

THE CP/DP PARALLELISM REVISITED*

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1. INTRODUCTION

This paper is a summarized version of the book “Elements of Comparative Generative Syntax: A Cartographic Approach” (Laenzlinger 2010) which offers a cartographic survey of fourteen languages concerning not only their clausal structure, but also their nominal one. The aim of the research is to use adverbs for the clause and adjectives for the noun phrase for identifying the positions of the verb and its arguments within the clause and those of the noun and its complements/arguments within the noun phrase.

As for the clause, the fourteen languages are grouped in the following way:

- (i) SVO languages (French, Hebrew, English and Swedish)
- (ii) Inversion VS(O) languages (Italian, Spanish, Romanian and Greek)
- (iii) Scrambling languages: (a) SOV (German, Tatar, Japanese)
(b) SVO (Russian and Serbo-Croatian)
- (iv) “Free” word order languages: Hungarian

For the noun phrase, these languages are classified according to the following orders:

- (i) PP < Adj < N (Tatar, Japanese)
- (ii) N < Adj < PP (Hebrew)
- (iii) Adj < N < PP (English, German, Swedish, Russian, Serbo-Croatian and Hungarian)
- (iv) (Adj) < N < (Adj) < PP (French, Italian, Spanish, Romanian, Greek)

The paper is organized as follows. Section 2 contains a presentation of the theoretical framework, which mainly concerns the cartographic structure of the clause and the noun phrase (Cinque 2002, Belletti 2004b, Rizzi 2004a). We will show that the parallelism between the clause and the noun phrase (Abney 1987, Siloni 1997, Guisti 2006 and much subsequent work) is not total, although we can identify three parallel domains, namely the *Nachfeld* (vP/nP), which is the thematic domain of the verb/noun, the *Mittelfeld* (TP/NumP), which is the domain of modifiers, PPs, Case-bearing DPs and agreement, and the *Vorfeld* (CP/DP), the domain of focalization, topicalization and quantification. Feature theory

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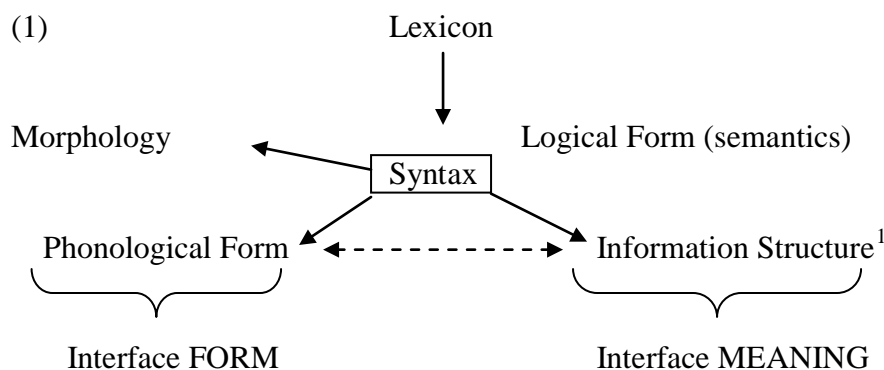
conditions movement possibilities within the clause and the noun phrase. Head-movement is very local, verb and noun raising are analyzed as remnant vP/nP -movement or possibly pied-piping (extended vP/nP projection) movement. The noun/verb's arguments/complements move to the Mittelfeld for agreement, Case and informational reasons. Both arguments/complements and modifiers can move to the left periphery for informational reasons.

Section 3 is devoted to the comparative study of clause structure based on the strict positions of adverbs and the various possible positions of arguments (subject, direct object) among adverbs. The SVO configuration is first examined (section 3.1) in English, French, Hebrew, Russian, Serbo-Croatian and Swedish, where this is the neutral word order, and in free inversion languages (Spanish, Romanian, Greek), where SVO is a more marked word order. The VSO configuration is studied in section 3.2 for languages allowing subject-verb inversion in relation with the pro-drop parameter (Spanish, Romanian, Greek, Russian, Serbo-Croatian, Hungarian). VOS is analyzed in section 3.3 for the same group of languages. Section 3.4 focuses on head-final languages showing SOV as the basic word order (Japanese, Tatar and to a lesser extent German).

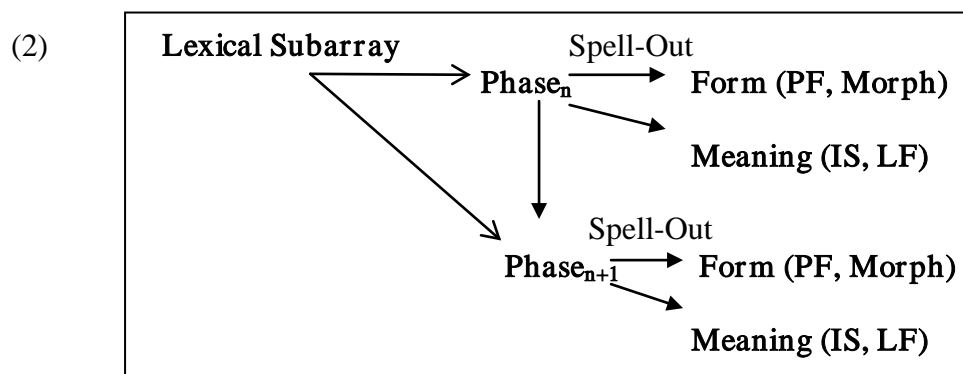
In section 4 the internal structure of the noun phrase is analyzed in function of the positions of the adjectives and the noun's complements. In the first part of this section (section 4.1), the placement and ordering of adjectives are examined, first in English, German, Swedish, Russian, Serbo-Croatian, Hungarian, Japanese and Tatar, displaying the order Adj < N (section 4.1.1), then in Hebrew (section 4.1.2), showing the order N < Adj, and finally in French, Italian, Spanish, Romanian and Greek, which are considered as mixed languages (section 4.1.3) displaying both pre- and postnominal adjectives (i.e. Adj < N < Adj). In this case, the prenominal placement of the adjective results from its movement to the left periphery (DP-layer). In the second part of section 4, we will propose an analysis of the noun's DP/PP-complements/arguments considering their placement with respect to the noun and the adjectives. We will first examine languages where the noun's complements occur postnominally (section 4.2.1), such as Germanic, Slavic, Hungarian, Romance, Greek and Hebrew. Then, N-final languages (Tatar and Japanese) are taken into consideration (section 4.2.2). These languages display the neutral word order [DP/PP-adjuncts < DP/PP-arguments < Adjectives < N], without noun raising. This means that the Mittelfeld contains a hierarchy of functional projections related to DP/PP-adjuncts, arguments and adjectives, which is organized as follows: $DP > FP_{DP/PP-adjuncts} > FP_{DP/PP-arguments} > FP_{adjectives} > N$. When the DP/PP-arguments occur postnominally, the noun moves either as an NP or along with some of its extended projection (containing one or more adjectives) past the DP/PP-related projections, hence the possible Adj < N < PP and N < Adj < PP orders.

2. THEORETICAL BACKGROUND

In this section we briefly present the theoretical background on which the present research is based. Given the standard minimalist assumptions, the Lexicon (i.e. Numeration) feeds Syntax with phonological, formal and semantic features, which are computed through structures and sent to the relevant interfaces. One interface is linked to FORM (Phonological Form and Morphology) and the other interface is related to MEANING (Logical Form and Information Structure). The architecture of the Grammar is schematized in (1).



Syntactic derivations proceed by successive steps, called phases following the Multiple Spell-Out hypothesis (Uriagereka 1999, Chomsky 2001, Platzack 2001, Grohmann 2003, Laenzlinger & Soare 2005a/b). A subset of the Lexicon feeds the syntactic derivation at each phase, as represented in (2).

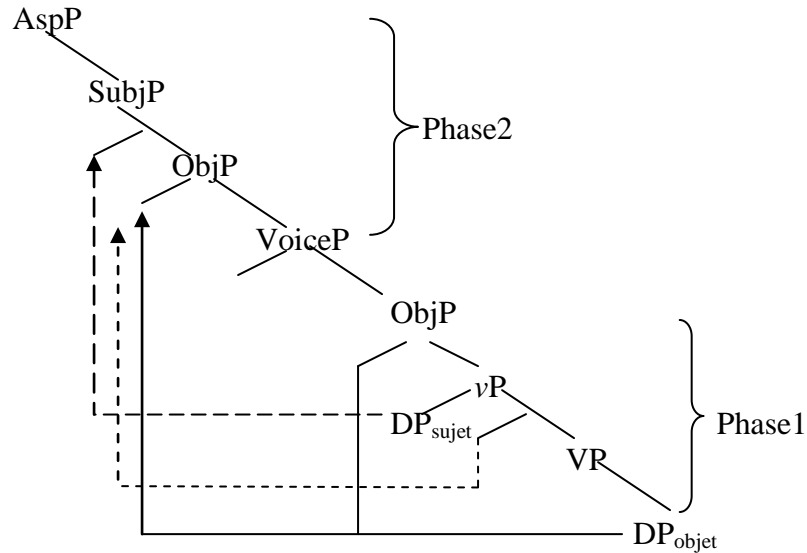


A phase is understood here not only as Chomsky's (2001) ν P, CP, and DP, but also as one of the core semantico-functional projections marking the midfield of the clause, namely [CP...MoodP > ModeP > AspP > VoiceP... ν P].² The tree in (3) shows that the verb and its arguments may leave the ν P phase. In this case, the subject and the verb can move to the higher phase since they are accessible from their base position. However, the object escapes from the ν P-phase through a left-edge object-related projection.

¹ Information Structure must be linked to Phonological Form in some way since Focus, for instance, has an effect on the stress pattern.

² These clause-internal projections do not constitute barriers to movement in the sense of Chomsky (2001) since they do not block e.g. wh-/Q-movement. In addition, no escape hatch position associated with these projections is available for successive movement. Let us assume that the ν P, CP and DP phases stand for the relevant barriers to the operation Move.

(3)



As for the phrasal module, the operation Merge (Chomsky 1995) takes two objects/categories (α , β), combines them and assigns them a categoral label that is either α or β , as represented in (4).

(4) $\boxed{\text{Merge } (\alpha, \beta) \Rightarrow (\alpha (\alpha, \beta)) \text{ or } (\beta (\alpha, \beta))}$

The categoral label is dictated by selection (i.e. by the element that selects: either α or β), be it C-selection or S-selection, in the case of first/external merge. In the case of second/internal merge (i.e. movement), it is the category that attracts that dictates the categoral label.

The integration of Kayne's (1994) Linear Correspondence Axiom into Merge (part of Bare Phrase Theory) requires the following constraint: a head α combines with a complement β_{Compl} and projects while transmitting its categoral value to the projection (say α in (5)), and this projected category combines with a specifier (i.e. γ) that it selects for, while transmitting its categoral value to the projection (still α in (5)). The Linear Correspondence Axiom closes off the projection, excluding merging of any other specifier and any further adjunction.

(5) $\boxed{(\alpha (\gamma_{\text{Spec}} (\alpha (\alpha, \beta_{\text{Compl}}))))}$

Given that Kayne's theory bans free/multiple adjunction, adjuncts must be analyzed as specifiers. In addition, all languages have the same basic order, that is, SVO (or possibly SOV depending on the vP -shell configuration for argument merger). As for the triggers of movement, we adopt the probe-goal minimalist technique accompanied by the mechanism of feature matching and valuation.

Feature theory plays a crucial role in the Minimalist (and Cartographic) framework, formalized first as Checking Theory (Chomsky 1995) and then as Feature-Matching/Valuation (Chomsky 2000, 2001, Pesetsky & Torrego 2004). Lexical and functional categories are associated with phonological, semantic and formal features in the Lexicon. In the Numeration below we observe that there are categoral features, some of which are lexical and others, functional (in the sense of the Cartographic approach). There are features associated with N (thematic, phi-, Case and informational features³ (IS)) and features associated with V (thematic, phi- and tense features). In the strong cartographic approach

³ See also Aboh (2007).

followed here, three additional functional categories are proposed: (i) *Subj* corresponds to the previous *Agrs*, but is an interpretable category due to the informational feature associated with it; (ii) *ObjP* stands for the previous *AgroP*, also associated with an informational feature and (iii) *Infl* is the category that agrees with the verb. Movement of the subject to *Spec-SubjP*, the object to *Spec-ObjP* and the verb to *Spec-InflP* (as an instance *vP*-movement) is triggered by the so-called *EPP*-feature, which has an informational flavour in our sense.

- (6) Numeration: Lexical categories: { N, V, Adj, Adv }
 – Features: N { θ , ϕ , Case, IS-feature }
 V { θ , ϕ , tense }
- Functional categories: { D, P, Force, Foc, Top, *Subj*_{CriteriaI},
 Mood, Mode, T, Asp, *VoiceP*, *Subj*,
 Obj, *Infl*, *v* }
 – Features: *Subj*, *Obj* { ϕ , Case, IS, +EPP }
 Infl { ϕ , tense, +EPP }

Information features such as *foc*, *top*, etc. are substantive features interpretable at the interface MEANING (see schema in (1)). These features are realized on independent projections in the left periphery (i.e. *FocP*, *TopP*) and possibly in the right periphery immediately above *vP* (Belletti 2004a). In the *Mittelfeld* these features are distributed on the categories *Subj* and *Obj*, which attract the subject and object arguments. Informational features such as *topic*, *focus* and other prominence features are active on *Subj* and *Obj* in the *Mittelfeld*, since they assign an informational value to the corresponding argument. We also assume that they are parasitic on *Case*-features. This assumption finds empirical support in the fact that languages having a rich *Case* system show a great deal of word order variations (e.g. Hungarian, scrambling languages) and display a rich and complex Information Structure. This is expressed in the two correlates in (7a) and (7b).

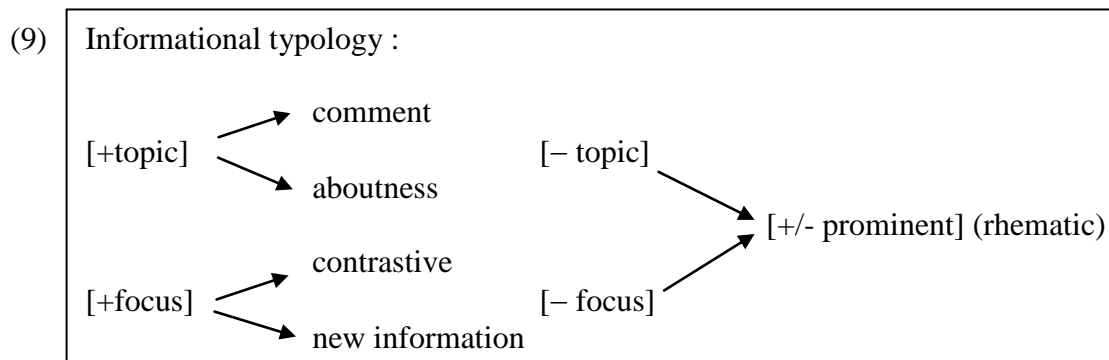
- (7) a. The richer the *Case* system of a language is, the freer its word order is.
 b. The richer the *Case* system of a language is, the more flexible its Information Structure is.

On the basis of these statements the fourteen languages under examination follow the hierarchy of word order freedom in (8), Hungarian being the freest word order language.

- (8) Hierarchy of word order freedom:
 English < Swedish < French < Italian < Hebrew < Spanish/Romanian/Greek
 < Tatar < German < Serbo-Croatian < Russian < Japanese < Hungarian

Since Information Structure is a property relevant to word order syntax (see Vallduví 1992, Choi 1999, van Gelderen 2003, Lopez 2009), we need to define which informational units should be taken into consideration in our crosslinguistic study. The table in (9) provides the minimal typology of informational units on which the present comparative work is based.⁴

⁴ This typology is far from being exhaustive. For instance, more than two types of foci and of topics can be identified crosslinguistically (Lambrecht 1994, Krifka 2008), but we intend to focus our research on the most frequently widespread informational units.



Vallduví (1992) and Choi (1999) convincingly show that the Information Structure of a clause cannot be reduced to a simple bipartite organization. Using the underlying notion of information packaging and prominence, we make the distinction between two types of topics and two types of foci. One kind of topic is associated with a comment and is generally dislocated (e.g. in Rizzi's 1997 TopP at the left periphery). Another sort of topic expresses the aboutness of the clause and satisfies the Extended Projection Principle (either in the Minimalist Spec-TP or in Rizzi's 2006 Spec-SubjP). As for foci, we can distinguish contrastive focus from new information focus. The former can be expressed in the left periphery (through Spec-FocP) or in situ, while the latter is expressed by a cleft-sentence in French, but quite generally occurs in the right periphery of the clause (i.e. at the border of vP following Belletti (2004a) in inversion languages. The part of the clause that does not contain any focus corresponds to what Vallduví (1992) calls the "tail".⁵ Most crucially, we propose that the constituents contained in the so-called "tail" are organized according to a scale of informational prominence in that some elements have larger communicative importance than others. Consider the three alternative French sentences in (10a-c).

- (10) a. Jean a fait consciencieusement ses devoirs.
 Jean did his homework carefully
 b. Jean a consciencieusement fait ses devoirs.
 c. Jean a fait ses devoirs consciencieusement.

The difference in (10a-c) does not lie in the strict meaning of the sentences in the sense that the truth values associated with the event (or state of affairs) described in the three sentences are the same. What differs is the way the information units are presented within the rhematic part of the sentence. (10c) is a felicitous answer to the question *Comment est-ce que Jean a fait ses devoirs ?* ("How did Jean do his homework ?"). Therefore, the adverb expresses new information focus. (10a) is the unmarked order, that is $V < AdvP < DP_{\text{object}}$, whereas (10b) shows a marked order between the verb and the adverb in the sense that the adverb is informationally more marked than the verb. As such, the adverb is more prominent than the verb.

The informational scale in (11), which expresses informational weight or ranking (i.e. prominence), shows that foci are more prominent than topics, which in turn are more

⁵ More precisely, the "tail" is part of what Vallduví calls the "ground", but without the "link" (=the topic). The ground is associated with a focus, which gives rise to the following informational pattern in (ib).

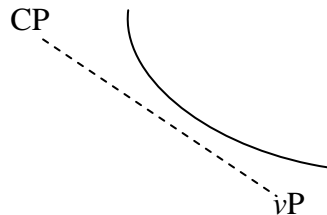
- (i) a. What about John ? What does he drink ?
 b. [_{Ground} [_{Link} John] [_{Tail} drinks]] [_{Focus} BEER]

prominent than a marked element (which is neither a topic nor a focus). The latter is more prominent than an unmarked element.

- (11) $\text{FOC}_{\text{contrastive}} > \text{FOC}_{\text{new info}} > \text{Top}_{\text{comment}} >^6 \text{Top}_{\text{aboutness}} > \text{Info}_{\text{marked}} > \text{Info}_{\text{unmarked}}$

What is interesting is the fact that focus and topic elements tend to be expressed at the peripheries of the clause by means of discrete projections (Rizzi's 1997 left periphery, Belletti's 2004a right periphery). In the middle of the clause (i.e. its "tail"), Information Structure is expressed through informational features which are parasitic on Case/phi-features and which attract the subject, the object and possibly the verb to the specifier of SubjP, ObjP and InflP respectively. We propose that the minimalist EPP-feature is related to such informational features triggering internal/second Merge. Thus, the informational units are distributed within the clause according to the informational curve in (12).

- (12) The informational curve



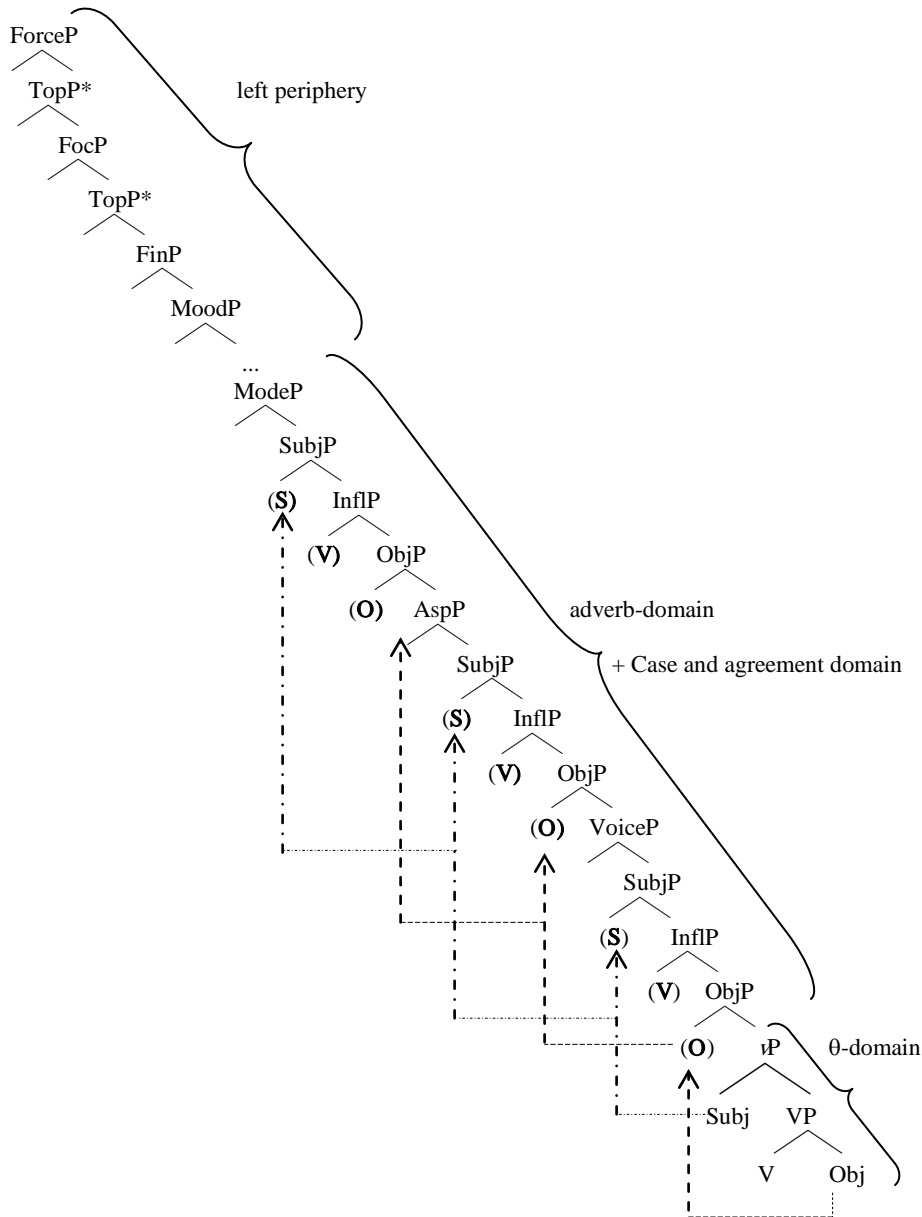
Now consider to what extent the clausal and nominal structures and the transformations that apply therein can run in parallel. Given the parallel structures in (13), we can observe that they are divided into three domains. The lower one is the thematic domain where arguments externally merge following a thematic hierarchy (Grimshaw 1990, Baker 1997, among others). The arrows show that these arguments, possibly accompanied by the nominal or verbal projection, can and sometimes must move either to the midfield or the left periphery. The midfield is the domain of first merge of modifiers (adjectives and adverbs), while the DP and CP layers contain various discourse- and scope-related projections delimited by an internal and an external C/D-like head.

- (13) a. $[\text{DP} \dots [\text{DP} [\text{FP}_{\text{adj1}} \dots [\text{FP}_{\text{adj2}} \dots [\text{nP} \dots [\text{NP} \dots]]]]]]]]$
 b. $[\text{CP} \dots [\text{CP} [\text{FP}_{\text{adv1}} \dots [\text{FP}_{\text{adv2}} \dots [\text{vP} \dots [\text{VP} \dots]]]]]]]]$

Let us examine the clause structure in more details. The structural representation in (15) shows the possibilities of merging projections within the three domains of the clause. Despite the fact that the order of projection merging is predefined through C-selection and S-selection (via the Numeration), the derivation proceeds bottom-up following minimalist assumptions. As already said, the vP-shell is the thematic domain from where arguments are displaced to the Mittelfeld in specific Subj and Obj positions. These positions (SubjP, ObjP) can be realized in various positions within the Mittelfeld, more precisely in a chunk between two adverb-related projections, e.g. between VoiceP and AspP or between AspP and ModeP, as

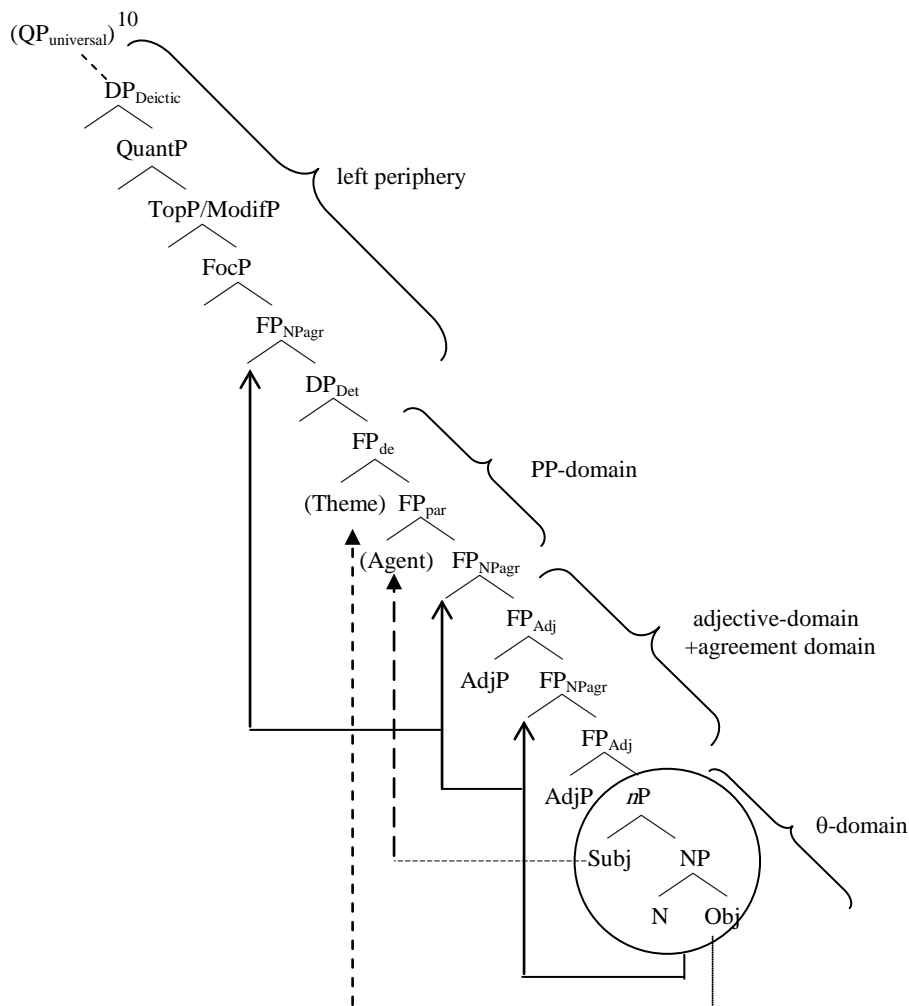
⁶ Scrambling in German and Japanese involves another kind of topicalization that is situated in the high portion of the Mittelfeld and distinct from topicalization in the Vorfeld (i.e. $\text{Top}_{\text{comment}}$). The scrambled topic is given information, but corresponds neither to $\text{Topic}_{\text{comment}}$ nor to $\text{Topic}_{\text{aboutness}}$.

(15) The clause



Consider now the inner structure of the noun phrase in (16).

(16) The noun phrase



Similarly to the clause, there are three clear-cut domains. The lowest one is the thematic domain of the noun, where its arguments external/first-merge. As in the clause, the arguments leave the *nP*-domain to reach Case- (for Case-marked DPs) and P-related projections (for PPs in the spirit of Kayne 2002) within the *Mittelfeld*. We will show in section 4.2 that these Case- and PP-related positions are situated higher than the adjective-related position and follow a hierarchical order. For instance, the *PP_{de}* is built higher than the *PP_{par}* given the linear order in *la photo de la mer par Jean* ‘the picture of the sea_{+theme} by John_{+agent}’; see structure in (16)). As for the adjectives, we follow Cinque (1994), Scott (1998), Laenzlinger (2005) and others in proposing that they external/first-merge according to a semantico-functional hierarchy, such as represented non-exhaustively in (17a) for object-denoting nouns and in (17b) for deverbal nouns.

¹⁰ Due to its scope, the universal quantifier occurs in the highest position of the DP-layer (e.g. [_{QP} *all* [_{DP_{deictic}} *these books*]], see Giusti 2002).

- (17) a. Object-denoting nouns:
 Adj_{quantification} > Adj_{quality} > Adj_{size} > Adj_{shape} > Adj_{color} > Adj_{nationality}
 b. Deverbal nouns:
 Adj_{speaker-oriented} > Adj_{subject-oriented} > Adj_{manner} > Adj_{thematic}

In some languages (e.g. Romance) the *nP*/NP or part of its extended projection (e.g. Hebrew) moves through agreement projections related to the adjective(s) (for gender and number agreement) to reach another agreement projection related to the determiner.¹¹ Then, the lower D raises to the higher D with some important exceptions (see also Julien 2005, Roehrs 2006 for similar proposals). In Romance some adjectives can move to the left periphery for discursive (focalization, prominence) or interpretative (strong subjectivity) reasons. This analysis in terms of dual merge positions for adjectives of a particular class follows the lines of Cinque's (2003, 2008) analysis of dual source for adjectives that behave as indirect modifiers (Sproat & Shi 1988, 1991, Larson 1998), although Cinque's proposal is implemented differently from ours. As we can see in (16), the DP-domain contains projections related to focalization, topicalization, informational prominence and quantification (Guisti 1996, Aboh 2004, Puskás & Ishane 2001, Laenzlinger 2005a-b).

3. THE CARTOGRAPHY OF THE CLAUSE

On methodological grounds we aim at identifying the exact positions that the subject, the direct object and the verb can occupy with respect to the fixed Mittelfeld-internal positions of three types of adverbs: modal epistemic adverbs (*probably*), which first-merge in the high portion of Cinque's hierarchy (simplified here as Spec-ModeP), aspectual frequency adverbs (*often*)¹², which are located in the middle portion of the hierarchy (i.e. Spec-AspP), and voice manner adverbs (*quietly*) situated in the low portion of the hierarchy (i.e. Spec-VoiceP).

3.1. The SVO configuration

Let us start with English, French and Hebrew where SVO is considered the neutral order. In these three languages the subject moves past AspP and possibly ModeP, while the object can move from *vP* to ModeP. The (floating) distribution of these arguments depends on subtle informational rearrangement. What differs among the three languages is verb movement. In French, the verb must raise (as remnant *vP*) past AspP and possibly ModeP and must be adjacent to the subject. Technically, it means that they must belong to the same chunk. In English the verb need not raise as high as in French. The verb can remain below AspP and even VoiceP. Another well-known parametric property of English is the adjacency constraint between the verb and the direct object, which means that the two elements must belong to the same chunk. Finally, in Hebrew the verb can float from VoiceP to a chunk higher than ModeP. These facts are summarized in the paradigms in (18a-c) associated with the relevant structures.¹³

¹¹ Note that these NP-related agreement positions are semantically relevant, since Number is an interpretable feature at LF.

¹² Here, we disregard the low position of the frequency adverb following Cinque's (1999) hierarchy, since the most natural order among the three classes of adverbs we use for testing the possible positions of the subject, the object and the verb is ModeP > AspP > VoiceP. Recall that these projections constitute the functional backbone of the clausal Mittelfeld.

¹³ Since Hebrew has only one auxiliary used with the Benoni participial form (Shlonsky 1997), we will not discuss the distribution of adverbs within [Aux+V_{PP}] structures in this language (but see Laenzlinger 2010).

- (18) a. John {probably} read {*probably} the Bible {*probably} (English)
 {often} {*often } {^{7/#}often }¹⁴
 {carefully} {*carefully} {carefully}
- [SubjP S [ModeP [SubjP S [InflP V [ObjP O] [AspP [InflP V [ObjP O] [VoiceP [InflP V [ObjP O]]]]]]]]]
- b. Jean {*probablement} lut {probablement} la Bible {*probablement} (French)
 {*souvent } { souvent } { souvent }
 {*attentivement} {attentivement} {attentivement}
- [SubjP S [InflP V [ModeP [SubjP S [InflP V [ObjP O] [AspP [InflP V [ObjP O] [VoiceP [ObjP O]]]]]]]]]
- c. Dani {qarov le-vaday} qore {qarov le-vaday } tanax {*qarov le-vaday} (Hebrew)
 {le-itim qrovot } {le-itim qrovot } {le-itim qrovot }
 {*be-šalva } {be-šalva } {be-šalva }
- [SubjP S [InflP V [ModeP [SubjP S [InflP V [ObjP O] [AspP [InflP V [ObjP O] [VoiceP [ObjP O]]]]]]]]]

In compound tensed sentences, French displays a subject-auxiliary adjacency requirement, the auxiliary being able to move (shortly) past ModeP, as illustrated in (19a). In English, there is no such adjacency requirement since the auxiliary can be separated from the subject by a modal or an aspectual adverb, as represented in (19b).

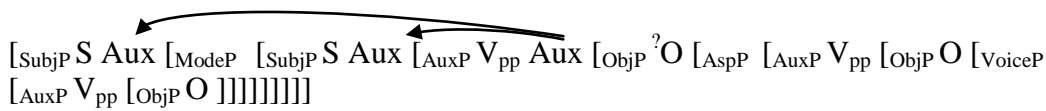
- (19) a. [SubjP Jean a [ModeP probablement [AuxP [vP lu] a [AspP souvent [ObjP la Bible [VoiceP
 tranquillement....]]]]]]]
- b. [SubjP John [ModeP probably has [AspP often [AuxP [vP read] has [ObjP the Bible [VoiceP
 quietly....]]]]]]]

For reasons of space, we will not discuss all cases of adverb distribution in complex tensed sentences ([Aux+V_{pp}]), but see Laenzlinger (2010) for further discussion.

Italian is an inversion-like language, displaying a possible VS configuration with intransitive and ergative verbs. With direct transitive verbs only the SVO configuration is allowed. As in French, English and Hebrew, the subject can move past ModeP, while the direct object can raise from vP to ModeP. The parametric differences lie again in the movement possibilities of the verb. This is exemplified in (20a-b) and represented in (21a-b).

- (20) a. Gianni {probabilmente} leggeva {probabilmente} questo libro {*probabilmente}
 {spesso} {spesso} {spesso}
 {tranquillamente} {tranquillamente} {tranquillamente}
 ‘Gianni probably/often/quietly read this book’
- b. Gianni {probabilmente} ha {probabilmente} letto {*probabilmente} questo libro
 {*spesso} {spesso } {spesso }
 {*tranquillamente} {tranquillamente} {tranquillamente}
 {*probabilmente}.
 {spesso }
 {tranquillamente }
 ‘Gianni has probably/often/quietly read this book’

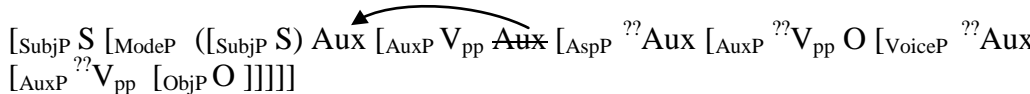
¹⁴ The placement of the aspectual adverb after the direct object is rather marked. The adverb is preferably focused in this position.

- (21) a. Simple tense:
 [SubjP S [InflP V [ModeP [SubjP S [InflP V [ObjP ?O [AspP [InflP ?V [ObjP O [VoiceP [InflP V [ObjP O]]]]]]]]]]]]]
 b. Compound tense:

 [SubjP S Aux [ModeP [SubjP S Aux [AuxP V_{pp} Aux [ObjP ?O [AspP [AuxP V_{pp} [ObjP O [VoiceP [AuxP V_{pp} [ObjP O]]]]]]]]]]]]]

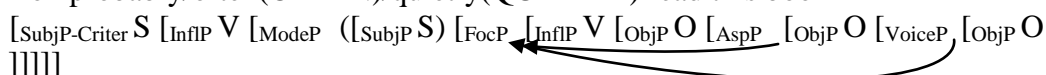
Greek, Spanish, Romanian are free inversion languages, which allow both VSO and SVO orders. In the SVO configuration the subject behaves as the topic-aboutness of the sentence, and hence targets the specifier of Rizzi's (2006) criterial SubjP by moving past ModeP. As for the object, it moves from vP to ModeP. In Spanish the distribution of the three adverbs looks like (22a), giving rise to the structural representation in (22b).

- (22) a. Juan {probablemente} leía {^(?)probablemente} este libro {*probablemente}
 {a menudo} {a menudo} {a menudo}
 {tranquilamente} {tranquilamente} {tranquilamente}
 'Juan probably/often/quietly read this book'
 b. [SubjP-Criter S [InflP V [ModeP ([SubjP S) [InflP V [ObjP O [AspP [InflP V [ObjP O [VoiceP [InflP V [ObjP O]]]]]]]]]]]]]

In compound tensed sentences the auxiliary and the participle must be adjacent. In other words, no (full) adverb is allowed to intervene between the two elements. The distribution of the adverbs is provided in (23a) and represented in the structure in (23b).

- (23) a. Juan {probablemente} ha {*probablemente} leído {probablemente} este libro
 {^{??/okFoc}a menudo} {*a menudo} {a menudo}
 {^{??/okFoc}tranquilamente} {*tranquilamente} {tranquilamente}
 {*probablemente}.
 {a menudo}
 {tranquilamente}
 'Juan has probably/often/quietly read this book'
 b. [SubjP S [ModeP ([SubjP S) Aux [AuxP V_{pp} Aux [AspP ^{??}Aux [AuxP ^{??}V_{pp} O [VoiceP ^{??}Aux [AuxP ^{??}V_{pp} [ObjP O]]]]]]]]]]]


Romanian is very similar to Spanish. In simple tenses the distribution of the adverbs is given in (24a), giving rise to the structural representation in (24b). The only difference between (24) and the Spanish data in (22) is that the aspectual and manner adverbs occurring between the subject and the verb are preferably focalized. As shown in (24b), we propose that these adverbs move to a clause-internal focus position.

- (24) a. Ion {probabil} citește {probabil} această carte {*probabil}
 {ADESEA} {adesea} {adesea}
 {CALM} {calm} {calm}
 'Ion probably/often(OFTEN)/quietly(QUIETLY) read this book'
 b. [SubjP-Criter S [InflP V [ModeP ([SubjP S) [FocP [InflP V [ObjP O [AspP [ObjP O [VoiceP [ObjP O]]]]]]]]]]]


In compound tenses the auxiliary must be adjacent to the participle, as in Spanish. As for the placement of the adverbs, it is the same as in simple tenses, that is:

- (25) a. Ion {probabil} a citit {probabil} această carte {*probabil}
 {ADESEA} {adesea} {adesea}
 {CALM} {calm} {calm}
 ‘Ion has probably/often(OFTEN)/quietly(QUIETLY) read this book’
 b. [SubjP-Criter S AUX [AuxP V_{pp} Aux [ModeP ([SubjP S] [FocP AUX [AuxP V_{pp} Aux [ObjP O [AspP
 [ObjP O [VoiceP [ObjP O]]]]]]]]]

We can observe that the auxiliary undergoes very short head movement and that the aspectual and manner adverbs move to a clause-internal focus position.

Consider now Greek, which displays only a simple tense system. The adverbs have the same distribution as in Spanish (and Romanian apart from the focus effect). Compare (22) with (26).

- (26) a. I María {ísos/sixná/lémarga} étroge {ísos/sixná/lémarga} éna mílo
 Det María probably/often/greedily was-eating an apple
 {*ísos/sixná/lémarga}
 ‘María probably/often/greedily ate an apple’
 b. [SubjP-Criter S [InflP V [ModeP ([SubjP S] [InflP V [ObjP O [AspP [InflP V [ObjP O [VoiceP [InflP V
 [ObjP O]]]]]]]]]]]

So far, we can make the following generalizations: (i) the subject moves higher than AspP and possibly ModeP, and (ii) the object floats from vP to ModeP. What differs crosslinguistically is essentially verb movement.

Let us now consider Slavic languages like Russian and Serbo-Croatian where SVO is considered the neutral order. The Russian data in (27) show that the subject can move higher than ModeP, which is a general crosslinguistic property observed so far. As for the object, it apparently cannot move past AspP. Finally, the verb can move past AspP and even ModeP. The complete derivational property is represented in (28).

- (27) a. Boris (vozmozhno) prepodajot (vozmozhno) sintaksis *(^{ok}),vozmozhno.
 ‘Boris probably teaches syntax’
 b. Boris (často) prepodajot (často) sintaksis *(^{ok}),často.
 ‘Boris often teaches syntax’
 c. Boris (voodushevlónno) prepodajot (voodushevlónno) sintaksis
 (voodushevlónno).
 ‘Boris cheerfully teaches syntax’

- (28) [SubjP S [InflP V [ModeP [SubjP S [InflP V [AspP [InflP V [ObjP O [VoiceP [InflP V [ObjP O]]]]]]]]]]]

Russian does not possess an auxiliary-participle tense system, while Serbo-Croatian has both a simple and a compound tense system. Consider first the simple tensed sentences in (29) displaying the distribution of three types of adverbs in a SVO configuration.

- (29) a. Jovan (verovatno) čita (verovatno) ovu knjigu (*verovatno).
 Jovan probably reads this book
 b. Jovan (često) čita (često) ovu knjigu (^(?)često).
 Jovan often reads this book
 c. Jovan (mirno) čita (mirno) ovu knjigu (mirno).
 Jovan quietly reads this book

Serbo-Croatian differs slightly from Russian in having the possibility of object movement past AspP. The two languages display similar behaviour with respect to subject and verb movement, exactly like Greek and Hebrew. This is represented in (30).

- (30) [SubjP S [InflP V [ModeP [SubjP S [InflP V [AspP [ObjP O [InflP V [ObjP O [VoiceP [InflP V [ObjP O]]]]]]]]]]]

With a compound tense (examples (31a-c)), facts are slightly more complex due to the phenomenon called "Clitic in Second Position" (Franks 1995). The auxiliary can externally/first-merge in a low part of the Mittelfeld and move to the second position, here Subj. This is indicated in (32) by means of arrows. The participle can move as *vP* past VoiceP, AspP and even ModeP. The direct object remains below ModeP.

- (31) a. Jovan je (verovatno) čitao (verovatno) ovu knjigu (*verovatno).
 Jovan has probably read this book
 b. Jovan je (često) čitao (često) ovu knjigu (često).
 Jovan has often read this book
 c. Jovan je (mirno) čitao (mirno) ovu knjigu (mirno).
 Jovan has quietly read this book

- (32) [SubjP S Aux [AuxP V_{pp} Aux [ModeP [SubjP S Aux [AuxP V_{pp} Aux [ObjP O [AspP [AuxP V_{pp} [ObjP O [VoiceP [AuxP V_{pp} [ObjP O]]]]]]]]]]]]]]]]]]]]]

Swedish is a Germanic language displaying SVO as the neutral order. It is also subject to the V2 constraint, e.g. the tensed verb in second position in matrix contexts. The simple tensed sentence in (33a) shows that the adverbs can intervene between the subject and the verb, but only in an embedded context (due to the V2 constraint applying to matrix clauses). In (33b) we can observe the three adverbs are allowed between the verb and its direct object. In (33c) the aspect and manner adverbs unlike the modal one can occur sentence-finally. All this is represented in (34).

- (33) a. * (att) Johan förmodligen/ofta/nogrannt läser den här boken.
 that Johan probably / often/consciously reads this book
 b. (...att) Johan läser förmodligen/ofta/nogrannt den här boken.
 c. Johan läser den här boken *förmodligen/^{ok}ofta/^{ok}nogrannt.

- (34) [CP (att) [SubjP S [InflP V [ModeP [InflP V [ObjP O [AspP [InflP V [ObjP O [VoiceP [InflP V [ObjP O]]]]]]]]]]]]]]]]]]]]]

Consider now the sentences with compound tenses in (35).

- (35) a. att Johan förmodlich/ofta/nogrannt hat läser den här boken.
 that Johan probably/often/consciously has read this book
 b. (att) Johan har förmodligen/ofta/nogrannt läst den här boken.
 Johan has probably/often/consciously read this book
 c. Johan har läst ^{??}förmodligen/^{??}ofta/^{??}nogrannt den här boken.
 d. Johan har läst den här boken *förmodligen/[?]ofta/nogrannt.

The derivational possibilities are given in (36). Note that a configuration of adjacency is required between the direct object and the participle (Engdahl et al. 2004). This means that they must be part of the same chunk.

- (36) [CP (att) [SubjP S Aux [AuxP V_{pp} Aux [ModeP Aux [AuxP V_{pp} [ObjP O [AspP Aux [AuxP V_{pp} Aux
 [ObjP O [VoiceP Aux [AuxP V_{pp} Aux [ObjP O]]]]]]]]]]]

German is also a V2 Germanic language, but it appears to be an SOV language. In simple tensed matrix clauses, the verb occurs in second position, which gives rise to the SVO order. In this configuration, the V2 constraint requires adjacency between the subject and the verb. This is shown in (37a). The three adverbs can occur after or preferably before the direct object. Thus, the direct object can remain below VoiceP or move past VoiceP, AspP and possibly/marginally ModeP, as structurally represented in (37b).

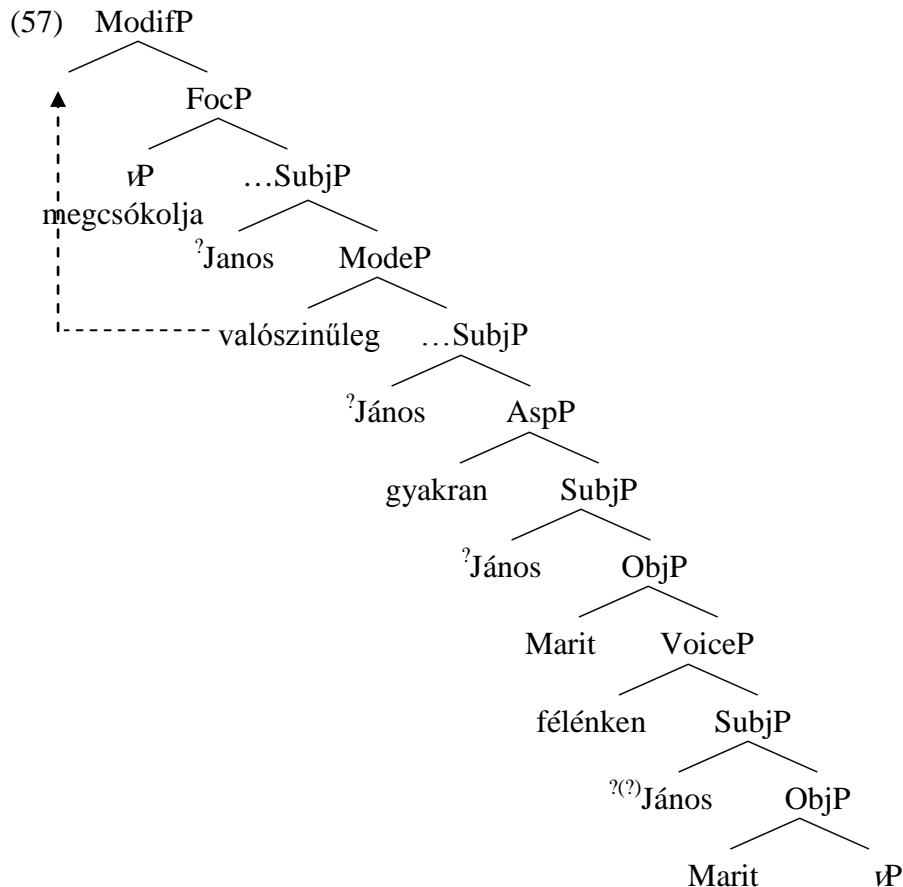
- (37) a. Hans (*wharscheinlich/*oft/*ruhig) las (wharscheinlich/oft/ruhig) diesen Roman
 ([?]wharscheinlich/[?]oft/ruhig).
 b. [SubjP Hans [las [ObjP [?]diesen Roman [ModeP wahrscheinlich [ObjP diesen Roman
 [AspP oft [ObjP diesen Roman [VoiceP ruhig [ObjP diesen Roman ...]]]]]]]]

Finally, let us examine Hungarian. Although it is taken to be a non-configurational language, SVO and SOV are considered the most neutral orders (see É Kiss 1987, 2002, Horváth 1981, Marác 1989). What is interesting to observe is that the distribution of adverbs is relatively constrained despite the freedom of word order displayed in this language. Only the possibilities in (38) are attested according to my informants, resulting in the structural representation in (39).¹⁵

¹⁵ Hungarian does not have a compound tense system.

Finally, let us consider the VSO order in Hungarian, which is also a pro-drop language. As in Serbo-Croatian, the verb is focussed. As shown in (56), the distributional possibilities of the three classes of adverbs are quite constrained. The modal adverb is fully acceptable in sentence-initial position, while it is marginal between the verb and the subject as well as between the subject and the object. The epistemic adverb is not allowed in sentence-final position. As regards the aspectual adverb, it is fully acceptable in a position between the verb and the subject and marginal in the space between the subject and the object. It is not acceptable in sentence-initial and sentence-final position. As for the manner/voice adverb, it is acceptable in sentence-final position and in the space between the subject and the object, but it is considered marginal between the verb and the subject and in sentence-initial position. Being focalized in the left periphery, the verb moves as remnant *vP* to Spec-FocP, as represented in the structure in (57).

- (56) a. {^{ok}Valószínűleg} megcsókolja {[?]valószínűleg} János {[?]valószínűleg}
 probably kissed probably János probably
 Marit {^{*}valószínűleg}.
 Marit probably
- b. {^{??}Gyakran} megcsókolja {^{ok}gyakran} János {[?]gyakran} Marit
 often kissed often János often Marit
 {^{??}gyakran}.
 often
- c. {^{??}Félénken} megcsókolja {^{?(?)}félénken} János {[?]félénken} Marit
 shyly kissed shyly János shyly Marit
 {^{ok}félénken}.
 shyly



3.3. The VOS configuration

VOS is a possible configuration in the inversion (or pro-drop) languages we have considered so far. In Italian VOS is limited to a sentence-final topic-focus configuration. A contextual illustration of this configuration is provided in (58B), which is an appropriate answer to (58A). According to Belletti (2001) the verb and the object form an immediately accessible topic and the subject is interpreted as new information focus.

- (58) A: Chi ha letto questo libro ?
Who has read this book?
'Who read this book?'
- B: Ha [letto questo libro] Gianni.
Has [read this book] Gianni.
'Gianni read this book.'

Since no material is allowed to follow the subject, Belletti (2001) analyzes the latter as being merged as the specifier of a low FocP. The sub-structure VO merges as the specifier of a TopP located right above FocP. In Spanish, Romanian and Greek, VOS is not constrained so much. In this configuration, the low subject is interpreted as new information focus, but it can be followed by a manner or aspectual adverb. Therefore, the subject does not occur in Belletti's (2004a) FocP, but instead targets the specifier of a Subj projection that is associated with a *focus_{new info}* value and floats in a space between *vP* and *ModeP* (though more or less marginally in Spanish and Romanian as compared to Greek). As shown by the data in (59) for Spanish, (60) for Romanian and (61) for Greek, the verb and its nominal object move independently to floating positions between *vP* and *CP* depending on their prominence value with respect to the adverbs concerned. The resulting derivational structure is represented in (62a-c) for Spanish, Romanian and Greek, respectively. The slight marginality of some orders is indicated by a question mark on the adverb concerned.

- (59) a. Leía/ha leído [?]probablemente/[?]a menudo/[?]tranquilamente este libro Juan.
b. Leía/ha leído este libro [?]probablemente/[?]a menudo/[?]tranquilamente Juan.
c. Leía/ha leído este libro Juan*(,^{ok})probablemente/[?]a menudo/^{ok}tranquilamente.
Read/has read this book Juan probably often quietly
- (60) a. Citește/a citit probabil/adesea/calm această carte Ion.
b. Citește/a citit această carte [?]probabil/adesea/calm Ion.
c. Citește/a citit această carte Ion *probabil/^{ok}, probabil/[?]([?])adesea/[?]calm.
Read/has read this book Ion probably often quietly
- (61) a. Étroge ísos sixná/ lémarga éna mílo I María.
Was-eating probably/often /greedily an apple det Maria
b. Étroge éna mílo [?]ísos / sixná/ lémarga I María.
Was-eating an apple probably/often /greedily det Maria
c. Étroge éna mílo I María *(,)^{ok}ísos/^{ok}sixná/^{ok}lémarga.
Was-eating an apple det María probably/often /greedily

- (62) a. [CP ...Aux [InflP/Aux [vP V] ~~Aux~~ [ObjP [?]O [ModeP [ObjP [?]O ...[SubjP [?]S [AspP [ObjP [?]O ... [SubjP S [VoiceP [ObjP [?]O...[SubjP [?]S [vP]]]]]]]]]]] (Spanish)
 b. [CP ...Aux [InflP/Aux [vP V] ~~Aux~~ [ObjP [?]O [ModeP [ObjP [?]O ...[SubjP ^{?(?)}S [AspP [ObjP O ... [SubjP S [VoiceP [ObjP O...[SubjP S [vP]]]]]]]]] (Romanian)
 c. [CP ... [InflP [vP V] [ObjP [?]O [ModeP [ObjP O ...[SubjP S [AspP [ObjP O ... [SubjP S [VoiceP [ObjP O...[SubjP S [vP]]]]]]]]] (Greek)

VOS is also attested in Serbo-Croatian where the verb is focalized. This is analyzed as remnant vP movement to Spec-FocP. As for the direct object, it is marked as topic. The distribution of the three classes of adverbs in VOS simple tensed sentences goes as follows.


- (63) a. Čita_{+foc} (verovatno) ovu knjigu_{+top} (verovatno) Jovan (*verovatno).
 reads probably this book Jovan
 b. Čita_{+foc} (često) ovu knjigu_{+top} (često_{+foc}) Jovan (često_{+foc}).
 c. Čita_{+foc} (mirno) ovu knjigu_{+top} (mirno_{+foc}) Jovan (mirno_{+foc}).

The structural analysis of these facts is represented in (64). Note that the aspectual and manner adverbs are marked as focus when they occur immediately before or after the subject. As for the object, it is associated with a floating topic feature (through Obj).

- (64) [FocP [vP V] [ObjP O_{+top} [ModeP [ObjP O_{+top} ...[SubjP S [AspP(+foc) [ObjP O_{+top} ...[SubjP S [VoiceP(+foc) [ObjP O_{+top} ...[SubjP S [vP]]]]]]]]]]

In compound tenses (see (65)) the possible positions for the object and the subject are the same as in simple tenses, the only difference being the auxiliary in second position. This is analyzed as auxiliary movement to Foc, as represented in (66). Note that the manner and aspectual adverbs are focalized even when they immediately precede the object.

- (65) a. Čitao_{+foc} je (verovatno) ovu knjigu_{+top} (verovatno) Jovan (*verovatno).
 Read has probably this book Jovan
 b. Čitao_{+foc} je (često_{+foc}) ovu knjigu_{+top} (često_{+foc}) Jovan (često_{+foc}).
 c. Čitao_{+foc} je (mirno_{+foc}) ovu knjigu_{+top} (mirno_{+foc}) Jovan (mirno_{+foc}).

- (66) [FocP [vP V] Aux [AuxP [vP ~~V~~] Aux [ObjP O_{+top} [ModeP [ObjP O_{+top} ...[SubjP S [AspP(+foc) [ObjP O_{+top} ...[SubjP S [VoiceP(+foc) [ObjP O_{+top} ...[SubjP S [vP]]]]]]]]]]
- 

In Russian the VOS order has the same discourse configuration as in Italian, hence it is assigned the same structural analysis. The sentence-final subject acts as new information focus (Bailyn 1995). Since no material may follow it, the subject second-merges as the specifier of Belletti's (2004a) VP-peripheral FocP. As for the verb and the object, marked as topics, they move conjointly as a remnant vP to the specifier of a TopP situated immediately above the low FocP. No adverb may intervene between TopP and FocP; the only possible occurrence of (some) adverbs is above TopP, as exemplified in (67) and structurally represented in (68).

- (67) a. *Vozmozhno prepodajot (*vozmozhno) sintaksis (*vozmozhno) Boris (*vozmozhno).*
 b. ^{(?)?} *Často prepodajot (*často) sintaksis (*často) Boris (*často).*
 c. ^{??} *Voodushevlónno prepodajot (*voodushevlónno) sintaksis (*voodushevlónno) Boris (*voodushevlónno).*
 ‘Probably/often/cheerfully Boris_{+focus} teaches syntax’

- (68) [CP ... [ModeP [AspP [VoiceP [TopP [vP V+O] [FocP S [vP S [VP V O]]]]]]]]]]

As a rich discourse configurational language Hungarian allows VOS where the verb, being the first constituent, is focused. As for the subject, it occurs in a low Mittelfeld position where it is assigned a more prominent informational value than the object. In this configuration the placement of adverbs is quite constrained. Thus, the co-occurrence of the three adverbs in the same sentence only allows the configuration in (69), which is assigned the structural representation in (70).

- (69) Valószínűleg gyakran megcsókolja Marit félénken János VOS
 Probably often kisses Marit shyly János

- (70) [CP ... [ModeP [AspP [InflP [vP+foc V] [ObjP O_{+top} [VoiceP [SubjP S_{+prominent} [vP]]]]]]]]]]

3.4. The SOV configuration (scrambling head-final languages)

SOV is a natural order for head-final languages like Japanese, Tatar and German¹⁷. Let us first consider German, more particularly the distribution of the three classes of adverbs in embedded clauses where the verb and the auxiliary occur in sentence-final position. The facts in (71a) show that the modal adverb has a large distribution: it can occur before or after the subject and before or after the object. As for the frequency and manner adverb in (71b-c), they are acceptable between the verb and the direct object, and between the direct object and the subject. They are rather marginal between the complementizer and the subject.

- (71) a. *weil (wahrscheinlich) Hans (wahrscheinlich) diesen Roman (wahrscheinlich) las/gelesen hat.*
 b. *weil (^{?(?)}oft) Hans (oft) diesen Roman (oft) las/gelesen hat.*
 c. *weil (^{?(?)}ruhig) Hans (ruhig) diesen Roman (ruhig) las/gelesen hat.*
 ‘because Hans probably/often/quietly read this novel’

If the verb is in a simple tense, it does not move at all. In a compound tense, the remnant participial vP moves to the specifier of AuxP, which merges immediately above vP. This is represented in the structure in (72) which also expresses the derivational possibilities of the subject and the direct object, which leave the vP-domain and move higher than AuxP, hence the SOV(Aux) order.

- (72) [CP weil [SubjP S [ObjP O [ModeP (wahrscheinlich) [SubjP S [ObjP O [AspP (oft) [ObjP O [VoiceP (ruhig) [ObjP O ([AuxP) [vP V] (Aux)]]]]]]]]]]]]]]]]]]]]

¹⁷ Except in contexts where the verb moves to second position (e.g. in the SVO configuration).

Let us now examine another head-final language: Tatar, a Turkic language. The verb is final and there are scrambling possibilities. The data in (73) show that the verb remains in situ, the object can move past VoiceP, AspP and even ModeP, and the subject must move higher than AspP and possibly ModeP. This is exactly what has been observed in German in (72), as compared to (74).

- (73) a. Ramil (balki) sintaksis (balki) ukyta.
Ramil probably syntax probably teaches
b. Ramil (esh) sintaksis (esh) ukyta.
Ramil often syntax often teaches
c. Ramil (iaratyp) sintaksis (iaratyp) ukyta.
Ramil with-pleasure syntax with-pleasure teaches

- (74) [_{SubjP} S [_{ObjP} O [_{ModeP} (balki) [_{SubjP} S [_{ObjP} O [_{AspP} (esh) [_{ObjP} O [_{VoiceP} (iaratyp) [_{ObjP} O [_{vP} V]]]]]]]]]]]]]]]]]]

Japanese behaves like Tatar (and German in SOV contexts). It is a head-final language displaying scrambling (see Saito 1989, Grewendorf & Sabel 1999, Miyagawa 2005, Sabel & Saito 2005). The paradigm in (75) shows that the derivational possibilities of the subject and the direct object in SOV contexts are exactly those expressed in (72) and (74) for German and Tatar, as shown in (76).

- (75) a. John-ga (tabun) hon-o (tabun) yon-da.
John-Nom (probably) book-Acc (probably) read-Past
b. John-ga (yoku) hon-o (yoku) yon-da.
John-Nom (often) book-Acc (often) read-Past
c. John-ga (tyuuibukaku) hon-o (tyuuibukaku) yon-da.
John-Nom carefully book-Acc (carefully) read-Past
'John probably/often/carefully read the book'

- (76) [_{SubjP} S [_{ObjP} O [_{ModeP} (tabun) [_{SubjP} S [_{ObjP} O [_{AspP} (yoku) [_{ObjP} O [_{VoiceP} (tyuuibukaku) [_{ObjP} O [_{vP} V]]]]]]]]]]]]]]]]]]

An important point to note concerning Tatar and Japanese is that two adverbs can permute, especially if they are adjacent. These facts are apparent counterexamples to Cinque's (1999) "universal" hierarchy unless some informational effects are at hand, in which case an adverb can move for prominence effects (e.g. focus).

SOV is a possible, but very marked, order in Russian. That is why this configuration will not be examined with respect to adverb placement. From an informational point of view the verb gets a new information focus reading, while the object is interpreted as given information (i.e. topic). The object need not be adjacent to the verb, since an adverb (e.g. a manner adverb) can intervene between them.

Finally SOV (like SVO) is quite a natural order in Hungarian. In the examples below all the possibilities of subject, nominal object and verb placement are given for SOV sentences containing the three co-occurring adverbs.

- (77) a. S Mod O Asp V Voice
 János valószínűleg Marit gyakran megcsókolja félénken.
 János probably Marit often kisses shyly
 ‘Probably János often kisses Marit shyly’
- b. Mod S O Asp V Voice
 Valószínűleg János Marit gyakran megcsókolja félénken.
- c. S O Mod Asp V Voice
 János Marit valószínűleg gyakran megcsókolja félénken.
- d. S Mod O Asp V Voice
 János valószínűleg Marit gyakran megcsókolja félénken.
- e. S O Mod Asp Voice V
 János Marit valószínűleg gyakran félénken megcsókolja.
- f. S Mod O Asp Voice V
 János valószínűleg Marit gyakran félénken megcsókolja.
- g. Mod S O Asp Voice V
 Valószínűleg János Marit gyakran félénken megcsókolja.

Following these facts one can observe that the verb can remain in situ, but can also move immediately above VoiceP (below AspP). As for the subject, it leaves vP and raises higher than AspP and possibly ModeP. The object also leaves vP and moves past AspP and possibly ModeP. The derivational possibilities for (77) are represented in the structure below.

- (78) ...[SubjP János [ObjP Marit [ModeP valószínűleg [SubP János [ObjP Marit [AspP gyakran
 ...[InflP megcsókolja [VoiceP félénken [vP megcsókolja]]]]]]]]]]

To conclude this section, we can make some observations from the aforementioned comparative analyses. Word order variations depend not only on the Case/agreement system, but also on informational features parasitic on subject-, verb- and object-related positions in the Mittelfeld. Only the peripheries of the clause contain discrete topic and focus projections. Languages with a rich Case system use the Mittelfeld more extensively than languages with a poor Case system to express their Information Structure(s).

It is observed crosslinguistically that the preverbal subject moves higher than AspP and possibly ModeP and can be associated with a *topic_{aboutness}* interpretation. The postverbal subject can be associated with a new information focus interpretation and occurs in a low portion of the clause. As already noted, (free) subject inversion is linked to the property of Null Subject. As for the object, it must leave vP and can move higher than VoiceP and possibly AspP. More generally it cannot raise past ModeP. It can also cross the subject either for topicalization/focalization in the CP-domain or for informational prominence (scrambling) in the high part of the Mittelfeld. Note that the placement of the adverbs around the subject and the object depends on the way in which these elements are ranked in terms of informational weight.

Finally, (simple) verb movement, analyzed as vP -movement, is parametrized across languages. In head-final languages, the verb does not move at all (except from V to v). In German and Swedish, the V2 constraint applies to the structure of the Vorfeld in the sense that only a single projection can be activated in the CP-domain with the verb internally merging with the head of this projection. Verb movement can be very long in the Mittelfeld, as in French (subject-verb adjacency). In other Romance languages, Greek and Slavic languages the verb floats in the Mittelfeld depending on its informational status with respect to the interfering adverbs. English also displays verb movement, as shown by the possibility of some adverbs to occur sentence-finally. The adjacency requirement between the verb and

its nominal object derives from their cooccurrence within the same chunk. V-feature valuation is done via Agree, while verb-movement is triggered by an EPP-feature associated with Infl, which is not only related to “strong” V-features (strong value), but also to informational features. This accounts for the fact that the verb can float among adverbs in some languages depending on the informational ranking value assigned to the verb and the adverbs. Subject-verb agreement (i.e. feature valuation) is done by Agree. Subject raising is triggered by the conjunction of strongly valued Nom-feature with some informational feature (prominence feature).

In compound tenses, involving an auxiliary and a full (participial) verb, the analysis proposed in the present work relies on the occurrence of an Aux head attracting the participial verb (as ν P) that merges as its specifier. When the auxiliary precedes the participle, it raises to Subj. There must be an adjacency requirement between the auxiliary and the subject in French, but not in English and other Romance languages. Unlike French and Italian, Spanish and Romanian require an adjacency between the auxiliary and the participle, both occurring within the same chunk. In German, the sentence-final sequence [V_{pp} -Aux] in non-V2 contexts derives from very short ν P-movement to the closest AuxP. Among the other languages considered in the present comparative study, Serbo-Croatian displays a compound tense system.

4. THE CARTOGRAPHY OF THE NOUN PHRASE

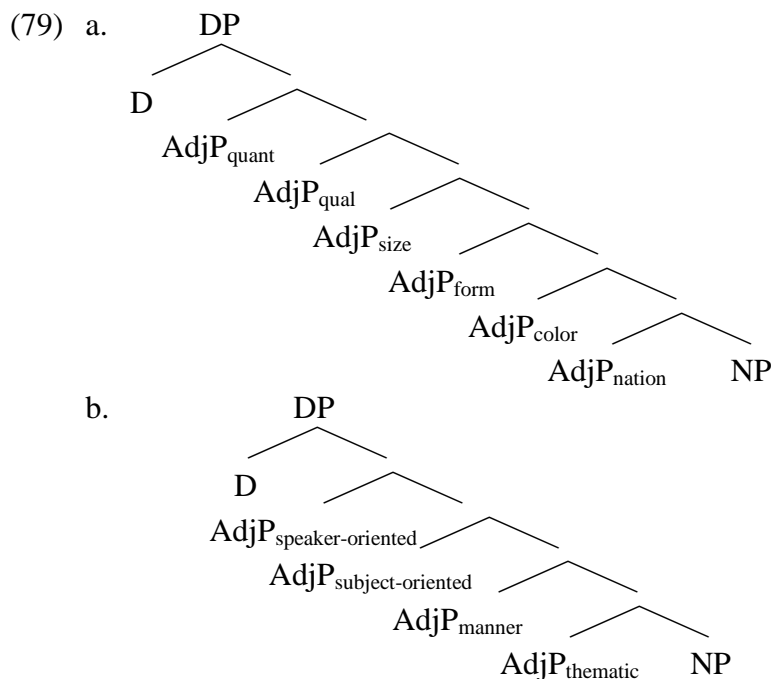
A quasi-parallelism is assumed between the clause and the noun phrase in the sense that both the clausal and nominal structure is divided into three domains: (i) the thematic domain (Nachfeld), (ii) the Case/agreement and modifier domain (Mittelfeld) and (iii) the quantification and discourse domain (Vorfeld). The differences that can be observed lie in the arrangement of projections in the Mittelfeld and the Vorfeld. As for the transformations that apply to the clausal and nominal structure, they are very similar: (i) movement of arguments to Mittelfeld and Vorfeld, movement of modifiers to the Vorfeld and (iii) n P-movement/ ν P-movement, which can pied-pipe some extended projection, to inflectional/agreement positions. The differences between the clause and the noun phrase lie in the precise landing sites of these movements, which depend on the differences in the arrangement of projections in the Mittelfeld and the Vorfeld mentioned above.

The methodology that will be used to examine the derivational structure of the noun phrase is the same as the one used for the clause. We will take two, three or more adjectives belonging to different classes (e.g. adjectives of quality, color and nationality) and consider their placement with respect to the noun and its complements/arguments and their ordering on the basis of Cinque’s (1994) hierarchy.

4.1. Adjective ordering and placement

This section deals with the placement and ordering of adjectives within the noun phrase. We will consider the same set of languages whose clause structure has been examined in the previous part of the article. By analogy with adverbs, adjectives of different semantic classes merge as specifiers of discrete functional projections following the hierarchy in (79a) for object-denoting nouns and (79b) for deverbal nouns.¹⁸

¹⁸ For arguments against a strict hierarchy of some classes of adjectives, see Bouchard (1998, 2002, 2005), Svenonius (2008) among others.



Concerning adjective placement, three possible crosslinguistic configurations will be taken into consideration: (i) $\text{Adj} < \text{Adj} < \text{N}$ (ii) $\text{N} < \text{Adj} < \text{Adj}$ and (iii) $\text{Adj} < \text{N} < \text{Adj}$.

4.1.1. *Prenominal adjectives* ($\text{Adj}^* < \text{N}$)

Germanic languages generally display prenominal adjectives. Let us first consider English. Attributive adjectives are prenominal, as in (80a-c), and their ordering respects the hierarchy in (79a-b).¹⁹ As indicated in the syntactic structure below, the noun as NP does not move.

- (80) a. [Quant numerous [Qual wonderful [Size big [Nation American [NP cars]]]]]
 b. [Quant various [Form round [Color black [Nation Egyptian [NP masks]]]]]
 c. the [Speaker-oriented probable [Subject-oriented clumsy [Manner immediate [Thematic American [NP reaction (to the offence)]]]]]

Some adjectives can be postnominal in English (e.g. *a man all naked*, *the only stars visible*), but they involve a predicative projection (Laenzlinger 2005a/b).²⁰ They have a predicative reading (they can only express indirect modification following Larson 1998), not an attributive one.

In the two other Germanic languages considered here, German and Swedish, the adjectives are prenominal and are ordered according to the hierarchies in (79a-b). This is illustrated in (81) for German and (82) for Swedish.

¹⁹ Some permutations in the order of adjectives are possible, but accompanied by focalization effects, as noted by Sproat & Shih (1988, 1991) for English (e.g. *BLACK small dogs*).

²⁰ As for postnominal adjectives in English, and their (restrictive) interpretation, see Larson (1998), Cinque (2003/8).

- (81) a. die wahrscheinliche ungeschickte unmittelbare amerikanische Reaktion auf der
 the probable clumsy immediate American reaction to the-
 offence
 Angriff
 b. zahlreiche wunderbare grosse amerikanische Autos
 numerous wonderful big American cars
- (82) a. den sannolika klumpiga amerikanska reaktionen på attacken
 the probable clumsy American reaction to the-offence
 b. talrika underbara stora amerikanska bilar
 numerous wonderful big American cars
 c. olika runda svarta egyptiska masker
 various round black Egyptian masks

Slavic languages like Russian and Serbo-Croatian also display prenominal adjectives. The two Russian noun phrases in (83) show that the adjective ordering constraints in (79a-b) are respected.²¹

- (83) a. mnogočislennye velikolepnye krasnye amerikanskije mašiny
 numerous beautiful red American cars
 ‘numerous beautiful red American cars’
 b. vozmoznaja budushaja zhestokaja agreszija]]]]
 possible future violent aggression
 ‘a possible future violent aggression’

This is also the case in (84) in the two Serbo-Croatian examples, one involving an object-denoting noun and the other a deverbal noun.²²

- (84) a. [DP [QuantP mnogi [QualP divni [ColorP crveni [NationP američki [NP automobili]]]]]]]
 numerous beautiful red American cars
 ‘numerous beautiful red American cars’
 b. [DP [Speaker-oriented mogući [TP naredni [Manner žestoki [NP napad]]]]]]
 possible forthcoming violent aggression

In Hungarian, adjectives occur in prenominal position and follow the ordering constraints in (79).

- (85) a. kis puha sárga francia párna
 small soft yellow French pillow
 ‘a small soft yellow French pillow’
 b. lehetséges jövőbeli erőszakos támadások
 possible future violent aggressions
 ‘possible future violent aggressions’

²¹ Attributive adjectives have a long form in Russian. When they have a short form, they are predicative/predicates.

²² Some adjectives have a short and a long form in Serbo-Croatian (see Aljović 2002, 2005 for the differences in interpretation). When adjectival forms are ambiguous (short/long), the short form is used in predicative and indefinite contexts, while the long form is used in attributive and definite contexts. The adjectives have a strong form in the examples given below.

Consider the two head-final languages, Tatar and Japanese. As expected, the noun is final within the noun phrase. The Tatar example in (86) shows that the prenominal adjectives modifying an object-denoting noun observe the hierarchy of semantically-related projections in (79a), namely QuantP > QualP > SizeP > ColorP.

- (86) [DP...[QuantP küpsanly [QualP matur [SizeP keçkenə [ColorP kyzyl [NationP amerikan
numerous nice small red American
[NP mashynalar]]]]]
cars

However, according to my informants some adjectives can permute without any focus effects, which is unexpected given the “universal” hierarchy expressed in (79).

Concerning deverbal noun phrases in Tatar, they are modified by adverbial forms instead of pure adjectives, as in (87). Nevertheless, in this case, the clausal hierarchy must be preserved, namely ModeP > TP > VoiceP.

- (87) [DP [ModeP mömkin [TP kiläçäk [VoiceP kurkyniç [NP agressija]]]]
probably shortly violently aggression

Japanese behaves like Tatar in the fact that two of the prenominal adjectives in (88a) can permute as in (88b).

- (88) a. subarashii tiisana akai kuruma
wonderful small red cars
‘wonderful small red cars’
b. subarashii akai tiisana kuruma
wonderful red small cars

Such permutation is also attested with deverbal nouns. Although (89a) expresses the preferred order of adjectives, (89b) is also a possible order among others.

- (89) a. kanoona booryokutekina America-teki-na koogeki
possible violent American-style_{adj} attacks
‘possible violent attacks in an American style’
b. booryokutekina America-teki-na kanoona koogeki
violent American-style possible attacks

The possibility of adjective reordering can be explained by an analysis of Japanese adjectives as (reduced) relative clauses, more precisely as stacked relative clauses (see Yamakido 2000, Baker 2003). As we know, stacked relative clauses are not ordered.²³ This analysis could apply to the Tatar case.

4.1.2. Postnominal adjectives $N < Adj^*$ (Hebrew)

In Hebrew the attributive adjectives are all postnominal and display a mirror-image order with respect to the Germanic prenominal order. Shlonsky (2004:1485-6) provides the following examples.

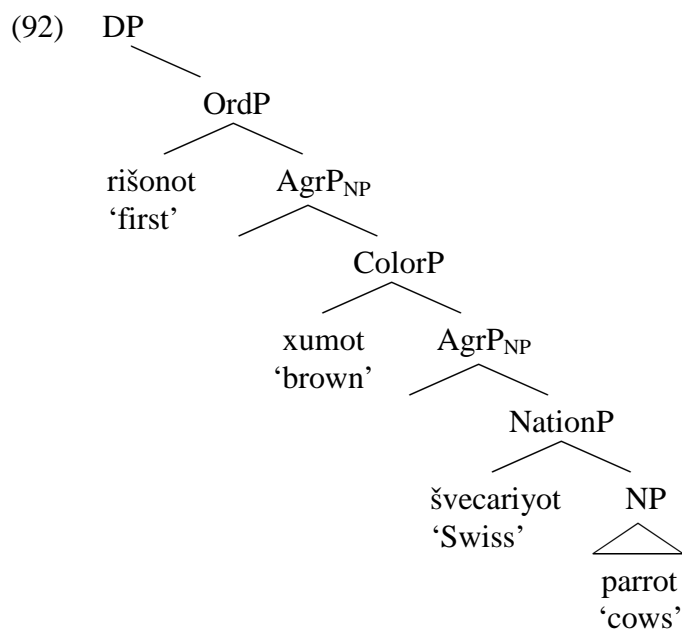
²³ The analysis of Japanese adjectives as relative clauses finds support in the use of a tense morpheme like *-i* in *akai* expressing present tense. For this tense morpheme to be licensed a TP must be represented in the adjective-related structure, which corresponds to a relative clauses (thanks to Yoshio Endo for this observation).

- (90) a. para švecarit xuma
cow Swiss brown
'a brown Swiss cow'
- b. ha-šulxan ha-šaxor ha-'arox
the table the-black the-long
'the long black table'
- c. naknikiya 'ostrit kšera
sausage Austrian kosher
'an kosher Austrian sausage'
- d. hafgaza 'isra'elit masivit 'efsarit
bombardment Israeli massive possible
'a possible massive Israeli bombardment'

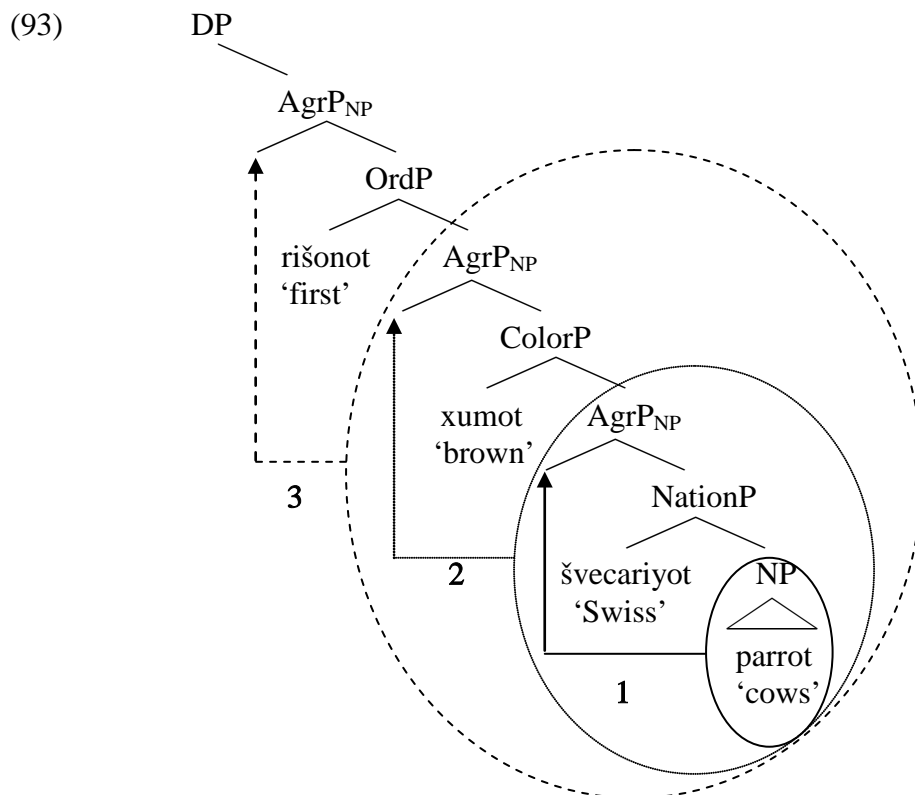
Shlonsky (2004) analyzes Hebrew reverse ordering of attributive adjectives as successive roll-up pied-piping movement. Consider the following example.

- (91) parrot švecariyot xumot rišonot
cows Swiss brown first
'the first brown Swiss cows'

The nationality and color adjectives as well as the ordinal adjective are postnominal displaying a mirror-image order with respect to the English corresponding example. The root positions for the adjectives in (91) are provided in (92).



On the basis of this structure the noun raises as an NP (not as a N) to the NP-related agreement projection (i.e. AgrP_{NP}) immediately above NationP. Then, this agreement projection moves to the next agreement projection immediately above ColorP. Finally, the latter agreement projection moves to the next agreement projection above OrdP. The complete derivation is provided in (93).



The same kind of snowballing movement holds for the noun phrases in (90b-d) above.

4.1.3. Mixed languages : $Adj < N < Adj$

Romance are among those languages that display both prenominal and postnominal adjectives. Let us first consider French. Adjectives of form, color and nationality must be postnominal, whereas adjectives of quality and size can be postnominal or prenominal. This is illustrated in (94).

- (94) a. une table ronde blanche
 a table round white
 'a round white table'
- b. une voiture rouge italienne
 a car red Italian
 'a red Italian car'
- c. une magnifique voiture vs. une voiture magnifique
 a wonderful car
- d. une énorme maison vs. une maison énorme
 an enormous house

Following Bernstein (1991), Valois (1991), Cinque (1994) among others, the postnominal placement of adjectives in Romance results from N-raising. This movement is optional in (94c-d) and impossible in the following examples: *de nombreuses voitures* ('numerous cars') vs. **des voitures nombreuses*²⁴, *de futurs diplômés* ('future graduates') vs. **des diplômés*

²⁴ There is another reading of *nombreuses* meaning 'having many members/people'. In this reading, the adjective is postnominal, as in the following example: *une/des famille(s) nombreuse(s)*.

futurs, etc. Laenzlinger (2005a) proposes an alternative analysis in terms of NP-movement in order to treat the cases of postnominal adjectives occurring in a mirror-image order with respect to the prenominal order (see Cinque's 2005a treatment of Greenberg's Universal 20, Aboh 2002 for the noun phrase in Gbe, Vangsnes 2004 for the Scandinavian noun phrase). This kind of analysis is proposed by Shlonsky (2004) for Hebrew postnominal adjectives in mirror-image order (see the previous section).

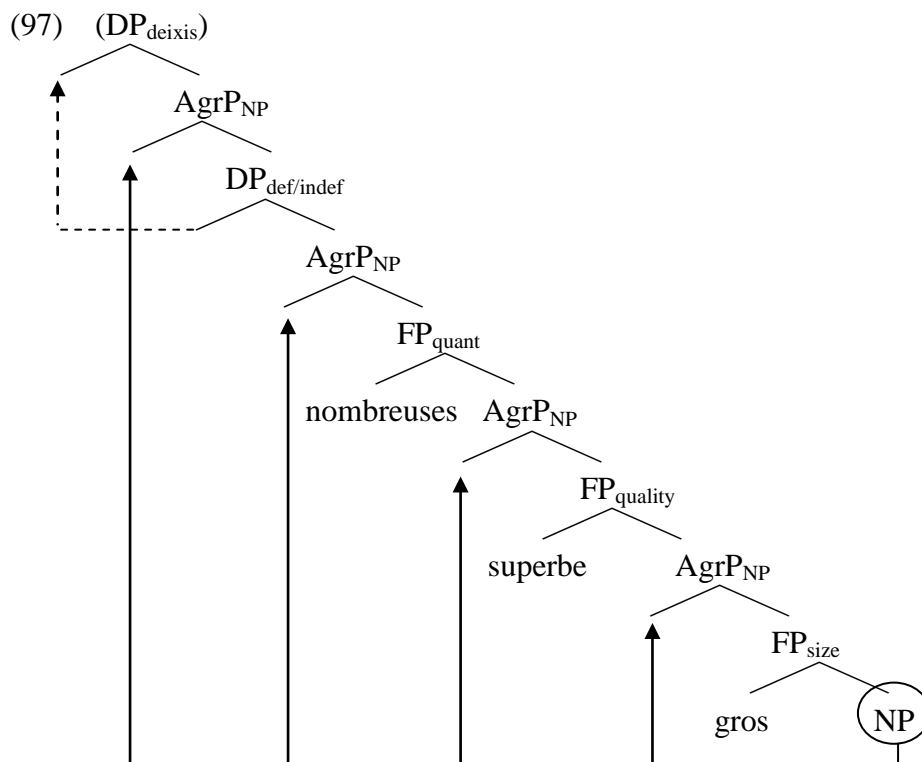
In (95a), for instance, the first step of the derivation consists of NP-movement past the color adjective to a NP-related agreement position, followed by movement of this NP-related projection past the quality adjective to a higher NP-related agreement position. The resulting structure is given in (95b).

- (95) a. *une voiture rouge magnifique* vs. a beautiful red car
 b. [DP [AgrP-NP [AgrP-NP [NP *voiture*] [FPcolor *rouge*] [FPquality *magnifique* [~~*voiture*~~ [*rouge*-[~~*voiture*~~]]]]]]]]

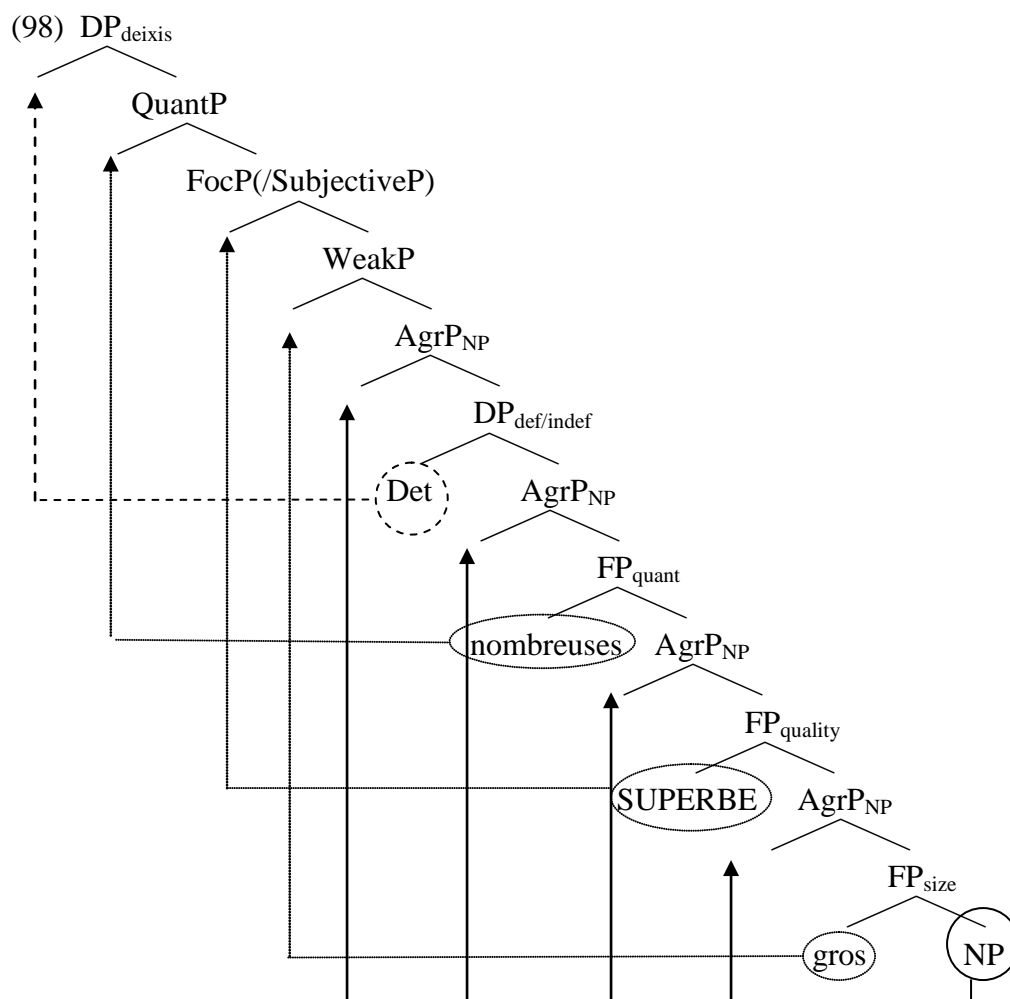
The question of prenominal placement of adjectives in French deserves some attention. Prenominal adjectives generally have a special reading related to strong subjectivity (*un pauvre homme* 'pitiable man'), focus (*une SUPERBE fille* 'a superb girl'), quantification (*de nombreuses voitures* 'numerous cars'), frequency and short/weak form (*de gros avions* 'big planes'). Following Laenzlinger (2005b) we propose that these prenominal adjectives move to the left periphery of the noun phrase. These adjectives root-merge in the Mittelfeld, i.e. in a prenominal position, as represented in (96).

- (96) [DP [AgrP-NP [FPquant *nombreuses* [AgrP-NP [FPquality *superbes* [AgrP-NP [FPsize *gros* [NP]]]]]]]]]

Then, the noun moves with its own maximal projection (i.e. NP) through agreement projections related to the adjectives. NP-movement ends up in an agreement projection related to the determiner within the DP-domain. Recall that the DP-domain is a complex structure starting with a D head specifying definiteness/indefiniteness and closing off with a D head expressing deixis. The prenominal placement of the determiner is explained by short head-movement of the determiner from $D_{\text{def/indef}}$ to D_{deixis} . The derivation so far is expressed in (97).



As we argued, the fronted adjectives, i.e. *nombreuses* (numerous), *superbes* (superb), *gros* (big) move to a specific position in the left periphery. The quantificational adjectives are attracted to the specifier of a quantificational projection (QuantP). The emphatic adjectives move to the specifier of a focus projection. The strong subjective adjectives move to the specifier of a subjective projection (SubjectiveP). Finally, the weak adjectives are attracted to the specifier of WeakP. On the basis of the partial derivation in (97), the final structure results in (98).



As regards prenominal adjectives in a deverbal nominal like (99), we follow Laenzlinger’s (2005b) proposal that the position targeted by the adjectives in the left periphery expresses informational prominence. This position is labelled ModifP by analogy with Rizzi’s (2004b) ModifP in the CP-domain²⁵ (e.g. [_{ModifP} *Probablement*, [_{ModifP} *maladroitement*, *l’ennemi a détruit la ville*]] ‘Probably, clumsily the enemy destroyed the city’).

- (99) la [_{ModifP} probable [_{ModifP} maladroite [destruction de la ville par l’ennemi]]]
 ‘the probable clumsy destruction of the city by the enemy’

As we have seen in section 4.1.1, there is no noun raising (i.e. NP-movement) past the adjectives in Germanic (e.g. English, German) given their prenominal placement. However, we now assume that the noun (i.e. NP) or its extended projection (i.e. the adjective-related projection(s)) move to the NP-agreement projection related to the determiner. This analysis, sketched in (100), will find further support in the postnominal placement of the noun’s PP-complements (see section 4.2.1).

- (100) [_{DPdeixis} the [_{FPqual} beautiful [_{FPcolor} red [_{FPnation} Italian [_{NP} car]]]]] [_{DPdet} the
 [_{FPqual} beautiful [_{FPcolor} red [_{FPnation} Italian [_{NP} car]]]]]

²⁵ Alternatively, it can be a SubjectiveP that hosts the fronted quality adjective *maladroite* (strong subjective reading).

The Swedish examples in (101) find a straightforward explanation in the light of the split-DP analysis proposed here. The definite determiner is realized as a morpheme attached to the right of the noun. In this case, the determiner does not raise to the higher D (see also the Romanian case below). Interestingly, the determiner is doubled in the occurrence of a prenominal adjective.

- (101) a. [DP_{deixis} [Agr-NP [NP bok] [DP_{det} -en [...]]] (bok-en)
 book -the
 ‘the book’
 b. [DP_{deixis} den [Agr-NP [FP_{adj} nya [NP bok]] [DP_{det} -en [...]]] (den nya bok-en)
 the new book -the
 ‘the new book’

Italian and Spanish as Romance languages are very similar to French with respect to the possibilities of adjective placement.²⁶ The examples in (102) illustrate the prenominal and postnominal placement of attributive adjectives in Italian. As in French, the noun raises as an NP first to an adjective-related agreement position and then to a determiner related one. Prenominal adjectives are moved to the left periphery.

- (102) a. le probabili goffe reazioni immediate alla tua lettera
 the probable clumsy reactions immediate to your letter
 b. una bella grande palla rossa
 a pretty big ball red

The noun phrase in (103a) shows that the NP moves successively through adjective-related agreement positions, while in (103b) the second step of the derivation involves an extended projection of NP/FP_{color} (i.e. AgrP_{NP} containing the noun plus the postnominal adjective).

- (103) a. [DP una [AgrP-NP macchina [FP_{color} rossa [AgrP-NP ~~macchina~~ [FP_{nation} italiana
 [NP ~~macchina~~]]]]]
 b. una [AgrP-NP macchina rossa [FP_{quality} bellissima [AgrP-NP ~~macchina~~ [FP_{color} rossa
 [NP ~~macchina~~]]]]]

Spanish behaves like French and Italian, as shown by the following data.

- (104) a. un coche rojo italiano
 a car red italian
 b. un coche rojo fantástico
 a car red fantastic
 c. un FANTÁSTICO coche rojo

The adjectives of colour and nationality are postnominal ((104a)), while the adjective of quality can be prenominal (focalized in (104c) or postnominal occurring in a mirror-image ordered position in (104b)). The Spanish noun phrases in (104) are assigned the same derivational analyses as in French and Italian.

Romanian noun phrases display very interesting properties that fit in well with our proposal on the cartography of the nominal structure. Consider the following facts:

²⁶ Concerning some subtle differences among Romance languages, see Cinque (2008).

- (105) a. mașini roșii americane
cars red American
'red American cars'
b. mașini roșii frumoase
cars red beautiful
'beautiful red cars'
c. numeroasele frumoase mici mașini
numerous(the) beautiful small cars
'the numerous beautiful small cars'

The behavior of the definite determiner in (105c) deserves some attention. The definite Det is an enclitic in Romanian, attached to the noun in the example (106a) below where the adjective is postnominal. When the adjective is prenominal, as in (106b), the determiner is an enclitic to the adjective. In the case of multiple adjective fronting, the definite determiner occurs on the left-hand adjective, as shown in (105c) above.

- (106) a. băiatul frumos
boy-the nice
'the nice boy'
b. frumosul băiat
nice-the boy

As for the Swedish case in (101a), the determiner in (106a) does not raise to the higher D. This is represented in (107a). In (106b) the definite determiner moves to the head of the projection where the fronted adjective second-merges as its specifier. The structure of (106b) is given in (107b).

- (107) a. [DP [AgrP [NP băiat]-[DP [D ul] [FPqual frumos ...]]]]
b. [DP [FocP/SubjectP frumos[ul] [AgrP [NP băiat] [DP [D ul] [FPqual frumos ...]]]]

The more complex case in (105c) is analyzed by raising of the definite determiner to the head of the highest projection whose specifier is lexically filled.²⁷ As shown in (108), the complex DP-structure for (105c) contains all the elements of the noun phrase (the adjectives, the noun and the determiner) in the left periphery (i.e. within the DP-layer).

- (108) [DP [QuantP numeroase[le] [FocP/SubjectP frumos[le] [WeakP mici [le] [AgrP [NP mașini] [DP [D le] ...]]]]]

As expected, Romanian behaves like French, Italian and Spanish with respect to the possible orders of postnominal adjectives. In (105a), the adjectives occur in a linear order with respect to their first-merge position (successive NP-derivation) and in (105b) they are realized in a mirror-image order (roll-up derivation).

Greek is also a very interesting case regarding adjectival modification in noun phrases. In the indefinite noun phrase in (109), attributive adjectives are most naturally prenominal. If they occur postnominally, they have an emphatic reading.

²⁷ By its nature, the definite determiner is an enclitic that must surface on the left of the first constituent (a kind of Wackernagel second position cliticization applying to the noun phrase).

- (109) a. ená kókkino vivlío
 a red book
 ‘a red book’
 b. ená vivlío KÓKKINO
 a book RED

In definite contexts we observe the possibility of polydefiniteness, a phenomenon called Determiner Spreading (Androutsopoulou 1994, Alexiadou & Wilder 1998, Leu 2001, Stavrou 1996, 1999, Spyropoulos & Stavrou 2008). In (110a) there is a single occurrence of the definite determiner in front of the prenominal adjective, but in (110b), as an option, the determiner is repeated in front of the noun. When the adjective is postnominal, the definite determiner must be reduplicated (110d vs. 110c). In other words, Determiner Spreading is obligatory here.

- (110) a. to akrivó vivlío
 the expensive book
 b. to akrivó to vivlío
 the expensive the book
 c. * to vivlío akrivó
 the book expensive
 d. to vivlío to akrivó
 the book the expensive

The very surprising fact is that prenominal adjectives do not necessarily obey the hierarchy expressed in (79) both in definite and indefinite contexts. This is shown in the paradigm below.

- (111) a. (i) poliáarithma mikrá kókkina aftokínita
 numerous small red cars
 (ii) poliáarithma kókkina mikrá aftokínita
 numerous red small cars
 (iii) kókkina poliáarithma mikrá aftokínita
 red numerous small cars
 etc.
 b. (i) thavmásia kókkina amerikánika aftokínita
 wonderful red American cars
 (ii) kókkina thavmásia amerikánika aftokínita
 red wonderful American cars
 (iii) kókkina amerikánika thavmásia aftokínita
 red American wonderful cars
 etc.
 c. (i) ta poliáarithma (ta) mikrá (ta) kókkina (ta) aftokínita
 the numerous (the) small (the) red (the) cars
 (ii) ta poliáarithma (ta) kókkina (ta) mikrá (ta) aftokínita
 the numerous (the) red (the) small (the) cars
 (iii) ta kókkina (ta) poliáarithma (ta) mikrá (ta) aftokínita
 the red (the) numerous (the) small (the) cars
 etc.

- d. (i) ta thavmásia (ta) kókkina (ta) amerikánika (ta) aftokínita
the wonderful (the) red (the) American (the) cars
(ii) ta kókkina (ta) thavmásia (ta) amerikánika (ta) aftokínita
the red (the) wonderful (the) American (the) cars
(iii) ta kókkina (ta) amerikánika (ta) avmásia (the) aftokínita
the red (the) American (the) wonderful (the) cars
etc.

We hope to relate this adjective order flexibility to the phenomenon of Determiner Spreading and the way it can be implemented in the Split-DP analysis. Since the determiner raises from the lower D to the higher D, Determiner Spreading can be analyzed as the spell-out of copies of the determiner following Chomsky's (1995) Copy Theory. The noun raises as an NP to an agreement position related to the determiner, while the prenominal adjective(s) target(s) recursive agreement positions within the DP-layer. Since these agreement projections are not ordered, the structural possibilities are obtained in (112a-b). The grammatical example in (112c) shows that determiner copying is just an option and the ungrammaticality of (112d) indicates that the D-chain may not be broken in its spelling out continuum.

- (112) a. [DP1 *to* [FPagr-adj megálo *to* [FPagr-adj kókkino *to* [AgrP-NP vivlío [DP2 ~~to~~]]]]]
big red book
b. [DP1 *to* [FPagr-adj kókkino *to* [FPagr-adj megálo *to* [AgrP vivlío [D2 ~~to~~]]]]]
red big book
c. [DP1 *to* [FPagr-adj megálo (*to*) [FPagr-adj kókkino (*to*) [DP2 vivlío [D ~~to~~]]]]]
d. * [DP1 *to* [FPagr-adj megálo [FPagr-adj kókkino *to* [DP2 vivlío [D ~~to~~]]]]]

As for postnominal adjectives, they receive an emphatic reading. According to Ntelitheos (2002), the noun is a topic and the adjective a focus in the configuration N < Adj, as in (113). That is why we propose that the noun moves to a topic position and the adjective to a focus position in the left periphery of the noun. This derivation is represented in (113).

- (113) [DP1 *to* [FPagr-adj megálo *to* [TopP vivlío *to* [FocP kókkino] [DP2 [D ~~to~~]]]]]

As shown in (114), there is no Determiner Spreading with indefinites. One possible explanation is that indefinites are operators and as such cannot be reduplicated because there will be more than one operator for a single variable in violation of Koopman & Sportiche's (1983) Bijection Principle (see Alexiadou & Wilder 1998: 331 for a proposal in terms of PF-rule or Novelty/Discourse Condition). Still, the lack of strict adjective ordering in indefinite noun phrases (109a-b) is related to (unordered) movement of the adjectives to the D-domain, but without determiner reduplication.

- (114) a. * éna kókkino éna vivlío
a red a book
'a red book'
b. * éna vivlío éna kókkino
a book a red

Now it remains to explain why the following cases of Determiner Spreading are impossible (taken from Alexiadou & Wilder 1998, see also Alexiadou 2001, Leu 2001 and Cinque 2008).

- (115) a. o ipotithémenos (*o) dolofónos
 the alleged the murderer
 ‘the alleged murderer’
 b. i italikí (*i) isvolí
 the Italian the invasion
 ‘the Italian invasion’
 c. i períphani ja to jo tis (*i) mitéra
 the proud for the son her (*the) mother
 ‘the mother proud of her son’

In Laenzlinger (2010) we propose that the adjectives in (115a-b), which modify the inner property of the referent, not the reference set itself, and the subcategorizing adjective in (115c) target the specifier of specific projections in the left periphery whose head is incompatible with a [+def] feature.²⁸ This means that determiner raising does not pass through this head, thus cannot leave a PF-copy.

4.2. Movement to the Mittelfeld: DP and PP complements

In this section we are interested in the syntax of PP/DP complements of the noun. In short, they can be arguments (i.e. thematically selected) or adjuncts, as in (116) for English.

- (116) a. a girl [with glasses] (adjunct)
 b. [John]’s car (Possessor)
 c. the destruction [of the city] (Theme)

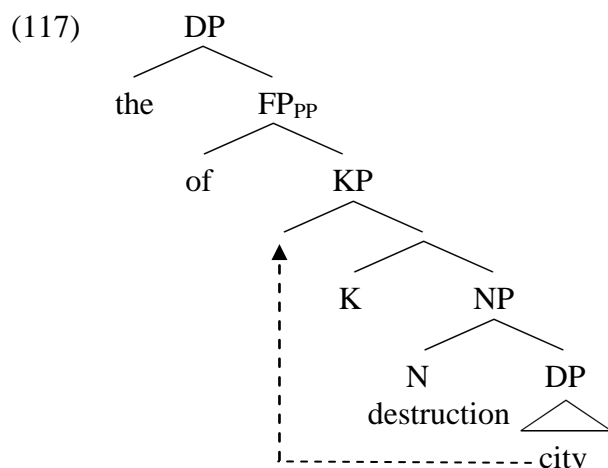
By analogy with Kayne’s (2002) analysis of the verb’s PP complement(s) as merging outside the VP-domain, Laenzlinger (2005a,b) proposes that the noun’s PP complements are built outside the NP even though the DP complement, if it is an argument, is root-merged inside the NP-shell. Consider the analysis of (116c). The DP *city* interpreted as the Theme argument of the noun first-merges with N as its complement. Following Kayne (2002), Cinque (2008), Koopman (2002) and others, the DP complement is attracted to the Case head named K, then the preposition *of* merges with this K(P). The resulting structure is given in (117).²⁹

²⁸ Note that Determiner Spreading is acceptable with a postnominal subcategorizing adjective, as in (i).

(i) $[_{DP} [_D I] [_{DP} \text{mitéra} [_D i] [_{PredP} \text{períphani ja to jo is}]]]]$
 the mother the proud of the son her
 ‘the mother proud of her son’

In this case the noun raises as an NP to the DP-layer past PredP so that Determiner Spreading may apply to the noun phrase.

²⁹ Note that for Cinque (2008) the P- and K-related projections merge outside the DP. In Laenzlinger (2005b) these projections are inside the DP, but very high within the Mittelfeld.



We will see in the next section that the domain for PP merging is higher than that of adjectival modification (see the discussion below concerning head-final languages having the unmarked order $PP < Adj < N$). Note that in the case in (117) the noun raises as an NP past the PP, hence the order $N > PP$ in (116c) (see section below).

4.2.1. $N < PP/DP$

We will first consider languages showing the configuration where attributive adjectives are prenominal and PPs are postnominal ($Adj < N < PP$). This is the case in Germanic languages, Slavic and Hungarian.

The English example in (118) shows that the manner adjective is prenominal and the PP argument is postnominal.

(118) the brutal destruction of the city

This nominal structure is derived through movement of the NP extended projection, more precisely, FP_{voice} , past the PP *of*-related projection, as shown below.

(119) [DP the [_{Agr-NP} [_{FP_{voice}} brutal [_{NP} destruction]] [_{FP_{voice}} ~~brutal~~ [_{NP} ~~destruction~~]]]]

The noun phrases in (120) contain more than one PP argument in the unmarked order.³⁰ In (120a) the noun phrase contains two arguments, the Theme expressed by the preposition *of* and the Agent by the preposition *by*. In (120b) three arguments are expressed: the Theme introduced by *of*, the Beneficiary by *to* and the Agent by *by*.

- (120) a. the brutal destruction of the city by the enemy
 b. a generous gift of money to the poor by the bank

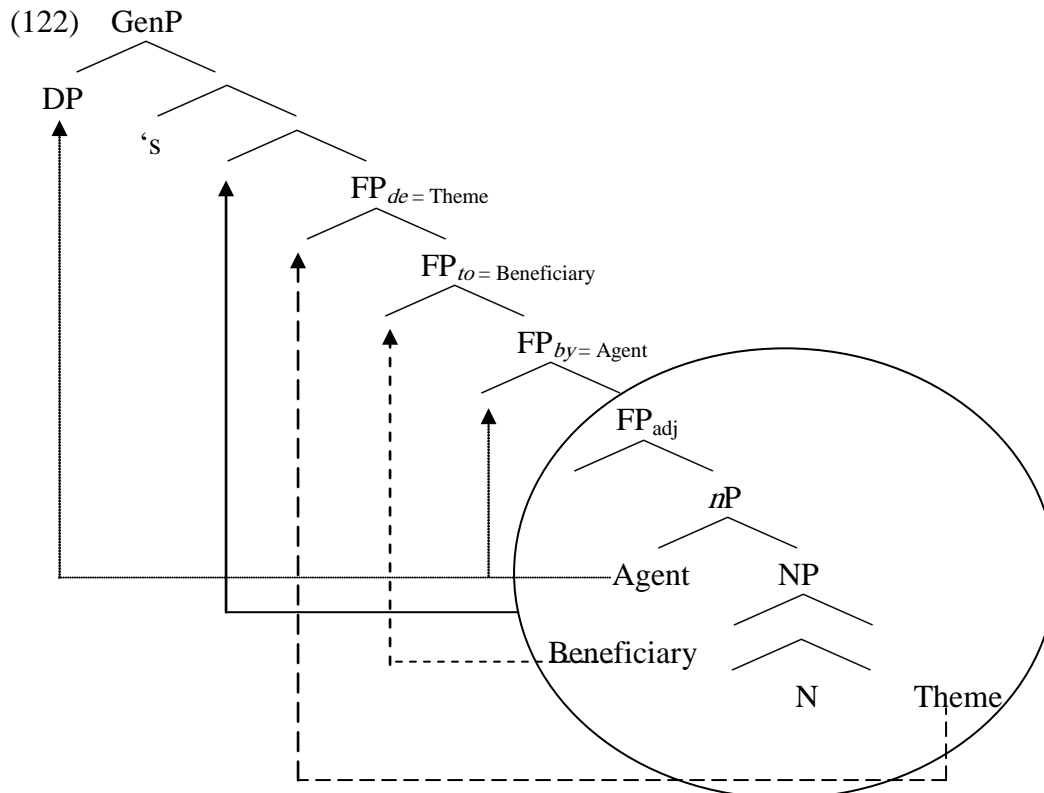
Note that the Agent in (120a-b) can be expressed in the Saxon Genitive position (121a-b). In this case, the agentive DP moves to a Genitive Case position in the left periphery.

³⁰ Some PPs can permute, as in (i), but this case is a marked option.

- (i) the gift of money by the bank to the poor

- (121) a. the enemy's destruction of the city
 b. the bank's generous gift of money to the poor

On the basis of (121a-b), a hierarchy of PP-related projections³¹ can be established in the Mittelfeld between the DP-border and the adjective-related projections, namely:



The arguments move to their PP/Case-related positions and the extended projection of *nP* (containing the noun plus the prenominal adjective) moves past the PPs.

As for PP-modifiers/adjuncts, as in (123), they merge above the argumental Case/P-related projections, as it will be shown later with the analysis of head-final languages (Japanese and Tatar).

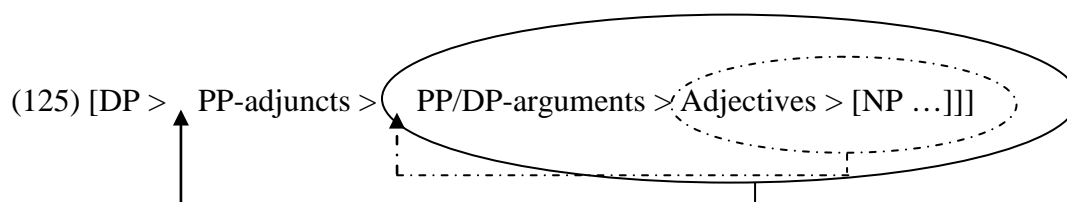
- (123) a. an interesting book on syntax **with a black cover**
 b. the recent destruction of the city by the Americans **with heavy artillery**

So far, the hierarchy of Mittelfeld internal projections is as follows:

- (124) [DP > PP-adjuncts > PP/DP-arguments > Adjectives > [NP ...]]

To obtain the order in (123) the NP and the prenominal adjective(s) move past the PP/DP-arguments and then the whole projection moves past the PP-adjunct. This is schematized in (125).

³¹ The categories K and P (Kayne 2002) are simplified here as FP_{pp} for ease of representation. This simplification of notation will be used in the remaining part of the present work.



German also displays the Saxon Genitive position, but it is confined to proper names, as in (126).

- (126) a. Johanns Buch
 ‘Johann’s book’
 b. Hans Wagen
 ‘Hans’ car’

The deverbal noun phrases in (127) contain a prenominal adjective and PP arguments, plus a PP adjunct in (127a). In (127b) the neutral order of the noun’s PP complements are $PP_{an} < PP_{durch}$. Note that the permutation of these two PPs is possible under the relevant informational conditions. Finally, the noun phrase in (127c) shows a preference for the order $PP_{von} < PP_{an}$.

- (127) a. die brutale Zerstörung der Stadt durch den Feind (mit Gewalt)
 the brutal destruction the city_{Gen} by the enemy (with violence)
 b. eine grosszügige Geldspende an die Armen durch die Bank
 a generous money gift to the poor through the bank
 c. eine grosszügige Geldspende von der Bank an die Armen
 a generous money gift from the bank to the poor

Swedish is very similar to German in having the Saxon Genitive position limited to proper names, as in (128).

- (128) a. Chomskys bok
 ‘Chomsky’s book’
 b. Johns bil
 ‘John’s car’

The data in (129) contain derived nominals with multiple PP arguments in their neutral order. As in English and German, this unmarked order is obtained according to the following hierarchy: Theme > Beneficiary > Agent. The right-hand position of the PP-adjunct in (129) derives from pied-piping movement of the noun plus the adjective and the PP complements past the adjunct-related position.

- (129) a. den brutala förstörelsen av staden av fienden
 the brutal destruction-the of the-city of(by) the-enemy
 ‘the brutal destruction of the city by the enemy’
 b. en generös donation av pengar till dom fattiga från banken
 a generous gift of money to the poor by the bank
 c. förstörelsen av staden av Amerikanarna med våld
 destruction-the of the-city of/by the-American with violence

Let us now turn to Slavic languages. The Russian deverbal noun phrases in (130) display postnominal complements and prenominal attributive adjectives. The noun's complements are realized as Case-marked DPs whose order is considered neutral in these examples. In (130a) the Genitive argument precedes the Instrumental one, which means that the Genitive Case-related projection is higher than the Instrumental one. In (130b) the Genitive argument precedes both the Dative and the Instrumental arguments. This surface ordering is expected given the aforementioned proposal that the Genitive projection is higher than the Dative one, which, in its turn, is higher than the Oblique (i.e. Instrumental) one.

- (130) a. zhestokoe razrushenie goroda vragom
brutal destruction city_{Gen} enemy_{Instr}
'the brutal destruction of the city by the enemy'
- b. shedryj dar deneg bednym bankom
generous gift money_{Gen} poor_{Dat} bank_{Instr}
'a generous gift of money to the poor by the bank'

The hierarchy of licensing positions in the Mittelfeld for the noun's DP complements is the following: (PP_{Adjunct}) > Genitive_{Agent} > Genitive_{Theme} > Dative > Instr. The right-hand position of the PP-adjunct in (131) follows from this hierarchy with pied-piping movement of the nominal extended projection past the adjunct, exactly as in Germanic.

- (131) a. razrushernie goroda amerikantsami s osoboj zhestokostju.
destruction city_{Gen} American_{Instr} with great violence
'the destruction of the city by the Americans with great violence'
- b. fotografiia Zhana s moria na kanikulah
photo John_{Gen} from seaside on holidays
'John's picture from the seaside on holidays'

Let us now examine Serbo-Croatian. Since the agentive passive "by-PP" is rarely used in Slavic, the prepositional phrase *by the enemy* is translated as a prenominal possessive form in (132a). The Genitive DP is postnominal, whereas the attributive adjective is prenominal. In (132b) not only the Genitive DP, but also the Dative one are postnominal, while the adjective is prenominal. As expected, given the Mittelfeld's hierarchy of Case-related projections proposed so far, the neutral order is GEN < DAT.

- (132) a. surovo neprijateljstvo uništenje grada
brutal enemy_{Poss} destruction city_{Gen}
'the brutal destruction of the city by the enemy'
- b. velikodušna pomoć banke siromašnima
generous help bank_{Gen} poor_{Dat}
'a generous help from the bank to the poor'

The noun phrases in (133a-b) show that PP-adjuncts are postnominal. In (133b) the PP-adjunct follows the noun's argument most naturally. This derives from the hierarchy of positions in the Mittelfeld – Adjuncts > Arguments > Adjectives – with movement of the projection hosting the arguments and the adjectives (plus the noun) past the adjunct. The prenominal placement of the adjective results from pied-piping movement of the adjective-related projection - containing the unmoved noun - past the argument and the adjunct. This movement presumably targets an abstract agreement position situated in the high portion of the Mittelfeld.

- (133) a. crvena kola iz 1958
 red car of 1958
 ‘a 1958 red car’
- b. surovo uništenje grada od strane Amerikanaca uz pomoć teške tiljerije
 violent destruction city_{Gen} by American by means of heavy artillery
 ‘the violent destruction of the city by the Americans with heavy artillery’

Finally, consider Hungarian where attributive adjectives are prenominal, while the noun’s complements are postnominal, apart from the possessive-related argument, which occurs in a prenominal position in front of the adjectives, as shown in (134a-c). Interestingly, the Possessor can be assigned either Nominative Case ((134b)) or Dative Case ((134c)) (see Szabolcsi (1994:180)). In the former case, the determiner precedes the Nominative argument, while in the latter it follows the Dative argument. Therefore, there is either a Nominative Case projection between the two DPs or a Dative Case projection located higher than the deictic DP, which attracts the possessor argument. This is represented in the structures below.

- (134) a. [DP a [NomP [DP város] [QualP teljes [NP megsemmisítése]]]
 the city+Nom complete destruction-POSS
 ‘the complete destruction of the city’
- b. [DP (a) [NomP [DP Mari] [QualP szép [NP kalap-ja]]]
 the Mari nice hat
- c. [DP [DatP [DP Mari-nak] [DP a [QualP szép [NP kalap-ja]]]]
 Mari the nice hat
 ‘Mari’s nice hat’

In (135a) one can observe that the Dative and Oblique arguments follow the noun most naturally, but they can also be prenominal as a discourse marked option, as in (135b). In the latter case, the arguments target recursive TopP in the left periphery (in the CP-layer). In (135a) the Dative argument neutrally precedes the Oblique one, and this is expected given the Mittelfeld-internal hierarchy of Case and P-related projections proposed so far in this work. The noun raises conjointly with the prenominal adjective (as QualP) to an agreement projection related to the determiner.

- (135) a. [DP egy [AgrP [QualP nagylelkű [n/NP pénz adomány]] [DP a szegényeknek] [PP a bank részéről] ...]]]
 a generous money gift the-poor+Dat the
 bank by
 ‘a generous gift of money to the poor by the bank’
- b. [DP egy [TopP [DP a szegényeknek] [TopP [PP a bank részéről] [QualP nagylelkű
 a the-poor+Dat the bank by generous
 [n/NP pénz adomány] [DP a szegényeknek] [PP a bank részéről]]]]]
 money gift
 ‘a generous gift of money to the poor by the bank’

PP-adjuncts, like non-Genitive arguments, are postnominal, as shown in (136).

- (136) egy piros kocs 1956-bol
 a red car 1956-from
 ‘a 1956 red car’

If a PP-adjunct occurs with a PP-argument, the former follows the latter, as expected from pied-piping movement of the projection containing the arguments and the adjectives past the adjunct: ↑ [PP-adjuncts > [Arguments > [Adjectives]]]. This is illustrated in (137).

- (137) Mari hite istenben gyerekkora óta
 Mari belief_{+poss} god-in childhood_{+poss} since
 ‘Mari’s belief in God since her childhood’

Let us now turn to a language having both adjectives and PPs in postnominal position: Hebrew. In (138a) there are two postnominal PP complements, the Genitive one followed by the Oblique one. This is the most natural order. In (138b) the adjective precedes the three postnominal complements. The adjacency between the noun and the postnominal adjective(s) is the only configuration possible. The Genitive complement introduced by *šel* must precede the other complements of the noun, which can be reordered for informational purposes. This is illustrated in (138c).

- (138) a. ha harisa šel ha 'ir al yedei ha oyev
 the destruction of the city by the enemy
 ‘the destruction of the city by the enemy’
 b. truma nediva šel kesef la aniyim al yedei ha bank
 gift generous of money to-the-poor by the bank
 ‘a generous gift of money to the poor by the bank’
 c. truma nediva šel kesef al yedei ha bank la aniyim
 (cf. French : un don d’argent par la banque aux pauvres)
 ‘a gift of money by the bank to the poor’

As shown in (139), the preferred order is with the PP-adjunct in final position, i.e. occurring after the argumental PPs, as observed for Germanic and Slavic languages.

- (139) ha harisa šel ha 'ir al yedei ha oyev im nešeq
 the destruction of the city by the enemy with(by means of) weapons

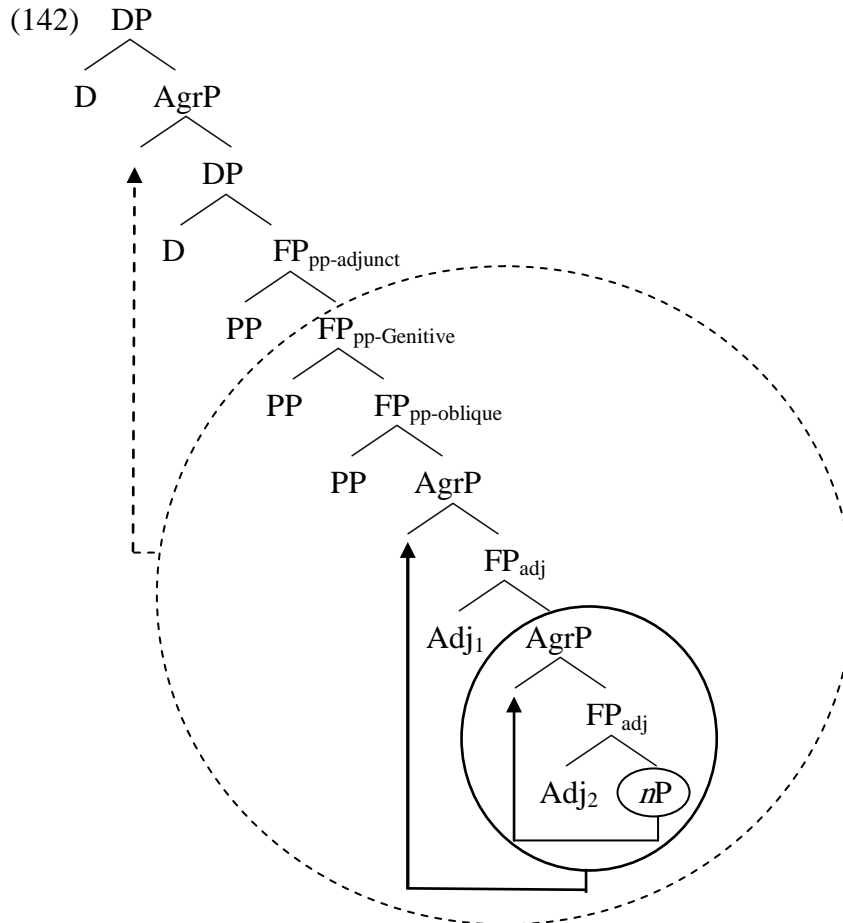
The contrast between (140a/c) and (140b/d) shows that the postnominal adjective must be adjacent to the noun both in definite and indefinite contexts.

- (140) a. ha oto ha adom šel Jean
 the car the red of Jean
 ‘Jean’s red car’
 b. * ha oto šel Jean ha adom
 the car of Jean the red
 c. ha ciyur ha mefursam šel Rembrandt
 the picture the famous of Rembrandt
 d. * (ze) ciyur šel Rembrandt mefursam
 (it is) a-picture of Rembrandt famous

The possible configurations within the noun phrase in Hebrew are summarized as follows:

- (141) [N Adj₂ Adj₁ PP_{Gen} PP_{Obl} PP_{Adjunct}]

Recall that the postnominal adjectives surface in a mirror-image order as compared to the prenominal order of adjectives in Germanic languages. This results from snowballing/roll-up movement, as previously proposed in section 4.1.2. As for the noun's PP-arguments and adjuncts, they are located above the adjectival domain in the *Mittelfeld* of the noun phrase where they merge according to the following hierarchy: [PP_{Adjunct} > PP_{Gen} > PP_{Dat} > PP_{Obl}]. The neutral order in (139) is obtained on the basis of the derivation provided in (142). First the NP moves past Adj₂ to the agreement projection immediately above the adjective-related projection, and then the Genitive PP-related projection moves past the adjunct PP-related projection to the determiner domain.



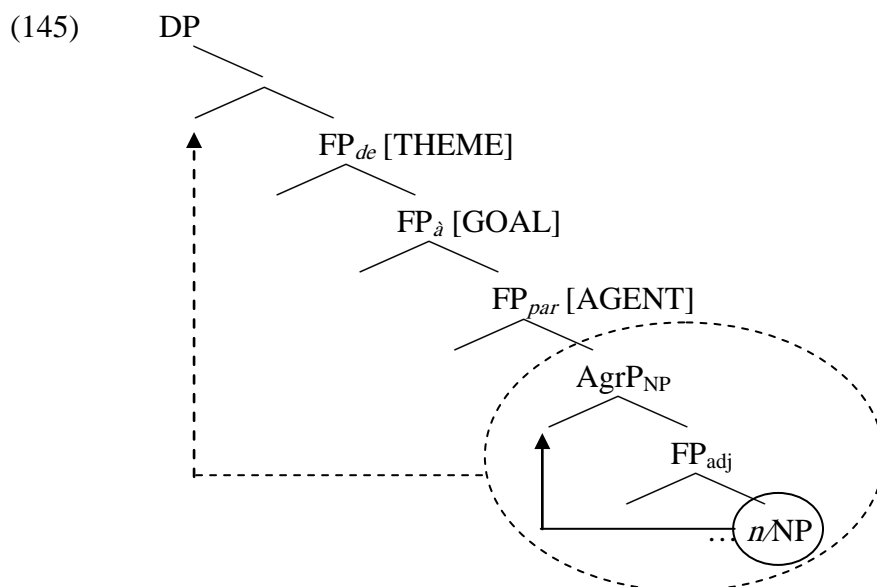
The last group of languages that will be examined in this section includes Romance languages and Greek displaying postnominal PP/DP complements and pre- and postnominal adjectives. Let us start with French. The deverbal noun phrases in (143) contain PP arguments whose neutral order is the one expressed in (144).³² In addition, the adjective preferably occurs next to the noun (e.g. *la destruction de la ville* (^{??}*brutale*) *par l'ennemi* (**brutale*)).

³² Permutation of PPs is possible as a marked option (e.g. *?un don d'argent par la banque aux pauvres* 'a gift of money by the bank to the poor'), as in the other languages we have considered so far.

- (143) a. la destruction brutale de la ville par l'ennemi
 the destruction brutal of the city by the enemy
 'the brutal destruction of the city by the enemy'
 b. un don généreux d'argent aux pauvres par la banque
 a gift generous of money to-the poor by the bank
 'a generous gift of money to the poor by the bank'

- (144) $N < PP_{de=Theme} < PP_{\hat{a}=Beneficiary} < PP_{par=Agent}$

Structurally this order results from the hierarchy in (145). Concerning the examples in (143), the *nP* moves past the adjective to the specifier of an agreement NP-related projection that moves past the argumental PPs.



As in Germanic, the PP-adjunct follows the argumental PPs most naturally. This is exemplified in (146). Recall that the PP-adjunct is situated in a structural position higher than that of the argumental PPs. The adjunct is spelt out in a final position in (146) after raising of the projection containing the NP and its arguments (but not the PP-adjunct) to the DP-domain.

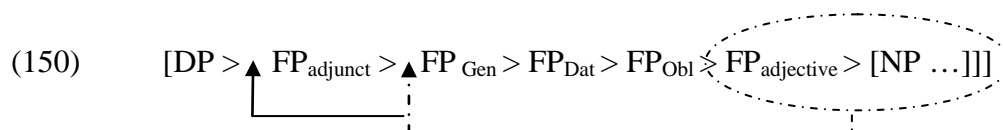
- (146) a. la destruction de la ville par les Américains avec de la grosse artillerie
 the destruction of the city by the Americans with heavy artillery
 b. la tableau d'Aristote par Rembrandt au Louvre
 the picture of Aristotle by Rambrand at the Louvre

The prenominal placement of the adjectives in (147) with respect to (144) results from movement of the adjective to the left periphery for informational prominence.

- (147) a. la brutale destruction de la ville par l'ennemi
 the brutal destruction of the city by the enemy
 'the brutal destruction of the city by the enemy'
 b. un généreux don d'argent aux pauvres par la banque
 a generous gift of money to-the poor by the bank
 'a generous gift of money to the poor by the bank'

What is interesting is that Italian and Spanish display the same patterns as French. This is shown in (148) for Italian and (149) for Spanish. The Genitive PP is followed by the Dative and the Oblique PPs.³³ As shown in (148c) and (149c), the PP adjunct in the unmarked reading is final. The sequence (AdjP <) N < (AdjP <) PP_{Genitive} < PP_{Dative} < PP_{Oblique} < PP_{adjunct} is derived from pied-piping remnant movement, as proposed for French, on the basis of the following hierarchy in (150).

- (148) a. la (brutale) distruzione (brutale) della città da parte del nemico
 the brutal destruction of the city from part of (=by) the enemy
 'the brutal destruction of the city by the enemy'
 b. [?] la (generosa) distribuzione (generosa) dei regali ai bambini da parte di Babbo
 the generous distribution of gifts to the children by/from Father
 Natale
 Christmas.
 'the generous distribution of gifts to the children by Father Christmas'
 c. [?] la distruzione della città da parte degli americani con ingenti mezzi
 the destruction of the city from part of-the American with great means
 'the destruction of the city by the Americans with great means'
- (149) a. la destrucción brutal de la ciudad por el enemigo
 the destruction brutal of the city by the enemy
 'the brutal destruction of the city by the enemy'
 b. ^(?) una donación generosa en efectivo a/para los pobres
 a gift generous of/in money to/for the poor
 'a generous gift of money to the poor'
 c. la destrucción de la ciudad por los americanos con armas
 the destruction of the city by the Americans with weapons



Romanian like the other Romance languages has both pre- and postnominal adjectives, and postnominal PP/DP complements. As we can see from (151a-b), the *de*-Theme precedes the Genitive complement, which precedes the Oblique PP. This follows from the hierarchy FP_{de-theme} > FP_{GEN/DAT} > FP_{OBL}.

³³ Note that the agentive “*by*-phrase” in Italian is expressed by the complex P *da parte di* within noun phrases.

- (151) a. distrugerea (imediată a³⁴) oraşului de (către) duşman
 destruction-the immediate POSS city-the_[+Gen] by enemy-the
 ‘the immediate destruction of the city by the enemy’
- b. reacţia (imediată a) lui Ion la această ştire
 reaction-the immediate POSS the_[+Gen] Ion at_[+Acc] this story
 ‘Ion’s immediate reaction to this story’
- c. promisiunea de amabilitate a lui Ion către Maria
 promise of amiability POSS the_[+Gen] Ion towards Maria
 ‘Ion’s promise of amiability to Maria’

The Genitive phrase can also reach the “Saxon” Genitive position in particular stylistic contexts, as illustrated in (152).

- (152) a. [_{GenP} [a oraşului] [_{DP} distrugere imediată de către duşmani]]
 b. [_{GenP} [a lui Ion] [_{DP} reacţie imediată la această ştire]]
 c. [_{GenP} [a lui Ion] [_{DP} promisiune de amabilitate către Maria]]

Let us turn to Greek. Recall that in the most natural order the adjectives are prenominal, but can also be postnominal in particular contexts (see section 4.1.3). As for the noun’s complements, in the neutral reading they occur in postnominal position. In the deverbal nominal in (153a) the Theme argument precedes the agentive one. This is the unmarked order, as in many other languages (i.e. Romance). In (153b) the Genitive argument immediately follows the noun. The Beneficiary Dative argument follows the Genitive one, and the Oblique agentive argument is final. The postnominal position of the noun’s complements is obtained after *n*/NP-movement.

- (153) a. i víei katastrofí tis pólis apó ton exthró
 the brutal destruction the city_{Gen} by the enemy
 ‘the brutal destruction of the city by the enemy’
- b. éna geneóðoro ðóro xrimáton stous ftoxoús apó tin trápeza
 a generous gift money_{Gen} the poor_{Dat} by the bank
 ‘a generous gift of money to the poor by the bank’

In the neutral order the Genitive possessor argument occurs postnominally, as in (154a). In (154b) the Genitive DP is preposed. According to Ntelitheos (2002) it is assigned a focus reading. Hence, it moves to the specifier of a Focus projection within the DP-domain, a position higher than that of the lower D.

- (154) a. [_{DP} to [_{AdjP} oréo] [_{DP} to [_{NP} fórema] [_{DP+Gen} tis Marías]]]
 the nice the dress the Maria
 ‘María’s nice dress’
- b. [_{DP} [_{FocP} [_{DP} Tis Marías] [_{DP} to [_{AdjP} oréo] [_{DP} to [_{NP} fórema]]]]]

The nominal expression in (155) contains an adjunct in addition to a Theme and an Agent argument. As in Germanic and Romance, the preferred order is the adjunct following the arguments.

³⁴ Concerning the distribution and the syntactic analysis of the possessive element *a*, see Cornilescu (1995), Laenzlinger (2005b) among others.

- (155) i katastrofí tis polis apó tous Amerikanóús me vía
 the destruction the city_{Gen} by the American with violence
 ‘the destruction of the city by the Americans with violence’

The order $N < DP_{+Gen} < PP_{Argument} < PP_{Adjunct}$ is obtained after *n*P-movement past the arguments, and then the projection containing the noun plus their arguments further raises past the adjunct.

4.2.2. *PP/DP < Adj < N*

This section focuses on head-final languages like Japanese and Tatar where both the adjectives and the noun’s complements are prenominal. Let us first consider Japanese. In the noun phrase in (156) both the adjective and the noun’s complements, i.e. PP and Genitive DP, are prenominal. The most neutral order is the one given in (156a-b), that is, the PP/DP preceding the adjective. Permutation is possible, but it is a marked option.³⁵ In (156b), for instance, the Oblique PP precedes the Genitive DP, both preceding the adjective. Such an unmarked order indicates the hierarchy of functional projections within the Mittelfeld of the noun phrase, since the noun (i.e. NP) does not raise at all.

- (156) a. teki niyoru machi-no yôshanai hakai
 ennemy by city -Gen brutal destruction
 ‘the brutal destruction of the city by the enemy’
 b. ginkô niyoru mazushii hito e no okane-no kandaina kifu
 bank by poor people to-Dat money-Gen generous gift
 ‘a generous gift of money to the poor by the bank’

The examples in (157) below show that the Genitive complement of the noun is prenominal, be it agentive or possessive.

- (157) a. Chomsky-no hon
 Chomsky-Gen book
 ‘Chomsky’s book’
 b. John-no kuruma
 John-Gen car
 ‘John’s car’

These facts clearly indicate that there is a Genitive Case-related position within the Mittelfeld. The nominal construction in (158) contains two argumental nominal complements and an adjunct. There is a preference for the adjunct PP to precede the argumental PPs, which shows that the domain of adjunct PPs is higher than that of argumental PPs in the Mittelfeld of the noun phrase.

- (158) kooseinoo bakudan-de-no Amerikajin niyoru machi-no yôshanai hakai
 high-tech weapon-with-Gen American by city-Gen brutal destruction
 ‘the destruction of the city by the Americans with high-tech weapons’

³⁵ It seems that this marked option is informationally triggered in the sense that the PP(s) (or one of them) become(s) more prominent than the adjective.

As shown in (159) a PP-adjunct precedes the adjective in the neutral order, which again indicates that the domain of PP-adjuncts is higher than that of the adjective.

- (159) 1956 kara-no akai kuruma
 1956 from-Gen red car
 ‘a 1956 red car’

The noun phrases in (160) further show that the Genitive DP precedes the adjective.

- (160) a. machi-no saikinno hakai
 city-Gen recent destruction
 ‘the recent destruction of the city’
 b. Jean-no akai kuruma
 Jean-Gen red car
 ‘Jean’s red car’

Thus, the Japanese data overtly indicate that the Mittelfeld is composed of a high adjunct PP domain, a medial argumental P- and a Case-related domain, and a low adjectival domain.

Let us now examine Tatar. As a head (i.e. N)-final language, Tatar displays attributive adjectives and the noun’s complements (arguments or adjuncts) in prenominal position. Interestingly, their neutral ordering is PP < Dative < Genitive < Adjectives < N. Since the noun does not move (hence its final position), the prenominal placement of the noun’s arguments and adjuncts reflects the hierarchy of their Mittelfeld Case and P-related positions, namely PP_{adjunct} > PP_{argument} > (Oblique) > Genitive > Dative > (Accusative). In (161a) the agentive PP precedes the Genitive argument, which is followed by the attributive adjective. The different noun phrases in (161b-e) show possible alternative orders among the Genitive and Dative arguments. The most neutral order is given in (161b). The Genitive Theme argument precedes the Genitive Agent argument, which is followed by the Dative Beneficiary argument. The examples in (161c-e) show alternative orders among these arguments, which must be triggered by factors involving Information Structure subtleties (marked readings).

- (161) a. dushmannar tarafynnan shäherneng rähimsez jimerelüe
 enemy from city_{Gen} brutal destruction
 ‘the brutal destruction of the city by the enemy’
 b. akcalata banknyng jarlylarga jumart buläge
 money_{Instr} bank_{Gen} poor_{Dat} generous gift
 ‘a generous gift of money to the poor by the bank’
 c. jarlylarga banknyng akcalata jumart buläge
 poor_{Dat} bank_{Gen} money_{Instr} generous gift
 d. banknyng jarlylarga akcalata jumart buläge
 bank_{Gen} poor_{Dat} money_{Instr} generous gift
 e. akcalata jarlylarga banknyng jumart buläge
 money_{Instr} poor_{Dat} bank_{Gen} generous gift

The unmarkedly ordered noun phrases in (162) further show that the Genitive argument precedes the adjective in front of the noun in the neutral order.

- (162) a. shähärneng kiläçäk jimerelüe
 city_{Gen} future destruction
 ‘the future destruction of the city’

- b. Zhannyng kyzyl mashinasy
 Jean_{Gen} red car
 ‘Jean’s red car’

In the nominal expressions below, the noun’s prenominal Genitive complement is interpreted as a Theme in (163a), an Agent in (163b) and a Possessor in (163c).

- (163) a. frantsuz sinatksisy-nyng_{Gen} kitaby
 French syntax_{Gen} book
 ‘a book of French syntax’
 b. Chomskij-nyng_{Gen} kitaby
 Chomsky_{Gen} book
 ‘a book by Chomsky’
 c. Jean-nyng_{Gen} mashinasy
 Jean_{Gen} car
 ‘Jean’s car’

In (164a) the deverbal nominal contains two Genitive arguments, the Agent preceding the Theme. In the most natural order the manner adjunct precedes the arguments. In (164b) the time adjunct occurs first in the prenominal domain, followed by the locative adjunct and the agentive Genitive argument. The noun phrases in (164c-d) display an unmarked order where the adjunct precedes the arguments in the prenominal field. Note that reordering among these prenominal constituents is possible under specific informational effects.

- (164) a. Koral belän Amerikanetslar-nyng shähärne jimerüe
 weapons with American_{Gen} city_{Acc} destruction
 ‘the destruction of the city by the Americans with violence’
 b. kanikulda dingez buendagy Zhannyng fotoräseme
 holidays-on sea border-at Jean_{Gen} picture
 ‘John’s picture on holidays at the sea border’
 c. Zhannyng dingez buendagy küp deta belän fotoräseme
 Jean_{Gen} sea border-at many details with picture
 ‘Jean’s picture of the sea border (taken) with many details’
 d. Zhannyng küp detal belän vakyigany iazuy
 Jean_{Gen} many details with event_{Acc} description
 ‘Jean’s description of the event with many details’

5. CONCLUSION

The present project of comparative syntactic analysis has focused on fourteen languages that have been grouped in the following way for the clause: (i) SVO languages (French, English and Swedish), (ii) VSO/VOS inversion languages ((Italian only partially), Spanish, Romanian, Greek), (iii) scrambling SOV languages (German, Tatar, Japanese), (iv) scrambling SVO languages (Russian and Serbo-Croatian) and (v) free order language (Hungarian). As regards the noun phrase, these languages are classified in the following way: (i) languages with the order PP < Adj < N (Tatar, Japanese), (ii) N < Adj PP (Hebrew), (iii) Adj < N < PP (English, German, Swedish, Russian, Serbo-Croatian and Hungarian) and (iv) (Adj) < N < (Adj) < PP (French, Italian, Spanish, Romanian and Greek).

A structural and transformational analysis based on the distribution of adverbs within the clause and adjectives within the noun phrase has shown that there are three parallel domains. The lowest one is the thematic domain (vP/nP), which is completely vacated by the arguments. The Mittelfeld is the hierarchized domain of modifiers (adverbs/adjectives) and the domain of Case, PPs and agreement. The latter is dispersed in the middle of the clause in function of the Information Structure expressed. Within the noun phrase, the domain of DP/PP-adjuncts is situated higher than that of Case- and P-related arguments/complements, which is located above the domain of adjectives. Finally, the CP/DP layer is the domain of focalization, topicalization, quantification, etc.

The transformations that apply to the clause and the noun phrase are very similar, namely: movement of the verb/noun as remnant vP/nP , (ii) obligatory movement of the arguments to Case/PPs and agreement positions, (iii) extended pied-piped movement involving the noun/verb plus other constituents and (iv) movement of arguments and modifiers to the left periphery.

The parametric variations we have observed among the languages are the following: firstly, some languages display (extended or not) vP -movement (French, Italian, etc.), others do not (Japanese and Tatar), and this accounts for the differences between SVO and SOV languages. Secondly, the way Information Structure interacts with the Case system within the Mittelfeld (scrambling vs. non scrambling languages). Thirdly, the peripheries are the loci of discourse-related projections, whose realization can vary across languages (lower and higher TopP and FocP, SubjP-Criterion), hence the possible VOS OVS, and OSV orders. Fourthly, some languages make use of very constrained pied-piping movement (e.g. $N < Adj2 < Adj1 < *Adj/PP$ in French noun phrases) and others allow successive pied-piping movement (e.g. $N < Adj3 < Adj2 < Adj1/PP$ in Hebrew noun phrases). Fifthly, some languages have a null subject, others do not, and this accounts for the distinction between inversion languages (VSO/VOS) and non-inversion languages (SVO). Sixthly, some languages do not display (short) head movement within DP (pre- vs. post-nominal determiner in Romanian and Swedish) and some languages display short verb-movement to C (Germanic V2). Finally, languages vary in the possibilities of adjunct fronting, (e.g. $Adv < S < V$ order in French/English and Romance $Adj < N$ order).

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