos 2004) seems to exclude the possibility that nounless DPs could arise in languages without movement processes splitting up the DP. With Ntelitheos, one can assume that the movement operation preceding deletion targets a DP-internal topic position, and that further movement is blocked because of the islandhood of DP. This might work for Basque (a language in which nothing can be extracted from DP), but it fails to capture Icelandic or Norwegian which tolerate the extraction of PPs out of DPs.

Kayardild and Swampy Cree have been cited as languages with discontinuous noun phrases but without nounless DPs. Ntelitheos (2004) shows, however, that nouns can be omitted for all adjectives in Kayardild once the appropriate pragmatic conditions are met. There are many kinds of nounless DPs, and it is certainly desirable to check if there is a relation between this typology and ~~the one of~~ discontinuous noun phrases. Swampy Cree is an Algonquian language and thus has simple splits at most. One can therefore confine the correlation between nounless DPs and discontinuous noun phrases to the inverted type. Note that in the system proposed in Fanselow (1988), such a correlation is predicted to be restricted to inverted split noun phrases in any event. In addition, one cannot exclude the possibility that splits in Swampy Cree are of the passive type, so that the language would not have discontinuous noun phrases in the strict sense at all. We therefore consider it highly likely that discontinuity and nounless DPs are universally correlated when discontinuous noun phrases are properly defined.

For obvious reasons, discontinuous noun phrases should also be difficult to form if the language has an **obligatory determiner system**. After all, the part of the discontinuous noun phrase hosting the noun lacks the determiner that shows up in the other part. However, the formation of discontinuous noun phrases turns out not to be severely affected by the obligatoriness of determiners in a certain language. German requires that overt determiners be present in certain types of DPs (singular count nouns). When such DPs enter a discontinuous noun phrase, a need for adjustment arises, that many German dialects meet by doubling the determiner (49c, see Riemsdijk 1989). Sometimes, grammatical number is changed (see section 4.2.), a solution not confined to German but also chosen by our informant for Romanian. Other dialects simply declare such splits such as (49d) as ungrammatical, but there are also speakers and dialects (see Puig-Waldmüller 2006) not having any problems with (49d) at all, although the leftmost element is not a legal DP in German.

- (49) a. *einen billigen Wagen* (German)
 a cheap car
 b. **einen billigen einen Wagen*
 c. *Einen Wagen kann er sich nur einen billigen leisten.*
 a car can he refl just a cheap afford
 d. *Wagen kann er sich nur einen billigen leisten.*
 car can he refl just a cheap afford
 “He can only afford a cheap car.”

The absence of discontinuous NPs in Basque might of course be related to the quasi obligatory presence of determiner elements in this language; the same might be true for Romance languages. Unfortunately, there is no clear-cut evidence in these or other languages that obligatory determiners can indeed play such a role. Bošković (2005) and many others have suggested that simple splits fronting adjectives are possible in languages without determiners only, but our and Bašić’s (2005) Bulgarian data do not support this conclusion. We take it to be quite telling that clear determiner-related effects are subject to dialectal/idiolectal variation in Bulgarian and German, while no such variability is visible for the role played by overt nouns.

The nature of noun phrase internal agreement has also been made responsible for the availability of discontinuous noun phrases. That **morphologically rich agreement** in DP plays a role in licensing discontinuous noun phrases may seem plausible, since discontinuity is linked to the presence of DPs with invisible nominal heads. That the licensing of the latter presupposes rich agreement in the noun phrase would fall in place with the idea that the features of empty elements must always be identified by overtly agreeing heads. However, Altaic languages like Kyrgyz, Nogai, and Turkish possess discontinuous noun phrases in the absence of any agreement within the DP. The reverse is true for Icelandic.

Basque does not only lack discontinuous noun phrases, it also forbids the extraction of PPs out of DPs. Grammatical processes must not destroy the contiguity of DPs and PPs in this language.

Thus, the ban against discontinuous noun phrases in Basque could also be reconstructed as an *island effect*. We do not expect, however, that the bounding theory for movement plays a decisive role in the licensing of discontinuous noun phrases. First, DPs are transparent for the movement of PPs in Icelandic and Norwegian, so that islandhood cannot be invoked in an account of the absence of split constructions in these two languages. Second, as we will see below, the formation of discontinuous noun phrases is often *more* flexible than PP-extraction.

We have seen that the grammaticality of DPs without overt nominal heads is crucial for the licensing of discontinuous noun phrases, and we have discussed several other potentially relevant factors. We could not identify a set of jointly sufficient conditions for the presence of discontinuous noun phrases, because Hebrew, Icelandic, Nama, and Norwegian fulfill all of the criteria one might make responsible for licensing discontinuous noun phrases without actually having them. PPs can leave DPs in these languages (so that there are no island problems), DPs need no nominal head (so that adjustment would not be called for), and movement is licensed by information structure. Furthermore, there is rich DP-internal agreement for grammatical features in Icelandic⁴⁰. Norwegian is a pitch accent language, and Nama a tone language, but the presence of discontinuous noun phrases in languages with the same or similar prosodic qualities (recall that Swedish has discontinuous noun phrases) again shows that these properties alone cannot rule discontinuous noun phrases out (although prosodic restrictions may be fatal for DP discontinuity in Basque, as we have suggested above).

Unless further factors are discovered in future research, we must conclude that the licensing of discontinuous noun phrases is independent of the other grammatical parameters. There are necessary but no sufficient conditions.

Baker (1995) suggests that **polysynthetic languages** do not have discontinuous noun phrases. He argues that constructions such as Mohawk (50) involve adverbial quantification rather than discontinuous noun phrases. The Algonquian languages Fox (51), Cree (52) and Passamaquoddy (53) are like Mohawk in showing dependencies that look like simple discontinuous noun phrases, but they might of course reduce to adverbial quantification again. If Kathol & Rhodes (1999) are, however, correct in rejecting an extraposition analysis for the relative clause in (55) from Ojibwe, then the creation of discontinuities in this language (see also (54)) cannot be fully reduced to laws of the placement of adverbial quantifiers.

- (50) a. akwéku wa'-e-tshÁri-' ne onhúhsa (Mohawk)
 all she-found NE eggs
- b. *Onhúhsa wa'-e-tshÁri-' akwéku
 "She found all eggs."

⁴⁰ Note that discontinuous noun phrase were possible in Old Icelandic (Rognvaldsson 1995), so that Modern Icelandic seems to have lost the construction without losing any of its "licensing" factors.

- (51) a. *neswi* *e.h=ayo.wa.či* *nakamo.nani* (Fox)
 three use.3p-inan/aor songs
 “They use three songs.” (= (1) of Dahlstrom 1987)
- b. *ma.haki* *kenenohtamwihene* *wi.teko.waki*
 these cause-to-understand-1-2/ind owl-pl
 “I made you understand these owls” (= (16) of Dahlstrom 1987)
- (52) *mitaht-nīsosāp niki-ayāwāwak* *awāsisak* (Cree)
 12 I had children
 “I had 12 children” (= (9) of Starks 1987)
- (53) a. *N-toli=n 4m-iy-a-k niktok skitáp 0-hik Kelisk.* (Passamaquoddy)
 1-location=see-ta-dir-prox.pl those.prox man-prox.pl Calais.loc
 “I saw those men in Calais”, data from LeSourd (2004)
- b. *N-toli niktok n 4m-iy-a-k skitáp 0-hik Kelisk*
 1-location those.prox see-ta-dir-prox.pl man-prox.pl. Calais.loc
- c. **N-toli skitáp 0-hik n 4m-iy-a-k niktok Kelisk.*
 1-location man-prox.pl see-ta-dir-prox.pl those.prox Calais.loc
- (54) *Nswi wgii-nsaan giigoonyan* (Ojibwe)
 three he.killed.them fish
 “He has caught three fish.”
- (55) Kina gegoo wii-waabndahdim [weztood aw (Ojibwe)
 all thing indef.will.display.it which.he.makes that
Nishnaabe].
 Indian
 “Everything that the Indians produce will be on display.”

All examples have the finite verb separating the two parts of the DP. Given the deep parallels between second position effects for clitics and for finite verbs (see Anderson 2000), the idea suggests itself that (50) – (55) involve passive splits only, so that none of the languages in question would have discontinuous noun phrases. Clearly polysynthetic languages such as Ainu and Lakota do not tolerate discontinuous noun phrases at all. However, examples such as (56) from Chukchee⁴¹, (57) from West Greenlandic, and (58) from Nivkh show that simple and inverted discontinuous noun phrases are possible in other languages with clear polysynthetic characteristics (but one may sharpen the notion of polysynthesis such that, e.g., Greenlandic would not be a polysynthetic language after all, see Baker 1995).

- (56) *nymkykin-et RaLxa-t ajwe tuLunet* (continuous) (Chukchee)
 many-pl bird-pl yesterday came
RaLxa-t ajwe nymkykin-et tuLunet (discontinuous)
 “Many birds came yesterday.”
- (57) *Qassit Maryp takuai issiaviit?* (Greenlandic)

⁴¹ It should, however, be added that some Chukchee speakers reject discontinuous noun phrases.

how-many Mary-rel see-ind-3sg-3sg chairs-abs
 “How many chairs does Mary see?”

Atuagaaq Piitap atuarsimavaa *nuannersoq*
 book-abs Peter-rel has-read-he-it interesting-abs
 “Peter read an interesting book.”

- (58) *urla-bitv9* *if* *eryali* *j-uru-g9ta-D* (Nivkh)
 good-book 3s many 3sU-read-res-ind/nml
 “He has read many good books.”

The backgrounding function that simple split formation usually comes with for the right part of the discontinuous phrase is certainly expressed by noun incorporation in the polysynthetic languages, so the relative rarity of simple discontinuous noun phrases in polysynthetic languages need not be surprising.

According to Jelinek’s (1984) Pronominal-Argument-Hypothesis (PAH) elaborated by Baker (1995) and many others, only the pronominal suffixes (and incorporated nouns) have argument status in polysynthetic languages – the overt free nouns and adjectives are adjuncts. In that sense, it is not clear whether the two nominal expressions, e.g. in (57), are parts of a single discontinuous noun phrase, or are better analyzed as two independent noun phrases linked to the same pronominal argument. This issue will reappear in section 4.

3.2. Simple vs. inverted, cohesive vs. incohesive discontinuous noun phrases

In the preceding subsection, we have tried to identify licensing conditions for the existence of discontinuous noun phrases. There are factors that may be considered necessary (the general well-formedness of DPs without nouns), and other factors that seem (in-)favourable to different degrees (e.g., prosodic type). In the present section, we will address two more focused (and therefore, easier) questions: what are the licensing conditions for simple/cohesive and for inverted/non-cohesive discontinuous noun phrases, respectively? A good way of approaching these issues lies in a discussion of those languages which allow one of the two (four) types of discontinuous noun phrases only, and we begin with languages that have simple discontinuous noun phrases only.

Fanselow & Čavar (2002) argued that the inverted split type is more basic than the simple one in terms of its formal properties, and they claimed that this conclusion was supported by an implicational relation: all languages with simple discontinuous noun phrases have inverted ones, but not vice versa. Their claim was based, however, on too small a sample of languages: there are in fact a few languages with simple discontinuous noun phrases that lack inverted splits. This is true for the Algonquian languages just discussed and for Tono O’odham, but even if these constructions from the North American languages do not really involve discontinuous noun phrases (because polysynthetic languages in the sense of Baker 1995 do not have them at

all), there are at least three other instances of languages with simple splits only. First, verb-initial Chamorro and Niue have simple discontinuous noun phrases only.

Verb initiality is, however, compatible with the presence of inverted discontinuous noun phrases, as Malagasy and Tagalog illustrate. The same is suggested by the little amount of evidence we have for Hixkaryana and Panare. In Yucatec Maya, a VOS language, inverted splits are well-established, while simple splits are acceptable only when the right part of the discontinuous noun phrase bears a definiteness-marking, so that the status and analysis of the construction is quite unclear. It may rather involve a type of secondary predication. While there is only one further language⁴² (*viz.*, Circassian) with simple splits only (if we disregard the Algonquian languages), our language sample is certainly much too small for allowing the conclusion that verb-initial languages are at least overrepresented in the set of languages with simple discontinuous noun phrases only.

Circassian illustrates another point in this respect. As we can see in (59) and (60), nouns cannot be fronted in discontinuous noun phrase-constructions in this language, while adjectives (59c) and determiners (60b) can. Given that adjectives and determiners appear on different sides of the noun in this language, the constellation in (59)-(60) cannot be captured in linear terms, while it can easily be analyzed relative to DP-structure: it is always the highest head present in [_{DP} ... D ... [... A ... [... N ...]]] that is displaced in a discontinuous noun phrases, i.e., Circassian is a language with simple splits only if a simple split is a discontinuous noun phrase in which the highest head is moved to the left, while inverted splits are discontinuous noun phrases in which the lowest head is affected in such a way. Circassian thus not only illustrates the need for a structural rather than linear typology of discontinuous noun phrase-types, it also shows that OV-languages may lack inverted discontinuous noun phrases, too.

- (59) a. *Murat une jenishxwa-(r) izha-sh* (Circassian)
 Murat house big (abs) build-past
 “Murat built a big house”
 b. **une murat jenishxwa izhash*
 c. *Jenishxwa Murat une izha-r*
 Big M. house build-part
- (60) a. *detxwade une-ra murat izha-r?* (Circassian)
 which house-foc Murat built-part
 “Which house did Murat build?”
 b. *detxwade-ra Murat une izha-r?*
 which-foc M. house build-part

⁴² Inverted discontinuous noun phrases were only reluctantly accepted by our Yakut informant, so maybe there is a fourth language with simple splits only. Likewise, the status of simple splits seems much stabler than the one of inverted splits in Chukchee.

Our argument concerning Circassian presupposes that (61) is not an instance of a discontinuous noun phrase, but rather involves quantifier float: nouns can be fronted only with the quantifier ‘all’.

(61) *Salu-xwa-m* my?aryse *psomi* jastash. (Circassian)
 Boy-pl-dat apple all-dat I.gave
 “I gave apples to all the boys.”

Summing up the discussion, we saw that a few languages have simple discontinuous noun phrases only. If the Algonquian languages do not belong to them, the presence of simple discontinuous noun phrases in the absence of inverted ones seems to be a rather rare constellation. It may be added that simple discontinuous noun phrases seem to be much more frequent than inverted ones in some languages with very free word order (see Merlan 1993 for Wardaman. For the ancient languages Sanskrit, Latin, Old Icelandic, and Ancient Greek, this impression suggests itself when one considers the descriptions in the literature), but the status of such frequency facts in grammar is quite unclear.

How can we describe such languages? An answer involves at least two dimensions. The first one is informational/prosodic in nature. Recall that inverted discontinuous noun phrases are typically non-cohesive. They involve two informational units that are realized as two i-phrases. The left one of these two i-phrases represents a (contrastive) topic, and if a language lacks such a left-peripheral position for topic phrases, it will not have the corresponding type of discontinuous noun phrases. Sperlich (p.c.) claims that Niue (lacking inverted discontinuous noun phrases) has no leftward topic fronting, which would explain why the language has simple splits only. Likewise, Baker (1995) argues that Mohawk lacks a peripheral (left-dislocated) topic position⁴³. A crucial factor blocking non-cohesive discontinuous noun phrases thus lies in the presence of left-peripheral topic positions, which may be related to prosodic properties, as suggested above.

⁴³ While the absence of non-cohesive discontinuous noun phrases can be related to the lack of a left-peripheral topic position, it does not explain why focus fronting in cohesive/simple splits cannot affect the noun and strand the determiner (creating an inverted discontinuous noun phrase). Probably, the displacement of focused material in simple discontinuous noun phrases always results from a movement process, a standard assumption that accounts for the stricter locality of focus movement (as compared to topic displacement) and the nearly universal absence of pronominal resumption in focus placement processes. We can postulate the principle that the relative linear (hierarchical) order of the elements of a phrase must be respected to the greatest possible extent in a movement process. For a DP [A ... [B ... [C ...]]], the fronting of A to some position outside DP leaves the relative order of the elements of DP intact. If B is moved out of DP, it ends up reordered relative to A. This can be avoided by pied-piping A. Ceteris paribus, A can, however, be pied-piped only if the full DP moves. In other words: in a focus movement constellation, only the highest element in a DP can move in isolation (simple discontinuous noun phrase). The movement of lower elements way require the pied-piping of the full DP.

The canonical noun phrase internal order of Circassian and Niue is D – N – A, and this serialization type does not appear to be very split-friendly. E.g., with Basque (at least for numerals and certain quantifiers), Hebrew (for quantifiers and certain determiners), Rotuman and the Celtic and Western Romance languages it characterizes many languages that lack discontinuous noun phrases at all. There are NA languages in our sample that allow inverted splits (as the NAD languages Baoulé and Limbum, and the NDA language Kitharaka, or Maori), and we find inverted discontinuous noun phrases in the NDA language Malagasy. The unmarked order of Chamorro is AN, yet it lacks discontinuous noun phrases.

Thus, there is no clear-cut correlation between the order of adjectives and noun on the one hand, and the acceptability of inverted splits on the other hand, but a certain tendency is visible in the data. This tendency would be strengthened if discontinuity in the Niger-Congo languages was to be reanalysed as a free topic construction. One might then speculate that (D)NA-order blocks inverted discontinuous noun phrases because N-A order arises from the movement of the noun to a higher functional projection. In the constellation [U ... N ... [w...A ... [... t_N ...] ...] ...], phrasal movement of the category U containing overt N cannot strand A⁴⁴ while this happens easily in [w ... A ... [z ... N ...] ...] when Z is extracted from W⁴⁵. Of course, more needs to be said in this context (why do determiners block inverted splits when nouns do not move past them? Why do some NA-languages have discontinuous noun phrases of the inverted type?), but one would like to have more splitting NA-languages in the data base before such question can be addressed.

After these somewhat speculative remarks on the analysis of the few languages with simple discontinuous noun phrases only, let us turn to languages with inverted discontinuous noun phrases only. Fanselow & Ćavar (2002) postulated that the formation of an inverted discontinuous noun phrase always involves two movement steps, a focus fronting operation followed by topic movement. This presupposes that all languages with positional preferences for topics also have such preferences for foci (which is not the case, see section 2), that inverted splits never are cohesive (which is false as well), and that focus positions are always reached by movement. However, quantifiers of direct objects can stay *in situ* in inverted splits in Croatian and Serbian (see (62)).

⁴⁴ Arguably, W cannot move out of U before U moves because that would leave the trace of N unbound.

⁴⁵ U, W and Z correspond to different levels in the hierarchy of XPs in the extended projection of the noun. The suggestions concerning the grammaticality of inverted discontinuous noun phrases made above can be reformulated in a base generation theory in these terms. One would have to assume that the category of left dislocated nominal projection must be lower in the functional hierarchy than the nominal projection in the argument position. Then Z, but not U, can be the left part of an inverted split with W filling the argument position. The model proposed by Fanselow (1988) (the left part binds an empty pronominal in the right part) has this consequence.

- (62) *Knjiga on kupuje mnogo.* (Serbian)
 books he buys many
 “He buys many books.”

To the extent that there is no (A-bar) movement in the postverbal domain of VOS languages, Yucatec Maya constitutes even stronger evidence against the view that the formation of inverted discontinuous noun phrases always involves a focus movement step: As (63) illustrates, inverted discontinuous noun phrases can be formed in this language with the right part of the noun phrase staying in situ in the postverbal section of the clause.

- (63) *áanalte'-e', Pedro-e' ts'o'k u xok-ik jun-p'éel jach ma'lob-i'*
 book-top Pedro-top term A.3 read-incmpl one-cl.inan very_good-nr
 “Peter read a very good book.”

Thus, there are neither theoretical nor empirical arguments for the view that inverted discontinuous noun phrases need to be formed in two movement steps: they can also arise just by the leftward displacement of the topical part. This conclusion (correctly) allows for languages that have inverted splits only, but no simple ones. Kitharaka is such a language: it allows inverted splits of the type exemplified in (64) only - *ma-ingi* and *mabuku* could not be swapped.

- (64) *Mabuku Peter n-a-thom-eet-e ma-ingi* (Kitharaka)
 6-book 1Peter f-sm1-read-st-fv 6-many
 “Peter has read many books.”

The distribution of languages with inverted but without simple splits seems quite regular. Among the Sino-Tibetan languages, Chinese, NaXi, and Tibetan clearly lack simple splits. According to our Burmese informant, a few sentences with the quantifiers *how many* and *many* may be transformed into simple splits, but in general, the construction seems absent in Burmese, as well. Data with discontinuous DPs with the quantifier appearing to the left of the nominal part in Prinmi probably involve afterthoughts, or have to be analysed as rightward (rather than leftward) displacements of anti-topics rather than as simple splits involving focus movement. The same can be argued for similar linear arrangements in Cantonese. The claim thus seems justified that *all* Sino-Tibetan languages lack simple splits, just like the only Austroasiatic language of our sample (Vietnamese) and just like Korean and Japanese (provided that few counterexamples in this language can be reanalyzed as quantifier float).

Furthermore, none of the Niger-Congo languages with discontinuous noun phrases in our sample (Agni, Baoulé, Limbum, Moghamo, Saari) allow simple splits, with the possible exception of Chichewa. Thus, there seem to be at least two areas in the world which are virtually free of simple splits, viz. East Asia and Subsaharan Africa, probably because the languages in these areas define dislocated *topic* positions only, while focusing is not linked to a position at all, or expressed by clefting, an operation that, arguably, cannot yield discontinuous

constituents. These syntactic properties may be a consequence of prosody: being tone languages, most East Asian and African languages probably do not possess enough flexibility for handling changes in the p-phrase, as discussed above. Therefore, they cannot have simple discontinuous noun phrases.

The absence of simple splits in the presence of inverted ones is not restricted to the two areas just mentioned. Recall that Yucatec Maya has nothing but a very restricted type of simple splits. Dutch, German, Hungarian, Romanian and Swedish also have inverted splits only, in contrast to the Slavic languages they are geographically close to. In this linguistic area, the crucial difference between the languages with and without simple splits seems to lie in the obligatory presence of overt determiners in languages like German or Romanian as compared to Slavic (See Bošković 2005 and references therein for similar claims). Whether one really wants this feature to figure in an account of the occurrence of split types depends on the analysis of languages like Kyrgyz, Malayalam, Nivkh, and Oryia that lack simple splits but have no obligatory determiner. Furthermore, (certain dialects of) Bulgarian may refute the proposed generalization as well, as already remarked above.

Among the European languages, there is a further factor that goes hand in hand with the presence of simple discontinuous noun phrases. Many languages with inverted discontinuous noun phrase *additionally* allow a discontinuous construction type that does not fit easily into the simple-inverted dichotomy: the adjective can be fronted, while the determiner and the noun stay behind. This is illustrated by Vietnamese (65). We call these constructions ‘intermediate’ splits. Among the European languages, nearly all of the languages with simple splits also have intermediate ones (but Sorbian is an exception).

- (65) đỏ thì tôi ?(chỉ) nhìn thấy hai quyển sách (Vietnamese)
 red top I only see two clf book
 “As for red things, I only saw two books.”

Data such as (65) may help us to distinguish true (inverted) discontinuous noun phrases from constructions involving free topics. There is no (plausible) derivation for such constructions in most accounts of discontinuous noun phrases if we assume an underlying hierarchical structure such as [Det ... [... A ... [... N ...] ...]]. There is no constituent that includes the adjective but excludes the noun and which could be moved to the left in order to form a discontinuous noun phrase. Thus, simple movement theories for discontinuous noun phrases cannot generate such sentences. In the copy-and-deletion theory proposed by Fanselow & Ćavar (2002), it is always the complete DP which is fronted in split constructions, and data such as (65) would then imply that scattered deletion in the upper copy may affect non-constituents, which renders the approach completely unrestricted and therefore untenable. Base-generation approaches to discontinuous noun phrases which require that the dislocated phrase binds an empty category in the DP in argument position face the problem that the projection ZP which

dominates the adjective and which has to bind a corresponding empty ZP in the DP in argument position normally includes the noun, so that (65) would imply that ZP in DP must be phonetically empty while it in fact contains an overt noun.

Conclusions are quite different if the left nominal projection is a free topic that is not strictly linked to an argument in formal terms. In such a constellation, nothing rules out the possibility that the free topic is projected by a nominalized adjective, and the DP argument position contains a noun and a determiner.

Of the languages without simple splits, intermediate splits also occur at least in Cantonese, Chichewa, Japanese, and Prinmi, for which free topic analyses are plausible in any event. Perhaps, the existence of this construction type in Gujarati, Hindi, or Telugu (66), Chichewa, and Greenlandic can also be explained along these lines. Intermediate splits can also be formed in Yucatec Maya which heavily restricts simple splits (see above).

- (66) manci-wi neenu mundu pustakam cadiweenu (Telugu)
 good-3pl I three books read
 “I read three good books.”

Recall that several aspects of a model for discontinuous noun phrases would be simplified if the East Asian (and also the Niger-Congo) languages had no discontinuous noun phrases in a strict sense.

All the Slavic languages except Sorbian license the linear sequence (66) as well, (see (67a) from Serbian), just as Modern Greek, Albanian, and Lak, Georgian (67b) and Mingrelian from the Caucasus do.

- (67) a. Crvene sam videla tri a plave sam videla samo dve knjige. (Serbian)
 Red am seen three but blue am seen only two book
 “I have seen three red books, but only two blue ones”
- b. C'itel-i nax-a meri-m sam-i c'ign-i. (Georgian)
 red-nom see-aor.3.sg Mary-erg three-nom book-nom
 “Mary saw three red books”

An analysis along the lines just suggested for the Far Eastern languages does not seem very plausible. In Georgian, ‘intermediate’ splits sometimes seem to have morphological properties (adjustment failures) of simple rather than inverted splits. At least for some speakers of Russian, intermediate splits imply that the adjective is in focus. For Czech, the counterpart of (67b) is well-formed only if the noun is de-accented and therefore given, (but this is not true of Ukrainian).

The construction thus seems to have more in common with simple splits in these languages. Furthermore, there are two reasons for questioning that intermediate splits involve discontinuous noun phrases at all in the European languages. First, German (see Puig-Waldmüller

2006) and Italian have counterparts of (67) as well, as (68) illustrates: in both cases, the AP sitting at the right periphery of the clause is focal.

- (68) a. *Gli spaghetti, Marco ha mangiato a Roma davvero buon.i* (Italian)
 the spaghetti M has eaten in Rome really good
 “Marco ate really good spaghetti in Rome.”
- b. *Zwei Schweine hamma ganz junge kriegt.* (German, dialectal)
 two pigs have-we really young got
 “We got two really young pigs.”

It would be quite surprising if Italian (68a) would illustrate a very marked type of discontinuous noun phrases in the absence of the simpler construction types. Similarly, there is no plausible derivation for German (68b) involving a split construction. It is much more promising to analyze the data in (68) as involving a marked type of secondary predication that differs from the standard one in terms of the agreement between the adjective and the preposed DP. Such an analysis could then also be applied to (67).

Second, Longobardi (p.c.) observes that the European languages with intermediate splits have an interesting property with respect to the interaction of A and N in common. A PP complement of A may be placed between the adjective and the noun in Slavic, but not, e.g., in Germanic languages. Attributive adjectives and nouns do not have to be adjacent, a fact that allows the *extraction* of the AP out of DP. An extraction analysis would also be able to handle cases like Modern Greek in which ‘intermediate splits’ presuppose multidimensional contrasts such as *red, she has seen two pencils, while green, she has seen one book and five plants*.

In this section, evidence has been presented that suggests that the Far Eastern (and perhaps also the Niger-Congo) tone languages (and the other languages in the area) possess free topic constructions rather than discontinuous noun phrases. Furthermore, NA-languages may encounter more difficulties than AN-languages in forming inverted splits, or splits in general. Among the European languages, the presence of an obligatory determiner system is correlated with the presence of simple splits, but in a less than perfect way only.

4. The Grammar of Inverted Splits

4.1. Basic Issues

Inverted splits are discontinuous noun phrases in which at least the lowest overt head of an extended nominal projection has been fronted, as exemplified in (69) and (70).

- (69) a. *dass er keine teuren interessanten Bücher liest* (German)
 that he no expensive interesting books reads
- b. *Bücher liest er keine teuren interessanten.*
- c. *Interessante Bücher liest er keine teuren.*
- d. *Teure interessante Bücher liest er keine.*
 “He does not read expensive interesting books.”

- (70) a. *Er sah viele neue rote.* (German)
 he saw many new red
 b. *Rote sah er viele neue*
 “He saw many new red ones.”

As mentioned above, there are three basic models for an analysis of inverted discontinuous noun phrases. The movement theory (mt) (nowadays) assumes a rich internal structure for extended nominal projections with various functional levels. Each of the functional projections and the nominal projection itself can be extracted from the DP, just as PP complements of the noun can. In simple versions of the mt, the left part of an inverted discontinuous noun phrase is not a full DP (but rather some functional projection embedded in DP), but mt is also compatible with an analysis in which both parts of the discontinuous noun phrase are complete DPs. This will be the case if movement is interpreted in terms of the copy-and-deletion model (Chomsky 1995), in which the *complete* DP is always copied to the left, while the resulting chain is partially spelt out in the target position of movement, and partially in the position of the source position of movement (Fanselow & Ćavar 2002).

The second and third models assume that the two parts of a discontinuous noun phrase are directly generated as being independent of each other (base generation theory, bt). In the original version of the bt developed by Hale (1983) and Jelinek (1984) for Australian languages like Warlpiri, none of the parts of a discontinuous noun phrase figures as an argument in the sentence. Rather, the true argument is the (possibly phonologically empty) pronominal clitic on the predicate (Jelinek 1984, Baker 1995 - if arguments have to be realized at all in surface structure (Hale 1983)), while the discontinuous noun phrase-parts are adjunct modifiers of this argument position. In a strict sense of the term, there are no discontinuous noun phrases in such a model. The same is true for those languages in which what appears to be a split construction in fact must be reanalyzed as involving free topics.

For languages like German, bts that generate at least one of the two discontinuous noun phrase parts as a verbal argument (Fanselow 1988, Kuhn 1998, Roehrs 2006, Puig-Waldmüller 2006) seem more adequate. The other part might originate as a modifying adjunct and move to the topic position later, or be generated there directly.

Crosslinguistically, there are both topic positions that are targeted by simple movement (probably, this holds for at least some instances of German verb second clauses) and those that are base generated and bind a pronominal (left dislocation). A priori, there is no reason for the topicalization yielding inverted discontinuous noun phrases not to have different sources in different languages, too.

Movement dependencies differ from dependencies established solely by binding in that the former are constrained by subjacency, while the latter are not. In the most restrictive

constellation, subadjacency implies that all phrases in a sentence except direct objects are barriers for movement. The status of subjects of transitive verbs and of indirect objects with respect to discontinuity may thus offer insights into the mechanism by which discontinuity arises in a certain language. Indeed, we can observe that transitive subjects and indirect objects can be discontinuous (as illustrated by (71) for Turkish). This has served as an argument in favor of bt accounts of discontinuous noun phrases (see Fanselow & Ćavar 2002).

- (71) a. *Öğrenciler geçen hafta çokca kitap okudular.* (Turkish)
 student-pl last week many book read
 “Many students read a book last week.”
- b. *şoförlere sen çoğuna şehire giden yolu gösterdin.*
 driver-pl-dat you many-3.sg-dat city-dat go-SbjP way-acc showed
 “You showed the way to the city to many drivers.”

The crosslinguistic perspective on this kind of argument is affected by the fact that many of the languages with inverted discontinuous noun phrases are verb final and allow scrambling. It is a well-known fact that islandhood is much less strict in these languages than, say, in English. E.g., it has been established for German (see De Kuthy 2002) that subjects are transparent for movement, so that the wellformedness of discontinuous transitive subjects tell us little: extraction and discontinuous noun phrase-formation pattern alike. In German, only indirect objects are (arguably) islands for PP movement, but they can be split up.

A comparison of the options for PP-extraction and inverted discontinuous noun phrase-formation for subjects and direct and indirect objects revealed that discontinuous noun phrase-formation was more liberal than PP-extraction in thirteen languages (meaning that the options for movement were a subset of those for discontinuous noun phrases), while the reverse was true for three languages. For the majority of languages (more than 30), however, the options for extraction and inverted discontinuous noun phrase formation were characterized as identical (for the rest, we lack the relevant information). This suggests that discontinuous noun phrase-formation is slightly more liberal than PP-extraction out of DP, but the data are difficult to interpret for various reasons. Inverted discontinuous noun phrases involve topic fronting, which tends to be less restricted than wh-movement or focus preposing. Furthermore, there is a strong informational component involved in the constitution of islands which is often difficult to distinguish from grammaticality effects in the acceptability data (see Erteschik-Shir 1973), so that the relevant data may not be fully reliable. E.g., the early literature on German had originally rated nominative and dative discontinuous noun phrases as ungrammatical (see e.g. Grewendorf 1989), and acceptability rating experiments with ‘linguistically naïve’ participants have the same result. The identification of structures with acceptable nominative and dative discontinuous noun phrases in German is the result of intensive reflections on the topic, and the questionnaire data certainly reflect different states of such a reflection process in different

languages. It therefore seems fair to say that little can be concluded for the issue of a movement analysis of discontinuous noun phrases from a comparison of subjects and objects with respect to discontinuity and PP-extraction. According to our informants, inverted splits are confined to objects in Swedish, Nogai, Kyrgyz, (but not in Turkish) Finnish, Estonian, Polish (but not in Russian), Gujarati, Cantonese, Prinmi, Avaric, Ossetic. No clear picture emerges from this list.

Stronger evidence may come from PPs. They are barriers for extractions in most languages. The formation of inverted discontinuous noun phrases respects the barrierhood of PPs, in that most languages disallow discontinuous noun phrases when the right part would end up being embedded in a PP (but see below). We have found such structures for Japanese (72a), and also for German (72b) – here, the preposed element bears nominative Case rather than the dative case governed by the preposition, suggesting that it has not been moved out of the PP, as is also likely for Japanese.

- (72) a. *mati-wa kare-wa sutekina-no-ni iku no?* (Japanese)
 town-top he-top nice-nl-prep go Q
 “Does he go to a nice town?”
- b. *Schlösser hab ich noch in keinen gewohnt.* (German)
 castles.nom have I yet in none.dat lived
 “I have not yet lived in any castle.”

Swedish allows preposition stranding in normal movement contexts, and PPs are no barriers for discontinuous noun phrase-formation either.

- (73) *Fina hus har han bott i många.* (Swedish)
 Nice house has he lived in many
 “He has lived in many nice houses.”

To the extent that the sentences in (72) can be re-interpreted as involving free topic structures, (73) (and the absence of the construction in the other languages) suggests that PPs can be discontinuous in the inverted fashion in those languages only that allow P-stranding with movement. This may favor the mt account of inverted discontinuous noun phrases. However, case transmission is blocked in left dislocation structures such as (74), so that the impossibility of splitting up a DP embedded in a PP (in an inverted fashion) may also result from a failure of case interaction between the two parts, quite independent of the further details of the analysis.

- (74) **Alten Professoren wer würde mit denen flirten?* (German)
 Old.dat professors-dat who would with these.dat flirt
 “As for old professors, who would flirt with them?”

In some Slavic languages, and in neighboring Estonian and Lithuanian, we find a different treatment of inverted discontinuous noun phrases embedded in PPs. Here, the preposition is fronted as well, as (75) shows. In addition, such constructions occur in Russian, Ukrainian, but they were rejected for Czech, Slovak, Sorbian, and Polish. It is not entirely clear what the

derivation of these sentences could look like if they involved inverted splits, both in a mt and in a bt.

- (75) a. U grad *ce* *on* *ici* lepi. (Serbian)
 In town will he go nice.
 b. Vo grad *k'e* *toj* *odi* lepi. (Macedonian)
 In town will he go nice.
 “He will go to a nice town.”
 c. Läbi metsa *ta* *läheb* ilusa. (Estonian)
 through wood.gen he go.3sg nice.gen
 “He will go through a nice wood.”

For Ukrainian, we have shown that the construction is possible only if the inverted split is a cohesive rather than an incohesive split. If such a correlation between the prosody and the grammaticality of (75) holds for the other languages, too, it is tempting to make use of the greater flexibility of word order in the Slavic noun phrase and reanalyze (75) as involving splits that are both *cohesive* and *simple*.

The same construction occurs in Gujarati, but this time with a postposition, while its exact counterpart was rejected for Hindi.

- (76) shaher-maN *e* *jashe* koi moTa (Gujarati)
 city-masc-in he-nom go-fut some big-masc
 “Into some big city, he will go.”

(76) suggests that the preposition cliticizes onto N before the latter is fronted; that the PP is decapitated in such a way is, apparently, not a preferred option of UG, given the rarity of (76).

Summing up, a consideration of the grammatical functions that can be expressed in a discontinuous way does not really allow drawing conclusions concerning the generation of discontinuous noun phrases. When a DP is embedded in a PP, it can rarely (if ever) be split up in the inverted fashion – a fact that easily arises from movement accounts for the construction.

4.2. Adjustments

It has frequently been observed that the shape of the words in a discontinuous noun phrase need not always be identical with what they would look like in a continuous DP. Similarly, there may be differences in word order (exemplified in (77)) that suggest that serialization constraints are independently applied to the two parts of an (inverted) discontinuous noun phrase.

- (77) a. *Ich habe auch viele Bücher.* (German)
 I have also many books
 b. **Ich habe viele auch Bücher.*
 c. Auch Bücher habe ich viele.
 “I also have many books.”
 d. *Ich lese keine Bücher aus Polen, die teuer sind*
 I read no books from Poland which expensive are

- e. **Ich lese keine Bücher, die teuer sind, aus Polen.*
 f. *Bücher, die teuer sind, lese ich keine aus Polen.*
 “I read no books from Poland which are expensive.”

Here, we will focus on the morphological adjustments we observe in discontinuous noun phrases. Consider, first, Case in this respect. In a number of languages, Case is a phrasal property in the sense that it needs to be realized only once in a DP, typically on the noun, or on the final element of the DP. For inverted splits, (78) and (79) show for Hungarian and Georgian that adjectives that would miss out on a (full) marking of Case in a continuous DP are fully marked for Case in an inverted DP. The same has been reported for Warlpiri and Quechua. The ‘stranded’ right part of the discontinuous noun phrase thus takes the shape that the same word sequence would have if it formed a simple, autonomous noun phrase of its own (recall that languages with inverted discontinuous noun phrases tolerate DPs without lexical nouns), it does not appear in the form it would have in the corresponding continuous DP.

- (78) a. *láttam nagy bicikliket* (Hungarian)
 saw.I big bike-pl-acc
 b. *bicikliket láttam nagyokat*
 bike.pl-acc saw-i big-pl-acc
 “I saw a big bike.”
- (79) a. *lamaz gogon-eb-s v-i-cn-ob* (Georgian)
 beautiful[dat] girl-pl-dat subj.1-know-hab.prs
 b. *gogon-eb-s v-i-cn-ob lamaz-eb-s*
 girl-pl-dat subj.1-know-hab.prs beautiful-pl-dat
 “I know beautiful girls.”

As we have already remarked in section 2, a similar phenomenon holds in German with respect to the declension class of the quantifier/adjective. The forms quantifiers and adjectives take depend on their syntactic context, in particular, they differ in DPs with and without nouns. (80a) illustrates that in a discontinuous noun phrase *keiner* appears in the shape the quantifier has in an independent DP without a lexical noun (80c-d). Dutch behaves like German in this respect.

- (80) a. *Geld hat er keines.* (German)
 money has he no
 b. *Er hat kein- Geld.*
 c. *Er hat keines.*
 d. **Er hat kein.*
 “He has no (money).”

A change in the determiner also occurs in Romanian, as (81) shows. Again, the form Det takes is the one required in DPs without overt nouns in general.

- (81) a. *Petru a citit o carte interesantă.* (Romanian)
 P. has read a book interesting
 b. *Cărți, Petru a citit una interesantă.*

books P. has read one interesting
 “Peter has read an interesting book.”

Number is also a feature with phrasal properties that may be realized only once in a DP. Number marking on the noun may also fail to appear if number is already indicated by the quantifier. In languages where this happens, the formation of an inverted discontinuous noun phrase creates a situation in which a dual realization of number seems to be called for, as (82) – (83) show. There is no need for a plural marking of the noun in a continuous DP headed by ‘many’ in Nogai and Estonian (see also section 2.1), but such a number marking must appear on N in an inverted discontinuous noun phrase. The same is true for Bulgarian, Finnish, Georgian, Hungarian, Ossetic, and probably also for Komi.

- (82) a. *Köp noRaj kitap-dy ul aldy.* (Nogai)
 Many Nogai book.sg-acc he bought
 b. *NoRaj kitap-lar-dy ul köp aldy.*
 Nogai book-pl-acc he many bought
 “He bought many Nogai books.”
- (83) a. *Mari sai kolm seent.* (Estonian)
 Mari.nom get.pst three.nom mushroom.part.sing
 b. *Mari sai seeni kolm.*
 Mari.nom get.pst mushroom.pl.part three.nom
 “Mary got three mushrooms.”

By far the most common type of adjustment we observe in inverted discontinuous noun phrases involve nominalizations, as we have already seen above. A nominalizer is added to the quantifier in Yucatec Maya (84a-b). A comparison of (84c) and (84d) also reveals that the adjective must be nominalized in inverted discontinuous noun phrases in Nogai.

- (84) a. *Pedro-e' ts'o'k u xok-ik ya'bkach áanalte'-o'b.* (Yucatec Maya)
 Pedro-top term A.3 read-incmpl many book-pl
 b. *áanalte'o'b-e', Pedro-e' ts'o'k u xok-ik ya'bkach-i'.*
 book-PL-top Pedro-top term A.3 read-incvml many-**nr**
 “Pedro read many books.”
- c. *Ul NoRaj kitap-lar-dy aldy.* (Nogai)
 He Nogai book-pl-acc bought
 “He bought Nogai books.”
- d. *Kitap-lar-dy ul noRaj-dyky-n aldy.*
 book-pl-acc he Nogai-subst-acc bought
 “He bought NOGAI books.”

Likewise, the quantifier *pala* of Malayalam (85a) must be augmented by a person-marker *re* or a ‘coordination’ marker *rum* when it is used in DPs without a noun (85b). This augmentation cannot be avoided in an inverted discontinuous noun phrase, either.

- (85) a. *Pala kuttikal (-um) pustakam wa: ηηi* (Malayalam)
 Many children- coord mark books bought

- “Many children bought books.”
- b. *Palare/Palarum pustakam waṅṅi*
 „Many bought books“
- c. **kuttikaḷ Pala pustakam wa: ṅṅi (=85c)*
- d. *kuttikaḷ Pala-re pustakam wa: ṅṅi (=85c)*
- e. *kuttikaḷ Pala-rum pustakam wa: ṅṅi (=85c)*

Telugu requires augmentation of an adjective in a discontinuous noun phrase as well:

- (86) a. *Meerii manci pustakam cadiwindi* (Telugu)
 Mary good book read
 “Mary read a good book.”
- b. *pustakam nenu manci-di cadiwenu*
 book I good-suffix read
 “I read a good book.”

In inverted discontinuous noun phrases, Cantonese adds the nominalizing modifier *ge* to adjectives, but not to quantifiers:

- (87) a. *?syu. Beidak tai-zo beon dakji ge.* (Cantonese)
 book Peter read-prf cls interesting mdf
 ?“Book, Peter has read (an) interesting piece.”
- b. *syu. Beidak tai-zo ho do (beon).*
 book Peter read-PRF good many (CLS)
 “Book, Peter has read many (pieces).”

The Moghamo data in (88) exemplify the frequent need for nominalizations in inverted discontinuous noun phrases in Niger-Congo languages. The adjective (or other category) that goes with the missing N is nominalized, that is, it takes a nominal prefix.

- (88) a. \square *kát*(MH) *ye*(M) *mλ*(H) *kβ*(L) *ε-firi*(HHH) (Moghamo)
 3-car COP I need one-black
- b. *mλ*(H) *kiβ*(L) \square -*kár*(LH) \square -*firi*(MFF)
 I need 3-car 3-black
 “I need a black car.”

Adjectives take up ablative case in Kirgisian inverted discontinuous noun phrases. This may also be a nominalizing device.

- (89) a. *Maria köp kysyktuu kitep-ter-di okudu.* (Kirgisian)
 Maria many interesting book-pl-acc has read
- b. **kitep-ter-di Mari köp kysyktuu okudu.*
- c. *kitep-ter-di Maria köp kysyktuulardan okudu.*
 book-pl-acc Maria many interesting-pl-abl has-read
 “Maria has read many interesting books.”

The remarkable aspect about adjustments in inverted discontinuous noun phrases is not so much that they happen at all. It is much more surprising that all adjustments that may be required to

meet the formal constraints on autonomous DPs without a nominal head are *always*⁴⁶ carried out in the right part (the part sitting in the argument position) of an inverted discontinuous noun phrase. The right part of an inverted discontinuous noun phrase MUST have the form of a base generated DP without a nominal head.

This generalization follows without further ado in all base generation accounts of inverted discontinuous noun phrases: since the right part of the construction is already generated with an empty nominal projection in it, it cannot avoid having the form of a DP without a nominal head. Movement theories can derive the generalization from the assumption that the morphological shape of a word is always determined *after* movement. The latter claim is, however, probably incorrect, as we will see when we consider the grammar of simple discontinuous noun phrases.

A number of languages carry out a further type of adjustment: when the inverted split is formed for a discontinuous noun phrase that is part of a PP, the preposition is doubled, as (90) – (96) show. (90) seems well-formed in the Burgenland variety of Croatian only. The doubling of the preposition is optional in Ukrainian, as well as in Russian (91) and Estonian (94). German (93) competes with (72b) mentioned above. We have found P-doubling for Hixkaryana as well, see (96), and also in Yucatec Maya.

- (90) *Va gradu* *Tome oš* *va nikakovom* *nij* *stanovao*. (Croatian)
 in castle-loc Thomas yet in no-loc aux.neg.3.sg lived
 “Thomas has not yet lived in any castle.”
- (91) *v gorod-to* *on poedet* *(v) sosednij* (Russian)
 to town-top he will-go to neighboring
 “He will go to the neighboring town.”
- (92) *Në shtëpi të bukura* *ka jetuar, në shumë* (Albanian)
 in nice houses he lived in many
 “He lived in many nice houses.”
- (93) *In Schlössern* *hab ich schon in vielen gewohnt*. (German)
 in castles-dat have I already in many lived
 “I have already lived in many castles.”
- (94) *?Läbi ilusate parkide on ta läbi paljude jooksnud* (Lithuanian)
 through nice.pl.gen park.pl.gen Aux he through many:pl:gen walk:part2
 “He walked through many nice parks.”
- (95) *lamaz saxl-shi v-cxovr-ob* (Georgian)
 nice house-in subj1.1-live-hab.prs.sg
saxl-shi v-cxovr-ob lamaz-shi
 house-in subj1-live- hab.prs.sg nice-in
 “I live in a nice house.”

⁴⁶ More precisely: we have no conflicting evidence in our data base, which does not exclude that the relevant data have not been provided.

- (96) owto hona *kahatakeko* anaro hona (Hixkaryana)
 village to I came out another to
 “I came out to another village.”

Such data have motivated the scattered deletion account of discontinuous constituents in a copy-and-deletion theory of movement because it can assume that the deletion process is subject to an interaction of economy constraints and principles governing the overt realization of heads. If PPs must have overtly realized heads and if DPs cannot move out of PPs such that the whole PP must be copied, the first constraint seems to rule out the deletion of P in both copies created by PP movement. When a language tolerates multiple realizations of the same element, (90) – (96) will be well-formed, if it does not, the incompatible requirements concerning the realization of P will render PP-splits ineffable. Standard movement theories have little to say about doubled prepositions (but they could be treated as a ‘regeneration’ phenomenon along the lines proposed by Riemsdijk 1989).

Base generation approaches have no particular difficulty with preposition doubling. It must be guaranteed, however, that the same lexical preposition shows up in the two PPs generated independently of each other, while the interpretive mechanisms need to ignore one of the two occurrences of the preposition.

Adjustment processes are obligatory for the right part of an inverted discontinuous noun phrase, and they often affect the left part of an inverted discontinuous noun phrase as well. Singular DPs formed from common nouns must have an overt determiner in German, a requirement that *ceteris paribus* cannot be met easily by the left part of an inverted discontinuous noun phrase. German offers four answers to this dilemma. First, structures such as (97a) and any of the alternatives may be ungrammatical, rendering inverted discontinuous noun phrase impossible for singular count nouns. Second, certain dialects insert an indefinite determiner into the left part of the discontinuous noun phrase, a process signalling ‘regeneration’ in the terminology of Riemsdijk (1989), as we have already mentioned above. Third, the left part may simply appear with plural morphology, such that the ban against determinerless singular DPs is circumvented – but at the cost that the two parts of the discontinuous noun phrase do not agree in number. Finally, the determiner constraint may also be simply ignored (which makes (97a) acceptable), This is possible for unmodified nouns only for some speakers, but further dialects ignore the number constraint completely (e.g., Viennese, see Puig-Waldmüller 2006).

- (97) a. Zeitung liest er nur eine. (German)
 newspaper.sg reads he only one
 b. Eine Zeitung liest er schon eine.
 a newspaper reads he well one
 c. Zeitungen liest er nur eine.
 newspapers.pl reads he only one
 “He reads only one newspaper.”

A few languages behave similar to German. Number mismatches of the kind of (97c) are rare, but they occur also in Dutch (98), Albanian (99), the Burgenland variety of Croatian (100), and in Ukrainian. Romanian (81b) illustrates the same phenomenon.

- (98) *Boeken heb ik nog geen één geschreven. (maar artikelen al een heleboel)*
 Books have I not yet one written but articles quite a lot. (Dutch)
 “I have not yet written any book.”
- (99) *Libra kam lexuar vetëm një.* (Albanian)
 books have-I read only one
 “I have read only one book.”
- (100) *Knjig sam proštao nek jednu.* (Burgenland Croatian)
 books-gen:pl Aux-I:sg read only one-acc
 **Proštao sam nek jednu knjig.*
 “I have read only one book.”

Determiner doubling as in German is also rare, but Albanian seems to offer it marginally (101), and it is a notorious characteristic of Modern Greek (see Ntelitheos 2004, among many others).

- (101) *Një makinë nuk kam, një amerikane.* (Albanian)
 A car not has an American
 “He does not have an American car.”

The Slavic DP with its complex determination of the form of the noun as a function of different choices of numerals (see, e.g., Franks 1994) also creates a set of contexts in which adjustments may become necessary for the left part of the discontinuous noun phrase. Consider Russian (102) first. Numbers above five assign genitive plural to their nominal complement, while lower numbers (except 1) combine with genitive singular.

- (102) a. *pjat' knig* (Russian)
 five book.gen.pl
 b. *tri knigi*
 three book.gen.sg
 c. *knig on kupil tol'ko tri.*
 book.gen.pl he bought only three
 “He bought only three books.”

In an inverted discontinuous noun phrase, the noun ends up in a context in which it is no longer (immediately) governed by the numeral. In this constellation, we find the governed singular form replaced by the semantically motivated plural form in (102c), i.e., the number of the genitive phrase is adjusted.

In addition, (102d) is also well-formed, i.e., the left dislocated noun can also appear with nominative case, but only with an intonational boundary following it, and an obligatory accent in the main clause. *Knigi* thus represents an incompletely integrated topic (comparable to the nominative form in German PP splits such as (72b)).

- (102) d. *knigi on kupil tol'ko tri* (Russian)
 book.nom.pl he bought only three

A similar shift to the ungoverned, general form appears in a similar context in Ukrainian, as (103c) shows: the special accusative form governed by the low numeral *try* can be replaced by general genitive in an inverted discontinuous noun phrase. The governed form also is acceptable, however, as (103d) shows, but it is homophonous with the nominative plural. See Féry et al. (2007) for further details.

- (103) a. *Marija maje try krisla.* (Ukrainian)
 Mary has-got three chairs.acc
 “Mary has three chairs.”
 b. *Marija maje bahato krisel.*
 Mary has-got many chairs.gen.pl
 “Mary has many chairs.”
 c. *Krisel Marija maje try*
 d. *Krisla Marija maje try*

In Serbian the governed form cannot, however, be replaced by the general form in a discontinuous noun phrase. For low numbers a special form (‘paucal’) is required, and the paucal remains mandatory in discontinuous noun phrases, too. Replacing it with the plural form would render (104) ungrammatical.

- (104) *Knjige, _____ tri sam ih procitala.* (Serbian)
 books three aux them read
 “I have read three books.”

Romanian has a formal change similar to what one observes in Slavic. With numerals which trigger *de*-insertion before N(um)P, *de* does not appear in the split construction. The same happens with empty nominal heads. The change affects the right part of the split construction, and is (therefore) mandatory.

- (105) a. *Am luat douăzeci de prosoape.* (Romanian)
 have.I taken twenty of towels
 b. *Prosoape am luat douăzeci.*
 towels have.I taken twenty
 c. *Am luat douăzeci.*

We conclude that the right part of part of an inverted discontinuous noun phrase must always be adjusted to the requirements for autonomous DPs. For the left part, adjustment takes place in many cases. There are very few exceptions only – if our remarks on (102) and (103) are correct, German (97a) and Serbian (104) constitute the only data that prevent us from making the claim that both right and left parts of inverted discontinuous noun phrases must always be adjusted to the needs of structurally independent DPs. That both parts have to fulfill the constraints on independent DPs suggests they are base-generated independently of each other.

4.3. Case Constraints

The availability of discontinuity for a certain DP depends on its grammatical function in a number of languages. As we have observed above, restrictions on the formation of discontinuous noun phrases often coincide with the restrictions on extractions from DP, but the former are also often somewhat more flexible than the latter. Since differences in the informational function of the processes may be involved, the interpretation of this fact is difficult.

In this section, we will see that constraints on the formation of discontinuous noun phrases can (and must) be reduced to Case realization rules rather than to a theory of islands in a number of languages. However, it can also be shown that restrictions concerning grammatical function cannot always be reduced to Case.

DPs in a topic position bear a special marking (-*wa*) in Japanese, which is incompatible with the realization of the structural case markers -*ga*, -*o*, and -*ni*. In the pertinent discontinuous noun phrases, Case is thus marked only once, and a multiplication of the Case marking particles would lead to ungrammaticality.

Case cannot be overtly realized in the left part of discontinuous arguments in Hindi, Korean, Gujarati and Oryia either. The North Indian languages differ from Japanese and Korean in a crucial respect, however: they disallow inverted discontinuous noun phrases for those structures in which an overt Case marking would be necessary. It seems as if two nearly incompatible requirements must be met simultaneously in the Indian languages: the topic position must not bear Case, but the two parts of the discontinuous noun phrase should not disagree in their features either. Sometimes, such unresolvable conflicts are tolerated in natural languages when the conflicts are not represented in overt morphology. Free relative clauses or the deletion of operators in Comp are cases in point (see, e.g., Fanselow & Féry 2002). When Case is not marked overtly, the disagreement between the Case-free topic and the Case-bearing argumental NP is not visible, and it is this constellation that North Indian languages restrict their inverted discontinuous noun phrases to.

Oryia has inverted discontinuous noun phrases in object position (see (106a), but if the object must bear a visible oblique Case (as is true for objects of verbs like *help*), the NP cannot be split at all. Likewise, numerals must be combined with classifiers in discontinuous DPs, and some of these classifiers require (or strongly prefer) the presence of visible Case marking on the noun, while others do not. Probably, the contrast in (106b-c) related to the different choice of classifiers can be accounted for in terms of the resulting conflict with the ban on overt Case marking for the topic phrase.

- (106) a. *bahi* *peter* *bahuta* *kiNichhi* (Oryia)
 book Peter many bought

- “Peter bought many books.”
- b. *police* *se* *tiniTaa* *maarichi*
 policeman, he three-class killed
- c. *?police* *se* *tinijaNanku* *maarichi*
 policeman he three-class-case killed
- “He killed three policemen.”

The situation in Hindi with its split ergative marking system is particularly telling. Direct objects can be discontinuous, but inverted discontinuous noun phrases of direct objects are possible only if the Case particle *-ko* (marking animacy, specificity) is not used. Similarly, subjects bearing the ergative Case marker cannot be realized as inverted discontinuous noun phrases (107a), but if a tense-aspect-form is chosen in which the subject does not get ergative but (phonetically unrealized) nominative Case, discontinuous noun phrase-formation is well-formed (107b)⁴⁷.

- (107) a. **baccoN-ne kal kai yah gaanaa gaayaa thaa* (Hindi)
 children-erg yesterday many this song sing-perf be-pst
 “Many children sang this song yesterday.”
- b. *bacce kal kai yah gaanaa gaayeN ge*
 children tomorrow many this song sing fut
 “Many children will sing this song tomorrow.”

(107) thus shows that it is not the grammatical function of a DP but its Case marking that is decisive for the grammaticality of an inverted discontinuous noun phrase. This is corroborated by the observation that simple splits can always be formed for subjects and objects in Hindi, showing that neither category is a barrier in this language.

The North Indian constellation is not restricted to that part of the world. We can see a related phenomenon in Circassian. When case is marked overtly either on the noun or on the adjective, no discontinuous noun phrase can be formed:

- (108) *Jenishxwa(*-r) murat une(*-r) izhar* (Circassian)
 big Murat house built
 “Murat built a big house.”

One question that arises immediately is whether we can make the interaction of the case requirements for the parts of an inverted discontinuous noun phrase responsible for grammatical function constraints on the construction in general. Indeed, inverted discontinuous noun phrases are often confined to DPs with nominative/absolutive Case without a morphological realization. In addition to the Indian and Circassian facts just discussed, this is also true for Chuckchee (109), and for Ossetic.

- (109) a. *nymkykin-et RaLxa-t ajwe tuLunet* (Chuckchee)

⁴⁷ A special thank goes to Anoop Mahajan for discussing this issue with us in detail.

- many-pl bird-pl yesterday came
 “Many birds came yesterday.”
- b. *RaLxa-t* *ajwe* *nymkykin-et* *tuLunet*
- c. *nymkykin-ete* *orawaLa-ta* *jara-t* *metejkynet*
 many-erg people-erg house-pl built
 “Many people built houses.”
- d. **orawaLa-ta* *jara-t* *nymkykin-ete* *metejkynet*

In the languages considered so far, direct objects would bear the morphologically unmarked Case, so one may wonder whether grammatical function constraints on the formation of discontinuous noun phrases could be reduced to Case restrictions. Quechua shows that this is not possible: in Quechua, inverted discontinuous noun phrases are confined to direct objects, in spite of the presence of overt Case marking in both parts; discontinuity does not seem to be an option for morphologically unmarked nominatives.

- (110) a. *Wasi-ta* *riku-rqa-ni* *hatun-ta* (Quechua)
 house-acc see-past-1sg big-acc
 “I saw a big house.”
- b. *?*Ashka* *hamu-ra-nku* *runa*.
 many come- past -3pl person
 “Many people came.”

4.4. (Semi-) Free Topics

Inverted discontinuous noun phrases require the presence of a nominalizing suffix on adjectives in many languages, as we have seen above. Technically, this means that there may be *two* nouns (one lexical, one derived) present in the inverted discontinuous noun phrase, one in each part. Where that is a viable option, the question arises whether the two nominal expressions in a discontinuous noun phrase might not also both be lexical. That such constructions should exist is partially predicted by non-movement theories of discontinuity, while only very abstract models of syntax could capture such data in terms of a mt.

It is not very surprising that discontinuous noun phrases involving two lexical nouns are well-formed in Japanese and Korean, as (111a-b) show. After all, it is a well-known fact that ‘free topics’ are grammatical in these languages (but structurally, (111) is on par with sentences in which the right part of the discontinuous noun phrase involves a nominalized adjective or a dummy noun). Together with the intermediate splits discussed above, (111) constitutes evidence for an analysis in terms of free topics.

- (111) a. *tori-wa kare-wa kanaria-dake(-o) sitteru* (Japanese)
 bird-top he-top canary-only-acc know
 “As for birds, he only knows canaries.”
- b. *Catongcha-nun ku-ka Toyota-man sa-n-ta.* (Korean)
 car-top he-nom Toyota-only buy-pres-dec
 “As for cars, he only buys Toyotas.”

The same expressive potential is realized in Burmese, Cantonese, Chinese, NaXi, Prinmi, and Vietnamese. These languages may be assumed to share the topicalization strategies of Japanese and Korean, so that whatever licenses (111) can be made responsible for the presence of corresponding sentences in these languages, too. (111) establishes that two independent DPs may be logically related to the same argument role of a predicate in the East Asian languages. It is worthwhile emphasizing that the presence or absence of an overt nominal head is, of course, fairly irrelevant for the constitution of structures such as (111). More surprisingly, the construction is also fine in many other languages, like Assamese, Gujarati, Hindi, Maithili, Persian, and Oryia, which suggests deeper parallels in the topicalization strategies of the Indoaryan and the East Asian languages. Interestingly, the construction in (111) is confined to direct objects in Oryia, an observation that corroborates the view that the Case agreement facts discussed in the preceding section are independent of islandhood, but we have no relevant data for the other Indian languages. One also finds counterparts to (111) in Indonesian, which may fall in line with the examples discussed so far in structural terms. Baoulé, Kitharaka and Saari illustrate that (111) can be realized in at least some Niger-Congo languages, too, probably, because these allow free topics as well.

(111) is, however, not confined to “free topic languages”. It has a counterpart in West Greenlandic (112), and in Mawng. This reflects that strongly non-configurational languages do not have a sharp distinction between nouns and adjectives in their grammar. Under Hale’s (1983) view of non-configurationality, the parts of a discontinuous noun phrase would both be adjuncts rather than arguments of the predicate in any event. Once nominals can function as modifiers of a pronominal argument, and once pronominal arguments can be modified twice, there is little reason to assume that the double modification could not be effected by two nouns. To the extent that one can tell nouns apart from adjectives in Warlpiri and similar Australian languages, (111) is a regular pattern for them.

(112) *Pinnussanit nalunngilai tungujortut arsat.* (Greenlandic)
 toy-abl.pl know-ind.3sg-3pl blue-abs.pl ball-abs.pl
 “As for toys, he only knows blue balls.”

In the languages mentioned so far, the double occurrence of lexical nouns in discontinuous noun phrases could be described in terms of well-motivated concepts such as a free topic position or the adjunct status of noun phrases. However, the distribution of counterparts to (111) goes far beyond the East Asian, Indian, Australian, and Niger-Congo languages: Bulgarian, Dutch (113), Estonian, German (114), Georgian (115), Greek (116), Hungarian (117), Finnish (118), Komi, Sorbian, Swedish (119), and Taschlehit Berber are neither famous for the presence of a free topic position, nor for pronominal argument effects, yet (111) can be translated into these languages without a loss of grammaticality.

(113) *Vogels kent hij alleen maar nachtegalen.* (Dutch)

- Birds knows he only but nightingales
 “As for birds, he only knows nightingales.”
- (114) *Raubvögel kennt er nur Bussarde* (German)
 birds of prey knows he only buzzards
 “As for birds of prey, he only knows buzzards.”
- (115) *satamasho-eb-i, i-c-i-s mxolod lurj-i burt-eb-I* (Georgian)
 Toy knows only blue ball
 “As for toys, he only knows blue balls”
- (116) *pu”lja “kseri mono aj”Donja* (Greek)
 bird.acc.pl know:3.SG only nightingale.acc.pl (=113)
- (117) *Madarat csak csalogányt látott.* (Hungarian)
 bird.acc only nightingale.acc saw.3sg
 “As for birds, he only saw a nightingale.”
- (118) *Lintuja hän tuntee vain satakielen.* (Finnish)
 birds-pl (s)he knows only nightingale.sg. (=113)
- (119) *Bilar köper han bara Toyota* (Swedish)
 cars buys he only Toyota
 “As for cars, he only buys Toyotas.”

Constructions in which two lexical nouns appear in a discontinuous noun phrase are thus quite widespread. They may be considered a typical companion of discontinuous noun phrases involving a single lexical noun only. In that sense, (113) – (119) support the view that inverted discontinuous noun phrases do not arise by a movement process: rather, they involve a DP placed into a topic position and a DP in an argument position which are syntactically quite independent of each other. It may also be observed that such sentences are always non-cohesive intonational constructions. The main point here is that there must be a second accent in the main clause. The option consisting of a focus on the left part and deaccenting of the remaining of the sentence, as illustrated in section 2.1.2 for German is not available here, suggesting a loose connection between the two parts.

If inverted discontinuous noun phrases involve two independent DPs as evidenced by (113) – (119), it becomes quite mysterious why intermediate splits seem to be ruled out quite systematically in many languages. If the topic DP consists of a (nominalized) adjective only, while the argumental DP hosts the noun (and, possibly, a determiner), an intermediate split arises. Therefore, (120) should be grammatical with an analysis in which *Schnelle* is a topic DP (that happens to lack an overt noun, but that is fine in German) just as *Raubvögel* is in (114). (113) – (114) thus involve “semi-free” topics only:

- (120) **Schnelle fährt er nur Porsches.* (German)
 fast-pl drives he only Porsche-pl
 “As for fast (cars), he only drives Porsche.”

The contrast between (114) and (120) requires that a theory of topics be developed in which the relevant distinction can be expressed. One particular challenge for such a theory lies in the fact

that discontinuous noun phrases with two nouns are unacceptable in the split-friendly Slavic languages (except Bulgarian and Sorbian), in Lithuanian, Albanian, Malagasy and Nogai, and in the languages with simple discontinuous noun phrases only. In the European languages (but not in the East Asian, Indian, and African languages) intermediate splits and discontinuous noun phrases with two lexical nouns thus co-occur rarely only, but there are enough languages (Bulgarian, Georgian, Modern Greek) which allow both constructions for rendering the idea implausible that the two constructions exclude each other on principled grounds.

The syntactic status of ‘semi-free topics’ also needs to be clarified in more detail. They often co-occur with constructions in which the ‘aboutness’-status of the left-peripheral XP is made explicit by Case marking (partitive or ablative) or by an adposition (as in Georgian (121a), German (121b) and Finnish (121c)).

- (121) a. *satamash-eb-i-dan i-c-i-s mxolod ltrj-I burt-eb-i* (Georgian)
 toy-pl-ins-from sv-know-prs-subj.3sg only blue-nom ball-pl-nom (=115)
- b. *An Raubvögel kennt er nur Bussarde.* (German)
 At birds of prey knows he only buzzards (=114)
- c. *Linnuista hän tuntee vain satakielen.* (Finnish)
 from the birds (s)he knows only nightingale.sg.

German also does not categorically rule out (122a), a structure in which an XP sitting in the Spec,CP position fails to overtly realize the locative preposition selected by the verb. (122a) motivates the assumption of a process that allows to suppress the overt realization of certain prepositions in Spec,CP, and if that process can be applied to (121) as well, the analysis of (114) would not have to involve a discontinuous noun phrase at all. Whether such an analysis is viable for German, and could be generalized to the other languages, is not clear.

- (122) a. *Moabit möchte ich nicht wohnen.* (German)
 Moabit want I not live
 “I do not want to live in Moabit.”
- b. *In Moabit möchte ich nicht wohnen.*
 In Moabit want I not live

It is tempting to analyze the Swedish-Norwegian contrast along such lines. Recall that speakers of Swedish accept discontinuous noun phrases such as (123a), while (nearly) all speakers of Norwegian reject its counterpart (123b). Presumably, there are no prosodic or syntactic differences between the two languages that could account for this contrast. Instead of (123b), Norwegian allows (123c) with the preposition *av* linking the quantifier and the noun (and the same is true for Danish and Icelandic), which only poses the problem that the corresponding continuous DP (123d) is ill-formed.

- (123) a. *Bekymrer har han mange.* (Swedish)
 worries has he many
- b. **Bekymringer har han mange.* (Norwegian)

- c. *Bekymringer har han mange av.*
 d. **Han har mange av bekymringer.*
 „He has many worries.“

Instead of analyzing Swedish (123a) as a discontinuous noun phrase, one might also relate it to a movement structure similar to the one in (123b), with the exception that the preposition *av* is first “pied piped” in Swedish (*av bekymrer har han mange*), and is then left unrealised overtly by the mechanisms that relate (114) and (121ba) and the data in (122).

Note that (123a) co-exists with (124), showing that *av*-PPs are possible topics, and note that (123a) is fine with direct objects only, while subjects and indirect objects can be ‘discontinuous’ only in the way of (125) that seems structurally identical to (123c). That ‘simple semi-free topics’ would be confined to direct objects would not be unique for Swedish (the same holds for Oryia, as mentioned above).

- (124) *Av fåglar känner han bara till näktergalen* (Swedish)
 of birds knows he only to nightingales
 “As for birds, he only knows nightingales.”
- (125) a. *Av studenterna har många läst en bok.* (Swedish)
 Of students have many read a book
 “Many students read a book.”
- b. *Av chaufförerna visade du många vägen till centrum.* (Swedish)
 Of drivers showed you many the way to center
 “You showed the way to the center to many drivers.”

If correct, this reinterpretation of (123a) would allow to exclude Swedish from the languages allowing discontinuous noun phrases.

4.5. Phrase Fracturing

Above, we have seen that the grammaticality of an inverted discontinuous noun phrase may presuppose certain morphological and lexical adjustments (as compared to what holds in a continuous DP). In a number of languages, these ‘adjustments’ may also affect noun phrases when they are *in situ*. Thus, the doubling of the Case marker *ta* in Quechua does not require that one part of the DP is actually dislocated to a position non-adjacent to the other part:

- (126) [*Ana-q llama-n]-ta pisi-ta riku-rqa-ni.* (Quechua)
 Ana-gen llama-3sg-acc a.few-acc see-past-1sg
 “I saw a few of Ana’s llamas.”

In Estonian, we see the same effect when the elements of a noun phrase do not appear in canonical order, compare (12) with (13) in section 2.1. (yet they may still remain adjacent to each other). Greek shows determiner doubling not only when the two parts of a DP are actually discontinuous, but also when they are still adjacent and Cantonese also inserts the *ge-*nominalizer when the elements in the DP are not arranged in canonical order. This has also been

reported for Gooniyandi, for which the term ‘phrase fracturing’ has been coined by McGregor (1989).

In the light of the facts introduced above/these facts, one can plausibly claim that discontinuous noun phrases may arise through the base-generation of two independent DPs, and if that is allowed, nothing in principle excludes that these two DPs are already merged in the verb phrase. The independent existence of two DPs rather than one in case of phrase fracturing phenomena has to be supported by prosodic evidence, but apart from Estonian and Greek, for which it could be established that the two DPs have different information structural properties, we lack the relevant evidence. Notice furthermore that theories of free word order as proposed by Haider (1993) or Fanselow (2001) imply that verb phrases offer more than one position for the linking of each argument in free word order languages (as compared to the single position for argument linking in English), which means that the multiple exploitation of this enlarged linking potential of free word order languages is unspectacular. Phrase fracturing may thus simply illustrate that (some) free word order languages make heavy use of the multiple linking potential. However, given interpretive effects of phrase fracturing, it may also be reanalysed as a discontinuous noun phrase formed by *scrambling* – a possibility that is predicted to exist if discontinuous noun phrases can be formed by A-bar-movement, and if scrambling is an A-bar-movement in some languages.

German (127) has been a mystery for many theories of discontinuous noun phrases and may be analyzed as phrase fracturing. One part of the discontinuous noun phrase still sits in the IP, while the other part has not been fronted on its own, rather, it is part of a topicalized VP. The construction is fine in Dutch and Swedish, too, and may occur in Estonian, Albanian or Serbian, but in the absence of clear second-position effects for auxiliaries, the proper analysis of corresponding sequences of words cannot be read off the data.

(127)	[<i>Bücher</i>	<i>gelesen</i>]	<i>hat</i>	<i>er</i>	<i>viele</i> .	(German)
	books	read	has	he	many	
	“He has read many books.”					

As discussed in detail in Fanselow & Ćavar (2002), there is no convincing movement analysis available for (127) (unless we interpret the sentence as involving distributed deletion after VP-copying). One might, however, resume an analysis proposed by Fanselow (1988) Kuhn (1989) and Roehrs (2006) according to which (127) involves phrase fracturing: *viele* and *Bücher* can be merged independently of each other with the VP, so that it is possible to pied-pipe only one of them when the VP undergoes partial fronting.

5. Simple Splits

Let us now turn our attention to simple discontinuous noun phrases. We have less evidence concerning their grammar, and we will focus on what distinguishes them from inverted splits. In

addition, the question arises whether simple discontinuous noun phrases form a uniform phenomenon in the world's languages.

As we have seen, simple splits mostly come with an intonation different from the one of inverted discontinuous noun phrases, but there are also notable syntactic differences. The most important one has already been alluded to: while the right part of an inverted discontinuous noun phrase must *always* be adjusted to the requirements of noun phrases without an overt head, and while there is an adjustment for the left part in nearly all cases, simple splits fail to show adjustments in many cases, and the most notable examples come from discontinuous noun phrase embedded in PPs. Prepositions do not regenerate in Russian simple splits:

(128) *v kakoj on poedet gorod?* (Russian)
to which he will-go town
“To which town will he go?”

The pattern exemplified in (128) is typical for all Slavic languages in our sample except Bulgarian, and it can be found in Albanian, Estonian, and Lithuanian. It fits a movement theory of simple discontinuous noun phrases fairly well. Above, we have suggested that the accented/focused part of a DP is the one that is moved, and that all material to its left (all material c-commanding it) must be pied-piped in order to satisfy a constraint requiring that the order relations in DP/PP be maintained to the greatest possible extent. Sentences such as (128) will arise when the preposition and the determiner get closer in than usual structural terms, so that the pied-piping of the preposition does not require that the whole PP be pied-piped. The fact that the structure exemplified by (128) seems to be geographically confined to the central and Eastern part of Europe is captured by the necessity of applying a process that renders P and D structurally close. It is rather unclear how such discontinuous constructions could be base-generated by a merge process, since *gorod* occupying the argument position in (128) is certainly not a PP, and cannot meet the selectional requirements of the verb.

Preposition doubling (yielding *v kakoj on poedet v gorod* instead of (128)) as we found it for inverted splits seems rather unusual for simple splits. It was marginally accepted for simple discontinuous constructions in Macedonian and in Ukrainian, Estonian, Lithuanian and probably also Albanian. For Ukrainian, the presence of the doubled preposition correlates with the prosodic split type. Russian linguists typically reject preposition doubling, but there seems to be variation among speakers. In an acceptability rating experiment that we carried out with Moscow students, the version of (128) without a second preposition was rated much better (5.95) than the doubled version (3.19). However, while 84 of the students rejected preposition doubling in simple discontinuous phrases completely (they gave a mean rating lower than 1.5 for the four experimental items), 42 accepted the structure (they gave a mean rating above 6.5). Unlike (128), the version with preposition doubling can easily be captured in a base generation model, while it requires special assumptions in a movement theory.

The evidence from DPs embedded in PPs shows, then, that simple discontinuous noun phrases show a behavior different from their inverted counterparts.

Simple and inverted splits follow different adjustment rules also when they are not embedded in a PP. Consider Nogai in this respect. Number marking on the noun is suppressed in the canonical arrangement of the direct object DP in (129a). In an inverted discontinuous noun phrase, the noun morphology needs to be adjusted (see (129c)), but this does not happen in a simple split (129b).

- (129) a. *men köp kitap aldy* (Nogai)
 I many book bought
 b. *köp men kitap aldy*
 c. *kitap-lar-dy men köp aldy*
 book-pl-acc I many bought
 “I bought many books.”

The same can be observed with simple splits involving adjectives. In an inverted discontinuous noun phrase, the stranded adjective must be nominalized and bear Case (130a-b), but a simple split does not require this (130c). That the crucial factor is not the linear position of the adjective but the split type is shown by (131): when the adjective is fronted as part of an inverted discontinuous noun phrase (since it ‘heads’ a DP without a nominal head in this example) the nominalizing morphology and the Case marking must appear.

- (130) a. *kitap-lar-dy ul nogaj-dyky-n aldy* (Nogai)
 book-pl-acc he Nogai-subst-acc bought
 “He bought Nogai books.”
 b. **kitap-lar-dy ul nogaj aldy*
 c. *Kyzyl ul almalar aldy*
 red he apples bought
 “He bought read apples.”
- (131) a. *Ul köp noRaj-dyky-n aldy* (Nogai)
 He many Nogai-subst-acc bought
 “He bought many Nogai (books).”
 b. *NoRaj-dyky-n ul köp aldy*
 Nogai (books) he many bought.

Being an Altaic language, Nogai might, however, have rules that imply an analysis of (130) – (131) that does not involve adjustment differences. As Malchukov (p.c.) points out, Altaic languages often have special morphological reduction processes for direct objects sitting in preverbal position. The drop of a Case marker for non-specific direct objects in Turkish exemplifies such regularities. The contrasts between (130) and (131) might thus merely reflect the option for a morphological reduction of the noun in preverbal position rather than the failure of adjustment to apply with simple splits.

However, one can observe the adjustment effect also when the noun is not in the preverbal position. In Nogai, there is no number marking in a continuous DP independently of position, while it must show up in an inverted discontinuous noun phrase. See (132) for the pertinent contrast.⁴⁸

- (132) a. *Üsh noRaj kitap-dy ul aldy* (Nogai)
 Three Nogai book.sg-acc he bought
 b. *NoRaj kitap-lar-dy ul üsh aldy*
 Nogai book-pl-acc he three bought
 “He bought three Nogai books.”

Adjustment in Lak is not much different with respect to the contrast between simple and inverted splits. A simple split (133b) retains the morphology of the continuous NP (133a), while the corresponding inverted discontinuous noun phrase in (133c) adjusts both parts.

- (133) a. *arcu xxulva insan-nal darcun-ni* (Lak)
 money five man-erg stole-3sg
 b. *xxulva-ri arcu insan-nal darcu-ssa*
 five-focus money man-erg stole-part
 c. *insan-tura-l arcu xxul-naa-l-li darcu-ssa*
 man-pl-erg money five-noml-erg-3sg stole-part
 “Five men stole money.”

Bulgarian has data reminiscent of the Nogai facts. Again, we have a suppression of plural marking of N with certain numerals, and we get a shift from singular to plural on the noun in inverted but not in simple discontinuous noun phrases:

- (134) a. *Toj ima tri stol-a* (Bulgarian)
 he has three chair (sg.)
 b. *Stol-ove toj ima tri*
 chair.pl he has three
 c. *Tri toj ima stola.*
 “He has three chairs.”

Sentences in which simple discontinuous noun phrases fail to show the adjustments that would make them grammatical independent DPs such as the ones shown in (130) – (134) pose a problem for extending base generation theories to simple splits. As an independent DP, the relevant part of the discontinuous construction would be generated with a different morphology. A movement theory can easily capture such data. One option is to have the morphological shape of the DP determined before it is split up (so that the parts will still show up in the form they have in continuous DPs). Recall that inverted splits are different with respect to adjustments, which supports the view that the two types of discontinuity are generated in different ways.

⁴⁸ Simple splits are impossible for a DP in this constellation, however.

Simple splits may fail to show the adjustments for Case and number which we observe in inverted splits, but there are also simple discontinuous noun phrases that show adjustments. In this respect, the grammatical features of the noun resemble adpositions, for which we already saw that they can sometimes be doubled (see also Georgian (135) for a doubled postpositional affix).

- (135) *ramden-ze i-lap'arak'-a p'et'er-ma naxat'-ze* (Georgian)
 How.many[dat]-on sv-speak-aor.subj.3.sg peter-erg painting[dat]-on
 “About how many paintings does Peter speak?”

E.g., recall that Telugu required the nominalization of an adjective in inverted splits. The same must happen in simple discontinuous noun phrases:

- (136) a. *Meerii manci pustakam cadiwindi* (Telugu)
 Mary good book read
 b. *manci-di meerii pustakam cadidwindi*
 good-3sg-pron.suffix Mary book read
 “Mary read a good book.”

The crucial difference between simple and inverted discontinuous noun phrases thus is not that the latter undergo adjustment processes while the former do not. Rather, adjustments are necessary in the inverted case, while they are not in simple discontinuous constructions. Ideally, we would be able to *predict* whether or not adjustment applies in a simple split. We have already seen the importance of prosodic factors for repair – but note that (13) from Estonian and the German repair facts show that adjustments are possible in cohesive discontinuous noun phrases, too.

Simple discontinuous noun phrase are therefore perhaps formed by (at least) two different processes, one triggering adjustment, the other excluding it. Our evidence for such a division is not overwhelming, but three factors should be mentioned at least. First, one can classify simple discontinuous noun phrases as to whether they show negative intervention effects (or intervention effects caused by quantifiers), as we can see in (137): a negative morpheme and many quantifiers cannot be placed between the parts of the *combien-de*-constructions or similar constructions.⁴⁹

- (137) a. *Combien de livres n'as tu pas lu?* (French)
 how many of books neg-have you not read
 b. **Combien n'as tu pas lu de livre?*
 “How many books did you not read?”

⁴⁹ This sentence is only well-formed as a rhetorical question implying that the addressee has read many books.

Such intervention effects figure prominently in the discussion of the scope taking of *in situ* wh-phrases, and they have also been applied to discontinuous wh-phrases (see Beck 2006, and Butler & Mathieu 2004).

Surprisingly, while the *in situ* effects seem stable crosslinguistically (as shown by Beck), simple split wh-phrases and quantifier phrases often turn out to be immune to intervention effects in our questionnaires. According to our informants, Albanian, Assamese, Bulgarian, Estonian, Finnish, Ossetic, and probably Nogai and Sorbian have intervention effects. In Persian and Turkish, they seem to be confined to negative intervenors, in Malagasy, Niue and Tagalog, they are confined to quantificational intervention.

Cantonese, Gujarati, Hindi, Indonesian, Maithili, Georgian, and Lak show no intervention effects at all in simple discontinuous noun phrases, like the Slavic languages not mentioned so far. Areal patterns are visible in these groups, but a correlation of the absence of intervention effects with the absence of adjustments is not evident.

Secondly, there are restrictions on the categories that can enter simple splits in certain languages. Adjectives cannot be fronted in simple discontinuous noun phrases in some languages even when they are the highest overt head in a DP. This restriction holds for instance in Assamese, Maithili, Niue and Persian. In Assamese, Oryia and Burmese, adjectives are forbidden in all kinds of splits. With these languages, a possible areal generalization suggests itself. Again, we observe that simple discontinuous noun phrases are not a uniform phenomenon, but there is no straightforward relation of the adjective restriction and the adjustment parametrization or the absence of intervention effects.

Finally, Serbian and Croatian are famous for allowing even proper names to be discontinuous (see (138)), and this property goes hand in hand with the ability to split off non-subjective adjectives which is usually considered bad in other languages (139-140). We have not yet found languages from other parts of the world that show this peculiar behavior.

- (138) Hansa-Petera *sam* *srela* Milera. (Serbian/Croatian)
 H-acc-P-acc am met Miller-acc
Hansa *sam* *srela* Petera Milera
 "I have met Hans Peter Miller "
- (139) (?)Moguće *je* *on* *video* pobednike. (Serbian/Croatian)
 likely is he seen winners
 "He has seen likely winners."
- (140) Samo bivše *je* *on* *video* ministre (Serbian/Croatian)
 only former is he seen ministers
 "He has seen only former ministers."

Simple and inverted versions of discontinuous noun phrases thus differ in their grammatical properties, as we have shown above. In addition, there is considerable variation within the

simple type of discontinuity, and we do not yet possess the relevant evidence for interpreting these differences.

6. Conclusion

This survey of the grammatical properties of split constructions from a typological point of view has revealed a surprising homogeneity for some aspects of the construction under consideration. For other aspects, very different constraints may play a role in the disparity in the distribution of discontinuous noun phrases. In terms of prosody, a threepart classification could be established. First, there are cohesive discontinuous noun phrases, in which the two parts of a discontinuous construction are realized in a single Intonation Phrase (i-phrase), signaling in this way a tight connection between the discontinuous elements. In this first type, only the lower level of prosodic phrasing, the Prosodic Phrase, or p-phrase, is changed. Secondly, there are non-cohesive splits, where the two parts of the construction are realized in two i-phrases, signaling a much looser connection between them. And the third class is the absence of splits. Section 2 of this survey suggests that the intonation structure is related to two independent properties. Firstly, there is information structure, which is the motor of the splitting. A fronted constituent usually is a topic, and may also be a focus, whereas the rightward element is much freer in its informational content. In any case, the information structure realized on the two parts is different. Secondly, languages are classified in several groups as far as their tonal properties are concerned, and we could show that intonation languages form discontinuous noun phrases much more readily than other types of languages.

Cohesive constructions are often simple splits in which the word order of the DP is preserved, and non-cohesive constructions often correspond to inverted splits having an inverted word order. Simple splits are less common than inverted splits, a fact that can be explained by the morphosyntactic aspects of this construction and its prosody. For inverted discontinuous noun phrases, a substantial part of the evidence points towards a model in which the two parts of the construction are generated independently of each other, but there also is evidence that does not support that conclusion (e.g., discontinuous PPs). It also turns out to be difficult to distinguish discontinuous noun phrases from structures with free topics. Simple discontinuous noun phrases, on the other hand, certainly involve a movement process, but the crosslinguistic variation is higher than in the case of inverted discontinuity, and still not understood. Finally, some factors seem necessary for the presence of discontinuous noun phrases in a language, but we have not yet found a sufficient condition for their grammaticality.

At the same time, this survey also reveals numerous gaps in our understanding of the relationships at play. Most of all, the overview of the intonational properties from a typological point of view is in its infancy. A great deal of study remains to be done in this domain. Only when we will understand better how the languages of the world use F_0 , duration and intensity to

structure their sentences we will be in a position to complete our survey of discontinuous noun phrases from an intonational point of view. It may be pointed out that split constructions are rewarding for this task, as they force a marked phrasing and the formation of special pitch accents. We also suspect that the picture we found for morphosyntactic aspects may change with our language sample becoming more representative in typological terms.

References

- Abney, Steven (1987) *The English Noun Phrase in its Sentential Aspect*. Diss., MIT, Cambridge, Mass.
- Agbayani, Bryan & Chris Golston (2005) *Movement of nonconstituents and insensitivity to islands in Ancient Greek*. Rutgers Optimality Archive.
- Anderson, Stephen (2000) *Towards an optimal account of second position phenomena*. In: Dekkers, Joost, Frank van der Leeuw & Jeroen van de Weijer (eds.) *Optimality Theory: Syntax, Phonology, and Acquisition*. Oxford: Oxford University Press, 301–333.
- Arvaniti, Amalia & Mary Baltazani (2005) *Intonational Analysis and Prosodic Annotation of Greek Spoken Corpora*. In: Jun, Sun-Ah (ed.) *Prosodic Typology. The Phonology of Intonation and Phrasing*. Oxford: Oxford University Press, 84–117.
- Asu, Eva-Liina (2004) *The Phonetics and Phonology of Estonian Intonation*. PhDiss., Cambridge University.
- Austin, Peter & Joan Bresnan (1996) *Non-Configurationality in Australian Aboriginal Languages*. *Natural Language and Linguistic Theory* 14, 215–268.
- Baker, Mark (1995) *The polysynthesis parameter*. Oxford: Oxford University Press.
- Bailyn, John (1995) *A Configurational Approach to Russian "Free" Word Order*. Ph.D. dissertation, Ithaca, NY: Cornell University.
- Baltin, Mark (1995) *Floating quantifiers, PRO, and predication*. *Linguistic Inquiry* 26, 199–248.
- Bartels, Christine (1997) *Towards a Compositional Interpretation of English Statement and Question Intonation*. PhD diss., University of Massachusetts, Amherst.
- Bašić, Monika (2005) *Nominal subextractions and the structure of NPs in Serbian and English*. MPhil thesis, University of Tromsø.
- Beck, Sigrid (2006) *Intervention effects follow from Focus Interpretation*. *Natural Language Semantics* 1, 1–56.
- Boersma, Paul & Weenink, David (2006). *Praat: doing phonetics by computer (Version 4.4.20)* [Computer program]. Retrieved May 3, 2006, from <http://www.praat.org/>
- Bošković, Željko (2005) *On the locality of left branch extraction and the structure of NP*. *Studia Linguistica* 59, 1–45.
- Brody, Michael (1990) *Some remarks on the focus field in Hungarian*. *UCL Working Papers in Linguistics* 2, 201–225. University College London.

- Bruce, Gösta (1977) Swedish word accent in sentence perspective. *Travaux de l'Institut de Linguistique de Lund* 12. Lund: Gleerup.
- Büring, Daniel (2001) Let's Phrase it! Focus, Word Order, and Prosodic Phrasing in German Double Object Constructions. In: Müller, Gereon & Wolfgang Sternefeld (eds.) *Competition in Syntax*. New York: Mouton de Gruyter, 69–105.
- Butler, Alastair & Eric Mathieu (2004) *The Syntax and Semantics of Split Constructions*. Macmillan: London.
- Ćavar, Damir (1999) *Aspects of the Syntax-Phonology Interface*. Doctoral dissertation., University of Potsdam.
- Chomsky, Noam (1995) *The Minimalist Program*. Cambridge, Mass.: MIT Press.
- Culicover, Peter & Michael Rochemont (1990) Extraposition and the Complement Principle. *Linguistic Inquiry* 21, 23–47.
- Dahlstrom, Amy (1987) Discontinuous Constituents in Fox. In: Kroeber, Paul & Robert E. Moore (eds.) *Native American Languages and Grammatical Typology*. Bloomington IULC. 53–73.
- De Kuthy, Kordula (2002) *Discontinuous NPs in German. A Case Study of the Interaction of Syntax, Semantics, and Pragmatics*. Stanford, California: CSLI Publications.
- Déprez, Viviane (1989) *On the typology of syntactic positions and the nature of chains*. Doctoral dissertation, MIT, Cambridge, Mass.
- Devine, Andrew M. and Laurence Stephens (2000) *Discontinuous Syntax. Hyperbaton in Greek*. New York: Oxford University Press.
- Elordieta, Gorka (2006). Constraints on intonational prominence of focalized constituents. In: D. Büring & M. Gordon & Ch. Lee (eds.). *Topic and Focus: Papers from a Workshop on Intonation and Meaning*. Dordrecht. Kluwer.
- Elordieta, Gorka, Iñaki Gaminde, Inma Heráez, Jasone Salaberria, & Igor. Martín de Vidales (1999) Another step in the modeling of Basque Intonation: Bermeo. In: Matousek, V., P. Mautner, J. Oceliková & P. Soika (eds). *Text, Speech and Dialogue*. Berlin: Springer, 361–364.
- Erteschik-Shir, Nomi (1973). *On the Nature of Island Constraints*. Ph.D. thesis, MIT, Cambridge, Mass.
- Fanselow, Gisbert (1988) Aufspaltung von NPn und das Problem der "freien" Wortstellung. *Linguistische Berichte* 114, 91–113.

- Fanselow, Gisbert (2001) Features, theta-roles, and free constituent order. *Linguistic Inquiry* 32, 405–437.
- Fanselow, Gisbert & Damir Ćavar (2002) Distributed Deletion. In: Alexiadou, Artemis (ed.) *Theoretical Approaches to Universals*. Amsterdam, Benjamins, 65–07.
- Fanselow, Gisbert & Caroline Féry (2002) Ineffability. In: Fanselow, Gisbert & Caroline Féry (eds) *Special Issue on Optimality Theory*. *Special Issue of Linguistische Berichte*, 265–307
- Fanselow, Gisbert & Denisa Lenertová (2006) Left Peripheral Focus. *Mismatches between Syntax and Information Structure*. Ms., under revision.
- Féry, Caroline (1993) German intonational patterns. Tübingen: Niemeyer. (= *Linguistische Arbeiten* 285)
- Féry, Caroline (2006) The prosodic basis of topicalisation. In: Winkler, Susanne & Kerstin Schwabe (eds) *ISAG volume*.
- Féry, Caroline & Shinichiro Ishihara (2006) How information structure shapes prosody. Ms., University of Potsdam.
- Féry, Caroline, Alla Paslawska & Gisbert Fanselow (2007) Discontinuous constructions in Ukrainian. *Journal of Slavic Linguistics* 15.1 or 15.2.
- Frey, Werner (2004) A medial topic position for German. *Linguistische Berichte* 198, 153–190.
- Franks, Steven (1994) Parametric Properties of numeral phrases in Slavic. *NLLT* 12, 597–674.
- Gouskova, Maria (2001) Split Scrambling: Barriers as Violable Constraints. In: Megerdooian, Karine & Leora Anne Bar-el (eds.) *WCCFL Proceedings*. Somerville, MA: Cascadilla Press, 220–233.
- Grewendorf, Günther (1989) *Ergativity in German*. Dordrecht: Foris.
- Gunlogson, Christine (2001) *True to Form: Rising and Falling Declaratives as Questions in English*. PhD Diss., UCSC.
- Gussenhoven, Carlos (1983) *A semantic analysis of the nuclear tones of English*. Indiana University Linguistics Club.
- Gussenhoven, Carlos (2004). *The Phonology of Tone and Intonation*. Cambridge University Press.
- Gussenhoven, Carlos & Jörg Peters (2004). A tonal analysis of Cologne Schärffung. *Phonology* 21, 251–285.

- Haider, Hubert (1985) Über sein oder nicht sein: zur Grammatik des Pronomens sich. In: Abraham, Werner (ed.) *Erklärende Syntax des Deutschen*. [Studien zur deutschen Grammatik 25]. Tübingen: Narr. 223–254
- Haider, Hubert (1993). *Deutsche Syntax – generativ*. Tübingen: Narr.
- Hale, Ken (1983). Warlpiri and the grammar of non-configurational languages. *Natural Language & Linguistic Theory* 1, 5–47.
- Haspelmath, Martin (1993). *A grammar of Lezgian*. Berlin: de Gruyter.
- Hastings, Rachel (2003) The semantics of discontinuous noun phrases in Quechua. In: Anderssen, Jan, Paula Menéndez-Benito & Adam Werle (eds.) *The Proceedings of SULA 2*. Vancouver, BC: GLSA. University of Massachusetts, Amherst., 35–55.
- Hayes, Bruce & Aditi Lahiri (1991). Bengali intonational phonology. *Natural Language & Linguistic Theory* 9, 47–99.
- Hoof, Hanneke van (1997) Left Dislocation and Split Topics. In: Anagnostopoulou, Elena, Henk van Riemsdijk & Frans Zwarts (eds.), *Materials on Left Dislocation*, vol. 14 of *Linguistik Aktuell*. Amsterdam and Philadelphia: John Benjamins, 275–305.
- Hoof, Hanneke van (2005) Split Topicalization. In: Everaet, Martin & Henk van Riemsdijk (eds.) *The Blackwell Companion to Syntax*. London: Blackwell.
- Horvath, Julia (1986) *FOCUS in the Theory of Grammar and the Syntax of Hungarian*. Dordrecht: Foris.
- Hyman, Larry M. & John R. Watters (1984) Auxiliary focus. *Studies in African Linguistics* 15, 233–273.
- Jelinek, Eloise (1984) *Empty Categories, Case, and Configurationality*. *Natural Language and Linguistic Theory* 2, 39–76
- Jun, Sun-Ah (1993) *The Phonetics and Phonology of Korean Prosody*. Ph.D. Dissertation, the Ohio State University. [Published in 1996 by Garland, New York]
- Jun, Sun-Ah, (ed.) (2005) *Prosodic Typology. The Phonology of Intonation and Phrasing*. Oxford University Press.
- Kathol, Andreas & Richard A. Rhodes (1999) Constituency and linearization of Ojibwe nominals. In: Caldecott, Marion, Suzanne Gessner & Eun-Sook Kim (eds.) *Proceedings of WSCLA 4*. UBC Working Papers in Linguistics II. Vancouver: Dept. of Linguistics, University of BC, 75–91.
- Kazenin, Konstantin (2005a). *A syntactic analysis of Split Constructions in Russian*. Ms., University of Potsdam.

- Kazenin, Konstantin (2005b). Split Constructions in Daghestanian Languages. Ms., University of Potsdam.
- Kazenin, Konstantin & Yakov Testelec (1999). Porjadok slov i struktura sostavljajushchix [= Word Order and Constituent Structure]. In: Kibrik, Aleksandr E. (ed.) Elements of Tsakhur in Typological Perspective. Moskva: Nasledie.
- E. Kiss, Katalin (1998) Identificational focus versus information focus. *Language* 74(2): 245–273.
- Kniffka, Gabriele (1996) NP-Aufspaltung im Deutschen. *Kölner linguistische Arbeiten – Germanistik* 31. Hürth: Gabel.
- Kohler, Klaus J. (1990) Macro and micro F0 in the synthesis of intonation. In Kingston, John & Mary Beckman (eds.) *Papers in Laboratory Phonology I. Between the Grammar and the Physics of Speech*. Cambridge: Cambridge University Press, 115–138.
- Kubozono, Haruo (1993) *The organization of Japanese Prosody*. Tokio: Kurosio.
- Kuhn, Jonas (1998) Resource sensitivity in the syntax-semantics interface and the German split NP construction. In: Kiss, Tibor & Detmar Meurers (eds.) *Proceedings of the ESSLI X Workshop on Current Topics in Constraint Based Theories of Germanic Syntax*, Saarbrücken.
- Ladd, D.Robert (1996) *Intonational phonology*. Cambridge University Press.
- Legate, Julie (2002) *Warlpiri: Theoretical Implications*. Doctoral dissertation, MIT, Cambridge, Mass.
- Leonetti, Manuel (2004). Specificity and direct object marking in Spanish. *Catalan Journal of Linguistics* 3, 75–114.
- LeSourd, Phillippe (2004) *The Internal Structure of the Noun Phrase in Maliseet-Passamaquoddy*. Ms., Bloomington, Indiana.
- Mattissen, Johanna (2003) *Dependent-Head Synthesis in Nivkh. A Contribution to a Typology of Polysynthesis*. Amsterdam: Benjamins.
- Merlan, Francesca (1993) *A grammar of Wardaman*. Berlin: Mouton de Gruyter.
- McCloskey, James. (2000) Quantifier float and wh-movement in Irish English. *Linguistic Inquiry* 31, 57–84.
- McGregor, William (1989). Phrase fracturing in Gooniyandi. In: Maracz, Laszlo & Pieter Muysken (eds) *Configurationality. The typology of Asymmetries*. Dordrecht: Foris, 207–222.

- Morimoto, Yukiko, Sam Mchombo & Caroline Féry (2005) Partitioning Discourse Information: A Case of Chichewa Split Constituents. In: Butt, Miriam & Tracy H. King (eds.) Proceedings of the LFG05 conference. Stanford University. CSLI Publications.
- Nagano-Madsen, Yasuko (1993) Phrase-final Intonation in West Greenlandic. Working Papers 40. Lund University, 145–155.
- Nagano-Madsen, Yasuko (1995) Analysis of intonational phrasing in West Greenlandic Eskimo reading text. Working Papers 44. Lund University, 129–144.
- Nolda, Andreas (2005) Integriertes Rahmenthema. Zur Syntax und Semantik der gespaltenen Topikalisierung im Deutschen. Doctoral dissertation, Free University Berlin.
- Ntelitheos, Dimitris (2004) Syntax of Elliptical and Discontinuous Nominals. MA Thesis, UCLA.
- Payne, Doris (1993) Nonconfigurationality and discontinuous expressions in Panare. In: Peterson, David A. (ed.) Proceedings of the Nineteenth Annual Meeting of the Berkeley Linguistic Society, February 12-15, Special session on syntactic issues in native American languages, 121–138.
- Pierrehumbert, Janet (1980). The phonology and phonetics of English intonation. Diss., MIT, Cambridge, Mass.
- Pierrehumbert, Janet. & Mary Beckman (1988) Japanese tone structure. Cambridge, Mass.: MIT Press.
- Pierrehumbert, Janet. & Julia Hirschberg (1990) The meaning of intonational contours in the interpretation of discourse. In: Cohen, Philip Jerry Morgan & Martha Pollock (eds.) Intentions in communications. Cambridge, Mass.: MIT Press, 271–311.
- Pinkster, Harm (2005) Changing patterns of discontinuity in Latin. Handout, ICLL 2005.
- Puig-Waldmüller, Estela (2006) Wörter stehen da einige. On nominal split constructions in non standard Viennese German. Diploma thesis, Universitat Pompeu Fabra, Barcelona.
- Reinholtz, Charlotte (1999) On the Characterization of Discontinuous Constituents: Evidence from Swampy Cree. *International Journal of American Linguistics* 65.2, 201–227.
- Riemsdijk, Henk van (1989) Movement and Regeneration. In: Benincà, Paola (ed.) *Dialectal Variation and the Theory of Grammar*. Dordrecht: Foris, 105–136.
- Rizzi, Luigi. (1997). The fine structure of the left periphery. In: Haegeman, Liliane (ed.) *Elements of Grammar: Handbook of Generative Syntax*. Dordrecht: Kluwer, 281–337.
- Rögnvaldson, Eiríkur. (1995) Old Icelandic – A non configurational language? *NOWELE* 26, 3–29.

- Roehrs, Dorian (2006) Split-NPs as an Instance of Sideward Movement. University of Pennsylvania Working Papers in Linguistics 13.1, 1–14.
- Rischel, Jørgen (1974) Topics in West Greenlandic Phonology. Copenhagen: Akademisk Forlag.
- Russell, Kevin & Charlotte Reinholtz (1995) Hierarchical structure in a non-configurational language: Asymmetries in Swampy Cree. In: Proceedings of the Fourteenth West Coast Conference on Formal Linguistics, 431–445.
- Samek-Lodovici, Vieri (2005) Prosody-Syntax Interaction in the Expression of Focus. *Natural Language and Linguistic Theory* 23, 687–755.
- Sekerina, Irina. (1997) The Syntax and Processing of Scrambling Constructions in Russian. Ph.D. dissertation, CUNY.
- Selkirk, Elisabeth O. & Koichi Tateishi (1991) Syntax and downstep in Japanese. In: Georgopoulos, Carol & Roberta Ishihara (eds.) *Interdisciplinary approaches to language: Essays in honor of S.-Y. Kuroda*. Dordrecht: Kluwer 519–7544.
- Skopeteas, Stavros, Elisabeth Verhoeven & Gisbert Fanselow (in prep.) Discontinuous noun phrases in Yucatec Maya.
- Sportiche, Dominique (1988) A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19, 425–449.
- Starks, Donna (1987) Word Order: More than ordering Subjects, Objects, and Verbs. In: Kroeber, Paul & Robert E Moore (eds.) *Native American Languages and Grammatical Typology*. Bloomington IULC 1987, 215–233.
- Szendrői, Kriszta (2001) Focus and the Syntax-Phonology Interface. Ph.D. dissertation., University College London.
- Tappe , Hans Thilo (1989) A Note on Split-Topicalization in German. In: Bhatt, Christa, Elisabeth Löbel & Claudia Maria Schmidt (eds.) *Syntactic Phrase Structure Phenomena*. Amsterdam and Philadelphia: John Benjamins, 159–179.
- Truckenbrodt, Hubert (1999) On the Relation between Syntactic Phrases and Phonological Phrases. *Linguistic Inquiry* 30.2, 219–255.
- Vallduví, Enric (1992). *The Informational Component*. New York: Garland.
- Vallduví, Enric & Elisabet Engdahl (1996) The linguistic realization of information packaging. *Linguistics* 34, 459–519.
- Vater, Heinz (1980): Quantifier floating in German. In: Auwera, Johan van der (ed.) *The Semantics of Determiners*. London: Croom Helm, 232–249.

Wang, Bei (2005) Split noun sentences in Mandarin: Production and perception. In: Proceedings of Interspeech. Lisbon.

Xu, Yi (1998) Fundamental frequency peak delay in Mandarin. *Phonetica* 58, 26–52.

Xu, Yi (1999) Effects of tone and focus on the formation and alignment of F0 contours. *Journal of Phonetics* 27, 55–105.

Yip, Moira (2000) *Tone*. Oxford University Press.

Language	Source	Status	Prosodic Analysis	DNP
Agni	Blaise Ahua	Checklist		Yes
Ainu	Hidetoshi Shiraishi	Checklist		No
Akum	Roland Cho			No
Albanian	Elton Prifti	Recordings		Yes
Ancient Greek	Devine & Stevens 2002	---		Yes
Assamese	Joyshree Sutradhar	---		Yes
Avaric	Gimbatov Magomedkamil	Recordings		Yes
Baoulé	Amani Bohoussou	---		Yes
Basque	Kepa Rodriguez	Recordings	Yes	Yes
Bulgarian	Svetlana Petrova	Recordings		Yes
Burmese	Hla Myat Thway	Recordings		Yes
Cantonese	Picus Ding	Recordings		Yes
Catalan	Xavier Villalba	Checklist, Recordings	Yes	No
Chamorro	Sandra Chung	Checklist	Yes	Yes
Chichewa	Yukiko Morimoto, Sam Mchombo		Yes	Yes
Chinese	Wang Bei	Recordings	Yes	Yes
Chukchee		Recordings		Yes
Circassian	Anita Temirova	---		Yes
Croatian (BGL)	Luka Szucsich, Ivo Szucsich	---		Yes
Croatian (Croatia)	Damir Ilavar	---		
Czech	Denisa Lenertová	Recordings	Yes	Yes
Danish	Eva Engels	Checklist		
Dutch	Hanneke van Hoof	Recordings	Yes	Yes
English	Many sources	---	Yes	No
Estonian	Kaja Kohler	Recordings	Yes	Yes
Ewe	Kofi Dorvlo	Checklist, Recordings	Yes	No
Fe'e fe'e	Tchambou Aubierge, Kizitus Mpoche	---		Yes
Finnish	Merja Sorsakivi	Recordings	Yes	Yes
Fox	Dahlström 1987	---		Yes
French	Native Intuitions	---	Yes	No
Georgian	Manana Tandaschwili, Rusudan Asatiani	Recordings	Yes	Yes
German	Native Intuitions	---	Yes	Yes
Gooniyandi	McGregor1989	---		Yes

Gujarato	Ashish Mehta	---		Yes
Hebrew	Rachel Eitan	Recordings		No
Hindi	Ayesha Kidwai	Recordings	Yes	Yes
Hixkaryana	Derbyshire 1985	---		Yes
Hungarian	Beata Gyuris	Recordings	Yes	Yes
Icari Dargwa	Sumbatowa & Mutalov 2003	---		Yes
Icelandic	Gunnar Hrafnbjargasson	Recordings		No
Indonesian	Wendi Gundawan	Recordings	Yes	Yes
Italian	Vieri Samek-Lodovici	Checklist, Recordings	Yes	No
Japanese	Shinichiro Ishihara	Recordings	Yes	Yes
Jingulu	Pensalfini 2004	---		Yes
Jiwarli	Pensalfini 2004	---		Yes
Kalkatungu	Moravcsik 1995	---		Yes
Kanuri	Abba Kakka	Partial, Recordings		Yes
Kashmiri	Wali & Koul 1993	---		No?
Kayardidi	Evans 1995	---		Yes
Kitharaka	Peter Kinyua Muriungi	---		yes
Kolyma Yukaghir	Maslova 2003	---		Yes
Komi	Deryabin Alexander Stepanovitch	Checklist		Yes
Korean	Shin-Sook Kim	Recordings	Yes	Yes
Kyrgyz	Larissa Ussabalieva	---		Yes
Lak	Ansar & Arsen Mazaev	Recordings	Yes	Yes
Lakota	Regine Pustet	Checklist, Recordings		No
Latin	Pinkster 2005	---		Yes
Latvian	Nau 1998	---		Yes
Lezgian	Haspelmath 1993	---		No
Limbum	Kizitus Mpoche	---		Yes
Lithuanian	Milda Basiulytė	Recordings		Yes
Macedonian	Benjamin Zivkovic, Tijana Asic	---		Yes
Maithili	Kamal Choudhoury	---		yes
Malagasy	Charles Randriamasimanana	---		Yes
Malayalam	Rosmin Mathew	---		Yes
Maori	Wee Kuki Kaa (Elisabeth Pearce)	Recordings		No
Mawng	Nita Garidjalalug, Ruth Singer	Recordings	Yes	Yes
Mengrelian	Lela Samushia	Recordings		Yes
Modern Greek	Stavros Skopeteas	Recordings	Yes	Yes

Moghamo		Recordings	Yes	Yes
Mohawk	Baker 1995	---		No
Moseten	Jeanette Sakel	Some data		Yes
Nalik	Craig Volker, J. Mban a Xomerang	---		No
Nama	Seth Domrog, Rebecca Voll	Checklist		No
NaXI	Niu Yuqiong, Wang Bei	Recordings		Yes
Nepali	Samar Sinha	Recordings		Yes
Niue	Granby Siakimotu, Pita Tanaki, Wolfgang Sperlich	Recordings		Yes
Nivkh	Johanna Mattissen	---		Yes
Nogai	Maja Bulgarova, Konstantin Kazenin	Recordings	Yes	Yes
Norwegian	Marit Julien	Recordings	Yes	No
Ojibwe	Kathol & Rhodes1997	---		Yes
Old Icelandic	Rögnvaldsson 1995	---		Yes
Old Occitan	Pinkster 2005	---		Yes
Oriya	Sahoo Kalyanamalini	Recordings		Yes
Oromo	Catherine Griefenow-Mewis	Checklist		No
Ossetic	Mamyk'aty Qazybeg, Konstantin Kazenin	Partial		Yes
Palestinian Arabic	Akram Abdu, Philippa Cook	Checklist		Yes
Panare	Payne 1993	---		Yes
Passamaquoddy	LeSourd 2004	---		Yes
Persian	Yasser Shakeri	Recordings	Yes	Yes
Polish	Joanna Blaszczak	Recordings	Yes	Yes
Prinmi	Picus Ding	Recordings	Yes	Yes
Quechua	Hanstings 2004	---		Yes
Romani (Ari)	Tisana Asic	---		Yes
Romanian	Ion Giurgea, Alexandru Maralte	Recordings		Yes
Rotuman	Marit Vamarasi	Recordings		No
Russian	Konstantin Kazenin	Recordings	Yes	Yes
Saari	Kizitus Mpoche	---		Yes
Sanskrit		---		
Serbian	Tijana Asic	Recordings	Yes	Yes
Slovak	Maria Ugrin, Tijana Asic	---		Yes
Sorbian	Madlena Norberg	Recordings		Yes
Swampy Cree	Nthelitheos 2004	---		Yes
Swedish	Astrid Kügler	---	Yes	Yes

xxx

Kommentar: Da fehlt doch was...

Tagalog	Amin Möller	Recordings		Yes
Tamil		Checklist		No
Taschlehit Berber	Hassan Raja	Recordings		Yes
Telugu	K.V. Subbarao	---		No
Tibetan	Huadan Zaxi	Partial		Yes
Tok Pisin	Craig Volker	Checklist		No
Tono O'odham	Payne 1993	---		Yes
Turkish	Özgür Sahin	Recordings	Yes	Yes
Ukrainian	Alla Paslaswka	Recordings	Yes	Yes
Vietnamese	Tue Trinh	Recordings	Yes	Yes
Wardaman	Merlan 1993	--		Yes
Warlpiri	Legate 2004	---		Yes
West Greenlandic	Naja Blytmann Trondhjem	Recordings	Yes	Yes
Wobe	Firmin Ahoua	Recordings		?
Woods Cree	Starks 1987	---		Yes
Yagua	Payne 1993	---		Yes
Yakut	Altainlina Boltitska	---		Yes
Yucatec Maya	Amebee Colli Colli, Stavros Skopeteas	Recordings	Yes	Yes