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Asymmetry in Grammar

Volume 1: Syntax and semantics

Edited by
Anna Maria Di Sciullo

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Asymmetry in grammar

Syntax and semantics

Anna Maria Di Sciullo

Introduction

The restrictions observed in a great variety of languages on the composition of linguistic elements, their dependency and their linear order indicate that Universal Grammar includes asymmetric relations. This collection of papers targets the properties of these relations in the different objects generated by the grammar. While asymmetry has mainly been discussed in syntax, the papers in this collection bring to fore the fact that asymmetry is central in semantics as well. But what is asymmetry?

In generative grammar, the term 'asymmetry' is used in more than one way. In some cases, it simply refers to differences between two features, categories or configurations. In other cases, it refers to differences between sorts of constituents, such as subject and object, complement and non-complement (subject or adjunct), with respect to the operations of the grammar. This is the case for the so-called 'asymmetries of extraction with respect to islands' the origin of which goes back to Ross's (1965) dissertation *Constraints on Variables in Syntax*. Thus, it has been observed that while the extraction of a complement contained in an embedded clause is possible, the extraction of a subject or an adjunct is rarely acceptable. The facts have been treated by different principles, including the Empty Category Principle (ECP) (Chomsky 1981), the Constraint on Extraction Domains (CED) (Huang 1982), Barriers' Minimality (Chomsky 1986), Relativized Minimality (Rizzi 1990). The Minimal Link Condition (Chomsky 1995) captures the restrictions in terms of an economy condition. The Derivation by Phase model (Chomsky 2001) allows for a derivational account of the observed asymmetries.

Asymmetry is also used to define certain relations between nodes in constituent structure trees. The structural relation of (asymmetric) c-command has been considered to be central in syntax. Thus, x c-commands y, if x does not dom-

inate y, and the first projection which dominates x also dominates y; x asymmetrically c-commands y, if x c-commands y, but y does not c-command x. These relations are considered to be determinant in the definition of movement, anaphoric relations, operator-binding and scope relations (Reinhart 1984; Chomsky 1981; Kayne 1984; Higginbotham 1985; Aoun & Lee 1993; Hornstein 1999).

More recently, the set theoretical notion of asymmetry is used to define the properties of the relations and the operations of the grammar. In Set Theory, asymmetry is a property of relations in a set such that if the ordered pair <x, y> is part of that set, the pair <y, x> is not. Symmetry and antisymmetry are also properties of relations in a set. Thus, symmetry holds if the ordered pairs <x, y> and <y, x> are in that set. The relations in a set qualify as antisymmetric if, in addition to asymmetric relations, the set may include reflexive relations, such as <x, x> and <y, y>. Asymmetric and Antisymmetric relations are not symmetric.

The set theoretical notions of asymmetry, symmetry and antisymmetry are used in syntax to derive the properties of observable linguistic phenomena. This is the case for Kayne's (1994) Linear Correspondence Axiom (LCA), according to which the linear order of terminals of a linguistic expression is a function of the asymmetric c-command relation between all the pairs of non-terminals. Moro's (2000) Dynamic Antisymmetry hypothesis is a weaker version of the LCA, as it allows for the derivation of symmetric relations, or what he calls 'points of symmetry' in the derivations. The motivation for movement is the elimination of the points of symmetry.

It has been proposed that c-command is not an elementary relation, but can be derived from the properties of derivations (Epstein 1995; Frank & Vijayashankar 1995; Reuland 1998). Asymmetric c-command falls out in a natural way from the operations of the grammar in the Minimalist Framework (Chomsky 1998), where asymmetric c-command does not play a role in core syntax. This relation is subsumed under the more elementary 'sister' and 'contain' relations, derived by the operation Merge.

The notions of asymmetry and symmetry are also used in the definitions of the operations of the grammar. Thus in Chomsky (1995) set-Merge differs from pair-Merge. The first, which basically derives head-complement structures, is said to be a symmetric operation, as either one or the other syntactic object that undergoes the operation projects its features, whereas the second, which derives adjunction structures, is asymmetric. The difference between categories and segments is expressed in terms of set theoretical terms in this framework. The operations of the grammar are also defined in terms of asymmetry. Thus, Move is asymmetric in that only the category targeted by Move projects its features in the configuration of which it is part.

Furthermore, the notion of asymmetry is part of the derivations of arguments and adjuncts. This is the case for the properties of arguments in Hale and Keyser's

(1993–1998) theory, where the restrictions on argument structure as well as argument structure alternations follow from the limitations due to the [Specifier [head Complement]] asymmetries. The properties of adjuncts also bring about important issues with respect to the asymmetry of these projections. In fact, the nature of the asymmetry of adjuncts is subject to debate. It is not clear, if they are external to the VP or if some adjuncts are part of the VP, whether they are Chomsky-adjoined to a projection or generated in the specifier of functional projections (Cinque 1999), whether there can be only one adjunct/specifier per projection (Kayne 1994; Moro 2000) or if multiple adjuncts are possible (Chomsky 1995; Ura 1996), and also whether adjuncts are distinct projections from specifiers.

A related set of questions arise with respect to the asymmetry of the full projection of a head, or phrased differently, the recursion of projections of the same sort, giving rise to further articulation of the verbal structure, as in Chomsky's (1998) small vP, as well as to other projections, including functional projections such as DP, CP and higher functional projections at the left periphery of sentences. (Ambar 2000; Rizzi 1997; Pollock, Munaro, & Poletto 1999). These works argue in favor of a fine-grained articulation of constituent structure, which can be viewed as a particular case of the basic asymmetry of syntax.

While research has been mainly focussed on the properties of syntactic asymmetries, there have also been results in the works on asymmetry in semantics. In this area, the notion of asymmetric c-command has been proposed to be crucial in the determination of anaphoric (Reinhart 1983; Reinhart & Reuland 1993; Reuland 2001) and binding relations (Chomsky 1981, 1986; Grodzinsky & Reinhart 1993). The notion of co-indexation, which was part of the binding relations, has been shown to be asymmetric in Higginbotham (1985), who proposed to replace it by the unidirectional Linking relation. The interpretation of indefinites and quantificational NPs has been proposed to match the geometry of phrasal projection in Diesing (1992). Asymmetric relations have also been proposed for the articulation of other semantic relations, including the predicate-argument relation (Hale & Keyser 1993), the modification relation (Cinque 1999), as well as temporal relations (Stowell 1995).

If phonological asymmetries and morphological asymmetries exist, as argued in Di Sciullo (1995, 2003); Keyser and Roeper (1995); Dresher and van der Hulst (1998); Dresher and Rice (1993); Hulst (1984, 1999, 2000); Piggott (1999, 2000); Rice (1992); Rice and Avery (1993); Raimy (2000), as well as syntactic and semantic asymmetries, the question that comes to mind is whether asymmetry is given by Universal Grammar. It might be the case that asymmetry is part of the initial state of the language faculty, enabling human beings to develop the grammar of the language to which they are exposed, to interpret and to quickly generate the expressions of this language in a relatively short period of time.

This collection of papers, contributes to the view that asymmetry is basic in Grammar and thus is a property of grammatical relations across the board. The following paragraphs summarize the main contributions of each paper.

Syntax

DP

In 'French definite determiners in indefinite contexts and asymmetric agreement', Antonia Androutsopoulou and Manuel Español-Echevarría propose that when definite determiners have no definite force, they are generated in an intermediate functional projection between D and NP with subsequent raising to D. They discuss in detail how the occurrence of this type of "expletive" determiners interacts with adjectival modification and the mass/count nature of the head noun, and argue that determiners may raise to D either through head movement or through phrasal movement, as heads of a constituent containing the determiner and the NP. When raising through head movement, determiners mediate φ–feature agreement between adjectives and nouns: they enter in an agreement relation first with the head noun and then with the adjective. It is shown that this mediated agreement has different properties from direct φ–feature agreement between adjectives and nouns and a 'Principle of Asymmetric Agreement', in the spirit of Chomsky (1998) and Di Sciullo (1999), is proposed which accounts for the different properties of these two instantiations of the agreement relation. In addition, the authors argue that postnominal adjectival modification must involve phrasal movement of a projection containing the noun and the expletive determiner past the adjective.

In her paper, 'Restrictive relative clauses vs. restrictive adjectives: an asymmetry within the class of modifiers', Dana Isac challenges the two most influential analyses of Restrictive Relative Clauses (the standard, adjunction view and the raising view) and she proposes instead an analysis in which the complement of D is a Conjunction Phrase, whose head (Co) is a functional category. The two conjuncts are the Spec and Complement of the Co head, and are nominal in nature, in keeping with the selectional properties of D. RRCs are analyzed as CPs that occupy the Specifier of the second conjunct. This analysis is able to capture the interpretive parallelism between RRCs and intersective adjectives and to derive some generalizations concerning the position of RRCs with respect to the 'head' Noun: a RRC can modify and precede an overt Noun only if the RRC contains an open, unsaturated argument position, which could identify the R argument of the Noun. Apart from advantages related to empirical coverage, conceptually, this analysis can easily be integrated within a view of the grammar in which asymmetric relations are generalized (Di Sciullo 1999).

In 'Asymmetry in case: Finnish and Old Russian nominative objects', Edit Jakab analyzes Finnish and Old Russian nonfinite and "defective" finite modal constructions which contain a direct object whose case is nominative instead of the canonical accusative in the framework of Asymmetry Theory (Di Sciullo 1999, 2001). The nonfinite constructions include Finnish and Old Russian infinitival sentences containing an invariable modal predicate (overt or covert) and an infinitive whose direct object is nominative. The "defective" finite constructions include Finnish imperatives that take a direct object in the nominative case. The study also examines the unique variation occurring in the case of direct objects: when the direct object is a personal pronoun in Finnish or an animate NP in Russian, the direct object's case is the canonical accusative in the same nonfinite environment that otherwise requires the direct object to be nominative. It is argued that in modal infinitivals, the NP direct objects are merged with nominative case in Spec-VP, and thus case checking happens in situ in the lexical domain. It is proposed that direct object pronouns are generated in the functional projection DP in the complement position of V with accusative case since pronouns are not lexical categories and thus necessarily behave differently from full NPs. In Asymmetry Theory, only lexical categories are part of the lexical domain; all others, including pronouns, belong to the functional domain. Hence the difference between the case realization of NP and pronominal direct objects equals the difference in their case identification, i.e., shifting or linking, respectively.

In 'Resumptive pronouns and asymmetric derivations', Cedric Boeckx develops an analysis of resumptive pronouns along the line of Kayne's (1994) proposal, and argues that resumptive pronouns are derivational residues. The main claim is that resumptive pronouns are similar to Floating quantifiers in a derivation à la Sportiche. The essence of the proposal is to relate RPs to Quantifier-Float under A-bar movement in an Irish English. The author claims that RPs are stranded D-heads. This stranding hypothesis explains why RPs in questions are restricted to D-linked contexts: if only D-linked wh-phrases are headed by D, only they will be able to strand D. It also accounts for the absence of subject RPs in many languages: no stranding can take place in subject position since it is not an intermediate landing site.

VP

In her paper 'Symmetry and asymmetry in Warlpiri syntax', Julie Anne Legate examines the syntax of Warlpiri, the prototypical nonconfigurational language, and presents new evidence from the A and A' domains showing that Warlpiri has a hierarchical phrase structure characterized by asymmetries among arguments and between arguments and adjuncts. It is thus argued that Warlpiri syntax cannot be ap-

propriately described by analyses that posit symmetric relationships between overt DPs (Hale 1983; Jelinek 1984; Baker 1996). The first part of the paper examines the A-Domain (applicatives). In particular, the author examines the behaviour of three types of dative DPs in Warlpiri–the goal of ditransitive verbs like yi-nyi "give", ethical datives, and dative adjuncts added by a preverb. The varying behaviour of these datives with respect to agreement, control, and semantic interpretation is accounted for by assuming that they are merged in different hierarchical positions within the VP structure. The second part of the paper examines the A'-Domain: Wh-questions. It is argued that Wh-words appear in an initial position, which is unique and which receives a specific interpretation as focused. Such a unique, interpreted position is difficult to capture under the symmetry-based approaches to Warlpiri, but expected under a hierarchical approach in which the position may be identified with [Spec, C]. The paper concludes with some speculations about the lack of weak crossover in focus constructions – one residual piece of symmetry in the asymmetry of Warlpiri syntax.

In 'Structural asymmetries but the same word order: the dative alternation in Spanish', Maria Cristina Cuervo examines ditransitive structures in Spanish. She claims that despite the traditional analysis in Spanish linguistics according to which Spanish lacks the dative alternation, such as *I sent the book to Mary/to France* and *I sent Mary/*Paris the book* in English, she argues that this alternation is in fact found in Spanish. She shows that although this clitic-doubling seems optional at first sight, it is in fact quite regular: the two variants correspond to two different configurations that exhibit differing syntactic and semantic characteristics.

In 'On the asymmetry of the specificational copula sentence', Jacqueline Guéron addresses two questions concerning the verb BE in English, (i) how many types of copula sentences does the grammar provide for? and (ii) are any of these sentence types symmetric? She adopts Moro's (1991, 1997) hypothesis according to which predicational copula sentences and specificational copula sentences are derived from the same underlying predicative small clause (sc) by raising either the sc subject or the sc predicate to the subject position of the sentence. However, she argues against the hypothesis that the predicative relation between the two nominals is maintained under raising. Contra Heycock and Kroch (1999), Guéron takes the subject of a specificational sentence to be non-referential and attributive. She argues further that both syntactic raising of the small clause predicate and the specificational construal that such raising triggers at LF can be traced to a single Formal Feature of the verb BE. She proposes that while predicational sentences are derived directly by merger of copula BE and its complement, specificational sentences are triggered by "augmented BE" containing a FF [+LOC], and can be derived only by predicate raising.

In her study, 'The Asymmetry between depictive and resultatives in Chinese', Niina Zhang examines the structures of two types of Chinese secondary predicates,

i.e., resultatives (RST) and depictives (DPC). One of her main observations is that DPCs precede while RSTs follow the matrix verb (Vpri). She argues that it is the situation because RSTs are complements of Vpri, whereas DPCs are merged in a higher position than Vpri. Her proposal is that predication is best described as xP, which is an extended projection of XP headed by a lexical X. She argues against Bower's Predicate Phrase showing that predication is a structural relation found in all types of categories. She further deals with three types of "mismatches" when the Vpri belongs to three types of verbs: property-change, creation, and transference. The author shows that in these instances, the distribution of secondary predicates exhibits a different pattern.

In 'Adjuncts and word order asymmetries', Thomas Ernst proposes a reconsideration of the traditional analysis of word order variation in which direction with respect to heads is parametrized. He proposes a view where only a part of a projection, i.e. the order between heads and complements is parametrized. Parametrization is not assumed to affect Specifiers, which are always to the left. This analysis attempts to account for scope properties of adjuncts. The merits of the present proposal are evaluated against Kayne's antisymmetric approach.

Clause

In her paper, 'Wh-Asymmetries', Manuela Ambar attempts a unified account of variation in wh-structures (including wh-questions and wh-exclamatives) across languages. In particular, she analyzes variation with respect to the following dimensions: possibility of wh-in-situ in questions vs. its impossibility in exclamatives; obligatory or optional inversion in wh-questions vs. no obligatory inversion in exclamatives; absence or presence of complementizers in wh-structures. The properties of wh-structures discussed in the first part are then discussed against a proposal that fits in Discourse projections like Common Ground and Universe of Discourse (cf. Heim 1982 & Calabrese 1985). The suggestion is that the Common Ground can be split into two projections – AssertiveP (a projection that accounts for presupposed information) and EvaluativeP (a projection that accounts for evaluations made by the speaker) – and that the Universe of Discourse can be likewise split into FocusP and TopicP. She proposes the following structure: XP [EvaluativeP [Evaluative' [AssertiveP [Assertive' [XP [WhP [Wh' [FocusP [Focus' [XP [IP. Based on this structure, the following typology is developed: (i) languages where AssertiveP is prominent will display a tendency for moving constituents to that projection, i.e. for having *wh*-structures without inversion, wh-in-situ and complementizer forms, which lexicalize the head of AssertiveP (the case of Brazilian Portuguese and Tetum); (ii) languages where AssertiveP is not prominent will ex-

hibit rather absence of wh-in-situ, obligatory inversion (the case of Hungarian); (iii) mixed languages will have common behaviors to both types of languages (case of French and European Portuguese).

In his paper 'Three arguments for remnant IP movement in Romance', Jean Yves Pollock investigates the syntax of Romance wh and subject inversion constructions and argues for an analysis which assumes Remnant IP movement, and implicitly against an analysis based on covert movement and head movement. The first part shows that wh-in-situ in Romance, illustrated by Bellunese *que*, is only apparently in situ, and that in fact such constituent moves overtly. It is argued that movement of the wh element is followed by the overt movement of the remnant IP constituent. The second part of the paper investigates another Romance phenomenon – French stylistic inversion – apparently unrelated to wh-in-situ, but which is shown to be amenable to the same kind of explanation, i.e. Remnant IP movement. The author argues against the view that subjects in Subject Inversion constructions in French are in situ. The third part of the paper draws on data involving French Subject Clitic inversion and Complex inversion. Based on the observation that SCLI involves 'do' support in Monese (one of the Northern Italian Dialects), and on the fact that 'do' support is an overt operation, the author derives the logical necessity of SCLI being an overt phenomenon, as well.

In their paper 'The clause structure of extraction asymmetries', Anna Maria Di Sciullo, Ilena Paul and Stanca Somesfalean observe that the extensively studied restrictions on A-bar movement vary according to the properties of the languages under analysis. Thus, the special properties of the object – in Malagasy – or the subject – in Romanian – are responsible for the opposite effects these languages illustrate with respect to extraction from wh-islands. More precisely, Romanian subjects can remain in-situ and as such they are not islands for extraction. However, all other island extraction effects are observed as in English. In Malagasy, on the other hand, objects are licensed in situ and are therefore "frozen" with respect to A-bar movement over a subject. This is the opposite of the English effects, where objects must move out of VP to a licensing position from which they are accessible to extraction. Thus the licensing conditions on arguments have direct consequences for movement. The analysis proposed here suggests that the variation in extraction can be linked to variation in the way the EPP feature is satisfied. A unified account of extraction asymmetries in English, Romanian and Malagasy is possible by adopting the Asymmetry Theory of Di Sciullo (1999, 2000 and forthcoming) and the Phase Theory of Chomsky (1999).

Semantics

In 'Interpretive asymmetries in major phrases', Greg Carlson argues, on the basis of current research in syntax and semantics, that there are basic asymmetries in DP, VP and AP before and after their associate functional categories. Given the type/token information difference, he substantiates the view that only type information is available within the lower levels of the phrase. Thus, a confluence of research, including Longobadi (1994), points to the generalization that the notion of "individuals" becomes available only at the functional DP level; lower levels are restricted to the expression of types of things alone. With respect to the verbal projection, Bach's (1986) proposal that verbs do not denote individual events but eventuality types, and that referential information is found above the VP, including Tense, Speech-act, and evidencials points in the same direction. This is also the case for Diesing's (1992) Mapping Hypothesis, which also points in the same direction: the DP in the VP is interpreted existentially, whereas the DP outside of the VP has a generic interpretation. Similar interpretive asymmetry also emerges from Rothstein's (1999) view of AP.

In 'Configurational properties of point of view roles', Peggy Speas and Carol Tenny present ongoing research on phenomena that involve the bearers of various discourse roles, which they call Point of View (POV) Roles. These roles, such as speaker, hearer, subject of consciousness, deictic center, self, pivot, source of information, perceiver, author, etc. are generally treated as peripheral to the study of syntactic structure. However, they show that a restricted subset of these roles seem to be hierarchically related to each other, show locality effects, and interact with syntactic features in a way that suggests that they are configurationally organized. They propose that discourse roles, like thematic roles in the frameworks of Hale and Keyser and Jackendoff, are not primitives of the pragmatic component, but are defined in terms of their relationship with a specific head.

In 'Contrastive topic and propositional structure', Chungmin Lee notices that because Contrastive Topic (CT) is only intonationally marked in some well-known languages such as English, it has been minimally treated. Different markers of CT in various languages and various intonational patterns for this particular phenomenon and Contrastive Predicate Topics (CPTs) are investigated. He shows how CT, which is topical and focal, is distinct from non-contrastive Topic, which is not focal at all, on the one hand, and how it is distinct from contrastive focus, which is associated with disjunctive question, on the other. CT underlies negation wide scope reading in its interaction with negation and licenses weak existential NPIs in different languages. CPT utterances witnessed in various languages necessarily convey unrealized polarity-reversed or negative higher predicate meanings, which is largely semantic and partly pragmatic. This cannot be a matter of conversational

implicature and may not even be a matter of conventional implicature in the sense that the speaker's real intent is to convey this unrealized proposition.

In 'Categories, types and qualia selection', James Pustejovsky explores selectional patterns in language. Type coercion is a semantic parameter which gives rise to highly polymorphic selectional behavior in language, resulting in both unilateral and co-compositional selection in a phrase. The author contrasts this with languages that employ classifier systems to ensure proper typing of arguments. Variation in typing and the application of coercion, as well as degrees of underspecification are general parameters along which the grammars of language can differ. It is important to explore the thesis that semantic specification, when viewed in an appropriately rich framework of compositionality, may help explain cross-linguistic variations in both syntactic and semantic phenomena.

This collection of papers came out from a conference on Asymmetry in Grammar held at the Université du Québec à Montréal in May 2001. I would like to thank the participants to the Conference as well as the members of the Asymmetry Project who helped in the organization and in the process of editing this volume. You will find all their names in our web site: www.asymmetryproject.uqam.ca

Finally, I would also like to thank the Social Sciences and Research Council of Canada for making this Conference possible, and more generally for the financial support to the Major Collaborative Research Project on Asymmetries in Natural Languages and their Treatment by the Performance Systems (Grant no. 412-97-0016).

French definite determiners in indefinite contexts and asymmetric agreement*

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Introduction

In this paper we propose that certain types of definite determiners are not generated under D_0, the head of the topmost functional projection in a DP, but rather under a projection above NP and below the projections hosting adjectives. In the course of the syntactic derivation, however, these determiners raise up to D_0. This theoretical claim is supported by our analysis of the interaction between adjectives and definite determiners in indefinite contexts such as *J'ai acheté du bon vin/??de bon vin* "lit. I have bought of-the good wine/?? of good wine" in French. Moreover, we claim that the Spec-Head agreement relation is asymmetrical, in the sense that the feature content of specifiers cannot be richer than that of heads for an agreement relation to hold. The paper is organized as follows. In Sections 1 and 2, we present the basic facts concerning the interaction between determiners and prenominal adjectives in the relevant contexts. An account of these facts is provided in Sections 3 and 4. In Section 5, we extend our account to DPs involving postnominal adjectives, whereas in Section 6 we deal with DPs with no adjectival modification. The paper closes with some concluding remarks in Section 7.

1. French definite determiners in indefinite contexts

French definite articles may occur heading DPs which do not receive a definite interpretation. In this paper we focus on cases such as the ones illustrated in (1)–(2):

(1) *J'ai mangé du pain.*
I have eaten of the bread
'I ate bread.'

(2) *J'ai des crayons.*
I have of.the pencils
'I have pencils.'

The direct objects in (1)–(2) can be decomposed as follows, cf. Milner (1978):

(3) QUANT + *de* + Det + N

le	*pain*	cf. (1)
the	bread	
les	*crayons*	cf. (2)
the	pencils	

That is, the DP following the preposition *de* contains a form of the definite determiner, i.e. *le, la, les*. In spite of the presence of this definite determiner, the DPs in (1)–(2) do not receive a presuppositional interpretation. *Du pain* and *des crayons* do not need to refer to a known amount of bread or a known set of pencils. On the basis of this observation, the definite determiner appearing in (1) and (2) can be labeled as expletive. Milner (1978) as well as Jones (1996) relate the determiner appearing in the contexts in (1)–(2) to the one occurring in generic contexts, in French, as for instance in (4):

(4) *Les lions sont méchants.*
the lions are mean
'Lions are mean.'

This correlation, although may enlighten the availability of an expletive definite determiner in contexts such as the ones in (1) and (2), leaves a number of obscure points. For instance, in contexts similar to that in (2), such as the one in (5):

(5) *J'ai acheté beaucoup des livres.*
I have bought many of.the books
'I bought many of the books.'

the determiner *les* cannot receive a generic interpretation. (5) contrasts with (6) in the relevant interpretation:

(6) *J'ai acheté beaucoup de livres.*
I have bought many of books
'I bought many books.'

The interpretation of (5) necessarily involves a known set of books, whereas that of (6) may not. On the other hand, the meaning of sentences like that in (6), as well as that of similar DPs in related languages, for instance, the Spanish DP in (7):

(7) *He comprado muchos de los libros.*
I.have bought many of the books
'I have bought many of the books.'

raises the question of why DPs following partitive *de* cannot get a generic interpretation. Note in this respect that definite DPs can get a generic interpretation after *non-partitive de*, as shown in the Spanish example in (8):

(8) *La melena de los leones es encantadora.*
the mane of the lions is charming
'The mane of the lions is charming.'

Putting aside the obligatory non-generic interpretation for the definite DP only in the cases in which an overt quantifier precedes *de*, cf. (7), there are other interesting phenomena involved in these contexts which will be presented in the following sections.

2. DPs and bare NPs in indefinite contexts

In the preceding section we considered the occurrence of an expletive determiner in cases like those in (1) and (2). This expletive determiner is not only possible, but obligatory in the relevant cases, repeated here under (9) and (10):

(9) *J'ai mangé de *(le) pain.*
I have eaten of the bread
'I ate bread.'

(10) *J'ai de *(les) crayons.*
I have of the pencils
'I have pencils.'

This expletive determiner may disappear in: (a) negative contexts, cf. (11), and (b) in the presence of a prenominal adjective, cf. (12):

(11) *Je n' ai pas mangé de (le) pain.*
I NEG.have NEG eaten of the bread
'I didn't eat bread.'

(12) a. *J'ai acheté de (les) bons crayons.*
I have bought of the good pencils
'I bought good pencils.'
b. *J'ai acheté de ??(le) bon vin.* (Milner 1978:31)
I have bought of the good wine
'I bought good wine.'

As shown in the contrast in (12), the expletive determiner can be omitted only if the head noun is a count noun. In the presence of a mass noun, cf. *vin* "wine" in (12b), the expletive determiner must surface.

In the following sections an account will be provided of how the occurrence of a prenominal adjective may condition the occurrence of the particular type of expletive determiner found in the French indefinite contexts discussed here.[1]

3. Configurational properties of French expletive determiners in indefinite contexts

Elaborating on the analysis developed in Androutsopoulou (2000b) for Greek determiners, we claim that the expletive determiner in French indefinite contexts such as the one in (1)–(2) is not introduced in the derivation under D, that is in the configuration in (13b), but rather that it is raised to D from a lower position, i.e. following the derivation in (13c):

(13) a. *J'ai acheté de (les) bons crayons.*
I have bought of the good pencils
'I bought good pencils.'

b. $[_{DP}\ [_{D}$ les$]\ [_{FP}$ AP $[_{F}]\ [_{NP}\ [\ _{N}$ crayons$]\ ]\ ]\ ]$[2]

c. $[_{DP}\ [_{D}$ les$_i]\ [_{DP*3}\ [_{D*3}\ t_i]\ [_{DP*2}\ [_{AP}$ bons$]\ [_{D*2}\ t_i]\ [_{DP*1}\ [_{NPj}$ crayons$]$
$[_{D*1}\ t_i]\ t_j\ ]\ ]\ ]\ ]$

DP*s are DP-like functional projections, in the sense that they may host an expletive definite determiner, for instance a pleonastic definite determiner in a Greek DP containing one or more adjectives, or the trace of an expletive definite determiner.[3] DP*s do not host any of the semantic features that are usually associated with D_0.

The contrast between the configurations in (13b) and (13c) allows us to structurally distinguish two types of determiners: the real definite determiner, and the expletive one. We saw in Section 2 that the occurrence of expletive determiners obeys some restrictions not holding for full determiners. One of these restrictions involves prenominal adjectives.

4. The interaction between expletive determiners and prenominal adjectives

In Section 2, we observed that expletive determiners of the sort considered here may disappear in the presence of a prenominal adjective. It was also observed, however, cf. (12), that in certain cases, the elimination of the expletive determiner

may yield marginal results. There is a clear contrast in acceptability between the examples in (14):

(14) a. ??*J'ai acheté de bon vin.*
I have bought of good wine
'I bought good wine.'
b. *J'ai acheté de bonnes carottes.*
I have bought of good.PL carrots
'I bought good carrots.'

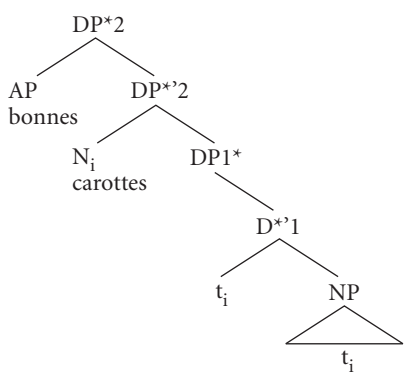
We would like to claim that the problem with (14a) has to do with the *mass* character of the noun, i.e. *vin*.[4] (14b) shows that when a count noun is involved, the determiner can be freely omitted. Note, in addition, that in both cases the version with the expletive determiner is fully acceptable:

(15) a. *J'ai acheté du bon vin.*
I have bought of.the good wine
'I bought good wine.'
b. *J'ai acheté des bonnes carottes.*
I have bought of.the good.PL carrots
'I bought good carrots.'

Putting the paradigm in (14)–(15) under the perspective of the basic proposal outlined in Section 3 (i.e. that the expletive determiner is raised up to D from a projection immediately above NP), we can conclude that a) apart from the derivation in (13c), there is an alternative derivation, which does not involve an expletive determiner, and (b) that this alternative derivation is blocked in the presence of a mass noun.

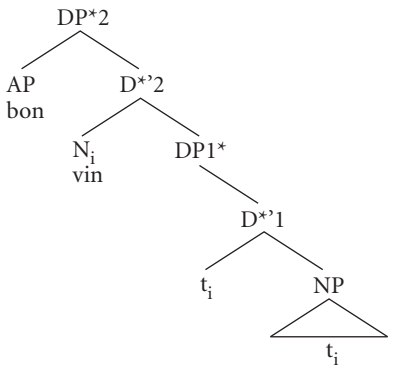
We would like to propose that the alternative derivation in question involves partial N-raising, as shown in (16):[5]

(16)



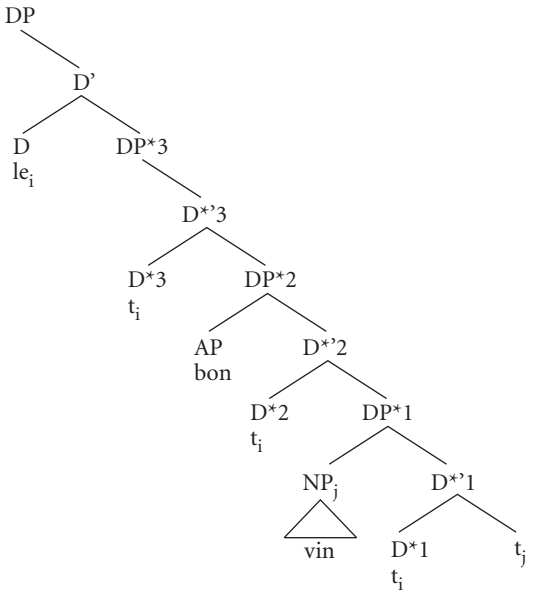
That is, N is raised up to the projection where agreement between the adjective and the noun in φ-features is checked, i.e. DP*2. We do not have a clear idea of why the insertion of the expletive determiner under D*'1 in the derivation is optional, but we take it to be the case, cf. Section 6 below for further discussion. The same step in the derivation proposed in (16) for *de bonnes carottes* "of good carrots" should in principle be possible for *??de bon vin* "of good wine", contrary to fact:

(17)



We would like to claim that the derivation of *de bon vin* crashes at the point of the derivation depicted in (17). Mass nouns like *vin* lack a morphosyntactic specification for Number, and a proper number form for the agreeing adjective in Spec, DP*2 in (17) cannot be selected. The derivation crashes because agreement in number is not possible. On the other hand, *carottes* "carrots", which has a [Number] feature, can agree in all the relevant φ-features with the adjective in Spec, DP*2, cf. (16). The alternative derivation involving generation and raising of an expletive determiner in the case of mass nouns, namely *du bon vin* "of good wine", does not encounter the same sort of problems:

(18)



The determiner *le* can enter into an agreement relation with the adjective in Spec, DP*2, and the derivation in (18) goes through. The question that arises now is whether the determiner merged under D*1 must agree in number with the NP (a mass noun) in Spec, DP*1, and if so, why this does not render the derivation illicit. We present an answer to this question in the following section.

4.1 Asymmetric agreement

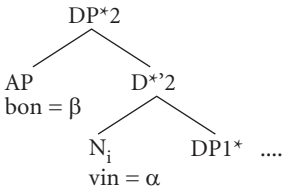
The contrast between adjectives and determiners with respect to agreement with the noun, which arose in the preceding section, can be accounted for if we assume the following principle:

(19) *Principle of asymmetric agreement*
In an agreement relation between two elements α and β, where α is the head and β is the specifier, the set of agreeing features of β must be a subset of the set of agreeing features of α.[6]

According to (19), a head must agree with all the agreeing features of the specifier. Otherwise, the agreeing features of the specifier would not be a subset (not even a non-proper subset) of the agreeing features of the head. In the case under consideration in (17), [Number] is not an agreeing feature on the mass noun, but it is an agreeing feature on the adjective *bon*. Thus, the set of agreeing features on the head

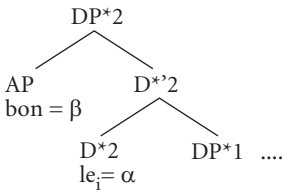
vin, will be a subset of the set of agreeing features on the specifier *bon*, contravening the principle in (19):

(20)



On the other hand, [Number] is an agreeing feature on the determiner *le*, raised to D*2:

(21)



Therefore, the set of agreeing features of β, [Number], [Gender] and [Case], is a subset, although a non-proper one, of the set of agreeing features of the determiner, i.e. α. Finally, the principle in (19) does not rule out a possible agreement relation between N and D under DP*1. We have assumed that the mass noun *vin* is defective with respect to the feature [Number], which means that [Number] is not an agreeing feature of *vin*. However, this is not a problem in the configuration under DP*1, because *le*, which contains a superset of the set of agreeing features of *vin*, is the head and not the specifier in this configuration.

5. Postnominal adjectives in indefinite contexts

We have provided an analysis of the distribution of the expletive definite determiner appearing in indefinite contexts for the cases involving prenominal adjectives. The examples in (22) show that only prenominal adjectives are compatible with determinerless NPs:

(22) a. **J'ai mangé de carottes jaunes.*
I have eaten of carrots yellow.PL

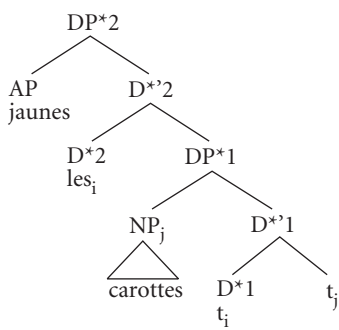
b. *J'ai mangé de bonnes carottes.*
I have eaten of good.PL carrots
'I ate good carrots.'

c. *J'ai mangé des bonnes carottes.*
I have eaten of-the good.PL carrots
'I ate good carrots.'

d. *J'ai mangé des carottes jaunes.*
I have eaten of-the carrots yellow.PL
'I ate yellow carrots.'

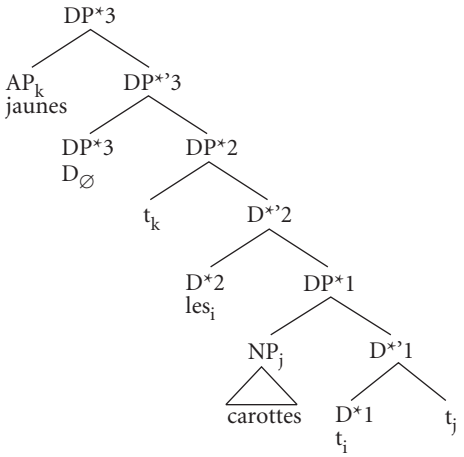
Thus, with a prenominal adjective like *bonnes*, the expletive determiner may or may not appear, cf. (22b)–(22c), whereas with a postnominal adjective like *jaunes*, the expletive determiner is obligatory, cf. the contrast between (22a) and (22d). Prenominal and postnominal adjectives, then, impose different configurational conditions on the overall structure of the DP, so that the possibility of occurrence of an expletive determiner is affected by these configurational conditions. In fact, the paradigm in (22) cannot be explained if we simply assume that this configurational difference between pre- and postnominal adjectives is just a difference between left versus right adjunction. We would like to outline an account of the effect illustrated in (22) on the basis of a derivational theory for postnominal adjectives. In agreement with the approach in Kayne (1994), we propose that French postnominal adjectives involve movement of a projection containing the noun from a position lower than the adjective to the left of the adjectival projections.[7] The core idea is implemented for (22d) as shown in (23)–(25):

(23)



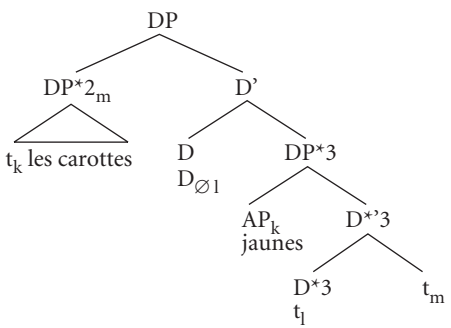
The derivation up to (23) is identical for prenominal adjectives co-occurring with an expletive definite determiner and postnominal adjectives. We would like to claim that, at this point, a D feature is introduced in the derivation above DP*2, i.e. under DP*3. The spell-out of this feature are the adjectival determiners of languages like Greek or Albanian (cf. Androutsopoulou 2000a).[8] Furthermore, the AP moves to the specifier of the new D*-head, with which it agrees in the relevant φ-features, as shown in (24):

(24)



At this point, D$_\varnothing$ and DP*2 are raised to the highest DP in the structure:[9]

(25)



The proposed derivation in (23)–(25) entails that French has a zero D*-head, at least in the cases in which the adjectives appear postnominally, which corresponds to the adjectival determiners found in other languages. Movement of DP*2 to the specifier of DP is only possible if DP*2 is headed by a determiner. If DP*2 is headed by N, then the constituent to be moved has no proper feature specification and therefore, no movement is possible. This distinction is reflected empirically in the fact that postnominal adjectives are incompatible with determinerless DPs in the contexts under discussion, cf. the ungrammaticality of (22a). What we have in mind here is a "hybrid" derivation which would involve:

– partial N-raising to the head of DP*2, as in the derivation in (16),
– insertion of the null expletive determiner D$_\varnothing$ under the head of DP*3 and movement,
– of the adjective to Spec, DP*3, as in (24), and
– raising of DP*2, as in (25).

6. Determiner optionality and adjectival determiners

In Section 4, which deals with French partitives containing an adjective, we assumed that the introduction of an expletive determiner under DP*1 is in principle optional. This optionality is not reflected in data such as those in (26), involving French partitives which do not contain an adjective:

(26) a. *J'ai mangé du pain.*
I have eaten of.the bread
'I ate bread.'
b. **J'ai mangé de pain.*
I have eaten of bread
c. *J'ai mangé des carottes.*
I have eaten of.the carrots
'I ate carrots.'
d. **J'ai mangé de carottes.*
I have eaten of carrots

The data in (26) seem to indicate that the expletive determiner is not optional, but rather obligatory. In spite of the apparent lack of optionality found in the paradigm in (26), we would like to claim that the insertion into the numeration of an expletive determiner is still optional in principle. The ungrammaticality of the examples without determiner in (26) does not reflect the fact that the occurrence of the expletive determiner is obligatory, but rather that a derivation not involving a determiner is unavailable.

The ungrammaticality of the examples without determiner in (26) has its source in the fact that nouns are not raised up to D in French, presumably because they lack the appropriate categorial D-feature. Consequently, in the absence of a determiner which is generated in a Spec-Head configuration with the noun in a low D(-like) position (the head of DP*1 in our structures) and then is raised up to D, as in (13c) or (18), transmission of φ-features from N to D is not achieved. Thus, the presence of the determiner is rendered obligatory.

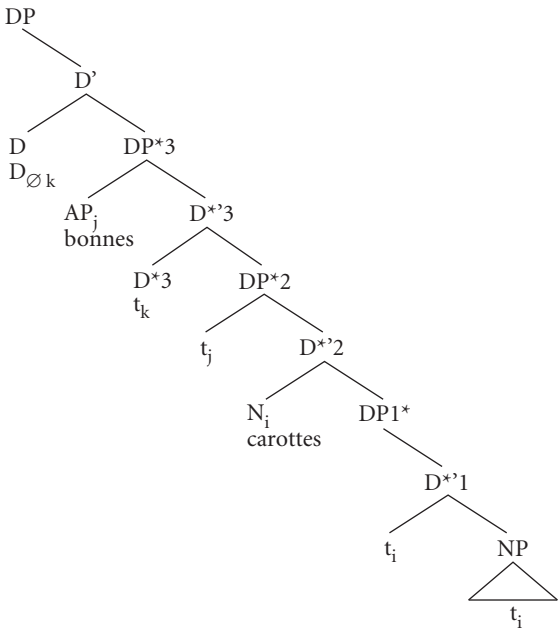
In the sort of structures considered in this paper, N may undergo partial raising up to the adjectival agreement projection, i.e. DP*2, cf. the partial derivation in (16), but not up to D. In fact, the availability of movement to the adjectival agreement position has been interpreted as the source of the contrast between mass and count nouns in the relevant contexts involving prenominal adjectives, cf. (14). The fact that the noun may be raised to a projection under which it enters into an agreement relation with an adjective opens new possibilities for the transmission of φ-features from the noun up to D. In other words, the presence of a low D-head which is raised and transmits φ-features may be obviated in cases in which the alterna-

tive derivation – namely, movement of the noun to the projection (DP*2 in our structures) under which it enters into an agreement relation with the adjective – is possible. Let us consider again in detail the relevant cases.

The contrast in (14) gives us the only case in which the occurrence of the expletive determiner may be obviated, namely (14b), the case in which the adjective is prenominal and the noun is a count noun. One might think that the complete derivation of the post-*de* DP in (14b), repeated here as (27a), is as in (27b), cf. also (16):

(27) a. *J'ai acheté de bonnes carottes.*

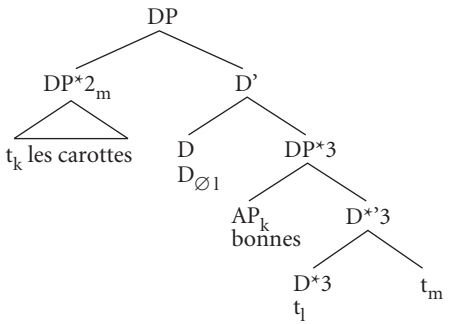
b. (*to be revised*)



The derivation in (27b) combines the one in (16) and that in the upper part of (24) coupled with the movement of the null adjectival determiner to D_0. It provides a framework flexible enough to derive prenominal and postnominal adjectives with the desired properties with respect to the occurrence of expletive definite determiners in indefinite contexts. However, it fails to provide a configurational characterization distinguishing prenominal from postnominal adjectives. Both types of adjectives move to Spec, DP*2, agree with the noun or an intermediate expletive determiner, and finally move to Spec, DP*3 and agree with the null adjectival determiner. The null adjectival determiner moves in both cases to D_0. Finally, postnominal adjectives are derived via movement of DP*2 to Spec, DP.

Consideration of the derivation in (28), however, lends support to the idea that an adequate treatment of the set of constructions under discussion must involve a different syntactic characterization of prenominal and postnominal adjectives:

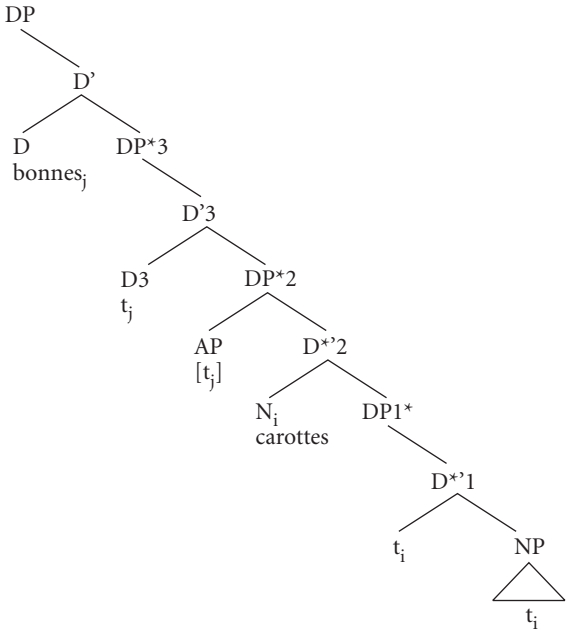
(28)



The string resulting from (28), i.e. **des carottes bonnes*, is ungrammatical, although nothing said so far rules out (28). The expletive determiner can be licensed under DP*1, then be raised to the head of DP*2 where it agrees with the adjective, cf. (24). After the movement of the adjective to Spec, DP*3, the determiner, pied-piping the NP, moves to Spec, DP, cf. (25).

We would like to claim that the derivation in (28) is unavailable, precisely because the adjective *bon* is a prenominal adjective, as opposed to *jaune*, which is a postnominal one, and prenominal and postnominal adjectives differ in a crucial way with respect to the syntactic configurations they involve. Following the analysis of Greek adjectival modification in Androutsopoulou (2000b), we propose that prenominal adjectives differ from postnominal ones as follows: prenominal adjectives move to the head of D*'3 and subsequently to D. Accordingly, the structure in (27b) should be revised as in (29):

(29)



If we think of the movement of A to the head of DP as a substitution movement, which among other consequences, renders the head of DP inert with respect to its ability to attract a constituent to its specifier, then the derivation in (30) is ruled out, cf. (28). DP*2 cannot move to Spec, DP because it is not attracted by any relevant head:

(30) $[_{DP}\ [_{DP*2}\ t_k \text{ les carottes}]_m\ [_D \text{ bonnes}_k]\ [_{DP*3}\ [_{D*3}]\ t_m\ ]\ ]$

We have proposed that in the general case, prenominal adjectives end up as heads, as in English, whereas postnominal adjectives are specifiers throughout the whole syntactic derivation. This squares well with independent properties distinguishing prenominal from postnominal adjectives; for instance, Romance prenominal adjectives, in contrast to postnominal ones, cannot take complements. There is one case in which prenominal adjectives may stay in a specifier position. The case in which the expletive determiner is raised up to D from DP*1, cf. (18), that is, cases like *du bon vin* or *des bonnes carottes*.

7. Conclusion

We have provided an account of the distribution of expletive definite determiners in French indefinite contexts based on the idea that this type of determiner is

generated low within the DP and is raised up to D. The introduction of this determiner is optional, and in the general case it mediates the transmission of nominal features up to D. This expletive determiner may be absent only if there is a prenominal adjective and the noun is a count one. To account for this case, we have claimed that there may be partial N-raising to a projection in which N agrees with the prenominal adjective. This agreement relation enables the transmission of nominal features up to D, cf. (29). In addition, we have derived the particular behavior of postnominal adjectives which do not allow determinerless DPs in the contexts under consideration by means of DP-internal XP-movement.

Notes

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1. In this paper we do not address the interaction of negation and the expletive determiner under consideration, i.e. the phenomenon illustrated in (11).

2. FP stands for Functional Projection (Cinque 1994).

3. We refer to examples like that in (i), which in Androutsopoulou (2000b) are assigned the structure in (ii):

(i) *to kokino to vivlio*
the red the book
'the red book'

(ii) $[_{DP}\ to_j\ [_{DP*3}\ [kokino]_i\ [_{D*03}\ t_j]\ [_{DP*2}\ t_i\ [_{D*02} to_k]\ [\ [_{DP*1}\ [_{NP}\ vivlio\ ]_m\ [_{D*01}\ t_k]\ t_m\ t_i$

4. Plural mass nouns like *épinards* "spinach" pattern with count nouns, cf. (14b), (15b):

(i) *J'ai mangé de/des bons épinards.*
I have eaten of/of.the good.PL spinach.PL
'I have eaten good spinach.'

Épinards "spinach", although a mass noun, is overtly marked for plural number, whereas *vin* "wine" is not. In the account below we capitalize on the morphosyntactic realization of the feature [Number] rather than on the mass/count nature of the nominal. Under such an approach, the similar behavior of *crayons* "pencils" and *épinards* "spinach" is not surprising.

5. Partial N-raising is a standard assumption for a number of Romance languages as in Bernstein (1993), Cinque (1994), Valois (1991), among many others.

6. Chomsky (1998) discusses cases in which a *probe* and a *goal* (a head and a specifier, respectively, in standard terminology) entering into an agreement relation do not have the

same number of features and makes use of this fact to allow for a feature not to *erase* and thus, enter in multiple checking relations. See also Di Sciullo (1999). Note also that the principle in the text is not claiming that the agreement relation is asymmetric in a formal sense, i.e. that for any *a, b* R_{agree} (a, b) $\rightarrow$ $\sim R_{agree}$ (b, a).

7. Androutsopoulou (1994) had independently proposed that the noun is preposed via phrasal movement in Greek definite DPs involving postnominal adjectives.

8. The term *adjectival determiner* refers to pleonastic definite determiners appearing in DPs containing adjectives in such languages, cf. Note 3.

9. It may be the case that the projection to the specifier and head of which [les carottes] and $D_{\emptyset}$ are raised respectively is not DP, that is, the topmost projection of the DP, but yet another DP*, DP*4, immediately dominated by DP. Then, a final step in the derivation would be movement of the article *les* out of [les carottes] to left-adjoin to D_0.

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Restrictive relative clauses vs. restrictive Adjectives

An asymmetry within the class of modifiers*

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0. The proposal

0.1 Restrictive relative clauses and intersective Adjectives

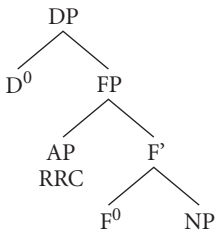
We propose an analysis of restrictive relative clauses that capitalizes on the observation that the semantic relation between a restrictive relative clause (RRC) and its 'head' Noun is similar to the relation between an intersective or extensional Adjective and a Noun. The expression in (1a) denotes the intersection between the set of entities denoted by the Noun and the set of entities denoted by the Adjective. Similarly, in (1b), the Noun followed by the RRC denotes the intersection between the set of entities denoted by the Noun and the set denoted by the RRC.

(1) a. tall student
b. student who is tall

We propose to capture this semantic similarity by positing a similar syntax for the relation between a Noun and an intersective Adjective, on the one hand, and the relation between a Noun and a RRC, on the other hand. Syntactically, intersective Adjectives could show up either in an attributive position, or in a predicative one, as illustrated in (2). We show that the syntax of RRCs is similar to that of attributive intersective adjectives, i.e. that both are Specifiers of some nominal functional projection, as in (3).

(2) a. the tall student
b. the student is tall

(3)



0.2 Identification of the R argument in the 'head' Noun

We point out that there are also differences between the two types of nominal modifiers, i.e. attributive intersective Adjectives and RRCs. Although both types of modifiers can show up either prenominally or postnominally (at least cross-linguistically), the postnominal position is accounted for by different syntactic phenomena: N-movement in the case of adjectival modification, and Gapping in the case of modification by a RRC. We show that a Noun modified by a RRC can be overt only if the RC contains an open, unsaturated argument position, which could identify the R argument of the Noun.

The paper is organized as follows: in Section 1, we discuss the two most prominent analyses of relative clauses existent in the literature (the 'standard' adjunction view, and the 'head raising' view) and we point out their strengths and weaknesses; in Section 2, we present a different analysis of RRCs, which is based on the parallelism between restrictive relative constructions and attributive intersective Adjectives. We show that our proposal is able to overcome the problems faced by the standard analysis or by the head raising analysis and that it also has additional advantages, namely it is able to derive some generalizations concerning the position of the RRC with respect to the modified Noun: prenominal or postnominal. In Section 3, we present the conclusions.

1. Previous analyses

There are two types of syntactic analyses of RRCs in the recent literature: the standard view, which assumes that RRCs are adjoined to an NP and that the head N is base-generated outside the relative clause (Chomsky 1977; Safir 1986; Browning 1991); and a raising approach, which assumes that the head N raises from inside the RRC (Vergnaud 1974; Kayne 1994).

1.1 The Adjunction Hypothesis (Chomsky 1977; Safir 1986; Browning 1991)

The standard view on RRCs is that the 'head' Noun is base-generated outside the CP expressing the RRC, and that it is linked to the wh-word within the CP by an interpretive relation. This relation is taken to be one of predication (although not one based on theta role assignment) by Williams (1994). Others (Safir 1986; Browning 1991) identify this relation with binding or 'construal'.

(4) $[_{DP}$ the $[_{NP}$ $[_{NP}$ book$_j$$][_{CP}$ which$_j$ John has read]]]

Several authors (Vergnaud 1974; Kayne 1994; Alexiadou et al. 2000) have pointed out that there are certain problems with the adjunction hypothesis. Below we revise some of these criticisms and we also add our own arguments against this view:

1.1.1 *Conflict with the Linear Correspondence Axiom*

Under the adjunction analysis, the RRC is adjoined to the right of the NP, contrary to Kayne's (1994) Linear Correspondence Axiom (LCA), given in (5).

(5) Linear Correspondence Axiom (LCA): For any non-terminals X, Y, if X asymmetrically c-commands Y, then all terminals x dominated by X precede all terminals y dominated by Y

One consequence of the LCA is that right adjunction is prohibited. Since Y adjoined to X asymmetrically c-commands X, the terminals of Y may only precede those of X in the string. The adjunction analysis is thus excluded for postnominal relatives (as in English), where the RC follows the rest of the DP it is supposed to be adjoined to.

Similarly, this view also violates the Strict Asymmetry Hypothesis (Di Sciullo 1999, 2000).

(6) Grammatical relations are asymmetrical

Given this hypothesis, all structural relations, at any point in the derivation must be asymmetrical. This view is stronger and more restricted than Kayne's, as it excludes any form of adjunction whatsoever, be it right adjunction or left adjunction.

An adjunction analysis of restrictive relative clauses would therefore fail to comply with the requirement in (6), and at least in some languages, like English, it would also violate LCA.

1.1.2 *Comparatives, equatives and degree constructions*

The adjunction analysis appears as problematic when comparatives, equatives and degree constructions are considered.

(7) a. long*er* books [*than John can read*]
b. *as* many books [*as John can read*]
c. *too* many books [*for John to read*]
d. the book [that John read]
e. every book [that John read]
∀x [book(x) & read (John, x)]

There are several reasons to assume that the bracketed clauses in (7a, b, c) are very similar to relative clauses: (i) the constructions in (7a, b, c) as a whole function externally as a DP, just as the construction in (7d), which contains a relative clause; (ii) the Degree Word (*-er, too, as*) functions like a Determiner that heads the construction (Corver 1990). Semantically the bracketed clauses in (7a, b, c) are interpreted in the scope of the Determiner. Similarly, under the adjunction hypothesis, a restrictive relative is interpreted within the scope of the Determiner, as illustrated by (7e); (iii) the bracketed clauses in (7a, b, c) display internal movement which is similar to the wh-movement within a relative clause; (iv) the bracketed clauses in (7a, b, c) appear right-peripherally within the DP or may undergo extraposition, just like RRCs; (v) in some English dialects, *as*, which can head a comparative clause, can also introduce relative clauses.

(8) He's a man as likes his beer.
That's my daughter as you see her.

Given these considerations, the clauses in (7a, b, c) should be assigned the same analysis as RRCs, i.e. they should be analyzed as adjuncts to an NP, under an adjunction analysis. The problem with this, however, is that the selection of the clause by the degree word fails to be captured. Clearly, the Degree Words in (7a, b, c), i.e. *-er* in (7a), *as* in (7b), and *too* in (7c), select a comparative CP, and the optimal expression of selection relation is in terms of a head directly selecting its complement. The problem with assigning an adjunction analysis to the sentences in (7a, b, c) is then that one would have to find a way of capturing the fact that a head selects an adjunct to its complement.

1.1.3 *Binding and scope reconstruction*

In (9), the NP which is the external head of the restrictive relative contains a reflexive (*himself*) which may be interpreted as dependent on *John*, which is an NP within the relative clause.

(9) the portrait of himself$_j$ [OP$_i$ that John$_j$ painted t$_i$]
*the portrait of him$_j$ [OP$_i$ that John$_j$ painted t$_i$].

Crucially, this kind of dependency may only arise if the reflexive could somehow be reconstructed in a position which is c-commanded by *John*. However, reconstruc-

tion effects are conditional on movement operations, as proposed by Chomsky (1993): the reflexive could be reconstructed in the position corresponding to the gap within the relative clause only if the external 'head' of the relative clause were connected to the gap via movement. In (9), the only constituent that can be reconstructed into the trace position in (9) is the operator, and not the NP 'portrait of himself'. However, reconstructing the operator into its trace position cannot account for the binding of the anaphor, since the anaphor is not contained in the operator, but in the external 'head'.

Thus, to the extent that the account of reconstruction effects in terms of movement chains is correct, facts like (9) cast doubt on the explanatory power of the adjunction hypothesis.

1.1.4 *Head internal relatives*

Still another problem with the base-generated external head hypothesis is the existence of (10), where the nominal 'head' of the relative clause is contained within, rather than being external to it.

(10) [$_{DP}$[$_{CP}$ *Mary* [$_{DP}$ *owiza wa*] *kage*] *ki*] *he ophewathu*
Mary quilt a make the I-buy
'I bought the quilt that Mary made'. (Lakhota)

Under the assumption that the 'head' Noun in (10), i.e. [$_{DP}$ *owiza wa*], starts out as adjoined to the relative clause, it is at least difficult to account for the derivation of internally headed relative clauses.

1.2 An alternative: Determiner complementation and head raising. Kayne's (1994) Proposal

Alternatives to the adjunction hypothesis have existed since as early as Vergnaud (1974), who proposes that the 'head' of relative clauses originates inside the relative clause and so is linked with an internal position in the relative clause by movement. In Kayne's (1994) variant of the 'head-raising' hypothesis, the relative clause is a complement to D^0, as in (11a), and the 'head' Noun raises to the specifier of the complement of D (i.e. SpecCP), as in (11b).

(11) a. [$_{DP}$ the [$_{CP}$ that John ate [$_{DP}$ pizza]]]]
b. [$_{DP}$ the [$_{CP}$ [$_{DPj}$ pizza] that John ate t_j]]]

Examples with relative pronouns (analyzed as transitive Determiners) have a more complex derivation, involving an initial step in which the NP complement of D raises to SpecDP, as in (12):

(12) a. [$_{DP}$ the [$_{CP}$ that John ate [$_{DP}$ which [$_{NP}$ pizza]]]]]

b. $[_{DP}$ the $[_{CP}$ that John ate $[_{DP}$ $[_{NPj}$ pizza] which t_j]]]]
c. $[_{DP}$ the $[_{CP}$ $[_{DP}$ $[_{NPj}$ pizza] which $t_j]_k$ C^0 John ate $t_k]]]$

In (12), there is first movement within the relativized Direct Object: the object NP raises in front of the Determiner that selects it, to the SpecDP position, as in (12b). This initial step is followed by another instance of movement, which is actually similar to the movement of the object DP in (11), and which targets the SpecCP position, as in (12c).

There are certain obvious advantages of this view over the adjunction hypothesis, mainly related to the fact that it offers a solution to the problems that an adjunction view encounters (as listed under 1.1). More specifically, (i) this view enables a restrictive theory of phrase structure and of the order-hierarchy relation to be upheld (LCA), and it also complies with the Strict Asymmetry Hypothesis; (ii) comparatives, equatives and degree constructions such as (7a, b, c) can easily be accounted for under a head raising analysis; (iii) connectivity effects such as (9) can also receive a natural analysis; and (iv) internally headed relatives can be analyzed as ordinary relative constructions in which head raising takes place after S structure.

1.2.1 *Problems with the movement analysis*

However, the 'head raising' view also faces a number of problems, which are mainly connected to the fact that it imposes an unorthodox constituency on the head-relative sequence (cf. Borsley 1997; Alexiadou et al. 2000, for more extensive discussion).

1.2.1.1 *Constituency.* One such problem is that according to the derivation in (12), the wh-pronoun and the relative clause do not form a constituent. However, the example in (13) shows that the opposite is the case:

(13) the pizza [which Bill liked] and [which Mary hated]

Since only constituents can be coordinated, 'which Bill liked' and 'which Mary hated' in (13) must be constituents.

1.2.1.2 *Extraposition.* Another (similar) problem with the 'head raising' approach is that it fails to account for the possibility of extraposing relative clauses.

(14) a. we will discuss *the claim* tomorrow *that John made yesterday*
b. we will see *the boy* tomorrow *with whose mother I spoke*

The analysis in (11) indicates that sequence 'that John made yesterday' is dominated by a C bar, since the NP 'claim' has moved to SpecCP. We would then expect that movement operations, which only affect heads or maximal constituents,

would not affect such sequences. However, as (14a) shows, 'that John made yesterday' can be displaced by movement, which questions its analysis as a submaximal constituent given in (11). Moreover, under a head raising analysis, (14b) would be assigned the derivation in (15), according to which the string 'with whose mother I spoke' would not form a constituent at all.

(15) $[_{DP}$ the $[_{CP}$ $[_{PP_j}$ boy$_j$ [with [[who t$_j$]'s mother]] C^0$[_{IP}$ I spoke t$_{PP}$]]], . . .

This analysis is however disproved by the possibility of extraposing the string 'with whose mother I spoke', as (14b) shows.

Notice that the extraposition facts appear straightforwardly compatible with the right adjunction hypothesis, since the displaced string corresponds to a maximal constituent (CP), a suitable target for movement. The problems encountered by the adjunction hypothesis and by the raising analysis thus appear to be complementary, the weakness of one aproach being the strength of the other.

1.2.1.3 *Modification.* The head raising analysis fails to capture the intuition that RRCs are modifiers of the head Noun (an intuition that was captured by the adjunction analysis).

2. Our analysis

2.1 RRCs as intersective modifiers

We start from the observation that RRCs are interpreted as Noun modifiers, more precisely, that they are interpreted just like intersective (extensional) Adjectives. Just like extensional or intersective Adjectives in (16a), RRCs in (16b, c) are functions applying to the extension of the modified Noun and the set of individuals designated by the RRC+Noun expression is a subset of the set designated by the Noun.

(16) a. a red ball
b. a ball which is red
c. the man who entered

Additional evidence for the extensional interpretation of RRCs comes from the observation that even when the RRC contains an Adjective that is potentially ambiguous between an extensional and an intensional reading, the result of embedding that Adjective within a RRC always results in an unambiguously extensional reading for that Adjective.

For illustration, consider the Adjective 'beautiful' in example (17) below, discussed by Larson (1998), among others. An Adjective like 'beautiful' may be used

both attributively and predicatively and it may be interpreted both extensionally and intensionally in either syntactic position.

(17) a. Maria is a *beautiful* dancer. (attributive use)
extensional reading: beautiful'* (m) ∧ dancer'* (m)
Maria, the individual, is beautiful, as well as being a dancer.
intensional reading: beautiful' (∧dancer)* (m)
Maria is beautiful as a dancer, she dances beautifully. The Adjective is a function whose argument is the noun intension.

b. The dancer is beautiful. (predicative use)
extensional reading: the lady who is dancing is physically beautiful
intensional reading: the lady dances beautifully.

When 'beautiful' is embedded within a RRC, as in (18), the intensional reading is blocked, although 'beautiful' is in principle able to have an intensional interpretation in a predicative position.

(18) the dancer who is beautiful

This suggests that it is the RRC that is responsible for the extensional reading, and that we may safely assume that RRCs are always intersective or extensional.

If this is on the right track, then one might gain some insight into the syntax of RRCs by looking at the syntax of intersective Adjectives. As illustrated above in (17), intersective Adjectives can occupy two kinds of syntactic positions: they can either be used attributively, or predicatively.

The question becomes, then, whether RRCs are like attributive intersective Adjectives, or like predicative ones. We argue that the relation between RRCs and its 'head' Noun cannot be one of predication.

2.1.1 *Predication and theta role assignment*

According to Williams (1980), predication always involves theta role assignment. In other words, for two elements to be in a predication relation, one element has to be a theta role donor and the other a theta role recipient.

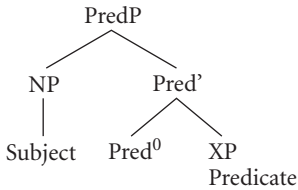
(19) John left.

The relation between the 'head' Noun and a RRC clearly does not comply with this definition of predication, since no theta role assignment is involved. All theta roles are saturated within the relative clause itself.

2.1.2 *Properties vs. propositions*

In an attempt to lay out a uniform, structurally based theory of predication, that would account for both Main Clause and Small Clause predication and that would be assigned a uniform semantic interpretation, Bowers (1993) proposes the following representation for all relations of predication:

(20)



Under this view, the predication relation holds between the argument in SpecPredP and the complement of $Pred^0$.

Although an analysis of RRC in terms of a hierarchical relation like (20) would be desirable in the sense that it would overcome most of the problems encountered by an adjunction analysis, the relation between the 'head' Noun and a RRC cannot be characterized as a relation of predication, since no theta role assignment is involved. All theta roles are saturated within the relative clause itself.

Moreover, semantically, a PredP is what Chomsky (1986) calls a complete functional complex (CFC) in the sense that it can stand on its own as a complete thought or informational unit. So semantically, too, the relation between a RRC and the 'head' Noun cannot be said to be one of predication, since the sequence N+RRC expresses a property, not a proposition, and so it is associated to a different logical type.

We conclude that RRCs are to be treated as attributive intersective Adjectives, rather than as predicative ones. In the discussion that follows, we describe the syntax of attributive intersective Adjectives and we try to extend it to RRCs.

2.2 The syntax of attributive intersective Adjectives

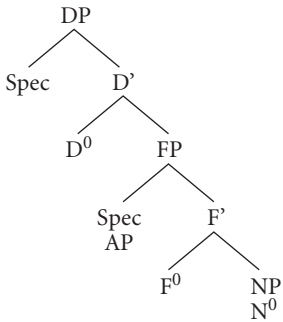
We will assume that the syntactic representation of (at least) attributive intersective Adjectives is the one proposed by Cinque (1999), Alexiadou (1994), Giusti (1992) for modifiers in general, namely a representation in which modifiers are Specifiers of a functional head. This follows from the hypothesis that modifiers, like any other phrase or head, need to be licensed, and that licensing procedes as indicated in (21) (Alexiadou 1994).

(21) Generalized Licensing Criterion

i. An [+F] head must be in a Spec-Head relation with a [+F] XP.
ii. An [+F] XP must be in a Spec-head relation with a [+F] head.

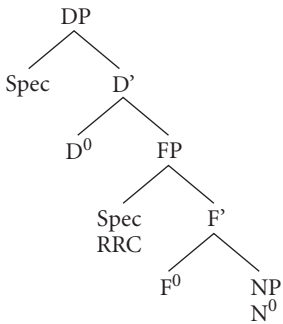
Under these assumptions, attributive intersective APs are generated as in (22).

(22)



Similarly, we propose that RRCs are Specifiers of some nominal functional projection, as in (23).

(23)



The proposal in (23) can straightforwardly account for the Japanese example in (24), where the RRC is prenominal, but cannot account for postnominal relative clauses, as in (25).

(24) [$_{RRC}$ *Yamada-san* *ga* *ka't-te* *i-ru*] [$_{N}$ sa'ru]
Yamada-Mr SUBJ keep-PART be-PRES monkey
'the monkey which Mr Yamada keeps'

(25) the [$_{N}$ man] [$_{RRC}$ who keeps a monkey]

Given the similarity between attributive intersective Adjectives and RRCs, and given that attributive intersective Adjectives can surface either prenominally or postnominally (at least cross-linguistically), just like the RRCs, one wonders whether a similar kind of syntactic account is possible for the postnominal position of attributive intersective Adjectives and postnominal RRCs.

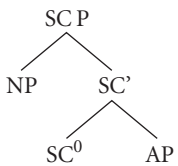
There are two accounts that were proposed for postnominal attributive intersective Adjectives. One type of analysis is that postnominal attributive Adjectives are generated just like prenominal ones, i.e. in the Specifier position of some nomi-

nal functional head, and that the Noun raises past the Adjective, to a nominal functional head which is higher than the functional projection hosting the Adjective (Cinque 1994; Valois 1991; Picallo 1991; Bernstein 1993).

(26) $[_{DP}\ D^0\ [_{FP1}\ F1^0 [_{FP2}\ AP\ [F2^0\ [_{NP}\ [\ N^0]]]]]]$

An alternative to this is that postnominal attributive Adjectives are generated as predicates in a Small Clause whose Specifier position is filled by the Noun Phrase, just like predicative Adjectives. The difference between postnominal attributive Adjectives and predicative ones consists in whether the 'subject' NP undergoes movement out of the Small Clause or not.

(27)



Now let us see whether any of these analyses can be extended to postnominal RRCs of the type illustrated in (25). As indicated above, there are several reasons to reject an analysis of RRCs as predicates. As to the other option, i.e. the one in which the 'head' Noun moves past the RRC, to some functional position that is higher than the functional projection hosting the RRC, there are reasons to reject it, too. First, such movement would be an instance of head-to-head movement, i.e. the head Noun would move to a functional head that dominates the functional projection hosting the RRC. This kind of movement would be problematic since it would violate Chomsky's (1993) Extension Condition.

(28) *Extension Condition*
For substitution, Ø must be *external* to the targeted P-marker K.

What (28) says is that substitution operations must always extend their target. As it stands, this condition prohibits overt head movement, since head movement does not extend the targeted P-marker as required. Naturally, this is a problem for the N-movement analysis only to the extent to which one endorses the Extension Condition.[1]

A second problem with the N-movement hypothesis is that there is evidence that the RRC actually modifies a nominal phrase, not an N head.

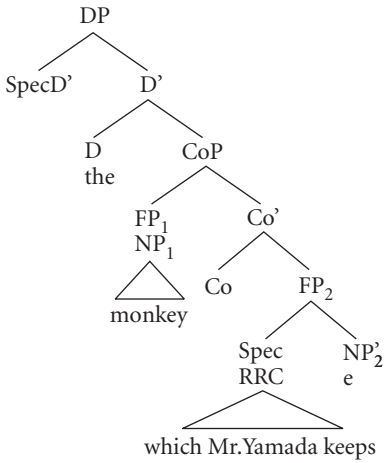
(29) the fear of wolves that paralyzed most of us

It seems, therefore, that none of the two accounts that have been proposed for postnominal Adjectives can be extended to the syntax of RRCs.

2.3 Postnominal RRCs

We propose the structure in (30) for postnominal RRCs, where the RRC modifies an empty Noun.

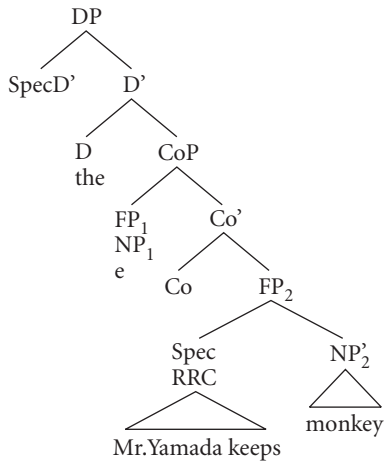
(30)



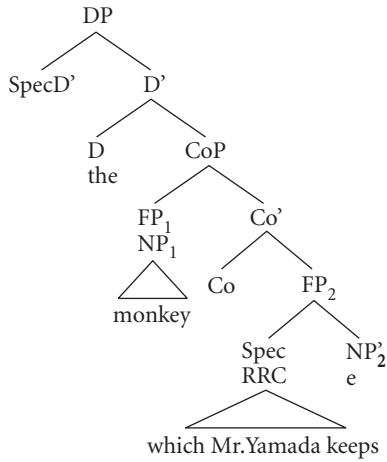
In (30), the complement of D is a Conjunction Phrase (CoP). Following Munn (1992), Johannessen (1996), Kayne (1994), we assume that the CoP can be generally considered to have a standard X-bar representation. Given the selectional properties of D (D selects a nominal complement), we assume that the two conjuncts (the Spec of the CoP, and the complement of the Co head) are nominal.

In order to unify (23) and (30), we propose that both have the syntactic representation in (30), but that in prenominal relative constructions the second NP conjunct is empty (see (31a)), while in postnominal relative constructions it is the second conjunct that is empty (see (31b)).

(31) a.



b.



In the remainder of this section, we will first list some arguments for a conjunction analysis of RRCs, and then we will show that the prenominal or postnominal position of RRCs in various languages can be predicted by assuming the structure in (30) above and by independent properties of the languages in question, such as whether the relativization strategy in a particular language involves wh elements or not.

2.4 Arguments for a coordination analysis

2.4.1 *Conjunction Reduction: Gapping and Right Node Raising*

A coordination analysis allows for an explanation of the differences between (31a) and (31b). More specifically, if the coordination analysis is on the right track, we

expect the two nominal conjuncts to enjoy a certain amount of freedom. Typically, we expect that identical substrings inside the two coordinates should be possibly targeted by Conjunction Reduction, which optionally deletes substrings which are shared by both conjuncts (Hankamer 1979; Neijt 1979; Postal 1974; Ross 1967; Sag 1976).

Our proposal is that the differences between (31a) and (31b) can actually be accounted for by assuming that typical Conjunction Reduction operations such as Gapping and Right Node Raising have applied. More specifically, (31b) is the result of Gapping (deletion of the main predicate of a non-initial conjunct, possibly together with other constituents), while (31a) is the result of Right Node Raising (deletion operates in the first conjunct).

Let us consider (31b) first, and let us compare it to a typical instance of Gapping. In (32a), Gapping applies to the verb (phrase) in the second conjunct, under identity with the verb (phrase) in the first conjunct.

(32) a. Some visited NY on Monday and others ~~visited~~ LA on Friday.
Some visited NY on Monday and others ~~visited New York~~ on Friday.
b. The monkey which Mr. Yamada keeps ~~monkey~~.

Similarly, in (32b), Gapping applies to the NP in the second conjunct, under identity with the NP in the first conjunct.

The same similarity holds between a typical instance of Right Node Raising (RNR) – (33a) – and prenominal relatives – (33b).

(33) a. She organizes ~~her life~~ and actually runs her life.
b. the ~~monkey~~ Mr. Yamada keeps monkey

In (33a), RNR operates in the first conjunct and it deletes the constituent 'her life'. Similarly, in (33b), RNR applies to a constituent – 'monkey' – in the first conjunct.

2.4.2 *Constituency*

If the coordination analysis is correct, we expect each of the two conjuncts in (30) to be able to appear independently as a complement of the Determiner. This expectation is borne out: the 'head Noun' can clearly appear independently as a complement of the Determiner and there are languages in which D can appear with a RRC alone, without an overt head N, as in (34).

(34) a. [[$_D$*Celui*] [*qui est venu*] *e*]. (French)
[[$_D$*Cel*] [*care a venit*] *e*]. (Romanian)
the-he who has come
b. *ny* *mbola* *tsy* *tonga* (Malagasy)
the still not arrive
'those who still haven't come'

This shows that the second conjunct in (30) – FP_2 – is a constituent, since it can independently be selected as a complement of D^0.

Additional evidence that the RRC can be taken as a complement by a Determiner is provided by the Early Middle English example in (35), where *as* follows the demonstrative *that*.[2]

(35) But that as syre launcelot dyd was of his grete gentylness.
(Md'A 215:6, Baldwin 1894)

2.4.3 *Comparatives, equatives, and degree constructions*

An indirect confirmation for our analysis comes from comparatives. It has been argued (Lechner 2000) that comparative constructions derive from a biclausal source and that they are related to their source by the same set of Conjunction Reduction operations which are attested in coordinate structures.

The following examples show that Conjunction Reduction targets substrings inside comparative clauses in the same way as it affects substrings inside coordinates.

(36) Gapping
a. John spoke against Mary and Tom ~~spoke~~ against Jane. (Napoli 1983)
b. John spoke more vehemently against Mary than spoke against Jane.

(37) Right Node Raising
c. I organize ~~her life~~ and actually run her life.
d. I organize more ~~her life~~ than I actually run her life. (Napoli 1983)

It seems reasonable, then, to pursue the hypothesis that *than* may function as a syntactic coordinator in the same way as the conjunction operators *and* and *or* do (Hankamer 1973; Hendriks 1995; Lechner 2000). The hypothesis can actually be extended to Complementizers in general. This generalization is suppported by morphological considerations, as shown in Di Sciullo (2000). Given this analysis of comparative clauses, our analysis of RRCs can naturally account for the similarity between RRCs and comparatives: both are analyzed as instances of coordination.

2.4.4 *Binding and scope reconstruction*

At first sight, our analysis of RRCs cannot account for the binding facts illustrated in (9), repeated below for convenience.

(38) the portrait of himself_j that John_j painted
*the portrait of him_j that John_j painted.

Chomsky's (1993) account of reconstruction effects in terms of movement chains predicts that reconstruction effects will arise only under displacement via move-

ment. However, as pointed out by Cresti (2000), the raising analysis is not the only way to account for reconstruction effects in these cases. The same efffects can be obtained if one assumes that, in deriving the relative clause, there is no particular movement occurring besides the usual wh-movement to CP inside the relative. What accounts for reconstruction is a kind of ellipsis which targets material that "matches" the external head of the relative, according to certain LF criteria. Under the assumption that the external head NP is generated independently of the RC modifier, the relative CP, before ellipsis applies, is the same as the relative CP under a head raising approach, before raising applies.

(39) $[_{CP}[_{DP}$ wh portrait of himself$][_{IP}$ John likes wh portrait of himself$]]$

The difference between these two approaches resides in the hypothesized relation between the NP 'portrait of himself' within the relative clause and the head 'portrait of himself' – movement or no movement. But since the relative clause looks the same under the two approaches before ellipsis or movement, the question of how to interpret the relative clause is the same for both the raising and the matching/ellipsis analyses.

2.5 Prenominal vs. postnominal RRCs

The analysis that we proposed above makes a distinction between prenominal relative constructions, in which the NP within the first conjunct is empty (see (31a)), and postnominal relative constructions, in which the NP within the second conjunct is empty (see (31b)).

One question that arises is why this is the case. In other words, can the difference between (31a) and (31b) be systematically related to other independent properties of the two groups of languages in question? In what follows, we show that this difference can be correlated to the presence or absence of a wh-word within the RRC. What is crucial for explaining the difference between N-initial and N-final RRCs is a generalization noted by Keenan (1985: 160), namely that N-final (prenominal) RRCs lack relative pronouns. The relative pronoun, when present, satisfies one of the arguments of the verb within the RC. Its absence in N-final (postnominal) RRCs indicates that the N-final RRC has an open position, *i.e.* that one of the arguments of the verb within the RRC is unsatisfied. Hence, this argument can identify the R variable contributed by the head N. The difference between N-initial and N-final RRCs thus reduces to a difference in the availability of an open thematic position within the RRC.

2.5.1 *Identification of the R (non-thematic) argument of the Noun*

As proposed by Williams (1981), Higginbotham (1985), Di Sciullo and Williams (1987), Grimshaw (1990), Nouns have an external, non-thematic argument (R) which expresses the variable contributed by the Noun. Modification of a Noun could proceed in one of the following ways:

i. The external non-thematic argument of the Noun is identified with the non-thematic external argument of the modifier, as in (40);

(40) hungry tiger
R_1 R_2

The adjective 'hungry' in the example above has an open position, and so does the noun 'tiger'. When the two are combined, the two open positions are identified or coindexed.

ii. If the modifier is deverbal, as in (41), its external non-thematic argument position will be an event variable (E).

(41) man-eating tiger
E, *Ext*, Int *R*

Since the external variables of the modifier and of the Noun are different in nature (Event vs Referential), the relation of modification cannot be established by identification of these two variables. In such cases, the R argument of the Noun is identified by a thematic argument of the deverbal modifier (Williams 1981; Di Sciullo & Williams 1987; Higginbotham 1985; Grimshaw 1990). In (41), the R argument of the Noun is identified with the external thematic argument of the Verb 'eat'.

Since RRCs are verbal constructions with an E variable position, the expectation is that they should identify the R argument of the Noun just like deverbal modifiers, i.e. with a thematic argument of the verb within the RC. However, this expectation is borne out for the Japanese example in (42), but not for the English (43).

(42) [$_{RRC}$ *Yamada-san ga ka't-te i-ru*] [$_N$ *sa'ru*]
Yamada-Mr SUBJ keep-PART be-PRES monkey
'the monkey which Mr Yamada keeps'

(43) the [$_N$ man] [$_{RRC}$ who keeps a monkey]

In (42), the R argument of the modified Noun – 'sa'ru'– is identified with the internal argument of the Verb 'ka't-te' in the RRC. In contrast, in (43), no such identification is possible because the RRC in (43) has no open/unsatisfied argument

position; all the thematic arguments of the Verb are satisfied within the RRC (the Internal theta role is satisfied by 'a monkey', and the External one by 'who'). It seems, therefore, that the distinction that our analysis makes between prenominal and postnominal RRCs can be derived from an independent difference between the two groups of languages. Crucially, we rely on a generalization that Keenan (1985: 160) noted, namely that prenominal RRCs lack relative pronouns. The relative pronoun, when present, satisfies one of the arguments of the Verb within the RC. Its absence in N-final (postnominal) RRCs indicates that the N-final RRC has an open position, *i.e.* that one of the arguments of the Verb within the RRC is unsatisfied. Hence, this argument can identify the R variable contributed by the head N. The difference between N-initial and N-final RRCs thus reduces to a difference in the availability of an open thematic position within the RRC.

2.5.2 *'That' relatives vs. prenominal relatives*

One potential problem to this approach is the existence of RRCs that actually lack wh-pronouns in languages that have postnominal relatives. English, for instance, can have not only wh-relatives, as in (44a), but also 'that' relatives, as in (44b), and even relatives that lack altogether any overt material in SpecCP or in C^0, as in (44c).

(44) a. the book [which John bought]
b. the book [that John bought]
c. the book [John bought]

The question is, then, whether there is any difference between the relatives in (44b, c) and prenominal relatives illustrated in (42), since both the relatives in (44b, c) and in (42) seem to be 'incomplete' or 'unsaturated'.

We will argue that the relatives in (44b, c) are actually different from the Japanese type prenominal relatives, in the sense that the 'gap' contained in the relative clause has a different nature in the two types of RRCs. In postnominal RRCs, the 'gap' within the relative clause is a variable, whereas in prenominal RRCs it is not.

2.5.2.1 *'That' relatives.* Chomsky (1980, 1981) shows that the derivation of relatives like (44b, c) involves the fronting of a null operator, as in (45).

(45) the book [OP (that) John bought _]

On the other hand, as presented in Section 2.4.4, we also assume, following Cresti (2000), that the derivation of relative clauses involves a kind of ellipsis which targets material that "matches" the external head of the relative, according to certain LF criteria.

By bringing together these two assumptions, we propose that the derivation of relatives like (44b, c) involves something like (46).

(46) the book [$_{CP}$[$_{DP}$ OP book][$_{IP}$ (that) John bought OP book]]

It follows that at a certain point in the derivation, postnominal relatives like (44b, c) are 'complete' or 'saturated' as far as their argument structure is concerned, and that our claim that English type RRCs cannot modify a phonologically realized Noun can still be maintained.

2.5.2.2 *Prenominal relatives.* Building on an analysis proposed by Murasugi (2000), we argue that although prenominal RRCs look very similar to relatives like (44b, c), unlike the latter, they are never 'complete' or 'saturated' as far as their argument structure is concerned. Our discussion will focus on Japanese RRCs, but we assume that the same claim can be made for all prenominal RRCs.

The main argument favoring our claim that Japanese RRCs are not 'complete' or 'saturated' at any point in the derivation comes from Murasugi's (2000), who shows that Japanese RRCs are never derived by movement. Very briefly, his arguments are summarized below:

i. Japanese relative clauses need not exhibit Subjacency effects, as noticed by Kuno (1973), and as illustrated in (47).

(47) [$_{NP}$[$_{IP}$[$_{NP}$[$_{IP}$ e_i e_j *kiteiru*] *yoohuku*$_j$]-*ga* *yogoreteiru*] [$_{NP}$*sinsi*$_i$]]
is-wearing suit -NOM is-dirty gentleman
'the gentleman who [the suit that he is wearing] is dirty

ii. A stronger claim is made by Hoji (1985), who notices the absence of connectivity or reconstruction effects in Japanese RRCs. A comparison between (48a) and (48b) shows that there is no Japanese counterpart of English relative clauses that illustrates connectivity effects.

(48) a. the picture of himself that John likes best
b. *[$_{NP}$[*John*$_i$-*ga* e_j *taipu-sita*][*zibun*$_i$-*no* *ronbun*]$_j$]
John-NOM typed self-GEN paper
'self$_i$'s paper that John$_i$ typed' (lit.)

The facts illustrated in (47) and (48) suggest that Japanese relative clauses do not involve movement and that "what is required between the relative head and the relative clause is only the 'aboutness relation'" (Murasugi 2000: 233). Murasugi (2000) relates the absence of movement in Japanese relative clauses to the fact that Japanese relative clauses are IPs, and not CPs. Since there is no SpecCP position for the relative operator to move to, Japanese relative clauses cannot be derived by movement.

All this discussion shows that the nature of the 'gap' in Japanese relative clauses differs from the nature of the 'gap' in English RRCs. In English, the 'gap' is the result of movement, whereas in Japanese it is base-generated as such. This shows that the correlation that we made between the 'completeness' of a relative clause and the possibility of modifying a phonologically realized Noun can still be maintained.

2.5.3 *Two consequences*

There are two facts that follow from the correlation that we propose between the 'completeness' of a relative clause and the possibility of modifying a phonologically realized Noun.

2.5.3.1 *Obligatory vs. optional Conjunction Reduction.* One is the obligatoriness of Conjunction Reduction operations in relative constructions. Although in typical coordinated constructions Gapping and RNR are optional operations, in relative constructions these operations are obligatory. The obligatory nature of Conjunction Reduction operations follow from our analysis. In languages like English, in which RRCs are 'complete', the R argument of the modified Noun cannot be identified. Consequently, Gapping applies obligatorily. In contrast, in languages like Japanese, in which RRCs are 'incomplete' or 'unsaturated', the argument which is not discharged within the RRC can identify the R argument of the modified Noun. Consequently, Gapping is blocked and RNR applies.

2.5.3.2 *Internally Headed Relatives (IHR).* A second desirable outcome of our analysis is that it can also offer an account of IHRs. We propose that IHRs are just like other (prenominal) relative clauses.The differences between prenominal relative clauses and internally headed ones reduce to the kind of Noun that is modified by the relative clause: in prenominal RRCs, the Noun can be phonologically realized, whereas in IHRCs it is null. Crucially, this is in turn correlated with the fact that prenominal RRCs have an open positon, i.e. one of the arguments is 'gapped', whereas the argument structure of IHRCs is complete, or saturated.

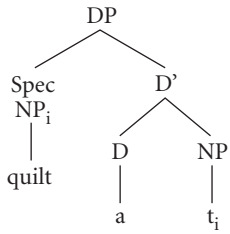
(49) [$_{DP}$[$_{CP}$ *Mary* [$_{DP}$ *owiza wa*] *kage*] *ki*] *he ophewathu.*
Mary quilt a make the I-buy
'I bought the quilt that Mary made'. (Lakhota)

(50) [$_{RRC}$ *Yamada-san ga ka'-te i-ru*] [$_{N}$ *sa'ru*]
Yamada-Mr SUBJ keep-PART be-PRES monkey
'the monkey which Mr Yamada keeps' (Japanese)

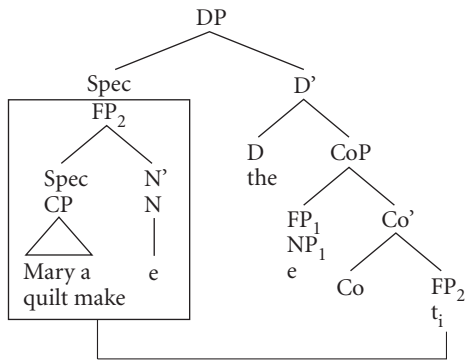
Moreover, IHRs also raise to a pre-determiner position, presumably to SpecDP. However, the movement of the relative clause to SpecDP is triggered by factors which are independent of the properties of the relative clause. The same kind of

movement takes place even if no relative clause is present, as a comparison between (51) and (52) shows.

(51)



(52)



3. To conclude

In this paper we proposed an analysis in which RRCs are analyzed on a par with attributive intersective adjectives. The differences between the two types of modifiers are accounted for by proposing a coordinated structure for the relation of modification between a RRC and a 'head' Noun. This kind of analysis is able to capture the interpretive parallelism between RRCs and APs and thus to derive some generalizations concerning the overtness of the modified Noun: the modified Noun can be overt only if the RC contains an open, unsaturated argument position, which could identify the R argument of the Noun. Moreover, our analysis can also account for data which is problematic under a head adjunction hypothesis and at the same time can overcome the constituency difficulties connected to the head raising approach.

Notes

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1. Chomsky suggests that this restriction "may be too strong even within the core computational system" (p. 365), but says no more about it.

2. *as* in Early Middle English could head a relative clause, although rarely so.

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Asymmetry in case

Finnish and Old Russian nominative objects

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1. Introduction

1.1 The data and the framework

In this paper, I examine Finnish (Fi) and Old Russian (OR) nonfinite and "defective" finite modal constructions which contain a direct object whose case is nominative instead of the canonical accusative. The investigation is carried out in the framework of the Asymmetry Theory (AT) (Di Sciullo 1999, 2000) whose basic tenet is that the structural relations of grammar are strictly asymmetrical. In AT, case checking (or case identification) is an operation subsumed under the two core operations, i.e., SHIFT (Merge) or LINK (movement + indexing).

The nonfinite constructions include Fi and OR infinitival sentences containing an invariable modal predicate (overt or covert in OR) and an infinitive whose direct object is nominative, illustrated in (1)–(2). This type of constructions will be called modal infinitivals. The "defective" finite constructions include Finnish imperatives that take a direct object in the nominative case, as in (3). Examples for the canonical situation, i.e., when the direct object is accusative, is given in (4)–(5).

(1) Sinu-n **täyty-y** osta-a **auto**. (Fi)
you-GEN **must**-3SG buy-INF **car-NOM**
'You must buy a car.'

(2) Ino **dostoit"** mužu **žena** **svoja** nakazyvati.[1] (OR)
for **fit**-3SG man-DAT wife-**NOMF** his-**NOMF** punish-INF
'For it is fitting for a man to punish his wife.'

(3) **Lue** (sinä) **tämä** **kirja**! (Fi)
read-IMPV-2SG (you-NOM) this-**NOM** book-**NOM**
'Read this book.'

(4) a. (Minä) lu-i-n **tämä-n/* tämä kirja-n/kirja.** (Fi)
I-NOM read-PAST-1SG this-ACC/*NOM book-ACC/*NOM
'I have read this book [the entire book].'

b. Minä **halua-n** luke-a **tämän/*tämä kirjan/* kirja.** (Fi)
I-NOM **want-1SG** read-INF this-ACC/*NOM book-ACC/*NOM
'I want to read this book.'

(5) a. S"v'ršiša **cerkov'** **kamęnu.** (OR)
accomplished church-ACCF stone-ACCF
'He built a stone church.'

b. Ol'ga že **povelě** iskopati **jamu** **veliku.** (OR)
Olga-NOM EMPH **ordered** dig-INF hole-ACCF large-ACCF
'Olga ordered to dig a hole.'

The picture is further complicated by another difference which can be observed in the case of direct objects: when the direct object is a personal pronoun in Finnish, as in (6), or an animate[2] NP in Russian (and OR), as in (7), the case of the direct object is the canonical accusative in the same nonfinite environment (cf. (1)–(3)), that otherwise requires the direct object to be nominative.

(6) a. Sinu-n täyty-y kutsu-a **minu-t/*minä.** (Fi)
you-GEN must-3SG invite-INF **I-ACC/*NOM**
'You have to invite me.'

b. Kutsu **minu-t/*minä!** (Fi)
invite-IMPV-2SG **I-ACC/*NOM**
'Invite me.'

(7) a. I tobě$_i$ bylo v"ěxavši v Kiev" [t$_i$ **brat[a]**
and you-DAT wasN enter-GER in Kiev-ACC brother-ACC
moego jati i **syna** **moego** i žena moja,
my-ACC seize-INF and son-ACC my-ACC and wife-NOM my-NOM
i dom" moj vzjati]. (OR)
and house-NOM/ACC my-NOM/ACC take-INF
'It was for you, having entered Kiev, to seize my son and my wife and to take my house.'

b. I mne poslat' **svoego** **voevodu** s' tvoim'
and I-DAT send-INF own-ACC general-ACC with your-INST
voevodoju (OR)
general-INST
'And it is for me to send my general with your general.'

In this paper, it will be argued that the difference in case follows from an asymmetrical relation between lexical and functional features. Consequently, case checking

equals identification of case features under local asymmetry in either the lexical or the functional domain. Thus, in modal infinitivals, the NP direct objects (which are lexical categories) are merged with nominative case in Spec-VP, and thus case checking (i.e., case identification) happens in situ in the lexical domain.[3] On the other hand, direct object pronouns are generated in the functional projection DP in the complement position of V with accusative case since pronouns are not lexical categories (i.e., they are not part of the lexical domain) and thus necessarily behave differently from full NPs.[4] In AT, only lexical categories (N and V) are part of the lexical domain; all others, including pronouns (D), belong to the functional domain. Hence the difference between the case realization of NP and pronominal direct objects boils down to the difference in their case identification, i.e., shifting or linking, respectively. Evidence for this proposal will be given in Section 4.2.

Furthermore, the difference in the case realization of the direct objects in (1), in which it is nominative, and (4b) and (5b), in which it is accusative, will be shown to derive from configurational (structural) variety.[5]

Throughout the paper I shall assume that the constructions containing nominative direct objects form a single clause with the modal predicate on the basis of the following pieces of evidence: (i) They contain an invariable modal predicate which is a functional head (Mod) rather than a full lexical verb. It has no φ-features, and thus, it does not establish a thematic relation with the subject. (ii) This modal predicate never takes a finite clause as its complement and, therefore, never allows a complementizer. (**Minun täytyy, että* (COMP) *luen tämän kirjan* '*I must that I read this book'). The impossibility of a complementizer suggests that there are no embedded CP and TP projections (cf. Wurmbrand 1998).

Although the phenomenon of nominative objects exists in several languages, I focus on Fi and OR because it may have been a syntactic borrowing from Fi and most Baltic Finnic languages[6] into the Northern dialects of OR.[7] The impact of Finnic languages on OR seems to be supported by the semantic similarity between Fi modal sentences, including imperatives,[8] and OR sentences: they all have a modal meaning expressing that something is necessary, mandatory, appropriate, or worthwhile for someone to do, as the examples in (1)–(2) above illustrate. With the exception of the imperatives, these nominative object constructions always contain a modal predicate, which may be either overt, in which case it is an invariable third person singular form, like *täytyy* and *dostoit*"[9] in (1) and (2), or non-overt, as in (8).

(8) Tym' znati svoja služba. (OR)
they-DAT know-INF own-NOM duty-NOM
'It is for them to know their own duty.'

To sum up, a necessary condition in all the languages discussed here is that the subject NP of the clause with a nominative object must be oblique (or, if it is nom-

inative, as in the case of Fi imperatives, it must exhibit properties that differentiate it from regular nominative subjects[10]) and the verb must be nonfinite or defective to a large degree (like the paradigm of imperatives cross-linguistically).

1.2 Organization of the paper

The paper is organized as follows. Section 2 introduces Fi and OR constructions that contain nominative objects. Section 3 describes previous theories. In Section 4, I detail the proposal which is subsequently applied to the Fi and OR constructions.

2. Constructions containing nominative objects

2.1 Finnish constructions with nominative objects

In Fi, direct object singular count nouns receive (a) the accusative case[11] (*-n*), (b) the partitive case (*-a/-ä, -ta/tä*), or (c) the nominative case (-Ø), depending on the context. This is illustrated in (9a), (9b), and (10), respectively.

(9) a. (Minä) lu-i-n tämä-n kirja-n. (Fi)
I-NOM read-PAST-1SG this-ACC book-ACC
'I have read this book [the entire book].'

b. (Minä) lu-i-n tä-tä kirja-a. (Fi)
I-NOM read-PAST-1SG this-part book-part
'I was reading this book [not the entire book].'

(10) a. Sinu-n täyty-y luke-a tämä kirja. (Fi)
you-GEN must-3SG read-INF this-NOM book-NOM
'You must read this book.'

a′. Minu-n kannatta-a osta-a auto. (Fi)
I-GEN worth-3SG buy-INF car-NOM
'It is worthwhile for me to buy a car.'

b. Lue (sinä) tämä kirja! (Fi)
Read-IMPV-2SG (you) this-NOM book-NOM
'Read this book.'

b′. Lue-taan tämä kirja. (Fi)
read-PASS this-NOM book-NOM
'Let's read the book.'/*'The book is being read.'

c. Tuli vaikea-t aja-t. (Fi)
came-3SG hard-NOM,PL time-NOM,PL
'There came hard times.'

Direct objects occur as nominative in three types of constructions (see (10) above) (Taraldsen 1985);[12] of these, the first two, (10a–b), directly bear on the issue of modality and will be discussed in this paper while the last one, (10c), has indirect relevance to the topic. Constructions with third singular modal predicates can be seen in (10a), imperatives are illustrated in (10b), and unaccusatives in (10c).

Next, let us briefly unpack these sentences. Examples (10a) and (10a′) contain an oblique (genitive) subject, an invariable third person singular modal predicate, and an infinitival, whose direct object is in the nominative case. The sentence in (10b) has an imperative verb form which takes a nominative direct object. (10b′) is an imperative sentence, expressed by a verb in the passive that takes an object in the nominative. Finally, (10c) is an unaccusative construction in which there is no agreement between the predicate and its nominative direct object, i.e., the predicate *tuli* 'came' is in the singular while the following NP *vaikeat ajat* 'hard times' is in the plural.

2.2 Evidence for objecthood

That the NPs marked nominative in (10) are indeed objects, and not subjects at any derivational level, is shown in Timberlake (1974) on the basis of cross-linguistic study of nominative objects. I will discuss three pieces of evidence he uses as diagnostics for the objecthood of the postverbal nominative NPs. I illustrate them with the Fi examples in (11)–(15).

First, the verb taking a nominative object is never plural. As the unaccusative (10c) above shows, the verb is in third person singular, and the NP in the nominative is plural. If this NP were a subject, it would be expected to trigger agreement on the verb.

Second, the conditions for partitives replacing accusative direct objects are the same as those for replacing nominative objects, but never subjects. In Fi, the partitive replaces the accusative on direct objects in negated sentences (see (11a)), when the action shows no result, as in (12a), when the object is the complement of a verb of emotion (see (13a)), and when the object expresses an indefinite quantity, as in (14a).

Under the same circumstances, the direct objects that would otherwise have to be in the nominative are overridden by the partitive just like the canonical accusative direct objects. The nominative objects are illustrated in the b-examples of (11)–(14), and the nominative objects overridden by the partitive are illustrated in the c-examples of (11)–(14).

(11) a. En osta auto-a. (Fi)
NEG-1SG buy car-PART
'I don't/won't buy a car.'

b. Osta auto! (Fi)
buy car-NOM
'Buy a car.'

c. Älä osta autoa! (Fi)
NEG-imp buy car-PART
'Don't buy a car.'

(12) a. Väinö ajaa auto-a. (Fi)
V. drives car-PART
'Väinö is driving a car (around).'

b. Väinön täytyy ajaa auto. (Fi)
V-GEN must drive-INF car-NOM
'Väinö has to drive the car.

c. Väinön täytyy ajaa auto-a. (Fi)
V-GEN must drive-INF car-PART
'Väinö has to drive the car around.'

(13) a. Minä rakastan äiti-ä. (Fi)
I love mother-PART
'I love mother.'

b. Kutsu äiti! (Fi)
invite mother-NOM
'Invite mother.'

c. Rakasta äiti! (Fi)
love mother-NOM
'Love mother.'

(14) a. Pekka juo olut-ta. (Fi)
Peter drinks beer-PART
'Pekka is drinking some beer.'

b. Juo olu! (Fi)
drink-imp beer-NOM
'Drink the beer.'

c. Juo olut-ta! (Fi)
drink-imp beer-PART
'Drink some beer.'

Thus, examples (11)–(14) above represent strong evidence for the objecthood of the NPs in question.

Third, the direct objects belonging to the "animate" category[13] preserve the canonical accusative ending in the same environment in which feminine and inanimate direct object NPs are nominative. In Fi, personal and interrogative pronouns

belong to the animate category and are the only parts of speech that keep the original accusative form,[14] as the example in (15) shows.

(15) a. Sinu-n täyty-y kutsu-a minu-t/*minä. (Fi)
you-GEN must-3SG invite-INF I-ACC/*NOM
'You have to invite me.'

b. Kutsu minu-t/*minä! (Fi)
invite-IMPV,2SG I-ACC/*NOM
'Invite me.'

We can conclude on the basis of this evidence that the postverbal nominative NP really is an object.

2.3 Old Russian constructions containing nominative objects

Now let us see what constructions contain nominative objects in OR. The majority of my examples with nominative objects contain feminine NPs ending in *-a* since this is the only class of inanimate nouns that morphologically distinguishes nominative (*-a* ending) and accusative (*-u* ending) cases. It is obvious that the direct object NPs indeed bear the nominative case since they end in *-a*, as the examples in (16)–(18) below illustrate. Most of the sentences contain a dative subject and an invariable third person singular modal predicate, which can be either overt, as in (16), or covert, as in (17) (cf. Kondrashova 1994).

(16) Torgovlja emu nadobno vědati. (OR)
trade-NOMF he-DAT necessary know-INF
'It is necessary for him to know about trade.' (Sprinčak 1960: 173)

(17) Tym' znati svoja služba. (OR)
they-DAT know-INF own-NOMF duty-NOMF
'It is for them to know their own duty.'

In (18) both the overt dative subject and the modal predicate are missing.

(18) Zemlja paxat'. (OR)
earth-NOMF plow-INF
'It is necessary to plow the land.'

Evidence for the objecthood of the nominative NPs in (16)–(18) will be given in Section 4.3.1, which discusses the OR constructions in detail.

3. Previous theories

3.1 The Case Tier Hypothesis

Since the case assignment mechanism for direct objects postulated in Government and Binding Theory (GBT) (Webelhuth 1995) is not adequate to explain how nominative objects get their case,[15] several linguists have proposed an alternative hypothesis (Zaenen et al. 1985; Yip et al. 1987; Mitchell 1991; Babby 1991).

As the Fi and OR data show, a configurational case can be assigned to different structural positions in the same language and the same structural position can be assigned different cases. In other words, there is no one-to-one mapping between cases and grammatical functions in the traditional sense: not all subjects are assigned nominative and not all NPs assigned nominative are subjects. Nominative can be the case of topics, vocatives, direct objects, predicate nominals or predicate adjuncts. A subject NP may exhibit oblique semantic case (e.g., partitive in Russian or genitive in Fi) or lexical case (e.g., Icelandic).

One of the theories attempting to explain the phenomenon of nominative case assignment is the Case Tier Hypothesis[16] (Zaenen et al. 1985; Yip et al. 1987), according to which the left-most available grammatical function is assigned nominative, and the next available one to the right is assigned accusative on the basis of the notion that grammatical cases form an autonomous case tier. This is formulated in (19).

(19) Case-in-Tiers Generalization (Yip et al. 1987: 224)
"If a verb has a quirky-case subject – which is thus not available for association with a syntactic [=structural] case – then the next NP (the object) will be associated with N[OM] by simple L[eft]-to-R[ight] association."

According to (19), when the subject is quirky-cased, the direct object is the left-most available NP, and thus the direct object NP is marked nominative.[17] Hence, when the subject NP is assigned quirky case (dative in Icelandic), the next available (i.e., highest) NP, the direct object NP, will be assigned nominative. This is illustrated in (20).

(20) Henni hefur alltaf Þótt Ólafur leiðinlegur. (Ice)
she-DAT has always thought Olaf-NOM boring-NOM
'She always thought Olaf to be boring.'

The CTH correctly predicts the object's nominative case in sentences such as (10a) above, which contain an oblique-cased subject. However, this theory cannot be applied to imperative sentences like (10b), whose subject is not oblique, but nominative, yet it also contains a nominative object (recall that OR imperatives do not have nominative direct objects). Finnish imperatives will be discussed in Section 4.2.

Another shortcoming of the hypothesis in (19) is that it does not provide a formal mechanism for the nominative object to check its [-interpretable] feature.[18] Furthermore, it does not indicate where and how the nominative object checks its nominative case, i.e., whether it differs from the way in which the nominative subject checks its case (cf. Lavine 2000).

3.2 Timberlake's Impersonal Theory

Another theory that tries to explain the phenomenon of nominative objects is Timberlake's Impersonal Theory (1974), which establishes the nominative object construction's systematic cross-linguistic status and its syntactic conditioning factors: whenever the V is "systematically impersonal," the direct object will be nominative.[19] He establishes nominative as the "default case" for the direct object, which occurs in environments that systematically lack a grammatical subject.[20]

According to Timberlake's theory, the object in (21a–b) should be accusative since the possessive suffix makes the infinitive personal (i.e., it indicates the person and number of the subject). However, this prediction is not borne out. The object in both examples is in the nominative, which shows that the personal/impersonal distinction cannot account for nominative objects. This example also shows that the nominative object "rule" is recursive in a sequence of infinitives, i.e., the object remains nominative even when it is multiply embedded.

(21) a. Sinu-n täyty-y matkusta-a Suome-en
you-GEN must-3SG travel-INF Finland-illat
[osta-a-kse-si auto]. (Fi)
buy-INF-TRANSL-POSS,2SG car-NOM
'You have to travel to Finland to buy a car.'

b. Matkusta Suome-en osta-a-kse-si
travel-IMPV,2SG Finland-illat buy-INF-TRANSL-POSS,2SG
auto. (Fi)
car-NOM
'Travel to Finland to buy a car.'

3.3 Mitchell's new functional projections for the subject

In this section, I outline Mitchell's (1991) account which adopts Bower's (1993) proposal that direct objects are not base-generated in the complement position of the verb, but rather in the specifier position. Mitchell posits a new functional projection, the PredP (Predicative Phrase), which is located above VP, to explain the

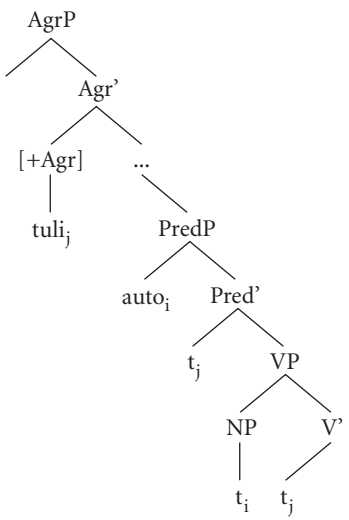
case assignment in Fi passive sentences such as (22) and unaccusative constructions such as (23).

(22) Kirja lue-taan.[21] (Fi)
book-NOM,SG read-PASS
'The book is being read.'

(23) Tuli auto. (Fi)
came-3SG car-NOM
'There came a car.'

According to a rule that she proposes, i.e., "Assign Nominative Case to Spec-Pred," the subject in this position will be assigned nominative, and the object, which is base-generated in Spec-VP, will be assigned the canonical accusative in the usual way. If, however, there is no subject in the sentence (as in passive constructions[22] such as (22)), the direct object can raise to Spec-PredP where it will be assigned nominative. This is in accord with the usual mechanism of the passive. Her explanation for unaccusative sentences, such as (23), represented in (24), is similar: the single argument (the direct object) is base-generated in Spec-VP and moves to Spec-PredP where it is assigned nominative.

(24)



The major problem with the tree in (24) is that the Agr projection predicts agreement between the nominative object (which is no longer the object since it occupies the subject position) and the verb. However, as example (10c), repeated below as (25), illustrates, there is no agreement between the singular verb and the plural nominative object. Her representation fails to account for this lack of agreement.

(25) Tuli vaikea-t aja-t. (Fi)
came-3SG hard-NOM,PL time-NOM,PL
'There came hard times.'

Next I present Mitchell's account of the remaining two constructions (10a) and (10b), repeated in (26).

(26) a. Sinu-n täyty-y luke-a tämä kirja. (Fi)
you-GEN must-3SG read-INF this-NOM book-NOM
'You must read this book.'
b. Lue (sinä) tämä kirja! (Fi)
read-IMPV-2SG (you-NOM) this-NOM book-NOM
'Read this book.'

To explain the structure of these sentences, she proposes another new functional projection (OblP = Obligation Phrase[23]). She argues that the subject in (26a) is base-generated in the Spec of OblP. This is necessary because Spec-PredP must be made empty (subject trace-free) in order for the object to be able to move there and attain nominative Case. In this way, since the subject (oblique or nominative) is base-generated in Spec-OblP, the direct object is able to raise to Spec-PredP to be assigned nominative.

I agree with the position in which Mitchell base-generates the subject; however, I propose a more general modal projection (ModP) since it expresses some kind of modal semantics, not only obligation.

One of the problems with Mitchell's analysis is conceptual. The notion of case assignment is not valid in the Minimalist framework: arguments check their case features against those of functional categories rather than being assigned case.

Furthermore, the empirical problem with her proposal is that it fails to account for the behavior of second person imperatives (see (26b)), in which there are two nominative-marked NPs, and third person imperatives such as (27), where the direct object bears the canonical accusative case. I shall argue that second and third person imperatives have different feature specifications in Fi. I propose that the nominative direct object NP of 1st and 2nd person imperative verbs is generated in Spec-VP where it checks its nominative case in situ (also, there is no obligatory nominative subject present in such sentences). On the other hand, the direct object of 3rd person imperatives is generated in the complement position of V with accusative case. This assumption is supported by the obligatorily presence of a nominative subject NP in the sentence.

Second and third person imperatives differ also in their pattern of subject omission. Fi is a "mixed" pro-drop language, i.e., it allows an empty subject in first and second person, as in (33b), but the presence of the subject is obligatory in third person, as in (27) (cf. Vainikka & Levy 1999). See Section 4.2.1 for more details.

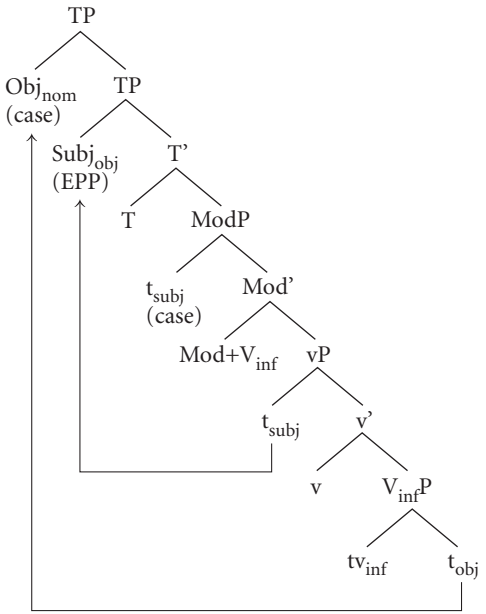
(27) Luke-koon hän kirja-n. (Fi)
read-IMPV,3SG (s)he-NOM book-ACC
'May he/she read the book.'

3.4 Multiple Feature-Checking Hypothesis (Jakab 2000a, 2000b)

Following Ura's (1996) multiple feature-checking proposal for Japanese, in this account it is proposed that the object has to raise to the Spec position of the TP to check its nominative case (T has two specifiers: the inner Spec contains its EPP- and φ-features, and the outer Spec hosts its case-feature). The object's movement is motivated by the weak nominative feature of T that needs to be checked. Since this feature is weak, it can be checked at LF, illustrated in (28).

The problem with this hypothesis is that it has to stipulate that T has a weak nominative feature and that it does not account for the instances where the direct object is accusative.

(28)



4. The proposed structure and its application

4.1 The proposal

In this section, I introduce the mechanism that I propose to account for nominative object constructions. As was mentioned above, the major drawback of the theories presented in the previous section is that they do not adequately explain the fact that in Fi, the direct object can be nominative even when there is another overt nominative present in the clause, as in (26b). Moreover, when the Fi infinitive bears a possessive suffix, which makes the verb form personal (i.e., the infinitive indicates the person and number of the subject), the object will still be nominative. This contradicts the impersonal theory (see examples in (21) which will be discussed in Section 4.1.1 in detail).

I assume the framework of Di Sciullo's (1999, 2000) Asymmetry Theory in accounting for nominative objects, which are one instance of the recognition that there is no longer a one-to-one relation between a functional category and an argument. "Structural" nominative is possible in more than one syntactic position. It has been extensively argued in the literature that the main motivation of NP movement is the EPP (cf. Harves & Lavine 1999; Lavine 2000); NPs do not necessarily have to move to check case. Thus, syntactic licensing of noun phrases and the morphological realization of case are not necessarily connected.

I propose that the difference in case follows from an asymmetrical relation between lexical and functional features. Consequently, case checking equals identification of case features under local asymmetry in either the lexical or the functional domain. Thus, in modal infinitivals, the NP direct objects are merged with nominative case in Spec-VP, and thus case checking (i.e., case identification) happens in situ in the lexical domain. On the other hand, direct object pronouns are generated in the functional projection DP in the complement position of V with accusative case since pronouns are not lexical categories (i.e., they are not part of the lexical domain) and thus necessarily behave differently from full NPs.[24] In AT, only lexical categories (N and V) are part of the lexical domain. All others, including pronouns (D), belong to the functional domain.[25] Hence the difference between the case realization of NP and pronominal direct objects boils down to the difference in their case identification, i.e., shifting or linking, respectively.

Besides the major difference in the case of direct objects in Fi (i.e., direct objects of imperatives and infinitives embedded in a modal context are nominative), there are several differences in the case of the direct objects even within these well-defined circumstances: (i) pronominal direct objects occur in the accusative case in the same positions in which full NP direct objects are nominative; (ii) within imperatives, the direct object of 1st and 2nd person imperatives is marked as the nominative case, as in (3), repeated as (29) below. On the other hand, the direct

object of 3rd person imperatives (which is an optative form rather than an imperative) is marked as accusative, as in (30) (which might partly be due to different feature specification). It will be shown that these differences are reducible to structural asymmetries.

(29) Lue (sinä) tämä kirja! (Fi)
read-IMPV-2SG (you-NOM) this-NOM book-NOM
'Read this book.'

(30) a. Luke-koon hän kirja-n. (Fi)
read-IMPV,3SG (s)he-NOM book-ACC
'May he/she read the book.'

b. Hän luke-koon kirja-n. (Fi)
(s)he-NOM read-IMPV,3SG book-ACC
'May he/she read the book.'

4.2 Independent evidence for the proposed structure

The proposal introduced in this paper, i.e., NP direct objects are merged with nominative case in Spec-VP, and thus case checking happens in situ in the lexical domain, can be motivated by the following pieces of evidence. (i) The nominative direct object in (1), repeated here as (31), cannot be extracted as nominative – its case will change to accusative, as in (32)–(33).

(31) Minun täytyy lukea tämä kirja.
I-GEN must-3SG read-INF this-NOM book-NOM
'I have to read this book.'

(32) Minkä/*Mikä hän sanoi että minun täytyy lukea?
what-ACC/*NOM (s)he said that I-GEN must-3SG read-INF
'What did (s)he say I should read?'

(33) Minkä kirja-n/*Mikä kirja hän sanoi että
what-ACC book-ACC/*what-NOM book-NOM (s)he said that
minun täytyy lukea?
I-GEN must-3SG read-INF
'What book did (s)he say I should read?'

It is well-known that elements cannot be extracted from a subject position, but only from an object position. The nominative direct object thus cannot occupy the complement of V position (since then it could be extracted); on the other hand, the generation of the direct object in Spec-VP does not deprive it from its object properties, as was demonstrated in Section 2.1. (ii) Another piece of evidence for the

assumption that asymmetry is involved can be observed in the preposing ability of nominative objects: the nominative direct object NP of modal constructions such as (31) can be preposed (see (26)) whereas the object NP of imperatives, such as (29), cannot be, shown in (42). This might be attributed to the different licensers of the nominative object NPs in the two types of construction: in (31), the nominative object is licensed by the modal (which selects an infinitive), and in (29), it is licensed by the imperative verb (cf. Harley 1997 in which the case of nominative objects is licensed by the stative verb/affix). The nominative object has to remain in the local domain of the case licenser which is the reason why it cannot raise higher than the imperative verb (which is in C), as (35) shows. On the other hand, it can raise out of an infinitival (to a topic position) since it is licensed by the higher verb (the invariant modal), as in (34) .

(34) Tämä kirja minun täytyy lukea.
this-NOM book-NOM I-GEN must-3SG read-INF
'It is this book that I have to read.'

(35) *Tämä kirja lue!
this-NOM book-NOM read-IMPV-2SG
'*This book, read.'

This proposal has the advantage of not having to stipulate that T has a weak nominative case feature and two specifier positions, one of which was assumed only for the purpose of hosting the nominative direct object (cf. Ura 1996; Jakab 2000a in Section 3.4). Besides, it is empirically unmotivated for the direct objects to check their nominative case in Spec-TP since they (the nominative objects) behave like regular direct objects syntactically. T has only an EPP feature which is checked by the oblique subject.

4.3 Finnish modal constructions

In this section, I show how the mechanism proposed above may be applied to modal constructions in Fi. In modal infinitival sentences such as (31) (repeated as (36)), the NP direct object is merged with nominative case in Spec-VP, and thus case checking happens in situ in the lexical domain. Notice, however, that the direct object is nominative only if the modal has no φ-features (it is an invariable form) and so it does not induce agreement on the subject, which is thus oblique-cased (i.e., genitive in Fi).

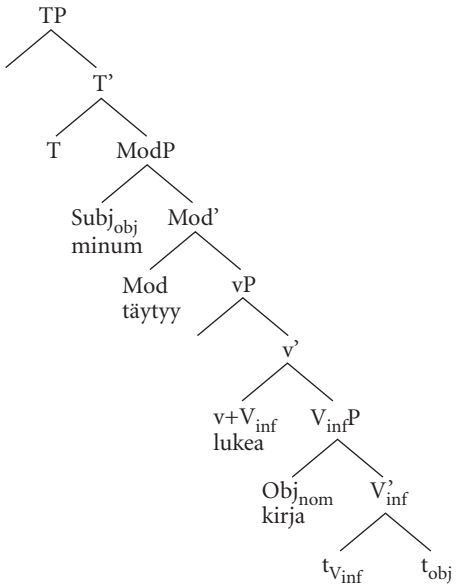
(36) Sinu-n täyty-y luke-a tämä kirja. (Fi)
you-GEN must-3SG read-INF this-NOM book-NOM
'You must read this book.'

On the other hand, when the sentence contains an inflected predicate, such as *haluta* 'want' in (37), the direct object will be the canonical accusative case. The difference between (36) and (37) is that the verb is lexical in the latter, in contrast with the invariable modal predicate of (36). Therefore, it induces agreement on the subject, which is thus nominative.

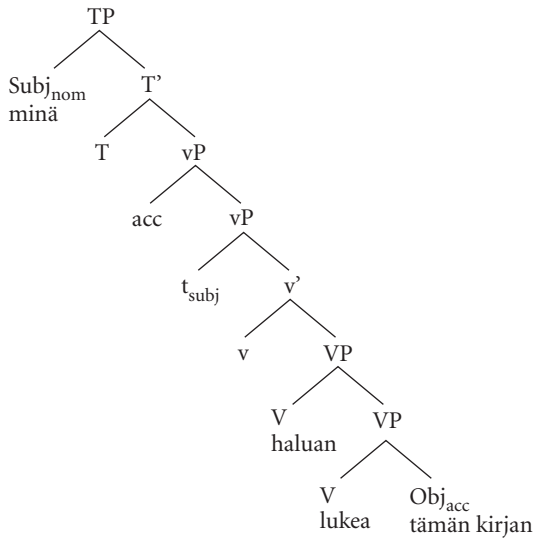
(37) Minä halua-n luke-a tämän kirjan/*tämä kirja. (Fi)
I-NOM want-1SG read-INF this-ACC book-ACC/*NOM
'I want to read this book.'

The difference in the cases of the direct object in (36) and (37) is thus reducible to the difference in the category of the main predicate. If it is a functional modal, as in (36), case checking of the object will take place in situ in Spec-VP (see (38)). If the main predicate is lexical, as in (37), case checking of the object will occur through movement in Spec-vP (see (39)) since this position is able to check accusative case. The difference in the case realization of the direct objects in (36) and (37) thus is derived from configurational variety, i.e., their different structure (see (38) and (39)) below.

(38)



(39)

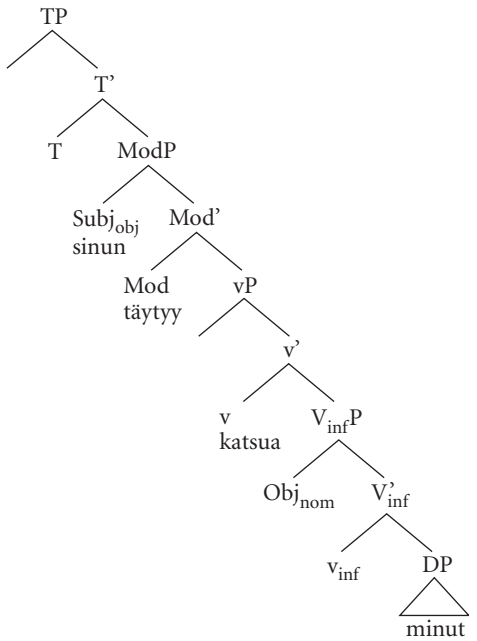


As (38) shows, the oblique subject is base-generated in Spec-ModP from where it raises to Spec-TP to check T's strong EPP (D) feature. We know that it is the subject, and not the object, that checks T's D-feature because the word order shows that the object did not, and could not, move overtly. Also, the subject is the closest NP to T, and as such, its D-feature is attracted to T. The oblique subject cannot be generated in Spec-vP because it is the invariable modal that is the source of its case. On the other hand, the subject in (39) is canonically merged with nominative case in Spec-vP since the verb *haluta* 'want' induces agreement on its subject.

Another difference can be observed between the cases of direct objects in the same nonfinite environment depending on their categorial adherence. Pronominal direct objects appear with the accusative case when direct object NPs are nominative (cf. (40)). I propose that direct object pronouns are generated in the functional projection DP in the complement position of V with accusative case (see (40) and its representation in (41)) since pronouns are not lexical categories (i.e., they are not part of the lexical domain) and thus necessarily behave differently from full NPs.

(40) Sinu-n täyty-y kutsu-a **minu-t/*minä.** (Fi)
you-GEN must-3SG invite-INF **I-ACC/*NOM**
'You have to invite me.'

(41)



4.3.1 *Infinitives containing a possessive suffix*

The Fi example in (42) further supports the structure that I am proposing for nominative object constructions: the direct object of the doubly embedded infinitive *ostaa* 'buy' is in the nominative despite the fact that this infinitive has a second person singular possessive suffix on it.

(42) Sinu-n täyty-y matkusta-a Suome-en
you-GEN must-3SG travel-INF Finland-illat
[t osta-a-kse-si auto]. (Fi)
buy-INF-TRANSL-POSS-2SG car-NOM
'You have to travel to Finland to buy a car.'

As we saw in Section 3.2, according to Timberlake's theory (1974), the object in (42) should be accusative since the possessive suffix[26] makes the infinitive personal. By personal, I mean that the possessive suffix on the infinitive enables the infinitive to agree with the subject in person and number. In contrast with Timberlake's prediction (i.e., the direct object can be nominative only if there is no agreement between the main predicate and the subject of the sentence), the object is nominative, which shows that the personal/impersonal distinction cannot account for nominative objects. (42) also shows the recursive character of nominative objects. Note that this is through two embeddings. In my proposal, the fact that the object

is nominative follows from the possible assumption that the infinitive is transparent and somehow inherits the nominative case assigning property from the modal (or the imperative (cf. 43)), and thus can be licensed locally in Spec-VP (Edwin Williams, p.c.).

The same situation can be observed in Fi imperatives such as (43), where the imperative takes an infinitive complement with a possessive suffix, which, again, makes the infinitive agree with its subject.

(43) Matkusta (sinä) Suome-en osta-a-kse-si
travel-IMPV-2SG (you-NOM) Finland-illat buy-INF-TRANSL-POSS-2SG
auto. (Fi)
car-NOM
'Travel to Finland to buy a car.'

The second person singular possessive suffix on the infinitive indicates that the subject is also second person singular, i.e., *sinä* 'you'. (43) is thus not an impersonal construction. The direct object of the infinitive is, however, nominative, and not accusative, as Timberlake's theory predicts.

4.4 Finnish imperatives

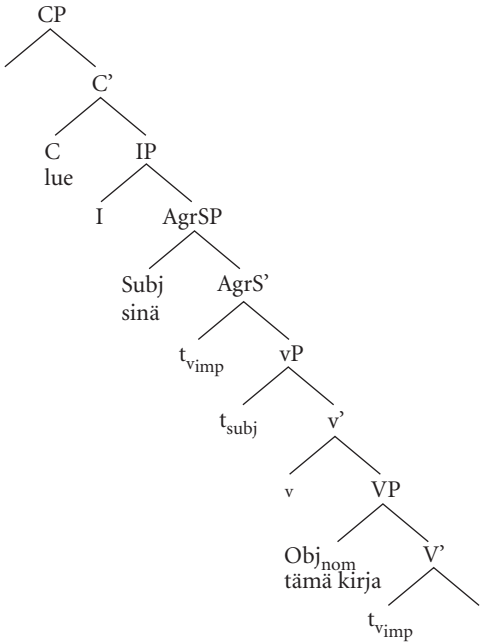
4.4.1 *Morphological imperatives*

As was mentioned in the previous section, the direct object of imperatives such as (44), illustrated in (45), is nominative as well (*tämä kirja* 'this book').

(44) a. Lue (sinä) tämä kirja! (Fi)
read-IMPV-2SG (you-NOM,SG) this-NOM book-NOM
'Read [SG] this book.'

b. Luke-kaa (te) tämä kirja! (Fi)
read-IMPV-2PL (you-NOM,PL) this-NOM book-NOM
'Read [PL] this book.'

(45)



As (45) illustrates, the imperative verb moves to C to check its [imp] feature against the same illocutionary force feature of C. This movement also accounts for the obligatory sentence-initial position of the imperative verb. Following Platzack and Rosengren (1998), I assume that imperatives do not contain a TP projection since they never exhibit tense distinctions in their paradigm. However, they do have an AgrSP, which ensures agreement between the imperative verb and its subject (ImpNP), as a Spec-head relation in AgrSP.

It is a cross-linguistic property for the subject of imperatives (ImpNP) not to be overt. The invisible subject of imperatives is commonly identified as the empty category *pro* in the literature (cf. Platzack & Rosengren 1998). We can observe this property in Finnish second person imperatives as well, shown in (44). Notice, however, that the direct object of the imperatives in (44) is nominative rather than accusative. The sentences in (44) thus contain two nominative-marked NPs. On the other hand, the examples in (46) show that the subject of a third person imperative[27] is obligatorily present and its direct object is in the canonical accusative case.

(46) a. Luke-koon hän kirja-n. (Fi)
read-IMPV-3SG (s)he-NOM book-ACC
'May he/she read the book.'

b. Hän luke-koon kirja-n. (Fi)
(s)he-NOM read-IMPV-3SG book-ACC
'May he/she read the book.'

With regard to the difference in case within imperatives in Fi, i.e., the direct object of 1st and 2nd person imperatives is marked as the nominative case (cf. (44)), whereas the direct object of 3rd person imperatives is marked as accusative (cf. (46)), it can be observed that the difference in the feature specification of second and third person imperatives coincides with their pattern of subject omission. Fi is a "mixed" pro-drop language, i.e., it allows an empty subject in first and second persons, as in (47a–b), but the presence of the subject is obligatory in third person, as in (47c) (cf. Vainikka & Levy 1999). Moreover, in contrast with second person imperatives, which always exhibit a verb-subject word order, the subject pronoun *hän* '(s)he' can occur either postverbally, as in (47a), or in a preverbal position, as in (47b).[28]

(47) a. Mene-n kotiin. (Fi)
go-1SG home
'I am going home.'
b. Mene-t kotiin. (Fi)
go-2SG home
'You are going home.'
c. Hän mene-e kotiin. (Fi)
(s)he-NOM go-3SG home
'(S)he is going home.'

I propose that the nominative direct object NP of 1st and 2nd person imperative verbs is generated in Spec-VP where it checks its nominative case in situ. The optional occurrence of a nominative-cased subject thus does not cause a theoretical problem and it is structurally accounted for (without the proliferation of functional projections, as in Mitchell 1991), i.e., it checks its case in Spec-AgrSP. On the other hand, the direct object of 3rd person imperatives is generated in the complement position of V and checks its accusative case in Spec-vP, similar to the direct object in sentences with a lexical modal (cf. (39)). This assumption is supported by the obligatorily presence of a nominative subject NP in the sentence.

The advantage of this proposal is that it ties together two distinct properties of second and third person Fi imperatives in accounting for the case difference that their direct objects display (i.e., the direct object of second person imperatives is nominative, whereas the direct object of third person imperatives is accusative). When the imperative has an obligatorily overt nominative subject, it takes a direct object in the accusative in the cross-linguistically canonical way. On the other hand, when the imperative's subject (i.e., ImpNP) is not necessarily overt, the di-

rect object's case is nominative. Notice that even when the ImpNP is overt, it cannot occupy the regular sentence-initial subject position: it always follows the verb. The regular absence and the position of the ImpNP suggests that it has different properties from those of regular subjects (cf. Platzack & Rosengren 1998). Consequently, its case is a weaker nominative, which allows the presence of another nominative (the direct object) in the same clause. Platzack and Rosengren (1998) suggests that the ImpNP can be considered to be caseless since imperatives lack the case-checking TP position. While this suggestion might be correct, I suggest that the nominative case of ImpNPs is checked in AgrSP (there is an AgrS projection since the ImpNP agrees with its subject) (cf. Iatridou 1993). However, there are constructions in which ImpNP is indeed caseless, i.e., Russian imperative sentences in their noncanonical (e.g., conditional) which lack agreement between the ImpNP and the imperative verb.

4.4.2 *Passive used as imperative*

In this section, I briefly explain the common use of the passive form to express the first person plural imperative in spoken Fi. As the glosses of the sentence in (10b′), repeated below as (48), show, the verb form *luetaan* is passive, yet it can be interpreted only as imperative, and never as passive. The unavailability of a passive reading is supported by the postverbal position of the nominative NP *tämä kirja* 'this book'. The sentence can be interpreted as passive only if this nominative NP is fronted, i.e., if it occurs preverbally, as in (49).

(48) Lue-taan tämä kirja. (Fi)
read-PASS this-NOM book-NOM
'Let's read this book.'/*'This book is being read.'

(49) Tämä kirja luetaan. (Fi)
this-NOM book-NOM read-PASS
'This book is being read.'

The imperative interpretation is also possible when the passive is formed from an unaccusative verb,[29] as in (50).

(50) Men-nään! (Fi)
go-PASS
'Let's go.'

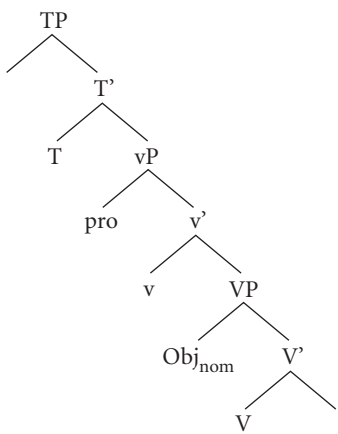
That the imperative can be expressed by various means, i.e., not only by a special imperative morpheme, is not a unique phenomenon. For example, Russian uses a historically participial form to render sentences like: *Pošli!* 'Let's go'. On the other hand, we can find instances of the reverse case also, i.e., the imperative can have several functions besides expressing the imperative. Imperative morphology can be

used to denote subjunctive (e.g., in Hungarian), or it can express the conditional (e.g., in Russian) (see Jakab 2000b for examples and details).

The example in (48) can be explained in the following way: since the verb form is passive and therefore lacks an external argument, it cannot assign accusative case (in other words, it contains a passive v-head, which lacks the upper layer where accusative case is checked, the direct object cannot be accusative). The direct object is thus located in Spec-VP where it checks its nominative case, similar to the modal constructions above.

In contrast with morphological imperatives, examined in the last section, the imperatives expressed by the passive contain a TP projection because the passive verb can have tense (see fn. 27). On the other hand, it does not have AgrSP since the invariant passive verb does not show agreement with its argument. The single Spec position that is available in passives is occupied by the empty category *pro*.[30] Recall that the invisible subject of second person imperatives is also *pro*.

(51)



4.5 Old Russian modal constructions

In this section, I turn to OR infinitival sentences with a modal predicate[31] that contain a nominative object. They mostly occur in manuscripts of the Northern and Northwestern dialects of OR, which is why it has been assumed that they were influenced by Fi and Balto-Finnic languages. They do not appear in manuscripts of ecclesiastical origin, i.e., in Old Church Slavonic texts. A large part of the texts in which nominative objects are used contain juridical material whose language is very close to the spoken language. The constructions with nominative objects always denote some kind of obligation, necessity, or mandatoriness, all of which are characteristic of the style of the law. Nominative objects also occur in proverbs which generally state the norms of common sense.

The OR infinitival sentences such as (52)–(54) are also noteworthy syntactically because, like the Fi modal constructions examined in the previous sections, they have a direct object, which is marked nominative, in contrast with the canonical accusative case[32] that is the cross-linguistically typical case of direct objects.[33]

(52) Ino dostoit" mužu žena svoja nakazyvati. (OR)
for fit-3SG man-DAT wife-NOMF his-NOMF punish-INF
'For it is fitting for a man to punish his wife.'

(53) Torgovlja emu nadobno vědati. (OR)
trade-NOMF he-DAT necessary know-INF
'It is necessary for him to know about trade.'

(54) Prežde vsex podobaet emu deržati kafoličeskaja vera. (OR)
before all befit-3SG he-DAT keep-INF Catholic-NOM faith-NOM
'First of all, he has to keep his Catholic faith.'

4.5.1 *Evidence for objecthood*

The above examples indicate that the direct objects are nominative. It is, however, also essential to show that these nominative NPs function as direct objects. To test their objecthood, we have to see how they behave when negated. OR had a phenomenon called the "Genitive of Negation", which meant that direct objects changed their accusative case to genitive under negation.[34] When nominative direct objects are negated, they behave the same way as accusative direct objects, i.e., they become genitive, which indicates that they are indeed direct objects. This is illustrated in (55).

(55) A ne poljubovno emu votčiny ne kupiti. (OR)
but NEG willing he-DAT inheritance-GEN NEG buy-INF
'And he is not willing to buy the inheritance [the inherited property].'

Another indicator of the objecthood of these nominative NPs is that when the direct object is a masculine animate noun like *voevoda*[35] in (56), it receives the canonical accusative case. It has been assumed that the reason for the change of case might be that masculine animate nouns belong to the animate category in Russian[36] (cf. Timberlake 1974). Since the oblique subject already checks the EPP, no other element is necessary to perform this, and therefore the direct object must be in the accusative.

(56) I mne poslat' svoego voevodu s' tvoim'
and I-DAT send-INF own-ACC general-ACC with your-INST
voevodoju. (OR)
general-INST
'And it is for me to send my general with your general.'

The example in (57) provides one more piece of evidence for the objecthood of the nominative NPs. In this sentence, the direct object NPs alternate between accusative and nominative cases: the masculine animate *brat moj* 'my brother' and *syn moj* 'my son' are, as expected, in the accusative, whereas the feminine NP *žena moja* 'my wife' receives the nominative case. The case of the masculine inanimate *dom" moj* 'my house' cannot be determined; it is either nominative or accusative.[37] This example shows that the nominative NP must be also a direct object since it has the same function and position as the accusative NPs in the same clause.

(57) I tobě$_i$ bylo v"ěxavši v Kiev" [t$_i$ brat[a] moego
and you-DAT wasN enter-GER in Kiev-ACC brother-ACC my-ACC
jati i syna moego i žena moja, i
seize-INF and son-ACC my-ACC and wife-NOM my-NOM and
dom" moj vzjati]. (OR)
house-NOM/ACC my-NOM/ACC take-INF
'It was for you, having entered Kiev, to seize my son and my wife and to take my house.'

The sentence in (58) is a final piece of evidence for the objecthood of the NOMinative NPs.

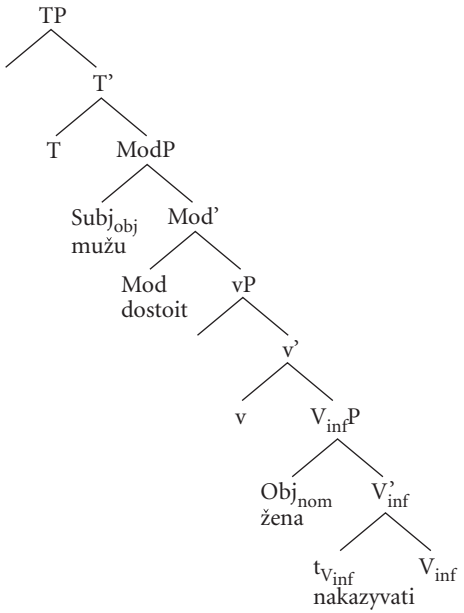
(58) Vzjat' vsju ta skotina na gosudarja. (OR)
take-INF all-ACC that-NOM cattle-NOM to lord-ACC
'It was necessary to take all that cattle to the lord.'

This example dates from the period (beginning of the 18th century) when nominative objects started to disappear, and consequently, there was confusion as to whether to use the nominative or the accusative case. As (58) shows, the feminine direct object NP *skotina* 'cattle' is nominative; however, one of its modifiers (*vsju*) is accusative while the other (*ta*) is nominative. The accusative-marked modifier indicates that its modifiee (*skotina*) is the direct object.

4.5.2 *The structure of Old Russian modal constructions*

In this section, I argue that the OR nominative object construction has the same monoclausal structure as the Fi modal construction examined in Section 4.1. The sentences in (52)–(54) above contain an oblique-cased (i.e., dative) subject, an invariable third person singular modal predicate that takes an infinitive which has a nominative direct object NP. I propose the mechanism given in (59), which is the same that was proposed for the Fi construction (see (38)), to account for the properties of the OR examples.

(59)



As (59) shows, the oblique subject, which is base-generated in Spec-ModP from where it raises to the Spec-TP to check the EPP. In contrast, (60) illustrates that if the main verb is lexical, it induces agreement on the subject, which is thus nominative. Since the subject NP can check T's case feature, the direct object is in the canonical accusative. According to my proposal, the accusative direct object is base-generated in the complement position of the infinitive.

(60) Ol'ga že povelě iskopati jamu veliku. (OR)
Olga-NOM EMPH ordered dig-INF hole-ACC large-ACC
'Olga ordered to dig a hole.'

Returning to the mechanism for the OR modal constructions, given in (59), we can see that similar to the Fi modal sentences, the direct object is merged in Spec-VP with the nominative case which is checked in situ.

The examples in (61)–(64) can be accounted for similarly; the only difference is that here the ModP is not filled with overt lexical material, as shown in (65). Nevertheless, the ModP is projected to account for the subject's oblique case.

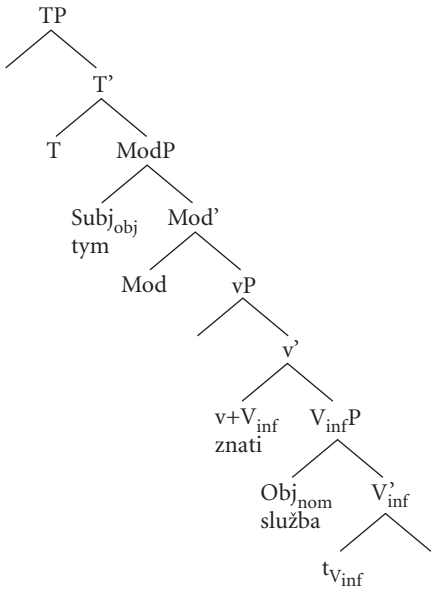
(61) Tym' znati svoja služba. (OR)
they-DAT know-INF own-NOMF duty-NOMF
'It is for them to know their own duty.'

(62) Molodym" pěti slava. (OR)
young-DAT,PL sing-INF glory-NOM
'The young ones had to sing glory.'

(63) A ta gramota, knjaže, dati ti
and that document-NOMF prince-voc,sg give-INF you-DAT
nazad". (OR)
back
'And prince, you need give that document back.'

(64) A orda znati tobě velikomu knjazju. (OR)
and army-NOMF know-INF you-DAT great-DAT prince-DAT
'And you, great prince, must know your army.'

(65)



When both an overt subject NP and an overt modal predicate are missing, as in (66),[38] the object has to move to the subject position to check T's EPP after having checked its case features in Spec-VP. We know that the nominative NP *zemlja* 'land' is the object, and not the subject, since the infinitive cannot induce agreement, given that it has no φ-features. Nevertheless, (66) gets the same representation, seen in (65), as the other sentences above. The difference is that in (66) the functional projections ModP and vP are empty, i.e., they are filled with covert material.

(66) Zemlja paxat'. (OR)
earth-NOMF plow-INF
'It is necessary to plow the land.'

There is a particularly interesting example, given in (67), in which at first glance it might appear that not the infinitive, but another nonfinite form, a verbal adverb, has its object in the nominative case.

(67) I tobě$_i$ bylo v"ěxavši v Kiev" [t$_i$ brat[a] moego
and you-DAT wasN enter-GER in Kiev-ACC brother-ACC my-ACC
jati i syna moego i žena moja, i
seize-INF and son-ACC my-ACC and wife-NOM my-NOM and
dom" moj vzjati]. (OR)
house:NOM/ACC my-NOM/ACC take-INF
'It was for you, having entered Kiev, to seize my son and my wife and to take my house.'

Upon closer examination, however, it becomes clear that we are dealing with the same phenomenon in (67) as in the previous examples: if we take out the gerund phrase *bylo v"ěxavši v Kiev"* 'having entered Kiev', which is a condensed version of the clause *when you entered Kiev*, what is left from the sentence is exactly the same construction as in all the examples above.

(68) I tobě brat[a] moego jati, i syna moego
and you-DAT brother-ACC my-ACC seize-INF and son-ACC my-ACC
i žena moja, i dom" moj
and wife-NOM my-NOM and house-NOM/ACC my-NOM/ACC
vzjati. (OR)
take-INF

As (68) shows, there are two infinitives (*jati* 'to seize' and *vzjati* 'to take'), a modal projection which is not filled with lexical material, and a dative subject *tobě* 'you'. The sentence is confusing at first because *tobě* is the subject of both the gerund and the infinitive, as the subscripted t[race] indicates, which is why it seems at first glance that the gerund takes the nominative direct object.

On the other hand, there can be found a few examples in OR in which verbal adverbs indeed seem to have nominative direct objects. However, they never occur without an infinitive in the same sentence, and they have the same interpretation (i.e., that something is necessary) as the previously examined modal constructions, as (69)–(70) show.

(69) I u togo, kto tak učinit, ta čužaja zemlja
and at that who so acts, that-NOM foreign-NOM land-NOM
vzjav, otdati tomu, u kogo otnjal". (OR)
take-PAST-GER return-INF that-DAT at whom took-away
'And the person who acts like this, having taken that foreign land [who has taken that foreign land], it is necessary to return it to the person from whom it was taken.'

(70) Ino gosudarju pravda davši vzjat' svoje. (OR)
for lord-DAT truth-NOM give-PAST-GER take-INF own-NOM/ACC
'Having given justice to the lord, it was necessary to take his own.'

Sprinčak (1960) claims that the verbal adverb + nominative direct object constructions appeared under the influence of the infinitives that take nominative objects. However, if we take a closer look at the sentences above, it becomes clear that the direct object of the infinitive is also nominative. Moreover, in (69), it is the same NP, i.e., *ta čužaja zemlja* 'that foreign land', which the verbal adverb takes as its direct object. It is likely that the direct object of the verbal adverb is nominative because of the presence of the infinitive which can be related to the recursive nature of the nominative object rule. We saw in the Fi example in (42), repeated as (71) below, that it is possible for the nominative object to keep its nominative case through two infinitival embeddings. Consequently, it is also possible to keep the object's nominative case when the embedded element is a verbal adverb, which is also a nonfinite category.

(71) Sinu-n täyty-y matkusta-a Suome-en
you-GEN must-3SG travel-INF Finland-illat
[osta-a-kse-si auto]. (Fi)
buy-INF-TRANSL-POSS-2SG car-NOM
'You have to travel to Finland to buy a car.'

It can be concluded that the postulation of a modal projection in the OR constructions containing a nominative direct object explains their properties that would be difficult to account for otherwise.

5. Conclusion

In this paper, I have presented a unified account for the usage and occurrence of nominative objects in Fi and OR modal constructions (including Fi imperatives) utilizing Di Sciullo's Asymmetry Theory. It has been demonstrated that in the examined nonfinite constructions, object NPs, as lexical categories, are merged in Spec-VP with the nominative case. On the other hand, pronominal direct objects, given their functional category status (i.e., they are DPs), are asymmetrically base-generated in the complement position of the infinitive, thus linking the difference in their case realization to case identification under local asymmetry in the lexical or the functional domain, respectively. It has been also shown that second and third person Finnish imperatives assign different cases to their direct objects. The choice of the case of the direct object has been tied to the licensing of subject omission in Fi. The occurrence of two nominative NPs in Fi imperatives also follows from this account and does not cause problem for the theory.

Notes

1. All the OR examples have been taken from Sprinčak (1960).

2. Animate NPs in Russian include 1st declension nouns ending in a consonant (these are all masculine), such as *brat* 'brother' and *syn* 'son' in (7a), as well as 2nd declension masculine nouns ending in *-a*, such as *voevoda* 'general' in (7b); (2*nd* declension nouns are usually feminine but there are a few masculine nouns ending in *-a* in this group).

3. I thank Anna Maria Di Sciullo for pointing this out to me.

4. The case difference between (1)–(3) and (6)–(7) will be attributed partially also to the different feature specification of these NPs, i.e., if they are specified as [+anim], they must be accusative.

5. Besides the configurational explanation for uninterpretable features such as case, it is important to note the relative independence of such uninterpretable features and interpretable ones such as theta roles: the fact that both nominative and accusative can be assigned to the internal argument in certain environments suggests that the relation between case and theta role is not substantial but parasitic on formal-functional properties (Anna Maria Di Sciullo, p.c.).

6. With the exception of Livonian.

7. Timberlake (1974) argues that Finnish and the Baltic Finnish languages may have influenced Northern Old Russian dialects through geographic proximity and linguistic contact. Since this paper is not about diachronic syntax, I will not discuss this issue here.

8. The direct object of an imperative verb is obligatorily nominative in Finnish but not in Slavic or Baltic languages (cf. Timberlake 1974: 172–179).

9. Although both *täytyy* and *dostoit*" can occur in other tenses than the present, they always remain third person singular forms.

10. We will see that the subject of imperatives (ImpNP) has unique properties; for example, it is usually omitted (cf. Platzack & Rosengren 1998).

11. The morpheme *-n*, which is actually the genitive morpheme in Fi, is also used to express the case of the direct object; for ease of exposition I will call it accusative. The original accusative *-t* desinence has been kept only in certain pronominal forms, i.e., in personal and interrogative pronouns such as *minut* 'me' or *kenät* 'whom'.

12. For Taraldsen, there is also a fourth construction that has nominative objects: the passive (i). He considers the NP *kirja* the object because of the word order. However, according to native Fi judgment, (i) does not have a passive reading; it has an imperative reading, which will be discussed along with the morphological imperatives. The regular passive word order in Fi is the derived subject followed by a verb with passive morphology (see (ii)), similar to English and other languages.

(i) Lue-taan kirja. (Fi)
read-PASS book-NOM
'Let's read the book.'/*'The book is being read.'

(ii) Kirja lue-taan. (Fi)
book-NOM read-PASS
'The book is being read.'

13. Masculine animate NPs are considered to belong to the animate category in Russian (cf. Timberlake 1974).

14. This is the original accusative ending *-t*, which was preserved only in personal and interrogative pronouns, which are the only animate categories in Fi. It is a universal tendency for pronouns to be more inflected than other categories (e.g., English *him*, *her*, or *whom*, etc.)

15. V is not able to assign nominative case to its object within GBT.

16. A variation on the Case Tier Hypothesis is Marantz's (1991) theory, which claims that the realization of structural case is a morphological property of the clause; it is the result of a dependency relation between NPs (i.e., the assignment of accusative or nominative depends on the number of the NPs that check structural case in the clause).

17. A case-theoretic version of (25) is given in Babby (1991) according to which the NP that is the most directly dominated by IP (i.e., TP) is considered the "highest NP". Accordingly, when the sentence contains an oblique-cased subject, the direct object is the highest NP, and as such, it is assigned nominative.

18. Structural case (e.g., nominative or accusative) enters the derivation with a [-interpretable] feature which needs to be checked.

19. By systematically impersonal Timberlake means that the modal predicate does not establish agreement with the subject of the clause.

20. Emonds (1989) translates Timberlake's proposal into "government-binding terms": nominative objects represent the failure to assign morphological accusative, even though nominative objects have abstract accusative case.

21. The passive in Fi is a constant form, i.e., it does not show agreement with the nominative subject (see (i)).

(i) Kirja-t lue-taan. (Fi)
book-NOM,PL read-PASS
'The books are being read.'

22. She argues that since the agent can never be expressed in Fi passive constructions, i.e., a *by*-phrase is never allowed, Spec-PredP is empty (nothing is base-generated there).

23. She posits an OblP on the basis of the semantics of the subject in these constructions, i.e., based on the fact that it expresses some type of obligation.

24. The case difference between (1)–(3) and (6)–(7) will be attributed partially also to the different feature specification of these NPs, i.e., if they are specified as [+anim], they must be accusative.

25. While these domains (i.e., lexical and functional) are distinct, the question arises whether the functional domain should properly include the lexical domain. That is to say, the distinction between nominative NP and accusative DP has implications for the geometry of lexical and functional domains (Anna Maria Di Sciullo, p.c.).

26. Infinitives in certain languages, such as Fi, Hungarian, or European Portuguese, can be inflected.

27. Third person imperative forms are considered optative expressing wish or permission (cf. Wickman 1955).

28. When the subject is postverbal, it remains in Spec-AgrSP similar to second person imperatives, and when it precedes the imperative, it moves to Spec-CP.

29. In Fi, it is possible to form the passive from intransitive verbs, as in (i).

(i) Nauret-tiin paljon. (Fi)
laugh-PAST,pass much
'It was laughed a lot [people laughed a lot].'

30. I follow Boeckx's (1997) analysis in assuming that the covert subject, which is generated in Spec-vP, is *pro*. He argues that *pro* is licensed by the aspectual richness of the passive morpheme. The Fi data provide particularly strong evidence for the suggestion that the covert subject of the passive is arbitrary *pro* since in Fi the "implicitized" agent argument can never license a by-phrase, as (i) shows. Given that the agent can never be expressed, *pro* seems to be an ideal substitute.

(i) Kirja lue-taan/*minu-lta. (Fi)
book-NOM read-PASS/I-ABL
'A book was read/*by me.'

However, since the topic of this dissertation is not the passive, I will not discuss this issue further.

31. This construction has been preserved in some northwestern dialects, as (i) and (ii) illustrate.

(i) Nužno topit' izba. (Vologda dialect)
necessary heat-INF cottage-NOM
'It was necessary to heat the cottage.' (Sprinčak 1960: 172)

(ii) Nado bylo dvum čelovekam obxvatit' odna el'. (Arkhangelsk dialect)
must was two-DAT people-DAT encompass one spruce
'Two people had to encompass one spruce [two people were necessary to encompass one spruce].' (Sprinčak 1960: 172)

32. As was mentioned in Section 3.2.3, most of the following examples, such as (59)–(61), contain feminine NPs ending in *-a*, since this is the only class of inanimate nouns that morphologically distinguishes nominative (*-a* ending) and accusative (*-u* ending) cases. Hence, the NPs ending in *-a* unambiguously indicate nominative case.

33. Standard Modern Russian does not have nominative-marked direct objects. The direct object is marked accusative; it can be either genitive or accusative under negation.

34. The phenomenon of the Genitive of Negation is still observed in Modern Russian (see Babby (1991) for a detailed analysis).

35. There is a small group of masculine nouns in Russian, such as *voevoda*, that end in *-a*; their gender is usually clear from their meaning. The possessive adjective *svoego* that

modifies *voevoda* also indicates that it is an animate category. *Svoego* is a masculine genitive form that is used to mark the accusative case of masculine animate nouns.

36. Recall that only animate categories (personal pronouns in Fi and animate masculine nouns in OR preserve the canonical case ending for a direct object.

37. Recall that among inanimate nouns, it is only feminine NPs ending in *-a* that can morphologically distinguish nominative and accusative cases.

38. This is an example from a modern North Russian dialect.

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Resumption and asymmetric derivation

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1. The proposal: Resumption = stranding

Ever since Perlmutter's (1972) shadow pronoun hypothesis, the nature of the relation between a resumptive pronoun (RP) and its antecedent has raised various interesting theoretical questions of grammar. (I will be concerned here mainly with the nature of what Sells (1984) refers to as 'true' resumptive pronouns, as opposed to 'intrusive' pronouns, which are restricted to island contexts. I return to intrusion in Section 5.)

The central thesis of the present contribution is that resumption is the result of stranding under A-bar movement (for a fuller treatment, see Boeckx 2001). Following Sportichian lines originally designed to deal with quantifier float, I assume a derivation like (1), where D is the stranded resumptive head (I follow Postal 1966 and much subsequent work in regarding pronouns and (definite) determiners as one and the same 'D'-element. I assume that the morphological component spells out a D as a determiner if its complement is non-null, but as a pronoun otherwise.).

(1) $[_{CP}\ \mathrm{Wh}_i\ [\ldots[_{VP}\ldots[_{DP}\ t'_i[\mathrm{D}\ t_i]]]]]$

As expected from a stranding analysis, the RP can be found in intermediate landing sites, as shown in (2) (Sells 1984: 92–93).

(2) ha-ʔiš *(ʔalav) ʔani xošev *(ʔalav) ʔamarta *(ʔalav)
The-man that I think that said-you that
sara katva ʔalav šir [Hebrew]
Sarah wrote about-him poem
'The man that I think that I told you that Sarah wrote a poem about.'

Let me now point out some consequences of the proposal made in (1). First, the stranding analysis appears to take us very close in the domain of A-bar binding to recent proposals made by Kayne (2000, 2001) (see also Zwart 2000) for A-binding.

Kayne argues that the nature of binding relations is better characterized if we assume that binder and bindee start off as one constituent, and are separated in the course of the derivation by movement.

Second, the structure in (1) bears striking resemblance to the structure Rullmann and Beck (1998) propose for D-linked wh-phrases, given in (3).

(3) $[_{DP}\text{Ø}_{\text{“the”}}\ [_{NP}$ which NP$]]$

On independent, purely semantic grounds pertaining to how presupposition projects in the presence of D-linked wh-interrogatives, Rullmann and Beck argue that D-linked wh-phrases are headed by the null counterpart of the definite determiner.

Interestingly, Doron (1982) has observed that to the extent that resumptives are found in interrogative contexts, they are restricted to D-linked environments (see Sharvit 1999 for a careful examination of the semantics of resumptive pronouns). The restriction falls out naturally from the proposed structure in (1).

Third, the structure in (1) also bears obvious similarity with the structure assigned to clitic-doubling structures by Torrego (1988), Uriagereka (1995), and many others. The connection between resumption and clitic doubling seems to have been anticipated by Kayne (1994), who observes that “(in some languages) resumptive pronoun relatives result from the usual raising to SpecCP, with the input being a clitic-doubling structure” (Kayne 1994: 165, n. 73).[1]

Fourth, a stranding analysis of resumption embedded in a raising approach to relative clauses (Kayne 1994) would amount to a derivation like the one sketched in (4)–(6). (Target: “the book that I read (it)”.)

(4) $[_{DP}$ D/the $[_{CP}$ [that [I $T^0[_{VP}$ read [D [book]]]]]]]

(5) $[_{DP}$ D/the $[_{CP}$ $[\text{book}]_i$ [that [I $T^0[_{VP}$ read $[t'_i[\text{D } t_i]]]]]]]$

(6) $[_{DP}$ D/the $[\text{book}]_i$ $[_{CP}$ t''_i[that [I $T^0[_{VP}$ read $[t'_i[\text{D } t_i]]]]]]]$

The raising of a bare NP in (4)–(6) is to be related to the one given in Kayne (1994) for *that*-relatives (7)–(9), and contrasted with the raising of a DP in relatives introduced by a relative pronoun (10)–(12).

(7) $[_{DP}$ D/the $[_{CP}$ [that [I $T^0[_{VP}$ read [book]]]]]]

(8) $[_{DP}$ D/the $[_{CP}$ $[\text{book}]_i$ [that [I $T^0[_{VP}$ read $[t_i]]]]]]$

(9) $[_{DP}$ D/the $[\text{book}]_i$ $[_{CP}$ t'_i[that [I $T^0[_{VP}$ read $[t_i]]]]]]$

(10) $[_{DP}$ D/the $[_{CP}$ $[C^0$[I $T^0[_{VP}$ read [which book]]]]]]

(11) $[_{DP}$ D/the $[_{CP}$ $[\text{which book}]_i$ $[C^0$[I $T^0[_{VP}$ read $[t_i]]]]]]$

(12) $[_{DP}$ D/the $[\text{book}]_j$ $[_{CP}$ [which $t_j]_i[C^0$[I $T^0[_{VP}$ read $[t_i]]]]]]$

It is significant that a stranding approach converges on Kayne's structure for *that*-relatives. There is indeed a strong tendency for languages to use an RP in relatives introduced by an invariant/uninflected complementizer, as opposed to wh-pronoun-relatives. Consider the following contrast from Polish.

(13) chłopiec co go widziałeś poszedłdo domu
boy that him saw went to home
'the boy that you saw went home.'

(14) *chłopiec którego go widziałeś poszedł do domu
boy who him saw went to home
'The boy who you saw went home.

Before moving on, I would like to point out some facts observed in Aoun and Choueiri (1999) that strongly suggest that a movement analysis to resumption of the type advocated here is preferable to the currently more popular base-generation analysis of the antecedent in SpecCP. As the data in (15) and (16) show, Lebanese Arabic allows for several strategies of question formation. Besides the movement-gap option, it also exhibits wh-in-situ, and resumption. (Aoun and Choueiri show that unlike the movement-gap configuration, the in-situ and resumption options are not sensitive to islands.)

(15) miin/ʔayya mmasil ʃəft(-o)
who/which actor saw.2SG.-him
'who/which actor did you see?'

(16) ʃəft miin/ʔayya mmasil mbeeriħ
saw.2SG who/which actor yesterday
'who/which actor did you see yesterday?'

Quite remarkably, Lebanese Arabic disallows non-D-linked wh-phrases like *ʃu* 'what' in-situ (17).[2] Resumption is also excluded with *ʃu*, as shown in (18).

(17) ʃtarayte ʃu mbeeriħ
bought.2SG what yesterday
'what did you buy yesterday?'

(18) ʃu ʃtarayt(*-i)
what bought.2SG-it
'what did you buy?'

Another difference between the two wh-sets is that *miin*/*ʔayya*, but not *ʃu*, can head partitive structures of the type found in (19) (vs. (20)).

(19) ʔayya kteeb mən ha-l-kətub /miin mən ha-l-mmasliin
which book of this-the-books/who of this-the-actors
'which one of these books/which one of these actors?'

(20) *ʃu mən ha-l-kətub
what of this-the-books
'which one of these books.'

The fact that the wh-elements that can appear in a resumption configuration turn out to be rich enough to enter into a partitive structure is not surprising under (1). That these very wh-phrases that can 'license' resumptive pronouns can also be 'licensed' in situ is very suggestive of a movement approach to resumptive chains. Under an approach that generates wh-phrases directly into SpecCP under resumption, such facts would be purely accidental. Note also that under a spell-out-a-(minimal)-copy approach to resumption, it is not clear how one could explain why resumption is restricted to 'richer'/D-linked wh-phrases. The Lebanese facts thus provide rather strong initial support for the approach I am advocating.

2. The Left-branch condition and its effects on the nature of resumption

Although the stranding analysis appears to make interesting connections, it faces one major problem. As given, the derivation in (1) amounts to a violation of the general ban on extraction out of left branches, which I will refer to (pre-theoretically) as the Left-branch condition (LBC), which prohibits extraction out of a leftward-branching specifier. The fact that languages like Bulgarian generally ban LBC violations, but make productive use of resumptive pronouns indicates that the problem is a serious one for the present proposal. To explain the LBC-problem away, I will pursue an approach to extraction out of NPs first proposed by Gavruseva (2000). Her core insight is that possessor extraction parallels subject extraction in the sentential domain.

As is well-known, languages like Hungarian which allow for possessor extraction typically impose a Case requirement on the possessor: only dative possessors, not nominative possessors can extract.

(21) a. Péter-nek csak Mari látta [*t* a kalap-já-t]
Peter-Dat only Mari saw the hat-POSS.3SG.ACC

b. *Peter czak Mari látta [*t* a kalap-já-t]
Peter-Nom only Mari saw the hat-POSS.3SG.ACC
'As for Peter, only Mari saw his hat.'

What I intend to do now is show that when followed through, the parallel between possessor extraction and subject extraction is correct. The generalization that will emerge is that agreeing possessors cannot extract, much like agreeing subjects cannot extract.[3]

As has often been noted, when structurally Case-marked elements and inherently Case-marked elements are subject to the same operation (say, passivization), inherently Case-marked elements fail to trigger agreement, while structurally Case-marked elements do. Let us then adopt the idea that nominative forms are agreeing forms, but dative forms aren't.[4] Applied to (21), that means that agreeing possessors cannot extract, while non-agreeing possessors can do so.

Interestingly, the effect of agreement on extraction has already been recognized in the sentential domain. Thus, in a number of languages that mark subject agreement on the verb, either the marker is dropped or it is replaced by a default marker when the subject undergoes A-bar movement (see Ouhalla 1993). The intuition that agreement plays a role in LBC-extractions is an old one. Thus, it has often been pointed out that the impossibility of *combien*-extraction in Italian ((22) vs. (23)) may be related to the fact that the Italian equivalent to *combien* agrees in φ-features with its N complement.

(22) combien Marie a-t-elle écrit [*t* de livres] (French)
how-many Marie did she write of books
'How many books did Marie write?'

(23) *quanti abbia scritto [*t* libri] Maria (Italian)

Let me refer to this effect of non-agreement on extraction as a local non-agreement effect. The non-agreement is manifested on the extractor/extractee. There is a second effect of non-agreement, one that is less obvious, but perhaps more pervasive in the domain of resumption. I will refer to this effect as non-agreement at a distance. This term will stand for the fact that an extractee does not show any agreement effect on its extraction path. Non-agreement effects at a distance are illustrated here from French. Unlike regular subject extraction, which triggers the *que* → *qui* alternation (24), extraction from a subject fails to affect the complementizer's morphology (25).

(24) combien de journaux crois-tu qui/*que publieront cela
how-many of newspapers think-you that will-publish that
'How many newspapers do you think will publish that?'

(25) combien crois-tu que/*qui [t de torpilles] ont coulé le T.
how-many think-you that of torpedoes have sunk the T.
'How many torpedoes do you think sank the T?'

It is important to bear in mind that 'local' and 'distant' non-agreement effects are taxonomic devices only. As I show in Boeckx (2001), a common mechanism underlies them both.

The most pervasive non-agreement effect at a distance has already been encountered. It is the generalization that in relative clauses an uninflected complementizer surfaces in the presence of an RP. The celebrated complementizer alternation found in Irish and discussed at length in McCloskey (1990, 2000) is a good illustration of this generalization.

(26) a. an fear aL bhuail tú (Irish)
The man C struck you
'The man that you struck.'
b. an fear aN bhuail tú é
The man C struck you him

It is important for the reader to bear in mind that Irish (and languages patterning like it) shows effects of non-agreement, for it is tempting to reject the whole idea of stranding and non-agreement based on the fact that the resumptive pronoun has φ-features that match those of the antecedent. If I am right, such matching cannot be the result of agreement. (See Boeckx 2001 for extensive discussion.)

Let us focus on a local instance of non-agreement under resumption. The crucial data come from Scottish Gaelic, as described by Adger and Ramchand (2000). Adger and Ramchand observe that the resumptive morphology seen on the preposition is special in that it fails to match a feature of the antecedent. As can be seen in (27)–(28), for instance, the preposition bears default masculine morphology, and not the otherwise expected feminine morphology.

(27) dè a'mhàileid a chuir thu am peann ann (Sc. Gaelic)
which the bag-FEM C put you the pen in-3-MASC
'Which bag did you put the pen in?'

(28) *dè a'mhàileid a chuir thu am peann innte
which the bag-FEM C put you the pen in-3-FEM

The fact that we are able to find instances of both local and distant non-agreement effects under resumption is very encouraging. Although most languages exhibit distant non-agreement effects, instances of local non-agreement may be more widespread than one would think. Thus, McCloskey (2000) provides an example from Irish, where a 3rd person RP is used for a non-3rd person antecedent. (Note that Irish is a language with no apparent local non-agreement effects.)

(29) A Alec, tusa a bhfuil an Béarla aige
hey Alec you aN is the English at-him
'Hey Alec you that know(s) English.'

The reasons for local non-agreement should be clear at this point: such is the price to pay for any extraction out of a left-branch. Note that the fact that we find the same constraint on agreement for subextraction and resumption provides a strong piece of evidence for the analysis developed here. Non-agreement is totally unexpected under alternative approaches to resumption. Still, questions remain: Why does non-agreement persist along the extraction path? Why isn't it possible for the φ-features of the moving element to become active after extraction out of DP?

Answering these questions would take me well beyond the limits of this paper. What I will do here is hint at an analysis, without exploring it in any detail (see Boeckx 2001 for a more adequate characterization, and a detailed exploration of its ramifications). The persistent effects of non-agreement become clear when we consider derivations from the point of view of the target, and further assume that there is no featural relation underlying intermediate steps of movement. Consider an element C targeting a DP like (1). For a resumptive chain to result, C cannot attract the head D. In technical terms, C and D cannot enter into an agreement relation. Since the moving element (antecedent of RP) agrees (in the technical sense) with the target, the antecedent and the RP must not be in an agree-relation either. As the feature set of D is typically taken to consist of φ-features (including Case), it follows that non-agreement in the technical sense will mean non-agreement in φ-features. Since by definition a target probes the head of the goal (equivalently, its label), it follows that any instance of subextraction (extraction of a non-head) will show in non-agreement effects.[5]

3. Elaborate patterns

The textbook description of movement/resumption used in Irish for A-bar chain formation is as given in (26). A series of *aL* complementizers corresponds to a 'movement' structure, while the presence of *aN* signals the use of an RP. The facts are straightforwardly captured under an agreement/non-agreement analysis. (30) and (31) provide schematic forms for the two patterns.

(30) $[\text{D-XP}]_i$ [aLφ...[aLφ...[aLφ...t_i]]]

(31) D $[\text{NP}]_i$ [$\text{aN}_{\text{Non-}}$φ...[go ... [go ... [$_{\text{DP}}$ t'_i[D t_i]]]]]

As we will see immediately, the neat dichotomy found in Irish is something of an idealization. McCloskey (2000), in particular, stresses the relevance of more marked patterns, and the need to take them into account. The first pattern, schematized in (32), and illustrated in (33), is one where the topmost complementizer is *aN*, and the intermediate complementizer is *aL*.

(32) DP [aN ... [aL ... [*t*]]]

(33) rud a raibh coinne aige a choimhlíonfadh _ an aimsir
thing aN was expectation at-him aL fulfill the time
'Something that he expected time would confirm.'

For an analysis like the present one, a possibility immediately avails itself to account for (32). Recall that Kayne's (1994) raising analysis of relative clauses posits a D-head selecting a CP complement. Once the presence of an external D head is taken into account, capturing the mixed pattern at issue becomes relatively straightforward. As (34) illustrates schematically, all that needs to be done in this case is to assume that *aL* acts as an agreeing attractor, raising the NP. The raised NP further raises stranding the external D head, as required by the non-agreement requirement imposed by the next attractor (*aN*).

(34) D $[\mathrm{NP}]_i$ $[\mathrm{aN}_{\mathrm{Rel/wh}}$ ... $[[t'_i[\mathrm{D}_j\ t_i]][\mathrm{aL}\varphi[\ldots t_j]]]]$

The availability of an external D-head can be put to good use to account for another 'mixed-chain' pattern found in Irish, illustrated in (35)–(36).

(35) DP [aL ... [aN ... RP]]

(36) aon duine a cheap sé a raibh ruainne tobac aige
any person aL thought he aN was scrap tobacco at-him
'Anyone that he thought had a scrap of tobacco.'

(35) is the mirror image of (32), in that the topmost complementizer is *aL*, and the embedded complementizer is *aN*. In our terms, the presence of *aN* forces the raising of a non-agreeing NP. After raising, the head N may combine with the external D head. Once this combination has taken place, nothing prevents the next attractor up to be an agreeing one, and attract both [D NP] as a unit. The derivation is depicted in (37).

(37) $[\mathrm{D}\ [\mathrm{NP}]_j]_i$ $[\mathrm{aL}\varphi\ldots t_i t''_j[\mathrm{aN}_{\mathrm{Rel/wh}}$ ... $[t'_j[\mathrm{D}\ t_j]]]]$

A third pattern is found in Irish that departs from the standard dichotomy. It is one where all complementizers, not just the intermediate one, are non-agreeing. Consider (38)–(39).

(38) DP [aN ... [aN ... RP]]

(39) an bhean a raibh mé ag súil a bhfaighinn uaithi é
the woman aN was I hoping aN get from-her it
'The woman that I was hoping that I would get it from her.'

Again, the availability of an external D allows us to capture this pattern straightforwardly.

(40) D [NP]$_i$ [aN$_{\text{Rel/wh}}$ ... [t_i'''[D t_i''][aN ... [t_i'[D t_i]]]]

Taken together, the mixed patterns found in Irish provide rather strong support for a raising analysis of relative clauses, and for a raising/stranding analysis of resumption.

I conclude this section on elaborate patterns of resumption by examining the phenomenon of RP-fronting. The phenomenon has been identified in Irish, Hebrew, and elsewhere. I focus the discussion on Irish.

Under certain circumstances, it is possible to front an RP, as shown in (41). (An in-situ RP is also an option, not illustrated here.)

(41) cé leis a raibh tú ag caint
who with him aN were you talk-PROG
'Who were you talking to?'

The possibility of RP-fronting is limited by a number of prosodic factors (on which, see McCloskey 1990). McCloskey (2000) assumes that RP-fronting is an instance of topicalization targeting a position immediately below C (*aN*), followed by prosodic movement, which switches the complementizer and the fronted topic, giving rise to the observed word order (<Wh-antecedent; fronted RP; C^0>). A prosodic movement analysis of the data is appealing in light of the prosodic restriction on RP fronting. However, analyses relying on PF movement processes face severe criticism, both conceptual and empirical (see, especially, Bošković 2001). Once a movement analysis is adopted, the independent process of pied-piping becomes available (although, admittedly, the rationale behind pied-piping remains unclear). I argue that pied-piping is what accounts for RP-fronting.

(42) [[cé [leis <cé>]] a raibh tú ag caint t_i

A pied-piping account can easily capture the prosodic requirements imposed on RP-fronting. Pied-piping applies 'blindly' and prosodically unacceptable outputs are filtered out in the phonology by pronouncing the lower copy of the pied-piped material (giving rise to an apparent 'in-situ' RP).

4. Resumption and islandhood

It stands to reason that a comprehensive theory of island effects falls beyond the scope of the present contribution. However, the issue of locality cannot just be put to the side here, for what I have said so far goes against standard views. In many languages I have mentioned, an RP, in contrast to a gap, is insensitive to islands. Crucially, that is not true of all languages. In particular, languages seem to differ as to whether strong islands can be obviated.[6]

Let me first state right away that, for my account to be tenable, islandhood is not to be understood in strictly absolute, configurational terms. Although this was how we used to think of islands, fairly well-supported observations suggest that the conclusion is needed anyway. As noted by Rizzi (1990) and Cinque (1990), and much subsequent work, some islands are 'selective,' allowing some elements associated with a given semantics to extract fairly easily, but prohibiting the 'same' elements from extracting if associated with a different semantics.

In addition, I think that the role of non-agreement has been widely underestimated in the context of islandhood. Take the case of subject extraction. It is standard since Rizzi (1982) to say that subject extraction is licit if it proceeds from a post-verbal position. Such a formulation fits the configurational view of island effects. But it is worth noting that in many languages, post-verbal subjects typically fail to trigger agreement on the verb. Could it be that non-agreeing subjects are extractable? I show in Boeckx (2001) that this is the case. Although the ban of extraction (out) of independently moved elements is well documented, there have always been recalcitrant cases of extractions out of moved elements (take the well-known case of subject extraction in many Austronesian languages, which has to proceed from a fairly high topic position). Extraction out of objects in Basque is as bad as extraction out of subjects in English. One possible explanation is to say that Basque objects are raised, and hence become opaque domains. But note that Basque objects stand out in another respect: they trigger overt agreement on the verb. Could it be that extraction is disallowed out of agreeing DPs? Boeckx (2001) shows that a careful examination of the properties of agreement provides an understanding for most islands, including the ban on extraction out of adjuncts and out of displaced constituents. Boeckx also shows how agreeing properties of complementizers alone determine whether resumptive chains will be island-insensitive.

Needless to say, structural conditions on movement cannot be disregarded to determine islandhood, but featural content is at least equally relevant. I hope to have at least provided some preliminary evidence that the path is worth pursuing. After all, recall Ross's (1967) claim that islands are constraints on chopping (feature-changing) rules, not on movement rules *per se*.

5. Intrusion

At the beginning of this paper, I drew a line, as did Sells (1984) and many subsequent studies, between true resumption and 'intrusion.' The former has been the focus of the previous sections, the latter will now be touched upon. Here I report on a study by Aoun, Choueiri, and Hornstein (2001) that bears on the nature of intrusion.

Aoun et al. concentrate on instances of resumption by strong pronouns and epithets (call these 'rich' RPs) in Lebanese Arabic. They observe that rich RPs cannot relate to quantificational antecedents, unless separated from them by an island. (Things are different with non-quantificational antecedents, see Aoun et al. 2001 and Boeckx 2001).

(43) *kəll muttahame ʃrəfto ʔənno hiyye nʔabasit
each suspect know.2PL that she imprisoned
'Each suspect, you know that she was imprisoned.'

(44) kəll muttahame tfeeʒaʔto [lamma/laʔanno ʃrəfto ʔənno
each suspect surprised.2PL when/because know.2PL that
hiyye nʔabasit]
she imprisoned
'Each suspect, you were surprised because she was imprisoned.'

Aoun et al. capture the contrast in (43)–(44) by developing a mixed theory of resumption (see also Aoun & Benmamoun 1998). According to them, resumption may be the result of movement (what they call "apparent resumption") or base-generation (in their terms, "true resumption"). In island contexts, movement is disallowed, hence base-generation is forced. Rich RPs can only be true resumptives, not apparent ones. Hence they are excluded in contexts where movement is possible (Aoun et al. follow Hornstein 2001 in taking movement to be forced if possible – the opposite of Chomsky's 1995 Merge-over-Move principle).

I believe that Aoun et al.'s intuition is correct. But before showing how it can be implemented in the present framework, let me make clear that what they call "true resumption" is more aptly characterized as intrusion. Following Sells (1984), I take intrusion to be instances of 'resumption' restricted to island contexts. This is exactly the distribution of rich RPs in Lebanese Arabic.

Having said this, let us proceed to a characterization of rich RPs. Aoun et al. analyze strong pronouns/epithets as appositives. Instead, I would like to analyze rich RPs as full DPs (D with an NP complement), like regular DPs (e.g., $[_{D}$ the $[_{NP}$idiot$]]$ or $[_{D}$ he $[_{DP}$ the idiot$]]$. (On full pronouns as 'full' DPs, see Cardinaletti & Starke 1999, among others.) If that is the correct structure for them, they cannot take their antecedents as complements, unlike the pronouns that have been discussed so far. As a result they cannot function as RPs. There is simply no room for antecedents inside the DPs headed by the intrusive pronouns. Being excluded from the complement domain of the 'resuming' elements, antecedents of rich RPs must be base-generated in their surface positions.

Note that if this view of intrusion is correct, intrusive pronouns literally stand for what would otherwise be a gap. In instances of true resumption (what Aoun et

al. call "apparent resumption"), the RP stands next to a gap formed by movement (of the antecedent). In cases of intrusion, there is no gap.

This analysis of intrusion is able to account for the ungrammaticality of (43) if we assume, with Kayne (2000, 2001), that in order for a pronoun to function as a bound variable, it must form a constituent with its antecedent upon First Merge. Since that can't be the case if the bound variable is a full pronoun, (43) is ungrammatical (a quantifier needs to bind a variable in a theta-position). The status of (44) is less clear. The sentence is better than (43), just as intrusive pronouns in English are better in island contexts than in non-island contexts. It is still an open question whether this improvement is to be captured in terms of competence or performance. Since it is not clear whether the sentences should be ruled in or ruled out from a syntactic point of view, and since the present analysis appears to make no sharp predication one way or another, I will not analyze (44) and English intrusive pronouns. It is hoped that further understanding of the interfaces will shed some light on the nature of improvement of sentences under intrusion.

6. Conclusion

The core proposal of the present paper is that RPs form a constituent with their antecedents upon First Merge. Resumptive chains are the results of stranding (subextraction) under A-bar movement. I pointed out that the Big-DP structure proposed in (1) makes interesting and correct predictions in various domains pertaining to the interpretive consequences of resumption, the relation between resumption and clitic doubling, extraction and non-agreement. It is worth stressing that no alternative analysis of resumption is able to make such predictions. In particular, the fact that we find restrictions on resumptive chains that are very similar to those found in the realm of possessor extraction strongly suggests that the present analysis is on the right track.

Notes

1. Boeckx (2001) shows that clitic doubling shows effects of (local and distant) non-agreement of the type discussed below.

2. See Aoun and Choueiri's study for evidence that *miin* and *ayya* phrases can be D-linked.

3. What I say here for RP-stranding need not hold for the phenomenon of Q-Float, given that extraction arguably does not take place in the latter case (see Bošković, in press). For extensive discussion, see Boeckx (2001).

4. This statement appears to be contradicted by the very example in (21b), where the dative possessor appears to trigger agreement on the head Noun. However, agreement here is supposed to be taken in a more abstract sense (see Boeckx 2001), and further there is good evidence that the morphological agreement witnessed in (21b) does not obtain directly with the dative element, as shown in detail by Den Dikken (1999).

5. The discussion in this paper centers on RPs found in 'internal' argument positions. Subject RPs are left out of the picture. There is a good reason for that: many languages prohibit RPs in subject positions. The following example from Irish illustrates this.

(i) *an fear a raibh sé breoite
The man aN was he ill
'The man that was ill.'

Boeckx (2001) shows that the subject restriction on (local) resumption follows from the non-agreement effects just discussed, once we capitalize on the relation between C^0, Infl, and agreeing subjects. Space limitations prevent me from even sketching the account here.

6. Serbo-Croatian and Vata show weak island effects with RPs. The reason for this state of affairs is discussed in Boeckx (2001).

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Reconstructing nonconfigurationality*

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Introduction

This paper argues that Warlpiri syntax is characterized by a hierarchical syntactic structure encoding asymmetries among arguments and adjuncts, contrary to the received view. The outline of the paper is as follows. In Section 1, I review known symmetries and asymmetries among arguments and adjuncts in Warlpiri. Next, I outline previous approaches to Warlpiri syntax, which posit symmetry among the arguments and adjuncts in a clause, and sketch an alternative hierarchical approach. Section 3 is concerned with A-syntax, presenting new asymmetries in applicative constructions, and demonstrating how these asymmetries are problematic for existing accounts. Section 4 turns to A'-syntax, arguing for a movement approach to wh-placement in Warlpiri, rather than a free-base generation approach.

1. Symmetry and asymmetry

Warlpiri is (in)famous for displays of symmetry among DPs in a clause. DPs may appear in any order in a sentence, regardless of grammatical function:

(1) *Free word order*

a. Ngarrka-ngku ka wawirri panti-rni
man-ERG PRESIMPF kangaroo spear-NPST
"The man is spearing the kangaroo"

b. Wawirri ka pantirni ngarrkangku
Pantirni ka ngarrkangku wawirri
Ngarrkangku ka pantirni wawirri

Pantirni ka wawirri ngarrkangku
Wawirri ka ngarrkangku pantirni (Hale 1983: 3)

Warlpiri exhibits unconstrained pro-drop of all arguments:

(2) *Unconstrained pro-drop*

a. Purra-nja-rla nga-rnu
cook-INF-PRIORC eat-PST
"Having cooked (it), (he/she/it) ate (it)." (Laughren 1989: 326)

Furthermore, arguments and adjuncts may appear discontinuously in the clause. This phenomenon is illustrated in (3) for the subject "big dog".

(3) *Split DPs*

a. Maliki-rli-ji yarlku-rnu wiri-ngki
dog-ERG-1SG-OBJ bite-PST big-ERG
"A big dog bit me." (Hale et al. 1995: 1434)

In addition, weak crossover effects appear to be absent from the language:

(4) *Lack of WCO effects*

a. Ngana-ngku kurdu nyanungu-nyangu paka-rnu?
who-ERG child 3-POSS hit-NPST
"Who$_i$ hit his$_i$ child?"

b. Ngana ka nyanungu-nyangu maliki-rli wajili-pi-nyi?
who PRESIMPF 3-POSS dog-ERG chase-NPST
"Who$_i$ is his$_i$ dog chasing?" (Hale et al. 1995: 1447)

Finally, Binding Condition C behaves as though subjects c-command objects, and vice versa. Thus, (5a) in which the subject is a pronoun and the object contains an R-expression possessor, is ungrammatical, as expected, under the coindexed reading. However, (5b) in which the subject contains an R-expression possessor and the object is a pronoun, is also ungrammatical.

(5) *"Flat" Condition C*

a. Nyanungu-rlu$_{*i/j}$ maliki Jakamarra$_i$-kurlangu paka-rnu
3-ERG dog Jakamarra-POSS hit-PST
"He$_{*i/j}$ hit Jakamarra$_i$'s dog"

b. Jakamarra$_i$-kurlangu maliki-rli nyanungu$_{*i/j}$ paji-rni
Jakamarra-POSS dog-ERG 3 bite-PST
"Jakamarra$_i$'s dog bit him$_{*i/j}$" (Laughren 1991: 14)

In contrast to these displays of symmetry, there are also a number of known asymmetries. First, the subject can bind an object reflexive, but not vice versa.

(6) *Condition A*

a. Purlka-jarra-rlu ka-pala-nyanu nya-nyi
old.man-DUAL-ERG PRESIMPF-3DUALSUBJ-REFLEX see-NPST
"The two old men are looking at each other" (Simpson 1991: 163)

b. *Purlka-jarra ka-nyanu-palangu nya-nyi
old.man-DUAL PRESIMPF-REFLEX-3DUALOBJ see-NPST
Lit: Each other are looking at the old men.

Second, a pronoun bound by the subject is ungrammatical as an object (with or without the reflexive agreement marker), but grammatical as an adjunct–a familiar Condition B effect.

(7) *Condition B*

a. *Jakamarra-rlu ka-(nyanu) nyanungu paka-rni
Jakamarra-ERG PRESIMPF-(REFLEX) 3 hit-NPST
"Jakamarra$_i$ is hitting him$_i$" (Simpson 1991: 170)

b. Japanangka-rlu-nyanu yirra-rnu mulukunpa nyanungu-wana
Japanangka-ERG-REFLEX put-PST bottle 3-PERL
"Japanangka$_i$ set the bottle down beside him$_i$." (Simpson 1991: 171)

Third, agreement clitics have separate paradigms for subject and object agreement, and this agreement is unaffected by the position of the arguments in the clause.

(8) *Agreement Clitics*

a. Nya-nyi ka-rna-ngku
see-NPST PRESIMPF-1SGSUBJ-2SGOBJ
"I see you"

b. Nya-nyi ka-npa-ju
see-NPST PRESIMPF-2SGSUBJ-1SGOBJ
"You see me"

Finally, Warlpiri shows suppletion in its infinitival complementizers, depending on whether the embedded PRO subject is controlled by the subject of the matrix clause, (9a), the object of the matrix clause, (9b), or an adjunct of the matrix clause (9c).

(9) *Embedded complementizers*

a. Karnta ka-ju wangka-mi [yarla karla-nja-**karra**]
woman PRESIMPF-1SGSUBJ speak-NPST [yam dig-INF-**SUBJC**]
"The woman is speaking to me while digging yams" (Hale 1983: 21)

b. Purda-nya-nyi ka-rna-ngku
aural-perceive-NPST PRESIMPF-1SGSUBJ-2SGOBJ
[wangka-nja-**kurra**]
[speak-INF-**OBJC**]
"I hear you speaking" (Hale 1983: 20)

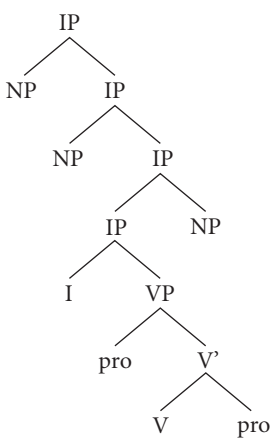
c. Wati-rla jurnta-ya-nu karnta-ku [jarda-nguna-nja-**rlarni**]
man-3SGDAT away-go-PST woman-DAT [sleep-lie-INF-**OBVC**]
"The man went away from the woman while she was sleeping"
(Hale et al. 1995: 1442)

Thus, we have conflicting evidence as to the clause structure of Warlpiri. On the one hand, a number of tests point towards symmetry among arguments and adjuncts, while on the other a number of additional tests point towards asymmetry. In the next section, I consider possible explanations of these data.

2. Approaches

One previous approach to the syntax of "nonconfigurational" languages like Warlpiri I will term the *pronominal argument approach* (PA); two instantiations of this approach can be found in Jelinek (1984) and Baker (1996). According to the PA, either all argument positions are filled by clitics, the overt DPs being adjuncts (Jelinek 1984); or the argument positions are filled by *pro*'s, the overt NPs being licensed by agreement morphology on the verb and appearing in a clitic left dislocation-type structure (Baker 1996).

(10) *Pronominal Argument Approach*

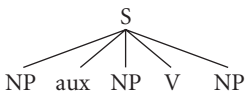


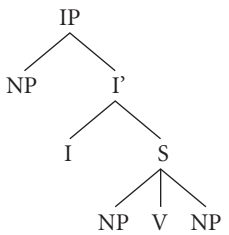
This approach has initial plausibility in allowing a simple, single explanation for the complete range of data in nonconfigurational languages. However, when it comes to Warlpiri, this apparent virtue of the approach turns out to be its weakness. Austin and Bresnan (1996) (henceforth A&B) examine Australian languages related to Warlpiri and carefully demonstrate that the nonconfigurational properties found in Warlpiri do not consistently co-occur, nor do these properties consistently co-occur with agreement/pronominal clitics, as required by the PA. Thus, a single parametric explanation for the full range of data found in Warlpiri does not seem appropriate, since the same phenomena in related languages cannot be so explained. Furthermore, A&B present a number of difficulties with the hypothesis within Warlpiri itself: several interpretive differences between arguments and adjuncts that would be unexpected on a theory in which all overt DPs are adjuncts; case marking on overt DPs based on lexical idiosyncrasies of particular verbs; the existence of DPs not linked to any agreement/pronominal clitic, and the ability of these DPs to undergo pro-drop. The reader is referred to A&B for details. Given these difficulties with the PA approach for Warlpiri, I will not consider it further.

The alternative approach proposed by A&B has its roots in Hale's (1983) original proposal for the structure of Warlpiri, and Simpson's (1991) related proposal. This approach posits two levels of representation: f(unctional)-structure, which encodes grammatical relations, and c(onstituent)-structure, which consists of the surface syntactic tree.[1] Under such a "dual-structure" approach, the asymmetric properties of Warlpiri are attributed to asymmetries among grammatical relations in the f-structure. The c-structure of Warlpiri, on the other hand, is a flat and nonprojective S, encoding the symmetric properties of the language (note that A&B, but not Hale (1983), posit an IP projection above S. The head of IP contains the auxiliary complex and its specifier hosts a focused constituent). By hypothesis, the Projection Principle does not hold of c-structure in Warlpiri, so that DPs corresponding to a single grammatical function may be generated in more than one c-structure position, and a grammatical function need not have a corresponding c-structure node.

(11) *Dual-structure Approach*

Hale (1983)	Austin & Bresnan (1996)
lexical-structure:	**f-structure:**
$[_{V'}$ *erg*, $[_{V}$ *abs*, verb$]]$	$\begin{bmatrix} \text{PRED'verb} < (f\ \text{SUBJ})(f\ \text{OBJ}) >' \\ \text{SUBJ}\ [\text{“DP”}] \\ \text{OBJ}\ \ [\text{“DP”}] \end{bmatrix}$
phrase-structure:	**c-structure:**





My goal for this paper is to identify a couple of difficulties with the dual-structure approach for Warlpiri, and to show that a third approach to Warlpiri syntax holds some promise. This approach holds that the distinctive character of Warlpiri is the result of a combination of UG-defined choices familiar from other languages. These choices include: DP-splitting, found in Slavic and Germanic languages (see for example van Riemsdijk 1989; Krifka 1998); *pro*-drop, ubiquitous throughout the world's languages; scrambling that repairs WCO violations, perhaps best studied in German, Hindi (esp. Mahajan 1990), and Japanese (esp. Saito 1989; Miyagawa 1997); and discourse-motivated movement to the left periphery (Rizzi 1997, and much subsequent work).

The discussion will address two aspects of the dual-structure account. First, the dual-structure account claims that Warlpiri is characterized by a flat verb phrase in the syntax. In Section 3, I will present data from applicative constructions to argue that the Warlpiri verb phrase is hierarchical. Second, the dual-structure account claims that free word order in Warlpiri is achieved by base-generating the elements of the clause in any order. In Section 4, I will present evidence from wh-questions that movement is crucially involved in determination of word order.

3. Asymmetry in the verb phrase

Two types of applicatives have been identified crosslinguistically (esp. Baker 1988; Bresnan & Moshi 1990), which are traditionally called “asymmetric” and “symmetric”. As the name suggests, asymmetric applicatives are characterized by asymmetric behaviour between the verbal object (VO) and the applicative object (AO): only

the AO shows primary object properties. In contrast, both the AO and VO show primary object properties in symmetric applicatives. Glossing over some interesting complications that arise within particular languages, the cluster of properties of symmetric and asymmetric applicatives are summarized in the following table.

(12) *Types of Applicatives Crosslinguistically*

Asymmetric	Symmetric
AO shows object properties (agreement, passives, scope, ...)	AO, VO show object properties (agreement, passives, scope, ...)
transitivity restriction on verb	no transitivity restriction on verb
animacy restriction on AO	no animacy restriction on AO
AO related to VO (possessor)	AO related to event

In Legate (2001), I demonstrate that Warlpiri has both types of applicative constructions. Thus, a class of ditransitive verbs are asymmetric applicatives and the ethical dative construction is a symmetric applicative. In the next section we begin with the ditransitives.

3.1 Ditransitives

Warlpiri has a class of verbs with an ERG-DAT-ABS case frame, that is the subject displays ergative case, the indirect object displays dative case, and the direct object shows absolutive case. An example of such a verb is *yi-nyi* "give":

(13) Warnapari-rli ka-rla kurdu-ku ngapurlu yi-nyi.
dingo-ERG PRESIMPF-3DAT child-DAT milk give-NPST
"The dingo gives milk to the little one."
(Warlpiri Dictionary Project 1993)

I argue that this is not a PP-dative construction, as the translation suggests, but rather an asymmetric applicative construction, akin to the English double object construction: "The dingo gives the little one milk".

First, the dative AO shows primary object properties for agreement and control (Simpson 1991). Thus, object agreement in the auxiliary is controlled by the dative AO rather than the absolutive VO:

(14) Ngajulu-rlu kapi-rna-**ngku** karli-patu yi-nyi
I-ERG FUTC-1SGSUBJ-**2SGOBJ** boomerang-PAUC give-NPST
nyuntu-ku
you-DAT
"I will give you (the) (several) boomerangs" (Hale et al. 1995: 1432)

and when the dative AO controls a PRO infinitival subject, the embedded complementizer *-kurra* registers control by an object (cf (9) above). This complementizer cannot be used when the absolutive VO controls embedded subject.

(15) a. Karnta-ngku ka-ju kurdu milki-yirra-rni
woman-ERG PRESIMPF-1SGOBJ child show-put-NPST
nguna-nja-**kurra**-(ku)
lie-INF-**OBJC**-(DAT)
"The woman is showing the child to me while I am lying down"
(Simpson 1991: 342)

b. ??Yu-ngu-rna-rla kurdu parraja-rla nguna-nja-**kurra**
give-pst-1SGSUBJ-3DAT child coolamon-LOC sleep-INF-**OBJC**
yali-ki
that-DAT
"I gave the child which was sleeping in the coolamon to that one"
(Simpson 1991: 341)

Furthermore, ERG-DAT-ABS verbs fall into the familiar crosslinguistic classes of double object verbs (see Levin 1993; Pesetsky 1995).

(16) *Double Object Verb Classes*:

a. inherently signify act of giving: *yi-nyi* "give"
b. inherently signify act of taking: *punta-rni* "take away from", *jurnta-ma-ni* "take away from", *jurnta-marda-rni* "take away from", *punta-punta-yirra-rni* "take away from", ...
c. instantaneous causation of ballistic motion: *kiji-rni* "throw" (cf. not *rarra-ma-ni* "drag")
d. sending: *yilya-mi* "send/throw to"
e. communicated message: *ngarri-rni* "tell", *payi-rni* "ask", *japi-rni* "ask", *milki-yirra-rni* "show" (cf not *wangka-mi* "speak/say", *jaalyp(a)-wangkami* "whisper")
f. continuous causation of accompanied motion in some manner: *ka-nyi* "carry, bring, take"

Also, there exists an alternation in Warlpiri between the ERG-DAT-ABS and an ERG-ABS-ALL(ative) ditransitive, an alternation reminiscent of the double object versus PP-dative alternation. In the ERG-ABS-ALL variant, it is the ABS that controls object agreement:

(17) *Allative Variant*
Yu-ngu-**ju**-lu Jakamarra-kurra
give-PST-**1SGOBJ**-3PLSUBJ Jakamarra-ALL
"They gave me to Jakamarra" (Laughren 1985)

Asymmetric applicatives crosslinguistically display a characteristic semantics, in which the AO is interpreted as a (potential) possessor of the VO. The dative AO of ERG-DAT-ABS verbs receives this interpretation, whereas the allative of the ERG-ABS-ALL variant does not. Thus, of the pair in (18),

(18) a. Ngarrka-ngku ka-rla kurdu-ku japujapu kiji-rni
man-ERG PRESIMPF-3DAT child-DAT ball throw-NPST
"The man is throwing the child the ball"

b. Ngarrka-ngku ka japujapu kurdu-kurra kiji-rni
man-ERG PRESIMPF ball child-ALL throw-NPST
"The man is throwing the ball to the child" (Hale 1982: 253)

Hale (1982) remarks that "[the] dative in [(18a)] implies that the child is the recipient of the ball, not merely the endpoint of motion. The allative in [(18b)], on the other hand, implies that the child – or the child's location – is merely the endpoint of the trajectory traversed by the ball" (Hale 1982: 253).

Finally, related to the possessive semantics, crosslinguistically we find an animacy restriction on the goal of asymmetric applicatives. This animacy restriction is also found on the dative AO of ERG-DAT-ABS verbs; if the AO is inanimate, the absolutive-allative variant must be used instead.

(19) a. Purturlu kala-**rla** yilya-ja.
backbone PSTC-**3DAT** send-PST
"He sent her the backbone"

b. Marnkurrpa-rna yilya-ja Yalijipiringi-**kirra**
three-1SG-SUBJ send-PST Alice.Springs-**ALL**
"I sent three to Alice Springs"

Thus, I conclude that ditransitive verbs which display the ERG-DAT-ABS case frame should be identified as an asymmetric applicative construction.

In the next section we consider a second construction in Warlpiri, the ethical dative construction.

3.2 Ethical datives

The Warlpiri ethical dative construction involves the addition of a dative DP, without an overt morpheme to indicate how the additional DP is to be interpreted. An example of this is given in (20):

(20) Karli yinga-rla paka-rni jinta-kari-rli **nyanungu-ku**
boomerang REASC-3DAT chop-NPST one-other-ERG **3-DAT**
"Because the other one will chop a boomerang for him"
(Simpson 1991: 381)

This construction has proven quite problematic for previous analyses of Warlpiri lexical structure, notably the detailed dual-structure account of Simpson (1991). Simpson is forced to posit a new grammatical function for ethical datives, which she calls "EXTERNAL OBJECT" (defined as a selected adjunct).

Examining the construction, we discover that it exhibits markedly different behaviour from the ERG-DAT-ABS verbs considered above. First, both the ethical dative (AO) and the object of the verb (VO) trigger object agreement. Due to a morpho-phonological restriction against both dative and absolutive agreement in the auxiliary (Simpson 1991), this agreement pattern is visible only when the object of the verb is also dative. In such a case, both datives are obligatorily registrated in the auxiliary. Thus, in (21), *warri-rni* "seek" selects a dative object, and the auxiliary agrees with both this VO object and the dative AO.

(21) Ngarrka-ngku ka-**ju-rla** ngaju-ku karli-ki
man-ERG PRESIMPF-**1SGOBJ-3DAT** me-DAT boomerang-DAT
warri-rni
seek-NPST
"The man is looking for a boomerang for me" (Hale 1982: 255)

In addition, when either the VO or the AO controls an embedded PRO subject, the *-kurra* complementizer appears, indicating control by a matrix object.[2]

(22) a. *Control by DAT*
Kamina-rlu ka-rla mangarri purra ngati-nyanu-ku
girl-ERG PRESIMPF-3DAT food cook.NPST mother-self-DAT
nguna-nja-**kurra**-ku
lie-INF-**OBJC**-DAT
"The girl is cooking food for her mother who is lying down."
(Simpson 1991: 385)

b. *Control by ABS*
Maliki-rna ramparl-luwa-rnu Jakamarra-ku parnka-nja-**kurra**
dog-1SGSUBJ accident-hit-PST Jakamarra-DAT run-INF-**OBJC**
"I accidently hit Jakamarra's dog while it was running."

Furthermore, unlike asymmetric applicatives (see the table in (12)), there is no transitivity restriction on the ethical dative construction.

(23) a. Karnta ka-rla kurdu-ku parnka-mi
woman PRESIMPF-3DAT child-DAT run-NPST
"The woman is running for the sake of the child"
(Simpson 1991: 381)

b. Nantuwu ka-rla Japanangka-ku mata-jarri-mi
horse PRESIMPF-3DAT Japanangka-DAT tired-INCH-NPST
"The horse is tiring on Japanangka" (Hale 1982: 254)

Finally, we do not find the possessive semantics characteristic of asymmetric applicatives in the ethical dative construction. Instead, interpretation of the dative AO "embrac[es] a considerable range of possible semantic connections which may hold between an entity and an event or process" (Hale 1982: 254), including at least benefactive, malefactive, and possessive:

(24) a. Nantuwu ka-rla Japanangka-ku mata-jarri-mi
horse PRESIMPF-3DAT Japanangka-DAT tired-INCH-NPST
"The horse is tiring on Japanangka"
"Japanangka's horse is tiring"
b. Ngarrka-ngku ka-rla kurdu-ku karli jarnti-rni
man-ERG PRESIMPF-3DAT child-DAT boomerang trim-NPST
"The man is trimming the boomerang for the child"
"The man is trimming the child's boomerang" (Hale 1982: 254)

In sum, the properties displayed by the Warlpiri ethical datives are those of a symmetric applicative construction. I conclude that Warlpiri has both an asymmetric and a symmetric applicative. In the next section, we discover that this conclusion poses difficulties for existing dual-structure accounts.

3.3 Implications

Bresnan and Moshi (1990) (B&M) present a dual-structure account of the distinction between symmetric and asymmetric applicatives, which I summarize briefly here. They employ two features [± r(estricted)] and [± o(bject)], which define four grammatical functions:

(25) *Four Grammatical Functions*

$$\begin{bmatrix} -r \\ -o \end{bmatrix} \text{SUBJ} \qquad \begin{bmatrix} +r \\ -o \end{bmatrix} \text{OBL}_\theta$$

$$\begin{bmatrix} -r \\ +o \end{bmatrix} \text{OBJ} \qquad \begin{bmatrix} +r \\ +o \end{bmatrix} \text{OBJ}_\theta$$

Of these only restricted object OBJ_θ may be unfamiliar – this is defined as an object which may not appear in subject position and which has a fixed semantic role, like an oblique.

Certain feature values are intrinsically (dis)associated with certain theta roles crosslinguistically, while others are added by rule, subject to certain constraints.

However, feature values do not need to be fully specified for the final determination of grammatical roles; the roles are assigned based on compatibility with the feature values specified. B&M make use of these roles in proposing their *Asymmetrical Object Parameter*, reproduced here in (26).

(26) *Asymmetrical Object Parameter*

$$\begin{array}{ccc} * & \theta & \ldots & \theta \\ & | & & | \\ & [-r] & & [-r] \end{array}$$

Combined with a universal restriction against benefactives and recipients bearing the feature [+ o], this parameter has as a result that (for languages in which it is set as an active constraint), a theme can never bear the OBJ function in a sentence which also contains a benefactive or recipient.

It is important to recognize that under B&M's analysis, in simple sentences symmetric and asymmetric applicatives do not differ with respect to the grammatical functions assigned to each nominal; the agent corresponds to the SUBJ function, the benefactive (AO) to the OBJ function, and the theme to the OBJ_θ. By Function-Argument Biuniqueness (which B&M attribute to Bresnan 1980), two nominals in a clause cannot bear the same function.

(27) *Function-Argument Biuniqueness*
Each expressed lexical role must be associated with a unique function, and conversely.

The two types of languages differ only with respect to the results of applying a lexical rule. For example, in a symmetrical object language, if a lexical rule applies to suppress the agent (i.e. the passive), the benefactive (universally [–r]) may become the SUBJ, freeing up the OBJ function for the theme. However, in an asymmetrical object language, the theme cannot bear the feature [–r] in the presence of a (necessarily [–r]) benefactive, and thus can never bear the OBJ function (see (25) above).

By now it should be clear that Warlpiri is problematic for this analysis in two respects. First, B&M posit a distinction between asymmetric and symmetric *languages*, whereas we have just seen that Warlpiri has both asymmetric and symmetric applicatives. No simple adjustment to their theory could accommodate such a language. Second, B&M cannot capture the symmetric behaviour between the AO and VO we find in Warlpiri, that is symmetric behaviour without lexical rule (use of embedded complementizers showing control by a matrix object), and even within the same sentence (object agreement).

On the other hand, if we reject the dual-structure analysis of Warlpiri, and maintain that Warlpiri has a hierarchical verb phrase, then the applicative data

presented here may simply be assimilated to structural accounts of applicatives in other languages (see for example McGinnis 2000 & Pylkkänen 2000).

To conclude, this section has addressed one of the central claims of the dual-structure account of Warlpiri syntax: that the language lacks a hierarchical verb phrase, having instead a flat, n-ary branching *S*. I demonstrated that Warlpiri has both an asymmetric and a symmetric applicative construction, and showed that these constructions are problematic for dual-structure accounts. Finally, I noted that if we assume that Warlpiri has a hierarchical verb phrase, the applicative constructions are easily accounted for by existing analyses.

4. Movement

In this section I turn to a second central claim of the dual-structure account of Warlpiri syntax: that the observed word order variations are the result of free base-generation of nominals. My focus here is on wh-questions.

Wh-phrases in Warlpiri appear in a left-peripheral position, as do the focused phrases which replace them in the answer.

(28) a. Ngana-patu ka-lu wangka-mi?
who-PL PRESIMPF-3PLSUBJ speak-NPST
"Which ones are speaking?"

b. Yurntumu-wardingki-patu ka-lu wangka-mi
Yuendumu-habitant-PL PRESIMPF-3PLSUBJ speak-NPST
"Yuendumu people are speaking"

c. Nyarrpa-jarri-mi ka-lu Yurntumu-wardingki-patu?
how-INCH-NPST PRESIMPF-3PLSUBJ Yuendumu-habitant-PL
"What are the Yuendumu people doing?"

d. Wangka-mi ka-lu Yurntumu-wardingki-patu
speak-NPST PRESIMPF-3PLSUBJ Yuendumu-habitant-PL
"The Yuendumu people are speaking" (Laughren, to appear)

However, a wh-phrase from an embedded clause cannot appear in the matrix clause to form a matrix question.

(29) Ngana-ngkajinta-ngku yimi-ngarru-rnu Jakamarra-rlu, kuja
who-with-2SGOBJ speech-tell-PST Jakamarra-ERG, CFACT
ya-nu wirlinyi Jangala
go-PST hunting Jangala
"Who did Jakamarra tell you with that Jangala went hunting?"
(Granites et al. 1976)
(*"Who did Jakamarra tell you that Jangala went hunting with?")

Instead a scope-marking strategy must be used for long-distance questions:

(30) **Nyarrpa**-ngku yimi-ngarru-rnu Jakamarra-rlu [kuja
how-2SGOBJ speech-tell-PST Jakamarra-ERG [CFACT
nyarrpara-kurra Jampijinpa ya-nu]?
where-ALL Jampijinpa go-PST]
"Where did Jakamarra tell you Jampijinpa went?"

In contrast, a wh-phrase from an embedded infinitival clause can appear in the matrix focus position, forming a long-distance question.

(31) a. Marna-kurra ka-rna wawirri nya-nyi
grass-OBJC PRESIMPF-1SGSUBJ kangaroo see-NPST
nga-rninja-kurra
eat-INF-OBJC
"I see a kangaroo eating grass" (Hale et al. 1995: 1434)

b. Nyiya-kurra ka-npa wawirri nya-nyi
what-OBJC PRESIMPF-2SGSUBJ kangaroo see-NPST
nga-rninja-kurra
eat-INF-OBJC
"What do you see a kangaroo eating?"

How does the dual-structure approach account for these data? Simpson (1991) argues that infinitival clauses are nominal in some sense.[3] So, the claim is that, just as the elements of a noun phrase may be base-generated in distinct positions throughout the clause ((3), repeated below as (32)), the subconstituents of an infinitival may also be base-generated discontinuously.

(32) *Discontinuous DPs*

Maliki-rli-ji yarlku-rnu **wiri-ngki**
dog-ERG-1SGOBJ bite-PST **big-ERG**
"A big dog bit me." (Hale et al. 1995: 1434)

The alternative approach advocated here, in contrast, attributes the contrast between (29) and (31) to constraints on movement. Thus, extraction from finite clauses is impossible or difficult in many languages, whereas extraction from nonfinite clauses (and subjunctives) greatly improves.

Support for the movement-based approach comes from adjunct infinitivals. Since adjunct noun phrases may be discontinuous in Warlpiri, identically to argument noun phrases, the dual-structure approach predicts that wh-phrases from an adjunct infinitival should also be able to appear in the matrix clause. This prediction is not borne out:

(33) a. Kurdu-ngku ka jarntu warru-wajili-pi-nyi karnta-ku,
child-ERG PRESIMPF dog around-chase-NPST woman-DAT
miyi purra-nja-rlarni.
food cook-INF-OBVC
"The child is chasing the woman's dog around while she is cooking food" (Hale et al. 1995: 1439–1440)

b. *Nyiya-rlarni ka kurdu-ngku jarntu warru-wajili-pi-nyi
what-OBVC PRESIMPF child-ERG dog around-chase-NPST
karnta-ku, purra-nja-rlarni?
woman-DAT cook-INF-OBVC
"What is the child chasing the woman's dog around while she is cooking?"

(34) a. Wati-ngki-nyanu jurnarrpa ma-nu, wurna
man-ERG-REFLEX belongings get-PST, travel
ya-ninja-kungarnti-rli.
go-INF-PREPC-ERG
"The man picked up his things before going on a trip."
(Hale et al. 1995: 1443)

b. *Nyarrpara-kungarnti-nyanu wati-ngki jurnarrpa ma-nu,
where-PREPC-REFLEX man-ERG belongings get-PST,
ya-ninja-kungarnti?
go-INF-PREPC
"Where did the man pick up his things before going?"

(35) a. Karnta-ngku warlu yarrpu-rnu kuyu purra-nja-kungarnti.
woman-ERG fire light-PST meat cook-INF-PREPC
"The woman lit the fire in order to cook meat."

b. *Nyiya-kungarnti karnta-ngku warlu yarrpu-rnu
what-PREPC woman-ERG fire light-PST
purra-nja-kungarnti.
cook-INF-PREPC
"What did the woman light the fire in order to cook?"

The data in (33), (34), and (35) pose a significant challenge to the dual-structure account, in particular its insistance that word order in Warlpiri is derived through free base-generation. On the alternative account advocated here, in which Warlpiri word order is derived through movement, these data are expected, since adjunct clauses are less transparent to movement than argument clauses crosslinguistically.

5. Conclusion

In this paper I have raised two challenges to a dual-structure, or symmetric, approach of Warlpiri syntax. First, I have demonstrated that Warlpiri has symmetric and asymmetric applicative constructions, and that these are problematic for the standard dual-structure account of applicatives (Bresnan & Moshi 1990). Second, I have uncovered an asymmetry between extraction of wh-phrases from argument versus adjunct infinitivals, and shown that this distinction is not accounted for under the dual-structure account of free word order involving unconstrained base-generation of elements in the clause. Furthermore, I have argued that both of these phenomena are expected and easily captured under an alternative approach to Warlpiri syntax, whereby the verb phrase is hierarchical and the word order permutations are derived through movement. If further research lends additional support to this alternative approach, we may conclude that human language is intrinsically and universally asymmetric after all.

Notes

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1. In addition, the LFG framework assumed by Austin and Bresnan (1996) and Simpson (1991) posits an a(rgument)-structure level, which encodes the participants linked to a particular predicate. However, it is the f-structure/c-structure distinction that will be important in our discussion.

2. Simpson notes, however, that examples like (22a) with control by the AO are rare.

3. Note, however, that Simpson also identifies a number of differences between noun phrases and infinitival clauses. Thus, noun phrases and infinitivals must be kept distinct.

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Structural asymmetries but same word order

The dative alternation in Spanish*

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1. Introduction

It has long been observed that a dative indirect object in Spanish can be optionally doubled by a clitic. Work done on the basis of a broader set of data have contrasted the optionality of clitic doubling in ditransitives with the obligatoriness of doubling in other dative constructions (Bruhn de Garavito 2000; Cuervo 1999; Torrego 1996, etc.). Optionality raises questions within a formal generative theory of language, and prompts for a search of a principled account. As in other work on optional phenomena, the analysis here leads to the claim that the optionality of clitic doubling is in fact only apparent. Rather, the two variants will be shown to correspond to two different configurations with contrasting syntactic and semantic properties.

I will present evidence that the presence (versus absence) of a dative clitic in ditransitive constructions like those in (1) correlates with syntactic and semantic phenomena. I will show how facts of binding, weak crossover, and scope follow naturally from an analysis where the presence or absence of the clitic is considered to be the expression that the dative alternation takes in Spanish. I will present evidence that strongly argues that, in spite of having the same word order (accusative-dative), sentences with clitic doubling correspond to the double-object construction, while sentences without a clitic correspond to a structure formed with a DP-Theme that asymmetrically c-commands a prepositional Goal or Locative.

(1) a. *Pablo (le) mandó una carta a Andreína*
Pablo CL.DAT sent a letter.ACC (to) Andreína.DAT
'Pablo sent a letter to Andreína'

b. *Valeria (les)* *ofreció* *empanadas* *a los invitados*
Valeria CL.DAT.PL offered *empanadas*.ACC (to) the guests.DAT
'Valeria offered *empanadas* to the guests'

I will show that the full range of syntactic data as well as the semantic restrictions and forced interpretations fall naturally from a non-derivational approach to the alternation. The proposal will present the two alternates as two different configurations where none derives from the other by movement or incorporation (cf. Masullo 1992; Demonte 1995; Bruhn de Garavito 2000). The double-object configuration corresponds to that of a transitive predicate with an applied argument. The dative clitic is the morphological spell-out of the applicative head. This accounts for the obligatoriness of clitic doubling when there is a 'real' dative argument, as well as allowing us to dispense with extra structure like clitic phrases, which are not independently required.

This analysis of ditransitives is embedded in a unified account of all datives in Spanish: from 'quirky' datives in psych predicates and other unaccusatives, to datives of interest and 'lower' datives in transitive constructions. The general picture (developed in Cuervo 1999, 2000a, b) is that dative arguments in Spanish are applied arguments licensed by an applicative head, where the clitic is merged. The applicative head is also responsible for the inherent case of the dative DP. An applicative head is always merged higher than the object, although Spanish datives do show a contrast in where they merge with respect to the lexical verb, in terms of Pylkkänen's (2000) high and low applicatives. Whether a dative argument functions as the subject of a clause or not correlates with the transitivity properties of the predicate (that is, with features of the verbalizing head *v*).[1]

The paper is organized as follows. In Section 2, I present the basic Spanish data that a theory of the dative alternation must account for. Section 3 introduces the details of the proposal. The structure without clitic is presented as corresponding to a DP-PP (Theme-Goal) configuration. The clitic-doubled structure is analyzed as the double-object DP-DP (Benefactive-Theme), where the dative is the argument licensed by an applicative head above the Theme. Movement of arguments in actives and passives that accounts for the resulting word order is analyzed in Section 4. Section 5 presents the phenomena that constitute the syntactic evidence for the proposal. The data deal with binding, weak crossover and relative scope of the objects. The analysis of the double-object construction is extended to cover data from configurations of possessor datives, previously analyzed as possessor raising constructions, in Section 6. It is argued that these possessor arguments are in fact another case of the dative low applicatives. Some general conclusions are presented in Section 7.

2. Ditransitives

Several languages have two alternative constructions that can express a relation between a Theme and a Goal. English and Greek, for example, present what is known in the literature as 'dative alternation':

(2) Prepositional (DP-Theme – PP-Goal)

a. I sent the book to Mary / to France

b. *O Jannis estile to gramma s-tin Artemi*
The Jannis.NOM sent the letter.ACC to-the Artemis.ACC
/ *stin Gallia*
/ to France
'John sent the letter to Artemis /to France'

(3) Double-object (DP – DP)

a. I sent Mary /*Paris the book

b. *O Jannis estile tis Artemis /*tis Gallias to gramma*
The Jannis.NOM sent the Artemis.GEN /the France the letter.ACC
'John sent Artemis /France the letter'

The contrast in acceptability of true locatives (*Paris*, *tis Gallias* in (3) vs. (2)) is reproduced in Spanish, where a locative cannot be clitic-doubled.

(4) a. *Andrea envió un diccionario a Gabi /a Barcelona*
Andrea sent a dictionary.ACC to Gabi.OBL /to Barcelona.OBL
'Andrea sent a dictionary to Gabi /to Barcelona'

b. *Andrea le envió un diccionario a Gabi*
Andrea CL.DAT sent a dictionary.ACC Gabi.DAT
/* *a Barcelona*
/ Barcelona.DAT
'Andrea sent Gabi /Barcelona a dictionary'

A locative PP can be added to the double-object construction, in English (5a) and Greek (6a). The same addition to the prepositional variant generates deviant sentences, (5b) and (6b).

(5) a. Auggie sent Peter a letter to Paris

b. */??Auggie sent a letter to Peter to Paris

(6) a. *I Ilektra estile tis Artemis to gramma stin*
The Ilektra.NOM sent the Artemis.GEN the letter.ACC to
Gallia
France
'Ilektra sent Artemis the letter to France'

b. */??*I Ilektra estile to gramma s-tin Artemi stin*
The Ilektra.NOM sent the letter.ACC to-the Artemis.ACC to
Gallia
France
'Ilektra sent the letter to Artemis to France'

In Spanish, we find the same contrast, again between the sentence with clitic doubling and the sentence without dative clitic.[2]

(7) a. *Pablo le mandó un diccionario a Andreína a*
Pablo.NOM CL.DAT sent a dictionary.ACC Andreína.DAT to
Barcelona
Barcelona
'Pablo sent Andreína a dictionary to Barcelona'

b. ??*Andrea mandó un diccionario a Gabi a Barcelona*
Andrea sent a dictionary.ACC to Gabi.OBL to Barcelona.OBL
'Andrea sent a dictionary to Gabi to Barcelona'

The parallelism of the contrasts exhibited by the sentences above is an initial suggestion that the clitic-doubled sentences correspond to the double-object construction.

2.1 Clitic doubling

It has been observed in the literature that clitic doubling of datives is optional in Spanish, in contrast to the restricted doubling of accusative arguments (Jaeggli 1986; Suñer 1988; Torrego 1998, among others). This observation arises from sentences with a ditransitive predicate, as in (8).

(8) *Mafalda (le) dio un caramelo a Felipe*
Mafalda (CL.DAT) gave a candy to Felipe

In other work, however, this optionality has been contrasted with the obligatory doubling of dative arguments with other kinds of predicates (Masullo 1992; Demonte 1995; Bruhn de Garavito 2000; Cuervo 2000a). Clitic doubling is in fact obligatory in all other cases of dative arguments. This is illustrated below for psych predicates (9a), *se*-unaccusatives (9b), two-argument unergatives (10), and for datives of 'interest' or so-called 'possessor datives' (11a–b). Doubling is also obligatory for benefactive datives with transitive predicates (12).

(9) a. *A Laura *(le) gustan las empanadas*
Laura.DAT CL.DAT like$_{3rdPl}$ the empanadas
'Laura likes *empanadas*'

b. *Al libro se *(le) salieron las tapas*
The book.DAT *se* CL.DAT came-out the covers.NOM
'The covers of the book came off'

(10) a. *Andrea *(le) gritó a Frodo*
Andrea.NOM CL.DAT shouted Frodo.DAT
'Andrea shouted at Frodo'

b. *Andrea *(le) habla hasta a las paredes*
Andrea.NOM CL.DAT talks even the walls.DAT
'Andrea talks all the time/would talk with anyone'

(11) a. *Hugo *(le) lavó el babero a Juana*
Hugo.NOM CL.DAT washed the bib Juana.DAT
'Hugo washed Juana's bib'/ 'Hugo washed the bib for Juana'

b. *A Hugo *(le) picaban las manos*
Hugo.DAT CL.DAT itched the hands.NOM
'Hugo's hands were itching'

(12) *Carlos *(les) construyó una casa a los suegros*
Carlos.NOM CL.DAT built a house his parents-in-law.DAT
'Carlos built his parents-in-law a house'

Notice that clitic doubling of datives – in contrast to doubling of accusative arguments – is obligatory irrespective of word order, animacy and specificity. When these facts are considered, the apparent optionality of clitic doubling in ditransitives, as in (1) and (8), seems surprising.

2.2 Clitic doubling and benefactive reading

Let's reconsider the claim that a locative phrase cannot be clitic-doubled.

(13) *Andrés (*le) envió los cuadros a Buenos Aires*
Andrés.NOM CL.DAT sent the paintings.ACC (to) Buenos Aires.DAT/OBL

On occasions, however, a locative *a*-phrase – the name of a city, a country, an institution – can be clitic-doubled. In such cases, the location is actually interpreted as a recipient, benefactive (or malefactive), and the corresponding sentence implies some kind of possession relation:

(14) a. *Jorge Luis le entregó los manuscritos a la*
Jorge Luis.NOM CL.DAT gave/donated the manuscripts.ACC the
ciudad de Buenos Aires
city of Buenos Aires.DAT
⇒ The city of Buenos Aires has the manuscripts

b. *Jorge Rafael les quitó la autonomía*
Jorge Rafael.NOM CL.DAT took-out the autonomy.NOM
a las universidades
the universities.DAT
⇒ The universities don't have autonomy (are not self-governed)

That the benefactive reading is 'forced' on the clitic-doubled variant can also be illustrated by an inverse example:

(15) a. *El presidente (les) ofreció honores a los soldados*
The president CL.DAT offered honours (to) the soldiers.DAT/ OBL
'The president offered the soldiers honours /honours to the soldiers'

b. *El presidente (*les) ofreció honores a los soldados*
The president CL.DAT offered honours (to) the soldiers
muertos en el hundimiento
killed.DAT/OBL in the sinking
'The president offered honours to the soldiers killed when the boat was sunk'

Even in the case of *a*-phrases that refer to animates and organizations formed by people, for which the alternation seems to be available (15a), it is still possible to tease apart a difference in meaning. The phrase *a los soldados muertos*, 'the dead soldiers', cannot have a benefactive role, and therefore clitic doubling is not possible (15b).

The contrast in interpretation discussed by Oehrle (1975) for the variants in the English dative alternation also holds in Spanish, with their unacceptability consequences. The sentences in (16) illustrate the case of inanimate – non-volitional – subjects of ditransitive predicates.

(16) a. **El viaje a Troncoso ofreció a María la oportunidad de*
The trip to Troncoso offered to Maria the opportunity of
practicar portugués
practice Portuguese
'The trip to Troncoso offered an opportunity to practice Portuguese to María'

b. *El viaje a Troncoso le ofreció a María la*
The trip to Troncoso CL.DAT offered Maria.DAT the
oportunidad de practicar portugués
opportunity of practice Portuguese
'The trip to Troncoso offered Maria the opportunity to practice her Portuguese'

2.3 Other alternations

In Spanish, we find parallel alternations between a sentence with a prepositional phrase (sentences a. below) and a sentence with a clitic-doubled dative (sentences b.). Some prepositions that participate in these alternations are *en* 'in/on', *para* 'for, and *de* 'of' (example (19) from Bruhn de Garavito 2000: 147).

(17) a. *Laura puso azúcar en el mate*
Laura put sugar in the *mate*
'Laura put sugar in the *mate*'
b. *Laura le puso azúcar al mate*
Laura CL.DAT put sugar the *mate*.DAT
'Laura put sugar in the *mate*'

(18) a. *Vicki y Hugo bailaron una milonga para Emilia*
Vicki and Hugo danced a milonga for Emilia
'Vicki and Hugo danced a milonga for Emilia'
b. *Vicki y Hugo le bailaron una milonga a Emilia*
Vicki and Hugo CL.DAT danced a milonga Emilia.DAT
'Vicki and Hugo danced a milonga for Emilia'

(19) a. *Me fui de la casa de mi madre*
REF.CL.1ST I-went from the house of my mother
'I left my mother's house'
b. *Me le fui de la casa a mi madre*
REF.CL.1ST CL.DAT I-went from the house my mother.DAT
'I left my mother's house'

In all these cases, the dative variant is available only when it makes sense for the dative argument to be interpreted as a benefactive, possessive or affected argument, as illustrated by the contrast between (17) above and (20) below.

(20) a. *Andrea puso libros en el estante*
Andrea put books.ACC on the shelf
'Andrea put books on the shelf'

b. **Andrea le puso libros al estante*
Andrea CL.DAT put books.ACC the shelf.DAT
'Andrea put books on the shelf'

The dative clitic-doubled variant is not available either for phrases with committative or instrumental meanings (examples from Masullo 1992: 28).

(21) a. *Marcos fue al cine con su amigo*
Marcos went to-the movies with his friend
b. **Marcos le fue al cine a su amigo*
Marcos CL.DAT went to-the movies his friend.DAT
'Marcos went to the movies with his friend'

(22) a. *Marcos cortó la soga con sus dientes*
Marcos cut the rope with his teeth
b. **Marcos le cortó la soga a sus dientes*
Marcos CL.DAT cut the rope his teeth.DAT
'Marcos cut the rope with his teeth'

The data on ditransitive predicates presented above point consistently in one direction: there is a tight correlation between clitic-doubled dative phrases and benefactive (more generally, affected) interpretation. In the sentences without dative clitic, this interpretation is not forced and is, in many cases, unavailable. We have also seen that clitic doubling of dative arguments is obligatory in all other kinds of predicates. Taking these facts together as a basis, I draw two initial conclusions.

(23) The alternative with and without dative clitic in Spanish ditransitives is the expression of the dative alternation. The clitic-doubled variant corresponds to the double-object configuration; in the alternate configuration, the non-doubled *a*-phrase is a prepositional phrase with a directional (locative) interpretation.

(24) Datives arguments are always obligatory doubled by a clitic.[3]

In other words, if there is no dative clitic, there is no dative argument; rather than a dative DP, then, the *a*-phrase is a prepositional phrase.

In the following section, I lay out an analysis of the two configurations mentioned in (23). In Section 5, I present an account of the normal surface order Accusative-Dative of the double-object construction in terms of movement of the accusative across the dative.

3. Two basic structures

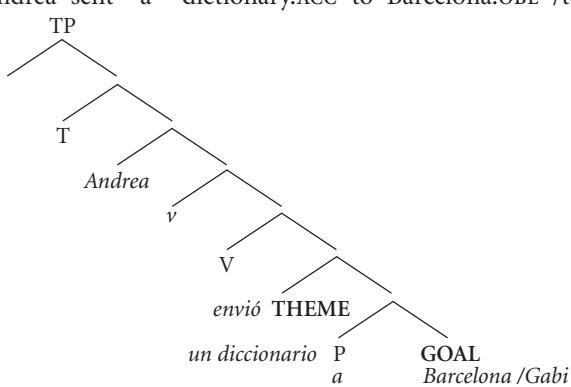
The unacceptability of the double-object alternate with locatives strongly suggests that the semantic role of the indirect object is not the same across the two constructions. We have also seen how the clitic-doubled dative has the interpretation of an affected argument (benefactive, malefactive, possessor). In principle, these contrasts between the two variants pose a problem for any derivational approach to the alternation. In fact, it is the focus on its similarities that is on the basis of the analyses within generative grammar that have tried to account for the alternation by having one structure derive from the other by movement and incorporation (Stowell 1981; Larson 1988; Aoun & Li 1989; and later in Agnostopoulou, to appear; Masullo 1992; Demonte 1995; Bruhn de Garavito 2000).

The analysis I develop for Spanish will focus on the contrasts, both syntactic and semantic, between the two constructions. A central claim of this approach is that the alternates are the expression of two configurations that are not derivationally related. There is no loss of generality, however. Quite on the contrary, it is by dealing with the two alternates as arising from different derivations that it is possible to discover the true parallels of each, as well as to account for the cases of unacceptability. The prepositional construction with ditransitives parallels similar constructions with other prepositions, like *for*, *on*, *towards*, etc, some of which also have a dative variant (as those in (17)–(19)). The dative in the double-object construction is analyzed as an applied argument, and resembles other datives in terms of interpretation, licensing, case and clitic-doubling.

3.1 Prepositional construction DP-PP

Ditransitive sentences without a clitic are formed by a direct complement and a prepositional phrase headed by the preposition *a* 'to'.

(25) *Andrea envió un diccionario a Barcelona /a Gabi*
Andrea sent a dictionary.ACC to Barcelona.OBL /to Gabi.OBL



As illustrated above, the direct object (the Theme) is merged higher than the prepositional phrase (Goal). The Theme asymmetrically c-commands the Goal. Evidence for this structural relation is provided in Section 5. This same configuration corresponds to other two-internal argument predicates, such as those in (17a) and (18a), repeated below.

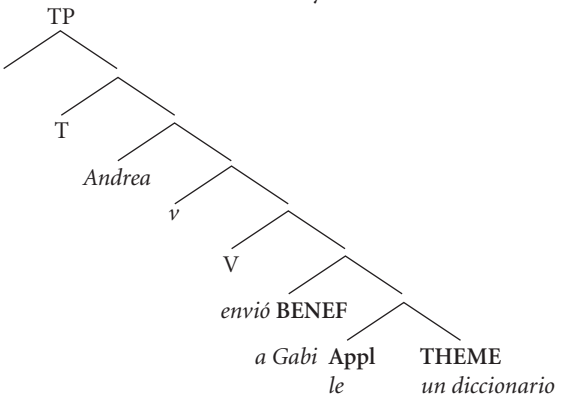
(26) a. *Laura puso azúcar en el mate*
Laura put sugar in the *mate*
b. *Vicki y Hugo bailaron una milonga para Emilia*
Vicki and Hugo danced a milonga for Emilia

3.2 Double-object DP(Dat) – DP(Acc)

Datives in ditransitives can be analyzed straightforwardly as instances of Pylkkänen's (2000) *low applicatives*. In her theory, low applicatives merge below the lexical verb (or root); this contrasts with *high applicatives* that merge above the verb. Pylkkänen argues that this structural difference correlates with a difference in the meaning. Low applicative heads have prepositional meanings: they relate an individual to the direct object; in most cases, they are interpreted as directional possessive relations (possessors/goals) or benefactives.[4]

The particular form that low applicatives take in Spanish appears below. Crucially, the dative argument is merged above the direct object. The dative clitic is merged as the applicative head that licenses the second argument, the applied dative, in its specifier. It is also from this head that dative case is assigned, as inherent case.

(27) *Andrea le envió un diccionario a Gabi*
Andrea CL.DAT sent a dictionary.ACC Gabi.DAT
'Andrea sent Gabi a dictionary'



The same configuration corresponds to the dative variant of the alternations in (17)–(19) above, and to examples of datives of interest and benefactive transitives as those in (11) and (12). In Section 6, I argue that this same configuration is the underlying structure of possessor datives, sometimes analyzed as 'possessor raising' (Demonte 1995; Landau 1999). All these cases can have a unified treatment as the expression of the low applicative configuration in Spanish.

In the following section, I present an account of word order in the double-object construction as the result of movement of the direct object, across the dative, to a high specifier within *v*P.

4. Movement in double-object ditransitives

It is a central claim of this analysis of Spanish datives as applicative arguments that datives are merged higher than objects, both in transitive and unaccusative predicates. We have seen, however, that the *normal* order in ditransitives is Accusative-Dative, i.e., the word order in which the sentences can have wide focus interpretation and be the answer to questions of the *What happened?* type. Surface word order is obtained, I will argue, by movement of the object across the dative to a higher position, the specifier of *v*P.[5]

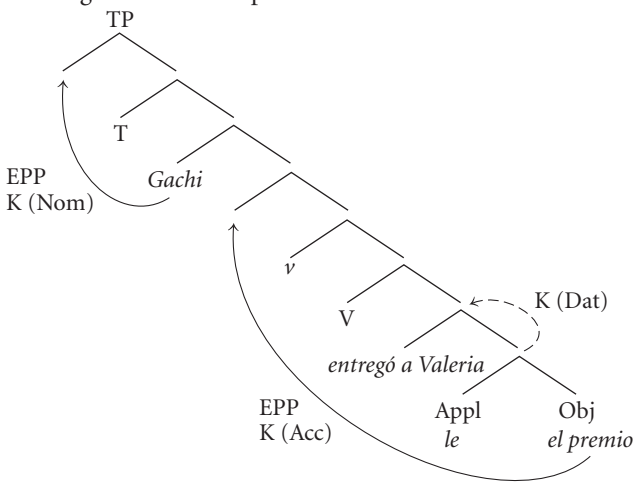
At least two proposals exist in the literature to account for word order in Spanish ditransitives. Demonte (1995), who presents an analysis of the dative alternation in Spanish within a Larsonian derivational approach, proposes that the V DO IO order is obtained by reanalysis of the direct object with the verb, followed by movement of the complex predicate thus obtained across the dative. On the other hand, following McGinnis's (1998) treatment of dative arguments in Spanish, DO IO order would be obtained by movement of the direct object to a specifier position above the dative. This movement would be triggered by an EPP feature on R, the head that selects for the applicative dative.[6]

There does not seem to be any independent evidence that the direct object – which can be of any kind: definite, indefinite, quantified – reanalyzes with the verb. Besides, one of the arguments Demonte provides for rejecting the possibility that word order is a consequence of the direct object scrambling across the dative (without reanalysis) is the "lack of due interpretation".[7] However, it is not clear that movement of the object must necessarily be the same kind as object-shift and have consequences on the focus of a sentence. As we will see, moreover, the fact that the object can raise to subject position in the passive also poses a problem for a reanalysis approach.

4.1 Actives

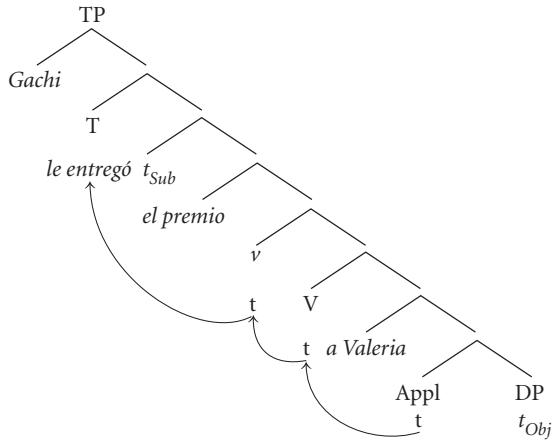
The general mechanisms of the movement follow the idea of EPP-driven movement that has become standard in Minimalism (Marantz 1991; Chomsky 1998, among many others). A functional head can have an EPP feature that is checked by a DP that moves to its specifier position. Checking of the uninterpretable Case feature of the DP and uninterpretable φ-features of the functional head can take place between the same elements that have an EPP-checking relation, but need not. In the case of the ditransitives, the relevant EPP feature is on *v*. Transitive *v* is also responsible for accusative Case.

(28) *Gachi* *le* *entregó* *el* *premio* *a Valeria*
Gachi.NOM CL.DAT gave the prize.ACC Valeria.DAT
'Gachi gave Valeria the prize'



The EPP feature on *v* 'looks for' a DP to attract to the specifier position. The dative, even when closer to *v*, has no uninterpretable case – it has inherent case – and so is 'invisible' to *v* (as the inherent dative experiencer in English is not 'seen' by T in a raising construction like *seem*+experiencer).[8] The lower object is active (has unchecked structural case) and raises to Spec*v*P. When T is merged, its EPP feature attracts the closest DP, the subject.[9] Case of the subject is checked against T (which has uninterpretable φ-features). The movement of the object should take place before the specifier of *v* (the external argument, EA) is projected, to ensure that the EA is the DP closest to T. Alternatively, the movement takes place after merger of the EA, but the object tucks in.[10]

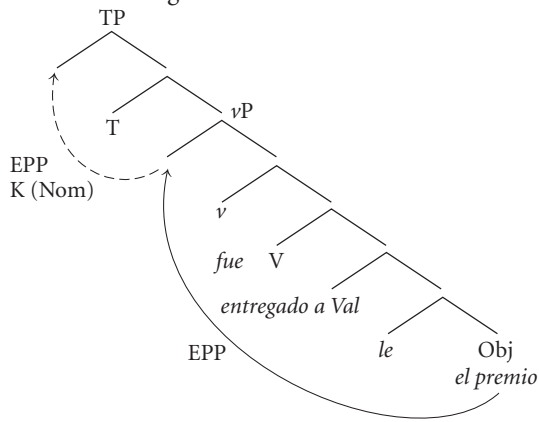
(29)



4.2 Passives

In Spanish passives, if an argument raises to subject position, it is usually the accusative object. Then, since ditransitives and passives in Spanish pattern together, and contrast with unaccusatives, we can suggest that this difference is related to the presence/absence of *v*. The *v* of passives, however, differs from fully-fledged *v* (*v**, in Chomsky 1998) in that passive *v* does not select for an EA and does not enter into a Case relation with the object. Similar to *v**, however, it does have an EPP feature that attracts the object. Once there, the object can enter into a case relation with T, and might raise to its specifier to check EPP.[11]

(30) *El premio le fue entregado a Valeria*
The prize.NOM CL.DAT was given Valeria.DAT
'The book was given to Valeria'



The fact that even when the object does not move to subject position in the passive it usually appears before the dative suggests that the mechanisms responsible for word order in the active are parallel to those in the passive.

5. Structural asymmetries

I have argued that the two alternative constructions of the dative alternation are instantiated in Spanish, although there is no difference in surface word order. The only apparent difference is the presence versus absence of the clitic. However, if there is a structural difference between constructions with and without clitic, and the difference lies in the merging positions of the arguments, as presented in Section 3, it should be possible to find contrasts that involve asymmetries in c-command relations. In the prepositional ditransitives, we expect, for instance, that the direct object will be able to bind into the Goal, but the opposite will be ungrammatical. In the double-object configuration, we expect that the dative will be able to bind into the direct object, but not vice versa. It is important to note, however, that in the latter case, movement of the object across the dative might affect the binding possibilities that would hold without this movement.[12]

5.1 Binding asymmetries

C-command asymmetries have been observed for the two structures in the dative alternation (Barss & Lasnik 1986). Larson (1988) discusses binding asymmetries in the DP-PP structures, as in (31). Pesetsky (1995) analyzes asymmetries in double-object constructions that parallel those observed in the DP-PP alternative (32)–(33).

(31) a. I showed John to himself in the mirror
b. *I showed himself to John in the mirror

(32) a. I showed John himself in the mirror
b. *I showed himself John in the mirror

(33) a. I denied every worker$_i$ his$_i$ paycheck
b. *I denied its$_i$ owner every paycheck$_i$

In spite of the identical surface word order in the two constructions, some asymmetries in binding relations can also be observed in Spanish.[13] If a PP is merged lower than the object, while a dative DP is merged higher than the object, we would expect some effect on constructions like those on (32). Even when none of the corresponding sentences is fully acceptable, there is still a clear contrast, in the direction of this analysis.

(34) a. Double-object
?*Valeria le presentó su respectivo paciente*
Valeria CL.DAT introduced his$_i$ respective patient.ACC
a cada cirujano
[each surgeon.DAT]$_i$
'Valeria introduced each surgeon his respective patient'

b. DP-PP
**Valeria presentó su respectivo paciente*
Valeria introduced his$_i$ respective patient.ACC
a cada cirujano
to [each surgeon.OBL]$_i$
'Valeria introduced his respective patient to each surgeon'

(35) a. Double-object
?*Les negamos su$_i$ cheque a los trabajadores$_i$*
CL.DAT.PL we-denied his$_i$ check.ACC [the workers.DAT]$_I$
'We denied the workers their checks'

b. DP-PP
**Negamos su$_i$ cheque a los trabajadores$_i$*
We-denied his$_i$ check.ACC to [the workers.OBL]$_i$
'We denied their checks to the workers'

We expect perfect acceptability of sentences where a possessive in a PP corefers to the accusative object, since the possessive can be bound by the accusative argument.[14] When the possessive is in a dative argument, my analysis predicts that there will be, at least, some degrading, given that the possessive would be merged higher than the antecedent. This is exactly what we find:

(36) a. *La policía entregó los bebés$_i$ a sus$_i$ respectivos padres*
The police gave [the babies.ACC]$_i$ to their$_i$ respective parents
'The police gave the babies to their respective parents'

b. */??*La policía les entregó los bebés$_i$*
The police CL.DAT.PL gave [the babies.ACC]$_i$
a sus$_i$ respectivos padres
their$_i$ respective parents.DAT
'The police gave their parents the babies'

(37) a. *Devolvimos el diccionario$_i$ a su$_i$ dueño*
We-returned [the dictionary.ACC]$_i$ to its$_i$ owner.OBL
'We returned the dictionary to its owner'

b. ??*Le devolvimos el diccionario$_i$ a su$_i$ dueño*
CL.DAT returned [the dictionary.ACC]$_i$ its$_i$ owner.DAT
'We returned its owner the dictionary'

It is possible, however, to use a ditransitive to express the meaning of the a. sentences, i.e., that the babies were given to their own parents, and that the book was returned to the owner of the book. To do that, a definite determiner is enough.

(38) a. *La policía les entregó los bebés a* ***los*** *padres*
The police CL.DAT.PL gave the babies.ACC the parents.DAT
'The police gave the parents the babies'

b. *Gabi le devolvió el diccionario* ***al*** *dueño*
Gabi CL.DAT returned the dictionary.ACC the owner.DAT
'Gabi returned the dictionary to the owner'

Constructions like those in (38) are sometimes analyzed as cases of the possessor dative construction, as distinct from the double-object construction. Under this analysis, they are one more case of the ditransitive construction. The possessive reading arises from the way the sentence is built. Any dative argument in this structure is forced to get that kind of reading; when that is not possible, unacceptability arises:

(39) a. *Gabi devolvió el libro*$_i$ *a* ***su***$_i$ *estante (correspondiente)*
Gabi returned the book to its (corresponding) shelf
'Gabi returned the book to its shelf'

b. *Gabi devolvió el libro* ***al*** *estante*
Gabi returned the book to the shelf
'Gabi returned the book to the shelf'

c. **Gabi* ***le*** *devolvió el libro*$_i$ *a* ***su***$_i$ *estante*
Gabi CL.DAT returned the book its shelf.DAT
'Gabi returned its shelf the book'

d. **Gabi* ***le*** *devolvió el libro* ***al*** *estante*
Gabi CL.DAT returned the book the shelf.DAT
'Gabi returned the shelf the book'

In (39a), we can have a coreferential reading through binding; the figurative 'possession' relation is established through the presence of the possessive pronoun (not through the locative structure). In (39b), there is no possession relation, and the sentence is fine. Binding in (39c) seems to be out for structural reasons (those that also apply to (36b) and (37b)). In contrast to (39b), (39d) is not acceptable. Arguably, this is because the ditransitive structure forces a 'possessive' relation between the book and the shelf that goes against what we would accept as reasonable for such individuals.[15]

5.2 Weak crossover

In the two alternative 'dative' constructions in English, weak crossover effects arise when the lower *wh*-argument raises across a higher object that contains a possessive pronoun coindexed with the *wh*-word.

(40) Double-object

a. *What$_i$ did Mary give its$_i$ owner t$_i$?

b. Who$_i$ did Mary give t$_i$ his$_i$ check?[16]

(41) DP-PP

a. *Who$_i$ did Mary return his$_i$ check to t$_i$?

b. What$_i$ did Mary return t$_i$ to its$_i$ owner?

If there is indeed a structural contrast in Spanish between constructions with and without clitic, and that difference corresponds to the dative alternation, we would also expect to see weak crossover effects parallel to English.

(42) Double-object

a. *¿*Qué*$_i$ *le devolvió a* ***su***$_i$ *dueño* ***t***$_i$ *Lilus?* (low-object raises)
What.ACC CL.DAT returned its owner.DAT Lilus.NOM
'What did Lilus return its owner?'

b. ¿*A quién*$_i$ *le devolvió* ***t***$_i$ *su*$_i$ *libro Lilus?* (high-dative raises)
Who.DAT CL.DAT returned his book.ACC Lilus.NOM
'Whom did Lilus return his book?'

(43) DP-PP

a. *¿*A quién*$_i$ *devolvió* ***su***$_i$ *libro* ***t***$_i$ *Lilus?* (low-PP raises)
To whom.OBL returned his book.ACC Lilus.NOM
'Who did Lilus return his book to?'

b. ¿*Qué*$_i$ *devolvió* ***t***$_i$ *a* ***su***$_i$ *dueño Lilus?* (high-object raises)
What.ACC returned to his owner.OBL Lilus.NOM
'What did Lilus return to its owner?'

In a ditransitive, we expect weak crossover effects if the (lower) accusative is a *wh*-word, and the dative contains a possessive. That is what we find in (42a). In contrast, (43b), where also the accusative is the *wh*-word, is a grammatical question. WCO effects arise in (43a), where the PP is a question phrase and the possessive is in the (higher) accusative.

A similar effect of the different structures can be seen in the binding of a possessive in a dative as opposed to the binding of a possessive in a PP:

(44) a. *¿Qué$_i$ entregó Emilio$_j$ a su$_{i/j}$ país de origen?*
What.ACC gave Emilio to its/his country of origin.OBL
'What did Emilio give to its/his country (of origin)?'

b. *¿Qué$_i$ le entregó Emilio$_j$ a su$_{*i/j}$ país de origen?*
What.ACC CL.DAT gave Emilio *its/his country of origin.DAT
'What did Emilio give his country (of origin)?'

5.3 Frozen scope

The scopal relation with the accusative object is different for datives and prepositional phrases. Bruening (2001) discusses frozen scope facts in English double-object constructions, i.e., the fact that the direct object cannot scope over the indirect object. He claims that this effect arises because quantifier raising obeys the Minimal Link Condition: a lower object cannot raise across the dative. In Spanish, the same frozen scope effect is found: an accusative cannot have scope over a dative (45a), but scope is free in Theme-PP locative constructions (45b). When *each* is in the dative (46a) or in the PP (46b), the intended reading is possible.

(45) a. *Andrés le mandó cada cuadro* ***a un museo***
Andrés CL.DAT sent each painting.ACC a museum.DAT
(#distinto) ****cada > un***
different
'Andrés sent a (different) museum each painting'

b. *Andrés mandó cada cuadro a un museo (distinto)* cada > un
Andrés sent each painting.ACC to a museum different
'Andrés sent each painting to a (different) museum'

(46) a. *Carolina le llevó un artículo (distinto)*
Carolina CL.DAT took an article.ACC (different)
a cada revista cada > un
each magazine.DAT
'Carolina took each magazine a (different) article'

b. *Carolina llevó un artículo (distinto) a cada revista* cada > un
Carolina took an article.ACC different to each magazine
'Carolina took a (different) article to each magazine'

What is striking about Spanish is that the scope that would be obtained from surface word order is not possible. This strongly supports the idea that the object is generated in a lower position, or, at least, that surface word order is not the reflection of initial merge positions of the arguments. Why this effect holds is not so straightforward, however. One approach would be that the direct object obligatory reconstructs, and it is the structure with the object in its original position

that feeds quantifier raising. I would put aside this issue here, leaving it open for future analysis.

6. Possessor raising

Having established that the double-object construction is attested in Spanish, I have argued for a non-transformational analysis of the dative alternation. I have provided an account of the syntax and the semantics of the double-object variant in terms of Pylkkänen's low applicative construction. The dative is an *extra* argument licensed by an applicative head – where the clitic is merged – that is applied to the direct object. This construction expresses a relation between two individuals: the dative and the accusative objects. We have seen that the applied object can be a recipient or a source. The construction expresses a directional or transfer relation. I will focus now on constructions that have been referred to as 'possessive dative constructions' (PDC). I will show how the PDC fits straightforwardly into the approach presented here, as one more instance of the low applicative construction. The only relevant difference is that in the possessive dative construction the possessive relation is not of transfer but stative.

Landau (1999) analyzes dative, non-genitive, possessor arguments in Hebrew and Romance (French and Spanish). In all the Spanish examples he deals with, the dative is doubled by a clitic, as in the following:

(47) a. *Les revisé los informes a los estudiantes*
to-them I-revised the reports to the students
'I revised the reports to the students'
(Landau 1999: 3; citing Kempchinsky 1992)

He expresses the puzzle raised by this construction as follows:

(48) The classical puzzle of possessive datives
An argument in the clause (the possessor) derives its *semantic* role from another argument (the possessee), but its *syntactic* behavior from the predicate. What is the possessive dative an argument of?

Landau presents an account of this phenomenon in terms of a *movement* approach: the dative possessor starts the derivation in a caseless specifier position within the possessee (the theme object), and moves to check its case to a specifier of V. For him, the PDC is crucially different from the double-object construction (where there is no movement). Demonte (1995) also provides a derivational approach, although in her case 'possessor raising' parallels the derivation of the double-object construction in Spanish. For Bruhn de Garavito (2000), the PDC is also related to

double-objects: both are cases of preposition incorporation and movement of the dative to a verbal-functional head.

It falls beyond the scope of this work to provide a detailed review of Landau's claims (or any other previous analysis) and the incorrect predictions they make for Spanish. I will simply provide here some relevant examples of the PDC and show how they can be accommodated as applicative constructions.

In the low applicative construction, the applied argument is in a possession relation with the theme object. In the case of ditransitive and other directional predicates, the possessive relation can be a transfer relation in both directions: the applied argument 'gets' the object (49a), or 'loses' the object (49b).

(49) Double-object

a. *Gabi le entregó el informe a Andreína*
Gabi CL.DAT handed the report.ACC Andreina.DAT
'Gabi handed Andreína the report'

b. *Gabi le robó el autito a Emilia*
Gabi CL.DAT stole the little-car.ACC Emilia.DAT
'Gabi stole the toy car from Emilia /Emilia's toy car'

The possessive relation is not limited to transfer relations, however. It can also be a stative relation: the object 'belongs' or is part of the applied argument, as in the PDC examples in (50).

(50) PDC

a. *Les admiraron el sombrero a los hijos de Daniela*
CL.DAT.PL they-admired the hat.ACC the children of Daniela.DAT
'They admired Daniela's children's hats'

b. *Les admiraron la nariz a los hijos de Daniela*
CL.DAT.PL they-admired the nose.ACC the children of Daniela.DAT
'They admired Daniela's children's noses'

The applicative construction can express the two varieties of possession: alienable possession (50a), and inalienable possession (50b). As we see, in Spanish, the use of a possessive determiner is not required in either case – as opposed to Hebrew and French that require a genitive pronoun for relational nouns (Landau 1999: 14).

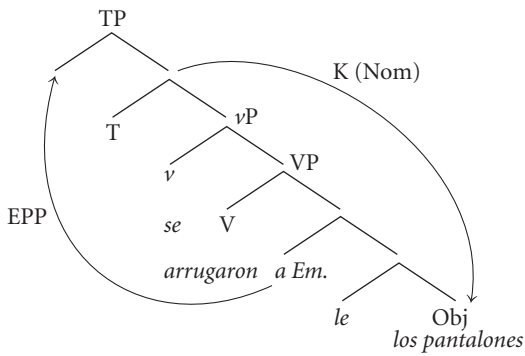
Stative possession relations (both alienable and inalienable) can be expressed in sentences where the dative argument has raised to subject position, as below.

(51) a. *A los chicos les dolió la cabeza durante todo el partido*
The kids.DAT CL.DAT.PL hurt.3RD.SG the head.NOM during all the game
'The kids had a headache during all the game'

b. *A Emilio se le arrugaron los pantalones*
Emilio.DAT *se* CL.DAT wrinkled3RD.PL the trousers.NOM
'Emilio's trousers got wrinkled'

The crucial difference between cases where the dative appears after the object, such as in (49)–(50), and the cases where the dative precedes the object (51) is the type of predicate. With transitive predicates, the object moves across the dative and gets accusative Case (the structure is the double-object structure as developed here). When the predicate is unaccusative, however, it is the dative that raises, the object gets nominative case and agrees with the verb (52). This contrast can be captured as a contrast in the EPP feature on *v*: transitive *v* has an EPP feature, while unaccusative *v* does not.[17]

(52)



Within this account, possessive relations are read off the initial structure: dative possessor DPs do not start as part of the object DP (contra Demonte 1995; Landau 1999). This simpler approach can accommodate a wide range of phenomena that is left unexplained by possessor raising approaches. I will mention two of these problematic cases.

The possessor raising approach predicts that the structure will not be possible with a possessive determiner, at least under the assumption that the possessive occupies a specifier position within the possessee (see Demonte 1995, and references therein). While co-occurrence of a dative and a possessive determiner is not possible in the case of inalienable possession (53), it is possible in some other cases (54).[18]

(53) a. **Le admiraron su nariz al hijo de Daniela*
CL.DAT they-admired his nose.ACC son of Daniela.DAT
'They admired Daniela's son's nose'

b. **A los chicos les dolió su cabeza durante todo el partido*
The kids.DAT CL.DAT hurt their head.NOM during all the game
'The kids had a headache during all the game'

(54) a. ?*Les negamos su cheque a los trabajadores*[19]
CL.DAT.PL we-denied his$_i$ check.ACC [the workers.DAT]$_i$
'We denied the workers their checks'

b. *Le perdonaron su condena a cada preso*
CL.DAT they-forgave his$_i$ sentence.ACC each prisoner.DAT
'They lifted the sentence from each prisoner'

Another problematic case for the possessor raising analysis comes from sentences where there is an affected/benefactive dative and a possessive phrase in the direct object.

(55) a. *A María le robaron la bici de su/la vecina*
Maria.DAT CL.DAT they-stole the bike of her/the neighbour
'María$_i$'s neighbour's bike was stolen from her$_i$ (i.e., when Maria was using it)'

b. *Le arreglé la computadora de sus/los hijos a Hugo*
CL.DAT I-fixed the computer of his/the children Hugo.DAT
'I fixed Hugo's children's computer for him'

Although Landau (1999:7) presents some examples of this sort, it is difficult to see how the dative argument can have been generated as part of the theme object, which already contains a possessor specifier. One could propose that the dative originated as the possessor (specifier) of the possessive *de*-phrase (*de su vecina* in (55a)). If that were the case, however, we would expect sentence (56), where the neighbour is not María's, to be unacceptable.

(56) a. *A María le robaron la bici de mi vecina*
Maria.DAT CL.DAT they-stole the bike of my neighbour
'My neighbour's bike was stolen from María (i.e., when Maria was using it)'

Therefore, if the datives in sentences like those in (55) do not originate in the object DP, they would require a different account from the datives in (49)–(51), an undesirable result. In fact, the dative arguments in (55) could be instances of high applicative arguments, i.e., arguments applied to the event (to the predicate *plus* the theme object), that can receive benefactive or malefactive interpretation (Pylkkänen 2000).[20] In light of examples like (56), the grammaticality of sentences in Spanish which "resist multiple possession by nature" (cf. Landau 1999:7) supports the high applicative analysis:

(57) a. *A María le cambiaron el nombre del hijo en la escuela*
Maria.DAT CL.DAT they-changed the name of her son in the school
'María's son's name was changed at school'

In sum, the 'puzzle' of possessor datives seen in the light of the approach developed here is not a puzzle at all. As in the other cases of the double-object construction, the dative argument gets both its syntactic behaviour *and* its compositional semantics from its place in the applicative configuration.

A wide range of variation in the expression of possession and affected arguments exists in Spanish, and many other languages that exploit low (and high) applicatives. The sentences below exhibit a small sample of the set of syntactic, morphological and semantic phenomena which the unified approach to datives developed here can accommodate in a principled and simple way.

(58) a. *María quebró un dedo de la muñeca*
Maria.NOM broke [a finger of the doll].ACC
'María broke one of the doll's fingers'

b. *María le quebró un dedo a la muñeca*
Maria.NOM CL.DAT broke a finger.ACC the doll.DAT
'María broke one of the doll's fingers'

c. *A María se le quebró un dedo de la muñeca*
Maria.DAT *se* CL.DAT broke [a finger of the doll].ACC
'María accidentally broke one of the doll's fingers' *or*
'One of María's doll's fingers broke'

d. **María se quebró un dedo de la muñeca*
Maria.NOM *se* broke [a finger of the doll].ACC

e. *A María se le quebró un dedo*
Maria.DAT *se* CL.DAT broke a finger.ACC
'One of María's fingers broke' *or*
'María accidentally broke one of her fingers'

f. **A María se quebró un dedo*
Maria.DAT *se* broke a finger.ACC

g. *María se quebró un dedo*
Maria.NOM *se* broke a finger.ACC
'María broke a finger'

(59) a. *María lavó la muñeca*
Maria.NOM washed the doll.ACC
'María washed the doll'

b. *María le lavó el pelo a la muñeca*
Maria.NOM CL.DAT washed the hair.ACC the doll.DAT
'María washed the doll's hair'

c. *María se lavó*
Maria.NOM *se* washed
'María washed (herself)'

d. *María* *se* *lavó* *el pelo*
Maria.NOM *se* washed the hair.ACC
'María washed her hair'

e. */#*A María* *se* *le* *lavó* *el pelo*
Maria.DAT *se* CL.DAT washed the hair.ACC
'María's hair accidentally washed (itself)'

The detailed account of the transitive-inchoative alternating structures in (58) and the transitive-reflexive constructions in (59) falls beyond the scope of this paper. Let's just point out that they can be accounted for, in the spirit of the approach presented here, by exploiting the merging position of the dative clitic-applicative head (below or above the lexical verbal) and the merging position of reflexive clitic *se* (as voice or causative *v* head, or applicative head), without possessor raising and without clitic phrases postulated as landing site for Case checking.

7. Conclusions

I have presented syntactic and semantic evidence that there is a dative alternation in Spanish. I have argued for an analysis of the double-object construction where the dative is a low applied argument licensed by an applicative head whose spell-out is the dative clitic. *A*-phrases in ditransitive sentences without clitic doubling have been shown to be prepositional phrases rather than a dative DP. An immediate desirable consequence of this analysis is that there is no optionality of clitic doubling: doubling of dative arguments is obligatory in Spanish, not only for subject, benefactive and possessive datives but also for datives in ditransitives.

I have extended this account of double-objects in the spirit of Pylkkänen's theory of applicatives to a range of dative arguments previously analyzed as distinct structures: benefactive datives, datives of interest and possessor datives. The syntax and the semantics of these constructions follow naturally from this unified approach, without having to postulate 'idiosyncrasies' for their (un)acceptability. The analysis covers a broader set of data, and sheds light on the restrictions and interpretation of the constructions.

The syntactic and semantic arguments developed for the analysis of the double-object construction in Spanish can be applied to other languages, and provide support for the analysis of the dative alternation as the expression of two distinct configurations that are not derivationally related.

Word order and semantic differences among the whole range of Spanish datives is reduced to differences in the merging position of the applicative head (high and low applicatives) and the feature characteristics of the functional heads *v* and T, which trigger movement of a DP to their specifier positions.

This work constitutes support for a theory that claims that argument structure and thematic roles result from syntactic structure building rather than from an independent semantic level that maps onto syntactic structures.

Notes

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1. See Masullo (1992), Demonte (1995), Fernández Soriano (1997), for partial unified approaches to datives in Spanish.

2. The unacceptability of the b. sentences must arise from something other than the repetition of the preposition, since in Spanish the contrast holds in spite of the preposition *a* appearing twice in each sentence.

3. I take the *a* in the datives to be the expression of case rather than a real preposition, as a parallel of the Spanish *a* that appears with animate accusative arguments.

4. As benefactives, the reading of a low applicative is that of an individual benefited by having a relation with some entity; they contrast with high benefactives, where the 'benefit' comes from the event taking place. See Pylkkänen (2000, 2002) for a detailed analysis of applicatives, and Cuervo (2000) for a unified analysis of datives in Spanish as high and low applicatives.

5. The question of whether this landing position is the same as the one for object-shift in object-shift languages is not addressed here. I will assume throughout the analysis that in transitive constructions, there is only one *v* responsible both for accusative case and the licensing of the external argument. This is not, however, crucial for the work presented here, and the issue can be left open.

6. McGinnis's (1998) does not account for Spanish word order, and in fact predicts that the normal order should not be possible. However, according to her analysis of Greek and Albanian, this is how the analysis could be adapted to account for DO IO order, where R = applicative head.

7. The second argument is the possibility of focus spreading.

8. I argue against this correlation between inherent case and transparency elsewhere (Cuervo 2000b). See Note 11, below.

9. In Cuervo (2000b), I discuss the idea that functional heads can vary with respect to the requirements they impose on the DPs they attract. In particular, I argue that transitive *v* in Spanish is like T in English: it has an obligatory EPP feature, movement to its specifier has no semantic import, and the DP that checks EPP must be active – in the sense of Chomsky (1998), McGinnis (1998), etc. In contrast, Spanish T can lack EPP, movement to its specifier

has semantic import – subject of predication – and the DP that satisfies EPP is the closest, irrespective of its case characteristics (thus, there can be – inherent case – dative subjects).

10. See Chomsky (2001) for some discussion of landing site of objects in object-shift languages and in English.

11. In Spanish passives, it is very common for the nominative phrase to be post-verbal, analyzed here as having remained in the Spec*v*P. This is possible due to the arguable optionality of EPP on T.

(i) *Le fue entregado un premio a Valeria*
CL.DAT was given a prize.NOM Valeria.DAT

(ii) *Fue arrestado Pinocho*
Was arrested Pinochio.NOM

12. Demonte (1995) also makes a case for datives being higher than the theme in double-object constructions through similar contrasts.

13. Sentences with *show in the mirror* are not very felicitous in Spanish. However, forced to construct them, judgments go in the right direction. Notice that the judgments for the Spanish ditransitive in (ii) are parallel to those in English (32). The contrast between (ia) and (iia) suggests that the structures are indeed different: the accusative is higher in DP-PP, but must start lower in ditransitives.

(i) DP-PP
a. ?*Mostré al mono.*ACC *a sí mismo en el espejo*
I-showed the monkey to himself
b. **Mostré a sí mismo.*ACC *al mono*
I-showed himself to the monkey

(ii) Ditransitive DP-DP
a. **Le mostré al mono a sí mismo.*DAT
CL I-showed himself the monkey
b. ??*Le mostré a sí mismo al mono.*DAT
CL I-showed the monkey himself

14. It seems to be a characteristic of possessive pronouns in Spanish that they act as bound variables in need of a c-commanding antecedent. In example (35), notice that *su cheque* is singular, but the intended reading is distributive among workers, and in that parallels (34) closely. A possessive *su* binding a lower argument creates a Condition C effect:

(i) **Su*$_i$ *amigo vio a Pablo*$_i$.
His friend saw Pablo

(ii) **A su*$_i$ *director le gustó la película*$_i$.
Its director.DAT liked the movie.NOM

(iii) ?La película$_i$ le gustó a su$_i$ director
The movie.NOM liked its director.DAT

(iii) shows that a Condition C violation in the initial structure is not completely solved by movement. So, (35b) can be understood as a Condition C violation, as well as (36b) and (37b).

15. The contrast between (36b)–(37b), on one hand, and (38)–(39d) on the other, suggests that the possession relation in ditransitives, although structural, is not achieved through binding. Possession is a reading that derives from the applicative nature of the selecting head in the ditransitive construction, as discussed in Section 6.

16. Some English speakers do not like extraction of a dative from the double-object construction. However, for those who accept (40b), there is no contrast with (i), where there is no pronoun:

(i) Who did Mary give a check?

17. See Note 10; see Cuervo (2000b) for a more detailed account.

18. The acceptability of this construction seems to depend on the kind of possession and the kind of the possessee (more acceptable with abstract objects).

19. This is sentence (35a), whose deviance from complete acceptability derives from binding relation between the referential dative and the possessive *su*.

20. *High* benefactive arguments in English can only be expressed by *for*-phrases. In Spanish, high benefactives and dative experiencers are instances of the high applicative construction, as in sentences (9a) and (11a) above.

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On the asymmetry of the specificational copula sentence

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1. Introduction

1.1 This article deals with two questions concerning the verb BE in English, and, by extension, in other languages.

i. How many types of copula sentence does the grammar provide for?
ii. Are any of these sentence types symmetrical?

The best known types of copula sentence are the predicational copula (1), the specificational copula (2) and the specificational pseudo-cleft (3), all described with great insight in Higgins (1973).

(1) Moby Dick is John's favorite book. (PRED)

(2) John's favorite book is Moby Dick. (SPEC)

(3) What/the book John bought was Moby Dick. (SPEC. PS-CL.)

Higgins showed that a specificational pseudo-cleft sentence such as (4a) exhibits "connectedness" effects, such as bound anaphora, in the absence of structural c-command between antecedent and anaphor, as if it were the simple sentence (4b). Predicational Ss like (5) do not exhibit these effects.

(4) a. What John is is important to himself/*him. (SPEC)
b. John is important to himself/*him.

(5) What John is is important to him/*himself. (PRED)

As the specificational copula sentence also manifests connectedness effects (cf. (6)), we will consider that (2) and (3) belong to the same, specificational, sentence type.

(6) John and Mary's only friends are each other.

Moro (1991, 1997) proposed that the predicational copula sentence (1) and the specificational copula sentence (2) are derived from the same underlying structure (7), in which BE takes a small clause complement containing two NPs.

(7) e T+ BE [$_{sc}$ [$_{NP1}$ Moby Dick] [$_{NP2}$ John's favorite book]]

Raising of the sc subject of (7) to the matrix subject position derives the canonical copula S (1) illustrated in (8). Raising of the sc predicate derives the inverse copula S (2) shown in (9).

(8) [$_{NP1}$ Moby Dick] T + BE [$_{sc}$ t_1 [$_{NP2}$ John's favorite book]]

(9) [$_{NP2}$ John's favorite book] T + BE [$_{sc}$ [$_{NP1}$ Moby Dick] t_2]

1.2 In Guéron (1992, 1994), I adopted Moro's raising hypothesis but not the rest of his analysis, according to which the raised predicate is both case marked and interpreted as a predicate. Citing the "Functional Definition of Categories" of Guéron and Hoekstra (1988) in (10), I claimed that a nominal predicate raised to an argument position can no longer be construed as a predicate in LF.

(10) FDC: A nominal is an argument iff it is case marked and a predicate iff it is T-marked.

A constituent is T-marked if it is governed by Tense or by a verb merged with tense within the functional skeleton of the sentence, a "T-chain" consisting minimally of C, T, and V.

I proposed that the underlying structure of the specificational S (2) contains the VP in (11a), in which the verb BE takes both a complement and a specifier. If NP1 raises, as in (11b), NP2 is still T-marked by BE or its trace and functions as a predicate in LF. But the raised NP2 in (11c) is not T-marked and cannot be construed as a predicate.

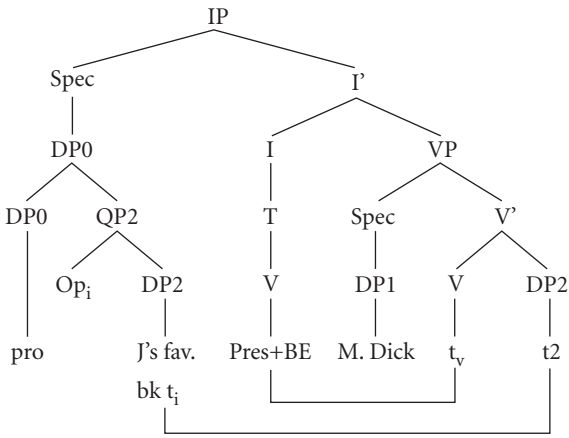
(11) a. e T [$_{VP}$ [$_{NP1}$ Moby Dick] BE [$_{NP2}$ John's favorite book]]
b. [$_{NP1}$ Moby Dick] T + BE_V [$_{VP}$ t_1 t_V [$_{NP2}$ John's favorite book]]
c. [$_{NP2}$ John's favorite book] T + BE [$_{VP}$ [$_{NP1}$ Moby Dick] t_V t_2]]

I proposed that the raised NP2 adjoins to a pro generated in the matrix subject position, as shown in (12). This adjunction operation derives a complex nominal construed as a non-referential quantifying phrase. More precisely, DP2 is construed in LF as a QP which contains the iota operator.

(12) [$_{NP0}$ pro [$_{QP2}$ Op_i [$_{NP2}$ John's favorite book t_i]]] T + BE [$_{VP}$ [$_{VP}$ t_1 t_2][$_{NP1}$ Moby Dick]]

I also suggested that the sc subject of (11a) adjoins to VP, as in (12) above, where it is construed as the Focus constituent of the sentence. Possibly, as pointed out by Heycock and Kroch (1999), the sc subject need not move, since its sentence-final position assures its status as information focus in LF. If so, the corrected syntactic structure of (2) is (13).

(13) John's favorite book is Moby Dick.



The Minimalist Program (Chomsky 1995) suggests a number of questions concerning the technical realization of this structural analysis. Questions (i) and (ii) below were raised by the reviewers of this article.

i. What forces DP2 to raise to Spec IP from its sc predicate position?
ii. Why does DP2 not adjoin to Spec IP rather than merge with its prohead in (13)?
iii. Is pro in Spec IP necessary? Can the relative clause interpretation of the raised DP2 not simply be construed at LF or at the syntax–semantics interface?
iv. Why not generate the headless relative in Spec IP as proposed by Heycock and Kroch (1999), avoiding the small clause structure altogether?

Here, I will answer only question (iv), which seems to me to be crucial to the syntax and semantics of the specificational copula and to the grammar in general. The answers to the other questions, which are concerned with the execution of my hypothesis in the Minimalist framework, should not affect the new analysis to be presented below.

I suggested in my cited work that on a later level of LF, the Focus constituent, Moby Dick in (13), is superimposed on the pro head of the subject DP. Superposition allows the two NPs, subject and focus, to occupy a single position and share

a single NOM case F. The output of superposition of nominals derives a structure equivalent to an NP with non-restrictive modifier, "Moby Dick, my favorite book".

In order to constrain the unorthodox grammatical operation of superposition of nominals, I distinguished two levels of grammar, récit and commentaire. On the level of récit or narrative, only the operations we now call merge and move (Chomsky, 1995), are allowed. But commentaire, or commentary, allows additional LF operations, such as the superposition of nominals.[1]

1.3 Heycock and Kroch's (1999) Logical Form and semantic analysis of specificational pseudocleft and copula sentences is essentially the same as my (1992, 1994) proposal for the specificational copula. For Heycock and Kroch, the subject of (2) and (3) is a free relative construed in LF as containing the iota operator. BE functions as an equivalence operator. On a later LF level, the focus of the pseudocleft sentence is construed as the value of the variable introduced by the iota operator.

(14) illustrates H & K's derivation of the pseudocleft sentence. At LF stage 1, the free relative subject is converted to an iota expression and BE to an identity operator. At LF stage 2, the variable of the iota expression is replaced by the value of the focus nominal.

(14) 1. What John hit was Fido →
ι x John hit x = Fido
2. Assign to the variable x in the expression "John hit x" the value Fido [and erase the operator] →
John hit Fido

The second LF stage, which reduces a complex logical representation to a simple one, is the input to connectedness effects at the interface, as in (15).

(15) 1. What John is is important to himself →
ι x John is x = important to himself.
2. Assign to the variable x in the expression "John is x" the value "important to himself" [and erase the iota operator] →
John is important to himself

Heycock and Kroch reject Moro's syntactic analysis of the surface subject of (2) and (3) as an underlying sc predicate. They claim that (2) and (3) are base-generated symmetrical constituents of an "equative" sentence. In an equative sentence, subject and object can invert while maintaining the truth value of the sentence. In addition to the specificational S, another type of equative S would be the tautology.

(16) Honesty is honesty.

A third type of equative sentence consists of Ss like (17).

(17) a. My opinion of Philadelphia is your opinion of Edinburgh.
b. Your opinion of Edinburgh is my opinion of Philadelphia.

Moro had argued that the verb BE is crucial for the inverse copula. Absence of BE accounts for the ungrammaticality of (18b).

(18) a. I consider [$_{sc}$ John (to be) my best friend].
b. I consider [$_{sc}$ my best friend *(to be) John t].

Heycock (1998) pointed out, however, that verbs other than BE can appear in a specificational S, as in (19), or embed a specificational sc, as in (20).

(19) a. My best friend remains John. (SPEC)
b. My best friend became John. (SPEC)

(20) If what you say is right,
a. That makes John the murderer. (PRED)
b. That makes the murderer John! (SPEC)

Heycock and Kroch propose that small clauses are divided into two semantic types, a predicational type as in (20a), and an equative type as in (20b). The verb *consider* would select a predicational sc in (18), while *remain*, *become*, and *make* select either a predicational or an equative sc in (19) and (20).

The hypothesis that verbs select their complements in terms of logical-semantic types rather than syntactic categories or Formal Features seems to me to be incompatible with the otherwise desirable hypothesis of the autonomy of syntax.

Moreover, the hypothesis of semantic selection fails empirically. The same verbs which Heycock (1998) proposed select an equative complement, *remain* and *become*, were ruled out in specificational sentences in Ruwet (1982). Compare (21b), where the English judgements are the same as the French ones, with (19a–b) above.

(21) a. Don Juan est resté/devenu l'amant de Zerline.
Don Juan remained/became the lover of Zerline.
b. *L'amant de Zerline est resté/devenu Don Juan.
*Zerline's lover became Don Juan.

(22a–b), the French versions of English (19a–b), are acceptable, however.

(22) a. Mon meilleur ami reste Jean.
b. Mon meilleur ami est devenu Jean.

The striking contrast between the sentences of (19) and (22) and those of (21b) shows that the grammaticality of a specificational sentence cannot depend solely on the selectional properties of the verb, but must take into account the construal

of other constituents of the sentence, here that of the surface subject. The specificational construal of a sentence whose main verb is *become* or *remain* is excluded if the subject has fixed reference, as in (21b). It is acceptable only if the intended referent of the subject can change over time, as in (19)/(22). This fact suggests that contrary to the claims of Heycock and Kroch (1999), for whom the specificational sentence is an equative sentence containing two referential nominals, the subject of a specificational sentence is in fact non-referential and attributive, as claimed in Guéron (1992, 1994).

1.4 If Heycock and Kroch could adopt a semantic analysis of specificational Ss so close to my own while rejecting Moro's predicate raising hypothesis, which I adopted, then the link between predicate raising in syntax and the specificational construal in LF must have been insufficiently motivated in my earlier work. Here I will try to show that in the simplest grammar, the semantic analysis of a specificational sentence depends on raising the sc predicate in syntax. I will argue further that both the syntactic raising of the predicate and the specificational construal that raising triggers at the syntax-semantics interface can be traced to a single Formal Feature (FF) of the verb BE.

2. A new analysis of the specificational (pseudo-cleft) sentence

2.1 Predicate raising

I assume that the first syntactic operation of the derivation merges V and a complement, with V an X head containing the FFs T and Agr and its complement any XP. As a flower grows from a seed, all further merges between an F node and a complement or specifier of (a projection of) F are determined by the FFs of the original V–XP pair. The FFs of the lexical constituents will be checked by those of appropriate F nodes via raising and/or agreement in syntax or LF.

If we assume every nominal constituent to have a [+D] FF, then, given the existence of A-movement in the grammar, raising of the nominal predicate of a small clause cannot be avoided. Whatever motivates raising of the post-verbal NP in Ss like (23) and (24), say, the [+D] F of the T probe, will also motivate raising of the post-copular NP of (25).

(23) e T was hit Bill →
Bill T was hit t

(24) e T se lave Jean →
Jean T se lave t

(25) e T John be the murderer →
the murderer T + be John t

To generate inverse Ss directly, as in (26), is to add another, unnecessary, derivational mechanism to that already provided by the operation "Move".[2]

(26) My best friend T [$_{VP}$ BE John]

Moreover, sentences like (18a) and (20) show that it is not possible to eliminate from the grammar the small clause structure which provides the input for predicate raising.

If, as we claim, a specificational sentence is derived from an underlying predicative small clause via the independently motived NP/DP raising operation, we avoid redundant derivations in syntax. We also avoid attributing a property of semantic selection to a verb, BE, whose auxiliary status reveals the total lack of the descriptive content which motivates selection.

2.2 Deriving the specificational copula sentence

The derivation of a sentence containing a copula verb begins with the merger of BE and its complement. Copula BE contains only the [-interpretable] FFs T and Agr (Agr = nb. and person in English). Lacking descriptive content, BE cannot denote a state or event and assign the concomitant theta-roles. In order to satisfy the interface constraint of Full Interpretation, copula BE must merge in syntax or in LF with a complement with descriptive content, deriving a VP which denotes an event or state. This new constituent requires a subject to provide a value for its uninterpretable phi Fs and/or to license their erasure before Spell-Out. A predicative sc is thus formed, in which BE functions as an agr morpheme in syntax and is plausibly construed as a predicate variable in Logical Form.

Now suppose that BE may optionally be endowed in the lexicon with a supplementary FF which prevents it from functioning as an agr morpheme and from forming a predicate under merger with its complement. If its supplementary F were construed as a lexical F, then BE would itself be construed as a predicate which defines an event or state. If the supplementary F were construed as a functional F, then BE could still contribute to the interpretation of the sentence by raising to the tense domain and functioning as an auxiliary verb. This function would require that the FF of BE were an aspectual F, as with all auxiliary verbs.

In the absence of an agr morpheme, the DP complement of "augmented" BE could not be construed as a predicate. If BE were itself a predicate, then DP would be construed as its internal argument. Otherwise, in the absence of a theta-role provided by BE, DP must also seek an interpretation in the higher TP domain where it could raise to check the [+D] F of T.

Contrary to Heycock and Kroch's claim that BE is always the semantically empty copula, natural language clearly contains the augmented BE I have just hypothesized.

BE augmented with a [+LOC] FF is construed as an existential predicate in (27a), and as a predicate denoting existence in (27b–c).

(27) a. Il était une fois une petite fille.
(it/there was once a little girl)
b. To be or not to be, that is the question.
Etre ou ne pas être, là est la question.
c. A poem shouldn't mean, but be.

I will propose below that the specificational construal of a sentence is triggered by BE "augmented" with a [+LOC] F in addition to the T and Agr FFs which minimally define it as a verb.

We may call a verb which lacks lexical features but contains a FF in addition to T and AGR a "light verb". Such a verb is too "heavy" to function as a copula and too "light" to define a state or event. Such a verb may take a small clause (sc) complement to which it provides the aspectual content which allows the state the sc describes to be inserted into the space and time of the discourse. As the variety of their available construals suggests, a light verb does not semantically select a complement, but, on the contrary, depends for its interpretation on the features of the sc head it governs and on the structural level on which it is construed.

The verbs cited in Heycock (1998) as "selecting" a specificational sc turn out to be construable as lexical variants of aspectual BE, but only in the specificational context.

The verb *make* cited as selecting either a predicative or specificational sc complement in the sentences of (20), is a typical "light verb", in English as in other languages, whose meaning depends on its context. *Make* is a lexical predicate when it merges with [+concrete] NP in (28a), but a causative verb when it merges with a sc in (28b) and (28c).

(28) a. John made [a pie].
b. John made [Mary leave].
c. John made [Mary happy].

MAKE functions as an epistemic causative verb, when its pronominal subject stands for a proposition, as in (20a–b), repeated in (29a–b) below, but not when the subject has spatio-temporal reference as in (30a–b).

(29) a. That makes John the murderer.
b. That makes the murderer John.

(30) a. *A bad childhood made John the murderer.
b. *A bad childhood made the murderer John.

Make functions as an aspectual auxiliary, like BE, in (31), but the specificational variant is excluded in (32).

(31) a. Two and two makes/is [t four].
b. John makes/is [t a good husband].

(32) a. *Four makes/is [two and two t].
b. *A good husband is/makes [John t].

The variable construal of sentences containing *make* illustrates our point that "light verbs" lack the lexical content necessary to select a complement. However their Formal Feature beyond T and AGR allows the light verb to make a flexible aspectual contribution to the construal of the sentence at the syntax-semantics interface.

In (19b), repeated in (33), *become* corresponds to BE + an inchoative aspectual F as in the equivalent "came to be" while *remain* in (19a) corresponds to BE + a durative aspectual F.

(33) My best friend became/remained John.

2.3 On the interpretation of the specificational sentence

In Guéron (1998, 2000), I proposed that all lexical items have a [+/–EXT(ended)] aktionzart (akt) F, construed in terms of spatial extension in VP, but in terms of aspectual extension in TP.[3] The hypothesis that the same FF is construed as akt in vP but as aspect in TP accounts for the fact that aktionzart and aspect are traditionally defined in the same terms, as [+/–EXTENDED], for example.

In the French sentence "Jean court" (John runs), the verb *courir* has a [+EXT] spatial aktionzart in VP. When merged with tense in TP, it has an extended temporal aktionzart construed as imperfective aspect.

I also claimed in the cited work that the akt F of a predicate determines whether or not it selects an external argument. In principle, any predicate with a [+EXT] akt/asp F requires a syntactic subject. In (34), for example, John is construed in the VP domain as a physical body performing the series of gestures which constitutes running. When raised to Spec TP, the same DP is construed as an Agent which triggers the running activity and maintains it over time. I call the subject in Spec IP selected by the aspectual extension of VP the "T(ense)-controller" of the sentence.[4]

(34) John ran.
$[_{TP}$ John$_i$ T $[_{vP}$ t$_i$ ran$]]$

I claimed in Guéron (1998) that the verb *have* has an inherent [+LOC] F which is construed as defining a spatial extension when *have* functions as a lexical verb in VP but an aspectual extension when *have* functions as an auxiliary in TP. In possessive (35a) below, John defines the space in which the book is contained. In (35b), however, John controls the temporal interval which aspectual *have* defines, one point of which the final boundary of the "speak to Mary" event is predicated.

(35) a. John has a book (in his hands).
b. John has spoken to Mary (today).

Benveniste's (1966) suggestion that *have* has a possessive construal even in the perfect sentence (35b) can be understood in terms of our analysis: the subject controls the temporal interval which contains an event in (35b) just as it defines the spatial extension which contains an object in (35a).

Similarly, a [+LOC] F in BE refers to the spatial dimension when BE is construed in VP, as in (27a–c), but to an aspectual dimension when BE is construed in TP. For example, BE has an aspectual extension as an auxiliary in languages with the BE-HAVE alternation in perfect structures. BE in (36a) below has the same aspectual function as HAVE in (36b): it defines the temporal interval into which the end point of an action is inserted.

(36) a. Si era parlato l'uno con l'altro.
b. They had spoken one to the other.

We propose that the [+LOC] F of *have* and of augmented BE is a free akt F, divorced from the lexical content of synchronically or diachronically related lexical verbs. The LOC F of *have* was inherited from an Indo-European lexical verb meaning *hold*. The LOC F of BE may derived from lexical verbs meaning "be in a place" such as Italian *stare*.

When the +LOC F of *have* or *be* is construed as a [+EXT] akt F, then these verbs require a subject. Possessive HAVE and BE takes subjects with a spatial extension, as in "pro habeo liber" and "mihi est liber" respectively, while aspectual HAVE and BE take a T-controlling subject in Spec IP, as in (36a–b).

I propose that the [+LOC] F of BE is construed as [+EXT] aktionzart, identical to imperfective aspect in the TP domain, in specificational (37).

(37) My best friend is John.
[+EXT]

An aspectually extended verb needs a T-controlling subject. But how can the attributive free relative subject of a specificational sentence function as the T-controller of its aspectual extension?

We propose that a specificational sentence defines a mental event. The free relative subject of the sentence denotes a mental process, the subparts of which control the points of the temporal interval of which the mental event is predicated. [+EXT] BE is construed in the specificational sentence as an epistemic predicate. BE assigns to the raised sc predicate nominal and the post-verbal sc subject the theta-roles of ORIGIN and GOAL which mark the beginning and end point of a mental trajectory. Ultimately the GOAL, the named referent, is superimposed on the ORIGIN, the described referent, to compose a single referent.

We suggest that a specificational sentence like (2) or (3) denotes a "mental accomplishment", comparable to the spatio-temporal accomplishment defined by the resultative sentences in (38).

(38) a. John drove [Mary home].
b. The class elected [Mary president]

A resultative S begins with a temporally extended activity, and terminates in a final state. Specificational sentences like (2) and (3) define a mental trajectory which begins with an attributive subject which defines an individual in intension on the basis of a salient property. This interpretation follows naturally from our proposal that the predicate nominal of the original sc is adjoined to an empty pro in Spec TP. The same lexical content which denotes a property of an individual in VP restricts a set of individuals on the basis of a property when adjoined to the subject in Spec TP. The object of BE, which refers directly to a discourse referent, marks the end of the trajectory.

The stages of examining the set of available doctors in (39b) is the mental equivalent of the act of driving in (38a). And the identification of the best doctor with John is equivalent to reaching home, the end point of a spatial trajectory.

(39) a. John is the best doctor in town.
b. The best doctor in town is John.

Our analysis of the specificational sentence as defining a mental event accounts for the contrast between (39b) and (40b).

(40) a. John is a doctor.
b. *A doctor is John.

We assume that only a subject with internal temporal content can control the temporal extension of an event. This implies that the definite NP in subject position in (38a–b) has inherent temporal content. Mental events with extended aspect also need a subject with temporal content. We propose that in (39b), the subject is an appropriate T-controller because it defines a process with temporal content. In a sentence with deictic tense, defining the "the best doctor in town" requires ranking

all the individuals in the presupposed discourse set on a scale representing degrees of being a good doctor. Such a mental process "takes time". It is this time which controls the aspectual interval defined by epistemic BE in (39b).

In (40b), however, the NP "a doctor" extracts a random individual from the set of doctors in the discourse world. The selection of a random individual from a set is a punctual process. Consequently, the subject is not an appropriate T-controller of the temporally extended mental event the sentence defines.

3. Recit and commentaire: The specificational sentence as a palimpsest

3.1 I proposed in Guéron (1992) that the post-verbal focus constituent of a specificational sentence is superimposed on the head of the subject NP at a late level of LF. Reconstruction from the complex head of the relative would account for connectedness effects.

(41) a. The woman every man likes best is his mother.
b. [$_{DP1}$ the woman [$_{DP2}$ his mother]] [Op$_1$ t$_1$ every man likes t$_1$ best] is t$_2$.
c. Every man likes his mother best.

Heycock and Kroch (1999) do not reconstruct a simple syntactic structure, but abstract a simple logical form from the complex logical form which translates the surface structure of the sentence. (14.1) converts the subject NP to an iota expression and the verb to an identity operator. At a subsequent level of LF, a special substitution rule and a deletion rule are necessary to simplify the initial logical structure, so that its output can handle connectedness phenomena such as anaphora in (15) and variable binding in (42) below.

The fact that the logical form produced by the special rules of (14.2) has the syntactic structure of a simple sentence produced by "Merge" in the syntax, and defines the same c-command relations which condition binding in sentences formed without special LF rules, is an accident. Nothing forces a late LF structure to resemble a syntactic structure: it only need be construable by some semantic rule at the interface. Under our analysis, there are no extra LF rules but simply a process of reconstruction of the original sc syntactic structure on which binding theory then operates.

Moroever, as implied by the term palimpsest in the subtitle of my (1992) article, the reconstructed simple sentence represents only a part of the construal of the specificational S. The sentence contains a "remainder" which must also be interpreted.

Note that reconstruction will not account for Higgin's (42a).

(42) a. What I like about John is his tie.
b. ι x I like x about John = his tie
c. *I like his tie about John

Moreover, the erasure in (14.2) of the iota operator and the operator of identity created in (14.1) violates compositionality. The final LF of the sentence is identical to that of a simple sentence, as if no specificational sentence had existed in the first place.

Certainly, sentence pairs like (1) and (2) have the same truth value. But this is also famously the case with other syntactic base and transform pairs. As documented already in Jackendoff (1972), passive, interrogative, and topicalization configurations all contribute to the logical or informational construal of a S. If the specificational copula reduces to a simple sentence in LF, then it alone makes no semantic contribution. If so, the best grammar would contain no such sentences.

Positing two levels of interpretation, récit (narrative), and commentaire (commentary), allows us to maintain the construal associated with each stage of (14). The simple predicative structure associated with the récit is abstracted from the more complex structure associated with the commentary. The commentary overwrites the recit without obliterating it. One area of non-overlap appears in (42), where "his tie" replaces the variable x (equivalent to "something") in the iota formula while the expression "about John" functions as a metalinguistic secondary predicate indicating that what/something refers to a property of an individual rather than to the individual himself.

3.2 The specificational sentence as a performative sentence

We associate the commentary with (a high level of) the Comp domain which provides access to the speech or reference time and in which both speaker and hearer participate in a speech act. Since performative sentences share these properties, we assimilate the specificational sentence to a performative sentence.

3.2.1 In a performative sentence, the state or event the sentence denotes is evaluated not at a time subsequent to the matrix time, as with the sentences of the recit, but precisely at speech time. The speaker's illocutionary act suffices to validate the truth of the sentence. A performative sentence thus cannot be negated or questioned.

(43) a. I (hereby) pronounce you man and wife.
b. *I (hereby) do not pronounce you man and wife.
c. *Do I (hereby) pronounce you man and wife?

The specificational variant of the performative sentence cannot be negated or questioned either. As sentences are often ambiguous between the predicational and the specificational construals, we can test this claim on sentences with connectedness effects, which identify the specificational sentence (cf. (4) above).

(44) a. What John is is not important to him. (PRED)
b. *What John is is not important to himself. (SPEC)

(45) a. Is what John is important to him? (PRED)
b. *Is what John is important to himself? (SPEC)

Negation also blocks the bound variable reading of specificational (46).

(46) a. What John is is proud of himself.
b. *What John is is not proud of himself.
c. *What John isn't is proud of himself.

Temporal interpretation disambiguates recit from commentaire. While a predicative sentence like (47a) can place a situation at any deictic or non-deictic time, the specificational variant in (47c) cannot place its content in the deictic past time.

(47) a. John has remained my best friend for a long time.
b. *My best friend has remained John for a long time.

Similarly, performative sentences are indexical with respect both to time and to addressee.

(48) a. I dub you the Queen Elizabeth II.
b. *I dubbed you the Queen Elizabeth II last week.

3.2.2 The property of resistance to extraction which Moro identified with specificational Ss is a property of performative sentences in general.

(49) a. The picture of the wall was the cause of the riot.
b. What riot was the picture of the wall the cause of t?

(50) a. The cause of the riot was the picture of the wall.
b. *What wall was the cause of the riot the picture of t?

(51) a. The king named the knight Earl of Sussex.
b. What realm did the king name the knight Earl of t?

(52) a. I hereby dub you Earl of Sussex. (PERF)
b. *You now know what realm I hereby dub you Earl of t.

We can account for incompatibility with interrogation and extraction by situating interrogative and performative, including specificational, sentences on the level of commentary, where the relevant time is speech time, and the speaker has direct

access to the hearer and other participants in the speech act. Only one type of sentence can be chosen from those available at this level. If a sentence is interrogative, then it is not performative and vice versa.

As for negation, questions, which themselves have a negative polarity (as shown by the grammaticality of negative polarity items in the scope of negation), allow it, while performative sentences, including the specificational S, have a positive polarity and disallow it.

3.2.3 *A spatio-temporal paradox*

A specificational sentence defines a mental event in which aspectual BE denotes a temporal interval, controlled by the temporal stages of the mental process its subject defines. But in a performative sentence, all events are situated at the moment of speech and have no internal temporal structure. Thus a sentence which is unacceptable with deictic tense in the récit, because, we believe, of the aspectual deficiency of the simple present tense in English, becomes acceptable under a performative construal.

(53) a. *The bus comes here.
b. Here comes the bus!

Similarly (54a) is acceptable only in a habitual construal or when included in a narrative, while (54b) is situated in the deictic present.

(54) a. Mary sees John from her desk.
b. I see you lurking there, you rascal!

These contrasts show that a performative sentence may denote an event, which normally is predicated of an interval rather than a point of time, and yet be placed at the point of speech time.

The paradox may be resolved. The specificational trajectory which goes from the attributive subject to the focus object of epistemic BE occurs in what Fauconnier (1985) calls a "mental space". Mental space is independent of the progressive movement of events on the time axis.

It is because the mental trajectory defined by the specificational sentence exists at a single point of time that the superposition of the focus referent on the attributive subject can take place. For no temporal gap separates the two nominals.

This property of mental events is not particular to the commentary. Epistemic verbs are temporally punctual: they can appear in the simple present tense in English, and they select states not events. Yet an epistemic verb can include in its purview situations which last in time.

(55) a. John seems to be faithful to his friends.
b. John appears to be the best doctor in town.
c. John must have climbed every mountain in the Alps.

3.2.4 *The specificational copula sentence as a metalinguistic commentary on the récit*

A performative sentence defines a speech act, such as a question, an exclamation, an order, etc. If the specificational copula sentence is a performative sentence, what kind of speech act does it define?

We claim that the specificational sentence is a metalinguistic speech act, as befits the term "commentary" we have chosen.

The syntactic constituant NP corresponds to various semantic types, as discussed in Partee (1987) and others. NP refers to an individual directly in the subject position of (1) and indirectly, via focusing, in post-verbal position in (2) and (3). NP does not refer but denotes a property of an individual in post-copula position of (1), while it describes an individual in terms of a property in subject position of (2) and (3). The type of entity a nominal denotes at the interface of syntax and semantics is determined by the interaction of its inherent FFs with its syntactic context, including the syntactic level on which it is construed.

We propose that the double interpretation of the specificational S, one in the récit via reconstruction, the other in the commentary, illutrates "type shifting" as a function of syntactic context. The commentary is a level in which the components of a proposition may be scattered in the sentence for a metalinguistic purpose.

As a performative sentence, the specificational sentence establishes by fiat, by the intervention of the speaker, the referential identity of two distinct types of nominals, an attributive free relative and a referential nominal selected by focusing on one individual in the discourse set. The situation which is represented in a performative sentence, e.g. in "I hereby declare you man and wife" would not exist without the speaker's intervention. Similarly, in the absence of the declaration of their identity by the speaker, an attributive nominal is not equivalent to a named referent. The first has only a virtual or intensional reference while the second has a presupposed reference. We thus associate with the specificational sentence a meaning which is opposite to that proposed by Heycock and Kroch. A specificational sentence implies the referential non-identity of the two nominals it contains in the usual discourse situation in which the speaker does not intervene. To enter the commentary is to pass through Alice's mirror, to a place in which things are different from the way they are normally.

4. A symmetry

The specificational S is semantically asymmetrical. First, its subject is non-referential while its goal is referential. Second, it denotes an event which unrolls in mental space-time, beginning at the initial point of an interval, where the descriptive range of the subject is defined, and ending with the final point of the interval where the free variable of the subject is saturated by a discourse referent.

Yet the Ss of (56) cited by Heycock and Kroch, and the similar ones of (57) and (58), seem to allow not only assymetrical predicational and specificational construals, but a symmetrical construal as well.

(56) My opinion of Phila. is your opinion of Edinburgh.
Your opinion of Edinburgh is my opinion of Philadelphia.

(57) Mary's success is Bill's failure.
Bill's failure is Mary's success.

(58) John's idea of fun is Mary's idea of a wasted evening.
Mary's idea of a wasted evening is Bill's idea of fun.

In a predicational sentence, the subject is referential and the predicate is not. In a specificational sentence, the subject is non-referential and attributive, and the focus is referential. In the sentences of (56)–(58), however, both nominals are attributive: there is no referential NP at all!

Such sentences define a symmetric, reversible, mental trajectory. We classify them as denoting a mental activity rather than a mental accomplishment. Because the sentence contains two intentional definitions and no referential argument, it does not contain within it a sentence with referential content which can be true or false. (57)–(59) belong purely to commentary; there is no récit at all.[5] If the grammar lacked a level of commentary, such sentences could not exist.

5. Conclusion

5.1 I have proposed that a syntactic structure containing copula BE followed by a nominal is necessarily predicational: copula BE is construed under merger with its complement as the agr morpheme of a predicate. But BE augmented by a [+LOC] F is too "heavy" to be construed as a copula. It functions in the grammar either as an existential predicate construed in VP or else as an aspectual predicate in TP.

In Semitic and Slavic languages in which adjectival predicates bear phi Fs, the copula is omitted in present tense predicational sentences. However, the inverse, specificational form of the sentence requires the copula. Here the aspectual content of BE [+LOC] defines a temporal trajectory, not just a point in time, so BE is necessary to supply an aspectual feature.

5.2 I associate the specificational copula with the same COMP level of the sentence as performative sentences in general. At this level, the time of the event is the speech or reference time and the speaker intervenes to guarantee the truth of the statement. I suggested that the specificational sentence performs a metalinguistic speech act: by abolishing the usual circumstances of discourse, the sentence indirectly illustrates the distinction between referential and non-referential nominal types which is crucially needed on the propositional level of the récit.

Notes

1. A fuller description of the commentary will be given in Section 3 below.

2. If, given an enumeration, "Merge" must always be chosen over "Move" (cf. Chomsky 1995), so that the subject of the specificational sentence had to be derived in Spec IP, then so would the thematic objects in passive and middle sentences as well, and all NP movement would be abolished. However, chains with at least two disjoint members would still have to be established to preserve local semantic relations such as thematic roles, so the abolition of A-movement does not seem to offer any real advantages.

3. The terms "spatial" and "aspectual" refer to cognitive notions which are pertinent at the syntax–semantics interface, not to the real world space and time as determined by the laws of physics.

4. Extended aspect selects a T-controller on a lexical basis, but the T-controller may fail to be realized in syntax. The verb beat has a [+EXT] akt F, yet the T-controller selected by its aspectual extension does not appear in passive (i).

(i) John was beaten within an inch of his life.

Likewise, the T-controller of an aspectually extended meteorological event does not appear as an argument in (ii). This is presumably because the T-controller belongs to the set of implicit mechanisms which have maintained the discourse world in time since the unaccessible beginning of time. The implicit T-controller may be accessible in LF, however. It controls PRO of the purpose clause in (iii), for example. It may even be syntactically represented, for example as the subject in familiar French (iv) where it also functions as subject of a deontic modal.

(ii) It is raining.
(iii) It rains [PRO to make the crops grow]
(iv) Ca pleut tout ce que ça peut.
(That is raining as hard as it can.)

5. (16) in the text, "Honesty is honesty" may likewise be construed as predicational or specificational, both of which are asymmetric readings, or else as symmetrically attributive and reversible.

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The asymmetry between depictives and resultatives in Chinese*

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This paper studies the syntactic structures of secondary predication constructions in Chinese. Three issues are discussed. First, in order to account for the alternation between the *de* and V-V constructions, I claim that a functional head is realized by either the functional word *de* or head-raising in secondary predication constructions. Second, in order to account for the subject-orientation and the nonspecific subjects of resultatives in the V-V constructions, I claim that they are the effects of head-raising in syntax. Third, secondary predicates in Chinese can occur either to the left or to the right of the primary predicate (Vpri, hence), and the choice is decided by two factors: the semantic type of Vpri (for instance, change of property, creation, transference) and the specificity of the argument which is shared between the Vpri and the secondary predicate.

1. The functional projection in secondary predication

1.1 An alternation between *de* and V-V

In Chinese, depictives precede whereas resultatives follow the verb of primary predication (Vpri hence), respectively. In (1), the resultatives follow the Vpri *da* 'beat', whereas in (2), the depictives precede the Vpris *zhuo* 'catch' and *he* 'drink'.[1] Both resultative and depictive constructions are represented in either the *de*-construction, where the functional word *de* occurs, or the V-V construction, where the lexical head of the secondary predicate is adjacent to Vpri. The a-sentences in (1) and (2) are in the V-V construction, whereas the b-sentences are in the *de*-construction. We can also see that in the resultative *de*-construction, *de* is right-adjacent to the Vpri, as in (1b); whereas in the depictive *de*-construction, *de* is right-adjacent to the depictive, as in (2b).[2]

(1) a. Wusong da si le laohu. (resultative, V-V)
Wusong beat die PRF tiger
'Wusong beat the tiger so that it died.'

b. Wusong da de laohu liuxue le. (resultative, de)
Wusong beat DE tiger bleed PRT
'Wusong beat the tiger so that it bled.'

(2) a. Wusong huo zhuo le yi zhi laohu. (depictive, V-V)
Wusong alive catch PRF one CL tiger
'Wusong caught a tiger alive.'

b. Wusong rere de he le yi wan jiu. (depictive, de)
Wusong hot DE drink PRF one bowl wine
'Wusong drank a bowl of wine hot.'

These data are in contrast to complex prediction constructions headed by epistemic verbs (see Moro's 2000 rich SC construction, see Williams 1997 for a relevant discussion on English data) and constructions containing a purpose expression (see Baker 1997: 25 for the contrasts between purposive and other complex predication constructions in Mohawk). The latter two constructions allow neither *de* nor V-V forms, as shown in (3) and (4), respectively.

(3) a. Wusong renwei Akiu hen lan.
Wusong consider Akiu very lazy
'Wusong considers Akiu very lazy.'

b. *Wusong renwei *de* Akiu hen lan. (de)

c. *Wusong *renwei lan* Akiu. (V-V)

(4) a. Wusong ao le yi guo tang he.
Wusong cook PRF one pot soup drink
'Wusong cooked a pot of soup to drink.'

b. *Wusong ao *de* yi guo tang he. (de)

c. *Wusong *ao he* le yi guo tang. (V-V)

1.2 My proposal

I propose that predication is encoded by xP, an extended projection of XP which is headed by a lexical X. It can be vP, nP, aP, pP, projected on VP, NP, AP, and PP, respectively. In Chinese secondary predication constructions, this x is realized in two ways (cf. Sybesma 1999: 19 ExtP): it is realized by either *de* or a head-raising.

(5) a. $[_{xP}\ [_{x'}\ \text{de}\ [_{XP}\ ]]]$ b. $[_{xP}\ [_{x'}\ X_i\ [_{XP}\ [_{X'}\ t_i\ ]]]]$

I do not adopt Bower's (1993, 2000) PrP for the reason that predication is a structural relation found in all types of categories. PrP cannot be in contrast to other extended projections such as vP. In primary prediction, we have no evidence that both v and Pr can co-occur. In addition, what Pr does in primary predication can be covered by v, which is motivated independently anyway.

As for the question why *de* occurs to the left of a resultative and to the right of a depictive, in Zhang (2001) I argue that the surface position of *de* is decided at PF: it is always right-adjacent to the leftmost verbal element of the current phase of the construction.

One might wonder why there is no *de*-V-V alternation in the vP which encodes primary predication. The situation may be similar to the realization of the functional head related to a yes-no question in English. According to Chomsky (1995), *if* realizes the functional head. However, it never occurs in a root yes-no question.

I will show the semantic consequences of this alternation in Section 2.

1.3 The last resort effect

Unlike the alternation between expletive-merge and subject-raising, auxiliary-merge is not cheaper than verb-raising. The *Do*-support is not cheaper than verb-raising in the sense that it occurs only when the latter fails and that the *do* is a formative not included in the Array (Arnold 1995; Hornstein 2001: 184; also see Chomsky 1957). Similarly, in the secondary predication constructions, compared to the V-V construction, the *de*-construction is the last resort: it occurs when the former fails. *De*, like *do* of the *do*-support in English, is a formative not present in the Array, and is used only when head-raising is impossible. A typical case where head-raising is impossible is when the XP selected by v contains a degree word *hen* 'very', as in (6).

(6) a. Lao Wang pao de hen lei.
Lao Wang run DE very tired
'Lao Wang run so that he got very tired.'
b. *Lao Wang pao lei hen.
c. *Lao Wang pao hen lei.

The choice of the *de*-construction rather than the V-V construction in (6) follows the constraint on head movement that no modifier can be stranded (Hoekstra 1988; see Sybesma 1999: 21).

2. Two contrasts between the *de* and the V-V TRC[3]

In this research, I adopt the assumption that resultatives are hosted in the complement of Vpri, and that object-oriented resultatives have a PRO subject, which is controlled by the object of the Vpri (Hornstein & Lightfoot 1987; Huang 1992; Bowers 1993, 2000; and Zhang 2001).

I claim that the derivations of the V-V resultative constructions are as follows:

(7) a. the element in X raises to x (5b)
b. The element right-adjoins to Vpri

I will discuss two contrasts between the *de* and the V-V TRC in this section. The contrasts are captured by the derivation proposed in (7).

2.1 The orientation of resultatives

As noted by Li (1990), in the presence of an overt object of the Vpri, the V-V construction allows a subject-orientation reading, whereas the *de*-construction does not. The contrast is shown in (8) and (9). In the second reading of (8a), the resultative is subject-oriented:[4]

(8) a. Baoyu zhui lei le Daiyu.
Baoyu chase tired PRF Daiyu
'Baoyu chased Daiyu and as a result Daiyu got tired.'
'Baoyu chased Daiyu and as a result Baoyu got tired.'
b. Baoyu zhui de Daiyu qichuanxuxu.
Baoyu chase DE Daiyu gasp
'Baoyu chased Daiyu and as a result Daiyu gasped.'

(9) a. Baoyu kan ni le na pan luxiang.
Baoyu watch fed.up PRF that CL video
'Baoyu watched that video and as a result he got fed up with it.'
b. *Baoyu kan de na pan luxiang dou ni le.
Baoyu watch DE that CL video even fed.up PRF

In the V-V construction (8a), the subject of the resultative predicate is co-referential with either the subject or the object of Vpri, i.e., either Baoyu or Daiyu got tired. However, in the *de*-construction (8b), the subject of the resultative predicate can only be co-referential with the object of Vpri, i.e., only Daiyu gasped, not Baoyu. In the V-V construction (9a), the subject of the resultative predicate is co-referential with the subject of Vpri, i.e., Baoyu got fed up. It cannot be co-referential with the object of Vpri, since semantically, *na pan luxiang* 'that video' cannot be the subject of the predicate *ni* 'get fed up'. In the *de*-construction (9b), the subject

of the resultative predicate cannot be co-referential with the subject of Vpri. It can only be co-referential with the object of Vpri. However, since the semantic clash mentioned above rules out the co-indexing, the secondary predication fails and the sentence is unacceptable.

Notice that it is not true that every V-V construction can have subject-oriented reading. The absence of subject-oriented reading in data like (1a) may be covered by pragmatics.

Huang (92:126) claims that between the V-V and the *de*-construction, "whereas the former is a lexical category, the latter is a phrase". Then the reading contrast is simply acknowledged by the claim that "the internal structures of compounds are not accessible to rules or principles that apply in syntax, in particular the MDP" (the Minimal Distance Principle of control).

We however pursue a syntactic account for the contrast. We claim that the head movement in the V-V construction has the effect of restructuring, and the regular object-oriented reading of resultatives is an effect of the syntactic locality constraint on the non-restructuring constructions. Specifically, in the absence of a restructuring, as in the Chinese *de*-construction and other chain-type constructions, including the resultative constructions in English, the PRO subject of the resultatives is controlled by the nearest overt argument of the primary predicate, i.e., the direct object, rather than the subject. The Chinese V-V constructions, however, have undergone restructuring and thus the control domain is changed. Consequently, either the overt direct object or the subject of the primary predicate can control the PRO subject of the nonprimary predicate. We conclude that head-raising in syntax may allow some control cases to escape from the constraint of MDP, and the subject orientation reading of the V-V resultative construction is derived by this restructuring effect.

2.2 The specificity of the subject of resultatives

Preverbal subjects in Chinese generally cannot be nonspecific. Nor can a subject of a secondary predicate, as in the *de*-construction (10a). However, the V-V construction does not show this constraint (10b).

(10) a. Akiu da de {na/*yi} ge xiaohair haotaodaku. (de)
Akiu beat DE that/one CL child cry.loudly
'Akiu beat that child and as a result the child cried loudly.'

b. Akiu da ku le yi ge xiaohair. (V-V)
Akiu beat cry PRF one CL child
'Akiu beat a child and as a result the child cried loudly.'

Assume that head-raising out of the projection where a subject is base-generated can license a non-specific reading of the subject (mapping cycle is enlarged) (Tsai 2001a). In (5b), the resultative predicate moves out of the xP where the subject of the predicate, a PRO, is base-generated. In contrast, in the *de* resultative construction, the resultative predicate never moves out of the lower xP, where its subject, a PRO, is base-generated, and thus no nonspecific reading of the subject is licensed in data like (10a).

3. Adjunct xP vs. complement xP

We will present four arguments to show that the xP in (5) is an adjunct if it is merged to the left of Vpri, as in depictive constructions, and is a complement of Vpri if it is merged to the right of Vpri, as in resultative constructions.

3.1 The position of a secondary predicate with respect to Vpri

In English, a VO language, secondary predicates are to the right of Vpri, as shown in (11). The resultative predicate *flat* is to the right of the Vpri *watered* in (11a), and the depictive predicate *raw* is to the right of the Vpri *ate* in (11b). In German as well as Japanese, an OV language, both types of predicates precede Vpri (abstracting away from V2). The German data in (12) show this point.

(11) a. John watered the tulip *flat*. (Vpri – resultative)
b. John ate the fish *raw*. (Vpri – depictive)

(12) a. Frank hat den Tisch *sauber* gewischt. (resultative – Vpri)
Frank has the table clean wiped
b. Frank hat das Fleisch *roh* geschnitten. (depictive – Vpri)
Frank has the meat raw cut

In Chinese, however, depictives precede, while resultatives follow, Vpri, as shown in the contrast between (2) and (1). In the *de*-construction, the former also precede *de*, while the latter also follow *de*. The surface positions of *de* will be argued to be decided at PF (Section 4.2). Here I only consider the position of a secondary predicate with respect to Vpri.

The positions of secondary predicates are strict with respect to Vpri in Chinese, and may provide information of the integration of the xP argued for in Section 2 into the structure of primary predication. In Chinese, complements of a verb occur to the right of the verb in unmarked cases, whereas adverbials of a verb occur to the left of the verb, as illustrated in (13a) and shown in (14). Similarly, as illustrated

in (13b) and shown in the data in (15) as well as other Chinese data in this paper, resultatives occur to the right of Vpri while depictives occur to the left of Vpri.

(13) a. adverbial V complement
b. depictive V resultative

(14) a. Akiu {*zuotian/like*} xi le *na* *jian chenshan*.
Akiu yesterday/immediately wash PRF that CL shirt
'Akiu washed that shirt {yesterday/immediately}.'
b. *Akiu xi le *na* *jian chenshan* {*zuotian/like*}.
Akiu wash PRF that CL shirt yesterday/immediately

(15) a. Akiu *qihuhu* de ti de men *zhi* *yaohuang*.
Akiu angry DE kick DE door continuously shake
'Akiu kicked the door shaky angry.'
b. *Akiu *zhi* *yaohuang* de ti de men *qihuhu*.
Akiu continuously shake DE kick DE door angry

These data show that depictives occur in a typical adverbial position, and resultatives occur in a typical complement position. The syntactic positions of depictives and resultatives with respect to Vpri in Chinese suggest that in the integration of a secondary predication into a primary one, depictives are hosted by an xP which is an adjunct of primary predicate, whereas resultatives are hosted by an xP which is a complement of Vpri.

3.2 The co-occurrence restriction

Resultatives do not co-occur with resultatives, while depictives can co-occur with depictives, as shown in (16). The restriction in English is discussed in Simpson (1983) and Rothstein (1985). The same contrast is observed in Chinese, as shown in (17).

(16) a. *John kicked the door open to pieces. (resultative)
b. They ate the meat raw tender. (depictive)

(17) a. *Akiu da de Baoyu haotaodaku shou le shang. (resultative)
Akiu hit DE Baoyu cry.loudly suffer PRF wound
b. Akiu huoshengsheng de xinglixingqi de chi le na tiao yu.
Akiu alive DE stinky DE eat PRF that CL fish
(depictive)
'Akiu ate that fish alive stinky.'

According to Winkler's (1997:7) semantic account, (16a) is unacceptable because resultatives are delimiting expressions and an event can only be delimited once in a

sentence, whereas (16b) is acceptable because depictives are not delimiting expressions, and thus the restriction does not apply. The contrast can also be accounted for structurally. It is generally assumed that an element cannot have two or more complements of the same type. The two complements, direct and indirect objects, of a ditransitive verb, bear different thematic roles. However, an element can have two or more adjuncts of the same type. The above co-occurrence contrast between resultatives and depictives in English and Chinese provides another argument for the distinctions between complement and adjunct phrases which host secondary predicates.

3.3 Pre-Vpri secondary predicates show the properties of adverbials

In this subsection, we show that like adverbials, different types of depictives are structurally ordered in a hierarchy, showing the properties of adverbials.

First, multiple depictives are ordered. When multiple depictives co-occur, we see mirror images of the orders in English and Chinese. In English, the order is object-oriented depictive – subject-oriented depictive (Carrier & Randall 1992), while in Chinese the order is just opposite; however, in both languages, object-oriented depictives are closer to Vpri than subject-oriented ones, as shown in the following:

(18) a. V depictive$_{obj}$ depictive$_{sbj}$ (English)
b. depictive$_{sbj}$ depictive$_{obj}$ V (Chinese)

(19) a. John$_i$ sketched the model$_j$ nude$_j$ [drunk as a skunk]$_i$.
b. *John$_i$ sketched the model$_j$ nude$_i$ [drunk as a skunk]$_j$.

(20) a. Akiu$_i$ yukuai$_i$ de rere$_j$ de he le [na wan cha]$_j$.
Akiu happy DE hot DE drink PRF that bowl tea
'Akiu drank that bowl of tea hot happy.'
b. *Akiu$_i$ rere$_j$ de yukuai$_i$ de he le [na wan cha]$_j$.
Akiu hot DE happy DE drink PRF that bowl tea

In (19), the depictive *nude* is closer to the Vpri *sketched* than the depictive *drunk as a skunk*. In the acceptable (19a), the subject of *nude* is co-referential with *the model*, which is the object of the Vpri, and the subject of *drunk as a skunk* is co-referential with *John*, which is the subject of the Vpri. (19b), with the opposite co-indexing, is unacceptable. Thus the object-oriented depictive is closer to the Vpri than the subject-oriented one. In (20), there are also two depictive predicates, *rere* 'hot' and *yukuai* 'happy'. In both sentences the subject of *rere* is co-referential with *na wan cha* 'that bowl of tea', which is the object of the Vpri *he* 'drink', and the subject of *yukuai* is co-referential with *Akiu*, which is the subject of *he*. *Rere* is closer to *he* 'drink' than *yukuai* in the acceptable (20a), whereas it is the other way around in the

unacceptable (20b). Like (19), (20) also shows that the object-oriented depictive is closer to the Vpri than the subject-oriented one.

The pattern of the orders is similar to that of adverbials. In the following data ((22) is from Hornstein 2001:116) the adjunct which has a dependency relation with the object of the matrix verb must be ordered closer to the matrix verb than the adjunct which has a dependency relation with the subject of the matrix verb.

(21) a. John$_i$ arrested Bill$_j$ [for PRO$_j$ driving his car too fast] [after PRO$_i$ leaving the party]
b. ??John$_i$ arrested Bill$_j$ [after PRO$_i$ leaving the party] [for PRO$_j$ driving his car too fast]

(22) a. John$_i$ bought Moby Dick$_j$ [for Mary to review e$_j$][PRO$_i$ to annoy Sam]
b. *John$_i$ bought Moby Dick$_j$ [PRO$_i$ to annoy Sam][for Mary to review e$_j$]

There is no doubt that the non-finite clauses above are adverbials. Hornstein (2001:97) claims that the adjunct which has a dependency relation with the object of the matrix verb is adjoined lower than the adjunct which has a dependency relation with the subject of the matrix verb. This difference in height indicates that the former has a closer structural relation to the matrix verb than the latter. In the linear order, the former is also closer to the matrix verb than the latter. The order restriction in (19) and (20) indicates that like the adverbials in (21)–(22), object-oriented depictives and subject-oriented depictives are ordered in a certain structural hierarchy. In Hornstein and Lightfoot (1987:27), the functional phrase hosting a subject-oriented depictive is a VP-adjunct, whereas the functional phrase hosting an object-oriented depictive is a V'-adjunct. The Chinese data in (19) and (20) are compatible with this distinction.

Second, the interactions with adverbs show the structural order of different types of depictives. For instance, subject-oriented depictives can occur to the left of the adverb *like* 'immediately', while object-oriented depictives cannot, as shown in (23):

(23) a. Akiu (like) gaoxing de (like) chang le yi shou ge.
Akiu immediately glad DE immediately sing PRF one CL song
'Akiu sang a song glad (immediately).'
b. Akiu (like) rere de (*like) he le yi bei cha.
Akiu immediately hot DE immediately drink PRF one cup tea
'Akiu drank a cup of tea hot (immediately).'

This restriction shows that the xP hosting the object-oriented depictive may be ordered lower than both the adverb and the xP hosting the subject-oriented depictive on the adverbial hierarchy, and thus has a closer structural relation with the Vpri.

The similarity of the order-patterns of depictives to the order-patterns of adverbials, and the interactions with other adverbs suggest that the xP hosting depictives has properties of adverbials. This order fact supports our claim that vPs which host depictives have an adjunct status in their integration into the structure of primary predication.

A remaining issue is what syntactic operation enables co-reference between the null subject of a depictive and an argument of Vpri. In other words, what are the syntactic representations of the so-called subject-orientation or object-orientation of a depictive predication. Following Hornstein and Lightfoot, I assume that depictive constructions have a control-into-adjunct structure. In other words, the null subject of a depictive is a PRO, controlled by an argument of the relevant Vpri.

3.4 Post-Vpri secondary predicates show the properties of complements of Vpri

An argument against a right-adjunct approach to post-Vpri secondary predicates is extraction. As is generally assumed, elements can be extracted from a complement but not from an adjunct. In the following sentence, *kuaizi* 'chopsticks' is extracted from the resultative. Data like this show that elements can be extracted from post-Vpri resultatives and thus the resultatives are complements rather than adjuncts.

(24) lian *kuaizi* Akiu xunlian de Mali dou hui yong le.
even chopstick Akiu train DE Mary also can use PRF
'Akiu trained Mary so that she was able to use even chopsticks.'

The above four subsections show that in depictive constructions, the assumed xP, where the depictive is base-generated, is an adjunct, and an argument of the Vpri has a control relation with the adjunct. In contrast, in resultative constructions, the assumed xP, where the resultative is base-generated, is complement of Vpri.

So far, we have seen a semantic-syntax match with respect to the semantic-type of secondary predicates and their structural positions. In the next section, we discuss some mismatch cases.

4. Three types of mismatch[5]

According to Halliday (1967:63), resultatives describe a resultant state which is caused by the action denoted in the primary predication, whereas depictives de-

scribe the state of their subject at the time when the action denoted by the primary predication occurs.

In the previous sections, we showed that resultatives are to the right of Vpri and depictives are to the left of Vpri. We will see that the division is true only when the Vpri does not belong to the following three types of verbs: property-change, creation, and transference. If we consider these three types of verbs, the distribution of secondary predicates shows a different pattern.

In the following chart, + means possible/present, – means impossible/absent, and ∃ means possible only when the shared argument is existential (weak indefinite). The feature [I] is adopted from Di Sciullo (1999: 36): "The lexical feature [I] specifies that a change of state is inherent to an event denoted by a verb, and the absence of this feature in the lexical specification of verb indicates that the change of state is the effect of an external source."

(25)

Vpri	Vpri	secondary predication: pre-Vpri		secondary predication: post-Vpri		secondary predication: new state of shared argument
	[I]	de	V-V	de	V-V	
		–	–	+	+	+
		+	+	–	–	–
I property-change	+	∃	–	+	+	+
II creation	+	∃	–	+	+	+
III transference	–	–	–	+	+	–

4.1 Mismatch-I: Change-of-property Vpri

In this section we consider the complex-predicate construction where Vpri is a change of property verb. In such a case, the secondary predicate can occur either to the left or the right of the Vpri. However, the choice is not free.

If the secondary predicate is pre-Vpri, the shared argument must be ∃, as shown in the a/a′-sentences in the following three groups of data; and only the *de*-construction is available, as shown in the corresponding b-sentences. This pre-verbal position is obviously different from the position for the resultatives seen in the previous sections.

If the secondary predicate is post-Vpri, the shared argument can be anything, and in either the *de* (the c-sentences) or the V-V construction (the d-sentences). This is similar to what we have seen in the resultative constructions in the previous sections.

Note that the secondary predication headed by such Vpris cannot denote an old state of the shared argument. This is shown in the following a″-sentences. This is different from English. See Appendix for the relevant English data.

(26) a. Akiu lanlan de zhu le {yi/*na} guo miantiao. (de, pre-Vpri)
Akiu messy DE boil PRF one/that pot noodle
'Akiu cooked a pot of noodle messy.' (too soft, like a paste)
a′. *na guo miantiao Akiu lanlan de zhu le.
a″. *Akiu changchang de zhu le yi guo miantiao.
long (i.e., long noodles)
b. *Akiu lan zhu le {yi/na} guo miantiao. (V-V, pre-Vpri)
Akiu messy boil PRF one/that pot noodle
c. na guo miantiao Akiu zhu de {hen lan/tai lan le}. (de, post-Vpri)
that pot noodle Akiu boil DE very messy/too messy PRF
'That pot of noodle, Akiu cooked {very messy/too messy}.'
d. Akiu zhu lan le {yi/na} guo miantiao. (V-V, post-Vpri)
Akiu boil messy PRF one/that pot noodle
'Akiu cooked {a/that} pot of noodle messy.'

(27) a. Akiu jianjian de xue le {yi/*na} zhi qianbi. (de, pre-Vpri)
Akiu sharp DE cut PRF one/that CL pencil
'Akiu sharpened a pencil.'
a′. *na zhi qianbi Akiu jianjian de xue le.
a″. *Akiu honghong de xue le yi zhi qianbi.
red (i.e., a red pencil)
b. *Akiu jian xue le {yi/na} zhi qianbi. (V-V, pre-Vpri)
Akiu sharp cut PRF one/that CL pencil
c. na zhi qianbi Akiu xue de {hen jian/tai jian le}.
that CL pencil Akiu cut DE very sharp/too sharp PRF
(de, post-Vpri)
'That pencil, Akiu sharpened very sharp/too sharp.'
d. Akiu xue jian le {yi/na} zhi qianbi. (V-V, post-Vpri)
Akiu cut sharp PRF one/that CL pencil
'Akiu sharpened {a/that} pencil.'

(28) a. Akiu feifei de yang le {yi/*na} zhi mao. (de, pre-Vpri)
Akiu fat DE raise PRF one/that CL cat
'Akiu raised a cat fat.'
a′. *na zhi mao Akiu feifei de yang le.
a″. *Akiu heihei de yang le yi zhi mao.
black (i.e., a black cat)

b. *Akiu fei yang le {yi/na} zhi mao. (V-V, pre-Vpri)
Akiu fat raise PRF one/that CL cat

c. na zhi mao Akiu yang de {hen fei/tai fei le}. (de, post-Vpri)
that CL cat Akiu raise DE very fat/too fat PRF
'That cat, Akiu raised very fat/too fat.'

d. Akiu yang fei le {yi/na} zhi mao. (V-V, post-Vpri)
Akiu raise fat PRF one/that CL cat
'Akiu raised {a/that} cat fat.'

An observation of the construction under discussion is that the object of the Vpri must be raised in the *de*-post-Vpri constructions, thus the null subject of the secondary predicate, which is controlled by the raised object, looks like a parasitic gap (pg). If there is no secondary predication, no such obligatory raising occurs. (Cf. Brody 1995: 82 for discussion of pgs which are internal to a complement clause.) Note that only specific objects can be raised in Chinese (cf. Karimi 1999 for the specificity condition of pgs in Modern Persian). We will not discuss this issue in this paper.[6]

4.2 Mismatch-II: Creation Vpris

Complex-predicate constructions where Vpri is a verb of creation is special. Wilder (2000) makes the following two observations of such constructions, with respect to their secondary predicates. First, the referent of the subject does not exist at the time of Vpri, unlike elsewhere. Second, the predicate is IL only, unlike elsewhere.

(29) a. He drew *her face* [square].
b. They built *the gallery* [as wide as they could].

In this section, we consider the complex-predicate construction where Vpri is a verb of creation. In such a case, the secondary predicate can also occur either to the left or to the right of the Vpri. However, the choice is not free, either.

If the secondary predicate is pre-Vpri, the shared argument must be nonspecific, as shown in the contrast between the a- and a′-sentences, and only the *de*-construction is available. The corresponding V-V construction is not available, as seen in the b-sentences. These properties show that the construction is different from the resultative constructions we introduced in Section 1 through 3.

If the secondary predicate is post-Vpri, the shared argument can be anything, and both the *de* and the V-V construction are available, as shown in the c-sentences and the d-sentences, respectively. These properties show that the construction is the same as the resultative constructions we introduced in Section 1 through 3.

(30) a. Akiu dada de hua le {yi/*na} ge quan. (de, pre-Vpri)
Akiu big DE draw PRF one/that CL circle
'Akiu drew a circle big.'
a′. *na ge quan, Akiu dada de hua le.
b. *Akiu da hua le {yi/na} ge quan. (V-V, pre-Vpri)
Akiu big draw PRF one/that CL circle
c. na ge quan Akiu hua de {hen da/tai da le}.
that CL circle Akiu draw DE very big/too big PRF
(de, post-Vpri)
'That circle, Akiu drew very big/too big.'
d. Akiu hua da le yi ge quan. (V-V, post-Vpri)
Akiu draw big PRF one CL circle
'Akiu drew a circle big.'

(31) a. Akiu hen duan de xie le {yi/*na} feng xin. (de, pre-Vpri)
Akiu very short DE write PRF one/that CL letter
'Akiu wrote a letter very short.'
a′. *na feng xin, Akiu hen duan de xie le.
b. *Akiu duan xie le {yi/na} feng xin. (V-V, pre-Vpri)
Akiu short write PRF one/that CL letter
c. na feng xin Akiu xie de {hen duan/tai duan le}.
that CL letter Akiu write DE very short/too short PRF
(de, post-Vpri)
'That letter, Akiu wrote very short/too short.'
d. Akiu xie chang le yi fen zaiyao. (V-V, post-Vpri)
Akiu write long PRF one CL abstract
'Akiu wrote an abstract too long.'

(32) a. Akiu hen qian de wa le {yi/*na} ge keng. (de, pre-Vpri)
Akiu very shallow DE dig PRF one/that CL pit
'Akiu dug a pit very shallow.'
a′. *na ge keng, Akiu hen qian de wa le.
b. *Akiu qian wa le {yi/na} ge keng. (V-V, pre-Vpri)
Akiu shallow dig PRF one/that CL pit
c. na ge keng Akiu wa de {hen qian/tai qian le}.
that CL pit Akiu dig DE very shallow/too shallow PRF
(de, post-Vpri)
'That pit, Akiu dug very shallow/too shallow.'
d. Akiu wa qian le yi ge keng. (V-V, post-Vpri)
Akiu dig shallow PRF one CL pit
'Akiu dug a pit very shallow.'

As in the construction discussed in Section 4.1, a specific shared argument must also be raised in this construction.

4.3 Mismatch-III: Transference Vpris

In this section, we consider the complex-predicate construction where Vpri is a verb of transference. In this construction, the shared argument does not change its state or property. In this semantic aspect, it patterns with depictive constructions. However, secondary predicates in this construction must be post-Vpri, as shown in the contrast between a/b and c/d-sentences. Thus in this syntactic aspect, it patterns with resultative constructions.

(33) a. *Akiu hen {xiao/zang} de zu le yi jian fangzi.
Akiu very small/dirty DE rent PRF one CL room
(de, pre-Vpri)

b. *Akiu {xiao/zang} zu le yi jian fangzi. (V-V, pre-Vpri)
Akiu small/dirty rent PRF one CL room

c. na jian fangzi Akiu zu de tai {xiao/*zang} le.
that CL room Akiu rent DE too small/dirty PRF
(de, post-Vpri)
'That room, Akiu rented, which is too small.'

d. na jian fangzi Akiu zu {xiao/*zang} le. (V-V, post-Vpri)
that CL room Akiu rent small/dirty PRF
'That room, Akiu rented, which is too small.'

(34) a. *Akiu feifei de mai le yi kuai rou. (cf. 28a) (de, pre-Vpri)
Akiu fat DE buy PRF one chunk meat

a′. *na kuai rou Akiu feifei de mai le. (cf. 28a′) (de, pre-Vpri)
that chunk meat Akiu fat DE buy PRF

b. *na kuai rou Akiu fei mai le. (V-V, pre-Vpri)
that chunk meat Akiu fat buy PRF

c. na kuai rou Akiu mai de {hen fei/tai fei le}.
that chunk meat Akiu buy DE very fat/too fat PRF
(de, post-Vpri)
'That chunk of meat, Akiu bought, which is {very fat/too fat}.'

d. na kuai rou Akiu mai fei le. (V-V, post-Vpri)
that chunk meat Akiu buy fat PRF
'That chunk of meat, Akiu bought, which is too fat.'

e. Akiu mai da le {yi/*na} jian chenshan. (V-V, post-Vpri)
Akiu buy big PRF one/that CL shirt
'Akiu bought a shirt which is too big.'

(35) a. *Baoyu renwei na bi qian Akiu tai shao de tou le.
Baoyu think that CL money Akiu too little DE steal PRF
(de, pre-Vpri)
b. *Baoyu renwei na bi qian Akiu shao tou le. (V-V, pre-Vpri)
Baoyu think that CL money Akiu little steal PRF
c. Baoyu renwei na bi qian Akiu tou de tai shao le.
Baoyu think that CL money Akiu steal dc too little PRF
(de, post-Vpri)
'Baoyu thinks that that money, Akiu stole, which is too little.'
d. Baoyu renwei na bi qian Akiu tou shao le. (V-V, post-Vpri)
Baoyu think that CL money Akiu steal little PRF
'Baoyu thinks that that money, Akiu stole, which is too little.'

In addition, as in the previous two mismatching constructions, a specific shared argument must be raised.

5. The adjunct-complement contrasts are kept in the mismatch cases

In this section, we present data to show that when secondary predicates occur to the right of Vpri in the mismatching cases, they still show properties of complements, and when they occur to the left of Vpri, they still show properties of adjuncts. Thus the adjunct-complement contrasts are kept in the three mismatch cases.

On the one hand, the co-occurrence restriction that multiple secondary predicates can occur to the left of Vpri but not to the right of Vpri is still obeyed:

(36) a. Akiu fangfangzhengzheng de dada de qi le yi ge chizi.
Akiu square DE big DE build PRF one CL pool
'Akiu built a pool square big.'
b. *na ge chizi Akiu qi de hen fang hen da.
that CL pool Akiu build DE very square very big
c. *na tiao qunzi Akiu mai de tai chang tai fei.
that CL skirt Akiu buy DE too long too big

On the other hand, if post-Vpri secondary predicates are hosted by a right-adjunct, they should not interact with the complements of Vpri. However, they do. The occurrence of a post-Vpri secondary predicate makes a ditransitive construction unacceptable:[7]

(37) a. Akiu zu le Lao Li yi jian fangzi.
Akiu rent PRF Lao Li one CL room
'Akiu rented a room from Lao Li.'

b. *na jian fangzi Akiu zu de Lao Li *tai xiao le.* (cf. 33c)
that CL room Akiu rent DE Lao Li too small PRF
c. *Akiu zu de Lao Li {yi/na} jian fangzi *tai xiao le.*
Akiu rent DE Lao Li one/that CL room too small PRF

This interaction shows that post-Vpri secondary predicates are complements, regardless of their semantic types.

6. Discussion

We have presented both the regular order-pattern, where resultatives and depictives are to the right and left of Vpri respectively and the three mismatching patterns, where either secondary predicates can occur at both of the two positions or secondary predicates which semantically pattern with depictives occur post-Vpri. After examining the constraints on the distributions, we see that the position of a secondary predicate with respect to Vpri is the result of an interaction between the semantic type of Vpri and the specificity of the shared argument, namely, the object of Vpri and the subject of the secondary predicate.

In the current syntax literature, the semantic types of verbs have been related to the different default specificity of their indefinite objects. For instance, Diesing (1992: 109) finds that the indefinite objects of verbs of creation such as *write* and *paint* are nonspecific, whereas that of verbs of using such as *read* and *play* are specific. In the present study, we have seen that the semantic types of Vpri also decide whether an xP is merged as an adjunct or complement.

On the other hand, in the current literature, there are different approaches to the specificity of objects with respect to verbs. Diesing (1992) proposes that specific objects undergo a (c)overt raising, whereas nonspecific objects do not. In other words, the contrast is shown in different positions at LF. Karimi (1999) and Cheng et al. (1997), among others, however, assume that specific objects are base-generated at SpecVP, whereas nonspecific objects are sister of V. In other words, the contrast also occurs at different base-positions. The study of this paper tells us that the specificity of the object of Vpri can affect the choice whether an xP is merged as an adjunct or as a complement, and in certain constructions, the specific object of Vpri must raise.

7. Summary

In this study we have shown that the syntactic structures of secondary predication constructions in Chinese are sensitive to the way the functional head of xP, which

encodes a predication relation, is realized, the semantic type of a Vpri, and the specificity of the shared-argument.

Appendix

A contrast between property-change Vpris and other Vpris in English.

The secondary predicates of the former can be either subject-oriented (38) or object-oriented depictives (39), whereas the secondary predicates of (40) cannot be object-oriented depictives. Instead, (41) can only have object-oriented resultative readings (Rapoport, to appear).

(38) a. Jones$_i$ cut the bread hot$_i$.
b. Jones$_i$ fried the potatoes drunk$_i$.
c. Jones$_i$ froze the juice tired$_i$.
d. Jones$_i$ boiled the lobsters sick$_i$.

(39) a. Jones cut [the bread]$_i$ hot$_i$.
b. Jones fried [the potatoes]$_i$ raw$_i$.
c. Jones froze [the juice]$_i$ fresh$_i$.
d. Jones boiled [the lobsters]$_i$ alive$_i$.

(40) a. Jones$_i$ phoned Smith drunk$_i$.
b. Jones$_i$ hugged Smith sweaty$_i$.
c. Jones$_i$ kicked Smith angry$_i$.
d. Jones$_i$ chased Smith drunk$_i$.

(41) a. *Jones phoned Smith$_i$ drunk$_i$.
b. *Jones hugged Smith$_i$ sweaty$_i$.
c. *Jones kicked Smith$_i$ angry$_i$.
d. *Jones chased Smith$_i$ drunk$_i$.

Notes

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1. The abbreviations used in the Chinese examples are: exp: experience aspect, prf: perfect aspect, prog: progressive aspect, ba: causative particle, cl: classifier, mod: modification marker.

2. Adjectives are not morphologically different from adverbs in Chinese. Thus in many cases, if the non-primary predicate is an adjective, as *rere* 'hot' in (2b), its PRO subject can be controlled by either an argument of the primary verb or the event expressed by the primary predication. In the latter case, the adjective is a manner expression, and the type of control can be understood as S-control in the sense of Williams (1985: 308). See Dechaine (1993) Section 3.3.3.2 'Manner adverbs as (derived) event depictives' for a discussion of the semantic and syntactic relations between subject-oriented adjective depictives and the corresponding *-ly* adverbs in English. Also see Ernst (1996, 1999) for more discussions on resultative and manner expressions.

3. TRC = transitive resultative construction, where the Vpri is transitive.

4. The subject of the primary predicate of (8) can also be a theme causer. In that case, the reading of the sentence is 'Chasing Baoyu, Daiyu got tired.' See Zhang (2001) for a discussion.

5. I do not discuss the cases where there is no argument sharing, as in (i):

(i) na jian fangzi Akiu zu de laopo dou mei qian le.
that cl house Akiu rent de wife even not-have money PRT
'That house, Akiu rented, so that his wife had no more money.'

Nor do I discuss intransitive Vpris in this paper (see Zhang 2001).

6. The same constraint is applied to post-verbal manner expressions. Objects of Vpri must be raised in the relevant constructions. Sentences like (ii) cannot be a manner construction, contrary to Ernst (1996: 120):

(i) Guorong ba na bu che kai de hen kuai.
Guorong BA that cl car drive de very fast
'Guorong drove that car fast.'

(ii) Guorong kai de nei bu che hen kuai.
Guorong drive de that cl car very fast
Not: 'Guorong drove that car fast.' (a manner construction)
OK: 'The car that Guorong drove is a very fast car.' (a relative clause construction)

7. Zhang (1998) shows that the default reading of a ditransitive construction in Chinese, in contrast to that in English, is "deprivation" rather than "possession".

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Adjuncts and word order asymmetries

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1. Introduction*

Cinque (1996) and others have pointed out that if languages were parameterized consistently for head-direction – say, if government determined the position of all nonhead phrases with respect to heads, and government were parameterized for leftward vs. rightward direction as suggested in Kayne (1984) – then the expected patterns would be as shown in (1) (where 'Adv' stands for any adverbial adjunct). But in actuality, such a complete symmetry is not the norm. As schematized in (2), the most basic language types are instead SVO and SOV, and adverbial adjuncts are systematically barred only when after the verb in head-final languages:[1]

(1) a. head-initial: VOS; *Adv – V – Adv
b. head-final: SOV; Adv – V – *Adv

(2) a. head-initial: SVO; Adv – V – Adv
b. head-final: SOV; Adv – V – *Adv

(3)–(4) illustrate the patterns in (2a–b): SVO languages generally allow adverbials on either side of V, depending on the type of adverbial, while SOV languages generally forbid adverbials of all kinds to the right of V:

(3) a. Elle a fréquemment préparé des plats pareils l'année dernière.
she has frequently prepared some dishes similar the year last
'She frequently prepared such dishes last year.' (French)
b. Jinrong yiding lai-le liang ci.
Jinrong definitely come-PRF two time
'Jinrong definitely came twice.' (Chinese)

(4) a. Kanojo-wa tokidoki mizukara lunch-o nuita
she-TOP occasionally willingly lunch-ACC skip-PAST
(*tokidoki/*mizukara).
occasionally/willingly
'She has occasionally willingly given up her lunch hour.' (Japanese)

b. Ahmet bazen hasta olduğu için kötü öksürüyor
Ahmet sometimes sick be-PAST-3SG for bad cough-PRES-3SG
(*bazen)
sometimes
'Sometimes Ahmet coughs badly because of his sickness.' (Turkish)

However, attempts to explain these patterns by making phrase structure completely asymmetrical in base structure (following Kayne 1994) face many unsolved problems, including having no principled way to account for the adverbial distribution pattern in (3)–(4). Thus in this paper I propose a version of the traditional analysis of word order variation in which direction with respect to heads is parameterized – but only for *part* of a projection, for complements (left or right of the head) but not for Specs (which are always to the left). This asymmetry is extended to explain the linear order patterns and scope relationships of adjuncts, providing evidence for this approach over Kaynean antisymmetric analyses, which cannot adequately handle adjunct data.

2. The proposal

There are two main claims to be made here. First, I maintain that, despite the thrust of much of current theory, *left-right direction is fundamental*, even more strongly than was traditionally assumed. Second, I claim that *phrase structure is partially asymmetric*, with a given language's left-right direction affecting only (a) complements and, derivatively, (b) basic options for adjunct placement.

These claims are embodied more formally in (5)–(6). First examine the F-complex and the C-complex shown in (5), each having an associated direction with respect to heads, F-dir(ection) and C-dir(ection); it is to these two fundamental properties of phrases that I trace the asymmetry in phrase structure:

(5)

COMPLEX	ASSOCIATED PROPERTIES	DIRECTION
F	function, tendency to LF conditioning and lightness; specs	F-dir = LEFT
C	content, tendency to PF conditioning and heaviness; complements	C-dir = RIGHT

Consider the C-complex first. Complements typically have content in the traditional sense that nouns, adjectives, and verbs have content semantics, as opposed to functional morphemes like negation, complementizers, aspect markers, and the like. Such items are almost always overt, of course (except for empty pronominals like pro/PRO). They also may be licensed in part by PF principles, especially considerations of weight; for example, it is the heavier, more complement-like items that are routinely moved to the right by Heavy Shift (see Rochemont & Culicover 1990).[2] By contrast, for the F-complex, what characterizes Spec position is some special grammatical function (Ernst 1991). Specs include surface subject positions to which external arguments move, triggered by a Case or EPP feature (Spec,TP); Spec,CP, for WH-phrases having quantificational and illocutionary-force functions; and the Spec positions of FocusP, NegP, and the like, for which similar functions are involved. The items in these Specs may be overt, of course, but it is also widely accepted that there may also be covert operators, such as a zero WH-operator in Spec,CP when Comp is filled by *whether*. Even when they are overt, it is well known that functional elements tend to be morphologically light (see Croft 1990: 156ff.). Finally, it is a central idea in current principles-and-parameters theory that such functional items are licensed at LF.

The directions associated with the two complexes are universal. However, while F-dir is active for all languages, C-dir may be either active or inactive. This shows up in the Directionality Principles in (6) as the parameter for (in)active C-dir in (6b-ii); when C-dir is active, rightward direction is introduced into a language:

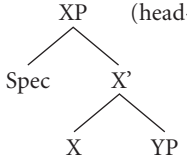
(6) DIRECTIONALITY PRINCIPLES:
  a. [+F] items are licensed only in F-Dir; otherwise
  b. Languages are parameterized for whether C-Dir is active or inactive:
    (i) If C-Dir is inactive, then all XP's are [–R];
    (ii) If C-Dir is active, then for any [–F] YP in XP,
      if X^0 or YP bears a C-complex feature, then YP is [+R]

The Directionality Principles in (6) are meant to cover all three types of position in a clause – Spec, complement, and adjunct. (6a) has the effect of placing all Specs to the left of their heads, assuming a definition of Spec by which all phrases licensed by a [+F] (F-complex) feature are in Spec positions (Ernst 1991; Hoekstra 1991; Saito & Fukui 1998; Ernst 2001). Such features include [+WH], [+Foc], [+EPP], [+Agr], and so on, i.e. those features discussed under the label [+F] in Chomsky (1995a).[3] (6b) handles both complements and adjuncts, with (i) accounting for head-final languages and (ii) for head-initial languages. (6b-i) requires that when C-dir is inactive, all nonheads precede heads (where [–R] induces this default linearization of a phrase bearing it; R is mnemonic for *right*) producing the consistently head-final, SOV pattern in (2b).

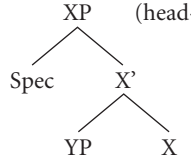
(6b-ii), where C-dir is active, represents a more complex case. It only affects [–F] phrases, with the result that Specs are still always to the left of heads, accounting for the fact that subjects are to the left of V in SVO languages (and VSO languages, assuming an SVO base order with subsequent verb raising), as are WH-phrases in Spec,CP, negative adverbs in Spec,NegP, and so on. Among non-Specs, a phrase is linearized to the right of its head by being [+R], whenever the head or the nonhead phrase bears a [–F] (i.e. C-complex) feature. The relevant ones for present purposes are shown in (7):[4]

(7) C-complex ([–F]) features: [+Lex], [+S]

[+Lex] is the familiar feature for lexical categories, and for our present purposes it defines V as opposed to functional heads like Tense, Comp, or Pred. I take [+Lex] to be relevant for (6) when on an X^0 head. [+S] stands for selected phrases, i.e. complements. Taking just [+S] for the moment, (6b-ii) says that all complements are to the right of their heads in languages with active C-dir – that is, head-initial languages. The results so far are nothing more or less than the traditional, expected phrase structure configurations shown in (8a–b), for head-initial and head-final languages, respectively:

(8) a. 

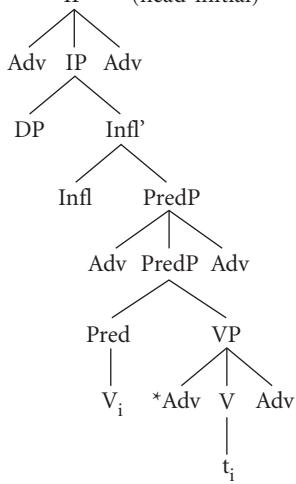
(head-initial)

b. 

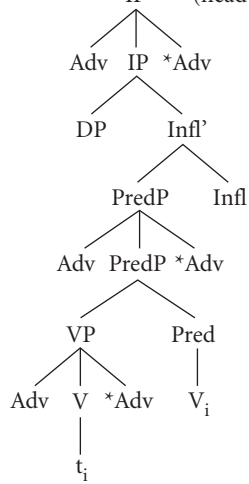
(head-final)

Turning to phrases with [+Lex] heads, we can now explain the cross-linguistic left-right distribution of adverbials shown in (2)–(4). Adverbials are neither [+F] (except in a few special cases) nor [+S] (reserved for selected phrases). Thus the Directionality Principles impose a restriction in head-initial languages only in lexical projections, forcing all adverbials to be to the right of V in VP's. Otherwise, in functional projections, adverbials are free to occur on either side of the head, since nothing restricts them with respect to direction. This is in fact the case, in general, though of course further principles restrict various adverbial subclasses to one side or another (see Ernst 2001). The result for adjuncts is shown schematically in (9) (where ternary branching indicates two possibilities for binary branching):

(9) a. (head-initial)



b. (head-final)



Note that I assume obligatory raising of V to the first functional projection above it, with direct object DP's occurring in Spec,VP, and subjects originating in PredP.[5]

(5)–(6) are proposed as universal principles, (5) embodying a claim about the clustering of semantic and morphological properties and the nature of Spec and complement positions, and (6) being the fundamental UG principles of linearization. As such they represent the formal underpinnings of the Greenbergian word order correlations (Greenberg 1963; Dryer 1992), including the sorts of adverbial word order data illustrated in (2)–(4) (see also Diessel 2001).

To summarize the central proposal in this paper, the Directionality Principles in (6) allow for two primitive directions for phrases with respect to their heads. F-dir, in essence, is the default direction that holds for all languages, as seen in the universal leftwardness of Spec positions and in the consistent leftward position of nonhead phrases in head-final languages. C-dir is where the traditional left-right parameter surfaces: when C-dir is active, complements and adjuncts in VP must be to the right of their heads; other adjuncts are freely ordered in general, with other principles determining their position with respect to heads. Only one parameter is involved, and the positions of arguments and adjuncts are accounted for by the same mechanism, as seems correct in light of the correlation shown in (2). In the following section, I provide evidence for this approach.

3. Five advantages of the proposal

In this section, I discuss five reasons to adopt the proposal based on the Directionality Principles in (6), two of them conceptual and three empirical.

3.1 Simplicity

First, this approach allows for a very simple system, with everything following from (5)–(6), along with independently needed phrase structure and [+F] and [+Lex] features, plus one new feature [+S] to represent complements. There is only one parameter (6b). There is no need to stipulate the leftward direction of Spec positions, or to provide a separate parameterization for the basic positions of adverbials in head-initial vs. head-final languages; nor is there a need for additional empty functional heads, movement triggers, or the like. This is important because many current theories do posit such elements without providing constraints on where, when, and how many can occur (on this point see also Bouchard 2001).

3.2 Conceptual groundedness

Second, this approach is conceptually grounded in the F- and C-complexes, providing a deeper explanation for the fundamental nature of Spec and complement positions and for why there should be a difference between them. Specs represent a position determined primarily by a phrase's grammatical function, and movement to Spec positions is not blocked or forced when an item is heavy. (If weight considerations affect movement to Spec at all, it is lightness that triggers the movement; see Cardinaletti & Starke 1996, for example.) The existence of a complement position does not depend on the function of the phrase in it, in the sense discussed above, and heaviness considerations may apply in ordering complements. Moreover, the distribution of peripheral elements like adjuncts is not an independent phenomenon, but is instead dependent on the principles designed for primary elements (Specs and complements) for their linearization.

3.3 Case adjacency

We move now to empirical considerations, with the third advantage of the proposal made here, the matter of 'case adjacency'. This phenomenon is illustrated in (10a), where an adverb cannot come between a verb and a (non-heavy) direct object in some languages; (10b) illustrates languages where case-adjacency does not hold in surface order:

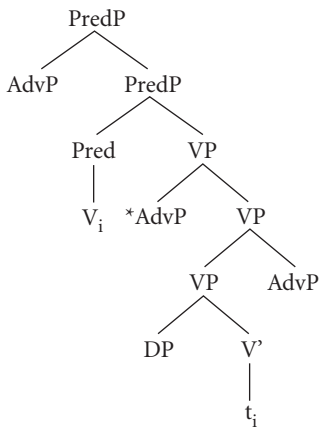
(10) a. She eats (*always) some candy.
b. Julie mange$_i$ toujours t$_i$ des confiseries.
Julie eats always some candies
'Julie always eats some candy.' (French)

(11) Julie always has eaten candy.

Stowell (1981) suggested that sentences like (10a) could be accounted for if case assignment were subject to an adjacency condition. But as many people have pointed out, this condition cannot hold for nominative case, since adverbs can come between subjects and Infl (see (11)). More importantly, the condition applies quite narrowly, not being derived from any broader principles. Thus the adjacency condition is little more than a description of the facts.

The system proposed here derives the effect from broader principles. V-to-Pred movement always raises V to the left of a direct object, and (6b-ii) forbids adverbs to left-adjoin to VP, so they cannot intervene:

(12)



As is standard (see Pollock 1989), a yet higher movement of V to Tense accounts for the position of French adverbs after main verbs as in (10b) (as well as finite auxiliary verbs in both languages).

3.4 Correlation between Spec/complement and adjunct positions

The fourth piece of support for the Directionality Principle analysis comes from its ability to correctly correlate a language's Spec and complement positions, on one hand, and its canonical adverbial positions on the other. This connection is made because complements and adjuncts are prime elements of the C-complex and thus, in head-initial languages, they both respond to C-dir. Observe this in schematic form in (13):[6]

(13) Correlation of complement and adjunct positions with Directionality Principles:

LG. TYPE	COMPLEMENTS		ADJUNCTS		
SVO	C-Dir active:	R	C-Dir active:	R	(obligatorily in VP, optionally in functional projections, by (6b-ii))

SOV	C-Dir inactive: L	C-Dir inactive: L	(obligatorily in all projections, by (6b-i))

As (13) shows, the same mechanism of the (in)activity of C-dir predicts the direction of both complements and adjuncts, and this captures their correlation.

3.5 Weight restrictions on adjuncts between subject and verb

Finally, consider the correlation between the weight of a phrase and restrictions on its distribution: with a suitable extension of the theory (needed independently for the rightward movement of heavy phrases) we can explain why light adverbs often must occur between subject and verb, and why heavy adverbials are disfavored in this same area but only in VO languages. Examine the English and Japanese data in (14)–(15):

(14) Alice (just) has (just) been (just) answering questions (*just).

(15) a. Alice (*at the podium) has (*at the podium) been (*at the podium) answering questions (at the podium).

b. Alice-ga (endai-de) situmon-ni (endai-de) sizukani
Alice-NOM podium-at question-DAT podium-at quietly
(endai-de) kotae-te-iru (*endai-de).
podium-at answer-gerund-been podium-at

These examples illustrate two complementary phenomena: certain light adverbs in VO languages, like *only, scarcely*, and *just,* may occur only between the subject and verb; and heavy adverbials, such as the PP *at the podium* in (15a), may not occur in this same area in VO languages, yet may do so in OV languages like Japanese (as in (15b)). A fruitful way to approach these data is to start from the prototypical association of lightness with the F-complex, and heaviness with the C-complex (see (5)):

(16) Generalization: Lightness is associated with the F-complex, heaviness with the C-complex.

Weight theory associates heavy and light elements with their typical directions, among other things triggering rightward extraposition of (heavy) relative clauses out of subjects as in (17a), and rightward Heavy Shifts as in (17b):

(17) a. Somebody spoke that I'd never seen at the meeting before.

b. They eat now everything they can get their paws on.

The relevant part of Weight theory for cases like (15) is shown in (18), leaving the matter of clause-initial position aside (see Ernst 2001 for discussion and a more formal instantiation):

(18) When C-dir is active, light adverbials only occur in F-dir, heavy adverbials in C-dir.

(18) accounts for the patterns in (14) and (15a) by forbidding light adverbs from postverbal positions and forbidding heavy adverbials from preverbal ones. It also accounts for (15b) because C-dir is inactive in rigid head-final languages like Japanese, so the normal, blanket prohibition against postverbal adverbials is in force, but there are no restrictions on the weight of preverbal ones. Thus, in this way, by invoking left-right directions in the context of the F- and C-complexes, we are able to account for these data in a way that captures the effect of weight on distribution and also accounts for how this is realized differently cross-linguistically.

3.6 Summary

In this section, we reviewed five points in favor of the analysis based on the F- and C-complexes and the Directionality Principles, relating to simplicity, conceptual groundedness, case adjacency, the correlation between spec/complement positions and adjunct positions, and different behavior of lighter and heavier adverbials. In the next section, we argue that this analysis is superior to antisymmetric approaches to adverbial adjuncts (Kayne 1994), which deny a significant role for parameterized directionality.

4. Comparison to antisymmetric theories with parameterization of movement triggers

4.1 Antisymmetric theories and intraposition

Analyses couched in the antisymmetric view of phrase structure disallow right-adjunction of adverbials and rightward movement. Instead, all Specs and adjunctions (which are actually one and the same, in this theory) are necessarily to the left of the head. Of course, this poses no problems for any left-adjoined adverbial. But how is this theory to handle cases like (19a–d), with two or more adverbials to the right of the verb?

(19) a. Miranda woke up slowly yesterday because she had taken a decongestant.

b. Negotiators work in their hotel rooms for long hours on purpose fairly often.
c. Julia didn't take her medicine twice again.
d. Danielle frequently buys a newspaper because her work demands it.

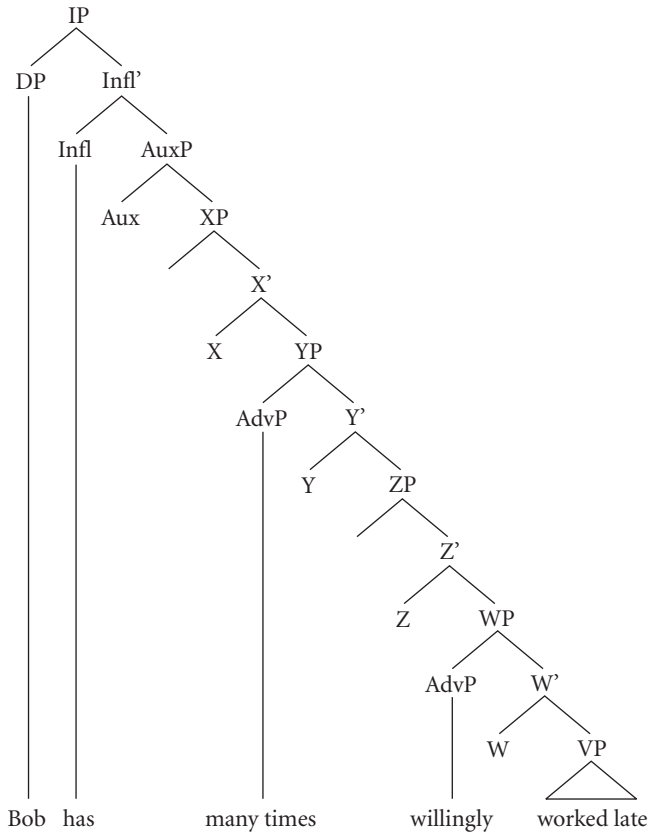
Importantly, in each case the postverbal adverbial farthest to the right has widest scope, and the next one closer to the verb has next widest scope, and so on. For example, in (19a) it is because Miranda took a decongestant that she woke up slowly yesterday; in (19b) what happens fairly often is for negotiators to work in their rooms for long hours on purpose, and what is done on purpose is work in their hotel rooms for long hours. Also, in (19c–d) the postverbal adjuncts may take scope over preverbal *not* and *frequently*, respectively; e.g. in (19c) the repeated event (in the scope of *again*) is Julia not taking her medicine twice. The traditional analysis handles these phenomena quite easily, by positing right-adjunction of the adverbials, possibly fairly high in the tree for (19c–d), and by conditioning scope relationships on c-command. Thus in (19c) *twice* and *again* would be adjoined higher than *didn't*, c-commanding and taking scope over it, with *again* likewise having scope over *twice*.

Antisymmetric theories must provide an alternative analysis in terms of movement. Specifically, they often assume a base structure with adverbials to the left of the verb,[7] and leftward movement of some predicate (loosely defined) to a landing site to the left of the adverbial (Kayne 1994: 72; Rochemont & Culicover 1997), a movement I will term *intraposition*. The difference between head-initial and head-final languages therefore is to be phrased in terms of movement triggers: there is a trigger on the appropriate node in head-initial languages, but no such trigger, and so no such movement, in head-final languages. To emphasize this crucial difference in the locus of parametric variation, I refer to this theory as the 'Movement Trigger' (MT) analysis.

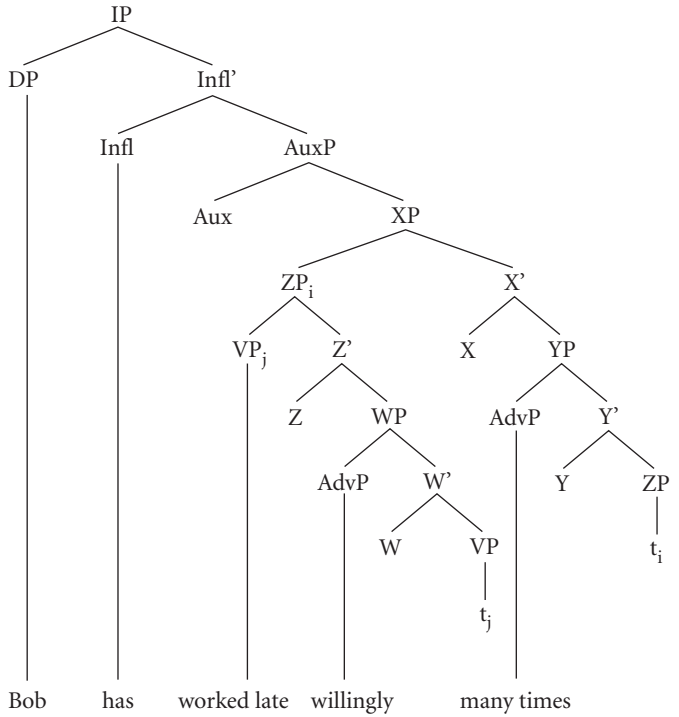
Take (20a) as an example of how the MT theory works, with the bracketed version in (20b) indicating scope relationships (giving the interpretation 'many times it was the case that Bob willingly worked late'), and (20c) providing the base structure for (20a) on the MT approach. (21) gives the base structure in tree form:

(20) a. Bob has worked late willingly many times.
b. Bob has [[[worked late] willingly] many times]
c. Bob has [many times [willingly [worked late]]]

(21)


IP
DP
Infl'
Infl
AuxP
Aux
XP
X'
X
YP
AdvP
Y'
Y
ZP
Z'
Z
WP
AdvP
W'
W
VP
Bob
has
many times
willingly
worked late

(22)



(21) is converted into (22) in two steps: first the VP *worked late* intraposes leftward over *willingly*, landing in Spec,ZP; then ZP (*worked late willingly*) intraposes across *many times* to land in Spec,XP. (The labels for these projections are not important to the point at hand.) The derived structure correctly represents constituent structure, as seen (for example) in the various possibilities for ellipsis and *do so* substitution, as shown in (23):

(23) a. Bob has worked late willingly many times, and Ann has __ twice.
(__ = worked late willingly)

b. Bob has worked late willingly many times, and Ann has done so reluctantly just as many times.
(*done so* = worked late)

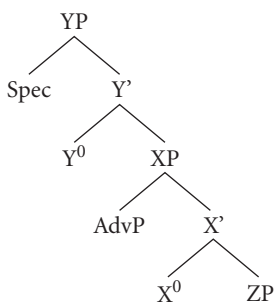
Although scope relations are not correctly represented by (22), they are in (21), so Reconstruction (or some other way to invoke the base structure configuration) allows accounting for scope.

There are at least three significant problems with the MT approach to sentences like (19a–d), outlined in the next three subsections.

4.2 Stipulativeness

The first problem is that the MT analysis is very stipulative in having no plausible motivation for movement, and no principled way to ensure movement of the correct phrase (i.e. the complement of the head following the adjunct that triggers Intraposition).[8] Intrapositions are not 'morphologically' triggered in the sense that they have some semantic/pragmatic correlate that is potentially marked morphologically, as is the case with WH-movement, topicalization, focus movement, and the like. Rather, intrapositions produce normal, unmarked word orders with postverbal adverbs, sometimes the only possible order, and as far as I know no language morphologically marks such constructions, as opposed to those with preverbal occurrences of adverbs. As there is no real motivation for this movement, positing this sort of intraposition represents a weakening of movement theory by removing one of the few constraints on movement triggers. Also, the identities of the moved constituent and its landing site are not derived in any principled way. As shown schematically below, the MT theory must ensure that in each case intraposition applies to the complement of the head licensing the adverbial (X^0 in (24), given Cinque's 1999 theory), and the landing site must be the Spec position of the next highest projection above the adverbial (Spec,YP in (24)). If not, the theory overgenerates, producing ungrammatical strings like (25a–b), resulting from movement of the wrong constituent (*late* in (25a), from within ZP) or of the right constituent to the wrong landing site (a Spec above the auxiliary *has* in (25b)):

(24)



(25) a. *Bob has late many times willingly worked.
b. *Bob worked late has many times willingly.

It is quite unclear why there should be this relationship among three separate projections in (24), where a movement trigger on Y must coexist with a particular type of phrase in the next lower Spec and induce movement of the complement of the next lower head. In fact, whatever stipulations are added to the grammar to ensure these intrapositions end up doing nothing more than switching the order of the

adverbial and the phrase to which it is attached. Clearly a theory embodying the Directionality Principles is far simpler and more principled than MT on this score.

4.3 Correlation between Spec/complement and adjunct positions

The second problem faced by the MT approach is that it cannot provide a principled correlation between Spec/complement and adverbial positions. As noted above, the analysis proposed here does this as in (26) (=13):

(26) Correlation of complement and adjunct positions with Directionality Principles:

TYPE	COMPLEMENTS		ADJUNCTS		
SVO	C-Dir active:	R	C-Dir active:	R	(obligatorily in VP, optionally in functional projections, by 6b-ii)
SOV	C-Dir inactive:	L	C-Dir inactive:	L	(obligatorily in all projections, by 6b-i)

The theory correctly predicts that rightward complements and the possibility of postverbal adverbials must covary, since the (in)activity of C-dir is responsible for both. On the MT theory, however, the situation is represented by (27):

(27) Correlation between complement and adjunct positions on MT theory with intrapositions:[9]

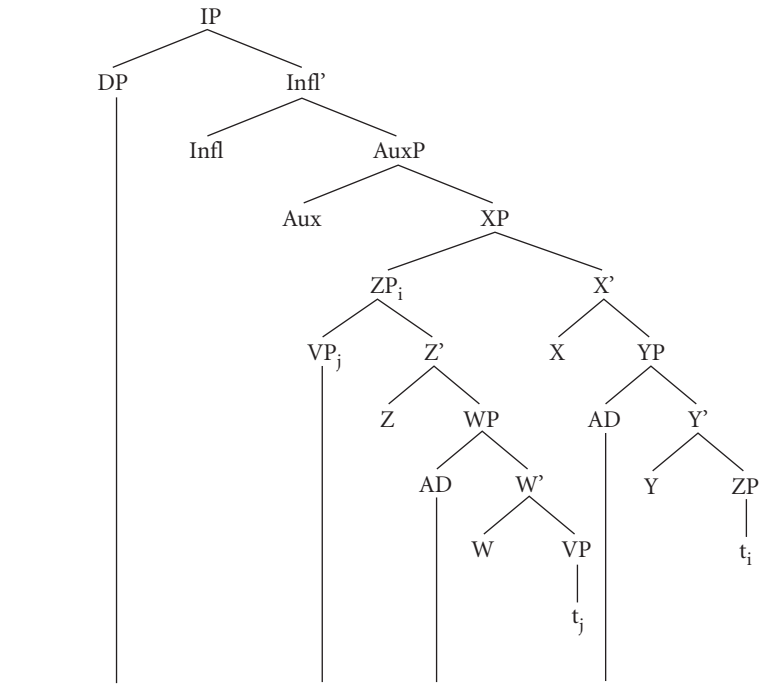
TYPE	COMPLEMENTS	ADJUNCTS
SVO	O doesn't raise	intraposition applies (for any postverbal adverbial)
SOV	O raises	no intraposition (for any adverbial)

Assuming an SVO base order, antisymmetric theories derive SOV order by raising the object. As in the case of triggering intrapositions seen just above, there is no apparent reason why raising of the object should correlate with the lack of intraposition, especially when there can be several triggers for intraposition, spaced widely in a clause, with no particular connection to a trigger for object movement. And even if one were to invent a principle linking the locations and values of the movement triggers, there is no apparent reason why this particular connection should be made, and not the opposite one. By contrast, on the Directionality Principle approach, the relationship is quite clear: the activation of C-dir for head-initial languages underlies both VO order and the possibility of postverbal adverbials.

4.4 Contradiction between scope and binding requirements

The third problem for the MT approach is that it cannot simultaneously account for adverbial scope relations and anaphor-- or variable-binding. As noted earlier, scope relationships are represented in base structure, and intrapositions destroy the necessary configurations by the time surface structure is reached, so Reconstruction at LF (or its equivalent) is necessary to represent scope. But anaphor- and variable-binding depend on the surface configuration. This is illustrated in (28), derived in the same way as (22), by two intrapositions; (29) provides the word order after Reconstruction.[10]

(28)



a. I spoke to them$_i$ on each other's$_i$ birthday many times
(anaphor binding)

b. I spoke to everyone$_i$ before his$_i$ performance deliberately
(variable binding)

In cases like (28), note first of all that the usual assumption of c-command as the structural condition for binding relations does not work at all on this sort of MT analysis, in either base or derived structure. Binding does at least hold at derived structure, in (28), if we use x-command and precedence (see Ernst 2001),

by which A x-commands B if they are within the same extended functional projection (PredP, TP, or CP).[11] Regardless of the version of c-command used, base structure does not permit accounting for the binding facts, so binding relationships hold only at derived structure. However, since the relative scope of the adverbials can only hold (by c-command) in base or Reconstructed structure, we have a contradiction. The MT theory can only account for both scope and binding relationships by positing two distinct levels for them, e.g. binding at S-structure and scope at LF. This goes counter to both (a) evidence that binding holds at LF, and (b) Minimalist assumptions that there ought to be no reference specifically to surface structure/Spell-Out as opposed to LF. Nor does it seem easy to represent both sets of relationships at a single level by some nuanced, differential deletion of parts of copies at LF without much stipulation and additional machinery (see Ernst 1998; Fox 1999; Safir 1999 and Nunes 1999 for discussion of this sort of deletion to capture scope facts).

(29) a. I many times [on each other's$_i$ birthdays [spoke to them$_i$
(Reconstructed version of (28a))
b. I deliberately [before his$_i$ performance [spoke to everyone$_i$]
(Reconstructed version of (28b))

Before we conclude, it must be noted that a 'Larsonian' version of antisymmetric theories does not fare any better as far as reconciling scope and binding facts are concerned. The structure such an account would assume is as in (30a) (omitting the empty heads between each adjunct):

(30) a. I [spoke [to them$_i$ [many times [on each other's$_i$ birthdays]]]]
(base structure or Reconstructed LF structure – the relevant level for Principle A)
b. I [on each other's$_i$ birthdays [many times [spoke to them$_i$]]]
(unreconstructed LF – the relevant level for scope)

Although (30a) allows a straightforward analysis of binding facts in terms of c-command,[12] this sort of theory requires raising the adjuncts at LF to account for their scope relationships, in a structure like (30b). This means that the same problems arise as for intraposition approaches, i.e. either there is a contradiction or two separate levels are required.

4.5 Summary

To sum up this section: we have seen that the MT analysis based on antisymmetric phrase structure can analyze cases of postverbal adverbial adjuncts by means of intraposition rules to account for surface linear order and constituent-structure

facts. But in doing so (a) it requires a number of unmotivated and stipulative additions to the grammar that are avoided on the more traditional Directionality Principle analysis, (b) it cannot account in a principled way for the cross-linguistic correlation between complement positions and basic adjunct positions, and (c) it cannot account simultaneously for scope and anaphor- or variable-binding facts without positing two separate levels of representation for them, a step which both is more complex and is disallowed in current principles and parameters theory. Therefore the Directionality Principle theory allowing right adjunction is superior in its treatment of adjuncts, and thus gains support.

4.6 A note on restrictiveness

It is common in current syntactic theory to claim that the Kaynean approach to linearization is superior to the traditional account in being more restrictive. However, one must not be misled by its positing a single base order for all languages: a mere shift in the locus of parameterization from base to derived structure (via a systematic parameterization of movement triggers, rather than of complement positions) adds no restrictiveness by itself. More important, there are three reasons to think that the MT approach of parameterizing movement triggers may be *less* restrictive than one embodying (5)–(6).

First, as shown above, current MT analyses impose no principled restriction on the types and occurrence of adverb shifts, intrapositions, and other movements that it needs to account for word order; moreover, it must posit numerous movement triggers, located on disparate heads widely distributed in the clause, with no principle to restrict their properties or locations. Thus almost any linearization is possible in principle, just as was so with transformations in the early days of generative grammar. Further restrictions (like the one discussed in Section 4.2) are of course possible, but they add unneeded complexity and are not motivated as an integral part of the basic principles. Second, as noted above, the theory proposed here is restrictive in predicting a tight correlation between complement positions and possible adverbial positions, while the MT theory allows any relationship between the two. Finally, the MT approach requires many empty heads (like X and Y in (24)) with no function but to host movement triggers. More restrictive theories of functional heads require them to either be overt or have a clear semantic function (see Thráinsson 1996; Bouchard 2001; Ernst 2001, Chapter 1; cf. also Chomsky's 1995b remarks on Agr).

Of course, a final determination of relative restrictiveness must be able to compare two theories whose details are sufficiently worked out, with the same empirical coverage; this is not yet so here. But reasons like those just reviewed give us

good grounds for pursuing Directionality Principles as a more restrictive basis for a theory of linear order.

5. Conclusion

Data from adverbial adjuncts provide evidence for a partially asymmetric theory with Directionality Principles as laid out in (5)–(7), with parameterization for C-direction, over antisymmetric theories. This paper has tried to show that the Directionality Principle approach has a desirable conceptual grounding, handles the case-adjacency phenomenon in an advantageous way, and is superior to the antisymmetric MT analysis (a) in being simpler and less stipulative, (b) in accounting naturally for the correlation between nonadjunct and adjunct positions in a given language, and (c) in avoiding the problem of having to license scope and binding at two different levels of grammar. This provides evidence for a more traditional view of cross-linguistic word order variation, with a parameter stated directly in terms of a phrase's leftward or rightward positions with respect to a head.

Notes

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1. I deal here only with the most basic, general patterns for a given language. For all the possible Adv positions in (2), a given adverbial in a given language may be excluded for semantic or morphological ('weight'-related) reasons. But at least some adverbial classes in that language occur regularly in each unstarred position.

2. It is common in current theory to assume that sentences like *Tim ate yesterday all the tofu surprise he had made the night before* are derived by leftward movement of *ate yesterday* over the direct object, rather than by rightward movement of the heavy object. The latter, more traditional analysis is defended in detail in Ernst 2001, Chapter 5.

3. I put aside the possibility that some languages allow some Spec positions to the right, as has been suggested at least for focus positions (Tuller 1992; Belletti & Shlonsky 1995; Ndayiragije 1999) and for subjects in verb-initial languages (Chung 1990). If such cases genuinely involve Specs, it may prove necessary to revise the Directionality Principles.

4. The other major C-complex feature is [+Heavy], which comes into play for noncanonical orders like the one mentioned in Note 2.

5. Though I call this projection Pred, following Bowers (1993), little hinges on the choice of label; it is essentially equivalent to μ (Pesetsky 1989; Johnson 1991), AgrO (Chomsky 1991), Voice (Kratzer 1994; Kratzer 1996), *v* (Chomsky 1995b), or Event (Travis 1994). I remain

neutral about its properties aside from those specifically claimed here, including that of always attracting V.

6. Some SOV languages, such as German, Dutch, and Hindi, have mixed SOV and SVO properties, and thus require further treatment beyond a simple head-initial/head-final parameterization, regardless of which theory of cross-linguistic linear order one adopts. I leave this issue aside here, but see Ernst (to appear), Ernst 2001 for discussion of these languages.

7. This follows the style of Cinque (1999), where the scope of adverbials is correctly represented in base structure, rather than using a 'Larsonian' analysis (Larson 1988). In the latter, all postverbal adjuncts are arranged in base structure down and to the right of verbs and complements, in the Spec positions of successively lower 'inner shell VP' projections. Space considerations prevent us from considering this version of antisymmetric theory, but see below (Section 4.4) and Ernst (2001), Chapter 4, for arguments that, if an antisymmetric theory is correct at all, it ought to be the 'Cinquean' sort with respect to base positions of adjuncts.

8. This point has also been made by Laenzlinger (1997); Rochemont & Culicover (1997); Donati & Tomaselli (1997); Shaer (1998).

9. 27 represents just one possible approach to take within the MT theory, but as far as I can tell, no MT analysis makes a principled connection between complement and adjunct positions.

10. See Stroik (1990), Stroik (1996) for further discussion of this sort of binding into adjuncts.

11. See Grimshaw (1991) for the genesis of the notion of extended projections, and Ernst (2001) for justification of the particular extended projections used for x-command; cf. also the related notion of 'phase' in Chomsky (1999).

12. It might be thought that the Larsonian approach has an advantage over both the intraposition and Directionality Principle theories, in that the former may use c-command while the latter two require x-command and precedence for binding relationships. However, Larsonian structures raise serious problems in other areas, such as the arbitrariness and complexity of the LF raising rules needed to convert (30a) to (30b), as well as the necessity to license adverbs at two levels (base structure to account for surface linear order, and LF to account for scope). These drawbacks are discussed in detail in Ernst (2001), Chapter 4.

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Wh-asymmetries*

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1. Introduction

The present work has two related goals: 1) to find a set of articulated and motivated answers to a variety of questions raised by asymmetries in wh-structures, intra and cross-linguistically and 2) to see how these answers contribute to an understanding of the structure and hierarchy of the interface between syntax and discourse.

Regarding 1) I would address the following questions: (a) intra-linguistically, what motivates the asymmetries between wh-questions and wh-exclamatives, concerning three aspects of their syntax – wh-movement, inversion, and complementizers? More precisely, what triggers the following asymmetries: (i) possibility of wh-in-situ in questions vs. its impossibility in exclamatives; (ii) obligatory or optional inversion in wh-questions vs. absence of obligatory inversion in exclamatives; (iii) absence vs. presence of a complementizer-like form in both constructions; (b) cross-linguistically my main interrelated questions are: (i) why is overt wh-movement obligatory, forbidden or apparently optional in some languages but not in others? (ii) are *in situ* wh-questions free variants of questions with fronted wh-phrases or does their interpretation differ? (iii) Why is inversion in wh-contexts obligatory, forbidden or apparently optional across languages? (iv) Why does the complementizer appear in wh-structures in some languages but not in others? (v) Why is there absence vs. presence of root-embedded asymmetries? (vi) How do these phenomena correlate?

As for 2) the main question is how pragmatic information that has effects on word order and on other syntactic restrictions is represented in the grammar. In other terms 2) addresses the question to what extent the leading idea in the 70's that pragmatic information is too unconstrained to be encoded in the grammar is to be accepted or rejected.

Chomsky wrote in the 80's:

> In the case of the language faculty, there is a fair consensus on some of the elements that should be incorporated within it, along with considerable dispute about others, in particular those on what might be called "the periphery", to use a metaphor that I hope will not be too misleading. It is conventional, at least since Aristotle, to think of language as form with meaning. If so, among the representations provided by the system of grammatical competence – henceforth the grammar – will be representations of form and representations of meaning. These representations are "peripheral" in the sense that they may be regarded as the point of contact between the language faculty and other systems of the mind – again not a necessary assumption, but a reasonable one, I think. [...] What are the elements of these representations? What is their character? On the modular assumptions outlined, these are obscure empirical questions, to be clarified and answered by empirical inquiry.
> (Chomsky 1980: 61)

In the 90's, this empirical inquiry has increased in what concerns the interface between syntax and discourse, originating a considerable variety of proposals and the recuperation of some traditional insights, namely some of the ideas in the studies in Li and Thompson (1976).

Those proposals have been of different type, depending on the point of view adopted. Some assume that the information relevant to that interface is encoded in syntactic projections. The way in which this is done still varies: there are those who assume the existence of "syncretic categories" where different features are combined (cf. a.o., Uriagereka 1995; Zubizarreta 1998; Simpson 1999; Barbosa 2000), sometimes discourse features being encoded in projections of the IP system, and those who defend a split CP approach where different properties are represented by different projections (Cinque 1997; Rizzi 1997; Kayne & Pollock 1998; Pollock et al. 1999; Ambar 1996, 2000; Ambar & Veloso 1999; a.o.). Other linguists have focused on "notions of pragmatic prominence or point of view that are relevant to that interface" (Sells 1987; Zribi-Hertz 1989; Tenny 1998; Speas 2000; Speas & Tenny, this volume) or have explored the idea that syntactic principles constrain pragmatic projections (Speas & Tenny, this volume) in a way similar to "constraints on the mapping from Lexical Conceptual Structure (LCS) to syntactic structure" (Hale & Keyser 1999; Di Sciullo 1999, 2001, 2002).

Curiously then some common conclusions are independently reached (see, for example the hierarchy and structure of EvaluativeP and EvidentialP and EvaluativeP and AssertiveP in Speas and Tenny's analysis (this volume) and in mine, respectively.

2. The interface system – the structure and main assumptions

In previous works I have been assuming that the CP system is split in nature and has the function of establishing the relation between the propositional content of IP and the Discourse in root sentences or between IP and the super-ordinate domain in embedded (as in Rizzi 1997), in other terms, the so-called 'CP' system is the interface between Discourse and IP.[1]

I have also proposed that the projections of this domain encode properties of different nature that I hypothesized to be related to two different aspects of Discourse: Common Ground and Universe of Discourse (Heim 1982; Calabrese 1985, a.o.). The intuitive idea underlying this proposal is that utterances vary according to the type of interaction established in Discourse and that this variation has syntactic effects, say, in word order. Moreover, given that the interactions in the Discourse involve information that has recourse to different pragmatic notions, plausibly universally established and constrained, as in syntactic representations (cf. Speas & Tenny, this volume),[2] and that a given utterance results from the articulation of these Discourse properties with IP properties, variation across languages will depend on the combination of both systems, reflecting the parameters of variation there observed.

One consequence of this hypothesis is that a given language may be "discourse-oriented", (recuperating a traditional notion), regarding either Ground, or UD, or both. Thus, on the one hand, this hypothesis allows for a language to be discourse-oriented in one of those senses due to properties of the IP system and their combination with discourse properties and, on the other hand, it allows distinguishing different properties of discourse with different effects on the syntax of languages. Another consequence is that the fact that the projections form structural domains, as those corresponding to Common Ground and Universe of Discourse, leads to a more articulated and restricted number of projections, probably forming syntactic 'phases' (Chomsky 1999). For concreteness, suppose this 'periphery' has the following structure:

(1) XP $[_{\text{EvaluativeP}}$ $[_{\text{Evaluative'}}$ $[_{\text{AssertiveP}}$ $[_{\text{Assertive'}}$ $[_{\text{XP}}$ $[_{\text{WhP}}$ $[_{\text{Wh'}}$ $[_{\text{FocusP}}$ $[_{\text{Focus'}}$ $[_{\text{XP}}$ $[_{\text{IP}}$

EvaluativeP and AssertiveP are related to Ground, Focus and XP (TopicP) to Universe of Discourse. The main difference between these two domains of projections concerns the relation with the Universe of Discourse itself – in both there is shared information by hearer and speaker (it is why communication is possible), but only in the latter that information is defined by the Universe of Discourse itself. Put differently, when speaker A says to speaker B *o que o Pedro disse!* (what Peter said!), he knows what Peter said and evaluates that, independently of the interaction between speaker and hearer, but if he says, *quero eu* (want I), or *esse livro, já li* (that

book I read), the value of the utterance depends on the discourse interaction with the hearer, in that moment of the speech.[3] Finally the structure presented in (1) is modular. It does not represent one specific speech act, but can enter different ones through the activation or interaction of one or more projections. As we will see from the analysis of interrogatives and exclamatives, one given interrogative may differ from another through the activation of one projection in the former, though not in the latter. Similarly, an exclamative will differ from a certain type of interrogative in at least one property, translated in the system by the activation of another projection. The interpretation of each sentence will then be compositional.

The structure proposed in (1) is here used to answer the questions formulated at the beginning of the introduction. The languages on which I will systematically concentrate are E(uropean) P(ortuguese), French, Hungarian, English, B(razilian) P(ortuguese) and Tetum (East Timor Language). From this point of view, let us start by defining the properties of each projection in our system.

i. XP is the landing site for dislocated elements (see Section 4); I will here assume that XP plausibly is a Topic-like projection.
ii. WhP is an operator projection[4] where wh-phrases move to; its head has two features:[5] *wh* and V-features; wh-movement is triggered by the need of *wh*-feature checking; Verb-Inflection (henceforth V-I) raising is triggered by the need of V-feature checking; in embedded contexts, lexical selection allows the V-feature of the Wh-head to be legitimated.
iii. Wh-phrases have a complex internal structure:[6] there is a scale of referentiality in wh-phrases, due to the existence of semantic features that restrict their domain of reference – from the barest wh-phrase *que*, [que $[e]_{N'-r}$], where [r] = [restricted], to wh-phrases of the form [que N]→ *que livro* (what book), with an intermediate degree of referentiality given by wh-phrases that are more restricted than *que*, but less restricted than [que N]: [que $[e]_{N'+r}$], [+r] = +human → *quem* (who). In languages of the French and EP type wh-structures are sensitive to this scale of referentiality; only [que N] and [que $[e]_{N'+r}$] wh-phrases can check the *wh*-feature; the barest wh-phrase *que* can do it if it is in a spec-head relation with V-I – this is why *que* cannot enter *in situ* wh-questions.
iv. AssertiveP is a projection located above WhP – it projects whenever assertive properties are involved in the construction.[7] We will see that AssertiveP provides a unifying link in the treatment of wh-structures that in a sense have a 'factive' interpretation, namely wh-in-situ, fronted wh-questions without inversion, wh-questions and wh-exclamatives, i.e. questions that lack a full-blown interrogative reading embedded. Only semantically restricted wh-phrases (que N and que e_{+r}) can check Assertive; *que* being [–r] cannot; this is why *que* cannot enter root and embedded wh-questions without inversion or

wh-exclamatives. Languages differ in their capacity of moving wh-phrases or remnant IP to that projection, due to the ±definite status of their wh-phrases (fronted non-inverted wh-questions) or to the properties of their inflection systems (wh-in-situ), respectively. EP, BP, French and Tetum can do it, Hungarian cannot. However, Hungarian allows checking of Assertive by merge of a complementizer (*hogy*). This hypothesis is supported by other related phenomena: a) Hungarian 'interrogatives of confirmation', embedded questions and exclamatives with complementizer *hogy*; b) lack of wh-*in-situ* and of wh-Subject-V order in Hungarian vs. their availability in EP, BP, French and Tetum.

v. EvaluativeP[8] is a projection located above AssertiveP, which codifies the speaker's evaluations (usually expressed by adjectival elements). Only semantically restricted wh-phrases to which an evaluative (adjectival) element is implicitly or explicitly associated can check the evaluative feature; *que* cannot. In wh-exclamatives, both EvaluativeP and AssertiveP project: wh-exclamatives differ then from wh-questions without inversion in that in exclamatives, the wh-element moves higher in the structure to check the [+evaluative] feature, after having checked the assertive feature that codifies the determined/factive status of exclamatives (Grimshaw 1977; Obenauer 1984).

vi. I will assume that all features are strong and that movement is always visible, much in terms of Kayne (1998) and Kayne and Pollock (1998).

As we will see, the analysis suggests a possible unifying link among the structures and the languages described: languages where AssertiveP is prominent will display a tendency for moving constituents to that projection, i.e. for having wh-*in-situ*, *wh*-structures without inversion and complementizer forms, which lexicalize the head of AssertiveP (BP and Tetum); languages where AssertiveP is not prominent will exhibit rather absence of wh-*in-situ*, obligatory inversion (Hungarian); mixed languages will have common behaviors to both types of languages (French and EP).

3. The internal structure of wh-phrases

Di Sciullo (2001) and Di Sciullo (2003) "argue for an internal Op variable articulated restrictor structure for wh-words on the basis of the properties of Romance and Italian in particular", relating the syntactic behavior of wh-constructions to the morphology of wh-words involved.

In different works (Ambar 1983, 1988; and Ambar & Veloso 1999), I have claimed that the internal structure of wh-phrases plays a role in the phenomenon of inversion in wh-questions. This is well illustrated by EP and French that use more than one form for the [–animate] wh-element, whose representative in English is

what (other well studied languages also exhibit a unique [–animate] wh-form: cf. Hungarian *mi*, Tetum *sa*, German *was*, Dutch *wat*, Hindi *kyaa*, etc.):

(2)	EP	French
	que	que
	o que (quê, o quê)	ce que (quoi)

Neither in EP nor in French can the form *que* occur in root or embedded wh-questions without inversion. Alternatively, EP has the particular form *o que* that dispenses with inversion in embedded questions, and marginally in root. In modern BP, this is the unique [–animate] wh-form available; it dispenses with inversion in root and in embedded contexts. The tonic forms *o quê* and *quê* are used in wh-in-situ contexts in EP and in BP, the form *quê* requiring to be preceded by a preposition, except in full echo questions. The equivalent of *o que* in French is *ce que* for embedded and *quoi* for wh-in-situ – there is no equivalent for root fronted wh-questions.[9]

The facts above and the observation that other wh-phrases, namely wh-phrases of the form *que livro*/*quel livre* (what/which book) and *quem*/*qui* (who), behave differently with respect to inversion led to the idea that obligatory vs. optional adjacency between the wh-phrase and the inflected verb in wh-questions should involve the internal structure of the wh-phrase (Ambar 1983, 1988). In these works it was proposed that wh-phrases have a syntactically complex structure, either of the form (3a) with a phonetically realized Noun, or of the form (3b) with an empty category [±r], in which case the empty N (or N') can be unrestricted (3b′) or have semantic features (3b″) that spell out differently and give rise to different wh-phrases, exemplified in:

(3)				
	a.	[Que [N]]		
	b.	[Que [e] $_{\pm r}$]		
	b′.	que [e] $_{-r}$	→ que	(what)
	b″.	que [e] $_{+human}$	→ quem	(who)
		que [e] $_{+time}$	→ quando	(when)
		que [e] $_{+space}$	→ onde	(where)
		que [e] $_{+specific}$	→ o que	('the' what)

r = feature drawn from the set R of features which restrict the domain of reference of a category; for wh-phrases of the type of *who*, *where*, *when*, [e] in (3b″) will be positively marked [+r], where [+r] would stand for [+human], [+place], [+time], respectively.

It was assumed that there is a three-way scale in the content of the wh-phrases in (3) – from $[e]_N$–r, to $[e]_N$+r, to lexical N – and that the less the category has content, the stronger the identification[10] has to be. In root sentences, both [–r] and [+r] elements had only one way to be identified, namely through V-Infl raising –

wh-phrases with a full noun didn't require inversion because they didn't contain any empty nominal element; in embedded contexts, government by the main verb would suffice for [+r] elements (*quem*) but not for [–r] ones (*que*). This explained why the verb had to raise in embedded interrogatives only in the context of *que*.

Aiming at extending this analysis to the equivalent data in other languages and at updating its architecture in minimalist terms, Ambar and Veloso (1999)[11] proposed a finer internal structure for wh-phrases, with the following representation:

(4) $[_{QuP}\ [_{Qu'}\ [_{DP}\ [_{D'}\ [_{NP}\ [\ e\ ]_{\pm r}/\ N]]]]]$

In this analysis, *o* in *o que* and *l* in *quel* in EP and French, respectively, are the definite articles. The feature in the empty category functions as a restrictor and raises to QuP were it incorporates into *que* whenever the definite article is not realized.

Di Sciullo (1999, 2001) has developed a compatible analysis, illustrated by the following structure, where the operator/variable (Op, x) and the Restrictor (y (R z)) split in two layers:

(5) (4) $[_{xOp}\ \mathrm{Op}\ x\ [_{R}\ y\ [\ R\ z\ ]]]$ (Di Sciullo 2001)

If wh-phrases are of this form, then we can think of variation across languages as a function of the way the restrictor operates inside the wh-phrase itself, combined with properties of the determiner system. We will see that this is probably the case and that this issue has consequences on the behavior of wh-questions and wh-exclamatives regarding the three aspects we will deal with.

Let us now take those three aspects – wh-movement, inversion, and complementizers – and consider each one in turn, first applied to wh-questions and then to wh-exclamatives.

4. Wh-movement – Wh-questions

4.1 Typology

Regarding wh-movement in root wh-questions, 4 types of languages can be considered:

i. languages where wh-phrases obligatorily occur *in situ*, i.e. languages that (apparently) lack overt wh-movement, like Chinese:

(6) a. Hufei mai-le shenme (ne)?
Hufei buy-PERF what PRT
What did Hufei buy?

b. *Shenme Hufei mai-le

c. *Shenme mai-le Hufei

ii. languages where wh-phrases cannot occur *in situ*, like Hungarian:[12]

(7) a. *János megvett mit?
John part-bought 3/SG what ACC
What did John buy

b. Mit vett meg János?
What ACC bought 3/SG part John
What did John buy?

iii. languages that allow for wh-*in-situ* just in case one wh-phrase has been moved, as English:

(8) a. Who bought what?
b. *John bought what?
c. What did John buy?

iv. mixed languages, i.e languages that allow both constructions (e.g. French, EP, BP, Tetum). Some (micro) variation is however at stake: BP and Tetum allow overt wh-movement, but, contrary to EP, wh-in-situ are more frequent (Lopes Rossi 1996 for BP):

	EP		*French*
(9)	O João foi onde? John went where	(10)	Jean a vu qui? John saw who

	BP		*Tetum*
(11)	Você vai onde? You go where	(12)	O hasoru se? You met who

4.2 Wh-in-situ – different strategies

There is abundant literature on wh-in-situ questions since at least the 70's. The classic approaches could be classed in three main views: (i) the wh-element is in its original position (Baker 1970); (ii) the wh-phrase undergoes LF movement (Chomsky 1977; Huang 1982, etc.); (iii) D-linked wh-phrases do not undergo LF movement; non-D linked wh-phrases do (Pesetsky 1987). Recently an alternative treatment of wh-in-situ has emerged from some analyses: in wh-in-situ the wh-element moves and IP undergoes remnant movement to a position that it is higher than the landing site of the wh-element (see Pollock, this volume; Uribe-Etxebarria 2000; Ambar et al. 1998; Ambar & Veloso 1999; Ambar 2000).

The paradigm above shows that languages of the French and EP type can choose one of two strategies to construct a wh-question: (i) by fronting the wh-phrase or (ii) by leaving it in its base position. Theoretically, this optionality poses a problem for the minimalist program – the system disallows optional operations.[13] Empirically, the question is to understand how those two options interpretatively differ, a question addressed in detail in Obenauer (1994).

4.3 Wh-in-situ – the claim

For the so-called wh-in-situ, I assume that: (i) wh-phrases always raise to the same projection (WhP); (ii) licensing applies uniformly in fronted and in wh-in-situ questions; (ii) the *in situ* effect is the result of ulterior remnant IP movement to AssertiveP; (iii) elements that appear at the right of the wh-phrase have been previously topicalized (or focalized).

(13) and (14) illustrate how the system proceeds, without and with topicalization, respectively:

(13) a. O Pedro encontrou quem?
Peter met who

b. (i) XP $[_{AssertiveP}$ $[_{Assertive'}$ $[$XP $[_{WhP}$ quem$_i$ $[_{Wh'}$ $[_{FocusP}$ t_i $[_{Focus'}$ $[$ XP $[_{IP}$ o Pedro encontrou t_i $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$

(ii) XP $[_{AssertiveP}$ $[$O Pedro encontrou $t_i]_k$ $[_{Assertive'}$ $[$XP $[_{WhP}$ quem$_i$ $[_{Wh'}$ $[_{FocusP}$ t_i $[_{Focus'}$ $[$ XP $[_{IP}$ t_k $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$

(14) a. O Pedro ofereceu o quê à Ana?
Peter offered what to Ana

b. (i) XP $[_{AssertiveP}$ $[_{Assertive'}$ $[$XP $[_{WhP}$ o quê$_i$ $[_{Wh'}$ $[_{FocusP}$ t_i $[_{Focus'}$ $[_{TopP}$ à Ana $_m$ $[_{Top'}$ $[_{IP}$ o Pedro ofereceu t_i t_m $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$

(ii) XP $[_{AssertiveP}$ $[$O Pedro ofereceu t_i $t_m]_k$ $[_{Assertive'}$ $[$XP$[_{WhP}$ o quê$_i$ $[_{Wh'}$ $[_{FocusP}$ t_i $[_{Focus'}$ $[_{TopP}$ à Ana $_m$ $[_{Top'}$ $[_{IP}$ t_k $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$

As illustrated in (13b) he wh-phrase *quem* moves to spec,WhP to check the wh-feature on its head. At this point, an option would be to move V-I to check the V-feature, but then we would obtain a fronted wh-question. In wh-in-situ, another operation is available: in the numeration IP, more precisely its head, has a [+assertive] feature. Thus, AssertiveP projects and the remnant IP moves to its spec to check [+assertive]. How is the V-feature in WhP checked? I will assume that the projection of the higher domain (Assertive P) creates a configuration of the lexical selection type and allows licensing of the V-feature on the head of the lower domain, just as in embedded questions.[14] In 1. (iii), we stated that only wh-phrases of the form [que N] and [que $[e]_{N'+r}$], could check the wh-feature; thus we predict that in wh-in-situ, whenever the wh-phrase moved to spec, WhP is *que* the sen-

tence will be ill-formed – being [–r] *que* wouldn't be able to check the wh-feature; this is a good prediction since *que* cannot occur in wh-in-*situ* questions (see fn. 9):

(15) a. A Maria viu *quê/*o quê*/quem/que livro?
Mary saw what/the what/who/what book
b. Marie a vu *que/quoi/qui/quel livre ?
Mary saw what/what/who/what book

In order to be able to check the wh-feature, *que* needs to be in a spec-head relation with I – *que* alone is not a full wh-phrase (only wh-phrases can check the wh-feature); *que* would be in a spec-head relation with I in a fronted wh-question, but not in a wh-in-situ, where V-I does not raise to WhP, rather it remains inside IP to ensure checking of the assertive feature when remnant IP is moved. The prediction that *que* (*quê*) cannot occur in wh-in-situ is derived in a unified way. A reviewer observes that the assumption that *que* needs to be in a spec-head relation with I (V-I) seems like a stipulation and wonders, "in what sense specified? Does it acquire a restrictor?" The reviewer still observes, "Intuitively it is difficult to understand why a V-I head should be able to license such referential properties in its spec." In an earlier version of this paper, I assumed that +Q in WhP had two features: N and V features. Wh-movement was triggered by the need for N-feature checking, V-movement by the need for V-feature checking. In this view it was easier to understand why *que* has a special status as far as the possibility of remaining in *situ* goes: being under-specified for nominal features *que* would be unable to check the N-feature in WhP, it would become specified through its relation with inflection (V-I), therefore able to check the feature. In the absence of V-I movement, the case of wh-in-situ, *que* goes on under-specified and unable to check N-features. The fact that other categories besides N (PPs and Advs) undergo wh-movement (see fn. 5) led me to replace N-feature by wh-feature. Thus, 'specified' here means that *que* acquires the status of wh-phrase, necessary for wh-checking, plausibly through its relation with I. It acquires nominal features, not a referential restrictor. As the reviewer observes it would be difficult to understand why a V-I head should be able to license such referential properties. Evidence for this is provided by wh-questions without inversion, where *que* clearly is unable to check Assertive due to lack of such referential properties even after having established a spec-head relation with V-I (see Section 4.4).

In this view then the difference between a fronted wh-question and a so-called wh-in-situ resides in the presence of one operation more in the latter: remnant IP movement, optionally with previous topicalization (focalization). This analysis makes a prediction concerning acquisition: wh-in-situ have more steps than fronted wh-questions, therefore the former should be acquired later. The predic-

tion seems to be born out.[15] Note that this fact has no explanation in the analyses aforementioned (see fn. 13).

At the end of last section, we addressed the question how these structures interpretatively differ from their equivalents with visible wh-movement. I have argued elsewhere (fn. 1) that, interpretatively, wh-in-situ differ from wh-questions involving a visibly moved wh-phrase in that in the former, the speaker 'knows more' than he does in the latter (in the spirit of Obenauer 1994). In other terms, in (17) the speaker knows that *John bought something*, he wants to know *what*. This is why for some speakers there is a contrast between (16b) vs. (17b); the latter is not a felicitous answer to (17a):

(16) a. Que comprou o João?
what bought John
b. Nada.
Nothing

(17) a. O João comprou o quê?
John bought what
b. ??Nada (Ambar et al. 1998)

Chang (1997) apud Cheng & Rooryck (2000) pointed out the same contrast for French. Let us say that these structures are associated with a 'stronger presupposition', given by Common Ground.[16] This 'strong presupposition' is translated in our system by checking of AssertiveP, just as in other echo-like structures, e.g. fronted wh-questions without inversion, as we will see. Further evidence for (13)–(14) is provided by the prosody of wh-in-situ, in two ways: (i) the intonation of *wh-in-situ* differs from visibly fronted wh-questions, a fact that in my analysis may be interpreted as being the result of remnant IP movement to AssertiveP – the prosodic relation between these structures and others involving AssertiveP being necessarily established;[17] (ii) topicalization in (14) also provides empirical evidence for the analysis proposed: only apparently the canonic Portuguese word order given by the declarative clause (18) is reproduced in the wh-*in-situ* (19):

(18) O Pedro ofereceu o livro à Ana.
Peter offered the book to Ana

(19) O Pedro ofereceu o quê à Ana?

In (18) the phonic segment *o livr'à Ana* has no pause between *livro* and *à Ana*, whereas in (19) there is a pause between *o quê* and *à Ana* (**o qu'à Ana*), a fact plausibly related with the tonic form of the *in situ* wh-phrase. Neither in an analysis assuming that the wh-phrase has stayed *in situ* in (19), nor in the different versions of LF movement is this contrast accounted for. In our analysis the contrast follows

straightforwardly: the order in (19) is not the basic one – *à Ana* is topicalized and the wh-phrase is in the position where wh-phrases are generally licensed.

Another empirical fact supporting my claim is provided by the following contrasts:

(20) Ofereceu –lhe o quê, o Pedro/?*ele/*alguém?
Offered him what, Peter/he/someone

There are restrictions on topicalization of pronouns and indefinites in Portuguese (cf. Kayne & Pollock 1998; Ambar & Pollock 1998). So the ungrammaticality in (20) is expected.[18]

Finally, the analysis makes the desired predictions concerning clitic placement. Wh-constructions trigger *proclisis* in Portuguese (cf. 21) as largely discussed in the literature (Duarte 1983; Rouveret 1996; Martins 1994; Duarte & Matos 1995, a.o.); however when the wh-phrase is post-verbal *enclisis* is obligatory – (22):

(21) a. Que livro lhe ofereceste?
what book him offered
b. *Que livro ofereceste-lhe?

(22) a. *O João lhe ofereceu o quê?
John him offered what
b. O João ofereceu-lhe o quê?

I just want to observe that whatever analysis of clitics we assume, enclisis in wh-in-situ is expected in our analysis due to remnant IP movement – clitics behave as they do in root declarative sentences.

The analysis proposed so far raises different questions concerning other related phenomena. One regards wh-in-situ in embedded, another multiple wh-questions. Although a deep treatment of both issues is far beyond the scope of this article, I will make a few observations.

4.4 Embedded wh-in-situ

Chinese and Tetum allow wh-in-situ in embedded domains. In EP this is also possible. As for French, the speakers consulted hesitate in their judgments, though in the unmarked case it seems that embedded wh-in-situ in French are more difficult to get than in EP (Cheng & Rooryck 2000 assume EP clearly contrasts with French on this respect (see their fn. 16)). Though, on the one hand, I have no solid empirical investigation to construct a general hypothesis on embedded wh-in-situ and, on the other hand, embedded wh-in-situ involve complex issues on complementation and selection that I cannot deal with here, I will point out some properties of these constructions in EP and will see how they fit our analysis. EP allows wh-in-

situ in embedded sentences to declarative and factive verbs and, more marginally, to interrogative verbs, as illustrated in (23)–(25) below:

(23) O Pedro disse que a Ana foi onde ? /* .
Peter said that Ana went where

(24) O Pedro lamenta que o João tenha dito o quê ? /* .
Peter regrets that João have said what

(25) ?O Pedro não sabe se a Ana foi onde ? /* .
Peter wonders whether Ana went where

However, as shown by the prosodic contrasts signaled in (23)–(25), through the graphic opposition ? /* ., these sentences are possible only if there is interrogative intonation and the wh-phrase has scope on the whole sentence. They contrast then with indirect wh-questions exemplified in (26), where the intonation contour is not interrogative and the wh-phrase has scope just on the embedded domain:

(26) O Pedro não sabe onde a Ana foi ? /* .
Peter wonders where Ana went

If an interrogative intonation is assigned to sentence (26), it becomes a yes/no question, as in (27):

(27) O Pedro não sabe onde a Ana foi ?
Peter wonders where Ana went

As expected, the answers to questions in (23)–(25) confirm the interrogative scope each sentence receives. Thus for these questions the normal answers will be respectively (28)–(30):

(28) (O Pedro) disse que (a Ana) foi ao cinema
Peter said that Ana went to the cinema

(29) (O Pedro) lamenta que (o João) tenha dito um disparate
Peter regrets that John have said nonsense

(30) (O Pedro) não sabe se (a Ana) foi à ópera
Peter wonder whether Ana went to the opera

As for (26) and (27), while the former has no answer given the absence of interrogative intonation, the felicitous answer to (27) will be (31):

(31) Sabe, sabe (sabe que ela foi ao cinema)
/ Não, não sabe
(he) knows, /he) knows ((he) knows that she went to the cinema)
/ No, (he) doesn't know

This is a typical answer to a yes/no question. Still note that the answers in (28)–(30) cannot be of this type, i.e. sentences below are not possible answers to (23)–(25):

(32) *Disse/não disse
(he) said/said not

(33) *Lamenta/não lamenta
(he) Regrets/doesn't regret

(34) *Sabe/não sabe
(he) knows/(he) doesn't know

The ungrammaticality of (32)–(34) as answers to (23)–(25) shows that these questions are not of the yes/no type, but rather of the wh-type, this meaning that the wh-phrase only apparently is in the embedded domain. In other terms, these wh-structures behave as wh-questions with fronted wh-phrases in the matrix domain, i.e. as sentences (35)–(37) below. Furthermore sentences in (28)–(30) also are felicitous answers to questions (35)–(37), where the wh-phrase originates in the embedded clause and ends up in the matrix domain:

(35) Onde disse o Pedro que a Ana foi?
where did Peter say that Ana went

(36) O que lamenta o Pedro que o João tenha dito?
What does Peter regret that John have said

(37) ?Onde não sabe o Pedro se Ana foi?
Where doesn't know Peter whether Ana went

Summarizing, both in (23)–(25) and (35)–(37) the wh-phrase is in the matrix domain, a fact that our analysis accounts for if we assume that remnant IP pied-pipes the embedded sentence when it moves to AssertiveP.[19] (38) below would be the derivation of (23):

(38) i. XP $[_{\text{AssertiveP}}$ $[_{\text{Assertive'}}$ $[$XP $[_{\text{WhP}}$ onde$_i$ $[_{\text{Wh'}}$ $[_{\text{FocusP}}$ t$_i$ $[_{\text{Focus'}}$ $[$ XP $[_{\text{IP}}$ o Pedro disse $[$ t$_i$ $[$que $[$a Ana foi t$_i$ $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]]]]$

ii. XP$[_{\text{AssertiveP IP}}$[o Pedro disse[t$_i$[que[a Ana foi t$_i$]]]]$]_k$ $[_{\text{Assertive'}}$[XP$[_{\text{WhP}}$ onde$_i$ $[_{\text{Wh'}}$ $[_{\text{FocusP}}$ t$_i$ $[_{\text{Focus'}}$ $[$ XP $[$ t$_k$ $]$ $]$ $]$ $]$ $]$ $]$ $]$ $]$

As in root questions previous topicalization derives sentences of the type (39):

(39) O Pedro disse que Ana ofereceu o quê à Joana.
XP[$_{\text{AssertiveP}}$ $_{\text{IP}}$[o Pedro disse[t_i[que[a Ana ofereceu t_i t_m]]]]$_k$[$_{\text{Assertive'}}$[XP [$_{\text{WhP}}$ o quê$_i$ [$_{\text{Wh'}}$ [$_{\text{FocusP}}$ t_i [$_{\text{Focus'}}$ [$_{\text{TopP}}$ à Joana$_m$ [$_{\text{IP}}$ t_k]]]]]]]]]

Finally, note that the weak wh-island status in (37) is maintained in the equivalent embedded wh-in-situ (25), a desired result. In both the wh-phrase has passed through a filled WhP. I will assume that *se* (the interrogative complementizer) has checked the wh-feature by merge; therefore the wh-phrase *onde* does not need to check (thus cannot) the embedded wh-feature, but can check another feature. This is the case of (37) where it has visibly raised to check the wh-feature in the matrix WhP and of (25) where overt wh-movement to the matrix domain has also applied, the apparent *in situ* effect being the result of subsequent remnant IP movement. The answer to (27), in (31), is also expected, given that it concerns a matrix yes/no question, in which the wh-phrase has visibly moved to the embedded Comp, though not to the matrix WhP. The interrogative intonation in (27) is assigned to the sentence by means of the yes/no question strategy. Similarly, answers (32)–(34) are ruled out for questions (23)–(25) because here the wh-phrase has been moved to the matrix WhP, making the structure a direct wh-question, not a yes/no one.

4.5 Multiple wh-questions

The complex behavior of multiple wh-questions is far beyond the scope of this work – any general approach to this phenomenon has to consider Multiple Fronted Languages, described in detail in Rudin (1988) and recently in Boskovic (1999). I will just make a few observations on the predictions of my system on EP multiple wh-questions. In EP multiple wh-questions are of the form in (40):

(40) O Pedro ofereceu o quê a quem?
Peter offered what to whom?

The basic structure of (40) is similar to (14). However, in (40) the question arises of what position the second wh-phrase occupies, if wh-phrases cannot be topics.[20] The relation between wh-phrases and Focus is less questionable under current assumptions. Thus, for the time being let us assume that in (40) the second wh-phrase raises to FocusP,[21] as in (41):

(41) [$_{\text{AssertiveP}}$[$_{\text{Assertive'}}$[XP[$_{\text{WhP}}$ o quê$_i$[$_{\text{Wh'}}$[$_{\text{FocusP}}$ a quem[$_{\text{Focus'}}$ [XP[$_{\text{IP}}$ o Pedro ofereceu t_i t_k]]]]]]]]]
[$_{\text{AssertiveP}}$[o Pedro ofereceu t_i $t_{k\ j}$ [$_{\text{Assertive'}}$[XP[$_{\text{WhP}}$ o quê$_i$[$_{\text{Wh'}}$[$_{\text{FocusP}}$ a quem [$_{\text{Focus'}}$ [XP [$_{\text{IP}}$ $_t$ t_j]]]]]]]]]

Under (41), we expect the focus intonation assigned to the wh-phrase in FocusP to be different from the one the wh-phrase receives in WhP.

Ordonez (1997) noted certain restrictions regarding the relative order of the two wh internal arguments, corresponding to the following Portuguese pair:

(42) a. ?A Maria deu a quem o quê?
Mary gave to whom what
b. A Maria deu à Ana o quê?

For EP I wouldn't say that (42a) is marginal and (42b) fine. According to my judgment, and according to other native speakers consulted, (42a) and (42b) rather differ in their prosody. Under my analysis this is plausibly due to the different positions the internal arguments occupy in the structure: the two wh-phrases in (42a) – *a quem* and *o quê* – are respectively in WhP and in FocusP whereas in (42b) *à Ana* is inside remnant IP (where no pause is expected) in Spec AssertiveP and *o quê* in WhP.

Assuming this proposal for wh-in-situ, the following question is: what are the parameters responsible for in the other types of languages described above? Regarding Hungarian, one possibility would be to consider that AssertiveP is not projected. There is however empirical evidence to assume that it does project. In Hungarian, wh-questions lacking a full-blown interrogative reading – interrogatives of confirmation, which involve AssertiveP in our system (cf. Section 4), are available, but then the complementizer *hogy* occurs:

(43) Hogy mennyi pénzt fizettem ki ezért a
That how_much money_ACC paid1PSG PART. this_for art
házért?
house_for

Suppose in (43) the wh-phrase moves to WhP and *hogy* checks assertive by merge. The resulting sentence will be a wh-question with an assertive feature, i.e. a question without a full blown interrogative reading. Now, the question turns out to be why there are no wh-in-situ in Hungarian, or in our terms why the remnant IP movement strategy, to spec of AssertiveP, is unavailable to derive *wh-in-situ* in Hungarian. The hypothesis I would like to explore is that the IP head is too 'heavy', in a sense to be made clearer in future work, and blocks IP movement. Actually, contrarily to Chinese,[22] inflection in Hungarian carries different values (agreement, Tense, definite/indefinite object agreement). Consider now BP and Tetum. Again the availability of wh-in-situ correlates with the status of Inflection: their Inflections are less 'heavy' than in Hungarian. In Tetum there is no Inflection morphology (as in Chinese), and BP is loosing different inflection specifications, e.g. agreement:

(44) a. João sosa livru
John comprar/bought/buys the book
b. João sosa ona livru
John buy *past* the book

(45) Você/tu/ele comprou o livro
you/you/he bought the book

The diachronic work by Lopes Rossi (1996) has shown that the use of wh-in-situ in BP has increased in the XX century, in a way with no parallel in EP. In our system, this fact is related with another change in the BP system: the loss of inflection specifications. Note that this relation is not established in other accounts of wh-in-situ. Once Inflection is the locus of different values, the trigger of the inflection 'heaviness' can vary according to the prominent value in each language.

If the parameter is to be seen in the heaviness of Inflection, one question arises: wouldn't the parameter proposed predict languages with 'light inflection' to have wh-in-situ – English being a case in point? As is well known, English does not have wh-in-situ questions, with an interrogative interpretation, though it allows wh-in-situ with a full echo interpretation. As we will see in what follows, the analysis here presented distinguishes 2 types of echo: *full echo* (the case of English wh-in-situ) and *echo-flavor* i.e. an intermediate degree of echo, structures that have one of the properties of full echo – e.g. they lack a *full* blown interrogative interpretation – though not all the properties (contrarily to full echo, they still are questions). I will not deal with full echo questions here (but see fn. 16). Thus, why doesn't English have wh-in-situ questions of the EP and French type? Traditionally EP has been considered a 'discourse-oriented' language, English not. This notion can however be misleading. As far as English allows communication, it must have some 'discourse' properties, namely Ground properties of the Assertive and Evaluative type or UD abilities as Focus and Topic. Thus, suppose that English does have AssertiveP, as Hungarian, French, EP, etc. The question is why Remnant IP movement to Spec AssertiveP is unavailable with the consequence of lack of wh-in-situ questions. Apparently we somehow arrive to a paradox: because of its heavy inflection, Hungarian does not have remnant IP movement to spec, AssertiveP, the same result as in English that, however, has a light inflection.

Recall that as mentioned above, given that inflection is the locus of different values, in one language heaviness may be defined with respect to value x and in another with respect to value z, e.g. in one given language agreement may be the relevant value but in another it may be Tense or Aspect, or something else. Moreover, English behaves differently from Hungarian regarding other aspects that may also be involved. One is V-movement: Hungarian allows it, English not. One possibility would then be to rely this parameter to absence vs. presence of wh-in-situ in English. Note that -heaviness and +V-movement are then necessary conditions,

though not sufficient ones. We saw that what licenses AssertiveP in wh-in-situ is remnant IP, more precisely its head – V-I. Suppose further that AssertiveP has to be licensed by an Event related element, V and V-I being possible licensers (see fn. 14). Thus, assuming Inflection inherits Event specifications from the Verb, in a language having Inflection (the IP head) but no V-movement (Pollock 1989), remnant IP movement will not license AssertiveP, given that its head is not Event related, therefore wh-in-situ will be excluded, e.g. English. In languages lacking Inflection morphology, the Verb takes over the role of Inflection, e.g. Tetum, Chinese. This is a strong hypothesis that will be confirmed or infirmed by future work on other languages.

The hypotheses made for embedded wh-in-situ and for multiples in EP also follow for English. Embedded wh-in-situ are not possible in English for the same reason they are not in root – lack of V-movement to Inflection prevents licensing of Assertive from happening through the remnant IP movement strategy to AssertiveP. As for multiples, our system also makes the good prediction: English only allows wh-in-situ in structures where one wh-phrase has been moved to WhP, because these structures do not involve remnant IP movement to Assertive. In sentences like:

(46) Who saw what?

the first wh-phrase checks WhP and the second remains in its original position, or in FocusP as we saw in (42). Therefore the wh-in-situ in (46) constitutes no exception to the English system.

Let us now turn to the generalization the data above suggest: why do languages (i) that lack wh-in-situ tend to lack non-inverted fronted wh-questions (Hungarian), (ii) that prefer wh-in-situ to fronted wh-questions, also prefer non-inverted fronted wh-questions (BP, Tetum) and (iii) that have both options for wh-movement, also have both options for inversion in fronted wh-questions (EP, French). I will argue that AssertiveP provides the unifying link. We will then return to wh-in-situ to understand why *in situ* wh-exclamatives are unavailable.

5. Inversion – wh-questions

5.1 Different strategies

It is now a well-known fact that different languages manifest an adjacency effect between the wh-phrase and the inflected verb in root questions. Since Kayne and Pollock's (1978) pioneer work, different strategies have been proposed to explain the phenomenon. We could consider two main approaches: (i) adjacency is due to V-Infl raising to the C-system (Torrego 1984; Rizzi & Roberts 1989; Rizzi 1991; Ra-

poso 1994; Uriagereka 1995; Ambar 1983, 1988, a.o.) and (ii) adjacency should rather be seen as the result of wh-operator raising to Spec-IP (Dobrovie-Sorin 1987, 1994; Bonet 1990; Contreras 1991; Vallduví 1992; Hulk 1993; De Wind 1995; Drijkoningen 1997; Zubizarreta 1998; Barbosa 2000, a.o.).

The short character of this paper precludes a deep comment to all aspects involved in one or another perspective. Crucially, my main goal is to extend the study of inversion to a larger wh-empirical domain and to reach a system of articulated answers to the questions formulated in the introduction.

5.2 Typology

Considering inversion in wh-questions 3 types of languages seem to exist:

i. languages where inversion is always obligatory, irrespective of the form of the wh-phrase, e.g. Hungarian:

(47) a. Mit vett meg János?
what ACC bought 3/SG PART John
What did John buy?
b. *Mit János vett meg/meg vett?

(48) a. Melyik könyvet olvasta el János?
which book ACC read 3/SG PART John
Which book did John read?
b. *Melyik könyvet János olvasta el/elolvasta?

ii. languages where inversion is impossible, e.g. *Tetum* (*maka* = licensing particle)

(49) *Se hasoru o?
who met you
who did you meet?

(50) Se maka o hasoru?
who ENF.PART. you met
who did you meet?

BP (in the unmarked case; *que* is not available anymore in BP – *o que*, the [que[e]$_{+r}$] form, replaces it)

(51) a. *?Que livro/*?o que/*que comprou você
what book/the what/what bought you

(52) a. Que livro/o que/*que você comprou?
which book/the what/what bought you

iii. languages where inversion coexists with absence of inversion in given contexts – EP, French:

(53) a. Que livro/quem/que viu o Pedro?
b. Quel livre/qui/qu'a vu Pierre?
what book/who/what Peter bought

(54) a. *Que livro*/?*quem*/**que* o Pedro viu?
b. *Quel livre*/?*qui*/**que* Pierre a vu?
which book/who/what Peter bought

5.3 Presence of inversion – 'pure' wh-questions

The proposed system uniformly derives fronted wh-phrases too, with and without inversion. Consider first the structures with adjacency between the fronted wh-phrase and V-I: the wh-phrase moves to Spec,WhP for the same reason it does in wh-in-situ – to check the *wh*-feature of WhP. The difference resides in the way the V-feature is licensed: in wh-in-situ through AssertiveP, which codifies the property that interpretatively distinguishes *wh-in-situ* from fronted *wh*-phrases – the stronger presupposition; in 'pure' fronted wh-questions, AssertiveP is not projected; therefore checking of the V-feature triggers V-I raising to the WhP head, as illustrated in (55b) below:

(55) a. Que comprou o Pedro/ele?
What bought Peter/he
b. (XP) $[_{WhP}$ que$_i$ $[_{Wh'}$ comprou$_v$ $[_{FP}$ $[_{F'}$ t_v $[_{IP}$ o Pedro/ele $[_{I'}$ t_v t_i]]]]]]

Now, *que* (the barest wh-phrase [–r]) is in a spec-head relation with V-I; therefore it becomes specified and able to check the *wh*-feature (recall discussion under (15); the restriction on *que* observed in *wh-in-situ* disappears. As illustrated in (55b), the derivation stops in WhP; we get then what I will call a 'pure' wh-question.[23] The system uniformly applies to Hungarian. Compare (55b) above with (56b) below:

(56) a. Mit vett meg János?
b. (XP) $[_{WhP}$ mit$_i$ $[_{Wh'}$ vett$_v$ $[_{FP}$ t_i $[_{F'}$ t_v $[_{IP}$ meg t_v János t_i]]]]]

Both in Hungarian and in Portuguese a dislocated element can precede the wh-phrase:

(57) a. János mit vett meg?
John what bought part
b. O João que comprou?
The John what bought?

(58) a. [$_{XP}$ János $_j$ [$_{X'}$ [$_{WhP}$ mit $_i$ [$_{Wh'}$ vett $_k$ [$_{FocusP}$ t $_i$ [$_{Focus'}$ t $_k$ [$_{IP}$ meg t $_k$ t $_j$ t $_i$]]]]]]]

b. [$_{XP}$o João $_j$ [$_{X'}$[$_{WhP}$ que$_i$ [$_{Wh'}$ comprou $_k$ [$_{FocusP}$ t $_i$ [$_{Focus'}$ t $_k$ [$_{IP}$ t $_j$ t $_k$ t $_i$]]]]]]

5.4 Absence of inversion – wh-questions ('echo flavor')

Consider paradigm (53)–(54). In previous accounts of these contrasts, I claimed that only wh-phrases of the form [que N] (*que livro*) could enter root non-inverted wh-questions; bare wh-phrases [que e_{+r}] (*quem*, *onde*) could dispense with inversion in embedded contexts, but not in root ones; the barest form [que e_{-r}] required inversion in all cases. A finer analysis of the data reveals that the *echo* vs. *non-echo-flavor* interpretation of each sentence is crucial for a deeper understanding of these facts: lack of inversion in root *wh*-questions originates *echo-like* structures i.e. *wh*-questions lacking a full-blown interrogative reading. This is why in the absence of inversion there is a special intonation contour on the sentence and on the *wh*-phrase in particular, translated by the *italic* in (54) above. Notice, however, that although most speakers accept the non-adjacency illustrated in (54), they prefer the sentences where the wh-phrase has a phonetically realized N and completely exclude the barest wh-phrase from this context. It seems then that the scale of grammaticality regarding absence of inversion reflects the scale of referentiality in the content of the wh-phrase (cf. Section 1-iv and Section 2): the more the wh-phrase is restricted, the more the non-inverted wh-question is grammatical.[24]

I will assume that this *echo-flavor* is to be interpreted as the result of further wh-movement to AssertiveP. If this movement is combined with movement of the subject to XP, we derive (59):

(59) [$_{Assertive}$ que livro$_i$[$_{Assertive'}$[$_{XP}$ o João$_j$[$_{X'}$[$_{WhP}$ t$_i$[$_{Wh'}$ comprou$_v$ [$_{FP}$[$_{F'}$ t$_v$[$_{IP}$ t$_j$[$_{I'}$ t$_v$ t$_i$]]]]]]]]]]]

Again only sufficiently restricted wh-phrases can check [+assertive]. The ungrammaticality in (54) follows: *que* cannot check assertive because it is not sufficiently restricted. Recall that AssertiveP being a projection that codifies "truly or falsely, how things are" (cf. Searle 1979 and fn. 8), or what the speaker knows, naturally cannot be checked by an unrestricted element.

We then derive the impossibility for the barest wh-phrase to occur in fronted non-inverted wh-questions and in wh-in-situ in a unified way. Notice however that we are not assigning the same status to these two structures, exemplified in (54) and (13) respectively. In fronted non-inverted wh-questions, the element that has an assertive feature and that is moved to check Assertive is the wh-phrase itself, whereas in wh-in-situ, it is the remnant IP. This is expected to have consequences on inter-

pretation: in non-inverted wh-questions, the speaker 'knows more' on the content of the wh-phrase, in wh-in-situ, he 'knows more' on the content of remnant IP. Technically *que* is excluded from these structures for two different reasons too: in non-inverted questions, it is unable to check Assertive, due to its unrestricted status, whereas in wh-in-situ, it is unable to check WhP due to its defective status as wh-phrase (see discussion under (15)). We understand now why no lexical material can intervene between the *wh*-phrase and the verb in pure interrogatives, as in (60) below, where *que* must be in WhP, contrarily to echo-like *wh*-questions (61), where the wh-phrase is in AssertiveP: only in the latter is there an available landing site for that lexical material (cf. XP in (59)):

(60) **Que* na tua opinião o João encontrou ?
what (in your opinion) the John found

(61) a. *Que livro*/*Quem* na tua opinião o João encontrou ?
which book/who in your opinion John met
b. *Onde* na tua opinião o João terá ido ?
where in your opinion John has gone

Thus, wh-questions *without* inversion result from a conspiracy between two operations: wh-movement to AssertiveP and movement of the subject to XP. For the time being, let us assume that XP is a Topic-like position and that movement of the subject is triggered by the need of topic-feature checking. Then we account for its optional nature – the equivalent of (61) with an echo-like intonation (and interpretation) but with inversion is possible – and for the possibility of having elements other than the subject. However if this is a topic position, we expect indefinite expressions to be excluded (*Que livro alguém leu*? which book someone read). Some speakers accept, others don't. It seems that dislocated elements can be of different type as the discussion in the literature suggests (CLLD, Topicalization, marked vs. unmarked Topics, etc.). I leave the determination of the precise properties of this position for future work; this is why, for the time being, I don't give a label to that projection.

Let us turn now to Hungarian. Why is adjacency between the wh-phrase and V-I always obligatory? Two hypotheses have to be considered: (i) AssertiveP does not project; (ii) AssertiveP does project. If we choose (i) we immediately account for lack of wh-questions without inversion and of wh-in-situ. However, as we saw for wh-in-situ, Hungarian has three constructions providing some evidence for choice (ii): interrogatives of confirmation, exclamatives and embedded questions – all of them share the 'factive' reading AssertiveP codifies and the presence of the complementizer *hogy*:

(62) 'interrogatives of confirmation' ('hogy')

Hogy mennyi pénzt fizettem ki ezért a
that_COMPL how_much money_ACC paid1PSG PART this_for ART
házért?
house_for

(63) exclamatives ('hogy')

a. Hogy mit láttam!
That_COMPL what_ACC saw_1PSG

b. Mit láttam!
What_ACC saw_1PSG

(64) embedded questions ('hogy')

Megkérdezte, hogy mit vett meg János.
Part-asked 3/SG that what ACC bought 3/SG PART John
He asked what John had bought.

I will assume that *hogy* checks [+assertive] by merge in the three structures. We still have to ask why Hungarian chooses *merge* to check [+assertive] instead of moving wh-phrases to spec, AssertiveP. I will claim that wh-phrases do not move to this position in Hungarian because they are not definite enough to check [+assertive]. Evidence for this claim is provided by overt object agreement in Hungarian: object wh-phrases trigger indefinite agreement:

(65) Mit mondo**tt** Mária, hogy megvett János?
what-ACC said-**INDEF** Mary, that part-bought-INDEF John

A problem arises however: d-linked wh-phrases of the type 'melyik N' (*which N*) trigger definite agreement:

(66) Melyik könyvet mond**ta** Mária, hogy megvette János?
which book-ACC said-**DEF** Mary that part-bought-DEF John

We should then predict, contrary to facts, that wh-questions without inversion are possible in this context. Nevertheless I will not abandon the claim. Other factors may conspire for the obligatory adjacency between the wh-phrase and the inflected verb in wh-questions triggering definite agreement in Hungarian. If we look at the other groups of languages considered, we find a coherent picture: languages that prefer, or simply allow, wh-questions without inversion (correlating with wh-in-situ) are languages whose determiner systems tend to be more definite than the Hungarian one: either they do not need visible definite/indefinite agreement,[25] or their wh-phrases are arguably [+definite] (e.g. EP, French),[26] or the DP system is [+definite (specific)] by default as in the following Tetum and BP sentences:

(67) a. Labarik sosa livru
Boy bought/buy book
b. Ha'u sosa careta
I buy/bought car

(68) a. Criança sofre
Child suffers
b. Você compra carro bom, n'e.
You buy car nice, n'e

Labarik (boy) in (67) is interpreted as [+definite] (specific); we should wonder why this is so. The answer is far beyond the scope of this article; a working hypothesis would be to assume that in languages of this type in the absence of any definite exponent, referentiality is assigned to the DP by discourse, probably by Ground, in a way not available in other languages, say, Hungarian (fn. 25). Let us assume that in Tetum and in BP wh-phrases are sufficiently definite to check assertive whereas in Hungarian they are not. As for wh-phrases triggering definite agreement on the verb, one possibility is to assume that raising of the subject to XP intervening between the wh-phrase and V-I blocks the overt agreement relation necessary for the wh-phrase to be definite enough to check assertive.[27] In EP and French, wh-phrases can be definite (see Note 26), therefore they can check assertive.

At this point, we have seen why inversion is obligatory in root wh-questions in Hungarian, why inversion coexists with absence of inversion in EP and French, and how these facts correlate with the so-called wh-in-situ strategy in the languages observed. We should now wonder why Tetum and BP (in the unmarked case) only have non-inverted wh-questions – the opposite case of Hungarian. Curiously, their Inflection systems are poor, also contrarily to Hungarian. Although I cannot pursue this question here, I would like to suggest that for independent reasons there is no V-I raising to WhP in these languages.[28] Consequently the only way to have the V-feature of WhP licensed is through AssertiveP.[29] We understand then why *que* disappeared from the BP wh-system, though not from the EP or French ones: on the one hand, it would be unable to check assertive due to its unrestricted status (as Hungarian wh-phrases) – AssertiveP would remain unlicensed and unable to check the V-feature on WhP; on the other hand, *que* in spec,WhP would not be licensed either, since V-I raising to WhP does not apply in BP. Thus *que* plays no role in the system in BP:

(69) a. *Que você comprou ?
what you bought
b. *Que comprou você ?
c. *Que você comprou !

The proposed analysis also accounts for root/embedded asymmetries in the different groups of languages and for restrictions on *que* in embedded questions in EP and French, correlating with similar restrictions in wh-in-situ, root questions and wh-exclamatives. Unfortunately, limitations of space preclude a detailed presentation and discussion of these structures here. Next section outlines the main guidelines for the analysis of embedded questions.

6. Embedded questions – absence vs. presence of root-embedded asymmetries

Typology

Regarding inversion, there is no root embedded asymmetry in wh-questions in Hungarian and, contrarily to the other languages considered, the complementizer (*hogy* (that)) co-occurs with the wh-element. In Tetum and BP, there is no inversion in embedded contexts, in the unmarked case. In French and EP, inversion becomes optional, except in the context of *que* that triggers obligatory inversion in EP and is unavailable in embedded questions in French – *ce que* supplies the [–animate] form:

Hungarian

(70) Megkérdezte, hogy mit vett meg János.
Part-asked 3/SG that what ACC bought 3/SG PART John
He asked what John had bought.

(71) Megkérdezte, hogy melyik könyvet olvasta el János.
Part-asked 3/SG that which book ACC read 3/SG PART John
He asked which book John had read.

Tetum

(72) a. Ha'u la hatene se (maka) João hasoru.
I NEG know who (PART) João met
I don't know who João met.

BP

(73) a. Não sei o que papai disse
I wonder what daddy said
b. *Não sei o que disse papai

EP/French

(74) a. *Não sei que o Pedro viu
(I) NEG know what the Peter saw
b. *Je ne sais pas que Pierre a vu

(75) a. Não sei que viu o Pedro
b. *Je ne sais pas qu'a vu Pierre

(76) a. Não sei o que/quem o Pedro viu
(I) NEG know the what/who Peter saw
b. Je ne sais pas ce que/qui Pierre a vu

(77) a. Não sei o que/quem viu o Pedro
b. Je ne sais pas ce que/qui a vu Pierre

Suppose we maintain the same structure as in root for embedded questions:

(78) $[_{VP}[_{V'}$ Megkérdezte$[_{AssertiveP}[_{Assertive'}$ hogy$[_{WhP}$ mit $_i[_{Wh'}$ vett $_v[_{FP}$ $t_i[_{F'}t_v$ $[_{IP}$ meg t_v János t_i]]]]]]]]]

Then we immediately account for the presence of the complementizer in Hungarian. In (78), *mit* will not move to Assertive for the same reason it does not move in root – it is unable to check the assertive feature due to its indefinite status; *hogy* is merged into the head of AssertiveP. Two questions arise, however: (i) why isn't the assertive feature licensed through lexical selection by the higher domain and *hogy* would be dispensed with? (ii) why isn't the V-feature of Q in WhP licensed by the head of AssertiveP (hogy) and V-I raising to WhP would be dispensed with? Put in other terms (i) addresses the question: why are complementizers obligatory, optional, or forbidden across languages in given contexts? The answer is to be seen in the complementation system of each language, relating with their tense systems and with the properties of sentential arguments – a question that is far beyond the scope of this article and that we are addressing in work in progress in the line of Kayne (1982) and Ambar (1992). As for (ii), we have to assume that when *hogy* is inserted the V-feature of Q in WhP cannot be licensed through the higher domain – a fact plausibly related with the nominal status of complementizers (Kayne 1982).

Suppose we extend this analysis to EP (and French). Now, contrarily to Hungarian, there is no overt complementizer in AssertiveP blocking licensing of the V-feature in WhP. We should then assume that this feature is licensed by the higher domain (AssertiveP), V-I raising to WhP being dispensed with (therefore forbidden). Thus the equivalent of Hungarian (78) in EP would be:

(79) $[_{VP}[_{V'}$ não sei$[_{AssertiveP}[_{Assertive'}[_{XP}[_{WhP}$ o que $_i[_{Wh'}[_{FP}$ $t_i[_{F'}[_{XP}[_{IP}$ o João comprou t_i]]]]]]]]]]]

The result is a non-inverted embedded question, the unmarked form of embedded wh-questions. However, as we saw, inverted structures are possible too. If there is no V-I raising to WhP in (79), inversion in embedded questions has recourse to another projection, e.g. FocusP. One possibility to derive the inverted order would be to assume that in (79), the verb raises to FocusP, another possibility would be to consider that first the subject moves to TopicP (the most embedded XP in (79)) and then remnant IP moves to Spec of FocusP. The choice depends on the focus vs. topic properties of each element. Limitations of space preclude the development of this aspect here. Note however that this hypothesis makes a good prediction: in root questions the unmarked order involves inversion, in embedded non-inversion. Curiously these two preferred orders correspond in each case to the most economic derivations: (i) in root the inverted structure is more economic than the non-inverted one – non-inversion in root has recourse to one more projection – AssertiveP; (ii) in embedded non-inversion is more economic than inversion – inversion in embedded has recourse to one or two more projections – FocusP and TopicP.

Our system rightly predicts the restrictions on the barest wh-phrase *que* too. Regarding V-I raising to C in embedded, EP differs from French: V-I raising is possible in EP, though not in French. According to Ambar, Lois and Obenauer (1986), V-I raising to C does not apply in sentential arguments in non-null subject languages, a proposal extending Kayne's 1982 hypothesis on the nominal nature of arguments. Therefore *que* cannot occur in embedded wh-questions in French – the wh-feature of Q in WhP would be unchecked because *que* cannot be in a spec-head relation with V-I due to lack of V-I raising. Thus, in the absence of V-I raising, *que* is excluded from embedded questions for the same reason it is excluded from *wh-in-situ*: failure of wh-feature checking. We proposed above that V-I raising in embedded is also unnecessary in EP given that the V-feature of WhP is licensed by the higher domain. However, as opposed to French, V-I raising can apply in EP if there is another trigger. I will assume that licensing of *que* triggers V-I raising to WhP in EP, an operation unavailable in French for independent reasons (the inflection system, according to Ambar et al. 1986, as we saw above). (80) represents an embedded question with *que* in EP:

(80) $[_{VP}\ [_{V'}$ não sei $[_{AssertiveP}\ [_{Assertive'}\ [_{WhP}$ que $_i\ [_{Wh'}$ comprou $[_{FP}\ t_i\ [_{F'}\ [_{IP}$ o João $t_v\ t_i]]]]]]]]]$

Summarizing, EP allows V-I raising in this context to supply the nominal/restrictive feature to *que* through Inflection, in order to check the wh-feature of Q in WhP, not the V-feature. In French, Tetum and BP, this strategy is unavailable due to lack of Inflection raising in embedded sentential arguments.[30] The analysis in (79)–(80)

rightly derives the fact that adjacency is obligatory with the barest wh-phrase *que* (81b), though not with [+restricted] wh-phrases (e.g. *quem*, who) (81a):

(81) a. Não sei quem ontem/finalmente encontrou o Pedro
I don't know who yesterday/finally met Peter
b. *Não sei que ontem/finalmente encontrou o Pedro

Finally the system successfully accounts for the contrasts below:

(82) a. O João disse que, ao irmão, o Pedro ofereceu um livro
John said that, to his brother, Peter offered one book
b. *O João disse, ao irmão, que o Pedro ofereceu um livro

(83) a. O João não sabe, ao irmão, que livro o Pedro ofereceu.
John wonders, to his brother, which book Peter offered
b. Não sei o Pedro que livro ofereceu ao irmão
I wonder Peter what book offered to his brother

As (82a–b) shows, in embedded clauses to declarative verbs, a dislocated element may appear between the complementizer and IP (82a), though not above the complementizer (82b), whereas in embedded questions the dislocated element can pass the wh-phrase (83a, b). According to our system, in (82a) the complementizer is in AssertiveP, the highest projection of the embedded domain, therefore in (82b), there is no landing site for the dislocated element – it would block the selection relation between the matrix verb and its complement. In (83a), the wh-phrase is in WhP, therefore there is a landing site for the dislocated element above WhP, between WhP and AssertiveP: XP (cf. (79)).

Another issue raised by embedded questions concerns selection. Verbs selecting questions do not accept the complementizer *que* (**Pergunto que o João disse*, I wonder that John said); thus, how is Assertive selected given that verbs introducing embedded questions do not take assertions as arguments? Note however that these verbs select nominal complements (*A Maria perguntou as horas*, Mary asked the hours), though not factive ones (**A Maria perguntou o facto de…*, Mary asked the fact that…) and that in languages of the Hungarian type they visibly accept the complementizer (*hogy*). Although I cannot pursue this question here, I would like to observe that: (i) the presence of the complementizer is not only associated with selection – in English, the complementizer can be dispensed with in embedded finite contexts of the assertive type and in Hungarian, it occurs in wh-questions, (ii) assuming these verbs only select +Q arguments, we do not explain why they select nominals; (iii) the prosody of embedded questions differs from root questions, being rather of the declarative type; (iv) finally note that in our system, embedded questions are not assertions of the type selected by declarative or factive verbs given that in the former a +Q projection is selected, though not in the latter. The

question turns out to be why in EP or French the complementizer cannot be overt, as opposed to Hungarian, a question that I am addressing in work in progress.[31]

7. Wh-exclamatives

Let us briefly see how our system accounts for wh-exclamatives unifying their mirror behavior w.r.t. wh-questions for a detailed study on the interpretation and syntax of exclamatives in the P&D framework see Obenauer 1994 (Chapter III). I will assume that:

i. wh-phrases raise higher in exclamatives than in interrogatives;
ii. two features have to be checked in exclamatives: an assertive feature and an evaluative feature, belonging to two different projections AssertiveP and EvaluativeP;
iii. Assertive checking is intended to satisfy one of the properties of exclamatives, that have been pointed out in the literature – *factivity* (Grimshaw 1977; Obenauer 1994; Portner & Zanuttini 1998); Evaluative checking is intended to satisfy another property of exclamatives – evaluation (Ambar 1996, 1998). Both properties belong to Common Ground. In the unmarked form, assertive properties are satisfied by nominal elements and evaluative properties by adjectival elements;
iv. complementizer *que* is able to check Assertive by merge when EvaluativeP selects AssertiveP.

Sentences in (84) and (85) below exhibit the same linear word order but differ in their prosody and interpretability. What interpretatively distinguishes non-inverted wh-questions lacking a full-blown interrogative reading in (84) from exclamatives exemplified in (85) is that in the latter the speaker knows the reference the wh-phrase denotes and implicitly or explicitly makes an evaluation on it:

(84) a. *Que livro* o João leu ?
what book the John read
b. *O que* o Pedro disse ?
the what the Peter said
c. *Onde* o Pedro foi ?
where the Peter went
d. **Que* o Pedro comprou ?
what the Peter bought

(85) a. Que livro o João leu !
b. O que o Pedro disse !

c. Onde o Pedro foi !
d. *Que o Pedro comprou !

The well-attested factive character of exclamatives is translated in our system by checking of AssertiveP, its evaluative status by checking of EvaluativeP – a projection that triggers movement of evaluative elements.[32] I will assume that adjectives satisfy that requirement. Thus, very plausibly wh-phrases entering wh-exclamatives have an overt or empty adjectival slot i.e. the interpretation of sentences in (85) presupposes an adjectival element:

(86) *Que livro* (bom/mau/interessante…) *o João leu*!
what book (nice/bad/interesting/…) John read!

Note that if this adjectival element is overt, it can occur with wh-phrases of the form *que livro*, as in (86) above, though not with bare wh-phrases of the form *o que*, *onde*, *etc.*, as in (87):

(87) a. *O que (bom/mau/interessante) *o João leu*!
what book (nice/bad/interesting) John read!

However also in these exclamatives, the presupposed interpretation involves such an evaluative element, i.e. in an utterance like *O que o João leu*! or *Onde o João foi*! (what John read! or where John went!) the speaker not only knows what John read or where John went but is also telling the hearer that the thing or place is of certain type (the speaker knows the thing or the place is nice, or dangerous or interesting, or…). This obligatory 'evaluative' interpretation characterizes exclamatives and opposes them to interrogatives. Thus I would like to maintain the idea of an empty adjectival slot in all wh-phrases entering exclamatives. The reason why this adjectival element can be overt with [que N] wh-phrases, but not with wh-phrases of the *o que* or *onde* type, has to be seen in the internal structure of these wh-phrases, an issue that I cannot pursue here (cf. Ambar & Veloso 1999). Wh-exclamatives receive then the following representation:

(88) Que livro o João leu!
$[_{\text{EvaluativeP}}$ que livro$_i$ $[_{\text{Evaluative'}}$ $[_{\text{AssertiveP}}$ t_i $[_{\text{Assertive'}}$ $[_{\text{XP}}$ o João$_j$ $[_{\text{WhP}}$ t_i $[_{\text{Wh'}}$ leu $_v$ $[_{\text{FocusP}}$ t_i $[_{\text{Focus}}$ $[\text{XP}$ $[_{\text{IP}}$ t_j t_v t_i]]]]]]]]]]]]

As in wh-questions without inversion, the wh-phrase moves first to WhP and then to AssertiveP – raising of the subject will derive a SV order and non-raising a VS order. The derivation proceeds with further movement to EvaluativeP. Note that whenever AssertiveP is projected XP also tends to be projected; in other terms, both in echo-like wh-questions and in wh-exclamatives the SV order is preferred.[33] The presence of one more projection in exclamatives than in wh-questions without inversion allows the derivation of wh-exclamatives with a complementizer:

(89) a. Que livro que o João leu!
What book that John read
[$_{EvaluativeP}$ que livro$_i$ [$_{Evaluative'}$ [$_{AssertiveP}$ [$_{Assertive'}$ que [$_{XP}$ o João$_j$ [$_{WhP}$ t$_i$ [$_{Wh'}$ [$_{FocusP}$ t$_i$ [$_{Focus'}$ [XP [$_{IP}$ t $_j$ leu t$_i$]]]]]]]]]]]

In (89), the complementizer *que* checks assertive by merge; the wh-phrase *que livro* checks EvaluativeP. I will assume that exclamatives require a well-defined reference for the element submitted to evaluation – only well specified wh-phrases i.e. wh-phrases of the form [que N] e.g. *que livro* (what book) can check Evaluative without passing through AssertiveP; bare wh-phrases of the form [que e_{+r}], e.g. *quem*, *onde* (who, where) are underspecified for evaluation; they will become specified through a spec-head relation with Assertive; thus they cannot move to EvaluativeP without passing through AssertiveP. This is why (89) is grammatical, but sentences in (90) are excluded: Assertive has been checked by *que*, thus the wh-phrase does not move to AssertiveP; being not in a spec-head relation with Assertive, the wh-phrase will go on under-specified and unable to check Evaluative:

(90) a. *O que que o João disse!
The what the John said
b. *Onde que o João foi!
Where that the John went
c. *Quem que o João encontrou!
Who that John met
d. *Como que o João fez isso!
How that the John did this

Our analysis uniformly accounts for the ungrammaticality of (85d) too: the barest wh-phrase *que* is unable to check Assertive, therefore evaluative, due to its defective status concerning definiteness, as was the case of wh-in-situ and echo fronted wh-questions without inversion. Curiously then the scale of referentiality we assumed to exist in the constituency of wh-phrases, also manifested in the degree of acceptability of wh-questions without inversion, reappears in wh-exclamatives: [que N] wh-phrases, e.g. *que livro* (what book) can occur with and without the complementizer; [que e_{+r}] e.g. *o que*, *quem*, etc (the what, who, etc.) cannot occur with the complementizer; the [que e_{-r}] wh-phrase, e.g. *que* is excluded from both contexts.

Finally the oddity of *in situ* wh-exclamatives first noted by Obenauer (1994):

(91) a. *Ela tem que belas pernas!
She has what beautiful legs
b. *Elle a quelles belles jambes!

is also derived in our system: in wh-exclamatives, the exclamative force is on the wh-phrase itself, i.e. it is the wh-phrase that carries the [+ assertive] and [+ evaluative] features to check AssertiveP and EvaluativeP. Thus no in situ effect will show up, because there is no Remnant IP movement to check those features.

8. Conclusions

My main goal in this work has been to find a set of articulated answers to the puzzling questions formulated in the introduction. Confirming Greenberg's (1963) insight that variation is co-variation, I argued that wh-structures are licensed uniformly intra and cross-linguistically, the asymmetries described being correlated with other parameters of variation related to: (i) properties of the inflection system of each language for wh-in-situ – a strong prediction was suggested: only languages with a 'non-heavy' Inflection, in a sense to be made clearer in future work, allow for remnant IP movement to Spec, AssertiveP, therefore for *in situ* wh-questions (Chinese, Tetum, BP, EP, French, not Hungarian); (ii) properties of the determiner system of each language, combined with subject raising and with the availability vs. unavailability of the V-movement strategy, for inverted vs. non-inverted structures – obligatory inversion in wh-questions was derived from the defective status of wh-phrases regarding definiteness (all Hungarian wh-phrases, EP and French *que*); 'optional' inversion only occurs in the context of [+restricted] wh-phrases and corresponds to two different constructions: (i) pure questions, whose derivation stops in WhP; (ii) echo-like questions, whose derivation stops in AssertiveP. Descriptively, a unifying link was established between wh-in-situ, non-inverted wh-questions and wh-exclamatives – all of them share a 'factive-like' property, theoretically translated in our system by AssertiveP. In wh-in-situ, Infl is the locus of assertive, in non-inverted wh-questions, it is the wh-phrase itself. Wh-exclamatives differ from non-inverted wh-questions, lacking a full-blown interrogative reading, in another property: evaluative, codified in EvaluativeP. The interpretation of each sentence is compositional.

Lack of wh-in-situ in exclamatives is derived from properties of the construction itself – this is probably why the phenomenon seems to be universal: in all languages considered wh-exclamatives are intended to evaluate the wh-phrase itself, thus the locus of assertive and evaluative features is the wh-phrase, not Inflection (the case of *in situ* wh-questions, where Inflection carries the assertive feature); it is the wh-phrase itself that checks Assertive and Evaluative, therefore there is no remnant IP movement and no *in situ* effect in wh-exclamatives.

We leave for future work the question why the wh-in-situ strategy is not only available but also obligatory in languages of the Chinese type. Our working hy-

pothesis is that this will be the case of languages lacking V-I raising – if V-I does not raise to WhP, the only way to have the V-feature of WhP licensed is through AssertiveP unless a given element is merged in the head of WhP to play over the role – e.g. Tetum, where fronted wh-phrases are possible if *maka* is inserted. As for the complementizer, we saw that it occurs as a strategy to check Assertive in exclamatives; we leave for further research its occurrence in wh-questions in BP – very plausibly, it plays the same role as *maka* in Tetum.

Finally, goal 2) has been partially attained. The proposal that the system establishing the relation between IP and Discourse is organized in two domains corresponding to two different aspects of Discourse – Common Ground and Universe of Discourse – has two immediate consequences: it allows distinguishing different properties of discourse and accounts for the fact that languages may vary regarding either Ground or Universe of Discourse, or both. At the same time, it leads to a more articulated and restricted number of projections, plausibly forming syntactic phases (Chomsky 1999). What are the formal restrictions on the number and size of the projections to form a phase is an interesting aspect to investigate in the future (as also pointed out by Speas & Tenny, this volume). Further research on other languages will confirm or infirm our hypotheses.

Notes

* This work has been presented at different stages of its development at Elements Minimaux de la Variation Linguistique, 1997–2000 Paris; Going Romance 1999, Leiden; IGG 2000, Rome; Going Romance 2000, Utrecht and IGG 2001, Trieste. I wish to thank the audience of The Asymmetry Conference for relevant comments on the present version of this work. Special thanks go to Anna Maria Di Sciullo for having organized this meeting, for having given me the opportunity to participate, and for her influential insights. I am also very grateful to Marie-Thérèse Vinet for relevant discussion and help, and to Guy Nephtali for important support, without which this work wouldn't have been presented at Montreal. All errors are mine.

1. Plausibly in embedded domains this relation with discourse is done through features of lexical items. In root, these features are implicit, in embedded, they are explicit, recalling Ross's (1970) proposal that every root sentence is embedded to a covert predicate.

2. See Speas and Tenny (this volume) where it is proposed that pragmatic projections are constrained by the same basic principles that command the form and size of syntactic projections, e.g. their "Speech Act projects the maximal structure, with a specifier, complement and external argument".

3. In other terms, though illocutionary acts probably always involve speaker and hearer, the domain formed by EvaluativeP and AssertiveP rather codifies the speaker's information, while in Topic and FocusP, the information transmitted is confronted with the hearer's one. Curiously then our hierarchy – EvaluativeP-AssertiveP in the one hand and -FocusP on

the other hand – has somehow a relation with Speas and Tenny's hierarchy (this volume), where speaker c-commands hearer in the *speech act* projection. The exact correspondence between speaker-Evaluative-AssertiveP and hearer-(Topic)-FocusP is an interesting aspect to investigate.

4. Note incidentally that this operator projection is in the middle of the two structural domains corresponding to Ground and UD. Similarly, XP can be at the beginning, middle, or end of each domain (cf. Rizzi 1997). For the time being, I have nothing else to add, apart that this fact provides further evidence for the unity of those two domains.

5. In an earlier version of this paper, wh-movement was triggered by the need for a N_{+wh} feature checking. It was observed to me that due to the fact that wh-movement applies to other categories besides N (PPs and Advs) the N-feature, being an L-related feature, is not involved in wh-checking. Thus for the time being, I assume that whatever '*wh*' means it has to be checked by a wh-element and this is part of +Q checking. Here, however, the +Q-feature that in most theories is the trigger of wh-movement is associated not only with +wh, but also with a V-element – a natural assumption if we consider that operators are V-related as proposed by Rouveret 1996.

6. For a syntactic proposal, see Ambar 1988; Ambar & Veloso 1999; Di Sciullo 1999, 2001 for a compatible analysis.

7. Searle 1979 defines "assertive" as the illocutionary act "where we tell our hearers (truly or falsely) how things are". Another possible label for this projection would be ReferentialP, as observed to me by Jean-Marie Marandin.

8. For evidence for this projection in other context, see Ambar 1996/1998 and Section 6.

9. *o quê* is the tonic form of *o que*, a fact probably related with the structure we are proposing. Research in the prosody field is required to confirm this. As for French, although prosodic factors also seem to be involved in the opposition *quoi* vs. *que*, *ce que*, something else has to be said, as the distribution of *quoi* in infinitives suggests. In its tonic form, *que* can enter wh-in-situ questions if it is preceded by a preposition – for our purposes here it is enough to assume that the preposition somehow changes the underspecified *que* into a specified form.

10. Identification was accomplished in terms of government (Chomsky 1981).

11. Detailed argumentation is presented in this work.

12. (i) below is attested and considered "highly marked" by Kiss (1993:99):

(i) A regény végén ki öl meg kit ?
The novel's end at who kills PERF whom
Who kills whom at the end of the novel?

13. Recent analyses tried to overcome this problem: Boskovic (1997) proposes that in French, LF insertion of C^0 with a strong [+wh] feature is possible and restricts wh-in-situ to matrix clauses; Cheng and Rooryck (2000) propose that an underspecified intonational morpheme [+Q:] is involved in the licensing of wh-in-situ; the underspecified [+Q:] becomes specified as [+Q:wh] by moving the wh-feature of the wh-phrase at LF. Simpson (1999) argues against "the Strict Locality Condition to be an invariant constraint on feature checking relations" and proposes a system where wh-phrases cross-linguistically carry

wh-features in need of checking (contra Chomsky's 1995 assumption that +interpretable features such as *wh* will only ever require checking when strong on a functional head) and where the checking domains for wh-elements can have different values across languages. For an extension of this analysis to PE and PB, see Duarte (2000).

14. In Rizzi's theory, selection by V licenses the embedded [+Q] feature. Here V licenses the V-feature, a subpart of +Q. Note that in embedded and in wh-in-situ, the higher domains are verbal in nature – the matrix verb in the former and Assertive in the latter (what licenses Assertive is the head of IP, V-I, plausibly the Event part of the Verb).

15. I thank Mary Kato and Carla Soares for having informed me that research in progress on acquisition of wh-questions in BP and EP, respectively, confirms that the child acquires wh-in-situ questions later than fronted wh-questions.

16. This is a subtle opposition. Thus, it is natural that this is a sharp contrast (ok/*) for some speakers while for others it is weaker or even does not exist. Note that I am not assuming that wh-in-situ in EP are only possible in *echo* questions as in English. This is why I used the expressions "echo-flavor" and "stronger presupposition" to mean a certain *degree* of echo, say, an *intermediate* degree of echo, not to be confused with *echo*. For the same reason, I hypothesized that *full echo* wh-in-situ in English (also available in EP) have a different derivation, where remnant IP movement to Assertive does not apply. My idea is that these structures involve a discourse null operator. This constitutes matter for another work.

17. This will probably be the case of yes/no questions. Prosodic research is needed in order to confirm this hypothesis.

18. Some speakers disagree with the judgment in (15), wrt *ele*. Actually, for some speakers judgments on topicalization of pronouns are not clear in other contexts as well, a fact that rather confirms our analysis.

19. If French does not allow embedded wh-in-situ, as opposed to EP, the (micro)parameter of variation has plausibly to be seen in the different status of their Inflections, in a way that should allow remnant IP movement to AssertiveP in root, though not in embedded. Note that French does allow V-I to C movement in root, but that this operation is excluded from embedded domains (as we will see, this is why the barest wh-phrase *que* cannot occur in embedded questions in French, contrarily to EP (cf. Ambar, Lois, & Obenauer 1986). It would then be desirable to relate these two facts. One possibility would be to do it through Tense, rejoining a suggestion by Nash & Rouveret (1998) according to which Tense in EP is weaker than in French.

20. It is not clear that wh-phrases cannot be topics. In Chinese, it seems they can, as illustrated by the following sentence (Liang Chen – University of Connecticut):

(i) shei shuo shei zhangsan hen xihuan
who say who Zhangsan very like

An interesting inquiry would be to see how languages that allow wh-phrases to be topics behave with respect to wh-in-situ and inversion in fronted wh-questions.

21. Boskovic's (1999) approach to Multiple Fronted Languages also involves Focus.

22. This would also explain why Iraqui wh-phrases couldn't be *in situ* in finite tensed domains, but can in infinitives (Simpson 1999) – inflection is heavier in finites than in infinitives.

23. Besides multiples, F(ocus)P proves to be necessary to account for inversion in embedded domains in languages of the French type, as we will briefly see. For the derivation of sentences with 3 place predicates and auxiliaries, see Ambar and Pollock (1998), where an account of the different orders is proposed (e.g. wh-Aux-Subj-PP vs. wh-Aux-PP-Subj).

24. Note that the analyses that derive obligatory adjacency between *que* and V-I from the clitic status of *que* do not account for this scale of grammaticality nor for the fact that *que* does not cliticize in wh-in-situ. In 1988, I noted that most speakers had observed that *que N* phrases dispensed with inversion just in the presence of an intriguing special intonation contour. The 'echo-flavor' ('flavor' meaning a weak degree of *echo*, cf. fn. 16) had not been discovered at that time. A finer analysis of the data reveals it does really exist, as claimed by about one hundred speakers (my students included). Anyway I do maintain the three-way distinction for wh-phrases: (i) [que N]; (ii) [que e_+]; (iii) [que e_{-r}]. Actually, non-inverted structures are better with (i) than with (ii) and impossible with (iii). Note that (i) are more restricted than (ii): (i) have all the features of the noun itself while (ii) have just one feature covering a wider range (e.g. [+human] in *quem*). Thus, this system allows accounting for this scale of grammaticality, a desirable result in my opinion. Note that in this view, it is conceivable that languages may vary, depending on their DP systems, i.e. a given language may require wh-phrases of the form (i) for non-inverted structures while others may use both (i) and (ii) (cf. Pollock et al. 1999; Ambar et al. 1998; and Ambar & Veloso 1999).

25. Let us assume that the more the overt morphology is available, the less the system is rich in allowing other means of providing information – e.g. non-null subject languages need an overt subject, because the inflection system is poor; Hungarian has a rich morphology regarding definiteness (overt definite/indefinite agreement on the verb), its DPs will not be definite by default; Tetum morphology regarding definiteness is null, its DPs (wh-phrases) will be definite by default. In other terms, absence of grammaticalization entails other means of supplying the relevant information, by hypothesis through discourse. For other languages exhibiting definiteness in the absence of definite exponents, see Kihm (2000).

26. In Ambar and Veloso (1999), it is claimed that *o* in *o que* and *-l* in *quel* are the definite article (see Section 2).

27. Note that this condition holding on checking of assertive may prove to be unnecessary for other contexts. Further research on this topic will show if this is the case or suggest other possible strategies.

28. Works by Kato and Tarallo (1988); Duarte (1992); Mioto (1994); Lopes Rossi (1996) have shown that in BP the VS order is available just in ergative contexts. As for Tetum, it seems that V-I raising is never possible, e.g focus constructions.

29. This would explain why these languages became 'discourse-oriented', Ground or UD-oriented in my terms – the less the languages are grammaticalized, the more they tend to be discourse-oriented.

30. Note that Ambar, Lois and Obenauer generalization makes good predictions on Tetum and BP as well. BP is loosing Agreement specifications and becoming a non-null subject

language, therefore V-I raising in sentential arguments is becoming unavailable. Tetum is a non-null subject language;V-I raising in embedded is impossible too.

31. See Bok-Bennema 1990 for an interesting analysis concerning properties of the complementizer also in relatives.

32. I have showed (Ambar 1996/1998) that EvaluativeP, rather than FocusP, is involved in some of the so-called focus constructions (cf. Raposo 1994). The motivation for labeling this projection Evaluative was drawn from the behaviour of quantifiers: evaluative quantifiers (e.g. *many*, in the sense of Barwise & Cooper 1981) could enter these constructions, but pure quantifiers (e.g. *every*, *all*) couldn't as illustrated below:

(i) Muitos livros o Pedro lhe ofereceu!
Many books Peter offered him

(ii) *Todos os livros o Pedro lhe ofereceu!
All books Peter offered him

33. I will not pursue this question here. It seems that the projection of a higher domain entails the projection of lower domains. See Vinet (2000)–(2001) for an interesting compatible analysis of 'tu-pas' in Quebec.

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Three arguments for remnant IP movement in Romance

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Introduction

The present article's goal is a modest one: it will sketch three of the arguments that mostly unpublished work by Nicola Munaro, Cecilia Poletto, Richard Kayne and myself has recently adduced in favor of the idea that Romance wh-syntax and subject inversion, when looked at from a comparative, often microparametric – cf. Kayne (2001, Chapter 1) – perspective, require that Remnant Movement replace not only much covert movement of the GB tradition (see Kayne 2001, Chapter 13) but also (some) head movement analyses. If the work reported on here is on the right track, Romance will provide as much evidence in favor of Remnant Movement as the Germanic languages do (cf. e.g. Kayne Chapter 13 and his references; Den Besten & Webelhuth 1987, 1990; Hægeman 1998; Koster 2000; Koopman & Szabolcsi 2000). There will be no attempt to argue that Remnant Movement should be *allowed* to exist for the simple reason that there is no need to do so; on the minimal assumption that movement – Chomsky's (2001) 'internal merge' – affects constituents, displacement of constituents which subconstituents have vacated at previous stages in the derivation cannot be avoided. Extra machinery would be needed to ban that option, which might be required if languages never made use of it; since Germanic *and* Romance most emphatically do, that would be an extremely ill-advised step. Remnant Movement gives indirect support to Kayne's (1994) LCA; Romance wh-syntax and subject inversion thus indirectly confirm the view that syntax is fundamentally antisymmetric.

1. Bellunese vs. French wh-syntax (Munaro, Poletto, & Pollock 2001)

French has a variety of – apparent (see Munaro, Poletto, & Pollock 2001),[1] – wh-in situ questions like (1a, b, c) but bare *que* cannot occur in such contexts:

(1) a. Tu vas où?
You go where?
'Where are you going?'
b. Tu as parlé à qui?
You have spoken to whom?
'To whom have you spoken?'
c. Tu pars quand?
You leave when?
'When do you leave?'
d. *Jean a acheté que?
Jean has bought what?
'What has John bought?'

When compared to French, Bellunese, a dialect of Northern Veneto studied at length in Munaro (1999), behaves quite unexpectedly: *che*, the counterpart of *que,* and less surprisingly, the other bare wh-words *andé* 'where', *chi* 'who' and *come* 'how' *must* all occur in sentence final position (cf. Munaro 1999):

(2) a. A-tu magnà che?
Have you eaten what?
'What have you eaten?'
b. *Che a-tu magnà?
'What have you eaten?'
c. sé-tu 'ndat andé?
Are you gone where?
'Where have you gone?'
d. *andé sé-tu 'ndat?
'Where are you gone?'

(1) and (2) must be carefully distinguished since the latter show obligatory subject verb inversion, which (apparent) wh-in situ in French bans totally:

(3) *Vas-tu où?
Go you where?

Modulo that important difference – on which see Munaro, Poletto, and Pollock (2001), Poletto and Pollock (2000) – the distribution of *che* and *que* is extremely puzzling; if one took things at their face value and held that Bellunese *che* was IP

internal one would be hard put to explain why its French counterpart *que*, which does not appear to be any more or less "defective" morphologically or semantically than *che*,[2] has to move to the left periphery; everything else being equal the morphological similarity of *que* and *che* should trigger similar syntactic behavior but that reasonable expectation pairs like (1d) vs. (2a) seem to falsify. As Munaro, Poletto, and Pollock (2001) show, appearances are deceptive; Bellunese and French wh-syntax can be made sense of if we assume that *che* in (2a) and *andé* in (2c) have indeed moved to the left periphery of the clause, just as French *que* must:

(4) a. Qu'a acheté Jean?
'What has bought Jean?'
b. Qu'a-t-il acheté?
What has-t-he bought?
'What has he bought?'

This is independently supported by the fact that (apparent) wh-in situ configurations like (2a, c) and (5) in Bellunese are sensitive to strong and weak island effects, as (6) from Munaro (1999, Chapter 1: 50–56, 74) show:

(5) a. à-tu parecia che?
have-you prepared what?
'What have you prepared?'
b. va-lo 'ndé?
goes-he where?
'Where is he going?'
c. se ciàme-lo comé?
himself calls-he how?
'What's his name?'

(6) Strong island effects:
a. *te à-li dit che i clienti de chi no i-à pagà?
To you have-they told that the customers of whom not they-have paid?
'Who have they told you the customers of haven't paid?'
b. *ò-e da telefonarte prima de 'ndar andé?
Have-I to phoneyou before of going where
'Where have I to phone you before going?'

Weak island effects:
c. ??te despiàse-lo de aver desmentegà ché?
to-you displeases-it to have forgotten what?
'What are you sorry you have forgotten?

That Bellunese *che* in (5a) is *not* in its IP internal argument position is also suggested by (7):

(7) a. Al ghe a dat al libro a so fradel
he to him has given the book to his brother
'He gave the book to his brother'

b. *Ghe ha-lo dat che a so fradel?
to him has-he given what to his brother
'What has he given to his brother?'

c. Ghe ha-lo dat che, a so fradel?
to him has-he given what, to this brother
'To him, what has he given, to his brother?'

(7b, c) show that the dative complement *a so fradel* is necessarily 'deaccented' in Bellunese *che* – also *ande, come, chi* – questions, though not in statements like (7a); if *che* in (5a) was in the ordinary sentence internal object position in which *el libro* in (7a) is standing, such facts would be difficult to understand; pairs like (7a) vs. (7c) thus give added support to an *overt* movement analysis of all wh-questions in Bellunese.[3]

Accepting the conclusion that *che, ande* and *come* in (5) have indeed moved to the CP field, we are evidently forced to say that the rest of the clause has itself moved past the ('low' see Munaro, Poletto, & Pollock 2001) 'Comp' position in which the bare wh-words stand to a higher layer of the left periphery; such sentences therefore involve wh-mvt of the expected variety and Remnant Movement of (some layer(s) of) IP to the left periphery; the much simplified derivation of a sentence like (5) in Bellunese must thus look something like (8):

(8) Input: $[_{IP}$ tu à parecia che$]$

a. Wh-movement $\Rightarrow$ $[_{XP}$ che $_i$ X^0 $[_{IP}$ tu à parecia $t_i]]$

b. Remnant IP Movement and further displacement $\Rightarrow$ $[_{YP}$ $[_{IP}$ à-tu parecia $t_i]_j$ Y $[_{XP}$ che $_i$ X^0 t_j $]]$

Step (8b) is lumping together computations that are analyzed at length in Munaro, Poletto, and Pollock (2001), Poletto and Pollock (2000); we come back to the analysis of the (French analogue of the) Subject Clitic Inversion displayed by (8b) in Section 3 below.

2. French stylistic inversion (Kayne & Pollock 2001)

There is a general consensus that the canonical surface word order of the Romance languages is SVO. The 'subject inversion' exhibited by many Romance assertive

or interrogative sentences like (9) (= (1) in Hulk & Pollock 2001) therefore raises interesting descriptive and theoretical problems.

(9) a. Che cosa ha detto Maria? (Italian)
What has said Maria
'What has Maria said?'

b. E' partito Gianni (Italian)
is gone Gianni
'Gianni has gone'

c. Qu'a dit Jean? (French)
What has said Jean
'What has Jean said?'

d. Onde foi a Maria? (Portuguese)
Where went the Maria
'Where did Maria go?'

e. Què farà en Joan? (Catalan)
What will-do the Joan
'What will Joan do?'

In (9), the subjects are in a position at the right edge of the sentence, and so, they must follow the participles and infinitives of (9a) and (9c); strings like **Che cosa ha Maria detto?, *Qu'a Jean dit?* are sharply out.

The question of how to get the subject to the right periphery of the clause in (9) is non trivial. Assuming all subjects, 'displaced' or otherwise, stand in a specifier position, if *Jean* in (9c) were structurally 'low' in the sentential architecture, it could be seen as a type of object. In fact, as is well-known, objects and postverbal SI subject are often incompatible:

(10) a. *A qui a montré mon article ton ami?
to whom has shown my article your friend
'To whom has your friend shown my article?'

b. *A qui a montré ton ami mon article?
to whom has shown your friend my article
'To whom has your friend shown my article?'

Such examples led Emonds (1976: 90) and more recently Legendre (1998) to suggest that the postverbal SI subject is actually *in* object position at spell-out, i.e. very 'low' in the clausal architecture. However Kayne and Pollock (2001) offer several arguments showing that the status of (10) is misleading and that post-verbal SI subjects are in fact very different from objects.

First, while postverbal SI subjects are generally incompatible with a postverbal lexical object, they are not incompatible with a postverbal *idiomatic* object:

(11) a. Depuis quelle heure ont faim les enfants?
since what time have hunger the kids
'How long have the kids been hungry?'
b. Quand a repris connaissance le malade?
When has retaken conscience the patient
'When did the patient come round?'

Such idiomatic objects are ordinary direct objects with respect to dativization of the infinitival subject in causatives:

(12) a. *Cela a fait avoir faim les enfants
That has made have hunger the kids
'That made the kids hungry'
b. Cela a fait avoir faim aux enfants
That has made have hunger to+the kids
'That made the kids hungry'
c. *Cela fera reprendre conscience le malade
That will-make retake conscience the patient')
'That will make the patient come round'
d. Cela fera reprendre conscience au malade
That will-make retake conscience to+the patient')
'That will make the patient come round'

The obligatory appearance of the (incorporated: 'à + les' ⇒'aux') preposition *à* before *les enfants* and *le malade* in (12b, d) is to be seen in the same light as (13):

(13) a. *Cela fera manger une glace les enfants
That will-make eat an ice-cream the kids
'That will make the kids eat an icecream'
b. Cela fera manger une glace aux enfants
That will-make eat an ice-cream to the kids
'That will make the kids eat an icecream'

The role of (incorporated) *à* in (13) can be made sense of in Case theoretic terms as in Rouveret and Vergnaud (1980). The Case-licensing of the post-infinitival subject in (13) is due to the causative verb (and/or, in more recent terms, to a functional head associated with it). But French, unlike English, has the property that the embedded infinitive cannot Case-license its object. Thus in (13) the embedded object *une glace* must be Case-licensed by the causative verb itself. Because of this, the embedded subject *les enfants* needs a distinct Case-licenser, the preposition *à*, whose absence in (13a) leads to ungrammaticality.[4]

The fact that (12b) behaves like (13b) indicates, then, that the idiomatic objects *faim* and *conscience* in (12) require the same Case-licensing that *une glace* does in

(13). This in turn makes it difficult to hold that in (11) the post-verbal SI subject is in object position, all the more so as SI subjects are often perfectly fine with a clitic direct object, as shown in (14):[5]

(14) À qui l'a donné ton ami?
To whom it has given your friend
'To whom has your friend given it?

and as SI subjects are compatible with a direct object if that object is a 'bare quantifier' as in (15) (= Kayne & Pollock's 2001: (15)):

(15) a. La fille à qui a tout dit Jean-Jacques
The girl to whom has everything told Jean-Jacques
'The girl to whom Jean-Jacques has told everything'
b. La fille à qui n'a rien laissé sa grand'mère
The girl to whom NEG. has nothing left her grandmother
'The girl to whom her grandmother has bequeathed nothing'
c. La fille à qui laissera sûrement quelque chose sa grand'mère
The girl to whom will-leave surely something her grandmother
The girl to whom her grandmother will surely bequeath something'

(12b, d), (14) and (15) prove beyond any doubt that postverbal SI subjects are not in object position. It could still be argued, however, that they are 'low' in the clausal architecture if, as claimed in much GB work, they were merged and stayed in the (specifier of the) v/VP layer, as sketched in (16):

(16) a. $[\ldots V_i\text{+Infl}^0 [\ldots t_i \ldots [_{vP} \text{DP} [\, t_i \text{ (DP)}]]]]$
b. $[\ldots V_i\text{+Infl}^0 [\ldots t_i \ldots [_{VP}\, t_i \text{ DP}\,]]]$

In such an account the 'displaced' subject of SI sentences stays low structurally – it is in the specifier of 'small v' in VPs headed by (in)transitives – (16a), see Larson (1988) – or the complement of unaccusative verbs – (16b), see Burzio (1986)) – and the verb adjoins by head-to-head movement to various layers in the 'split' Infl.

There is substantial evidence however that (16) does not make the right predictions for French SI subjects.[6] The following four sets of facts suggest, rather, that they are in a 'high', preverbal-like position (for more on this see Kayne & Pollock 2001, Sections 2 to 5).

Firstly, 'de NP' preverbal *and* postverbal subjects, are excluded in SI – cf. (17b, c) – unlike 'de NP' direct objects – cf. (17d):

(17) a. Peu de linguistes nous ont critiqués
few of linguists us have criticized
'Few linguists have criticized us'
b. *De linguistes nous ont peu critiqués
Of linguists us have few criticized
'Few linguists have criticized us'
c. *Le jour où nous ont peu critiqués de linguistes
The day when us have few criticized of linguists
'The day when few linguists have criticized us'
d. J'ai peu critiqué de linguistes
I have few criticized of linguists
'I criticized few linguists'

Secondly, neither postverbal subjects in SI nor preverbal subjects in standard SVO sentences can give rise to subnominal 'en' extraction (on which see Pollock (1998); in this, they differ from objects, as pairs like (18a, b) vs. (18c) show:

(18) a. *Trois en ont critiqué ce linguiste
Three of them have criticized this linguist
'Three of them criticized this linguist'
b. *Le linguiste qu' en ont critiqué trois
The linguist that of them have criticized three
'The linguist that three of them criticized'
c. J'en ai critiqué trois
I of them have criticized three
'I criticized three of them'

Thirdly, postverbal subjects in SI resist long distance 'pas' (neg) quantification, unlike objects and like preverbal subjects; compare:

(19) a. *De linguistes n' ont pas lu ce livre
Of linguists NEG have not read this book
'Linguists have not read this book'
b. *Quel livre n' ont pas lu de linguistes?
What book NEG have not read of linguists
'What book have linguists not read?'
c. Je n' ai pas vu de linguiste
I NEG have not seen of linguist
'I haven't seen any linguists'

Finally, the subject position of the postverbal subjects is 'Topic-like' in showing an 'anti-indefiniteness' effect, first noted by Cornulier (1974); compare:

(20) a. ?*Quel gâteau a mangé quelqu'un?
What cooky has eaten someone?
'What cooky has someone eaten?'
b. ?*Quel article critiquera quelqu'un?
What article will-criticize someone?
'What article will someone criticize?'

Let us now explicitly adopt Kayne's (1994) claim that UG allows no rightward adjunction and no right-hand specifiers; so the postverbal subject of (17) to (20) cannot have been displaced rightwards or stand in a right-adjoined position. Nor can it have been merged in a right-hand Spec (contra Freidemann 1997).

Let us also take seriously the conclusion, strongly suggested by (17)–(19), that SI subjects behave like preverbal subjects with respect to a significant number of syntactic processes; in particular let us start with the non controversial claim that (17)–(18)–(19b) are excluded because *peu, pas, en* cannot c-command their traces in the 'high' Spec, Infl position; movement can only be to a c-commanding position; the null hypothesis would be that (17)–(18)–(19c) are excluded for the same reason. If so, the spell-out parse of those SI sentences cannot be that in (16) since moving *peu, pas, en* leftwards in (16) would produce a legitimate c-command configuration which should yield fine sentences, just as moving *peu, pas, en* from object position does in (17)–(18)–(19c).

We hold rather that SI subjects must be in the left-hand specifier of some projection – call it 'FP' – and that the preceding string gets to the left of the subject DP via movement of some relevant phrase to the specifier of a functional projection which we call 'GP' like Kayne and Pollock (2001); the much simplified parse of SI sentences is thus as in (21),

(21) $[_{GP}\ [_{XP}\ \text{V (Participle)}]_i\ \text{G}\ [_{FP}\ \text{DP F}\ t_i]]$

and it is easy to see that the hypothetical movement of *peu, pas* and *en* from the SI subject will be banned, as desired, exactly for the same reason it was in (17)–(18)–(19b): in all of these, movement from the subject in Spec, FP or Spec, IP is to a non c-commanding position since in SI cases *en, peu, pas* would end up inside the XP phrase in Spec G, i.e. in a position which does not c-command (into) the DP subject.

What are FP and GP? The XP preposed past the subject in SI contains the finite auxiliary, when there is one, and the pre-auxiliary clitics, if there are any (cf. e.g. *Quand en a parlé Marie?* ('When of it has spoken Marie?'), *Où lui a parlé Jean?* ('where to him has spoken Jean?') i.e. XP seems to correspond to the whole IP minus the subject. This is especially clear under the standard assumption that French finite verbs and auxiliaries are in the highest head position within IP (cf. Pollock 1989). A paradox now emerges, since moving a constituent equal to IP less the

subject of IP would mean moving a non-maximal projection, which is typically assumed to be banned. The conclusion that should be drawn and which we have anticipated in (21) is that in SI the subject first moves out of its normal Spec,IP position to a still higher Spec,FP which in turn allows taking the XP movement of (21) to be 'simple' IP movement, with IP now containing an empty subject position, as sketched in (22):[7]

(22) $[_{GP}\ [_{IP}\ t_i\ I^0 \ldots VP]_j\ G\ [_{FP}\ DP_i\ F\ t_j]]$

The 'extra' leftward movement of the subject in SI just posited provides a principled way of looking at two further properties of subjects in SI: their anti-indefiniteness, already mentioned in (20), and the fact that they cannot be clitics:

(23) a. Qu'a mangé Jean?
What has eaten Jean?
'What has Jean eaten?'
b. *Qu'a mangé il?
What has eaten he?
'What has he eaten?'

Because in Kayne and Pollock's (2001) analysis SI subjects move to the left periphery, the anti-indefiniteness effect can be seen in same light as that of (24),

(24) a. *Quelqu'un il a critiqué mon article
Someone he has criticized my article
'Someone has criticized my article'
b. *Quelqu'un il a mangé le gâteau
Someone he has eaten the cooky
'Someone has eaten the cooky'

since the position of SI subjects and that of CLLD phrases are both left periphery positions; examples like (24) show indefinites do not like such positions; put another way, it is plausible that the structure and computations yielding (22) will provide an account of (20) by reducing their ill-formedness to that of (24).

The same perspective can be adopted for (23): such sentences would be acceptable if subject clitics could move to the Topic-like Spec, FP position in which full DPs stand in SI sentences and CLLD constructions like (25a); but we of course know that replacing the lexical subject itself by a subject clitic is not possible, as (25b) shows:

(25) a. Jean, il a mangé un gâteau
Jean, he has eaten a cooky
'Jean has eaten a cooky'

b. *Il, il a mangé un gâteau
he, he has eaten a cooky
'He has eaten a cooky'

It seems again highly plausible to attribute the unacceptability of (23b) to the same factor that excludes (25b). Kayne and Pollock's Remnant Movement analysis of French SI paves the way to this desirable generalization.[8]

3. French subject clitic inversion ('SCLI') and complex inversion ('CI') (Poletto & Pollock 2000; Pollock 2000).

SCLI is a wide-spread phenomenon in those Romance languages and dialects that have developed subject clitics, among which French and many Northern Italian Dialects – 'NIDs' – as Poletto (2000, Chapter 1, Section 3.2) shows at length; (26) illustrates the phenomenon:

(26) a. Que fait-il? (French)
What does-he?
'What is he doing?'
b. Cossa fà-lo (Paduan)
What does-he?
'What is he doing?'
c. Ce mangia-l (Friulian)
What eats-he?
'What is he eating?'

Interestingly, in one NID, Monese, SCLI obligatorily triggers 'fà-support' (cf. Benincà & Poletto 1997), precisely in those contexts in which English triggers 'do-support':

(27) a. Ngo fa-l ndà
Where does-he go?
'Where does he go?
b. Ngo fè-t ndà
Where do you-SG go?
'Where do you go?'
c. Ngo fè-f ndà
Where do you-PL go?
'Where do you go?'

English 'do-support' and Monese 'fa-support' are strikingly similar in that they occur only in root contexts when no auxiliary or modal verbs are present and both are

banned when the subject is questioned (cf. Benincà & Poletto 1997). This strongly suggests that Monese 'fa-support' and English 'do-support' call for a unitary analysis. Benincà and Poletto (1997) provides one and argues that they can, hence must, be analyzed in the same terms; assuming so, note that no one has ever suggested that 'do-support' be analyzed as an instance of *covert* movement; the null hypothesis is then that Monese 'fa-support', the shape SCLI takes in that language, is also an instance of *overt* movement to the Comp domain; by parity of reasoning SCLI in the more familiar varieties of Romance should also be viewed as a case of pre-spellout movement to the left periphery.[9] This obviously holds of French SCLI constructions which share their defining properties with their NID analogues.

On the other hand, French SCLI has been shown not to be amenable to a I^0/V^0 head movement analysis; this follows from Kayne's (1991, 1994) convincing analysis of non nominative clitics as heading a number of functional projections distinct from the verb's; therefore SCLI questions like e.g. *te l'a-t-il donné?* (to you it has he given? 'Has he given it to you?'), cannot arise as a consequence of I^0/V^0 movement; this result carries over to the equivalent clitic-verb sequences in the NIDs; as Kayne (1991) and Poletto and Pollock (2000) further argue, the view that non nominative clitics need not be analyzed as adjoined to V is almost certainly required by examples like (28a) in literary French, (28b, c, d) – from Madame de Sévigné's *Lettres* – in classical French, and (29a, b, c, d) in Modern Triestino and Calabrian; in all of these, the clitics are separated from the verb by various (maximal) adverbial phrases:

(28) a. Il a dû en fort bien parler
He must have of it very well spoken
'He must have spoken of it very well'

b. [...] elle dit qu'elle lui doit tout son bonheur,
[...] she says that she to her owes all her happiness,
par le soin qu'elle a eu de la bien élever
because of the care that she has had to her well bring up
'she says that she owes her all her happiness, because of the care she took to bring her up well'

c. [...] ils ont été affligés de ne vous point voir
[...] they have been sorry to NEG you not see
'They were sorry not to see you'

d. Nous faisons une vie si réglée qu'il n'est quasi pas
We make a life so regular that it NEG is almost not
possible de se mal porter
possible to oneself ill bear
'We lead such an orderly life that it is almost impossible to be in poor health'

(29) a. Nol se gnanca vedi (Triestino)
Not-it REFL not-even see
'You cannot even see it'
b. El me sempre disi
He to-me always says
'He always tells me
c. Un ti manco canusciu (Calabrian)
Not you at all know
'I do not know you at all'
d. Ci propiu volia
LOC-CL really need
'It was really necessary'

Such examples transparently show that French, Triestino and Calabrian non subject clitics need not/have not always adjoin(ed) to the verb. In addition Kayne (1994) points out that saying that they may sometimes do would leave us without an account for the fact that referential expressions are typically banned from appearing within words (compare 'a self hater' vs. *'an {it, her, you} hater'); Hulk (1993, 3.3), Kayne (1994: 45), Terzi (1999, Section 2) observe further that on the standard assumption that in Romance imperatives the verb *does* move to a very 'high' – see Terzi (1999) – head position in the CP field, the fact that in (30a) the clitics are obligatorily stranded by the verb is in itself an argument that no verb movement has applied in SCLI and CI sentences like (30b, c):

(30) a. Donne le lui!
Give it him
'Give it to him'
b. (Quand) le lui donnera-t-il?
(When) it him will-give he')
'(When) will he give it to him?'
c. (Quand) Pierre le lui donnera-t-il?
(When) Pierre it him will-give he)
'(When) will Pierrre give it to him?'

Hulk (1993) and Terzi (1999) note that the negative head 'ne' blocks head movement in imperatives,

(31) a. *Ne donne le lui pas
NEG give it him not
'Don't give it to him'
b. Ne le lui donne pas
NEG it him give not
'Don't give it to him'

and point out that if head movement was involved in (26) one would expect the perfectly fine (32) to be ungrammatical, contrary to facts.

(32) Ne le lui donnera-t-il pas?
NEG it him will-give he not?
'Won't he give it to him?'

Those three arguments show beyond any reasonable doubt that the clitics in (33),

(33) a. Pierre me l'a donné
Pierre me it has given
'Pierre has given it to me'
b. Pierre ne lui a pas parlé
Pierre NEG him has not spoken
'Pierre has not spoken to him'
c. Il ne m' en donnera pas
He NEG me of it will-give not
'He won't give me any of it'
d. Elle m'y conduira
She me there will-take
'She'll take me there'

head a projection different from the verb's and hence that the computation(s) to the left periphery at work in SCLI and CI like (34) cannot be instances of I^0/V^0 movement:

(34) a. Pierre me l'a-t-il donné?
Pierre to me it has-he given
'Did Pierre give it to me?'
b. Pierre ne lui a-t-il pas parlé?
Pierre NEG to him has he not spoken
'Hasn't Pierre spoken to him?'
c. Ne m'en donnera-t-il pas?
NEG to me of it will-give he not
'Won't he give me any?'
d. M'y conduira-t- elle?
Me there will-take she
'Will she take me there?'

Since we showed above that SCLI is *overt* movement, we conclude that SCLI is *phrasal* movement to the Comp domain; *Le lui donnera-t-il?* can now be derived, as it must, if the string 'le+lui+donnera' is a phrase and moves as one to the left periphery; but of course XP in (35),

(35) $[_{XP}$ le $[_{YP}$ lui $[_{ZP}$ donnera …]]]

and Object clitic + finite verb strings in general are typically *NOT* constituents; they are not in (36), for example, in which XP includes the negation, the participle and the infinitives as well:

(36) a. Il ne le lui donnera pas
He NEG it to-him will-give not
'He won't give it to him'
b. Il ne m'a pas parlé
He NEG to-me has not spoken
'He hasn't spoken to me'
c. Je n'y suis pas allé
I NEG there am not gone
'I haven't gone there'

It appears, then, that a phrasal movement analysis of SCLI entails that XP in (35) can only move as a phrase because the elements included in the '…' have vacated their input position at some earlier stage in the derivation; in short, any overt phrasal movement analysis of SCLI in French has to be a *Remnant* Movement analysis. The derivations that have to be posited to yield (37),

(37) a. Ne le lui donnera-t-il pas?
NEG it to-him will-give he not
'Won't he give it to him?'
b. Va-t-elle lui prêter un livre?
Will she to-him lend a book
'Will she lend him a book?'
c. Avez-vous envoyé un livre à Paul?
Have you sent a book to Paul
Have you sent Paul a book?

must thus involve previous displacement of the negative phrase *pas* in (37a), of the infinitival clause *lui prêter un livre* in (37b) and of the participial phrase *envoyé un livre à Paul* in (37c) as sketched in (38):

(38) a. Il ne le lui donnera [pas]] $\Rightarrow$ $[_{XP}$ [pas]$_i$ X^0 [il ne le lui donnera t_i]]
$\Rightarrow$ $[_{YP}$ il$_j$ Y^0 $[_{XP}$ [pas]$_i$ X^0 [t_j ne le lui donnera t_i]]]
$\Rightarrow$ $[_{ZP}$ [t_j ne le lui donnera t_i]$_k$ Z^0 $[_{YP}$ il$_j$ Y^0 $[_{XP}$ [pas]$_i$ X^0 t_k]]]
b. Elle va lui prêter un livre $\Rightarrow$ $[_{XP}$ lui prêter un livre]$_i$ X^0 [elle va t_i]] $\Rightarrow$
$[_{YP}$ Elle$_j$ Y^0 $[_{XP}$ [lui prêter un livre]$_i$ X^0 [t_j [va t_i]]]]
$\Rightarrow$ $[_{ZP}$ [t_j va t_i]$_k$ Z^0[$_{YP}$ [elle$_j$ Y^0 $[_{XP}$ [lui prêter un livre]$_i$ X^0 t_k]]]]

c. [Vous avez [envoyé un livre à Paul]] ⇒ $[_{XP}$ envoyé un livre à Paul$]_i$ X^0 [vous avez t_i]]
⇒ $[_{YP}$ vous$_j$ Y^0 $[_{XP}$ [envoyé un livre à Paul$]_i$ X^0 [t_j avez t_i]]]
⇒ $[_{ZP}$ [t_j avez $t_i]_k$ Z^0 $[_{YP}$ vous Y^0 $[_{XP}$ [envoyé un livre à Paul$]_i$ X^0 t_k]]]

We shall not attempt to be more precise here about the XP, YP and ZP layers of the ('highly' split) Comp area which derivations like these presuppose (see Poletto & Pollock 2000; in prep.); what we shall do, rather, is show in what way this approach can solve long-standing problems when it is extended, as it must – see (34) – to the French (and Valdôtain, see Roberts 1993; Pollock 2000) Complex Inversion further illustrated in (39):

(39) a. Pierre ne le lui donnera-t-il pas?
Pierre NEG it to-him will-give he not
'Won't Pierre give it to him?'
b. À qui Marie va-t-elle prêter un livre?
To whom Marie will she lend a book
'To whom will Marie lend a book?'

As has been repeatedly stressed in the literature (cf. e.g. Kayne 1972, 1983), CI in French contrasts sharply with clitic left dislocations like (40) not only in terms of the position in which the preverbal DP stands with respect to the wh-phrase but also prosodically, as the obligatory coma intonation of (40) indicates:

(40) a. {Yves, cet homme}, (Quand) va-t-il téléphoner?
{Yves, this man}, (when) will he phone?
b. {Yves, cet homme}, (à qui) va-t-il téléphoner?
{Yves, this man}, (to whom) will he phone?

Furthermore quantified DPs like *tout le monde*, *chaque homme* and bare QPs like *tout* or *rien* can occur in the preverbal position in (39) in French, though not in CLLD position:

(41) a. Pourquoi rien ne s'est-il passé?
Why nothing ne-REFL-is it happened
'Why has nothing happened?'
b. Pour qui tout est-il toujours un problème?
For whom all is-it always a problem
'For whom is everything always a problem?'

(42) a. *Rien, pourquoi ne s'est-il passé?
Nothing, why ne-REFL-is it happened
'Nothing, why has it happened?'

b. *Tout, pour qui est-il toujours une problème?
All, for whom is-it always a problem
'Everything, why is it always a problem?'

It would thus appear that the preverbal DP in CI stands in the same position with respect to the wh-phrases as the 'ordinary' subjects of embedded questions like (43):

(43) a. Je ne sais pas quand {Yves, cet homme} va téléphoner
I NEG know not when {Yves, this man} will phone
'I don't know when {Yves, this man} will phone'
b. On voudrait savoir pourquoi
One would like (to) know why
rien ne s'est passé
nothing NEG REFL is happened
'One would like to know why nothing happened'
c. Dis moi pour qui tout est toujours un problème
Tell me for whom everything is always a problem

Put another way, such facts provide fairly direct evidence that the preverbal DP of CI is more closely linked to the ordinary subject position of simple statements like (44a, b, c) than to the CLLD position of (44d, e, f):

(44) a. {Yves, cet homme} va téléphoner
{Yves, this man} will phone
b. Rien ne s'est passé
Nothing NEG REFL is happened
'Nothing happened'
c. Tout est toujours un problème pour Paul
Everything is always a problem for Paul
d. {Yves, cet homme}, il va téléphoner
{Yves, this man}, he will phone
e. *Rien, il ne s'est passé
Nothing, it happened
f. *Tout, il est toujours un problème pour Paul
Everything, it's always a problem for Paul

However, like SCLI and unlike SI or simple statements like (44), CI is restricted to root (interrogative)[10] contexts:

(45) a. *Je ne sais pas quand (Yves) va-t-il téléphoner?
I NEG know not when (Yves) is he going to phone
'I don't know when is {Yves, he} going to phone?'

b. *Dis-moi à qui (Yves) va-t-il téléphoner?
Tell me to whom (Yves) will he phone
'Tell me whom will {Yves, he} phone?'

We must thus account for the properties shared by CI and SCLI – e.g. their common restriction to root contexts – and also capture the traditional grammarians' intuition that CI is at the same time a "non inverted" structure.

Let us start with SCLI and CI's restriction to root sentences; since at least Den Besten (1983) it has been viewed as following from the fact that the CP domain of embedded clauses does not make available the position(s) to which the Infl projection (and the finite verb it hosts) moves in root clauses (cf. e.g. Kayne 1983; Rizzi & Roberts 1989), say because a lexical Comp blocks Infl(P) to C(P). The three scholars just mentioned analyzed movement to the Comp area in root SCLI and CI as one and the same computation, as is obviously required, and formulated it in head movement terms; both use Kayne's (1972) 'clitic phrase' and claim that the input structure of CI and SCLI is essentially the same, differing only in that the clitic phrase in subject position has an overt DP specifier in CI but only a non lexical pro specifier in SCLI, as (46) shows:

(46) a. $[_{IP}\ [_{ClP}$ DP il/elle$]\ I^0 \ldots\ ]]$
b. $[_{IP}\ [_{ClP}$ pro il/elle$]\ I^0 \ldots\ ]]$

Head movement of I^0 to C^0 yields (47a, b):

(47) a. $[_{C^0}\ [V^0{+}I^0]_i\ {+}C^0]\ [_{IP}\ [_{ClP}$ DP il/elle$]\ t_i \ldots\ ]]$
b. $[_{C^0}\ [V^0{+}I^0]_i\ {+}C^0]\ [_{IP}\ [_{ClP}$ pro il/elle$]\ t_i \ldots\ ]]$

Further (optional) wh-mvt to Spec C^0 then derives (39) and the like. If C^0 always counts as lexical in embedded contexts (47) will not apply there and (45) will not be generated, as desired. As such, however, derivations of that type do not yet yield the word order of CI sentences like *(Où) Marie va-t-elle partir?* ((Where) Marie is she going to go?); additional movement of the subject DP to the Comp field is evidently needed. This in itself is non trivial since targets for DPs in 'Comp' are A-bar positions which typically attract operators. Kayne (1983), Rizzi and Roberts (1989) adopt different ways of solving the problem; putting it aside, the spellout parse of CI in any such I^0 to C^0+ DP mvt analysis is essentially (48):

(48) $[_{CP}$ (Wh-) $[\ DP_j\ [_{C^0}\ [_{I^0}\ V^0{+}I^0]_i\ {+}C^0]\ [_{IP}\ [_{ClP}\ [_{DP}\ t_j$ il/elle$]\ t_i \ldots\ ]]$

(48) raises several conceptual and factual problems. First, a major binding theoretic problem arises in (49) and the like:

(49) a. Où Marie est-elle allée?
Where Marie is she gone
'Where has Marie gone?'
b. À qui Jean a-t-il parlé?
To whom Jean has he spoken
'To whom has Jean spoken?'
c. Quand Anne et Marie partiront-elles?
When Anne and Marie will-go they
'When will Anne and Marie go?'

On the parse shown in (48) the subject DP and the agreeing pronominal in postverbal position should trigger a principle B violation: DP_j binds {il, elle, ils, elles}$_j$ in the same minimal governing category; (49) should thus be excluded the way **Pierre$_i$ l'$_i$aime*('Pierre$_i$ likes him$_i$') is. Second, as Hulk (1993) observes, on Sportiche's (1988) classical reanalysis of Kayne's (1975) 'R-tous' configurations in which the floating quantifiers are stranded by (the rest of the) DP moving to some higher position, we would expect fine CI constructions like (50a, b) to have as an acceptable variant the ungrammatical (50c):

(50) a. Pourquoi tous tes amis n'ont-ils pas téléphoné?
Why all your friends NEG have they not phoned
'Why haven't all your friends phoned?'
b. Pourquoi tes amis n'ont-ils pas tous téléphoné?
Why your friends NEG have they not all phoned
'Why have your friends not all phoned?'
c. *Pourquoi tes amis n'ont-ils tous pas téléphoné?
Why your friends NEG have they all not phoned
'Why have your friends all not phoned?'

According to (48), *Tous tes amis* in (50a) has moved as a whole from its subject position to the Comp field; in (50b) *tes amis* has stranded *tous* in the specifier of some 'low' v/VP position. *Tous* should then also be able to strand in the Spec,IP position preceding *pas* (cf. *Tous tes amis n'ont pas téléphoné*) and *Tes amis* should move to the Comp domain, which incorrectly generates the unacceptable (50c). This should probably be seen as a consequence of the fact that (48) fails to capture the traditional idea that CI is a 'non inverted' construction.

Finally CI constructions display a surprising pattern of strong preverbal pronouns. Third person strong pronouns are acceptable DP_j in (48), as in (51), but first and second person pronouns aren't:[11]

(51) a. Quel livre lui a-t-il publié?
What book him has he published
'What book has HE published?
b. Quel livre eux ont-ils publié?
What book them have they published
'What book have THEY published?

(52) a. *Quel livre toi as-tu publié?
What book you have you published
'What book have YOU published?'
b. *Quel livre moi ai-je publié?
What book me have I published
'What book have I published?
c. *Quel livre nous avons-nous publié?
What book we have we published
'What book have WE published?'
d. *Quel livre vous avez-vous publié?
What book you have you published
'What book have YOU published?'

Kayne's (1983, (74)) proposal to account for pairs like these is repeated in (53):

(53) A first or second person pronoun must necessarily be an argument

(53) says that in acceptable CI the postverbal third person clitics are expletives, an idea that solves the binding theoretic problem noted above. If (53) holds, then *toi, moi, vous* etc. are necessarily R-expressions and (52) fall back being violations of principle B. However, as Friedemann (1997: 164) notes, acceptable examples like (54a, b) are counterexamples to (53).

(54) a. Pourquoi ta femme et toi ne viendriez-vous pas à la fête?
Why your wife and you NEG would-come you not to the party
'Why wouldn't your wife and you come to the party?'
b. Où moi et mes enfants sommes-nous invités?
Where me and my children are we invited
'Where are my children and I invited?'

A Remnant IP movement analysis of CI can solve those problems in a principled way. It also adopts Kayne's (1972) idea that the subject of SCLI and CI are 'clitic phrases' like (46), repeated in (55):

(55) a. $[_{IP}\ [_{ClP}$ DP {il(s), elle(s), nous, …}] I^0 …]
b. $[_{IP}\ [_{ClP}$ pro {il(s), elle(s), nous, …}] I^0 …]

and holds that in CI, just as in SCLI, the head of the ClP moves to some 'high' position in the left periphery – 'Spec YP' in (38) – as in (57a), the derivation of (56):

(56) Pierre téléphonera-t-il?

(57) Input: $[_{IP}$ $[_{ClP}$ Pierre il] téléphonera]

a. Clitic Mvt to YP $\Rightarrow [_{YP}$ il_j Y^0 $[_{IP}$ $[_{ClP}$ Pierre t_j] téléphonera]]

b. Remnant IP mvt to ZP $\Rightarrow$ $[_{ZP}$ $[_{IP}$ $[_{ClP}$ Pierre t_j]téléphonera$]_k$ Z^0 $[_{YP}$ il_j Y^0 t_k]]

(57) only differs from (59) in having a non lexical DP in the Spec, ClP:

(58) Téléphonera-t-il?

(59) Input: $[_{IP}$ $[_{ClP}$ pro il] téléphonera]

a. Clitic Mvt to YP $\Rightarrow$ $[_{YP}$ il_j Y^0 $[_{IP}$ $[_{ClP}$ pro t_j] téléphonera]]

b. Remnant IP mvt to ZP $\Rightarrow$ $[_{ZP}$ $[_{IP}$ $[_{ClP}$ pro t_j]téléphonera$]_k$ Z^0 $[_{YP}$ il_j Y^0 t_k]]

As desired, this offers a unitary analysis of SCLI and CI and, like Den Besten (1983), we state that Remnant IP mvt to ZP is banned when ZP is filled by a complementizer counting as lexical; this takes care of the root vs. embedded asymmetry of SCLI and CI.[12]

We can now come back to the four problems raised above. The preverbal subject *Pierre* in (57b) is standing in the same subject position as in sentences like *Pierre téléphonera*, in Spec,IP; thus (54) does capture the traditional intuition that in CI the preverbal subject *is* an ordinary subject; it can therefore be a bare quantifier like *tout* or *rien*, a quantified DP like *chaque homme,* etc. (56) has no need, clearly, for the inelegant idea that the CP field allows for some 'special' A-bar like A-position to host the preverbal DP, a move forced on Kayne (1983), Rizzi and Roberts (1989), Laenzlinger (1998: 2.11) by their head movement analyses.

Since the preverbal subject of CI in (56) does not move to the CP field independently of the finite verb – and object clitics when present – we do not expect that the stranding of quantifiers in CI will be any different from what it is in simple sentences; Hulk's (1993) ungrammatical (50c), repeated in (60),

(60) *Mes amis n'ont-ils tous pas téléphoné?
My friends NEG have they all not phoned
'Haven't your friends all not phoned?'

is therefore excluded for the same reason (61) is,

(61) *Mes amis n'ont tous pas téléphoné
My friends NEG have all not phoned
'My friend have all not phoned'

despite the fact that the subject DP of CI constructions has indeed moved to the Comp area with the rest of the elements in IP. This, then, solves the second problem.

Neither *Pierre* nor *Marie* c-commands *il* and *elle* in (57b); the binding theoretic problem faced by Kayne (1983), Rizzi and Roberts (1989), Friedemann (1997) simply disappears; (57) aligns it with the trivial fact that *Pierre* and *le* in sentences like (62),

(62) [[la mère [de [Pierre]]] [l'aime]]

can be coreferential because *Pierre* does not c-command *le*; evidently, there is no need to appeal to the idea that *il* and *elle* are (exceptional[13]) expletives in CI, as in Kayne (1983), or that they are agreement markers of the NID variety, as in Friedemann (1997). On our Remnant Movement approach to CI, the third problem thus simply does not arise.

Finally (57) allows us to look at (51) vs. (52) in the same light as (63) vs. (64):

(63) a. LUI a publié un livre
'HE has published a book'
b. EUX ont publié un livre
'THEY have published a book'

(64) a. *MOI ai publié un livre
'I have published a book'
b. *TOI as publié un livre
'You have published a book'
c. *VOUS avez publié un livre
'You have published a book'
d. *NOUS avons publié un livre
'we have published a book'

What (63) and (64) show is that a strong third person pronoun can stand in what appears to be the 'ordinary' Spec,IP subject position but that strong first and second person pronouns can't. The Remnant mvt analysis of CI says that whatever explains (63) vs. (64) will carry over to (51) vs. (52) since they are all cases of the same configuration; that this is the right approach is confirmed by the fact that the acceptability of (54) pairs with that of (65) (see Pollock 2000; Kayne & Pollock 2001; and Kayne 2001, Chapter 9 for a fully-fledged account of such pairs):

(65) a. Toi et ta femme avez trois enfants
'You and your wife have three kids')
b. Mes enfants et moi sommes invités à la fête
'my children and I are invited to the party')

Like the first three problems, the fourth simply does not arise for our Remnant IP movement approach to Complex Inversion.

4. Concluding remarks

We have argued here that three very different types of constructions in Modern French, Stylistic Inversion – SI, Subject Clitic Inversion – SCLI – and complex inversion – CI – all require Remnant IP Movement to the left periphery. On the highly plausible view that the left periphery of the clause is the locus of the discourse/syntax interface where notions like 'topic', 'focus', 'presupposition', 'ground' etc. acquire syntactic import – see Rizzi (1997), our HP, YP, XP, ZP etc. layers in the Comp field will ultimately have to find a principled position in the hierachy of projections that define that conceptual domain, a task that could not be undertaken here.[14]

Still, such layers and the computations that they trigger can and should be evaluated on the basis of the empirical and theoretical generalizations they make possible. Our task here has been to show that a Remnant Movement approach to SI, SCLI and CI has a number of significant empirical advantages over past head movement analyses.

In the same perspective, it is also worth noting that if we are right *all* question related verb movements in French are cases of Remnant Movement; in particular, Stylistic Inversion only differs from SCLI and CI in that its Remnant IP targets a different layer of the Comp domain, Kayne and Pollock's 'GP' rather than the ZP layer specific to root questions which attracts Remnant IP in SCLI and CI. The unitary approach to the verb related computations to the CP domain thus made possible by our analysis should, we believe, be regarded as a step forward.[15]

Notes

1. But see Cheng and Rooryck (2000) for an analysis of (1) relying on covert movement of a Q-feature.

2. On "defective" wh-words see Munaro and Obenauer (1999), Poletto and Pollock (in prep.). As pointed out by an anonymous reviewer, French *que* does differ from other bare wh-words in French, e.g. *qui* (who) in showing clitic-like properties which Bellunese *che* does not have; the clitic nature of *que* is ultimately responsible for its ungrammaticality in (1d) (cf. Bouchard & Hirschbühler 1986; Munaro & Pollock 2001). This difference between *que* and *che* has no bearing on the point made in this section, namely that both *must* move to the left periphery, despite appearences.

3. On a remnant movement approach to the Spanish and Portuguese counterparts of (7) see Ambar (2000), R. Etxepare and M. Uribe-Etxebaria (2000); see also Poletto and Pollock (in prep.).

4. We have remained vague on the status of 'à'. On the idea that it is a 'probe' in Chomsky's (2001) sense, see Kayne (2001b).

5. Although judgments vary somewhat see Kayne (1972, Note 8).

6. Although variants of (16) could very well be adequate for other subject inversion construction in Romance. See Belletti (2001).

7. Postulating the two additional layers FP and GP supports Rizzi's (1997) 'split' CP idea, according to which the left periphery of the clause has a far more complex architecture than the usual 'CP' terminology would lead one to believe (see Munaro, Poletto & Pollock (2001), Poletto & Pollock (2000) and 3 below). The IP movement required here would still not be movement of a maximal projection if the subject had merely moved leftward to a second Spec position (cf. Chomsky 1995: 356) of IP itself.

8. On this and much else see Kayne and Pollock (2001).

9. See Poletto (2000, Chapter 3) and Poletto and Pollock (2000) for more arguments to the same effect.

10. And 'residual V2' constructions in the sense of Rizzi (1996) as in (i) (from Kayne 1972: 81):

(i) a. À peine (Jean) était-il parti que Marie est entrée
Hardly (Jean) was-he left that Marie is come
'Hardly had {Jean, he} left when Mary walked in'

b. Sans doute (Cette fille) reviendra-t-elle
No doubt (this girl) will-come back she
'No doubt this girl will come back'

c. (Cette fille) reviendrait-elle que je ne serais toujours pas content
(this girl) would-come back she that I neg would-be still not be happy
'Even if that girl came back I still wouldn't be happy'

11. Those facts were originally noted in Morin (1979) who gave contrasts like the following (see also Kayne 1983: 219):

(i) a. Pourquoi lui seul a-t-il été prévenu?
Why he only has he been told
'Why he alone was told?'

b. *Pourquoi toi seul as-tu été prévenu?
Why you only have you been told?
'Why you alone were told?'

12. ZP should then most probably be equated to ForceP (see Poletto & Pollock 2000); in SI Remnant IP moves to a different layer of the left periphery, Kayne and Pollock's GP (2001), Poletto and Pollock's (2000) 'GroundP'.

13. Because they show gender and number distinctions, which expletives typically don't, although the NIDs show that expletive pronouns can be morphologically masculine or feminine.

14. See Poletto and Pollock (2000, in prep.).

15. For this to be a genuine breakthrough one would need to explain why Remnant IP movement to GP, as in SI, crucially depends on the previous topicalization of the subject while in CI and SCLI Remnant IP movement is not subject to this requirement; on this see Poletto and Pollock (2000).

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The clause structure of extraction asymmetries*

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1. Introduction

A long-standing tenet of linguistic theory holds that languages exhibit a complement/non-complement asymmetry. This asymmetry can be illustrated by wh-movement out of wh-islands in the English examples below.

(1) *Who did Mary wonder whether read Metropolis?

(2) *When did Mary wonder whether John read Metropolis?

(3) ?What did Mary wonder whether John read?

A-bar movement out of wh-islands is ungrammatical for subjects and adjuncts (1a, b), but only slightly degraded for objects (1c). The literature on extraction has largely accepted the centrality of this complement/non-complement asymmetry, though the theoretical explanation has changed over the years (e.g. Huang 1982; Rizzi 1990; Cinque 1990; and others).[1]

Once other languages are considered, however, this asymmetry disappears, calling into question the universality of the complement/non-complement distinction. For example, in Romanian, sentential subjects are not islands, while other typical islands such as adjuncts and complex NPs are nevertheless opaque to extraction. Malagasy, on the other hand, only allows extraction of subjects and adjuncts, not of objects, thus presenting the reverse image of English. Moreover, many aspects of the previous analyses of (1)–(3) have been rejected in recent frameworks (e.g. government). We will show that a unified account of English, Romanian, and Malagasy is possible once the Asymmetry Theory of Di Sciullo (1999, forthcoming) is adopted. We also assume the Phase Theory of Chomsky (1999). We propose that, while the languages under consideration exhibit asymmetries of extractions, the differences follow from the way the EPP feature is satisfied.

1.1 Specificity of AT

According to the Asymmetry Theory (AT) all the active grammatical relations are asymmetrical. Asymmetry is taken to be a property of relations in a set, such that if the pair (x, y) is part of that set then the pair (y, x) is not. AT excludes symmetrical relations, such as the 'sister of' relation or symmetric c-command, from the set of active grammatical relations. Thus, constructions that have been analyzed in terms of sisterhood, including predication, small clauses, and adjunction are reanalyzed in terms of asymmetrical relations. AT thus differs from Moro (2001), as there can be no point of symmetry in the derivations. Thus, small clauses, multiple specifiers, and head adjunction structures are asymmetrical relations. According to AT, there is no point of symmetry in optimal interface interpretation. AT also differs from Kayne's (1994) LCA, which targets precede and dominate relations (asymmetrical c-command) to derive word-order, a Phonetic Form (PF) property, as it extends to Logical Form (LF), as it relates structural relations, precede and dominate (asymmetric c-command), to semantic visibility.

In AT, the operations and the conditions apply to asymmetrical relations and derive more complex asymmetrical relations. There is no law that applies to mere labels or categories. Thus, the complement/non-complement asymmetry, extensively discussed in the literature (Chomsky 1981; Aoun & Sportiche 1983; Huang 1982; Chomsky 1986; Rizzi 1990; Chomsky 1995; among others) is not basic in grammar. The difference in extraction from islands is a function of the position of the non-complement in the configuration, given language specific parameters.

In this paper, we bring forward new evidence from Romanian and Malagasy that opens the debate of the relation between asymmetry and variation. The facts indicate that parametric variation interacts with the syntactic asymmetries in such a way as to obliterate their effects in some configurations but not in others. We will take this to show that parametric variation may override constituent specific asymmetries, such as the complement/non-complement asymmetry, but it cannot run counter the basic asymmetry of grammatical relations, which hold across the board in AT, for any sort of constituent, be it complement or non complement.

We provide evidence that this is the case on the basis of Romanian and Malagasy pointing to the correctness of our hypothesis, according to which:

(4) Asymmetry is a property of grammatical relations, it is not a property of specific grammatical constituents.

The articulation of this paper is the following. We first present some properties of Romanian syntax. We show that strong and weak islands differ with respect to extraction and exhibit a different pattern from English. The difference residing, we propose, in the way the EPP is satisfied. We provide evidence to show that our hypothesis covers the unexpected differences between Romanian and En-

glish. We then discuss data from Malagasy, which illustrate strikingly different wh-movement patterns from English. We conclude with some consequences pertaining to the asymmetry, locality and parametric variation.

2. Romanian

2.1 Characteristics

Romanian is a Romance language that shares some properties with the neighbouring Slavic languages. In the following sections, we will highlight the basic properties of Romanian syntax, such as the word order, the clause structure, and the properties of wh-constructions.

2.1.1 *Word order*

We assume the word order VSO, with Dobrovie-Sorin (1994) and others.

(5) *Au vāzut copiii biblioteca universitātii.*
have seen children.the library.the university.DAT
'The children have seen the university library.'

The verb raises in the functional domain, to I^0 or to the head of an inflectional projection. Here, we assume that to be M^0, the head of a Mood projection argued for in Isac (1998). In the other Romance languages, the subject is generally assumed to raise in the functional domain (usually [Spec, IP]), in order to check its features. The Romanian subject does not need to raise for feature verification to take place, since we assume, with Alboiu (2000), following Chomsky (1998), that feature verification can take place by feature-raising. In this case, we would say that Romanian is specified [–] for the EPP.[2] The subject stays within the verbal projection, hence the VSO order.

In fact, Alboiu (2000) proposes a distinction between the D-type EPP and V-type EPP languages. Romanian, since it does not need the overt raising of the subject, is specified [–] for the D feature of T. Hence, it does not realize EPP in the nominal projection, but in the verbal projection, being specified for a V-type EPP feature. The differences between the V-type vs. the D-type EPP languages would be, for example, the semantic and syntactic constraints imposed on the pre-verbal subject in D-type languages, but not in V-type languages.

Note however that Romanian may well realize the SVO order, see (6), in which case the subject raises in the functional domain to [Spec, FP], a position which we assume to be a topicalized position, and which may also host one of the wh-words in multiple wh extraction constructions.

(6) *Studentii vor citi articolele cerute.*
Students.the will read articles.the required
'The students will read the required articles.'

2.1.2 *Wh- constructions*

In Romanian, all wh-phrases have to raise overtly in the operator domain. Hence, Romanian has a strong [+wh] uninterpretable feature that needs to be checked in a Spec/Head relation, following Rizzi's (1996) wh-criterion :

(7) a. A wh-operator must be in a specifier-head configuration with X^0. [+wh]
b. An X^0 must be in a specifier-head configuration with a wh-operator. [+wh]

It has been argued in numerous studies that Romanian *wh*-phrases do not need to raise to [Spec, CP], but to a lower position in the operator domain, namely to the specifier of the highest functional verbal projection (this is assumed to be $Mood^0$ in Isac 1998, I^0 in Alboiu 2000). The [Spec,CP] position will only be used for successive-cyclic wh-movement. Evidence for the Wh-movement targeting a lower position than [Spec, CP] can be taken to be the constructions such as (8), where the complementizer is followed by the wh-word:

(8) *Maria crezuse cã unde plecase Mihai* t_i ?
Mary thought that where left Mihai
'Where did Mary think that Mihai left?'

Moreover, the lack of V-to-C in Romanian and the compulsory verb-adjacency of the wh-phrases, as noted by Alboiu (2000), are further arguments for the presence of the [+wh] feature in the functional head M^0.

2.2 Structure

The basic structure of the Romanian CP is the one presented in (9). We will take this structure to be central in the analysis of the complement/non-complement asymmetry.[3]

(9) [CP [C FP [F MP [M TP [T FP [F vP [V DP]]]]]]]

The structure of the Romanian sentence that we adopt here is also compatible with the detailed analysis of the left periphery found in Rizzi (1997). The Focus/Topic/Force projections that he proposes can accommodate the Romanian sentences, as we do need to have different functional projections in the CP domain in order to capture the differences in force and scope of each constituent involved in

the wh-movement, for example. However, for the discussion at hand, we will adopt the simplified structure proposed in (9), and we will use the 'Topic' label without all the implications of a structure à la Rizzi (1997).

2.3 Wh-islands

2.3.1 *Island typology*

Wh-island constructions have been classified, for languages like English, into strong islands – where no extraction is allowed (be it of arguments or of adjuncts), and weak islands – where the extraction of arguments is allowed, but not the extraction of adjuncts.

Island constructions have been analyzed within different frameworks. The solutions proposed involve the empty categories formed by the extraction out of the islands. Generally, these constructions constitute either Subjacency, ECP or proper government violations. Such solutions group either the subject and the adjunct on one hand, as antecedent-governed constituents versus the object, as a θ-governed constituent, in Huang (1982) and Chomsky (1986); or they group the subject and the object, as θ-role bearers, versus the adjunct, as a non θ-role bearer, in Rizzi (1990). Thus, these theories make predictions about the possible extraction sites out of the islands on the basis of these classes of constituents. In this paper, on the other hand, the behaviour of the different constituents will be accounted for on the basis of their configurational properties and on the basis of language-specific parameters, given the basic asymmetry of the grammar. We will see that Romanian and English exhibit differences in the possibilities of extraction out of the islands, specifically in the case of subject islands, which implies a significant configurational difference between these two languages.

2.3.1.1 *Weak islands (e.g. factive islands, extraposition islands).* With respect to weak islands, Romanian behaves like English, in allowing the extraction of the arguments, but not of the adjuncts, from embedded constructions:

(10) a. What$_i$ do you regret that you have not seen t$_i$?
b. To whom$_i$ do you regret that you could not speak t$_i$?
c. *How$_i$ do you regret that you talked to her t$_i$?

(11) a. *Ce$_i$ regreti cã nu ai vãzut t$_i$?*
what regret that not have seen
'What$_i$ do you regret that you have not seen t$_i$?'
b. *Cui$_i$ regreti cã nu i – ai putut vorbi t$_i$?*
to whom regret that not to him have could speak
'To whom$_i$ do you regret that you could not speak t$_i$?'

c. **Cum$_i$ regreti cã ai vorbit cu ea t$_i$?*
how regret that have talk with her
'How$_i$ do you regret that you talked to her t$_i$?'

2.3.1.2 *Strong islands (e.g. CNPC, subject islands, adjunct islands).* With respect to the strong islands, Romanian behaves like English, in forbidding all extraction out of embedded constructions, with the exception of the subject islands that we will examine in Section 2.4. We illustrate the strong island extraction restrictions in the two languages with examples of adjunct islands.

(12) a. *What$_i$ did you leave without buying t$_i$?
b. *To whom$_i$ did you leave without speaking t$_i$?
c. *Where$_i$ did you solve without going t$_i$?

(13) a. **Ce$_i$ ai plecat fãrã sã cumperi t$_i$?*
what have left without SUBJ buy
"What$_i$ did you leave without buying t$_i$?"
b. **Cui$_i$ ai plecat fãrã sã – i vorbesti t$_i$?*
to whom have left without SUBJ to him speak
'To whom$_i$ did you leave without speaking t$_i$?'
c. **Unde$_i$ ai rezolvat fãrã sã te duci t$_i$?*
where have solved without SUBJ you go
'Where$_i$ did you solve without going t$_i$?'

2.4 Subject islands

Of crucial importance here is the fact that the Romanian subject islands behave differently from the English ones, since they allow extraction of all constituents (i.e. subjects, objects, adjuncts), whilst English allows no extraction whatsoever.

(14) a. Which books$_i$ did [talking about t$_i$] become difficult?
b. *How$_i$ would [to speak to him t$_i$] be inappropriate?

(15) a. *Cine$_i$ e imposibil [sã citeascã t$_i$ ziarul dimineata]?*
who is impossible SUBJ read paper.the morning.the
'Who$_i$ is it impossible that t$_i$ reads the paper in the morning?'
b. *Ce$_i$ e imposibil [sã citeascã Paul t$_i$ dimineata]?*
what is impossible SUBJ read Paul morning.the
'What$_i$ is it impossible that Paul reads t$_i$ in the morning?'
c. *Când$_i$ e imposibil [sã citeascã Paul jurnalul t$_i$]?*
when is impossible SUBJ read Paul paper.the
'When$_i$ is it impossible that Paul reads the paper t$_i$?'

Especially relevant for our discussion here is the fact that the Romanian allows extraction in the VSO constructions (15), but not in the SVO ones (16):

(16) a. **Cine*$_i$ [*sã citeascã* t_i *ziarul dimineata*] *e imposibil?*
who SUBJ read paper.the morning.the is impossible
'Who$_i$ is it impossible that t_i reads the paper in the morning?'

b. **Ce*$_i$ [*sã citeascã Paul dimineata* t_i] *e imposibil?*
what SUBJ read Paul morning.the is impossible
'What$_i$ is it impossible that Paul reads t_i in the morning?'

c. **Când*$_i$ [*sã citeascã Paul ziarul* t_i] *e imposibil?*
when SUBJ read Paul paper.the is impossible
'When$_i$ is it impossible that Paul reads the paper t_i ?'

Consider other examples which show that the extraction is allowed and which also manifest this asymmetry between the Romanian VSO and the SVO constructions:

(17) VSO:

a. *Cine*$_i$ *ar fi bine* [*sã manânce* t_i *tortul desearã*]*?*
who would be good SUBJ eat cake.the this evening
'Who$_i$ would it be good that t_i eats the cake this evening?'

b. *Ce*$_i$ *ar fi bine* [*sã manânce copiii* t_i *desearã*]*?*
what would be good SUBJ eat children.the this evening
'What$_i$ would it be good that the children eat t_i this evening?'

c. *Când*$_i$ *ar fi bine* [*sã manânce copiii tortul* t_i]*?*
when would be good SUBJ eat children.the cake.the
'When$_i$ would it be good that the children eat the cake t_i ?'

(18) SVO:

a. **Cine*$_i$ [*sã mãnânce* t_i *tortul desearã*] *ar fi bine?*
who SUBJ eat cake.the this evening would be good
'Who$_i$ would it be good that t_i eats the cake this evening?'

b. **Ce*$_i$ [*sã mãnânce copiii* t_i *desearã*] *ar fi bine?*
what SUBJ eat children.the this evening would be good
'What$_i$ would it be good that the children eat t_i this evening?'

c. **Când*$_i$ [*sã mãnânce copiii tortul* t_i] *ar fi bine?*
when SUBJ eat children.the cake.the would be good
'When$_i$ would it be good that the children eat the cake t_i ?'

In this section, we have considered evidence to the effect that the difference in the configurational properties of the subject in the two languages (depending on their respective parameters) will have a direct consequence on the possible vs. impossible extraction sites from islands.[4]

2.5 Analysis

2.5.1 *Subject position*

It is generally assumed that the Romanian subject occupies a postverbal position, hence the VSO word order. Cornilescu (1999) proposes two postverbal position for the Romanian subject, one where the Nominative Case is checked, i.e. [Spec, AgrS] and the VP internal position, i.e. [Spec, vP]. As we have already mentioned, Alboiu (1999) proposes instead that the feature verification takes place by feature-raising, which means that the subject does not need to raise out of the vP in order to check its features. The empirical evidence for the [Spec, vP] position show that in such cases, there is no strict adjacency between the verb (which has raised to M^0) and the subject, adverbs being allowed to intervene between the two constituents:[5]

(19) *Deseori mergeau copiii in excursie.*
often went children.the in trip
'The children were often taking a trip.'

(20) *Veneau uneori toti vecinii în vizitã.*
come sometimes all neighbours.the in visit
'Sometimes all the neighbours were coming to visit.'

Further empirical evidence, namely the VOS word order constructions, indicate that the subject has to be in [Spec, vP]. Cornilescu (1999) argues that the subject cannot appear after an object clause (see also Di Sciullo & Somesfalean 2001), which indicates that the subject cannot be adjoined to the VP (as initially discussed by Dobrovie-Sorin 1994 and Motapanyane 1989).[6]

(21) **I – a spus lui Ion cã vremea va fi frumoasã Petru.*
to him has said to Ion that weather.the will be beautiful Petru
'Petru has told Ion that the weather will be fine.' (Cornilescu 1999)

Cornilescu (1999) further discusses the Double Subject Constructions (DSC), see (22a), where the clitic pronoun may only occupy the higher postverbal position [Spec, AgrSP], whilst the doubled lexical NP will occupy the [Spec, vP] position. As we can see in (22b), the lexical NP subject cannot occupy the position outside the vP in such constructions.

(22) a. *Vine el tata sã – ti explice tema.*
comes him father SUBJ to you explain homework.the
'He, father, will come to explain (to you) the homework.'
b. **Vine tata el sã-ti explice tema.*

Based on these data, we conclude that in VSO constructions, the subject is in [Spec, vP]. Our findings are consistent with Alexiadou and Anagnostopoulou (1998),

which make a distinction between two classes of languages: Germanic on one side and Romance and Greek on the other, based on the value of the AGR and EPP parameters in these languages. They argue that in Null Subject languages with no overt expletive (as the case in Romanian), when the order is VSO, the subject is VP-internal.

As mentioned above, Romanian also allows SVO word order, in which case the preverbal subject is in a topicalized position in the operator domain. Dobrovie-Sorin (1987) argues that the topicalized subject may be preceded or followed by other XPs:

(23) a. *Ieri Mihai fără nici un motiv a plecat acasă.*
yesterday Mihai without even a reason has left home
'Yesterday, Mihai went home for no reason.'

b. *Ieri fără nici un motiv Mihai a plecat acasă.*
yesterday without even a reason Mihai has left home
'Yesterday, for no reason Mihai went home.'

c. *Mihai ieri fără nici un motiv a plecat acasă.*
Mihai yesterday without even a reason has left home
'Mihai yesterday for no reason went home.'

Further evidence provided by Cornilescu (1999) for the preverbal subject topic position involve the restrictions on the possible types of subject in the left periphery (BQs cannot be topics, the impossibility of a subject weak pronoun in the preverbal position, etc.).

2.6 Discussion

The Romanian extraction facts considered in the previous section are taken to indicate that Romanian does not realize the complement/non-complement asymmetry in the same way that English does. The parameters of the language affect the realization of this asymmetry: in a theory such as the Asymmetry Theory, we expect to have different manifestations of the basic asymmetry of the grammar.

We have seen that Romanian and English differ from each other with respect to word order: while English is a SVO language, Romanian is VSO. This parametric difference is expected to have implications in the grammatical systems of the two languages and hence in the extraction facts.

With respect to the word order, we start by noting that subject movement in the two languages is not motivated by the same mechanism. In English, it is the strong feature D of T that causes the movement of the subject in the functional domain, in [Spec, IP]. In Romanian, as we have seen, the feature D of T is weak

and the subject does not need to raise out of the vP domain in order to check its phi-features. When the subject does move out of vP, it is for topicality reasons.

The fact that the Romanian subject stays within the lexical domain, hence it is properly contained in the vP domain, has implications in the extraction facts: subject islands can be freely extracted and so can the constituents inside the subject clauses. This follows from the Interpretation Condition, (Di Sciullo forthcoming), as only [+wh] elements within the domain of the vP can be fully interpreted under local asymmetry. Thus, only the subject in [Spec,vP], found in a local asymmetrical relation with the verb, can be optimally interpreted. As we will see in the next section, the generalization holds for Malagasy, where the objects which are not found in a local asymmetrical relation with the verb cannot be optimally interpreted. However, once this relation is established, by moving the object to the subject position, the interpretation is possible. See Section 3 for details.

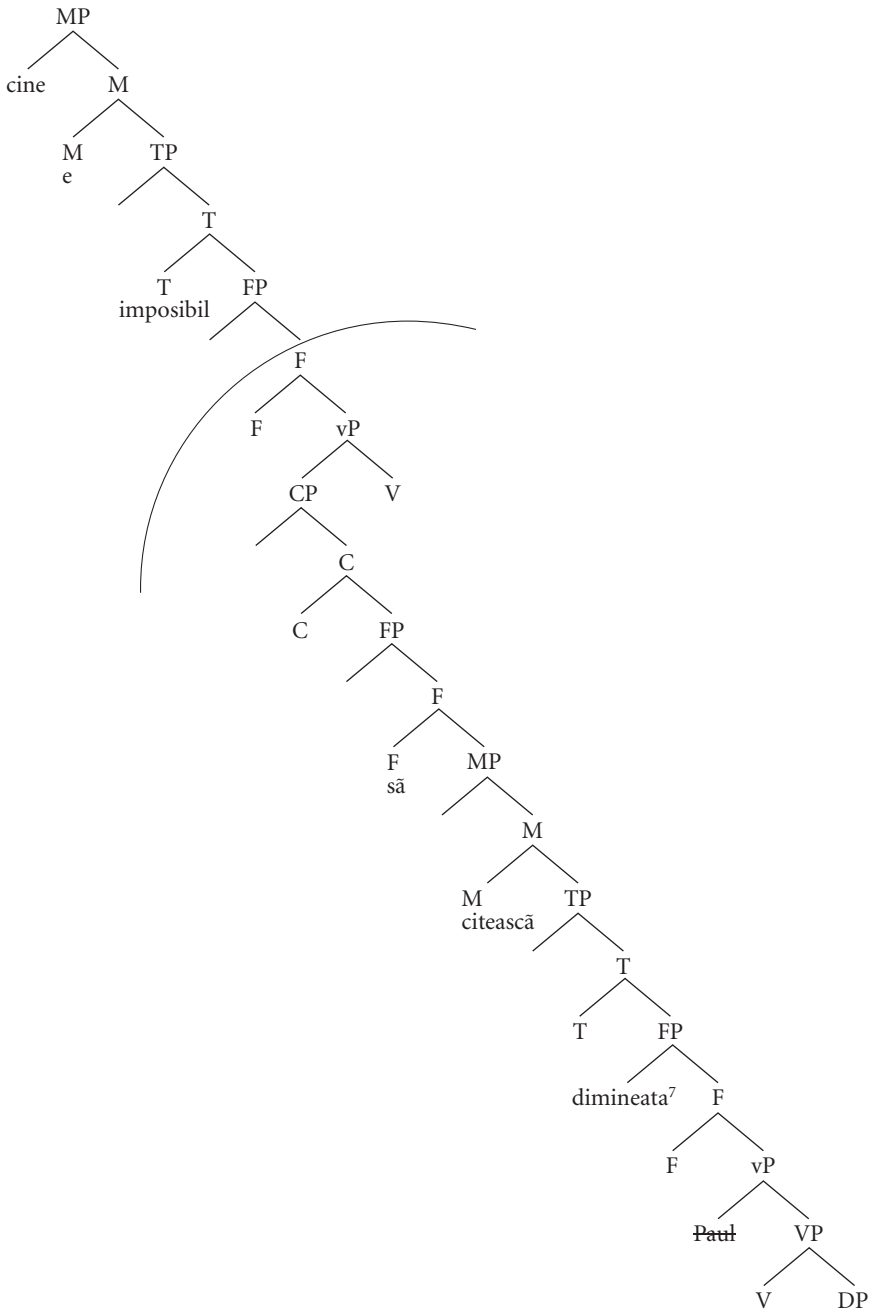
Consider again the examples seen in (15a) and (16a), repeated here as (24 a, b), versus the English (14a), repeated here as (25), with their respective structures:

(24) a. *Cine*$_i$ *e imposibil* [*sã citeascã* t_i *ziarul dimineata*]*?*
who is impossible SUBJ read paper.the morning.the
'Who$_i$ is it impossible that t_i reads the paper in the morning?'

b. **Cine*$_i$ [*sã citeascã* t_i *ziarul dimineata*] *e imposibil?*
who SUBJ read paper.the morning.the is impossible
'Who$_i$ is it impossible that t_i reads the paper in the morning?'

(25) *Which books$_i$ did [talking about t_i] become difficult?

(24) a.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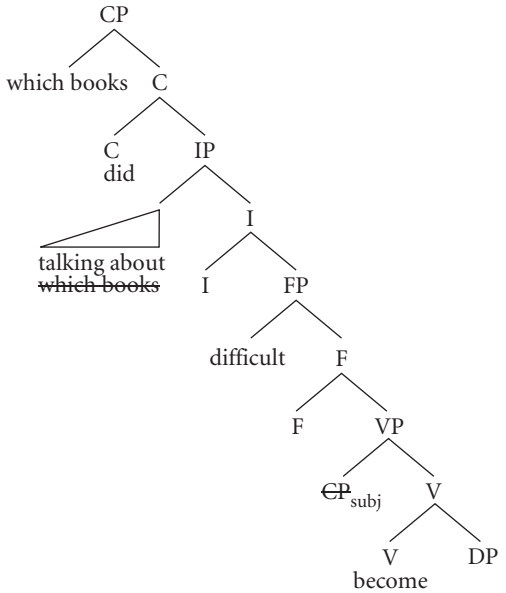
(25)



In the Romanian structure in (24a), the subject of the island can be freely extracted, as the subject clause is in the specifier position of vP. Moreover, note that the extraction of the adjunct (from the subject clause) is possible, as we have seen in (15c), which indicates that the specifier domain (of the adjunct) is transparent to the feature percolation across domains. The adjunct is still included in the verbal domain of the matrix clause, hence it is possible to extract it, on the basis of the Interpretation Condition previously mentioned.

In English however, as seen in (25), the subject has raised out of the verbal domain and the Interpretability Condition does not hold. All extraction out of the subject island is barred.

An important asymmetry observed within the Romanian strong islands facts is the following: the VSO constructions allow the extraction out of the wh-islands, but the SVO constructions never do. As we have seen, the subject in a pre-verbal position is a barrier to extraction, be it out of the strong or out of the weak islands. In fact, the only movement of the subject to the preverbal position is motivated by topicality (i. e. movement to a position higher than MP), hence the subject can only precede the wh-word, it can never follow it. We propose that this is a consequence of the fact that Romanian lacks the [+] EPP feature and that the Romanian subject can verify its features in its base position. The movement of the subject into the pre-verbal field is not motivated, unless topicalized, in which case it occupies the specifier of a topic projection, which is higher than the MP position (hosting the

wh-words). This explains the ungrammaticality across the board with respect to extraction out of SVO constructions.

3. Malagasy

We now turn to the Malagasy data. As the wh-questions below illustrate, Malagasy exhibits a very different asymmetry from English: only subjects and (certain) adjuncts can undergo A-bar movement (Keenan 1972).[8,9]

(26) a. *Iza no namaky ilay boky?*
who FOC PST.at.read DEF book
'Who read the book?'

b. *Oviana no namaky ilay boky i Soa?*
when FOC PST.at.read DEF book Soa
'When did Soa read the book?'

c. **Inona no namaky i Soa?*
what FOC PST.at.read Soa
'What did Soa read?'

The ungrammaticality of (26c) shows that an object cannot undergo A-bar movement in Malagasy. Instead, the object must first be promoted to subject, as in (27). In (27), the verb is marked with Theme Topic morphology, similar in some respects to English passive.

(27) textitInona *no novakin'i Soa?*
what FOC PST.TT.read.GEN.Soa
'What was read by Soa?'

The above data show that Malagasy and English exhibit strikingly different wh-movement patterns.

Comparing English with Malagasy, the question arises as to why languages vary in this respect. Under ECP-based accounts of extraction asymmetries in English, the Malagasy facts are surprising and difficult to account for. Assuming a universal base, direct objects in all languages should be generated in a properly governed position, which should allow for extraction. In this paper, we argue that the ungrammaticality of (26c) is due to the fact that there is no derived object position in Malagasy. In other words, Malagasy and English differ in how arguments are licensed, a fundamental distinction between the languages.

3.1 Extraction patterns

The above example from Malagasy illustrates wh-movement, a kind of focus movement. Non wh focus movement patterns in the same way, as shown in (28).

(28) a. *Rasoa no namaky ilay boky.*
Rasoa FOC PST.at.read DEF book
'It was Rasoa who read the book.'

b. *Omaly no namaky ilay boky Rasoa.*
yesterday FOC PST.at.read DEF book Rasoa
'It was yesterday that Rasoa read the book.'

c. **Ilay boky no namaky Rasoa.*
DEF book FOC PST.at.read Rasoa
'It was the book that Soa read.'

Topicalization has the same extraction pattern as focus. Relativization, however, displays a stricter restriction on movement: only subjects (not objects or adjuncts) can be relativized.

(29) a. *ny vehivavy izay namaky ilay boky*
DET woman REL PST.at.read DEF book
'the woman who read the book'

b. **ny antony izay namaky ilay boky Rasoa*
DET reason REL PST.at.read DEF book Rasoa
'the reason that Rasoa read the book'

c. **ny boky izay namaky Rasoa*
DET book REL PST.at.read Rasoa
'the book that Rasoa read'

We take the wh-movement facts to illustrate the true restriction on (A-bar) movement. Relativization is subject not only to constraints on movement but also to a matching requirement between the head noun and the empty operator (see Paul 2000).

3.2 A-bar subject

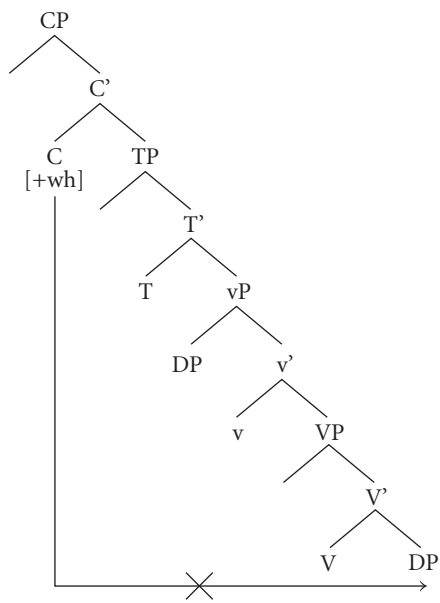
Other analyses of the extraction asymmetry in (26) have invoked the A-bar status of the subject position (e.g. Pearson 2001). On this view, (26c) is ungrammatical due to a Relativized Minimality violation when the object A-bar moves past the subject (Pearson (2001) in fact argues for another kind of blocking effect). Paul (in press) argues that this analysis is not tenable for Malagasy as the subject is an A, not an A-bar, position. We refer the reader to that paper for details.

3.3 An alternate analysis

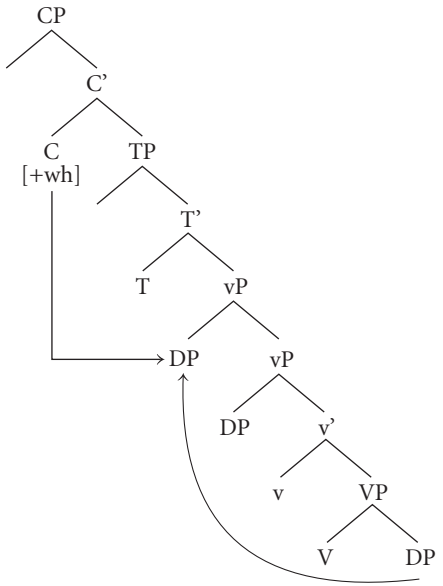
The A-bar analysis attempts to tie the extraction asymmetries to special properties of the subject. As an alternative, we focus on the properties of the object. For independent reasons, Travis (in press) has argued that there is no derived object position in Malagasy.[10] Although she does not discuss the wh-movement facts, Travis' conclusions provide the basis for a solution to the problem of extraction in Malagasy. Let us assume that the derived object position and the position for true object shift is [Spec, vP], as claimed by Chomsky (1995, 1999). Further, let us assume that the motivation for object shift is an EPP feature of v. We propose that Malagasy lacks this EPP feature and therefore the object remains "trapped" in VP.[11] (See McGinnis (in press) for a similar analysis of extraction asymmetries in Bantu applicatives.)

The labelled brackets below illustrate the basic clause structure we assume: a layered VP where the logical subject is merged in [Spec, vP] and the logical object in VP (either as sister to V^0 or as a specifier).

(30) a. Malagasy:



b. English:



Since vP is a phase, any elements within the "domain" of the phase (anything other than the specifier and the head) are invisible for extraction at the next phase level, i.e. CP. As illustrated in (30a), the object is ineligible for attraction by a [+wh] C^0. For languages such as English that allow object *wh*-movement, the object must first adjoin to vP. From this position, the subject and the object are equidistant to C^0, as seen in (30b). In Malagasy, the only 'escape hatch' for object extraction is the grammatical subject position, [Spec, TP]. Unlike CP, TP is not a phase and consequently elements in VP are visible to a T probe. The object must therefore be promoted to subject with Theme Topic morphology before any subsequent movement to [Spec, CP].[12] This analysis of extraction in Malagasy correctly accounts for adjunct extraction and long-distance wh-movement, as we discuss in the following two sub-sections.

3.3.1 *Adjuncts*

As mentioned earlier, some but not all adjuncts can undergo movement (see Rabenilaina (1998) for relevant discussion and further data). Instruments, benefactives and indirect objects, unlike most other adjuncts, resist movement. This contrast can be explained if the first set of adjuncts is generated within the lower VP, as seems reasonable to assume. The second set is generated higher: adjoined to TP. The examples below illustrate topicalization, which is subject to similar constraints as focus movement.

(31) a. **Amin'ny marary dia mitsiky ny dokotera.*
P.GEN.DET sick TOP at.smile DET doctor
'At the patient, the doctor smiles.' (Rabenilaina 1998: 2)

b. *Isan'andro dia mikapoka mpianatra Rabe.*
each.day TOP at.hit student Rabe
'Every day, Rabe hits students.' (Rabenilaina 1998: 24)

If, as we have suggested, there is no position at the edge of vP for elements to adjoin to, VP adjuncts (such as indirect objects) should pattern with objects, as is the case of (31a). In other words, like objects, VP adjuncts are 'trapped' within the verb phrase. TP adjuncts, on the other hand, are accessible as they are generated outside of the verb phrase, as seen in (31b). In order to extract a 'low' adjunct, Circumstantial Topic must be used to promote the adjunct to subject (similar to Theme Topic for objects), as in (32).

(32) *Amin'ny marary dia itsikian'ny dokotera.*
P.GEN.DET sick TOP CT.smile.GEN.DET doctor
'At the patient, the doctor smiles.'

Intuitively, VP is opaque to extraction of all elements: complements and adjuncts alike. This intuition can be formalized with the system of phases, as discussed above.

3.3.2 *Long-distance extraction*

Under the above analysis, it should be impossible to extract out of an embedded clause. A CP complement to the verb will be opaque to extraction as it remains within VP. In order for long-distance movement to be possible, the CP must be promoted to subject. The subject of this clause is then eligible for extraction. The example below illustrates long-distance movement (note that CP complements appear to the right of the matrix subject).

(33) a. **Iza$_i$ no nilaza i Soa [$_{CP\ object}$ fa milomano haingana t_i]?*
who FOC PST.at.say Soa that at.swim quick

b. *Iza$_i$ no nolazain'i Soa [$_{CP\ subject}$ fa milomano haingana t_i]?*
who FOC PST.TT.say.GEN.Soa that at.swim quick
'Who did Soa say swims quickly?'

In (33a), the subject of the embedded clause is extracted and the result is ungrammatical. This result is explained if the matrix vP blocks extraction and there is no intermediate position for the embedded subject to move through. In (33b), on the other hand, the complement CP is in the subject position. The embedded subject can now be extracted and (33b) is grammatical.

4. Conclusion

In this paper, we have explored a range of data from languages which do not show the standard extraction asymmetries predicted by the ECP. We have shown that by assuming that certain arguments can be licensed in their base position, the extraction facts follow. For example, in Romanian, subjects may remain in [Spec, vP] and from this position, wh-movement is permitted. This contrasts with subjects in English, for example, which obligatorily move to [Spec, TP] and are therefore opaque to extraction. In Malagasy, on the other hand, objects can remain in their merged position and not move to a higher licensing category. This results in the objects being frozen in-situ. We can state the parameter that distinguishes these three languages quite simply by invoking the EPP for both objects and subjects. In Romanian, the EPP feature for subjects is weak and the subject may remain in-situ. In Malagasy, the EPP feature for objects is weak and the object may remain in-situ. Thus the local licensing conditions on arguments have direct consequences for movement, as is expected in Asymmetry Theory and in Phase Theory.

The facts presented in this paper point to the correctness of our hypothesis that asymmetry in grammar is best stated as a primitive property and not in terms of asymmetries with respect to grammatical labels such as complement/non-complement. Asymmetries with respect to extraction from islands are parasitic on parametric variation, which in turn has an effect on locality. The locality constraints, including constraints on A'-movement, are constant and reduce to the simplest form in UG, and apply to parametrized configurations in specific grammars. This constitutes a specific implementation of the general hypothesis that the languages of the world are specific cases of a single grammar whose initial state includes elementary asymmetrical relations as well as parameters of variation, allowing linguistic diversity as well as different manifestations of the basic asymmetry of the grammar.

Notes

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1. One explanation is the ECP:

   A non-pronominal empty category must be:

   i. properly head-governed (Formal Licensing)
   ii. antecedent-governed or Theta-governed (Identification) (Rizzi 1990:32)

2. See Alexiadou and Anagnostopoulou (1998) for further discussion of languages with no EPP/weak EPP as a consequence of the unavailability of Move/Merge XP for Nominative Case checking.

3. In (9), the higher FP is the host of topicalized elements, whilst the lower FP is the host of the adverbs, as in AT functional categories may only be projected in the functional projection of the vP, to ensure Strict Asymmetry between lexical and functional projections. The analysis of adverbs as part of the functional domain is also discussed in Cinque (1997). AT provides a rationale for their exclusion from the lexical domain. The linear order of adverbs, with respect to the functional projection they are the specifier of, follows from an operation in AT that inverses grammatical relations. This operation is Flip. It applies to PF to ensure linearization, and it also applies to LF to ensure the visibility of scope relations. Its application is restricted in both cases. In its PF incarnation, the operation is forced to resolve computational complexity with respect to linear order. In its LF incarnation, it is forced to resolve conceptual complexity with respect to scope relations. See Di Sciullo (forthcoming) for discussion. For the case at hand, Flip inverts the Spec-head relation, such that the adverb is to the right periphery of the functional projection it is the Specifier of, thus providing the correct linearization for the cases where the adverb is to the right of vP or TP or other intermediate functional projections.We will thus assume the structure (9) to be correct and derive rightward adverbs by the independently motivated Flip.

4. Further evidence for our hypothesis comes from constructions that employ a complementizer (*ca*, the subjunctive form and *că*, the indicative form). The *ca* constructions confirm the previous findings, in allowing the extraction out of the VSO subject islands, provided the complementizer (*ca*) and the subjunctive particle (*să*) are not in strict adjacency. When the complementizer *că* is employed, even though the Romanian facts seem apparent counterexamples, our generalization holds. See Di Sciullo and Somesfalean (2001) for examples and further discussion.

5. This is also the case in Greek and Spanish, as argued for in Alexiadou and Anagnostopoulou (1998).

6. Cornilescu's analysis of VOS constructions involves Object Movement (scrambling).

7. Recall that under Flip, the adverb will be reordered.

8. As we will see in Section 3.3.1, only IP-level adjuncts may directly extract. VP-adjuncts must be promoted to subject with Circumstantial Topic prior to wh-movement, similar to the promotion of themes with Theme Topic.

9. In Malagasy, wh-questions are clefts. Paul (2001) shows that clefts involve operator movement rather than displacement of the wh-element. For simplicity, however, we will refer to the wh-element itself as the 'moved' item.

10. Travis cites data from raising to object, applicatives, possessor raising and object shift to support her conclusion. We refer the reader to her paper for the details.

11. Using Chomsky's (1999) 'phase' terminology, vP is a strong phase and therefore opaque to extraction at the CP level. The only position from which extraction can take place is from the 'edge' of the vP phase: the head, the specifier or any adjoined positions.

12. Object wh-elements may remain in-situ, however.

(i) *Namaky* *inona* *i Koto?*
PST.at.read what Koto
'What did Koto read?'

The licensing for wh in-situ is evidently not sensitive to the same locality conditions as overt movement (e.g. unselective binding, Baker 1970).

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Interpretive asymmetries in major phrases

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1. Introduction

It has been widely recognized in the syntax and semantics literature that the major phrases (NP (or DP's), VP (or Predicates), AP) have different levels in them that require different sorts of interpretations.[1] To take just one example, it is widely recognized that nouns may take prepositional phrases either as complements (as in (1)), or as restrictive modifiers (as in (2)):

(1) a. the king **of England**
    b. a decision **on the course of the economy**

(2) a. the king **at the end of the table**
    b. a decision **over breakfast**

These differing functions are correlated with differing syntactic configurations, which we might represent in the following way, following Radford (1988) and Jackendoff (1977):

$[_{NP}$the $[_{N'}[_{N}$king$]$ [of England$]]]$

$[_{NP}$the $[_{N'}[_{N'}[_{N}$king$]]$ [at the end of the table$]]$

A large amount of research has been conducted over the years which explores the functions of various "levels" for semantic interpretation, of it within the X-Bar framework of syntactic categories (e.g. Williams 1975; Zamparelli 1995).

The topic in this paper is closely related to these issues but, I will argue, fundamentally different in kind. I will be reviewing a confluence of research in syntax and semantics of major phrases which, I believe, all point in the same direction: that there is a fundamental asymmetry between the sorts of interpretations these phrases may have before, and after, the addition of their associated functional categories. While the major phrases can be used either to make reference to type or

token information, only type information is available within the lower reaches of the phrase.

Since the work on noun phrases is the most copious, and as it is where the asymmetry shows up most plainly, I will begin there.

2. Noun phrases

It has been noted for some time (Szabolcsi 1987; Stowell 1989) that some languages display an asymmetry between nominals that appear in argument positions, and those that appear in non-arguments positions, such as vocatives and predicate nominals. In Italian, for example, the non-argument positions allow no determiner to appear and generally disallow a determiner; whereas in argument positions, the opposite seems to be the case (Longobardi 1994: 612).

(3) a. **(Un/il) grande amico di Maria mi ha telefonato.* (Argument)
(A/the) great friend of Maria called me up
b. *Caro amico, vieni a trovarmi.* (Non-argument)
dear friend come to visit me

On the assumption that lack of a determiner means that one has only that portion of a noun phrase which is sister to the determiner, these observations are consistent with the "DP" hypothesis (Abney 1987). What we have been traditionally calling "noun phrases" are constituents with D as a head and NP as its sister. Thus, this syntactic asymmetry between the character of argument and non-argument noun phrases might be expressed as:

Only DP's can be arguments

Though this would seem to be immediately challenged by languages such as English which has determinerless noun phrases in argument positions ("Cats chase mice"), and predicate nominals with an apparent determiner ("John is a doctor"), more subtle arguments have been made that English and other Germanic languages in essence follow the same pattern (Crisma 1991). One of the chief assumptions that must be made is that at least some instances of apparently determinerless noun phrases have, in fact, null determiners. Indeed, in Spanish and Italian, there do appear instances of determinerless noun phrases in selected argument positions so long as those empty positions are properly governed (Contreras 1986; Torrego 1989). Chierchia (1998) takes a different point of view, however, in suggesting that a parameterization takes place which will allow NP's to be arguments for languages such as English and Chinese (and not Italian or Spanish), though they must un-

dergo a type-shift operation in the semantics which, in effect, gives them DP-type denotations. I will have a little more to say about this last view later on.

One notion that has been expressed repeatedly is that determiners are necessary for reference (Higginbotham 1985; Vergnaud & Zubizarreta 1992; Longobardi 1994); it follows then that NP's (as opposed to DP's) have no inherent reference. What is the meaning of an NP, then? The usual semantic representation, as found in Montague grammar for example (where "NP" would be construed as the category CN), would be to construe them as predicates ranging over individuals. But another notion that has gained some currency is that NP's have denotations among the category of kinds, or types. One smallish bit of support for this comes from sentences such as the following:

(4) a. Several [bears]] were seen at the campground. *They* are common in mountainous areas.
b. Jack bought [a [[Mercedes [with a leather interior]]]. It turns out *they* come in only five different colors.

In (4a), the pronoun *they* is most plausibly interpreted as synonymous with *bears*, and does not refer to several bears, or those bears seen at the campground. In (4b) there are two natural construals of the pronoun–saying either that Mercedes (in general) come only in five different colors, or that Mercedes that have leather interiors do (or, that the leather interiors do). If NP's have as their denotations types or kinds, then there is a ready antecedent for the pronouns present in the discourse already introduced in the prior sentence.

An extensive discussion of this idea, that NP's denote types or kinds, is to be found in Vergnaud and Zubizarreta (1992). The initial puzzle they are trying to deal with is the fact that in the French inalienable possession construction, in certain instances a singular DP is interpreted as a plural.

(5) (= V&Z (4a)) *Le médecin leur a radiographié l'estomac.*
"The doctor X-rayed their stomachs"

Here, the singular definite form *l'estomac* appears to be interpreted as if plural, rather than singular, due to an association of predication that exists between *l'estomac* and the plural clitic *leur*. They go on to argue that this predication relation only results in plurality of the DP makes reference to a type, rather than to a token.

They assume the DP hypothesis, and in the case where the DP denotes a token, as in *that cat* (over there on the chair), there is a relation that holds between the (interpretations of) D and the NP, namely, one of instantiation. So, in this example, the D *that* will denote an object a just in case a instantiates, or is an exemplar of, the sort of thing b that is denoted by the NP, in this instance *cat*. Thus, the

NP/DP structure is a distinction between types, introduced by the NP, and tokens, introduced by the DP. Vergnaud and Zubizarreta codify this distinction as their "Correspondence Law" (p. 612):

> When a DP or NP denotes, the DP denotes a token, and the NP denotes a type

To put it another way, individuals only "appear" at the DP level, and not at the NP level.

This then raises the question of those instances of DP's that would appear to denote types themselves, as they most commonly can. For example, if you say that John and Bob work on the same computer, you could intend that they share a computer at work, or that each has his own computer, but they are of the same type (e.g. they are both Apple G-3 powerbooks). For such instances, they suggest that there are expletive articles, in particular the definite article *le*/*la* in French, which make no semantic contribution to the whole; that is, they introduce no individuals into the denotation of the DP. The denotation of the whole DP then is just that of the NP, a type. In (6a) the type reading of *le ordinateur* "the computer" is schematized, and in (6b) the token reading:

(6) a. Type: j
|
[$_{DP}$ *le* [$_{NP}$ *ordinateur*]] (denotation of DP is j, the type denoted by NP)

b. Token:
a j
| |
[$_{DP}$ *le* [$_{NP}$ *ordinateur*]] (denotation of DP is individual a, which instantiates type j)

One might assume that definite articles in many other languages function similarly (e.g. Brugger 1993, for a discussion of Germanic).

Longobardi (1994) takes up a different issue, that of DP's that cannot have type readings: proper names (his view is updated some in Longobardi 2001). His well-known analysis, based primarily upon Italian data, is one that examines the surface syntax of proper names, and claims that proper names must move into the D position from their "original" position within an NP. Thus, the structure of the DP *Maria* would involve movement of a name from its position within the NP to D.

(7) [$_{DP}$ [$_{D}$ Maria] [$_{NP}$ e]]

There is an alternative form with modified proper names (and, dialectally, with certain unmodified names) which exhibits a definite determiner:

(8) *...il vecchio Camaresi*
"(the) old Camaresi"

In this instance, there is no movement into D. Further, in many languages, definite articles are routinely used before proper names.

The semantics of a structure like (7), Longobardi suggests, is that the determiner D which contains the name *Maria* takes as its reference just the person referred to by that name; the empty NP position remains uninterpreted. When an article is present, and the name continues to occupy a position within the NP, Longobardi takes the article, as in (8), to be an expletive. In this instance, the expletive serves as the initial element of a chain which binds the occurrence of the name in the NP. From a semantic viewpoint, reconstructing Longobardi somewhat, the notion seems to be that the expletive article has the effect of "absorbing" the proper name meaning and making it its own denotation, so that the name's meaning is unavailable for interpretation within the NP.[2]

This, again, insures that reference to individuals is a function of D, and not a function of NP. In the case of common nouns, for which there is no similar pattern of evidence for movement to D at S-structure, the lack of movement is motivated by the idea that common nouns make reference to kinds (or substantive universals). Longobardi generalizes thus:

"Common nouns must always be used to refer to a kind..."

This prevents movement to D at S-structure (though allowed is prefixation to a definite article, as in Albanian and Scandinavian). At the level of LF, however, movement to D is available. This holds not just for proper names in languages which associate no article with names or in which there is no evidence of S-structure movement, but also common nouns themselves. If the common noun remains unmoved, and is in an argument position, there must be a D; if the D is null, it is interpreted existentially:

(9) John saw [e [dogs]] (=John saw some dogs)

However, there is the option, at LF, of movement into D; in this case the DP makes reference to a kind, the kind named by the N appearing in D:

(10) [dogs [e]] have four legs.

Structures like (10) allow reference to the kind dogs as a whole, and preclude existential quantification. Throughout, Longobardi is adamant in the view that NP's cannot denote individuals, only types.

The notion that individual reference is a function of higher-level functional categories finds some support from the domain of lexical semantics. It is commonly noted that the internal structure of words does not allow determiners to

appear, suggesting that the categories D and DP do not appear word-internally. This should preclude reference to individuals, and, in fact, it does in most constructions. For instance, in languages which incorporate objects, no D may appear internally to the word, and proper names do not appear to be among the possible objects incorporated. In English, a number of verbs are derived from proper names (e.g. *to boycott, to lynch, to hector*), but these do not constitute reference to the individuals bearing those names (e.g. "(*) I boycotted himself" ≠ "I boycotted Charles Cunningham Boycott"), nor do nouns or adjectives derived from names (e.g. *sandwich, macintosh, davenport; platonic, sadistic*). In root compounds, even full recognizable names do not make reference: use of *Disneyland*, named after Walt Disney, does not constitute a reference to that person (e.g. "??Disneyland was founded by him"), and a Bowie knife, so-called after Jim Bowie, makes no reference to that person. It is only in synthetic compounds that one finds genuine referring names – "he is a Nixon-hater from way back"; "Chomsky-bashing is a favorite pastime of the conservative press," etc.

Finally, a very different point of view is expressed in Chierchia's work (1998a, 1998b). Chierchia argues, *pace* Longobardi and others, that NP's, subject to parameterization, may function as arguments just like DP's can: that is, on his analysis there is no empty determiner slot in the case of bare plurals or determinerless mass terms, on this parameterization. This is because NP's make reference to (or take as their denotations) kinds, and Chierchia disputes the notion that D is necessary for at least this type of reference. Chierchia does allow for null determiners in some languages, including Italian and Spanish, which have a different parameter setting. The point is, once again, that NP's are taken to denote kinds of things, and any notion of individual reference in Chierchia's analysis requires the presence of D, or a type-shifting operation that has the same semantic effect as adding D.

From the above review, I have sought to point out that there is a confluence of research which suggests that the notion of an "individual" is not part and parcel of the semantics of the NP, but is only something that becomes available once the functional projection of the DP is added. That is, "higher" levels if interpretation make available something that is fundamentally unavailable at the "lower" levels which are confined to the expression of types of things alone. The discussion above is not comprehensive (e.g. Cheng & Sybesma 1999, among others, could be used to make much the same points).

What I am going to do now is move on to the major phrases VP and AP, and point out that it is plausible to think that a similar pattern emerges there, as well. In the end, I will hope to have established that there is a fundamental interpretive asymmetry that pervades the grammar of major phrase types.

3. Verb phrases

At first sight, it would appear that verb phrases, which commonly contain DP's that make reference to individuals, would not be at all similar to DP's in this regard. There are, however, two hints in the literature that they might. The first is Emmon Bach's (1986) notion, which has enjoyed wide currency, that verbs do not denote events (which may be looked upon as a sort of individual) or functions from individuals to truth-values or other functions, but instead denote event-*types* (or *eventualities*). It appears that the sorts of elements which require reference to the world and token-information are to be found "above" the VP. For instance, tense, which situates an event temporally within a world, is interpreted outside the VP at a higher level. Speech-act marking, which requires or conveys token information about the ongoing speech act itself (see Speas' contribution, this volume), likewise appears at this higher level. Evidentials, which require information about the (token) knowledge-state of the speaker, occur at this higher level.

The second hint, based upon syntactic argument, is to be found in a perspective of Diesing's "Mapping Hypothesis" (Diesing 1992).

> *Mapping Hypothesis* (p. 10)
> –Material from VP is mapped into the nuclear scope
> –Material from IP is mapped into a restrictive clause

This presumes a scheme of semantic interpretation that stems from Heim (1982) and Kamp (1981), where a restrictor clause provides the immediate context for the interpretation of the nuclear scope (which typically corresponds to the main assertion). The Mapping Hypothesis mainly affects the syntax and interpretation of DP's.

Evidence from the interpretation of bare plurals is one type of data Diesing considers. It is well known that bare plurals have (at least) two distinct readings: an existential reading, and a generic reading. The hypothesis is that bare plurals in subject position are interpreted existentially if appearing within the VP, but generically if appearing in the IP position. Consider (11).

(11) Sharks are visible. (ambiguous)

a. $[_{IP}$ Sharks $[_{VP}$ e are visible$]]$

b. $[_{IP}$ $[_{VP}$ Sharks are visible$]]$

(11) is ambiguous between two readings, an existential reading in which there are some sharks that can be seen at the moment, and another generic reading in which it is stated that sharks, in general, are of such a size and composition as to make them visible entities (unlike air, microbes, or electrons). The generic reading would

thus be accorded the syntactic structure (at LF) in (1a), while (1b) would give rise to the existential reading.

Diesing provides syntactic motivation for (11a) vs. (11b) comes from German, which displays a surface reflex of these two interpretations in the position of the DP. For the generic interpretation (11a) the surface position is argued to be outside the VP, whereas the existential interpretation (11b) has the DP within the VP. That is, the differing interpretations are induced by the structural differences, in particular whether the DP appears within the VP or not. Within the VP, it is interpreted existentially as in (12), but outside the VP it appears to have a generic interpretation (13). This follows naturally from the semantic assumptions of the DRT framework (Kamp 1981; Heim 1982) together with an additional stipulations that the operation of existential closure operates at the VP level (and not on texts), and that there is a generic operator GEN that induces a tripartite structure for generic sentences.

(12) $[_{IP}$ $[_{VP}$ Sharks(x), are visible (x)]] (existential reading)

(13) $[_{IP}$ GEN (Sharks (x)) ($[_{VP}$ e are visible])] ("universal" reading)
(= roughly, "If something is a shark it has a propensity towards being seen")

This analysis generalizes to other argument positions, such as object position. So in (13a, b) the existential vs. the generic reading of the determinerless noun phrase *dogs* is accounted for as described:

(14) a. John petted dogs (existential, within the VP, bound by existential closure)
b. John hates dogs ("universal", outside the VP, in restrictor of GEN)

This line of thought is applied to other types of DP's. The point of immediate relevance is that a consequence is that any NP/DP that is intuitively "presuppositional" in character *must* move into a higher position in the IP to be interpretable; it cannot remain within the VP. This makes for an interesting list of types of DP/NP's:

- Things "bound by" the generic operator
- Strong quantifiers
- Definites and demonstratives
- Proper names
- Specific indefinites
- Partitives
- Pronouns (though not discussed explicitly)

One good question to ask is, what do all these sorts of noun phrases have in common? They are not all strong (Barwise & Cooper 1981; Milsark 1974), nor are

they all definite; they are not all quantificational, nor does it appear that all induce a tripartite structure. So perhaps a better question to ask is, what types of DP's can remain within the VP at the level of LF (taken to be the input to semantic interpretation)? The list is not very long:

– Weak indefinites

In Carlson (in press) it is argued that weak indefinite noun phrases (*a man, three cats, several papers*...) are distinguishable from all the other sorts of noun phrases in one crucial respect: their semantics is definable based solely on type information. For all other sorts of noun phrases some kind of token contextual information is required. For instance, proper names obviously require a notion of reference to a particular, context being one such particular. Quantifiers like *every* require contextual information. Consider a situation in which students a, b, c, and d have left the room. Did *every* student leave? What you have to know, of course, is that a, b, c, and d are the only students in the context. This is token information. By way of contrast, we need no recourse to token context to evaluate weak indefinites: in the situation described we know that four students left, or that some students left. It might appear offhand that even weak indefinites require reference to individuals. But this is not so–the particular identity of individuals is irrelevant, as is context.[3]

A slightly different but related discussion is to be found in McNally (1998), in which she seeks to characterized the types of noun phrases that may appear in the English existential construction. In sentences like "There are several envelopes on the desk", the postverbal NP *several envelopes* is securely within the VP. Her argument is that the nature of these noun phrases can be captured in this way: "The postverbal NP will thus have to be interpreted as a property...". What McNally intends by using the term "property" is noun phrases that can be defined solely with regard to type information.

The discussion of VP-meanings here is also consonant with a suggestion made by Dominique Sportiche (pc), based in part on observations about the nature of English Gapping constructions. His idea is that determiners and NP's actually become dissociated in the syntax, with the D part of the DP appearing higher in the tree, outside the VP, leaving only the NP within the VP. To illustrate the basic idea, instead of assigning the sentence (15) the structure in (15a) as is the custom making use of Quantifier Raising, the structure is better represented as (15b):

(15) The man saw every cat

a. [The man_x [every cat_y [x see y]]] (no!)

b. [The_x [$every_y$ [man_x see cat_y]]] (yes!)

Whether this suggestion can be fully motivated remains to be seen. However, it has the character of leaving type information only within the VP.

Thus, Verb Phrases as well may have the same sorts of characteristics as the better-understood DP's, type information alone in the lexical projection, and any token information is made available only with the addition of higher functional projections. Something like this has also been explored in Svenonius (1996) and Guéron (ms).

4. Adjective phrases

Much less work has been done on the intricacies of the interpretation of AP's than on DP's and VP's. Consequently, this section will be brief. But here, too, once this asymmetrical interpretive framework is in mind, AP's quite plausibly fit the pattern outlined above for VP's and DP/NP's.[4] Again, our point of departure is the very common idea that adjectives phrases express predicates that apply to individuals, so an adequate representation of the semantics of an AP like [$_{AP}$ clever] is simply *clever*(x).

Rothstein (1999) argues that the meanings of adjective phrases should not be so analyzed. Her strategy is to compare the denotations of adjective phrases to those of verb phrases. The main difference between them is that VP's form predicates, whereas AP's do not, but require the presence of the copula in order to function as a predicate. From the present perspective, addition of a copula is the higher-level functional category that makes available token information.

Briefly, Rothstein argues that AP's denote a certain species of eventuality which lacks the properties of predicatability and localizability. The thrust is that AP's denote states that correspond to mass rather than count interpretations, and because of this lack of "packaging" they cannot be located in time, even though they might have duration. Consider the following contrast:

(16) (=Rothstein's (51))

a. Yesterday, the witch made John clever for three hours.
b. Yesterday, the witch made John clever at three o'clock.

In (16a), the phrase *for three hours* can modify the AP *clever*. Note that the interpretation does not localize the time of being clever. For instance, the sentence's meaning is compatible with a situation where a witch, at nine in the morning yesterday, performs some little ceremony that has the effect of making John clever between one and four in the afternoon today. Or, even perhaps the actual cleverness has yet to appear. There is another reading of (16a) where *for three hours* modifies the main verb *make*, which could be interpreted as repetitive acts of transforming John, or as the duration of an extended ceremony, perhaps.

In contrast, (16b) only has a reading where the modifier *at three o'clock* modifies the main verb. Lacking is an expected reading where the witch performs a ceremony of sorts during the morning hours that has the effect of John suddenly becoming clever at three that afternoon. The witch's activities must take place at three, not in the morning. Unlike durative modifiers, point-time modifiers localize an eventuality, which requires reference to specific, token information, and AP's do not have a denotative structure that allows this. Note that if the copula is added to (16b), the localization of the cleverness is made possible:

(16) b′. Yesterday the witch made John be clever at three o'clock.

Here, it is possible to have the witch perform some magic in the morning, which has the effect of John suddenly becoming clever at three o'clock later that day.

A detailed discussion of Rothstein's view of VP meanings, and how to square what she says there with the current perspective would take us too far afield. However, her discussion is highly suggestive of the notion that AP's, too, involve only type information and there is a requirement that some higher-level functional category be applied to it in order to make reference to specific, individual token information.

5. Conclusion

I have reviewed some of the research in this paper which appears to support the notion that major phrases, NP, AP, and VP, have a semantics that differs qualitatively from the semantics of the higher-level projections in which they may be embedded. I have left aside discussion of PP's, unsure whether to count them as major phrases at all, and having nothing to offer about them in any case. My goal here has been to establish the plausibility of a certain view – that these categories encode type-information only – and that research conducted with this view of the organization of the grammar in mind may lead us to understand better the character of natural language.

Notes

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2. Longobardi does address the fact that proper names do, occasionally, function as genuine predicates, meaning roughly "x has the name Y". So, if I complain there are too many Jeff's in the department, *Jeff* is functioning as a predicate and not a name.

3. One has to deal with vagueness of quantifiers like *many* and *quite a few*, and I will not get into the question here of how one accomplishes this in the absence of context (see Chierchia and McConnell-Ginet (2000) for an analysis which does not necessarily rely on context).

4. This section needs to be qualified by Cinque's (1995, 1999) analysis of AP in the DP domain being placed among the functional categories in the DP. If this is so, then the type/token asymmetry might have to be located in the functional domain only. However, Rothstein's focus, on the other hand, is on AP's that are functioning as predicates of sentences, and comments here are limited to that.

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Configurational properties of point of view roles

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Introduction: P-roles

The pragmatic force of a sentence and the pragmatic roles of discourse participants have traditionally been considered to be peripheral to the syntactic component of Grammar. Recently, there have been a variety of proposals for syntactic projections that encode information relevant to the interface between syntax and pragmatics (Rizzi 1997; Cinque 1999; Ambar 1999; among others). At the same time, linguists have been exploring the various notions of pragmatic prominence or point of view that are relevant to that interface. (Sells 1987; Zribi-Hertz 1989; Tenny 1998; Speas 2000 etc.) Studies of this sort naturally raise questions about the *extent* to which pragmatic information is syntactically represented. After all, the idea that syntax encodes extensive pragmatic information was rejected as being too unconstrained in the 1970s.

On a separate track, linguists have observed that sentience (also variously described as animacy, subjectivity or experiencer-hood) plays an interesting role in the grammar. (Kuno & Kaburaki 1977; Stirling 1993; Smith 2000) However, these phenomena have been treated as involving pragmatics or Discourse Representation; syntactic representation of sentience has been largely limited to treatments such as associating lexical features for animacy or logophoricity with individual lexical items. Our proposal will unify both tracks: representation of sentience and representation of pragmatic properties, under one syntactic approach.

We will argue that basic syntactic principles constrain projections of pragmatic force as well as the inventory of grammatically relevant pragmatic roles. We take our inspiration from the work of Hale and Keyser (1993, 1998, 1999), Di Sciullo (1999, 1996), Travis (2000), Borer (1998), among others, who have explored constraints on the mapping from Lexical Conceptual Structure (LCS) to syntactic

structure. Although there are interesting differences among the proposals made by these authors, they seem to be converging on two points: syntactic principles impose constraints on possible lexical items and their projections, and semantic roles are not primitive, but are determined within these basic asymmetric projections. We will argue that the same basic structural principles that constrain lexical primitives and the lexicon-syntax interface also operate on primitives of a *Sentience Domain,* and restrict the pragmatics-syntax interface. The above authors have offered theories of what can count as a "grammatically relevant" *thematic* property. Our goal is to use their insights to restrict what will count as a "grammatically-relevant" *pragmatic* property.

We will not be proposing a new theory of the specific structural restrictions on the lexicon-syntax interface, and we don't offer much insight into how one might choose among the existing theories. What we will do is use Hale and Keyser's theory as a point of departure, and show how the constraints they propose mediate the interaction between syntax and pragmatics.

Hale and Keyser have observed that lexical entries across languages are constrained in ways that ought to be predicted by an adequate theory of lexical representations. They develop their theory of lexical representations in order to explain the observed generalizations, shown in (1).

(1) Hale and Keyser's observations:
   a. There are many types of logically possible word meanings that are never grammaticized.
   b. Verbs never select more than two internal arguments and one external argument.
   c. Thematic roles seem to fall into a hierarchy.
   d. We can descriptively isolate about six thematic roles (agent, theme, goal, source, experiencer, beneficiary), but we can't seem to define any of the roles precisely.

We will claim that a parallel set of properties holds of grammatically-relevant pragmatic roles (P-roles):

(2) a. *There are many logically possible speech acts that are never grammaticized.*
   b. *No language grammaticizes more than three roles: speaker, hearer, and onelogophoric role.*
   c. *P-roles seem to fall into a hierarchy.*
   d. *We can isolate about five P-roles (speaker, hearer, source, self, pivot), but we can't seem to define the roles precisely.*

In this paper, we will focus on the first two of these properties, and will develop an account from which all four properties follow. The first property is examined in Section 1, where we propose a constrained system for projecting pragmatically relevant syntactic structure within a *Speech Act Projection*. In Section 2, we extend this system to what we call the *Sentience projection.* These two projections make up the Sentience Domain. In Section 3, we show elements of these domains interact with "lower" syntactic and lexical domains to yield the above four properties. The proposal we will make differs from the traditional view in the philosophy of language, in which the asymmetric structure of the sentence is opaque to the principles that determine the pragmatics of the sentence. We will try to show that there are syntactic projections that mediate the syntax-pragmatics interface. If we are wrong, it seems to us that the pragmatic component must be organized in a way that parallels the syntactic component to a surprising extent.

1. The Speech Act domain

1.1 Speech Act projections

We follow Rizzi (1997), Ambar (1999, 2002) and Cinque (1999) in claiming that syntactic structures include a projection whose head encodes illocutionary force. This head is overt in languages that have sentence particles, clitics or morphemes indicating whether the sentence is a statement, question, etc. We'll adopt Cinque's terminology, calling this projection *Speech Act Phrase*, projected from a *Speech Act Mood* head.

We are interested in how such projections are constrained. To begin with, it is clear that such projections cannot be literal representations of specific speech acts, as was proposed by Ross (1970).[1] Speech acts are not unambiguously tied to specific forms. In principle, a sentence of any form may be used to perform any act. For example, a declarative sentence like that in (3a) may be used as an indirect command to close the window, an interrogative like that in (3b) may be used as a statement of outrage command to be left alone, and an imperative like that in (3c) may be used as an indirect challenge.

(3) a. "It's freezing in here" → statement = indirect command to close the window
b. "Are you crazy?" → question = indirect statement of outrage
c. "Eat my dust!" → command = indirect challenge

Therefore, we do not mean to suggest that every speech act has an abstract syntactic representation. Rather, we are interested in those grammatical forms that correspond to direct speech acts, or illocutionary force.

Lyons (1977) classifies sentences (grammatical forms) into three basic types: Declaratives, Interrogatives, and Imperatives. Languages with verbal Mood systems generally also mark Subjunctive Mood, which conveys various difficult-to-pin-down meanings having to do with Speaker attitudes. Subjunctives are most often found in embedded sentences, but they may occur in matrix clauses as well, as we see in (4). Finally, some languages have a morpheme in the mood paradigm for Quotative Mood, which is used when the Speaker is conveying information reported to him/her by someone else (or people in general).

(4) Some examples of Latin Subjunctives:

a. boves aquam bonam … bibant
attle water good drink+3PL+PRES+SUBJUNCTIVE
'Let the cattle drink good water'
(Cato, *de Agri Cultura*, cited in Palmer (1986: 201)

b. Sed maneam etiam, opinor
but remain+1SG+PRES+SUBJUNCTIVE still I-think
'But I should still stay, I think'
(Plautus, *Trinummus*, cited in Palmer (1986: 40)

c. Iam apsolutos censeas quom incedunt infectores.
now paid-off think+2SG+PRES+SUBJ when come in dyers
'You may think they are already paid off, when in come the dyers'

(5) Examples that might be called "Subjunctive" in English:

a. Would that this too, too solid flesh would melt.
b. Oh, to be young again!

(6) Quotative Mood in Ngiyambaa:[2]

a. *bura:y-**dja**-lu* *ga:-y-aga*
child+ABS-LING.EVID-3ABS BRING-CM-IRR
'It's said she's going to bring the children

b. *ŋadhu-dhan* *wir- nji*
I+NOM-LING.EVID cook-PAST
'I am supposed to have cooked'

This seems to be the extent of grammatical forms corresponding to types of Speech Act.[3] Some languages distinguish Subjunctive from Optative, but we would follow Palmer (1986) in assuming that Optative is a portmanteau morpheme expressing Subjunctive Mood plus other features, such as Speaker's epistemological commitment or tense.

These types are clearly not in a one to one correspondence with types of *illocutionary acts*. In a study of English overt Speech Act Verbs, Wierzbicka (1987) lists 37 different *types* of speech act verbs of English (e.g., ORDER, PERMIT, BLAME,

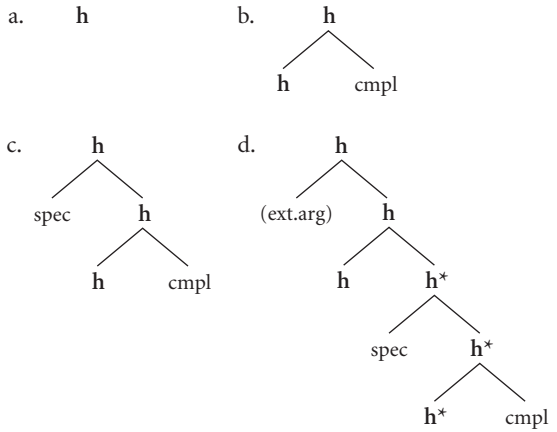
FORGIVE, BAPTIZE, WARN, PRAISE...). Searle (1979) classifies illocutionary acts into five basic categories:

(7) assertives: where we tell our hearers (truly or falsely) how things are
directives: where we get them to do things
commissives: where we commit ourselves to doing things
declarations: where we bring about changes in the world with our utterances
expressives: where we express our feelings and attitudes

Directives would include acts where the relevant thing we get the hearer to do is provide us with an answer, so both Imperatives and Interrogatives would correspond to prototypical directives. Perhaps one might be convinced to add a question category to Searle's list. In any case, the striking fact is that although there seem to be anywhere from 5 to 37 distinct types of illocutionary acts, no language grammaticizes more than those discussed above, and the classification of possible grammatical Mood markers does not correspond to any proposed classification of illocutionary acts. No language has a special marker for promises, declarations,[4] warnings, forgivings, etc. Thus, just as the types of predicates found in natural languages are quite limited, the types of speech acts grammaticized in natural languages are surprisingly constrained.

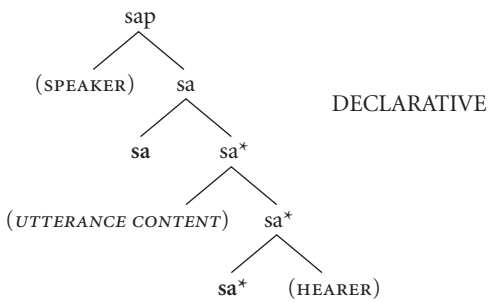
To explain the constraints on predicate types, Hale and Keyser propose that LCSs are built out of the same basic structural primitives as syntactic structures are. The constraints come from the fact that LCS is not recursive in the way that syntactic structure is.[5] This means that LCS is limited to structures that are either atoms or instantiations of one of the three basic types of structural relations: head-complement, head-spec or head-external argument. Thus, the four structures shown in (8) are the only possible LCSs.[6] Hale and Keyser stipulate that these are the basic relations. The theory of syntactic projection proposed by Canac-Marquis (2002) predicts that the largest possible projection of any head is one in which the head moves to check features, creating a new "higher shell" projection. Since all movement must be motivated by feature-checking, the head can move only once.[7] Thus it follows that the largest possible projection from a single head, in the lexicon or in syntax, would have two head positions, two specifiers and one complement.[8]

(8)



We propose that the projection of features relevant to the interpretation of speech acts is constrained by these same basic principles. The Speech Act head projects the maximal structure, with a specifier, complement and external argument.

(9)



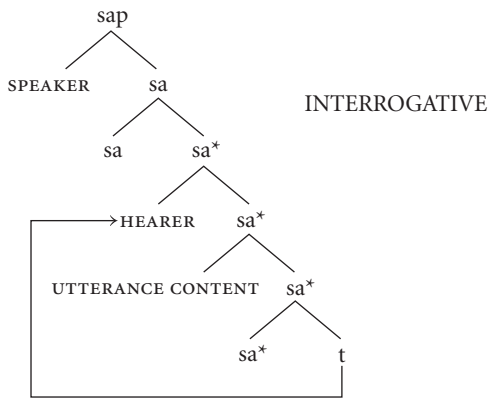
This is the structural representation of any declarative. Whether the sentence is *used* to deny, claim, request, praise, warn, promise, etc., is not represented syntactically. What is represented syntactically is the fact that the relations among the roles are asymmetric. Following Hale and Keyser, the pragmatic roles of "speaker", "hearer", and "utterance content"[9] are not primitives, but are defined in terms of their structural position. Thus, we may think of the SPEAKER as the agent of the speech act, the UTTERANCE CONTENT as its theme, and the HEARER as its goal.

We claim that the limit on possible grammatical moods comes from the fact that the basic structure in (9) can vary only in formal features of the head, where formal features include only a feature that is checked by head movement and another that is checked in a spec-head configuration.

Looking first at the spec-head feature, the unmarked value yields a structure like that in (9). Suppose that this feature is parallel to Case features in VP shells. In VPs, following Larson (1988), Case absorption results in Dative Shift: the indirect object (goal) is promoted and the direct object (theme) becomes oblique. If we

apply a parallel process to the Speech Act shell, we get a structure like (10), in which the goal of the speech act (the hearer) occupies the specifier of the lower projection, while the theme (utterance content) is "demoted".[10] Under this view, Interrogative sentences would involve absorption of some feature of the lower head, and attraction of the hearer to the specifier position of the lower head.

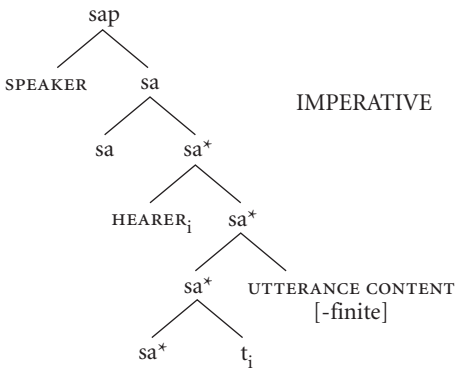
(10)



(10) is the structure of an Interrogative. The SPEAKER is still the highest argument of the speech act, but the HEARER has been promoted to a position where it can check the formal feature on the lower head. In this position, it is also the closest c-commander of the UTTERANCE CONTENT. The HEARER is now in a position to control the highest argument in the Point of View domain, which we will call the SENTIENT *argument* (see Section 2). In a question, it is the HEARER who possesses the knowledge relevant to evaluating the UTTERANCE CONTENT.

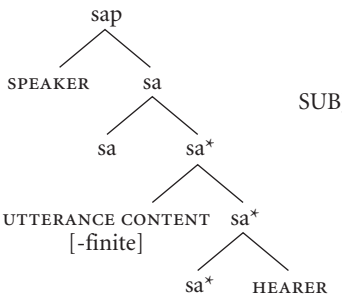
The other feature corresponds to the subcategorization features of a verb. Like overt verbs of speech, the speech act head may select a finite or nonfinite[11] complement (UTTERANCE CONTENT). The finite utterance content is what is found in a Declarative. When the content is nonfinite, the result is either Imperative or Subjunctive. For reasons to be discussed in Section 2, the result is Imperative if the HEARER c-commands the UTTERANCE CONTENT and Subjunctive if the UTTERANCE CONTENT c-commands the HEARER.

(11)



IMPERATIVE

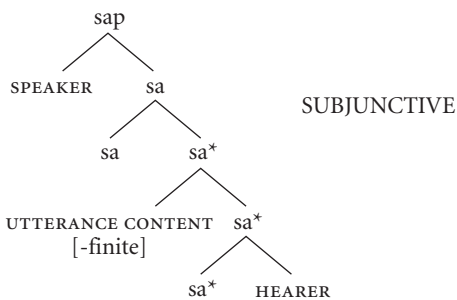
(12)



SUBJUNCTIVE

This exhausts the possible permutations of the basic structure in (9). What about the Quotative Mood? When we presented this paper, we assumed that the Quotative (Reportative) Mood is not really a Mood, but is located in a lower Evidential projection. However, in languages like Ngiyambaa, the Quotative morpheme is part of the Mood paradigm. Anna Maria Di Sciullo (personal communication) has raised the possibility that the specifier of SAP may be an expletive. We speculate that the Quotative Mood is just such a configuration. Quotative Mood is often described as being used when the speaker wishes to distance him/herself from the information being reported. In a representation with an expletive subject, the Speaker would be (abstractly) absent from the Speech act. This captures the fact that Quotative Mood is often translated to English with an 'it' expletive.

(13)



Thus, by using basic principles of syntactic projection to constrain the projection of a Speech Act Phrase, we accurately predict the inventory of possible grammaticized speech acts.

1.2 Speech Act roles

The roles SPEAKER and HEARER are usually thought to be represented in discourse representation and not in syntactic structure. It's possible that the representations we are proposing are discourse representations, and hence that Discourse Representations are constrained by the same principles as LCSs. In this section, we will present some of the data that lead us to believe that these roles do have some kind of representation in syntax.

First of all, although the specific proposal of Ross (1970) that sentences have a covert representation of a higher predicate, speaker and hearer has been discredited, it is not clear that all of the data that led him to his analysis has been adequately accounted for. In particular, he pointed out a constellation of facts that seem to involve either local c-command by the Subject of a speech act/propositional attitude predicate, or deictic reference to Speaker. He makes the point that representing the SPEAKER in the syntax would allow us to account for these phenomena without recourse to a disjunctive rule. Since the conclusive arguments against his proposal have to do with the notion of deleting specific higher predicates and not with the notion of a configurational representation of SPEAKER and HEARER, it is not clear that the idea of a higher representation of P-roles has been discredited (see Section 5).

Second, a number of languages have agreement phenomena that look like agreement with SPEAKER or HEARER. We will cite just two examples here. Ross (1970) pointed out that a certain form of the complementizer in Arabic occurs in either matrix COMP, or in the COMP immediately embedded under a predicate of speech with a first person subject:

(14) Arabic complementizers:

a. *ʻan* after 'want', 'command', 'request', etc.
b. *ʻinna* after 'aquulu' '(I) say'
c. *ʻanna* elsewhere

(15) *ʻaquulu* ***ʻinna*** *lwalada* *qad* *taraka* *lbayta*
(I)say that the-boy(ACC) PST leave the-house(ACC)
'I say that the boy left the house'

(16) ***ʻinna*** *lwalada* *qad* *taraka* *lbayta*
that the-boy(ACC) PST leave the-house(ACC)
'(I say) that the boy left the house'

Frajzyngier (1989) describes a morpheme that looks very much like number agreement with the HEARER. In Mupun, a West Chadic language, there is a morpheme *numa*, which occurs only in two environments: in matrix questions with plural addressees (17b), and in declaratives embedded under transitive verbs of saying whose object is plural (17c).

(17) a. *wur* *n-jiŋ-e*
3M PREP-Jing-INTERR
'is he in Jing?'

b. *wur* *n-jiŋ-e* ***nuwa***
3M PREP-Jing-INTERR
'is he in Jing?' (plural addressee) (Frajzyngier 1989: 45)

c. *n-sat* *mo* *n?* ***nuwa*** *naa* *k?* *n-kes* *makaranta*
1SG-say 3PL COMP PL look PERF 1SG-finish school
'I told them, look, I have finished school' (Frajzyngier 1989: 45)

Finally, the syntactic description of person features in Slave[12] indirect reports[13] seems to require reference to the HEARER role. According to Rice (1986), person features in Slave (as in numerous other languages) can be interpreted relative to the reported speech act. What is interesting is that second person is coreferent with an overt Object if the higher verb has one, but with the matrix HEARER there is no overt Object. Embedded first person in the same sentence is coreferent with the Subject of the higher verb. In (18), we see the verb 'tell', which has an overt Object. The embedded second person is coreferent with the higher Object, who is the HEARER of the reported telling act. The first person object is coreferent with the Subject of the sentence, who is the SPEAKER of the reported telling act. This case is not necessarily a problem, since the person features are interpreted as they are for direct reports in a language like English. It could be suggested that Slave simply allows for a "context shift" in the interpretation of indexicals within indirect

reports. The problem arises when we look at speech act verbs that do not have an overt Object, as in (19).[14]

(18) *w'ilada setw' ę? ?anet'i yíle hédesi*
again 1SG.to 2SG.come NEG 1SG tell 3SG
'I told him not to visit me again': I told him you don't visit me again

(19) *Simon rásereyineht'u hadi*
S 2SGS-1SGO-hit 3SG.say
'Simon said that you hit him': Simon said you hit me

Sentence (19) would be appropriately uttered in a context such as the following:

(20) a. Simon points at Mary and says to me, "She hit me."
b. I go over to Mary, and I say "Simon says you hit me."

A sentence like (19) cannot be accounted for by saying that embedded person features can be interpreted relative to either the current discourse context or the reported discourse context, because first person targets the reported discourse while second person targets the current discourse. We also cannot say that Slave pronominals can individually target either discourse, because when there is an overt Object, as in (18), a second person pronominal must be coreferent with that Object. Second person is coreferent with a higher Object if there is one, otherwise it is coreferent with the matrix HEARER. Note that the matrix speech act in (19) and (20b) does include a pragmatic HEARER, but that HEARER is not the referent of the embedded second person pronoun.

If we assume that the matrix sentence contains some representation of SPEAKER and HEARER, then a very simple picture emerges: Slave first and second person pronominals are bound by the most local SPEAKER and HEARER, respectively.

(21) Slave first person pronominal is bound by the most local SPEAKER
Slave second person pronominal is bound by the most local HEARER.

a. overt matrix object:

(*speaker hearer*)
[$_{SAP}$ SPEAKER$_i$ HEARER$_j$ [$_{CP}$ Simon$_k$ told him$_n$ [$_{CP}$ [you$_n$ not visit me$_k$]]]]

b. no overt matrix object:

[$_{SAP}$ SPEAKER$_i$ HEARER$_j$ [$_{CP}$ Simon$_k$ said [$_{CP}$ [you$_j$ not visit me$_k$]]]]

These data may seem exotic, but they can be made to follow quite simply if we adopt the view of Tsoulas and Kural (1999) that indexical pronouns are variables.[15, 16] They argue on semantic grounds that first and second person pro-

nouns are variables, bound by operators "located above the CP node" (Tsoulas & Kural 1999: 8). If their proposal is on the right track, then the only difference between Slave and English is that Slave 1st/2nd pronouns are bound by the *closest* speaker/hearer, while English 1st/2nd pronouns are bound by the *highest* speaker/hearer.

A complete account of the phenomena discussed in this section is beyond the scope of this paper. For present purposes, these data show that the interactions between thematic and pragmatic roles are restricted by locality principles, which are difficult to formulate unless the pragmatic roles are syntactically represented.

2. The point of view (sentience) domain

2.1 Preliminary typology of point of view phenomena

Reference to some notion of *point of view* can be found in discussions of a variety of grammatical phenomena, including long-distance binding, logophoric pronouns, psychological predicates, and switch reference. These are all constructions in which the grammatical form depends in some way on the *sentient individual* whose *point of view* is reflected in the sentence. In this section, we will claim that basic syntactic properties also restrict the inventory of this sort of P-role. In particular, we will argue, following Stirling (1993) that there is one, but only one, P-role in addition to speaker and hearer. We will show how the apparent evidence for multiple P-roles is actually a reflection of the limited ways in which this P-role can be coindexed with other roles. (See Fillmore (1971), Cantrall (1974), Mitchell (1986), Sells (1987), and Minkhoff (1994), among others, for claims that we need multiple roles, and Stirling (1993) for a detailed discussion of Sells' proposal.)

In this section, we will briefly discuss the phenomena for which point of view or logophoric roles seem to be relevant in some way to sentence grammar. Our discussion is based on the survey of Smith (2000). We do not attempt an analysis of these data here; we simply include this list to illustrate the range of phenomena that display point of view effects. The question of the extent to which some common analysis can or should unify these data remains for future research.

Smith (2000) discusses 15 "linguistic forms contributing to subjectivity" (2000: 18). She proposes a composite approach, which constructs a Discourse Representation from various syntactic properties of a given sentence. It is beyond the scope of this paper to argue in detail against the Discourse Representation Approach, so we won't go through all of the forms that she lists.[17] Rather, our list is constructed to illustrate two points: 1) There are numerous such phenomena that show constraints that mimic syntactic locality constraints 2) Accounts of these

phenomena never require reference to more than one pragmatic role in addition to SPEAKER and HEARER.

A. Logophoric pronouns

Logophoric pronouns are morphologically marked to take reporter or SOURCE of information as antecedent. They form part of the person paradigm in some languages. They behave syntactically like A'-bound variables. Sells (1987) argues that there are three different types of logophoric antecedents, those shown in (22). Stirling (1993) argues that only one discourse role is needed to describe the relevant phenomena.

(22) SOURCE: the one who makes the report
SELF: the one whose "mind" is being reported
PIVOT: the one from whose physical point of view the report is made

Sells also argues that these three are in a hierarchical implicational relationship, which Culy (1994) derives from a hierarchy of logophoric predicates:

(23) Hierarchy of logophoric predicates: . (Culy 1994: 1062)
speech >> thought >> knowledge >> direct perception

If a language allows logophoric pronouns in the complement of one of these types of verbs, it also allows them in the complement of all types that are higher in the hierarchy. Speas (2000) argues that the logophoric hierarchy is the exact inverse of the typological hierarchy for morphemes marking the type of evidence for a report (personal experience >> direct evidence >> indirect evidence >> hearsay). See also Hagège (1974), Clements (1975), Maling (1984), Culy (1994), Koopman and Sportiche (1989).

B. Long distance reflexives

These are anaphors that are not locally bound. They may be bound outside of their local binding domain, or they may have no overt antecedent, and be interpreted as coreferent with the 'SUBJECT OF CONSCIOUSNESS.' See Koster and Reuland (1991), Zribi-Hertz (1989), Pollard and Sag (1992), Kuroda (1973), Kuno (1972), Kuno and Kaburaki (1977), Iida (1996).

C. Modality

Palmer comments,

> [Epistemic modality] is concerned with language as information, with the expression of the degree or nature of the speaker's commitment to the truth of what he says. [Deontic Modality] is concerned with language as action, mostly

> with the expression by the speaker of his attitude toward possible actions by himself and others. (1986: 121)

Although both speaker commitment and speaker attitude involve subjectivity, the distinction between "language as information" and "language as action" suggests a difference in the type of point of view involved. For example, the deontic reading of 'may' involves permission, and only a sentient being can give or receive permission, while the epistemic reading involves only an assessment of logical possibility. Similarly, the deontic reading of 'must' involves obligation, which can only be imposed by a sentient being.

(24) a. The rock may roll down the hill ≠ The rock has permission to roll down the hill.
b. The book must be at least 200 pages to count for this assignment.
≠ The book is obligated to be at least 200 pages.
✓ Someone requires that the book be at least 200 pages.

D. Speaker-evaluative adjectives and epithets

Expressions like *damned, the bastard*, *the idiot,* express an evaluation or judgement, which may be that of the SPEAKER, or of the subject of a verb of speech or propositional attitude. Such expressions reflect the attitude of the speaker, except that when embedded under a predicate of speech, they may reflect the attitude of the Subject.

(25) a. John phoned his damned cousin/the bastard. (damned by SPEAKER)
b. John said he phoned his damned cousin/the bastard. (damned by SPEAKER, or Subject)

Epithets have well-known peculiar binding properties, behaving in some ways like R-expressions and in other ways like pronouns. See Lasnik and Stowell (1991).

E. Psychological predicates

These are verbs or adjectives that have an experiencer as one of their arguments. An experiencer argument is necessarily sentient, capable of internal experience. In languages such as Japanese, certain psych predicates can only be expressed from the point of view of the experiencer, generally first person in statements and second person in questions. Experiencer arguments appear to be able to bind anaphors they do not c-command, and they may be antecedents for long distance reflexives or other arguments involving point of view. See among others, Tenny (2001), Postal (1970) and (1971), Giorgi (1984), Pesetsky (1987), Belletti and Rizzi (1988). In addition, psych adjectives, such as 'beloved' contrast with Speaker-evaluative adjectives, in that the attitude can be that of someone other than the speaker.

(26) a. John phoned his beloved cousin.
b. I hate John's beloved dog.

F. Discourse-oriented adverbs

Evidential adverbs comment on the quality of the evidence supporting the truth of the proposition, or on the manner in which the individual has come to learn of that fact or truth (e.g., *clearly, evidently, apparently, mysteriously, inexplicably*). Evaluative adverbs express a judgment or evaluation of the fact or proposition, on the part of some sentient being (e.g., *fortunately, regrettably*). Speech act adverbs (*honestly, frankly*) express something about how the speaker is presenting the proposition or fact. Although all three types of adverbs are traditionally called "Speaker-oriented" adverbs (see Jackendoff 1972), evaluative and evidential adverbs differ from speech act adverbs in that the former may reflect the judgment or comment of the speaker or of some other sentient individual, whereas speech act adverbs represent only the attitude of the speaker. In (27a), it is apparent *to Rhett,* not just to the speaker/author that Scarlett had used the curtains for a dress. In (27b), it is Rhett, not just the speaker/author (and certainly not Scarlett) who believes it fortunate that Ashley was not in love with Scarlett. However, (27c) is odd. Since 'frankly' expresses an attitude only of a speaker/author, the sentence cannot mean 'Rhett's frank thoughts were that he didn't give a damn.'

(27) a. Rhett looked at the window. Apparently, Scarlett had used the curtains for a dress.
b. Rhett looked at Scarlett. Fortunately, Ashley was not in love with her.
c. ##Rhett glared at Scarlett. Frankly, he didn't give a damn.

Some languages use morphemes or particles to express these notions. Cinque (1999) shows that there are universal ordering restrictions that apply to the expression of these notions, whether adverbs or morphemes are used.

G. Spatial deixis

Expressions like *here, there, behind, right, left* represent spatial relations as relative to some perceiver. (Fillmore 1971) They may interact with other point of view phenomena in interesting ways. Relative spatial location may also occur inflected on NPs, as with the Japanese inanimate pronouns *kore* (= this (here)), *sore* (= that (right there)), *are* (= that way (over there)). Spatial deixis is expressed as relative to some *perceiving individual,* not just to some discourse context. For example, in the discourse in (28), "here" refers to a location not just near the discourse, but near Sue in (28a) and near Mary in (28b).

(28) a. Sue: Shall I put the handouts back here on the table?
b. Mary: No, put them here on the stage.

H. Temporal deixis

Expressions like *now, then, yesterday, tomorrow* represent time as relative to some particular event, and may interact with other point of view phenomena in interesting ways. Inflection (for tense) on the verb in sequence of tense constructions seems to depend on the point of view reflected in the embedded clause. See Hollebrandse (1999).

I. Person

First person and second person refer to the unique sentient individuals that are the participants in the discourse. Third person makes no reference to discourse participants. Several linguists have observed that there is a fundamental distinction between first and second person on the one hand, and third person on the other (Benveniste 1956; Bloomfield 1938; Forchheimer 1953; Halle 1997; Noyer 1992; Harley & Ritter 1998). Only the participants in the speech act – the speaker and the addressee, represented by first and second person – have true grammatical person. Languages often distinguish between participant and non-participant person in their morphosyntax. Further, some languages, such as Slave, Navajo, and Amharic, use first person pronouns in logophoric contexts to refer to the Subject of a verb of speech.

J. Oriented predicates

Many languages distinguish verbs of motion depending on whether or not the motion is toward the speaker (eg. English *come, go*). Actually, the relevant point of orientation need not be the speaker, it just must be the sentient individual whose point of view is being taken. As Sells (1987:465) points out, (29a) is fine (29b) is odd because the predicate *went* indicates orientation away from the Subject, while the use of *own* indicates orientation toward the Subject.

(29) a. He$_i$ was happy when his$_i$ own mother came to visit him$_i$ in the hospital.

b. ??He was happy when his$_i$ own mother went to visit him$_i$ in the hospital.

K. Switch reference

Stirling (1991) reports that some Switch-reference systems mark coreference between Subject and VALIDATOR (= person responsible for determining truth of proposition), rather than between Subjects.

L. Short-distance pronouns
Point of view affects whether a pronoun can be bound by a local antecedent: when some expression introduces a point of view, then coreference is permitted (see Tenny 1998):

(30) a. *Lucie$_i$ took a picture of her$_i$.
b. Lucie$_i$ took that damned picture of her$_i$.
c. *Timothy$_i$ set the books on him$_i$.
d. Timothy$_i$ set the books behind him$_i$.
e. *Pierre saw nothing but failure for him.
f. Pierre saw nothing but failure before him.

M. Free Indirect Style (Represented Speech)
In a certain literary style, a protagonist's point of view may be represented, while person and tense marking are still evaluated relative to the author (see Banfield 1982; Speas 1999).

N. Speech Act Mood morphology
We include morphology marking questions, statements, imperatives, and subjunctives in our typology of phenomena involving interaction between syntax and point of view, as discussed in this paper.

2.2 The sentience projection

The above section is a list of phenomena whose description requires reference to some sentient individual, other than speaker or hearer, whose point of view is being reflected in the sentence. A complete account of all these phenomena is beyond the scope of this paper, and we haven't shown that all, or indeed any, of them are fundamentally syntactic in nature. However, we would like to draw attention to the *restrictions* on the inventory of such phenomena. We believe that there are systematic restrictions that would be surprising if the discourse-related properties of these constructions were purely pragmatic.

First, although many different terms have been employed for the relevant sentient individual other than speaker and hearer, it is striking that no languages ever mark more than one other such individual. For example, languages can have 1st person, 2nd person, 3rd person and logophoric pronouns,[18] but no language has one pronoun for Sells' SELF and another for PIVOT. Nor does any language have pronouns for other individuals who could conceivably be prominent in a discourse, such as "orator," "persuadee," "medium of communication," "target of gossip," "overhearer," "author," "God," etc. This is strikingly different from the sit-

uation with other deictic features, such as honorific rank, where there are languages (like Thai) with pronouns for as many as 9 different levels of politeness (see Hoonchamlong 1991).

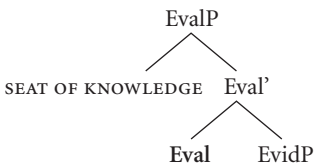
Second, many, if not all, of these phenomena show locality effects. "Logophoric" reflexives are blocked by intervening first or second person Subjects; the Japanese restriction on the subject of a psych predicate can be obviated by a higher predicate; the relevant sentient mind is fixed for a given clause; logophoric pronouns show crossover effects; etc.

Third, several of these phenomena have hierarchical properties. The relevant hierarchies are generally treated as distinct pragmatic hierarchies, which are matters of degree, not reflecting any constituent structure. However, Speas (2000) has shown that several distinct "pragmatic" hierarchies can be unified into a single hierarchy, and this hierarchy turns out to reflect the structure that Cinque has shown to be necessary to account for morpheme and adverb order.

In sum, only one "sentient mind" role is grammaticized, the referential properties of this "sentient mind" are constrained by locality restrictions, and a hierarchy governing adverb and morpheme order also governs hierarchies that had previously been treated as pragmatic. In order to capture these restrictions, we propose a configurational structure that encodes matters having to do with the point of view of a sentient entity. We will call this projection Evaluation Phrase, adopting Cinque's term for the projection just below Speech Act Phrase. Cinque doesn't posit an argument structure for EvalP, and our notion of "evaluation" is broader than the notion relevant for evaluative adverbs. Otherwise, we consider our sentience projection to be the same as his projection for Evaluative Mood.

We claim that EvalP has argument structure, like the Speech Act projection. We have adopted Hale and Keyser's terminology, but our analysis is also the structure one would expect under Di Sciullo's asymmetric shell analysis (see Di Sciullo, 2003, 2001 and 1999). The EvalP has one necessarily sentient argument (as both arguments of the Speech Act projection are necessarily sentient). This is the "SEAT OF KNOWLEDGE" or sentient "mind," who can evaluate, or process, or comment on the truth of a proposition. This argument is mapped to the specifier. This argument is essentially the VALIDATOR argument of Stirling (1993), however we are claiming that this argument has a direct representation in syntax. (See Section 3). A second argument is the proposition itself, which is mapped to an internal argument position. We label this internal argument Evidential Phrase, following Cinque.

(31)



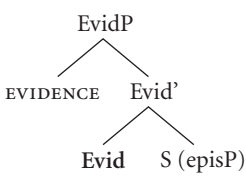
The structure in (31) has only the single head, and not the higher head. We speculate that (29) is just part of a larger phrase, which has the same form as SAP, as described above. This means that we treat EvidP as a lower projection in a basic shell projection. This suggestion is very tentative, since some languages have phonetically realized morphemes for both evidentiality and evaluativity. It may instead be that there is some independent reason why Eval and Evid heads project structures with no external argument. Since this issue remains undecided, we will first sketch out the internal structure of the Evidential Phrase, and then illustrate the result of combining EvalP with EvidP, which is a projection we call "Sentience Phrase."

The Evidential Phrase has to do with the type of evidence available for evaluating the truth of the sentence, for example, personal experience, direct evidence, indirect evidence, and hearsay. (See Speas 2000; Willett 1988; Tenny 2000). It would be headed by a morpheme that is overt in some languages, such as Makah, and abstract in others.

(32) a. wiki-caxa-***w*** 'It's bad weather (directly experienced)' Makah
b. wiki-caxa-ut***k'u*** 'It was bad weather'
c. wiki-caxa-k-ut***pid*** 'It looks like bad weather (inference from phys. evid)'
d. wiki-caxa-k-ut***qad'i*** 'It sounds like bad weather'
e. wiki-caxa-k-ut***wa.d*** 'I'm told there's bad weather' (Jacobsen 1986: 10)

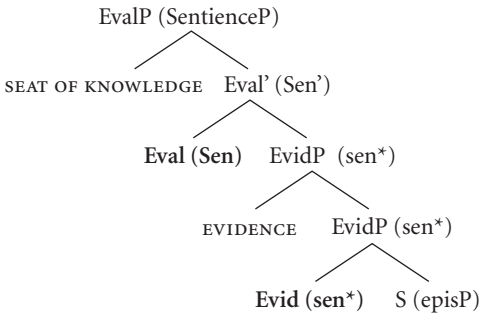
In this case, no new sentient argument is introduced: it is the SPEAKER/SEAT OF KNOWLEDGE who has the relevant evidence. Therefore, we suggest that the evidence itself is the argument in spec, EvidP. In other words, the conceptual representation of (32c), for example, is "physical evidence indicates [the weather is bad]."

(33)



Putting together EvalP and EvidP, we have that portion of the structure that encodes judgements and evaluations by a sentient mind on the truth-value of the proposition. We call this the Sentience Domain. It is within the scope of the Speech Act Domain, but has scope over the rest of the sentence. We speculate that this may be a shell projection of a single head like SAP above, and like VP.[19] The sentience domain, then, instantiates the maximal projected structure of a given head.[20]

(34) Sentience Phrase:



We are proposing, then, that there are three implicit arguments P-roles that map to participants in the discourse. These bear the P-roles SPEAKER, HEARER, and SEAT OF KNOWLEDGE. Given the inventory of Mood heads[21] along with the basic principles of syntactic projection, these three exhaust the inventory of possible P-roles that can be relevant to sentence structure.

3. P-roles and θ-roles

If we are right that there can only be three grammatically projected P-roles, then we have to account for the finer-grained distinctions that other researchers have found. We follow Stirling (1993) in claiming that the apparent presence of three different logophoric roles comes from the various ways in which the SEAT OF KNOWLEDGE (her VALIDATOR) can be coindexed with other arguments. Stirling did not consider these indexings to involve syntactic representations, and she didn't look at the indexings in various types of speech acts, but she showed that only one sentient role is needed.

First we will go through the possible indexings between arguments in the Speech Act domain and those in the Sentience domain. We will show how these work in the four different types of speech acts. Then we will consider the three logophoric roles distinguished by Sells (1987), and will suggest that there is also coindexing between arguments in these higher domains and arguments bearing θ-roles.

In an unmarked statement, the SPEAKER is the SEAT OF KNOWLEDGE. In other words, the SPEAKER has the evidence relevant to assessing the truth of the proposition, and the SPEAKER evaluates the information. In this unmarked case, the SEAT OF KNOWLEDGE is coindexed with the highest argument in SAP, that is, the SPEAKER.

In a question, it is the HEARER who is the SEAT OF KNOWLEDGE. The HEARER has the knowledge needed to determine which of the possible answers is the true

answer. In this case, the SEAT OF KNOWLEDGE is coindexed with the HEARER. This follows naturally in our theory from the fact that a question is the output of the passive-like operation within the Speech Act domain. We take this coindexing to be a sort of control, which requires that the controller c-command the controlee.

Our claim that in a question the HEARER is the highest argument and is coindexed with the SEAT OF KNOWLEDGE in a question predicts that discourse-related adverbs in a question should express attitudes of the HEARER rather than of the SPEAKER. This prediction is correct.[22]

(35) a. Mary evidently knew the victim. (must be evident to SPEAKER)
b. Who evidently knew the victim? (must be evident to HEARER)

(36) a. Mary unfortunately knew the victim. (SPEAKER thinks it's unfortunate)
b. Who unfortunately knew the victim? (HEARER thinks it's unfortunate)

(37) a. Honestly, Mary knew the victim. (SPEAKER claims to be honest)
b. Honestly, who knew the victim? (request that HEARER be honest)

Imperatives and Subjunctives show a parallel alternation in SPEAKER vs. HEARER prominence, but since these are nonfinite, the alternation involves responsibility for something other than a truth-value.[23] In Imperatives, the HEARER is responsible for realizing the unrealized (nonfinite) proposition. In Subjunctives, the SPEAKER is responsible, but there are various interpretations that this responsibility can take. These interpretations correspond to the different uses of Subjunctives crosslinguistically. In Latin, for example, Subjunctives are used to express a promise, wish, etc. (see R. Lakoff 1968). What these have in common is that the SPEAKER is responsible, for effecting the event, for choosing the preferred world from the set of possible worlds, etc. Thus, the HEARER is the SEAT OF KNOWLEDGE in an Imperative and SPEAKER is the SEAT OF KNOWLEDGE in a Subjunctive, although the sentence does not involve knowledge per se, since the event is unrealized.[24] This alternation follows in our theory from the fact that the SPEAKER is the highest argument in a Subjunctive, but the passive-like operation has taken place in the Imperative, so the HEARER is the highest argument. As with Declaratives and Interrogatives, the seat of knowledge is controlled by the highest argument.

We have discussed the cases where the SEAT OF KNOWLEDGE is coreferent with the highest argument of SAP. However, it is also possible for the SEAT OF KNOWLEDGE to be disjoint from the highest argument. This is what happens when the sentence is conveying the point of view of someone other than the discourse participants, i.e., when there is some "logophoric" role.

Sells proposed, that logophoricity involves more than single logophoric role. As mentioned in Section 2.1, he proposed that some phenomena involve the SOURCE of the information, some involve the SELF whose mind is being reported, and some involve the PIVOT, from whose point of view the report is made. In our

framework, phenomena targeting SOURCE would be those that target the highest argument in SAP. Those that target SELF would be targeting the argument in the specifier of EvalP (SenP). As for PIVOT, we believe that phenomena targeting this role are targeting an argument in LCS that is coindexed with the argument in spec, EvalP. When a theme is coindexed with the seat of knowledge, we call the argument the "experiencer." When a goal is coindexed with the seat of knowledge, we get a "speaker-oriented" (actually seat of knowledge oriented) predicate, like *come*.

4. Summary

We can now return to the five properties of grammatically relevant pragmatic roles we introduced in the beginning of this paper. We claim that the syntactic structures and processes argued for in this paper give a very simple explanation for these properties. Basic principles of syntactic composition operate on primitive heads of the Speech Act Domain and the POV (Eval) Domain. These yield asymmetric structures over which the three grammatically relevant pragmatic roles of speaker, hearer, and point of view argument, are defined.

The first two properties, which we are largely focused on in this paper, concern the restricted inventory of speech acts and pragmatic roles that we find grammaticized cross-linguistically:

a. There are many logically possible speech acts that are never grammaticized.
b. No language grammaticizes more than 3 roles: speaker, hearer, and one logophoric role.

We can find language after language that distinguish statements from questions, and many languages also have forms for commands and for subjunctive-type meanings. We find language after language that distinguish speaker, hearer and one more pragmatic role. Yet we do not find other types of speech acts or other types of roles that are systematically grammaticized, even though one could imagine other types of speech acts and roles that could be salient in human cognition and discourse.

We have proposed that the reason why there are so few grammatically relevant pragmatic roles is because P-roles are the arguments of restricted SA and POV heads. The reason why there is this particular and tiny inventory of grammaticized speech acts is that they are constrained by the operation of familiar syntactic processes and principles on syntactic configurational structure. The four types of grammaticized speech acts exhaust the possible operations on the structure of the Speech Act Phrase, and the three grammaticized roles, plus a role for utterance

content and evidence, exhaust the possible argument positions within the Speech Act and Point of View phrases.

This paper also points the way towards an explanation for the third and fourth properties we included in our initial observations:

c. P-roles seem to fall into a hierarchy.
d. We can isolate about five pragmatic roles (speaker, hearer, source, self, pivot), but we cannot seem to define the roles precisely.

The five pragmatic roles (speaker, hearer, source, self, pivot) that seem to be distinguished result from (and are definable as) the allowable combinations of the heads plus the possible coindexings between them. We have sketched out this approach in the previous section. Finally, the five roles seem to fall into a hierarchy, as Sells (and Culy) observed, because of the scope relations between the syntactic heads: the Speech Act head has scope over the Point of View/evaluative/evidential head. These in turn have scope over the thematic roles introduced through the LCS.

We have claimed that the structures we posit are in fact in the "Left Periphery" of the syntactic representation, and we sketched out a few reasons for thinking this in Section 1.2. If we are wrong about this and the phenomena we have examined are instead due to properties of a pragmatic component, then this pragmatic component is apparently constrained by the same configurational principles as the syntactic and lexical components. Resolution of this issue raises intriguing questions about the relationship between nonlinguistic conceptual structure (if there is such a thing) and syntactic structure.

As increasingly articulated functional structures are proposed, the need for a theory of the limits on functional projections becomes pressing. If we are on the right track, then we have a way to begin addressing this issue. We have adopted the view that the basic architecture of the computational component results dictates that a given projection can have no more than 2 heads, 2 specifiers and 1 complement (at least, underlyingly). Structures have been proposed for various other domains, such as Aspect (Travis 2000; Maruenda & Salome 1999; Zagona 1993) Tense/Agreement (Pollock 1989), WH-phrases and complementizers (Di Sciullo 2001, 2003), Topic/Focus (Zubizarreta 1998) and VP (Pica and Rooryck 1999) that seem to confirm that some principle restricts each domain to approximately this size. At the left-periphery (or the "right-periphery" in the case of Japanese – Tenny 2001), and we speculate at other levels as well, Ambar (2002) suggests that there are two structural domains, corresponding to the Universe of Discourse and to Common Ground. An interesting hypothesis to pursue would be that the computational principles limit both the size of a projection and the number of projections that may be combined to form a syntactic "phase"(Chomsky 1999).

5. Coda: Why we aren't re-inventing Ross's performative analysis

As noted in Section 1.2, Ross (1970) proposed that sentences have a Deep Structure representation of a higher "performative predicate." (See also Saddock (1969)). For example, sentence (38) and (39a) would have the DS (38) and (39b), respectively.

(38) a. SS: Mary is the culprit.
b. DS: I tell you that Mary is the culprit.

(39) a. SS: Is the exam tomorrow?
b. DS: I ask you whether the exam is tomorrow

Ross's proposal was rejected based on arguments such as those of Anderson (1971), Fraser (1974), and Gazdar (1979) (See Newmeyer 1986, Chapter 5 for a summary). What is interesting about these arguments is that they are primarily against an aspect of Ross's theory that is not part of the present proposal. Specifically, Ross claimed that DS representations contained specific predicates expressing the relevant speech act, and he claimed that sentences with overt performative predicates had the same DS as the equivalent sentence without an overt predicate. For example, (40a) and (b) had the same DS, as did (41a) and (b), and (42a) and (b).

(40) a. I tell you that Mary is the culprit. b. Mary is the culprit.

(41) a. I ask you whether the exam is tomorrow. b. Is the exam tomorrow?

(42) a. I request that you pass the salt. b. Pass the salt.

The claim that (40)–(42b) have the same DS as (40)–(42a) is clearly vulnerable to the objection that we then have no way of ruling out the possibility that the DS of sentence (40a) is actually "I tell you that I tell you that Mary is the culprit." Nor do we know whether the correct DSs for the (b) cases are actually (40)–(42a), or a DS with some other predicate, such as "I report to you", I advise you" "I warn you" etc.

Our claim, on the other hand, is that every sentence has one and only one Speech Act Projection, with an abstract structure that constrains what can be coindexed with the seat of knowledge, but gives no other specific information about whether the speech act is a telling, a warning, a report, etc. So,(40a) would have the structure (43a), and (40b) would have the structure (43b).

(43) a. [SPEECH ACT PHRASE [SPEECH ACT [$_{CP}$ I tell you that Mary is the culprit.]]]
b. [SPEECH ACT PHRASE [SPEECH ACT [$_{CP}$ Mary is the culprit.]]]

Notes

1. See Section 5 for a discussion of how our proposal differs from Ross's.

2. These examples are from Donaldson 1980: 276, via Palmer 1986: 72–73.

3. In Speas (2000), morphemes marking information obtained through hearsay are treated as part of the paradigm for an Evidential head, which is located, following Cinque (1999), lower than the Speech Act head. Assuming that the present proposal is on the right tract, the relationship between the Speech Act head and the Evidential head is unclear. It could be that "hearsay evidence" is slightly different from Quotative Mood, or it may be that languages may grammaticize reported information either in terms of the status of the utterance content (Hearsay Evidential) or in terms of the speech act (Quotative Mood). For an overview of evidentiality, see Rooryck (2001).

4. Of course, many declarations, such as "I now pronounce you man and wife" require specific words. The point is that no language has a morpheme or structure that must be used with all declarations.

5. In most of Hale and Keyser's work, it is not clear how recursion is to be ruled out. See Juarros-Daussa (2000) for a proposal that restricts recursion by allowing free generation of non-head daughters, but no recursive selection.

6. Hale and Keyser's LCS's are argument structures. Additional modificational material may be present.

7. The lurking stipulation here is that each head can only have one feature to check (or, all features must be checked in the same position).

8. Hale and Keyser analyze ditransitive verbs as having the structure in (8d). This requires that the LCS of the preposition in 'Mary gave the book to Bill' is a sub-part of the LCS of 'give'.

9. We use the term "utterance content" as a vague cover term for the role assigned to the (rest of the) sentence. Sometimes the content is a proposition, but sometimes, as in a command or quote, it is not.

10. Hale and Keyser treat this operation as a matter of content of the lower head. One content yields verbs like "shelve", where the incorporated complement is the location/goal, while the other content yields verbs like "saddle," where the incorporated complement is the locatum/theme.

11. As Stowell (1981) pointed out, verbs that subcategorize for interrogative complements cannot specify a value for finiteness. Verbs that take WH complements always take both finite and infinitival WH complements. The reason for this would seem to be parallel to the reason that speech act heads don't select for WH features, only for finiteness, but we don't quite see how to work out this parallel.

12. Slave is a Northern Athabaskan language. Data are from Rice (1986).

13. Such sentences are indirect reports and not quotes: the words do not have to be the same words used in the reported speech act, and certain deictic terms are still speaker-oriented. See Willie (1989) and Speas (1999) for a discussion of such sentences in Navajo.

14. The facts discussed here obtain regardless of the person of the matrix Subject.

15. By 'indexical pronouns' they mean first and second person pronouns and deictic third person pronouns.

16. See also Schlenker (2000), for arguments that the bound third person pronouns are interpreted in the same way as first and second person pronouns. Schlenker proposes context variables rather than person variables. His theory predicts that all indexicals in the scope of a given context variable are interpreted relative to the same context. The Slave data are a counterexample to this, as are data in Navajo in which person features can be interpreted relative to a lower context while temporal and spatial indexicals are interpreted relative to the matrix context. See Speas (1999).

17. There is much overlap between her list and ours, but they aren't identical. Since both are just lists, and neither purports to be exhaustive, we won't go into a comparison of the two.

18. Some languages also have hearer-oriented logophoric pronouns.

19. The existence of distinct heads of EvalP and EvidP rather than a single Sentience Phrase is crucial in the proposal of Speas (2000) that the typology of logophoric predicates is related to the possibility of predicates selecting SAP, EvalP, EvidP or EpisP (Cinque's next projection down).

20. Our proposal for these two domains has an interesting parallel in the proposal of Pica and Rooryck (1999) for the configurational structure of propositional attitude predicates. Their proposal was brought to our attention after our presentation of this paper. The parallel is perhaps not completely surprising, since morphemes in the speech act and sentience domains express the same notions as overt propositional attitude predicates. If the sentience domain should turn out to be projected from a single complex head, the parallels become even more striking, but we leave this for future research.

21. Admittedly, we have no idea why the inventory of Mood heads is what it is.

22. Thanks to Tom Ernst for drawing our attention to this property of speech act adverbs like 'honestly'.

23. Note also that there is no evidence argument in Imperatives and Subjunctives.

24. Perhaps *responsible mind* would be a better term for this role.

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Contrastive Topic and proposition structure*

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1. Introduction

This paper first tries to distinguish Contrastive Topic (CT) from non-contrastive Topic marking. It further addresses the issue of how to represent the meaning conveyed by Contrastive Predicate Topic (CPT)(see Section 3.5). The conveyed meaning is typically the denial of a stronger predicate triggered by the contrastive contour in English (L+H*LH%), as in 'She ARRIVED,' or Contrastive Topic markers attached to a repeated predicate in other languages (Korean -*nun*, Japanese -*wa*, Chinese -*shi*, and Russian -*to*)(Lee 2000). The internal structure of the realized sentence that is the locus of such a CPT will also be considered.

The CT construction (see Section 3.1) involves some leftward movement of the topicalized nominal or predicate. I assume that a typical non-contrastive topic takes the SPEC of TopP position, whereas a CT including CPT takes a mid-sentential out of VP position in Korean and Japanese; it is nearer the nuclear scope zone because of its partially focal feature at the same time, unlike a typical Topic. Then, an antitopic, which also comes from a typical noncontrastive Topic may be treated as a consequence of remnant movement of the complement of a whole TopP from the bottom. In various languages, CT is marked by various devices such as a morpheme, syntactic position and prosodic feature as well as the grammatical relation its original category takes and some combination thereof. English happens to have a prosodic feature alone for its marking and it can be an analogue to a CT morpheme in other languages. Chinese shows a variety of CT markings such as *shi*, *ne*, prosodic feature and movement. CT is basically topical and partially focal, and the degree of leaning toward either Topic or focus depends on various factors.

The paper is organized as follows: In Section 2, I discuss the structure of typical non-contrastive Topic. It tends to be more compatible with individual-level predicate for categorical judgement. Antitopic is a backgrounded, nonprominent, non-contrastive Topic. In SVO languages such as Chinese, Hebrew, and English, a

'copula' developed into a Topic marker. There is a certain coherence condition on the dependency relation between a nonargumental Topic and its complement IP or an element in it. In Section 3, I turn to CT. CT is distinct from Contrastive Focus. For entity/individual contrast, scalarity is not obvious, but scalarity is unmistakable for event/proposition contrast with a CT marker/prosody. How to represent this kind of contrasted proposition generated by CT in connection with the given utterance in linguistic structure must be a tantalizing task. [But – NOT – predicate$_x$ stronger than the given] is semantic and the predicate$_x$ is supplied from the contextual contrast-set scale triggered by the CT. The phenomenon of Contrastive Predicate Topic is shown to be crosslinguistically witnessed. In Section 4, the status of such a contrasted proposition is philosophically considered. An unuttered, syntactically unrealized proposition, though necessarily conveyed by the almost universally witnessed CPT, must be what the speaker conventionally meant but it must be more than what he/she 'implicates' (Bach 1999), since the contrastively conveyed proposition is the speaker's real intent and the uttered part is simply concessive admission of what is given in argumentation logic (Hamblin 1970; Krabbe 1999). Neale's (1999) multiple proposition theory may be supportive of the position taken here. Section 5 is the conclusion.

2. Non-contrastive Topic marking

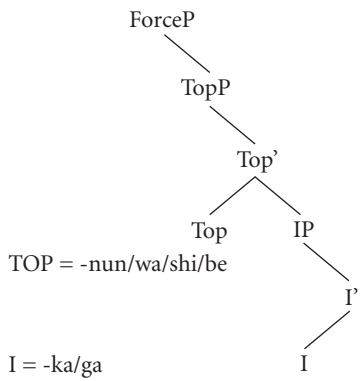
2.1 Topic and individual-level predicate

Non-contrastive Topic, because of its characterizing nature, is more compatible with individual-level predicate. Generic statements take a non-contrastive Topic marker in Korean, Japanese, Chinese, and basically also in English though without a marker. Their subjects are normally quantified DPs (with an <<e, t>, t> type) and take a generic tense ('present'), as in *Humans are finite*. If the predicate of a sentence is an individual-level predicate, no matter whether its subject is referential (discourse-bound/-old), as in *Sam is intelligent*, or quantified DP, the subject becomes by default a non-contrastive Topic. A discourse-anaphoric, referential DP may also become a non-contrastive Topic, followed even by a stage-level predicate, as in *Sam is running* for *What is Sam doing?* Otherwise, stage-level predicates take neutral subjects marked by NOM, not by TOP. Also note that a generic Topic cannot take a stage-level predicate, e.g., ?* *inkan-un tali-ko iss-ta* 'Humans are running.' I posit a TopP for such a non-contrastive Topic (Rizzi 1997) and its head category Top is realized as TOP markers such as Korean *-nun* and Japanese *-wa* (Whitman 2001). However, the same morphological marking is used for CTs. The initial distinction is made by the distinction between individual-level predicate (non-contrastive Topic) and stage-level predicate (contrastive Topic), and another

possible source of non-contrastive Topic is discourse-bound subjects of stage-level predicates.

I further argue that Chinese *shi*, which originated as a Copula, African-American English *be* from Copula, and Hebrew 'pronominal copula' *hu*, as well as some uses of Copula forms in English are also Topic markers. Underlyingly, the VP-level is a nuclear scope, where weak indefinites are existentially closed (Diesing 1992, Carlson 2000) and such VP subjects, getting a θ-role from the verb, move to Spec, IP for NOM case, of which the head is realized as NOM marker *-ka/-ga* in Korean/Japanese. Strong DP subjects including generics appear in Spec, IP, to which INFL gives a θ-role, but unlike in Diesing they must move upward to SPEC, TopP for proper meaning/information structure. This also applies to object arguments (of generic/kind, as in *The metal type printer, Koreans invented it*), which can be left-dislocated as Topic or TOP-marked sentence-initially. Stage-level VP subjects typically cannot take this TopP position. If stage-level VP subjects take the same marker *-nun/-wa*, they must become Contrastive Topics (CTs). ForceP lies above TopP and IP/TP lies under TopP. Take a look at the approximate structure of TopP below:

(1)



Individual-level predicate vs. stage-level predicate (Carlson 1977; Kratzer 1989) can be exemplified by a possession predicate vs. locative existential predicate in Korean, their subjects being marked by Topic and subject, respectively. Observe:

(2) [$_{TopP}$ harapeci$_i$-**nun** [$_{IP}$ Ø$_i$ ton –i manh-(u)si -ta]
grandpa-TOP money-NOM much-HON-DEC
'Grandpa has much money.'

The adjective *manh-* '(has) much' (or *iss-* 'has') in its individual-level possession sense, as a two-place predicate, combines with the NOMinative-taking arguments in turn, taking a generic tense. The AGR morpheme HONorific *-(u)si* shows agreement of the adjective with the TOP (possessor) while in SPEC, IP/TP position, and

not with its immediate complement *ton* 'money' (possessee), which must be in Spec, VP first.

On the other hand, LOCative-taking adjectives such as *manh-* 'much/many' and *iss-/kyesi-*(HON) 'be present/exist' agrees with their subjects raised from SPEC, VP, as shown in (3):

(3) [$_{IP}$ harapeci -ka kongwon –e kyesi -ta]
grandpa -NOM park-in exist[HON]-DEC
'Grandpa is in the park.' (*kyesi-*: lexical HON form of *iss-* 'exist')

(4) [$_{IP}$ ton –i harapeci-eke iss-/ *kyesi- -ta]
money NOM grandpa -to exist/exist[HON]-DEC
'Money is at/with grandpa.'

Those sentences (3) and (4) as well as *A boy is running*, with VP-generated subjects, are stage-level or "thetic" (Brentano 1973; Kuroda 1972) statements as opposed to individual-level or "categorical" statements. Possession predicates we have seen, as in (2), must have originated from such dative or existential locative constructions as (4) historically, still retaining NOM for the possessee nominal, but became distinct from them.[1]

Children acquiring Korean make an error of placing the NEG marker before an entire unaccusative sentence as in (5), otherwise placing it before a predicate including an object.

(5) an pi-ka o-n-ta
NEG rain-NOM come-PRES-DEC
'It is not raining.'

Adults place it right before a verb and (5) shows that children take the entire unaccusative sentence as a VP, which must be underlyingly the case.

2.2 Antitopic

In English, a left-dislocated DP (and in European languages a hanging Topic), rather than a "topicalized" XP of simple preposing (or contrastive left-dislocated XP), tends to be a non-contrastive Topic. An antitopic (Chafe 1976; Lambrecht 1994) or "right-dislocated" lexical DP is also necessarily a non-contrastive Topic. Consider (6) and (7):

(6) Mary, she's real smart.

(7) She's real smart, Mary.

(8) [$_{TopP}$ Mary [Top][$_{IP}$ she's real smart]]]

(9) [$_{IP}$ she's real smart] [$_{TopP}$Mary [Top]]]

The antitopic construction of (7) is a grammatically conventionalized one and not an afterthought. An unaccented resumptive pronominal in English (or empty category in Korean) preceding the antitopic contributes to high accessibility of the lexical antitopic referent cross-linguistically. This may be treated as a consequence of the positioning of the TopP and (remnant) IP movement to the front by dint of some foregrounding operator. Because IP is fronted to the prominent left peripheral position for its focal part, the antitopic becomes non-prominent and gets a falling intonation in English, Korean, and other languages. Because an antitopic starts out as a Topic it cannot be focal. An antitopic is, therefore, unaccented and therefore non-contrastive across languages. Observe (10) and (11):

(10) ttalki mek-ul kkeya na-**nun** (child Korean) (Lee 2001)
strawberry eat-be-going-to I-TOP
'I am going to eat strawberries.' SK 2;4

(11) yomiyasui -yo mainichi -**wa** (adult Japanese) (Matsumoto 1996)
to read-easy -DISC Mainichi-TOP (DISC=Discourse Particle)
'(is) easy to read, the Mainichi.'

In a V-final language Korean, the subject-final order of VS, OVS, and ComplementVS is more than 10% in children of 2;2, 2;7, and 2;10 (Cho 1981), though it may not be a strong support for Kaynes' (1994) claim of Spec-Head-Comp universal order. In a VOS language Malagasy, a Topic lies on the right edge; the external argument moves into the higher Spec, TopP. In this word order, the right periphery must be a prominent position unlike in SOV or SVO languages. Observe:

(12) namaky ny boky ny mpianatra
PST-NOMP.read DET book DET student
'The student read the book'. (Pearson 2001)

The optimal place for non-contrastive Topic, then, turns out to be a left or right periphery.

2.3 'Copula' as Topic marker

In African-American English, individual-level vs. stage-level is shown by the presence vs. absence of non-tensed copula *be* and because it coincides with Topic vs. Subject, I claim that *be* is a Topic marker that is attached to Top^0. Consider (13) and (14):

(13) a. Mary be happy.
b. Do you be tired?

(14) a. Mary happy.
b. Mary nice.
c. I gonna do it.
d. You tired?

If *happy* occurs with the Topic marker *be*, as in (13a), it denotes Mary's persisting character/mood (individual-level), whereas *happy* without *be*, as in (14), constituting a matrix small clause, denotes Mary's transitory happiness (stage-level). A similar Topic phenomenon is found in colloquial American, where a (reduced) specificational pseudocleft construction is followed by another *is*, as follows:

(15) a. (The) thing is, is that I like you.
b. The problem is, is that we can't find the evidence.
c. What the problem is, is that we can't find the evidence.

The *what* – part of the specificational pseudocleft construction (15c) is plausibly claimed by Dikken et al (2000) to be the same as the question *What is the problem*? But I would argue that *what* in (15c) cannot be licensed as a *wh*-word and must be a *wh*-word-based indefinite. There is no question force operator in the sentence that can license a *wh*-word. But if we view the second *is* as a Topic marker, then Topic is semantically connected to conditional and it can be paraphrased as 'if we are concerned with what the problem is' with a *wh*-word *what*. In Korean, we find the same expression *munce-ka mue-nya ha-myen* 'If we say what the problem is' as a paraphrase of the Topic. Similarly, *is* is a Topic marker in *Our kids are great on vacations, but when they come back* ***is*** *they need to play* (Massam 1999). Appositive nouns (Stowell 1981; Massam 1999) used in (15) show (individual-level) identificational relation between them and the complement clauses following. The marker *is* before a complement clause as a Topic marker shows that its preceding (reduced) CP with a topical nominal (*thing, problem*) is a Topic, although its complement CP following is a Comment part. A Topic marker takes the position of Top° and takes an IP/TP as its complement, which is a Comment. Therefore, Massam's (1999) claim that the second *is* in (15) is a focus marker is quite understandable but misses the target. If it were a focus marker, it would not be deleted but it can be deleted as in (15a, b) together with the complementizer *that*. In specificational pseudocleft constructions, however, the Topic marker *is* in English still retains the identificational linking (copula) function as well as syntactically. The *wh*-predicate of the CP in Spec, TopP in (15c), involving an appositive noun, is the set of propositions that can serve as an answer to the corresponding question and can be a λ expression of proposition type. If the construction is of the following type:

(16) What Mary did is buy a computer

the *wh*-based word stands for a set of properties or a family of set of entities. This is ultimately about Mary the topical nominal and the Comment *buy a computer* is specification of the currently relevant property that serves as an answer to the potential question in the Spec, TopP. It is assigning a value to the involved λ. If a referential Topic is strictly discourse-bound by occurring in the previous context or question as if it were in a closed circuit world or situation, then its complement Comment can be a stage-level predicate, as in *Mary bought a computer* for *What did Mary do*? The (potential) Topic referent in the previous context or question is anaphorically inherited without partitioning (dividing into parts) or accommodation (assuming a super-Topic that includes the current Topic). Otherwise, the combination of a non-generic or non-quantified DP with a stage-level predicate creates a CT situation to be discussed. The *wh*-clause of a specificational pseudocleft construction is a result of Topic-establishing process originating from a question. The *wh*-form in the free relative clause, however, is an indefinite, not a question word any longer with no question operator. In a related construction, the Topic marker (copula) can be deleted, as in (17), and it can be inserted in an error by a Korean student learning English, as in (18):

(17) "Expectations in the country [are] we can't get anything done." (George W. Bush, L.A. Times January 21, 2001, [are]: Staff writers' addition)

(18) "I <u>am</u> work in an office."

The word *are* in (17) is deleted because it is a Topic marker. If it were a pure copula, it could not be deleted in standard English. The copula is used by Korean students as a Topic marker and therefore it is inserted only at the place where the Topic marker -*nun* should appear in the corresponding Korean sentence, as in (18).

Similarly, I argue that Chinese *shi* is a Topic marker originating from a copula. Chinese ***shi*** is used at places where a copula cannot occur. Consider:

(19) a. dinzi sanpin <u>shi</u> [$_{IP}$ sanxing dinzi (de) zui hao] (Chinese)
electronic goods-TOP Samsung Electronics best
'As for electronic goods, Samsung Electronics is the best.'

b. jeonja jepum –<u>un</u> [$_{IP}$ Samsung jeonja-ka choiko-i-ya] (Korean)
electronic products-TOP Samsung Electronics -NOM best-be-DEC
'As for electronic products, Samsung Electronics is the best.'

In (19a) a nominal before *shi* and a clause after it do not match each other in type and cannot be linked by a copular verb. The marker *shi* shows that the preceding nominal is a Topic and at the same time the following Comment is in focus. It helps you foresee the following focal Comment part and it is still prosodically closer to the following Comment IP unlike *shi* in (20) below. People tend to feel, therefore, that it is a focus marker. In meaning, however, it leaned toward the preceding Topic.

It is different from a real focus-marking *shi* in pseudo-cleft constructions. In the Korean counterpart (19b) exactly the Topic marker *-nun* appears in place of ***shi*** and a copula is not used. Consider further:

(20) wo shi, wu xiangxin you bai zhong shiti ge (Shanghai dialect)
I TOP not believe there is such situation
'I don't believe there is such a situation.'

With an individual-level predicate, *shi* is attached to its subject pronominal in (21), making it a Topic. It cannot be a copula in this position. In Shanghai dialect, *shi* is even attached to the Topic phonologically (Xu & Liu 1992) and *shi* occurs in such positions also in Mandarin Chinese (Jim Huang, p.c.). In a sentence such as *wo shi bu qu (de)* 'I don't go' a 'weak neutral tone' (Chao 1968) is used differently from other uses of *shi*.

Another kind of *shi* construction in Chinese is with *de* that 'describes a profession' as cited by Paris (1978) from Tan (1957) as a nominalization construction. Observe:

(21) a. ni **shi** baidu de?
you TOP ferry COMP
'Do you ferry (as a ferryman)?'
b. ni baidu ma?
you ferry Q
'Are you ferrying ((in) a boat)(as a traveler/ferryman)?'

Originally *shi* was a copula and sentence (21a) might have meant 'Are you a ferrying man?' with *ren* 'man' as a head nominal after *de*, as traditionally claimed or something like 'Is it (the case) that you ferry?' But the function of *shi* has shifted to that of Topic marking and at the same time the function of the complementizer or nominalizer *de* became weak and now it functions as an individual-level predicate or generic tense marker. In Korean, the complementizer *kes* with its preceding future prenominalizer *-l* and the following copula *-i-* (*-l kes-i-*) became a future tense marker. Literally, a null expletive subject is required because of the copula preceded by a nominal complement clause for the reading of 'It is (the case) that it will rain'. Consider (22):

(22) pi-ka o -l kes - i -ta
rain-NOM come-FUTURE -DEC
'It will rain'.

Without *shi – de*, the verb is stage-level in Chinese, as in (21b). Similarly, if the adjective used is individual-level, *shi – de* is employed to make the entire sentence a Topic sentence, as in (23a):

(23) a. rén sheng shì you xiàn de.
life TOP finite
'Life is finite.'
b. rén sheng you xiàn .
life finite
'Life is finite.'

Sentence (23a), typically colloquial, is more natural and 'clear' and (23b) tends to be used in stage-level situations of listing, casual presentation, etc.

An exact parallel is found in Hebrew. A 'pronominal copula' with PERS, NUMBER and GENDER but no TENSE can appear with predicative adjective or nominal, as in (24). It is obligatory (inherently or 'syntactically') for an identificational relation, as in (25). (The same is true of Turkish.) If the predicate is individual-level, as in (24a), then the subject becomes a Topic and the 'pronominal copula' *hu* as a Topic marker shows up. Observe:

(24) a. David **hu** xole
PronCOP sick
'David is sick'. (persistently)
b. David xole
'David is sick'. (at the moment) (Rapoport 1985)

(25) Dani *(**hu**) mar Cohen (Rothstein 2001)[2]
PronCOP Mr.
'Dani is Mr. Cohen'. (Greenberg 1998)

The Topic marker *hu* with the frozen features of 3rd-masc-sg cannot be a regular pronoun, since it co-occurs with the second person subject, as in *Ata hu ha-more* 'You are the teacher' (Li & Thompson 1977). It cannot be a resumptive pronoun subject in a left-dislocated structure preceded by an intonational pause (Berman & Grosu 1976). It is no longer part of the complement IP but part of the TopP. In the *hu*-Topic-marked Ss, the predicate adjective/nominal characterizes the Topic, as in *shi*-marked Ss in Chinese. It is noted that Chinese *shi* changed its function from a demonstrative meaning 'this' to a copula, as everyone agrees, and then to a Topic marker, as I claim, and similarly the Hebrew *hu* changed its function from a pronoun to a copula, as most agree, and then to a Topic marker, as I claim. If one leans toward the view that *hu* is an individual-level marking copula, though defective inflectionally, then he/she can treat the Ss without it, as in (24b), as matrix small clauses, or in our terms, Topic-less clauses. Those clauses saturate 'predication' in the sense of Rothstein (2001) but she fails to pinpoint their nature as stage-level. An existential locative PP construction without *hu*, for instance, such as $[[\textit{Dani}]_{DP}$ $[\textit{be-tel aviv}]_{PP}]_{SC}$ means that 'Dani is presently (in stage-level) in Tel Aviv'.

2.4 Nonargumental Topic

A conditional may be syntactically analyzed as an embedded adjunct (see Kayne 1982), but it shows an important semantic relation to its consequent and is topical, as a PP variant in (26a) shows. Therefore, it may be under a higher TopP as a CP, taking the consequent as a complement clause. The conditional complementizer may be Top°. There is an intonational pause after the TopP. *Robin*, then, may be another Topic in an embedded TopP. Its inversion counterpart (26b), on the other hand, involves an emphatic (or focal) concessive (because of hidden *whatever*) construction with sentential scope negation. Observe:

(26) a. With no clothes, Robin looks attractive.
b. With no clothes does Robin look attractive.
(cf. Horn 1989; Haegeman 2000)

Another kind of Topic construction in Korean, in which a Topic does not come from an argument in its complement IP, is shown in (27):

(27) [Coffee –<u>nun</u> [$_{IP}$ cam –i an w -a]]
-TOP sleep-NOM not come-DEC
'If we drink coffee, we don't get sleep.'

The adjunct-like Topic in (27), establishes a conditional thus topical relation with its complement IP in the following way: coffee is a beverage for drinking in its << raison d'être >> or telic (purpose) function in the qualia (constitutive, formal, telic and causal) structure of lexical representation of *coffee* << à la >> Pustejovsky's (1995) generative lexicon theory, and the conditional relation arising from the Topic will become *if one drinks coffee*. Then, its complement IP *sleep does not come to one* or *one does not get sleep* becomes individual-level because a conditional relation unlike a causal one holds generically. Without the Topic, the same IP would get a stage-level interpretation. Thai shows an exactly parallel Topic: [$_{TopP}$ *Coffee -<u>meq</u>$_{TOP}$* [$_{IP}$ khueng '*sleep*'-*Veq$_{NEG}$ zaq$_{RESULTATIVE}$*]]. The choice of Topic in the topical relation to its complement IP can never be arbitrary, requiring the following general condition:

(28) **Coherence** condition for topical S: The Topic phrase in Spec, TopP must be coherently related to the Topic's complement. This dependency relation based on the Topic marker requires coherent anaphoric (binding), conditional (based on causal/logical), possessive, whole-part, set-member relationship, necessarily with the LARGER (in its abstract sense, including scope) in the TopP preceding the smaller (typically a nominal with NOM) in the complement phrase (Lee 1989, 1994).

3. Contrastive Topic

3.1 CT from conjunctive Q and contrastive focus from disjunctive Q

Turning now to Contrastive Topic (CT), we can say that a potential (non-contrastive) Topic in the discourse or previous question can be partitioned into parts, CT in the current utterance is about one particular part in contrast with the rest of the parts of the potential Topic and the speaker has the alternatives in contrast or contrast set in mind.

This is a phenomenon that Rooth (1996) cannot deal with properly with his focus alternative sets alone. The parts (alternatives) of a potential Topic are conjunctively understood (see (29) below). In the case of pure focus, wide or narrow, the speaker makes exclusive choice of the focused material, ignoring other alternatives at the time of utterance. The alternatives set can be vague in this case. If the alternatives are explicitly given in the context and if they are understood disjunctively (if the question in (29-Q) were a disjunctive question with *or* instead of *and*, the answers in (29-A)–(32) would be unacceptable), then the chosen focus from among them is a contrastive focus.[3] CT is topical in the sense that it comes from a potential Topic and somewhat focal in the sense that the choice of the particular part is not known to the hearer. It gives rise to an implicature-like proposition concerning the alternative in contrast, typically opposite to the given in its polarity or at least epistemologically uncertain.

CT is marked by something like B accent (Bolinger 1965; Jackendoff 1972) or roughly L+H*LH% in English (Pierrehumbert & Hirschberg 1990) and by a similar high tone on the Contrastive Topic marker morphemes in Korean, Japanese, and Chinese: the same markers *-nun*, *-wa*, *-shi*, respectively, as used in non-contrastive Topic. While non-contrastive Topic comes from subject, object, dative/locative, being located in S-initial/final periphery Topic position, Contrastive Topic can come from any PPs of oblique grammatical fucntions and any constituents/categories including adverbials and main verbs in a sentence, though with some linguistic variations. Object shift in Icelandic and scrambling in German and Dutch are sensitive to definite/specific and may be treated to be cases of moving out of VP (Thrainsson 2001) (scrambling in Korean has the same effect), all increasing the topicality of the moved element. However, CT, in most languages witnessed, whether morphologically marked or not, accompanies some contrastive contour and may remain in-situ (or it may move along with something else) because of its partial focality. Fronting or topicalization is to make it prominent or emphatic, as in *THESE EXAMPLES*$_{CT}$ *I found in Gundel.*

So far, CT of individual-contrast, as opposed to event/proposition contrast, which I explore, has been well treated in the literature (Carlson 1983; Krifka 1991;

von Fintel 1994; Roberts 1996; Wee 1997; Buring 2000). Consider the following (examples from (30) to (32) mean the same as (29-A)):

(29) Q: What about you? Did you eat the beans and the peanuts?
A: I ate the BEANS$_{CT}$. [L+H*LH%]

(30) na khong-UN mek -ess –e (Korean)
I bean-CT eat -PAST-DEC

(31) Fasulye –LER-i ye -di -m (Turkish, S. Gokmen p.c.)
bean -PL-ACC eat-PAST-1ST

(32) wo chi [dou zi] ^{CT} le. (Chinese, B. F. Jia p.c.).
I eat beans PERF

In Korean (30) and in Japanese, the CT marker replaces the ACC marker and attains high tone. In Korean, unlike in Japanese, however, there is a tendency to avoid double occurrence of *-nun* and the TOP marker for *na* 'I' dropped in (30) or even a neutral subject NOM marker *-ka* can replace it (e.g., ?Yumi-*ka* brother-*nun* intelligent). But CT cannot drop; together with a high tone, the CT conveys the meaning of 'I didn't eat peanuts'. In Turkish (31), a high tone is on the fourth syllable of the noun 'beans', unlike an answer to the question 'What did you eat?' or 'Did you eat the peanuts?', which has a high tone on the third syllable. Surprisingly, a delayed high tone but not the specificity (alone) of the ACC marker marks CT in Turkish. In Chinese (32), 'beans' has been shifted to the front of the perfective marker. In (31A), *the BEANS$_{CT}$* can be topicalized with the same CT interpretation in one sense of topicalization. The topicalized CT NP *the BEANS$_{CT}$* constitutes an independent intonational phrase within the whole sentential intonational phrase. All the answers by dint of the convention of the CT markers and/or contrastive intonation convey the meaning of 'but I didn't eat the peanuts'. Therefore, if any of the answers is followed by 'and I ate the peanuts', the result is unacceptable; the conventionally conveyed meaning is not cancellable. Therefore, if someone who ate peanuts as well answers the question by one of (31A) through (34), people tend to think he/she is lying or the answer is false.

When we have been talking about a group of five people who were here and say "Three people left," then although the numeral expression is indefinite and even nonspecific, it is partitive and it becomes a CT; it is neither a non-contrastive Topic nor a neutral subject with NOM with its stage-level predicate. Therefore, Kuroda's (1972) and Ladusaw's (2000) assigning the CT sentence simply to categorical judgment seems to be too simplistic; although Ladusaw shows its 'presuppositional' nature correctly, he misses its focal nature, which is not in non-contrastive Topics.

Structurally, CT cannot be quite in Spec, TopP above IP. Its topicality heads for the S initial position but its focality draws it back to VP. So, it must be somewhere just out of VP. But it must be distinguished from a simple object shift/scrambling

for topicality/familiarity that does not involve contrast, for which Jayaseelan (2001) posits an IP-internal TopP above FP (FocusP) under IP. Under FP lies vP. In Korean, CT-marking and simple scrambling with case-marked phrases are clearly distinguished. In SVO Cantonese, where *V-IO-DO, an IO must be ordered before a DO to get ***ne*** CT-marked (e.g., *Deidih bei Minh-jai* ***ne*** *jauh mh bak man, Fan-neui* ***ne*** *yat bak man* 'Dad gave his son Mingh $500 and his daughter Fan $100.' Xu 2001). In German and Dutch, CT needs a fall-rise contrastive contour, whereas scrambling is a clause-bounded fronting Object shift in Icelandic and is also clause-bounded. Object shift and scrambling, based on definiteness/specificity/genericity, are IP-internal, clause-bounded movement (topicalization) (Thrainsson 2001), whereas CT is a more marked operation.

3.2 List CTs

Another kind of individual-contrast is expressed by Chinese CT ***ne***. We can find contrasted pairs of items in the following. Observe:

(33) Q: ni shi hanguoren ma?
you COP Korean Q
'Are you Korean?'
A: wo shi, ni **ne**? (Rising)
I am you CT
'I am, and you *ne*?'

(34) ni **ne /**, shi na-guo-ren?
you CT COP what-country-person
'As for you, what country are you from?'

(35) liang ge yue yiqian — 'Two months ago, —
two CL month ago
xianzai **ne** — 'at present —'
at present CT

(36) —, shiji **ne** '—, actually' (Lee-Wong 2000)

This type of CT in Chinese shows an explicitly expressed or listed contrast between two elements of the same type ('I' vs. 'you', 'two months ago' vs. 'at present', '—' vs. 'actually'), whereas the ***shi*** Contrastive Topic to be discussed shows inter-propositional, scalar, contrast between elements. Although pairs are present, the first element of a pair does not get *ne* marking and no separate unexpressed meaning is conveyed except the given because of the list reading.

In languages like Italian, where a focused NP appears S-finally, CT occurs S-initially as follows:

(37) Q: Chi e venuto? 'Who came?'
A: e venuto MARIO$_F$ 'MARIO$_F$ came.'

(38) Q: What about Mario and Maria? Did they come?
A: MARIO$_{CT}$ e venuto (ma MARIA$_{CT}$ no) (Mozzikato, p.c.)
CT but CT NEG
'Mario$_{CT}$ came (but Maria didn't)'.

3.3 Multiple CTs possible?

Multiple focus is possible in one sentence crosslinguistically, e.g., in answer to a multiple *wh*- Q, but multiple CT is rarely possible. In a language like English, where CT is marked by prosodic contrastive contour alone, only one CT seems to be allowed because sentential intonation architecture is limited. Even in Korean, in which CT is morphologically marked, two CTs in a sentence are quite possible but a third CT may be allowed only in limited contexts. Consider:

(39) i ai-nun tongsayng -hanthe-nun inhyeng-un cu-ess-ta
this child-CT brother -DATIVE-CT doll-CT give-PAST-DEC
'This child gave the doll to his younger brother'.

As previously mentioned, alternatives for focus are ignored and do not take our memory storage, whereas alternatives for CT must be born in mind every time it occurs, taking processing cost. In (39), the hearer is expected to process three distinct contrast-sets (different from simple alternatives for focus), one for the 'child', another for the 'younger brother', and the third for the 'doll', for the three contrast-sets expressed and, furthermore, the unexpressed contrasted elements of each contrast-set are all associated with polarity-reversed, i.e., negative (here), propositions, e.g., 'that child didn't give —,' '— didn't give — to his older brother,' '— didn't give a model plane —,' etc.[4] Tracing all the involved computation is not easy, neither are high pitch rises. Note that the S initial *-nun* can equally function as a CT as other CT markers located in the middle of the sentence. It can ambiguously function as a non-contrastive Topic. The mid-sentential CTs cannot be treated differently as Contrastive Focus, unlike in Choi (1999). They all come from a potential conjunctive Topic as CTs.

3.4 CTs in relative clauses

In relative and subordinate clauses in Korean and in Japanese, non-contrastive Topic cannot occur whereas CT can (Lee 1973). However, occurrence of CT in relative clauses is rather restricted and restrictions vary crosslinguistically. Observe:

(40) a. a song that MARY$_{CT}$ sings well (from SUBJ)
b. ?*a boy who ate the BEANS$_{CT}$ (from OBJ) (Whitman and others, p.c.)
c.(?)*a man who cut the tree with an AXE$_{CT}$ (from Oblique)
d. *a singer who ARRIVED$_{CT}$ (from V) (Leaper, p.c.)

(41) a. Mary-nun cal puru-nun norae (from SUBJ) (Korean)
-CT well sing REL(Pres) song
'a song that Mary-CT sings well'
b. khong -un mek -un ai (from OBJ)
beans -CT eat-REL(PAST) child
'a child who ate the beans-CT'
c. (?)tokki-ro-nun nam-rul caru –n saram (from Oblique)
axe –with -CT tree-ACC cut –REL man
d. ??o-ki-nun o-n/ha-n kasu
come-NMZ-CT come(REL)/do-REL(PAST) singer
(from V)

(42) a. Yoko-wa joozu-ni utaeru uta (from SUBJ) (Japanese)
-CT well sing-able song
b. ???mame-wa tabeta kodomo (from OBJ)
beans-CT ate boy
c.????ono-de -wa ki –o kitta kikori (from Oblique) (Takasu, p.c.)
axe-with-TOP tree-ACC cut tree-cutter

(43) a. MALI chang de hao (er bie ren chang de bu hao) de ge
sing well but others sing not well COMP song
'a song that Mary-CT (but not others) sings well'
b. (?)yong FUTOU kan shu de ren (from Oblique) (Chinese)
with axe cut tree COMP man (B. F. Jia, p.c.)
'a man who cut the tree with an axe-CT'

In English (40), only the CT from the subject in the relative clause is all right and CTs from object, oblique and verb are all bad, getting worse from object to oblique and verb, which reflects NP accessibility hierarchy, by which a subject is most accessible, and object and oblique are less and less accessible to a grammatical operation like relativization (Keenan & Comrie 1972). The hierarchy applies in other languages as well. As in the case of multiple CT licensing in the matrix clause, there is a sharp distinction between contour CT languages such as English and morphologically CT-marking languages such as Korean, Chinese and Japanese in CT licensability in relative clauses. If a more contrastive context is provided, including negative relative clauses, then acceptability increases. If (42b) is followed by *–mo toonyuu-wa noma-nai* 'even (a child–) does not drink soybean milk', it sounds rather acceptable. If (42c) is followed by *–mo te-de-wa kire-nai* 'even (a tree-

cutter –) cannot with a hand', it also gets almost acceptable'. If (43b) is contrasted with a corresponding negative sentence with *yong dao* 'with a knife' in contrast, e.g. 'but could not cut it with a knife,' then it becomes all right. Note that ***shi*** is used as a CT marker in front of the CT NP/PP in relative clauses in (43). It is not simple focus, as traditionally believed. Thus we can see that CT can occur in relative clauses in general, though with language-specific and context-sensitive restrictions. This claim is rather contra Jacobs (1997) and Krifka (1999), even in German, but is in line with Molnar (1998). In Malagasy, however, the *dia* CT seems to be almost impossible in relative clauses.

3.5 Contrastive Predicate Topic: crosslinguistic evidence

Let us turn to the issue of Contrastive Predicate Topic (CPT). This section addresses how predicates in contrastive prosodic contour or morphological marker show the nature of Contrastive Topic and generate scalar propositions that are more than 'conversational implicatures.' Such a CT induces an alternative contrast set (C-set henceforth) of event descriptions in the speaker's mind, based on the common ground in context. The C-set of event-descriptions is partially ordered on a quantificational (Horn's) scale in terms of degree of accessibility to goal event in event series, which will be illustrated shortly.

An utterance of a predicate in CT generates a polarity-reversed predicate meaning inversely (Lee 2000):

(44) If 'CT(p)' is given, then contrastively ('but') 'not q' (q: a higher stronger predicate) is conveyed and if 'CT(not-q)' is given, then contrastively 'p' (a lower weaker predicate) is conveyed.

The cross-linguistic conventionality of this mechanism suggests its semantic contribution. Event-denoting predicates, then, share their scalar nature with quantifier expressions in CT situations. Our present treatment of CT sheds new light on why scope inversion occurs and how reversed polarity or event-contrast occur. The notion of CT can thus be extended and modified from non-predicate nominal expressions (Buring 1994) to predicative event-descriptions cross-linguistically, which reveals aspects of interaction between Topic-Focus information structure and scalar information strength structure.

How does CT occur on predicates? Suppose someone asks a question combining (45) and (46). 'Going on the stage' is the ultimate goal event and one of the two questions alone can be understood as a super-question that combines (45) and (46) via accommodation. Then, it has a potential predicate Topic that has been talked about in the questions. In an answer 'Her arriving and going on the stage was blocked by the crowd of her fans', the predicates as a whole became a Topic. This is

a rare case of noncontrastive Topic and when the goal event of going on the stage is the ultimate concern the hearer can respond to a subquestion given as (45). Then, an answer can be (47) in English and (48) onwards in Korean, Japanese, Chinese, Italian, Russsian, Turkish, and Hungarian with the relevant predicate meanings from the contextually salient scalar C-set. Consider:

(45) What about her? Did she arrive yet?

(46) Did she go on the stage?

(47) a. She ARRIVED$_{CT}$ [L+H*LH%].
b. Arrive she DID$_{CT}$.

(48) a. o -ki -nun hae-ss –e (Korean)
come –NMZ –CT do-PAST-DEC NMZ=Nominalizer
b. o -ki -nun o -ass –e
come –NMZ –CT come-PAST-DEC
(a-b) '(She) came-CT.'

(49) a. doochaku-wa shita (Japanese)
arrive –CT did
'(She) arrived-CT'.
b. ki -wa shita
come –CT did
'(She) came-CT.'

(50) lái shì lái le. (dan shi mei you shang tai biao yan)
come CT come PERF but CT not on the stage perform
'(He) came-CT (but didn't go on the stage).' (Chinese)

(51) per venire e venuto (Italian) (Mozzikato, p.c.)
for come(INF) be came(come-PAST)

(52) Maria pridti -to pri-shl-a. No ne vzo-shl-a
approach-CT approach-PAST-FEM But not
na stsen-u
up-climb-P-F on stage-ACC
Maria came-CT. But, she didn't go on the stage.' (Russian) (V. Rouss, p.c.)

(53) Q: Seda gel-di ve sahne-ye cık-tı mı? (Turkish) (S. Gokmen, p.c.)
come-PAST and stage-to go on-PAST Q
'Did Seda come and go on the stage?
A: gel-mesine gel-di (ama sahne-ye cık-ma-dı)
come-CT come-PAST but stage-to go on-not-PAST

(54) meg -erkez –ni meg-erkez-ett (Hungarian) (B. Gyuris, p.c.)
PreV-arrive-INF PreV-arrive-PAST[3rdSG]
'(He/She) ARRIVED$_{CT}$'

In English and in some other languages, the same contrastive contour as used for individual-contrast is the only means of showing CPT, as in (47). Verb fronting is to make the verb prominent, as a separate operation for proposition affirmation (see Birner & Ward 1998 for the case of preceding *but*) and (47b) has both effects of CT and prominence, reinforcing the contrast involved. Otherwise, there are two different syntactic patterns of Contrastive Predicate Topic: as in (49), one is [Vstem/root +NMZ + CT do$_{LV}$ +Inflectional Elements] and the other is [Vstem/root +NMZ + CT Vstem/root +Inflectional Elements] (copying may be involved, see Choi 2001). In some languages, NMZ (Nominalzer) is not needed and Vstem/root or infinitive is used. Japanese belongs to the first pattern and the rest (Chinese, Italian, Russian, Turkish, Hungarian), to the second pattern.[5] In Turkish, a CT marker *mesine* is attached to the verb stem, the verb being repeated or copied, whereas individual-contrast is marked by a delayed high tone. In all the verb repetition (copying) pattern languages inflectional functional categories appear with the second verb, which head the functional projection. The pattern of light verbs *ha*'do' (in Korean) and *suru* 'do' (in Japanese) cannot be an exception to this generalization.

If we view the patterns as basically identical in meaning, we can learn that the patterns do not denote repetition of 'coming' events. Both of them denote one time event of 'coming', the lexical meaning of the original head verb may be transferred to the copied verb, and the functional complex ([V-Agr(HON)-T-Top-Force] for Korean) remains for the original verb. It is true that the repetition has the flavor of the tautology of [P is P] or rather a question-answer pair of [Q: P? A: yes, P], as a way of affirmation. It is reminiscent of VP ellipsis in [Did she arrive? Yes, she did] in English. But because of the CT situation, that is not complete and another question is conjoined: [Did she go on the stage?]. The speaker has a negative answer to it but it is not explicitly expressed but conveyed by means of the conventional CT used. In CT situations, all predicates are quantificationally scalar, the ultimate goal event being universal, say, here 'going on the stage' in the context. If the answer is rendered as a negative Contrastive Predicate Topic such as 'She didn't GO ON THE STAGE $'_{CT}$, what the speaker conveys may be a proposition with a weaker affirmative predicate 'but she arrived'. For (47) we need:

(55) a. C-set on the scale: {*arrive* < *go on the stage*}
b. Conveyed meaning: (*But* she did *not* go on the stage.)

3.6 CT and negation

In the interaction between negation and universal quantifier, the negation wide scope interpretation is a case of CT. Consider the following example in Korean:

(56) motu o -ci -nun an-h-ass-e
all come-COMP-CT not-do-PAST-DEC
'Not all came'.

If the predicate is CT-marked in a negative S as in (56), because of its partial focality, it is associated with universal quantifier (or it may be ambiguously associated with the verb) as a focus inducer. Then, necessarily, negation wide scope reading occurs, some weaker quantifiers than universal standing in constrast to be affirmatively combined with the verb in meaning. Even if the CT marker deletes, still a compensatory high pitch falls on the preceding complementizer and there cannot be ambiguity in speech. We can expect similar effects in other languages. Let's compare the following two sentences with negation and CT in Korean:

(57) a. Yumi-ka o -ci -nun an-h-ass-ta
-NOM come-COMP-CT not-do-PAST-DEC
'Yumi didn't come but —'
b. Yumi-ka an o -ki -nun an o -ass -ta / hae -ss -ta
-NOM not come-NMZ-CT not come-PAST-DEC do-PAST-DEC
'Yumi didn't come but —'

In (57a), CT can be associated either with the subject *Yumi*, making it focused and contrasted with someone else, or it may be associated with the verb 'come' to make it focused and contrasted with weaker verbs in respect of the current goal event in the context, and the conveyed propositional meaning may be 'but she sent flowers'. If the subject marker in (57a), i.e. *-ka* in *Yumi-ka*, is replaced by *-nun* by default it becomes TOP and normally cannot be in the scope of the following CT *-nun. Yumi* in (57a), when *-nun* is focally associated with the verb *o-* 'come,' is originally a Topic but because another *-nun* follows in the same sentence, the first original *-nun* is avoided, and a neutral subject marker *-ka* steps in instead. This does not happen in Japanese. In (57b), the entirety of *an o-ki* 'not coming' is within the scope of the CT *-nun*, copied out of the head, and the CT cannot be associated with the subject *Yumi* and thus cannot focus it, cannot contrast it with anything. The subject here, I claim, comes from Topic *Yumi-nun*; because when a non-contrastive Topic occurs with a Contrastive Topic, the non-contrastive one tends to concede to the marked focal and topical *-nun* and gets the NOM marker. This phenomenon does not occur in Japanese. At most, a con-contrastive Topic marker can drop in Japanese. Because 'not coming' together has been repeated, there is no double negation effect (cf. Choi 2001). Instead of *an o-ass-ta*, the light verb 'do' form *hae-ss-ta*

'do-PAST-DEC' but not **an hae-ss-ta* 'not do-PAST-DEC' with negation can be used. (57b) sounds like a more volitional negative act, whereas (57a) can be more circumstantial. In (57a), if another negation marker *an*'not' comes before the verb *o*'come', there occurs double negation effect. The second negation is a real negation and is not in a repetition construction. Because of its denial interpretation, double negation here, particularly with CT, is weaker than the positive form in its positive force. We can see that a repetition is not a simple repetition. Motivations for different syntactic structures are important.

We can notice various cases of CTs marked by *shi* of transitive verbs in Chinese, as follows:

(58) fan, chi shi chi guo le, dan shi mei you chi bao
rice eat CT eat PER PF but CT not eat enough/full
'Rice, I ate-CT, but I didn't eat enough.'

(59) shu shi mai le, diannao mei you mai
book CT buy PF computer not buy
'A book, I bought but I didn't buy a computer.'

(60) zhen shi da guo le, yao hai mei you chi
injection CT get PER FP medicine yet not eat
'I got a shot but I didn't take medicine yet.'

(61) ni shi xiang baba, ta shi xiang mama (Hashimoto 1966)
you CT resemble father he CT resemble mother
'You-CT resemble father, he-CT resembles mother.'

In (58), the CPT clause is contrasted with the next clause that has a negated higher predicate *mei you chi bao* 'not eat fully'. In (59), object individuals are contrasted but still there seems to be some scalar tendency. In (60), related events involving objects are contrasted. A list contrast of individuals, which is not common, is also made in (61).

3.7 How CTs license weak NPIs

CT construction constitutes a weakly affective context because of its associated negatively conveyed proposition. Consider:

(62) a. He *lifted a FINGER*$_{CT}$. (But he wasN'T very helpful) [weakly negative]
b. Joe-ka *sonkkarak hana* -RA-TO kkattak-ha-ki –NUN hae –ss –ta
-NOM finger one-DEC–CONC move-do-Nmn-CT do-PAST-DEC
'He lifted a finger-CT.' (Korean)

c. bae-na sagwa- NUN an mek-ess-e (Korean)
pear or apple -CT not eat-PAST-DEC
'I ate neither pears nor apples.' (NEG > disjunction)

d. bae-na sagwa -rul an mek-ess-e
pear or apple -ACC not eat-PAST-DEC
'What I didn't eat is either pears or apples.' (possible)
(NEG < disjunction)

(63) a. gercek-te calıs-ma-dı–m (Turkish)
at all study-not-PAST-1stSG
'I didn't study at all.'

b. ?*gercek-te calıs-tı–m
at all study-PAST-1stSG
'I studied at all.'

c. gercek-te calıs-masina calıs-tı–m
at all study-CT study-PAST-1stSG
'I did STUDY$_{CT}$ at all.'(Lit.)

In (62a), a very strong NPI *lift a finger* is in an apparently affirmative sentence, but because of its Contrastive Topic effect, it is quite acceptable. In Korean (62b), similarly a weak affective item can co-occur with CT. In (62c), because of the affective CT marker, its associated disjoined NP can be interpreted only as 'neither pears nor apples' with the short form negation following, whereas in (62d), the ACC-marked disjoined NP can be interpreted as 'It is pears or apples that I didn't eat'. In Turkish (63), a strong NPI that can occur in a negative sentence, as in (63a), but not in a positive sentence, as in (63b), freely occurs in a CT-*masina*-marked verb repetition sentence, as in (63c). If we ignore this kind of negative force of CT, we cannot treat its semantics properly. The contrastive contour and CT markers make the whole difference.

There is some general confusion about the distinction between Contrastive Topic and Contrastive Focus (e.g., see Choi 1999). But we can postulate a conjunctive super-question for a CT-marked answer and the Korean marker *-nun* consistently shows the function of Contrastive Topic, whatever place in a sentence it may take, whatever grammatical function (subject to oblique) it may come from, whatever category from noun, adverb to verb it may be attached to, as we have seen so far. On the other hand, Contrastive Focus supposes a disjunctive super-question such as 'What about Yumi? Did she eat the beans or (did she eat) the peanuts?' Then, you cannot answer it with 'I ate the beans-*nun*$_{CT}$' appropriately but with 'I ate the beans-*rul*$_{ACC}$.' The latter is Contrastive Focus. Other forms of Contrastive Focus also come from previous contexts that may be reduced to alternative questions. From the given set of alternatives, you choose one exclusively. It is focused, and the rest is ignored and eliminated unlike in CT.

4. Proposition structure

4.1 The unrealized proposition cannot be conversational implicature

In (47), the initial proposition expressed with Contrastive Predicate Topic *She ARRIVED*$_{CT}$ is concessively admitted and is not complete as an answer to the superquestion that is a potential predicate Topic. Therefore, the speaker's real intent in uttering (47) is to convey a more assertorial proposition of *but she did not go on the stage* from the viewpoint of argumentation logic (see Hamblin 1970; Krabbe 1999). The uttered part is nothing but a concessive commitment. It is somewhat like axiomatically given suppositions in argumentation, and what is important is what follows from these as a concluding assertion, which is not expressed. In 'one step back, two steps forward,' 'two steps forward' gains more weight than the retraction. The following part, unuttered in CT, is more important. If one utters (47) with the contrastive contour and continues with – *and she went on the stage*, it sounds contradictory, without perhaps some epistemological hedge such as *maybe* inserted after *and*. Without the contrastive contour, it is perfect. In this sense, characterization of the phenomenon as a 'conversational scalar implicature,' as done by Rooth (1994) and Buring (2000), is not tenable. The phenomenon should originate from it. But it has a conventional linguistic CT contour or morphological marker or syntactic shift/scrambling. 'Conventional implicature' may still be weak, although Grice may be satisfied. Bach (1999) shows a similar objection to the 'conventional implicature' treatment of particles such as *even*, but he does not treat such a prosodically distinct phenomenon as CT that has an unuttered part. C-set is computed in such a way: if any right side element entails its left side element in a relevant dimension, then it constitutes a scalar C-set. If *arrive* temporally precedes and is necessitated by *go on the stage*, *Mary went on the stage* entails *Mary arrived* in the limited closed circuit context.

4.2 Semantic strength and different layerings of propositions

Meaning strength scale (though goal event-oriented), polarity-reversal, and inverse relation are all semantically motivated. The only part pragmatics of context intervenes in is selecting the relevant alternative elements on the scale. The contrastive conjunction *but* and the polarity reversal negation *not* are semantically or conventionally determined. Event/subevent descriptions are ordered on the scale based on degree of accessibility to the ultimate goal in the relevant series of events. The predicate meaning *go on the stage* entails the predicate meaning *arrive*. In other words, *go on the stage* is stronger than *arrive* in meaning in the relevant series of events for the planned goal.

Neale (1999) discusses Frege's (1892) 'coloring' of thought. For Frege, *Alfred has not arrived yet* and *Alfred has not arrived* have the same sense but have different coloring, the former suggesting that someone expects Alfred to arrive. Afterwards, linguists came out with many more expressions that generate Grice's 'conventional implicatures' such as 'even', 'still', 'yet', 'anyway', 'however', 'nevertheless', etc. including honorifics in Korean (see (3)), in Japanese, and in Tamil. The syntactic HONorific agreement in Korean coming from the conventional marking of *-shi-* is motivated by the following pragmatic attitudinal manner of speech:

(64) Propositon: [The speaker HONORs the (Topic/)subject referent]

Neale (1999) argues that the content of the suggestion for 'yet' is a *second proposition expressed*, dependent upon the ground-floor proposition (that Alfred has not arrived), proposing a multiple proposition approach. A *dependent way* for an *n*-th proposition is ultimately attributable to semantic features of lexical items. An utterance simply expresses one or more propositions and these have truth-values. All the associated propositions must be true for an utterance to be true. If this position is taken, the unuttered proposition generated by CT can be duly treated. However, I cannot agree with Neale's not distinguishing between presuppositions and other types of propositions. Assertion, entailment, presupposition, conventional implicature, and conversational implicature in that order may have different degrees of influence for truth. A person who misses the HON marker *-shi* from (3) in Korean may have said something inappropriate regardless of the truth of the utterance. The utterance cannot change its truth value because of lack of the HON marker. But there must be more refined and polished layerings of different propositions analyzed for different utterances.

5. Conclusion

Because CT is only intonationally marked in some widely studied languages, its status, particularly its unuttered part, is easy to ignore or treat minimally/weakly. Different markers of CT in various languages and various intonational patterns for this particular phenomenon of CT and Contrastive Predicate Topics (CPTs) have been investigated. On the one hand, we have shown how CT, which is topical and focal, is distinct from non-contrastive Topic, which is not focal at all, and on the other, we have displayed how it is distinct from contrastive focus, which is associated with disjunctive question. CT underlies negation wide scope reading in its interaction with negation and licenses weak existential NPIs in different languages.

CPT utterances witnessed in various languages necessarily convey unrealized polarity-reversed or negative higher predicate meanings, which is largely semantic

and partly pragmatic. This cannot be a matter of conversational implicature and may not even be a matter of conventional implicature in the sense that the speaker's real intent is to convey this unrealized proposition.

Notes

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1. In underlying structure, a VP-internal Dative may be posited to give an explanation of why the possessee takes NOM rather than ACC. If the fronted possessor DP takes a dative marker, however, it is still an existential locative construction, blocking an HON agreement. For a very small number of Koreans who accept HON agreement in this situation, fronting creates topicalization effects.

2. Cf. *Dani more* 'Dani is a teacher (at the moment)' without copula is possible as well as *Dani* ***hu*** *more* 'Dani is a teacher'.

3. As Chunghye Han pointed out (p.c.), a disjunctive question presupposes that a single chosen answer is expected. Therefore, it can trigger a contrastive focus but *-nun* can never trigger a contrastive focus.

4. Because the S-initial CT from the subject takes wide scope over other following CTs, its alternative, namely 'that child,' turns out to have given neither his elder brother nor his younger brother, neither a model plane nor a doll. This consequence is due to the basic scalar (in whatever sense) nature of alternative C-sets. I share this intuition with Choon-Kyu Lee (p.c.).

5. In Japanese, however, some younger speakers prefer the second pattern for a few verbs such as *kuru* 'come' (e.g., *kita-koto-wa kita* 'came-thing-CT came').

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Categories, types, and qualia selection*

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1. Introduction

In this paper, I outline some aspects of the theory of categories for natural language semantics. In particular, I develop a richer classification of types, exploiting the role that *qualia structure* can play in the determination of asymmetric selection in the grammar. Qualia roles will be used to define a ranking for the types of objects and relations. These types are referenced by predicative structures for all compositional operations in the grammar. For the present discussion, the major distinction is that between *natural* and *functional* types. In particular, I will illustrate how the asymmetric operation of type coercion enables a complement to take on a new interpretation in distinct selective environments, where the grammar dictates. Conversely, I will also discuss classifier constructions in the language Arrernte, and show how classifiers act asymmetrically as type-shifting operators over nominal classes to provide for legitimate typing environments. I compare lexicalized concepts with synthetic constructions in classifier languages. I will not, however, discuss the specifics of the syntactic analysis for these constructions, but rather focus on the general behavior or coercive operations. The lexicalization strategies that are employed in a language reveal much about the underlying conceptual machinery of thought, as do the compositional processes that generate more complex constructions derived from them. The basic framework of semantic analysis I will assume is Generative Lexicon Theory as outlined in Pustejovsky (1995, 1998, 2001), and it is the qualia structure which allows us to make such distinctions.

In Generative Lexicon Theory (henceforth GL) it is assumed that an essential component of semantic interpretation and composition is the manner in which predication is distributed over a complex event structure representation. The predicative force of a single relation or predicate (such as *build* or *die*) is distributed into distinct subpredicates, which are structurally positioned within an event tree annotated with temporal constraints. For example, rather than a neo-Davidsonian

single event-place interpretation for the verb *build*, i.e., $\lambda y \lambda x \lambda e[build(e, x, y)]$, there are subevents which are associated with distinguished subpredicates, each of which corresponds to some logical aspect of the verb's meaning. That is, for a predicate, P, denoting an event, e, there are as many subpredicates, P_i, as there are subevents that are distinguished in the event structure. This is illustrated in (1a) below. For the verb *build*, this corresponds roughly to the schematic representation in (1b).

(1) a. $P(e) \rightarrow P_1(e_1)P_2(e_2)\ldots P_n(e_n)$
b. $\lambda y \lambda z \lambda x \lambda e_2 \lambda e_1 [build_1(e_1, x, z) \wedge build_2(e_2, y) \wedge e_1 < e_2]$;

The number and nature of these subpredicates is inherently restricted by the *qualia structure*. The qualia are an interpretation of the Aristotelian "modes of explanation" for an entity or relation (Moravcsik 1975), positioned within a type logic as defined in Pustejovsky (1995) with the following characteristics: the FORMAL role is the basic category which distinguishes the concept within a larger domain; the CONSTITUTIVE is the relation between an object and its constituent parts; the TELIC expresses its purpose and function; and the AGENTIVE expresses the factors involved in its origin or "bringing about the entity."

For relations, the qualia act in a capacity similar to thematic roles, where the individual qualia are associated with entire event descriptions rather than individuals. For example, the qualia structure for the *constitutive causative* verb *build* in (1) divides into an initiating activity (the AGENTIVE) and a culminating stative terminus (the FORMAL). Hence, we can refer to *build*'s qualia structure as the pair [A, F], abstracting away the qualia values. The qualia structure is only one of three aspects of the lexical structure of a word, which impacts the mapping of semantic information to syntax. The others are:

(2) a. ARGUMENT STRUCTURE: The specification of the number and type of logical arguments.
b. EVENT STRUCTURE: The identification of the event type of an expression and its subeventual structure.
c. QUALIA STRUCTURE: A structural differentiation of the predicative force for a lexical item.

In the discussion that follows, I focus on how the qualia act to naturally differentiate the semantic classes underlying the lexical items in a language, while contributing to the asymmetric properties of lexical selection.

2. Categories of things

2.1 Natural types

In this section, I review briefly the theory of type construction developed in Pustejovsky (2001), where the distinction between kinds of objects in the world and the types that represent them is elaborated in detail. Let us begin with the basic distinction between natural kinds and artifacts. There are several questions that pertain to this distinction, including the satisfaction conditions on membership in a category, but what concerns us here is the difference in how natural kinds are interpreted relative to artifacts. In Pustejovsky (2001), I argue that the major discriminant that distinguishes natural kinds and artifacts is *intentionality*, and is expressed in relation to the AGENTIVE and TELIC qualia of an object. This forms the basis for ranking the types for the kinds of things there are into a hierarchy of types, what we will call the *Principle of Type Ordering*.

To begin, consider the nouns *chair* and *rock* in the following two contexts: "a good chair/rock", vs. "enjoy that chair/that rock." On a very basic level, the evaluative predicates present in these examples refer to the utility or purpose of the object or material; hence the judgments in these sentences are functional ones. For natural kinds such as *rock*, *tiger*, and so on, this is only possible when we have reconceptualized the concept to also carry some intention along with it, e.g., a conventional use. For example, if rocks are judged relative to how good they are for climbing on, then the constructions above are well-formed enough. Similarly, although *apples* are natural kind plant products, we can categorize them as a food stuff, a category which is typically grouped into natural kinds as well. Other sorts of food stuff, such as cookies and cakes are, however, artifactual in nature, but what are the discriminant properties that tell us this is so? On this view, classifying them as foods does not tell us what category they belong to, but reference to an event of creation would do just that. Hence, although there are some diagnostics for determining what is natural or not, they do not appear to uniquely relate to intentional acts and purposes.

To model the natural kinds, let us assume that the *Natural Types*, L_N, are generated by type relations involving only the FORMAL and CONST roles (i.e., the language of these types is closed under the operations of subtyping and CONST). For example, the nouns in (3) are natural types:

(3) a. *stick*, *lion*, *pebble*
b. *water*, *sky*, *rock*
c. *wooden stick*;
d. *cloudy sky*.

Following the notation in Asher and Pustejovsky (1999), I will interpret the conventional feature-based qualia structure of GL in terms of an algebra of types, operating under very restrictive rules of combination. For example, instead of the feature structure in (4), where constitution as a quale is a feature value, we can represent this aspect of the meaning as integrally part of the basic type structure itself.

(4) a. $\begin{bmatrix} x & \\ \text{QUALIA}: & \begin{bmatrix} \text{FORMAL}: \sigma \\ \text{CONST}: \tau \end{bmatrix} \end{bmatrix} \Longrightarrow$

b. $x : \sigma \copyright \tau$

Hence, what is needed to represent both FORMAL and CONST aspects in L_N is the following:

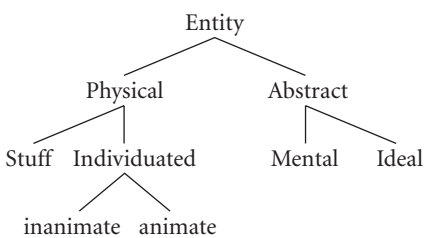
(5) If σ and τ are types in L_N, then $\sigma\copyright\tau$ is also in L_N, where © expresses the constitutive relation, as defined above.

From the examples above, we would thus have the following types in L_N, ignoring the actual composition rules giving rise to the compound interpretations:

(6) a. "wooden stick"; *stick©wood*
b. "cloudy sky"; *sky©cloud*

Viewed in isolation, the set of natural types N provides the necessary building blocks on top of which to define our other types. Given these assumptions, the upper lattice structure of the natural types will refer only to unintentional objects and will have the following sort of structure:

(7)



UPPER NATURAL TYPE LATTICE

Now consider the predicates that select for just these natural types. In other words, once we have defined the natural type entities, we are in a position to define the natural predicates and relations that correspond to these types. First, let us review some notation. I assume a *typing judgment*, $g \vdash \alpha : \tau$, with respect to a grammar to be an assignment, g, an expression, α, and a type, τ, such that under assignment g,

the expression α has type τ. In the case of the natural types, I will also assume the following equivalence:

(8) $g \vdash x : \alpha \in N =_{df} g \vdash x : e_n$

Then, for the construction of predicates from natural types, we have the following: for the predicates below, e_n and $\underline{t}$ are in the set of Natural Types, N, structured as a join semi-lattice, $< N, \sqsubseteq >$:

(9) a. *die*: $e_n \rightarrow \underline{t}$,
b. *touch*: $e_n \rightarrow (e_n \rightarrow \underline{t})$,
c. *be under*: $e_n \rightarrow (e_n \rightarrow \underline{t})$,

The predicate and relational types that result from natural type entities are just those predicates and relations that are natural types themselves. Examples of the resulting sentences of the compositions are shown below:

(10) a. The rabbit died.
b. The rock touches the water.
c. The ants are under the tree.

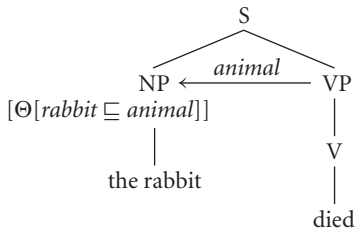
So far, I have outlined a simple class of types for entities and relations, N and $N \times N$. Now let us explore how these types are deployed in composition in syntax. First we turn to the manner in which subtypes in the lattice, N, are accepted in selective contexts. As in Pustejovsky (1995), we express a *subtyping coercion* relation, Θ, for these judgments as follows:

(11) $$\frac{x : \sigma_1, \quad \Theta[\sigma_1 \sqsubseteq \sigma_2] : \sigma_1 \rightarrow \sigma_2}{\Theta[\sigma_1 \sqsubseteq \sigma_2](x) : \sigma_2}$$

This says that, given a variable x of type σ_1, which is a subtype of σ_2, there is a coercion possible between σ_1 and σ_2, which changes the type of α in this composition, from σ_1 to σ_2. The typing relation between the subtype **rock** and the type selected by a governing verb *throw*, for example, namely **phys_obj**, is respected by this coercion relation, Θ. Similarly, since the concept **rabbit** is subtyped under **animal**, it falls under the same coercion operation. Both are shown below in (12) and a composition is illustrated in (13), where the type for the verb *die* is *animal* $\rightarrow$ $\underline{t}$;

(12) a. $\Theta[\ rock \sqsubseteq phys\_obj] : rock \rightarrow phys\_obj$
b. $\Theta[rabbit \sqsubseteq animal] : rabbit \rightarrow animal$

(13)

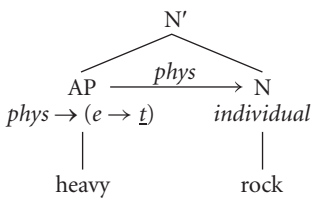


Adjectives will be typed in a similar fashion to predicates, selecting directly for a natural type and thereby becoming *natural qualities*, as shown in (14) below.

(14) a. *red*: $e_n \rightarrow \underline{t}$
b. *heavy*: $e_n \rightarrow \underline{t}$

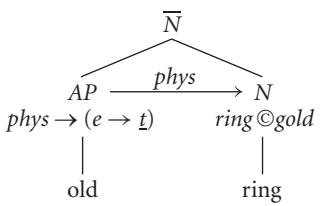
Ignoring for now how the semantics of attributive modification treats the type differently, we see a straightforward composition in (15).

(15)



Given the above representation for FORMAL and CONST qualia as a specialized kind of composite type structure, it is no surprise why adjectives such as *old* in the noun phrase *an old ring* appear to be able to predicate of either quale, FORMAL or CONST.

(16)



Briefly, within the type structure for *ring*, either quale is satisfied by the type restrictions of the adjectival, giving rise to the two interpretations below. Although the CONSTITUTIVE interpretation is not as acceptable as the FORMAL, assume composition allows for type selector functions (cf. Pustejovsky 1995) such as Σ_1 and Σ_2 below, thus solving the classic mereological puzzle discussed in Bach (1986) and Link (1998).

(17) a. $\Sigma_1[ring©gold]$: "the object is old as an artifact";
b. $\Sigma_2[ring©gold]$: "the constitution of the ring is itself old".

This states essentially that, when there are distinct values (types) for the CONST and FORMAL, the selective ability of adjectives such as *old* allows for a non-specific interpretation.

2.2 Functional types

Up to this point we have discussed only natural types. In some fairly obvious sense, these types refer to real objects that are identified through classic principles of individuation. But L_N is not a very expressive language, because any trace of intentionality is absent. This is what the operations of the TELIC or AGENTIVE qualia do; they introduce intentionality, giving rise to the generation of our first *virtual types*, concepts referring to natural types which are colored by intentional descriptive content. For example, the identification of any of the natural types *stick*, *stone*, or *water*, as functioning in the capacity of the activities of *hitting*, *throwing*, or *drinking*, respectively, is a compositional operation that is not supported by L_N.

(18) Introduction of TELIC:
  a. *hitting stick*; not in L_N;
  b. *throwing stone*; not in L_N;
  c. *drinking water*; not in L_N.

The introduction of TELIC above generates a functional description for an entity without of course creating a new entity in the world. Hence, we have a new domain of entities in our type system, the *Functional Types*, *F*, which are virtual, in that from a realist perspective, each is still identifiable by the properties that satisfy its being a natural type, which forms the *ground* for the functional type.

The other aspect of intentional description is associated with the AGENTIVE quale. Starting again with natural types, we can identify *artifacts* as those naturals with identified AGENTIVE and TELIC roles (see Pustejovsky 1995). Natural artifacts are those naturals with no expressed purpose or TELIC associated with them; the Ajd-N cases in (19) are a good example of this interpretation.

(19) Introduction of AGENTIVE:
  a. *carved stick*; not in L_N;
  b. *flaked stone*; not in L_N;
  c. *boiled water*; not in L_N.

We will call such concepts "semi-intentional", when reference only to AGENTIVE is made. In these examples, the natural type has been transformed or modified from its original state, but not brought into existence by the referenced activity (event). Clearly, real artifactual concepts such as *table*, *knife*, and *computer*, are intentionally

defined by reference to both AGENTIVE and TELIC. In fact, for such objects, it is difficult to imagine creation without purpose.

Other concepts that are semi-intentional in nature are types involving individuals where a relational state is defined in terms of the AGENTIVE quale. For example, the classification of two natural type individual humans as entering into the relations of *brother* or *father* also constitutes a semi-intentional type. Reference to the functional relation of two individuals through the TELIC however, is a purely intentional relation, such as with the nouns *boss* and *friend*. Combining both TELIC and AGENTIVE for humans gives rise to concepts such as *wife* and *president*, where social function and social modes of creation are folded into one concept and one lexicalized item. Not surprisingly, the relations associated with such types will also be functionally defined, e.g., *elect*, *vote*, *marry*. A large subclass of such nouns, the *agentive nominals*, has been studied recently in Busa (1996, 1999), where TELIC and AGENTIVE values for nouns such as *violinist* and *pilot* characterize the relation that the individual has to its defining event or event descriptions. For the nouns presented above, institutionally defined roles such as *boss*, *president*, or *wife* make reference to events through the TELIC or AGENTIVE.

For the present discussion we will interpret the feature-based representations of qualia structure as types, adopting and extending the framework introduced in Asher and Pustejovsky (1999).[1] In earlier treatments of types in GL (Pustejovsky, 1995), unified types were represented as the result of a meet of two types from the type lattice, $\sigma \sqcap \tau$, where

(20) a. $\sigma = [_{\sigma} \ldots [Q_F = \alpha]]$
b. $\tau = [_{\tau} \ldots [Q_T = \beta]]$

In the logic presented in Asher and Pustejovsky (1999), the tensor type constructor, $\otimes$, introduces a quale-relation as part of the type directly, $\sigma \otimes \tau_T$.

(21) a. $g \vdash x : \alpha =_{df} g \vdash x : e_n$
b. $g \vdash x : \alpha \otimes \beta_T =_{df} g \vdash x : e_f$, where $x : \alpha \otimes (\ldots \beta_i \ldots) \wedge \mathit{Telic}(x, y) \rightarrow y : \beta_i$

For example, the feature-based qualia structure for a noun such as *beer*, shown in (22),

(22)
$$\begin{bmatrix} \textbf{beer} & \\ \text{ARGSTR}: & \begin{bmatrix} \text{ARG1}: \texttt{x:liquid} \end{bmatrix} \\ \text{QUALIA}: & \begin{bmatrix} \text{FORMAL}: \texttt{x} \\ \text{TELIC}: \texttt{drink(e}^{P}\texttt{, y, x)} \end{bmatrix} \end{bmatrix}$$

can be viewed directly as a type as follows:

(23) *beer*: $liq \otimes drink_T$

Similarly, the unified type for **phys_artifact_tool**, shown in (24)

(24)
$$\begin{bmatrix} \textbf{phys\_artifact\_tool} & \\ \text{ARGSTR}: & \begin{bmatrix} \text{ARG1}: \text{x:physobj} \\ \text{D-ARG1}: \text{y:human} \end{bmatrix} \\ \text{QUALIA}: & \begin{bmatrix} \text{FORMAL}: \text{x} \\ \text{TELIC}: \text{R}(e^P, \text{y}, \text{x}) \\ \text{AGENTIVE}: \text{make}(e^T, \text{y}, \text{x}) \end{bmatrix} \end{bmatrix}$$

can be represented as a type as follows:[2]

(25) $phys \otimes make_A \otimes \varepsilon_T$

In the previous section, natural predicates were defined in terms of natural entity types. In what follows, we will show how functional predicates are defined in terms of functional entities. As a result of this, it will be shown how the predicate inherits the intentionality of its arguments directly. Assume e_f is in the set of Functional Types, F, structured as a join semi-lattice, $< F, \sqsubseteq >$. Consider the predicates below; $e_f \rightarrow \underline{t}$

(26) a. *spoil*: $e_f \rightarrow \underline{t}$
b. *eat*: $e_f \rightarrow (e_n \rightarrow \underline{t})$
c. *feed*: $e_f \rightarrow (e_f \rightarrow (e_f \rightarrow \underline{t}))$

Below are examples of *functional propositions* composed from functional entities and functional predicates, i.e., functional types;

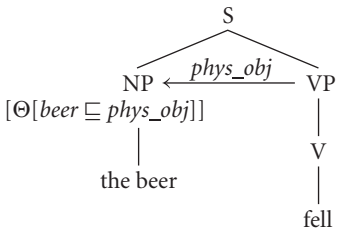
(27) a. The beer spoiled.
b. The rabbit ate the carrots.
c. The rabbit fed the bunny the food.

The judgments expressed by the above propositions entail natural propositions, but go beyond them as they also express judgments of intentional content, which natural propositions do not. To illustrate how this separation in judgment is actually calculated compositionally, consider the sentence below in (28).

(28) The beer fell.

If a functional expression such as *the beer* is predicated by a natural event expression, then the natural proposition is denoted by virtue of the base natural type constituting the expression, i.e., *liquid*, as shown in the derivation below:

(29)

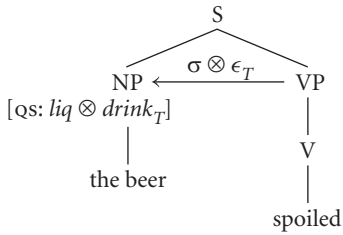


However, in the context of a functional predicate, such as the verb *spoil*, the same expression denotes both a natural proposition and a functional proposition, as explained below. Because the predicate *spoil* selects for not just a natural type, *N*, but a *functional type*, *F*, as its subject, the general type of the predicate *spoil* is $e_f \rightarrow \underline{t}$, and specifically it is typed as (30):

(30) $phys \otimes \varepsilon_T \rightarrow \underline{t}$

Therefore, functional type selection is selection of not only the base type but of the functional component as well, as illustrated below.

(31)



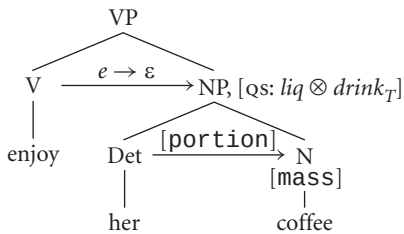
There are two logically distinct components to what is asserted by this sentence: (a) some physically tangible event is implicated relative to a quantity of liquid (this is the brute proposition); (b) the event is intentionally described as a spoiling, and the liquid is beer (this is the functional proposition).

3. Asymmetric selection through coercion

In this section I will discuss briefly what consequences of the present type system there are for operations of type coercion. Following the basic formulation of type coercion in Pustejovsky (1995), as a semantic operation that converts an expression, α, to the type expected by a governing function, β, it was suggested that α has a set of type shifting operators, Σ_α, associated with it which may operate over an expression, changing its type and denotation. These operators are the qualia themselves and the resulting types are the values of the qualia. Following the standard

GL analysis of coercion in complement position,[3] I will assume that the verb *enjoy* selects for an eventual function, that is, an unsaturated event description (see Pustejovsky 1993, 1995 for discussion). Thus, although the NP *her coffee* does not satisfy the typing environment of the governing verb *enjoy*, it is coerced to the appropriate type by the operation of *type coercion*. The compositional processes in the grammar results in the coercion of the NP complement *her coffee* into an event description, whose subject is controlled by the predicate *enjoy* (ε is an event description type).

(32)



The exact value of the predicate in this event description is mediated by two factors, described in (33) below.

(33) SPECIFICATION IN COERCION: For a coercing predicate β and its argument α, the specification is controlled by two factors:
  a. the selectional specificity of the coercing predicate;
  b. the aliases, Σ_α, available to the argument being coerced. There are two types of aliases for an expression:
    (i) Globally available methods of type-shifting, such as *grinding* and *packaging*;
    (ii) Locally available values in the qualia structure of an expression, such as TELIC and AGENTIVE events.

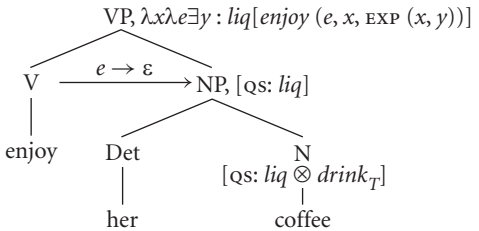
The property exhibited by coercing predicates such as *enjoy* is interesting because the verbs do not seem to ever fail in coercion. That is, although there may be no obvious or "proximate" interpretation for the sentences in (34), there are legitimate default readings available, even in the absence of qualia-derived interpretations. The two sentences in (34), for example, are cases in point

(34) a. Mary enjoyed the rock.
  b. John enjoyed the flower.

Namely, Mary might enjoy the way a rock feels, and John the way a flower looks or smells, all of which are perceptual experiences. For such top-typed experiencing predicates, it is hard to imagine a semantically ill-formed "enjoying event". In such cases where the complement is a functional type, the natural component of a

functional type can be selected and is itself coerced into the selected type. For this reason, I shall refer to such type changing contexts as *Natural Coercions*. Returning to the example in (32), the same structure viewed as undergoing a natural coercion results in the following interpretation:

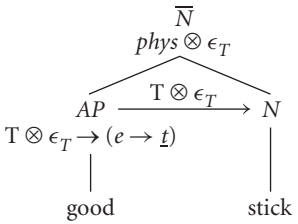
(35)



Hence, natural coercions (such as with *enjoy*) impose an event description interpretation on its complement, even in cases where the complement itself does not directly carry such information.

Evaluative predicates, on the other hand, such as *good* and *effective*, impose functional descriptions on their arguments, and as such shift the order or rank of the argument to a functional type.

(36)



With the introduction of type order (or *rank*), it is possible to classify the kinds of coercion operations a bit more precisely than has been accomplished thus far. There are two parameters which can help us distinguish the types of coercion operations that occur in grammar. One refers to the integrity of the type within its rank, while the other refers to the rank itself. For example, coercions preserving the order of the type will be called *Rank-preserving*; this is where an expression $x : \alpha \in N$, remains in N after the application of coercion. A coercion not having this property is said to be *Rank-shifting*. A coercion is *Domain-preserving* when the coerced expression α is not shifted from its domain, i.e., entities, events, or properties, during the coercion. If this is not the case, the coercion is said to be *Domain-shifting*. These properties are summarized in the table below.

(37) Table of coercion relations

COERCION TYPES	Rank-preserving	Rank-shifting
Domain-preserving	*Subtyping* *(38a)*	*Evaluative Predicates* *(38c)*
Domain-shifting	*Natural Coercion* *(38b)*	*Imposed Telic* *(38d)*

The sentences in (38) contain instances illustrating the distinct coercion types referred to in the table.

(38) a. Mary threw the rock.
b. John enjoyed the flower.
c. The water spoiled.
d. John began the rock.

The actual complement in (38a) is a subtype of that selected for by the verb *throw*, as seen above in (12). The coercion in (38b) has already been discussed, while (38c) is a clear example of a natural type instance being coerced to a functional interpretation. The aspectual coercion in (38d) combines this functional interpretation with a domain-shift to a controlled event description. Because both parameters are being positively deployed in this example, this sentence is clearly the hardest for which to find a natural interpretation.

4. Classifiers as bound qualia roles

4.1 Qualia binding

In this section we see how selection by adjectives is sensitive to the qualia structure of the head being modified, and this information is carried in the typing of the adjective itself. We begin with a discussion of adjectives and the semantic classes they denote. In Pustejovsky (1995), I discussed the classic field-descriptive approach to adjective classes, as summarized in Dixon (1982), where taxonomic classifications are used for distinguishing adjectives according to the general semantic fields associated with the words. For example:

1. DIMENSION: big, little, large, small, long, short
2. PHYSICAL PROPERTY: hard, soft, heavy, light
3. COLOR: red, green, blue
4. HUMAN PROPENSITY: jealous, happy, kind, proud, cruel, gay
5. AGE: new, old, young
6. VALUE: good, bad, excellent, fine, delicious

7. SPEED: fast, quick, slow
8. DIFFICULTY: difficult, easy
9. SIMILARITY: alike, similar
10. QUALIFICATION: possible, probable, likely

A slightly different approach is taken in Pustejovsky (1993) and Bouillon (1996), where some adjectives, such as *fast* and *good* are analyzed as event-denoting predicates. In Pustejovsky (2000), this analysis is extended to the entire class of adjectives, such as those listed above, by treating the qualia roles as temporally ordered relative to each other. Abstracting over the qualia in terms of their temporal properties gives the partial orderings below: $A < F$, $C \circ F$, and $F < T$. Now let us assume that any adjectival phrase, prepositional phrase, or relative clause modifying its head noun is bound to a specific qualia role of the head noun. Putting this principle together with the observations above regarding the temporal ordering of qualia values, we arrive at the thesis for qualia selection, stated below:

(39) QUALIA SELECTION THESIS:
Every Phrase, XP_i, occurring as a modifier to a nominal head, N, is associated with a specific qualia role, q_j, for that noun, according to the following constraints. If XP_i modifies:

i. FORMAL: then the event for that phrase corresponds roughly to an overlap relation, '$\circ$', with the head N;
ii. TELIC: then the event for that phrase corresponds roughly to the '$>$' relation relative to the head N, but in fact is closer to a generic interpretation. $\circ_g$ (see below);
iii. AGENTIVE: then the event for that phrase corresponds roughly to the '$<$' relation relative to N;
iv. CONST: then the event for that phrase corresponds roughly to an overlap, '$\circ$', relation with the head N.

(40) Table of qualia selection properties

ADJECTIVE	Qualia selection
well-built	Agentive
unbaked	Agentive
red	Formal
stone	Constitutive
wooden	Constitutive
useful	Telic
carved	Agentive
effective	Telic
fast	Telic

heavy	Formal
dense	Const
large	Formal

What is interesting for the discussion here is how the selective binding properties of adjectives narrows and restricts the modification possibilities inherent in adjectival interpretations. Relative to predication and the ordering of the event descriptions within an entity intension, the qualia provide three relations: $<$, $\circ$, and $>$. Most adjectives appear to predicate of the formal role, and hence are overlapping event descriptions. For example, dimensional adjectives such as *small*, *long*, *wide*, and *tall* all refer to properties that hold of an entity while it persists as that entity. These are overlapping properties, and can be said to modify the formal qualia role. Nevertheless, some adjectives refer explicitly to AGENTIVE (41a), and others to TELIC (41c), or CONST (41d). Examples of each of these can be seen in the modifications in (41) below.

(41) a. a well-built (A_1) house ($[F, C, A_1, T]$)
b. a two-story (F_1) house ($[F_1, C, A, T]$)
c. a vacation (T_1) house ($[F, C, A, T_1]$)
d. a brick (C_1) house ($[F, C_1, A_1, T]$)

All of these modifications might conceivably be present in the structure of a single NP, such as in (42) below.

(42) a. a large carved wooden useful arrow
b. a large (F_1) carved (A_2) wooden (C_3) useful (T_4) arrow ($[F_1, C_3, A_2, T_4]$)

Selective binding into the qualia structure of the head noun is not unique to adjectives, but in fact is paramount in the analysis of some classifier constructions, as we show in the next section.

4.2 Classifier constructions

The data in this discussion are taken from David Wilkins' (2000) article on classifier constructions in Mparnetwe Arrernte, the traditional language of the Alice Springs area in Central Australia. The discussion here is not intended to be comprehensive, but rather illustrative of how classifier constructions can be viewed as qualia binding in the syntax of the language.[4]

Below are examples of natural type descriptions in Arrernte, what Wilkins calls *specific nouns*. Notice the perceptual immediacy and tangible nature of these descriptive classes:

(43) a. *thipe*: flying, fleshy creatures;
b. *yerre*: ants;
c. *arne*: ligneous plants;
d. *name*: long grasses;
e. *pwerte*: rock related entities.

These map directly onto the class of Natural Types, as described in Section 1.1 above. The Arrernte nominal system also has what Wilkins calls *function/use generics*. Examples of such classifier nouns are given below:

(44) a. *kere*: game animals, meat creatures;
b. *merne*: edible foods from plants;
c. *arne*: artifact, usable thing;
d. *tyape*: edible grubs.

Interestingly, these nouns map almost directly to the general terms in the Function Type hierarchy presented above; namely, they each denote a fairly general function associated with a specific class of objects. What is relevant to our present discussion is that these two types of nominals enter into a *classifier construction*, whereby a specific noun (the natural type) is classified by a generic noun (the functional typing). For example, the constructions in (45) illustrate this process.

(45) a. *kere aherre*: kangaroo as food;
b. *merne langwe*: edible food from bush banana;
c. *pwerte athere*: a grinding stone

Given the distinction between natural and functional types presented in Section 1.0 above, the facts of the noun classification system that Wilkins provides, can be reanalyzed as in (46).

(46) a. SPECIFIC NOUN: sortal classification, a Natural type;
b. GENERIC NOUN: a Functional type;
c. CLASSIFIER CONSTRUCTION: the instantiation and binding of the qualia role from the Functional type onto the Natural Type.

The generic noun classifier modifies the specific noun for just those cases where the predicate selects for the qualia role carried by the generic noun.

To illustrate how classifiers bind a specific qualia role for the head noun, observe the different NP structures for the two sentences below. Sentence (47) involves predication and selection by the Arrernte verb for *see*, which is a general type. The object of the verb, *many kangaroos*, can appear as an instance of a natural type (cf. Wilkins 2000: 172–173).

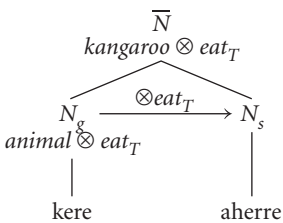
(47) *Iwerre-ke* *anwerne* *aherre* *arunthe-Ø* *are-ke.*
way/path-DAT 1PTERG kangaroo many-ACC see-PC
"On the way we saw some kangaroos."

In sentence (48), on the other hand, the semantic selection by the verb for *eat* requires an edible substance. Unlike the type coercion operation that would apply successfully in English, Arrernte requires an explicit classifier construction to enable the naturally typed *aherre* (kangaroo) to appear in the typing environment of the verb *arlkwe* (eat).

(48) *the* *imarte* *arratye* *kere* *aherre-Ø* *arlkwe-tye.lhe-me-le.*
1SGERG then truly meat kangaroo-ACC eat-GO&DO-NPP-SS
"When I got there I ate some kangaroo meat."

The classifier construction can be seen as creating a Functional type from a Natural type. Viewed independently of the selection properties of a predicate, the construction shifts the *rank* of the noun *aherre* to a functional type, as illustrated in (49) (where N_g is Wilkins' *generic noun*, and N_s is *specific noun*).

(49)



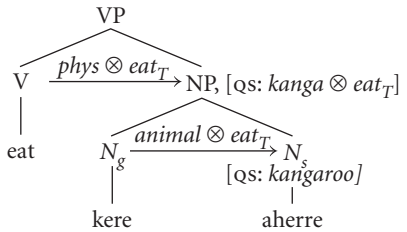
This is effectively the operation of qualia unification, as defined in Pustejovsky (1995). Now, assume that the selectional properties of these two verbs can be distinguished by the typing of the internal arguments, as illustrated below.

(50) $$\begin{bmatrix} \textbf{see} & \\ \text{CAT} = \textbf{verb} & \\ \text{ARGSTR} = & \begin{bmatrix} \text{ARG1} = \textit{animal} \\ \text{ARG2} = \textit{phys} \end{bmatrix} \end{bmatrix}$$

(51) $$\begin{bmatrix} \textbf{eat} & \\ \text{CAT} = \textbf{verb} & \\ \text{ARGSTR} = & \begin{bmatrix} \text{ARG1} = \textit{animal} \\ \text{ARG2} = \textit{phys} \otimes \textit{eat}_T \end{bmatrix} \end{bmatrix}$$

While the natural type, *aherre*, satisfies the typing environment of the predicate *see* after subtyping, this is not the case with sentence (48). Observe that the strict selectional environment imposed by the predicate *eat* requires a functional type as its internal argument, which *aherre* cannot satisfy by itself, since there is no overt coercion in Arrernte. The classifier construction strategy, however, transforms *aherre* to a functional type by unifying with the generic noun *kere*, and the resulting construction is admissible in this environment.

(52)



(53) $\Theta[kangaroo \sqsubseteq phys] : kangaroo \rightarrow phys$

The subtyping rule, Θ, applies twice, since the concept `kangaroo` is subtyped under `animal`, which is itself subtyped under `phys` in the type hierarchy. Hence, we see that classifier constructions act to enable an apparent mismatch, where coercion is not an option for the grammar. This distinction is best viewed as a parameter of selection cross-linguistically: languages employing type coercive operations in the semantics, and not synthetically in the morphology or syntax, will not utilize classifier systems to any extent. Conversely, languages that lack coercion will make extensive use of classifier constructions, depending on the range of the verbal selection available. This is explored in more detail in Pustejovsky (forthcoming).

5. Conclusion

In this paper, I have tried all too briefly to outline some of the issues of how semantic typing relates to asymmetries in grammatical selection. In particular, I discussed the theoretical trade-offs between applying type coercion in the compositional operations themselves, and the utilization of explicit classifier constructions, which overtly shift the types of arguments that are selected. In order to formalize these observations, I have presented extensions to Generative Lexicon Theory employing a ranking of types, where the semantics distinguishes between natural types and functional types. These have subsequent grammatical effects and impact the range of coercion and selection possibilities. Although the discussion has been brief and incomplete, I hope to have shown how conventional models of type

structures are too homogeneous in structure for capturing the semantic richness behind the selectional behavior of natural language expressions. What has been left unexplored are the deeper theoretical issues of selection and binding in structured theories of asymmetry, such as that presented in Di Sciullo (forthcoming), a topic for future work.

Acknowledgements

I would like to thank José Castaño, Nicholas Asher, Jong Sup Jun, for various discussions and comments on the material in this paper. I would also like to thank the participants of the Montreal Conférence sur l'asymétrie des langues naturelle, where this material was presented, and particularly to Anna Maria Di Sciullo for specific comments and suggestions. All remaining inconsistencies are of course my own.

Notes

* Several themes in this paper are explored in more detail in a forthcoming book entitled *The Multiplicity of Meaning*, from MIT Press. In its current form, several sections are based largely on two papers: "Type Construction and the Logic of Concepts" in P. Bouillon and F. Busa (Eds.), *The Syntax of Word Meaning*, Cambridge University Press, 2001; and "Events and the Semantics of Opposition" in C. Tenny and J. Pustejovsky (Eds.), *Events as Grammatical Objects*, CSLI Publications, 2000.

1. In Asher and Pustejovsky's (1999) Dot Logic, no explicit distinction is made in the type structure between the qualia roles; in other words, they are all introduced as tensor types to a base type, σ, i.e., $\sigma \otimes \tau$. The basic set of types there is defined as follows:

(i) If σ and τ are types, then so is $\sigma \rightarrow \tau$.

(ii) If σ and τ are types, then so is $\sigma \bullet \tau$.

(iii) If σ and $\tau_1, \ldots \tau_n$ are types, then so is $(\sigma \otimes (\tau_1 \ldots \tau_n))$.

In the present work, I adopt the basics of the Dot Logic, but also introduce explicit reference to qualia by name, i.e., $\sigma \otimes \tau_T$ and $\sigma \otimes \tau_A$ for reference to TELIC and AGENTIVE respectively. Furthermore, here CONST is introduced as a type operation, $\sigma \mathbin{©} \tau$, directly on the base type.

2. Just as the original Dot Logic was extended to include the constitutive type operator, ©, we could complete the extension to map isomorphically to the complete set of qualia by partitioning the tensor type constructors into an AGENTIVE operator, @, and a TELIC operator, $*$. Then, the type in (25) would be represented as *phys@make* $* \varepsilon$.

3. I assume some version of function application with coercion (FAC), as stated below:

FUNCTION APPLICATION WITH COERCION (FAC): If α is of type c, and β is of type < a, b >, then,

(i) if type c = a, then β(α) is of type b.

(ii) if there is a $\sigma \varepsilon \Sigma_\alpha$ such that σ(α) results in an expression of type a, then β(σ(α)) is of type b.

(iii) otherwise a type error is produced.

4. For more details on noun classifier behavior, the reader is referred to Craig (1986) and Senft (2000). The correspondence between coercion and classifiers is explored further in Pustejovsky (forthcoming).

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