Nominal Syntax at the Interfaces

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A Comparative Analysis of Languages With Articles

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To Giuseppe and Tancredi,
who stayed back in Venice
and managed together
throughout all sorts of incidents

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This work is based on almost 25 years of research and teaching on a very specific topic, the syntax of nominal expressions, in all its possible ramifications. I am indebted to more people than a couple of pages could ever contain. First of all to Guglielmo Cinque, who has mentored me throughout my intellectual and academic career, and second to Anna Cardinaletti, who was a fellow student and still is a colleague, co-author and dear friend. I am enormously indebted to the many co-authors of previous works who believed that certain analyses were worth pursuing in their own fields of research, and who have generously provided invaluable empirical knowledge and critically improved the theoretical framework: Mila Dimitrova-Vulchanova, and more recently Valentin Vulchanov, with whom I have shared study tables and dining tables with equal pleasure; Nedžad Leko, who also shared his personal experience of the terrible years of civil war in his dear Sarajevo; Melita Stavrou, who has been a generous host and a welcome guest every time we have had the luck to be in the same place. My work on Romanian has been inspired by the scholarship and the personalities of two great women and good friends: Carmen Dobrovie-Sorin and Alexandra Cornilescu.

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LIST OF ABBREVIATIONS

(*X)	X is ungrammatical
(X)	X is optional
*(X)	X is obligatory
{X} ... {*Y}	X is grammatical, Y is ungrammatical
{X}...{Y}	X and Y are in complementary distribution, both are grammatical
3P	third person feature
A(P)	adjectival (phrase)
ACC	Accusative case
ADJ.ART	adjectival article
Adv(P)	adverbial (phrase)
Art	article
Asp(P)	aspect (phrase)
Aux	auxiliary
C(P)	complementizer (phrase)
CL	clitic
D(P)	Determiner (phrase)
Dem(P)	demonstrative (phrase)
DIR	Direct case
F(P)	Functional (generic label for a bundle functional features) (phrase)
F/FEM	feminine
Fin(P)	Finite (phrase)
Foc(P)	Focus (phrase)
GEN	Genitive case
GEN.ADJ	Genitival adjective
GEN.ART	genitival article
*i*F	interpretable F
ind_R	referential indexical
indP	indexical Phrase
INSTR	Instrumental case
Kon(P)	Contrast (phrase)
LE	Left Edge
LF	Logical Form
M/MASC	masculine
N	neuter

N(P)	noun (phrase)
N/D(P)	highest head / phrase of a complete nominal projection, where N is bundled with the features usually taken to be in D, including Case.
NE	Nominal Expression (general term to denote any kind of nominal phase)
NOM	Nominative case
OBL	Oblique case
perf(P)	perfective (phrase)
PL	Plural
possAP	possessive AP
Prog(P)	progressive (phrase)
pron	pronoun
SG	singular
~~strikethrough~~	silent segment of a remerged element
T(P)	Tense (phrase)
Top(P)	Topic (phrase)
*u*F	uninterpretable F
V(P)	Verb (phrase)
X > Y	X is higher than Y in a hierarchy; X precedes Y in the linear order
φ	phi-features: nominal features targeted by a probe

SOURCE ABBREVIATIONS

Bart.	Bartolomeo da San Concordio, *Ammaestramenti*, distinctio, chapter, paragraph [pis. > fior.: 1302/1308], Opera del Vocabolario Italiano. V. Nannucci (ed.) 1840. *Ammaestramenti degli antichi latini e toscani raccolti e volgarizzati per Fra Bartolomeo di San Concordio* Ricordi e Compagno, Florence.
Beccaria	Cesare Beccaria (1763) *Dei delitti e delle pene*. Cons. 19/08/15 *de Bibliotheca*, Biblioteca telematica. http://bepi1949.altervista.org/delitti/index.html
Brunetto. *Rett.*	Brunetto Latini, *La Rettorica* [fior.: ca. 1260-61] Francesco Maggini (ed.). 1968. Le Monnier, Firenze.
Caes. *Gall*.	Caius Iulius Caesar [100 B.C. - 44 B.C.] *Commentarii belli Gallici*. Bibliotheca Teubneriana Latina Online: W. Hering (ed.). 1997, p. 1-147.
Cavalcanti	Guido Cavalcanti, *Rime*. [fior.: 1270-1300]. Opera del Vocabolario Italiano. G. Contini (ed.) 1960. *Poeti del Duecento*. Ricciardi, Napoli.
Cic. *Brut.*	Marcus Tullius Cicero [106 B.C. - 43 B.C.] *Brutus*. Bibliotheca Teubneriana Latina Online: E. Malcovati (ed.). 1970. *M. Tulli Ciceronis scripta quae manserunt omnia*, fasc. 4.
Cic. *fam.*	Marcus Tullius Cicero [106 B.C. - 43 B.C.] *Epistulae ad familiares*. Bibliotheca Teubneriana Latina Online: D.R. Shackleton Bailey (ed.). 1988.
Cic. *Mur.*	Marcus Tullius Cicero [106 B.C. - 43 B.C.] *Pro L. Murena oratio*. Bibliotheca Teubneriana Latina Online: D.R. Shackleton Bailey (ed.). 1988.
Cic. *Sext.*	Marcus Tullius Cicero [106 B.C. - 43 B.C.] *Pro P. Sestio oratio*. Bibliotheca Teubneriana Latina Online: D.R. Shackleton Bailey (ed.). 1988.
Dante *Conv*	Dante Alighieri, *Convivio*: page, line. 1304-7. Opera del Vocabolario Italiano. F. Brambilla Ageno (ed.) 1995. Le Lettere Firenze (Società Dantesca italiana. Edizione Nazionale), 3 tomi [testo: t. III, pp. 1-456].
Dante *Vita*	Dante Alighieri, *Vita nuova*: page, paragraph. 1292-93. Opera del Vocabolario Italiano. M. Barbi (ed.) 1932. Bemporad, Firenze.

Doc Fior	Lapo Riccomanni *Libro del dare e dell'avere, e di varie ricordanze* [fior.: 1281-97]. Opera del Vocabolario Italiano. A. Castellani (ed.). 1952. *Nuovi testi fiorentini del Dugento*, Sansoni, Firenze, pp. 516-55.
Liv.	Titus Liuius [59 B.C. - 17 A.D.] *Ab Urbe condita*. Bibliotheca Teubneriana Latina Online: Books I-X: W. Weissenborn et M. Müller (eds). 1932.
Marsilio	Marsilio da Padova, *Il libro del difenditore della pace*, [fior.: 1363]. Opera del Vocabolario Italiano. C. Pincin (ed.). 1966. Fondazione L. Einaudi, Torino.
Novellino	*Il Novellino* [fior.: 1315]. Opera del Vocabolario Italiano. F. Favari (ed.). 1970. Bozzi, Genova.
Sen. *apocol.*	Lucius Annaeus Seneca [4B.C. 65A.D] *Diui Claudii apolocyntosis*. Bibliotheca Teubneriana Latina Online: R. Roncali (ed.). 1990.
Sen. *contr*.	Lucius Annaeus Seneca [4B.C. 65A.D] *Diui Claudii apolocyntosis*. Bibliotheca Teubneriana Latina Online: Teubner: L. Hakanson (ed.). 1989.
Sen. *nat*	Lucius Annaeus Seneca [4B.C. 65A.D] *Naturales quaestiones*. Bibliotheca Teubneriana Latina Online: H. M. Hine (ed.). 1996.
Stat Fior.	Capitoli della Compagnia della Madonna d'Orsammichele del 1297. Opera del Volabolario Italiano. A. Castellani (ed.) 1952. *Nuovi testi fiorentini del Dugento*. Sansoni, Firenze. Pp. 662-72.
Stat. Sen	Ranieri Gangalanti *Il Costituto del comune di Siena volgarizzato*: page, line. 1309-10. Opera del Volabolario Italiano. A. Lisini (ed.). 1903. Tip. Sordomuti di L Lazzeri, Siena.
Svet. *Caes*.	Caius Suetonius Tranquillus [75? - 150?] *De uita Caesarum*. Bibliotheca Teubneriana Latina Online: M. Ihm (ed.). 1908.
Tac. *Agr*.	Cornelius Tacitus [55-116/20] *De uita Iulii Agricolae.* Bibliotheca Teubneriana Latina Online: J. Delz (ed.). 1983.
Villani	Giovanni Villani *Cronica* [fior.: 1348]. Opera del Vocabolario Italiano. G. Porta (ed) 1990-1991. *Giovanni Villani, Nuova Cronica.* Fondazione Pietro Bembo / Ugo Guanda Editore, Parma.

INTRODUCTION

Most current studies in generative grammar assume the underlying hypothesis that Syntax feeds LF (Logical Form), which is the component in which semantic interpretation takes place. On this assumption, the interpretation of a given utterance is a straightforward consequence of its syntactic structure and *vice versa*. It follows that it is legitimate to propose semantic arguments in support of syntactic analyses, as well as the converse, syntactic arguments in support of semantic analyses. However, the former case is overwhelmingly more common than the latter. This essay aims to fill this gap by providing an account of the latter type of case.

The main topic concerns the syntax of Nominal Expressions (henceforth NE).[1] In particular, it starts from the analysis of so-called definite descriptions, such as English *the girl*, Italian *la ragazza*, Romanian *fata*, Latin *puella*, and goes on to investigate other kinds of NEs including indefinite articles, demonstratives, possessives, pronouns, and proper names. As is apparent, in some languages (e.g., English and Italian) definite descriptions are obtained through the combination of two words: a lexical word (*girl*, *ragazza*) of category N, denoting a number of semantic features that can be informally summarized as [HUMAN], [FEMALE], [YOUNG], and a functional word (*the*, *la*) of category D (Determiner), which provides reference to an individual specified as [UNIQUE], [KNOWN]. In other languages (e.g., Romanian and Latin) we find only a single word (*fata*, *puella*). But Latin must be distinguished from Romanian, in that in the former, the element carrying reference is simply missing, leading to ambiguity of the interpretation of *puella* either as a definite description ("the girl") or as an indefinite expression ("a girl"). In Romanian the indefinite NE is very similar to its English and Italian counterparts: Rom. *o fată*, Engl. *a girl*, It. *una ragazza*, allowing us to conclude that the definite expression made of a single word *fata* actually contains two

[1] I thank Mila Dimitrova-Vulchanova for suggesting the term "nominal expression" or NE to avoid the ambiguity arising from DP or NP. NE is used here as parallel to "clause" (which is not a label in the tree), in that it refers to the entire nominal constituent with no commitment to the actual label of the highest projection.

elements (*fată* + *-a*) to be respectively attributed descriptive denotation and referential value.[2]

The semantic analysis of NEs is grounded on Logic, which has traditionally taken German and English as a source of empirical data. But unlike modern syntacticians, philosophers such as Frege and Russell were not interested in the morpho-syntactic distribution of specific morphemes. Their aim was to construe an algebraic mechanism with the precise goal of abstracting from all the (morpho-syntactic) redundancies and idiosyncrasies of natural languages. As will be apparent in Chapter 2, even in the most orthodox semantic tradition, the very items that realize the definite article are not taken to be definite operators in all possible utterances of any language. It is always necessary to allow for some "non-logical" exception in order to force Logic into morpho-syntactic forms. Furthermore, definite descriptions in the semantic sense must exist even in languages with no articles, opening up a hot debate on how these languages behave as regards the mapping of syntactic structures to LF (the interpretive interface).

With this in mind, throughout the volume I try to find a synthesis (in the Hegelian sense) between a thesis represented by mainstream syntactic accounts that assume a universal syntax–semantic mapping and take the semantic analysis of article languages as a starting point for a syntactic proposal holding for all languages (the DP-hypothesis, Longobardi 1994), and an antithesis consisting in more minimalistic accounts that analyse article-less languages as structurally defective (DP-languages vs. NP-languages, cf. Corver 1990, Chierchia 1998a, Bošković 2005, 2008, a.o.). I propose that articles, unlike other determiners, are (mainly) the result of the mapping between syntax and Spell-out. In other words, definite descriptions have a null definite operator in all languages. Like many null elements, they may need to be in a special relation with an overt head. The article is such an overt head.

My proposal complies with minimalist requirements (which call for minimal language structure; namely, minimal application of Merge), while at the same time assuming a common structure-building procedure for languages with and without articles.

Chapter 1 introduces the reader to the basic tools of analysis used in this volume and locates the discussion within the minimalist framework. Chapter 2 starts with a brief overview of the logic tradition on which the most influential syntactic accounts depend: namely, Longobardi (1994) on

[2] Denotation and reference are core semantic notions to be introduced to the unfamiliar reader in §2.1.

the one hand and Chierchia (1998a) and Bošković (2005, 2008) on the other. It then tests these three approaches on different languages, raises a number of problems with the approaches, and concludes that most of the problems are due to the erroneous assumption that articles and what we label D, namely the highest head in the NE, are carriers of reference.

Chapter 3 presents an alternative framework that analyses the article as a discontinuous part of the nominal inflection, thereby reconciling DP- and NP-languages. I argue that feature-sharing is not to be viewed as the result of one and the same syntactic process but rather of the application of different types of Merge: external Merge, which is triggered by Selection and Modification, and internal Merge, which is due to the recursive nature of language. In other words, for the same lexical element N to entertain selection and modification relations with more than one element, it needs to (internally) merge as many times as it has relations. Multiple merger of the lexical head bundled with all its functional features builds the spine of the "extended projection" (in the sense of Grimshaw 1991), or of the phase (in the minimalist sense).

I call the feature-sharing triggered by Selection **Agreement** (following the general line of research in minimalism). Different from what is generally done in the current minimalist literature (cf. Baker 2003), I differentiate Agreement from the feature sharing triggered by modification, which I call **Concord**, and from the feature spreading triggered by multiple merger of the same head, which I call **Projection**. The latter operation will be shown to capture "head movement" and "article insertion", in the spirit of what I have proposed in previous work (Giusti 1997, 2002, a.o.).

Chapter 4 shows that articles are different from the other so-called determiners. First of all, in many languages they can cooccur with (a subset of) them. After setting quantifiers apart (treating them as either being external to the NE, or being like adjectival modifiers), the chapter gives a unified analysis of the function played by demonstratives, personal pronouns, and proper names inside NEs, as providing the referential index required by the semantics of a denoting N. It also shows that possessives, whether pronominal or adjectival in nature, have an index of their own which is valued independently of the index of the NE. But this index contributes to further identifying the referent of the NE.

Chapter 5 applies the proposal of Projection to account for a number of phenomena that confirm that articles are segments of a reprojecting N. Based on Romanian data, §5.1 shows that the enclitic article is part of the nominal paradigm. Based on Italian data, §5.2 extends Longobardi's hypothesis of "expletive" articles to all articles. They are "expletive" in the

sense that they are not inserted to provide the interpretation of a definite description, which is instead provided by a null indexical. §5.3 accounts for the micro-variation displayed by double definiteness in Scandinavian. §5.4 claims that articles in German are inserted to make Case visible.

Chapter 6 analyses special kinds of adjectival Concord. §6.1 reviews so-called adjectival articles in three Balkan languages: Albanian, Romanian, and Greek, showing that they are not the same phenomenon. I argue that in some cases, what looks like an article is part of the projection of the adjective (and therefore interacts with the notion of Concord); in other cases it is a pronominal element introducing a reduced relative clause (in the sense of Cinque 2010), and in yet other cases it is the realization of a segment of the head N. §6.2 shows how the defective paradigm of a modifier may require an overt realization of a segment of the reprojecting head. This is argued on the basis of the apparent article-like paradigm of two prenominal vocabulary items in Italian, namely the demonstrative *quel* and the adjective *bel*. §6.3 provides an analysis of the Germanic weak and strong inflection, claiming that adjectives in German do not inflect (as is clear in predicate position) and that the adnominal inflection on the adjective is instead a segment of the projection of N.

A brief overview of results and residual issues concludes the volume.

CHAPTER ONE

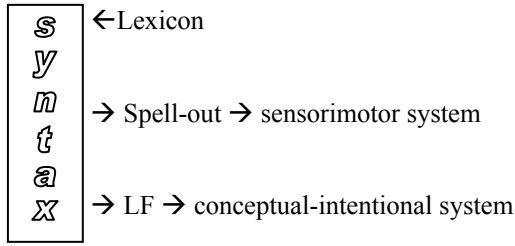
SOME BASIC TOOLS OF ANALYSIS

The present work is set within the minimalist framework, which is briefly introduced in this section, focusing on the aspects that will be crucial for the discussion.

According to minimalism, syntax should be at best derivable from properties "imposed by the sensorimotor system and the conceptual-intentional system" (Chomsky 2005:10). Syntax should be minimal in the sense that all its properties should be necessary at the interfaces: Spell-out and Logical Form (LF), which feed the sensorimotor and the conceptual-intentional systems respectively.

In (1) the Lexicon feeds syntax with lexical and functional items producing structures that are spelled out before the syntactic component ends its job and feeds the interpretive interface (LF):

(1)



The model in (1) is not a unique process for whole utterances or even for whole sentences but is reiterated for chunks of structure called **phases**. It is highly possible that NEs are phases (cf. Svenonius 2004, Bošković 2008, Cornilescu & Nicolae 2011, Gallego 2012, a.o.). This implies that they are sent to the interfaces (Spell-out and to LF) before they are computed as being part of the clause.

Unlike the Principles-and-Parameters framework (Chomsky 1981) from which it directly derives, minimalism (Chomsky 1995, 2000, 2005) is much less of a theory and much more of a set of general principles used

to evaluate competing theories. It conceives the language faculty in terms of the tension between its logical-mathematical nature which makes it "perfect" in the sense of logically necessary, and its biological nature which is supposedly the cause of its "imperfections" and the ground for crosslinguistic variation. What is subject to variation is what must be acquired, while the universal part is, by definition, genetically present (or at least genetically subject to maturation).

In my work on the definite article, the tension between the properties of the Spell-out and the requirements of LF will be crucial to distinguish between a semantic dimension that concerns the interpretation of definite descriptions, which is ascribed to LF, and the parametrized distribution of certain syntactic features that are spelled out in some languages but not in others, as articles will be shown to be, which is an issue regarding the micro-parametric variation typical of inflectional morphology.

1.1. Economy and Full Interpretation

It is generally agreed that meaning (the interpretation of a given utterance) is compositional, that is to say, obtained from the sum of the meanings of all the parts. This is known as the Principle of **Compositionality**.

Thus, in order to obtain a definite description such as "the girl", we need a descriptive property (*girl*), also defined as the "denotation", which can be attributed to an individual, and an element providing the referential index (ι) that introduces such an individual in the discourse. In a language with free definite articles, it is just about intuitive to assume that the article "the" provides the referential index. This can also be assumed of a language with enclitic articles, as we observed in the introduction for Romanian *fata* (lit. girl-the, "the girl") where the root *fată* clearly provides the descriptive property (the denotation, which comes with an open position to be saturated by a referential index), and the suffix *-a* provides the referential value (in this case a definite individual).

But for an articleless language like Latin, it is not at all straightforward to see how we could pull the denotation and the individual index apart. In fact, *puella* can be interpreted either as an "unsaturated" denotation (since it can combine with any determiner, e.g., *haec* / *illa* / *ista* / *ea* / *ipsa* / *eadem* / *una*[1] *puella*), or as a definite description "the girl", or as an

[1] These determiners include demonstratives (*haec*/*illa*/*ista*), the demonstrative use of the 3rd Person pronoun (*ea*), some determiner-like adjectives meaning "same/self" (*ipsa*/*eadem*), and the indefinite singular *una*.

indefinite expression "a girl", which can in turn be specific (a particular girl the speaker has in mind) or non-specific (any girl).

It is a generally shared opinion that if we want to keep compositionality of meaning in its full form, we must assume that there are elements that are interpreted even if they are non-overt (they are not realized at Spell-out, but are interpreted at LF). This amounts to saying that if *puella* can be interpreted as a definite description, its semantic representation must contain the description as well as the referential index, even if the latter does not correspond to any overt element (free or affixal).

The assumption of a non-overt element does not tell us exactly where this element is in the structure. But in a framework searching for universal properties of language and the relative parameters that can derive language variation (including what can be non-overt in what language), we basically have two choices: (i) We can assume that what we observe in a language with articles happens in exactly the same fashion in a language without articles, with the only difference that the articleless language has non-overt articles. (ii) We can say that the parametric choice that allows or disallows the article concerns how the language builds/realizes the nominal structure. In either case, we have not yet established what the structures of these languages should look like. Neither have we developed a secure methodology that can help us choose between an analysis that extends the properties of the "more economical" to the "less economical" language. As a matter of fact, it is not even obvious what counts as computationally more economical, whether a language with all functional features overtly expressed, or a language with some or all functional features left non-overt, especially if non-overt material is the result of deletion (a costly operation, according to Nunes (2004)), or requires licensing by means of Agreement or Concord, as we will observe in detail throughout this volume.

The minimalist program is precisely intended to give us the tools to decide, from among the possible analyses, which is the most economical from the computational point of view. For this reason I will first introduce some minimalist machinery. It should, however, be kept in mind that my ultimate goal in this work is mainly empirical, persuaded as I am that a good theoretical approach can help us raise questions that ultimately lead us to formulate more precise empirical claims about language.

Together with compositionality, there must also be a principle that forbids insertion of "apparently useless" elements. This principle is needed to capture the empirically solid evidence that merger of "redundant" elements, as is the case for a second determiner, makes the utterance ungrammatical, as in **this the girl*, **the girl this*, or **the this girl*, where a

demonstrative cooccurs with an article in English. Another property of language related to this general principle is the impossibility of inserting an element with no meaning at all, as in **the girlp*, **thep girl*, **the op girl*. So even a meaningless sound cannot be tolerated and simply disregarded in the interpretation. This property is captured by the Principle of **Full Interpretation** that states that "Every symbol of grammar must be interpreted".

Full Interpretation is a consequence of a general principle of **Economy** which not only prohibits insertion of useless material but also requires the "least costly choice" among the possible structures, procedures, and number of operations. According to Cardinaletti & Stark (1999), Economy is what forces Italian to choose a null subject pronoun and a clitic object pronoun *l(o)* in (2a); whereas the insertion of a strong pronoun in object position *lui*, in (3a), can only be motivated by the necessity of realizing a [FOCUS] feature on the object. In turn, the strong pronoun *lui* is preferred over the full form *Gianni* in (4), if the referent of *Gianni* has already been mentioned in the discourse and can be identified as the antecedent of the pronoun in the discourse. Note that, *mutatis mutandis*, English works in the same way; the only difference is that the subject pronoun cannot be silent, and the strong vs. weak/clitic object pronouns apparently have the same position and are not different in spelling (but they are different as regards stress and phonological realization):

(2) a. [pro] L'ho visto ieri.
b. I saw ['m] yesterday

(3) a. [pro] Ho visto lui ieri
b. I saw him yesterday

(4) a. Io ho visto Gianni ieri
b. I saw Gianni yesterday

Economy and Full Interpretation are general principles of the Ockham's razor kind, and, as such, they are necessary properties of any scientific theory of language. However, their application to the hard, everyday work of linguistics is not without problems. As beautifully stated by Haegeman & Guéron (1999: Ch. 5), the principle of Full Interpretation is at odds with well-established hypotheses in generative grammar, such as the assumption of expletives, the necessity for NEs to receive abstract (and morphological) Case, and the widespread phenomenon of feature redun-

dancy. We will now see how these phenomena are manifested in NEs and why they apparently contradict Economy and Full Interpretation.

1.2. Expletives, Case, and Redundancy

An expletive is something that needs to be inserted for syntactic reasons but has no semantic counterpart. The typical example of an expletive is the English pronoun *it* as the subject of weather verbs (5a), of raising verbs with a finite clausal complement (5b), and of any predicate with a postverbal clausal subject (5c). Expletive *it* is homophonous to referential *it* (5d), but unlike referential *it*, expletive *it* does not refer to any individual nor does it saturate any thematic role of the predicate. Despite this, it is mandatory. Note that in the same three cases, Italian has no overt subject pronoun (6a–c), and only in (6d) could a more informative subject be inserted:

(5) a. It is raining.
b. It seems that Mary is ill.
c. It is impossible to omit the subject.
d. That / The cookie / It is sweet.

(6) a. 0 Piove.
b. 0 Sembra che Maria stia male
c. 0 È impossibile omettere il soggetto.
d. Questo / Il biscotto / 0 È dolce.

A similar state of affairs occurs in existential sentences whose subject is homophonous to the locative adverb *there*. Expletive *there* is clearly not a locative adverb, because it is in subject position, it can cooccur with a locative adverb, and unlike the latter it does not share the distal index of locative *there*, cannot be substituted by *here*, and can only appear in very particular contexts – namely, when the subject is indefinite and the predicate is unaccusative,[2] as is the case of *occur* in (7a), auxiliary *be* in (7b), or copula *be* in (7c):

[2] Unaccusative verbs are those verbs of motion, location, or state that have a non-agentive subject: see Haegeman & Guéron 1999: Ch. 1 for a thorough introduction to verb classification according to the different argument structures, and the syntactic phenomena that consequently arise.

(7) a. There occurred a terrible accident.
b. There are three women working in the team.
c. There is a mess here/there.

In *there*-sentences, the semantic subject is an NE, not a sentence, and it appears inside the predicate; whereas in *it*-sentences, the semantic subject, if present, can only be a clause extraposed to the right of the predicate, as in (8c):

(8) a. There occurred (*yesterday) a terrible accident (yesterday).
b. *There are working three women in the team.
c. It was possible in old English to omit the subject pronoun.

In (8a), nothing can intervene between the verb and the postverbal subject: a PP would also give ungrammaticality (cf. **there occurred on this road lots of terrible accidents*). In (8b), the subject of the intransitive verb *work* cannot be displaced from the post-auxiliary/preverbal position observed in (7b). A further displacement towards the end of the clause would not help (cf. **there are working in the team three women*). On the contrary, in (8c) the infinitival sentence can very well appear after any adjunct of the main clause (cf. *It is still possible today under specific conditions to omit the subject in English*).

In brief, *it* and *there* obey very clear principles of grammar that force their insertion, even if they do not seem to contribute to the interpretation of the clause and, in so doing, apparently violate Economy and Full Interpretation. If these elements are not interpretable, why can we not be more economical and just omit them? How come their insertion does not lead to ungrammaticality? The (syntactic) answers to these two questions take us to the theory of (abstract) Case.[3]

The traditional notion of case is based on the empirical evidence of languages like Latin that display different nominal morphology according to the function the NE has in the utterance. For example, the noun *puella* in (9) has three different endings. In (9a) it is the subject of an absolute ablative *stupente*; in (9b) it is the object of the transitive verb *transfigit*; in (9c) it is the genitive argument of a relational noun *pater*; and in (9d) it is a partitive genitive argument of the superlative adjective *festivissimam*:

[3] The notion of "abstract Case" (with capital C) originates from Chomsky (1981: Ch. 6). It is supported by the observation made in historical linguistics that Indo-European languages have developed an article parallel to the weakening of case morphology. It also captures Hjelmslev's (1935) observation that in no language of the world can the category of Case be safely assumed to be missing.

(9) a. pavida *puella* stupente ad clamorem nutricis fidem Quiritium inplorantis fit concursus.
"The scared girl [being] speechless, at the noise of the nurse imploring the protection of the Quirites, [there] occurred a gathering [of people]." (Liv. 3,44,7, 184)
b. stricto itaque gladio simul verbis increpans transfigit *puellam*.
"holding thus the sword, at the same time with words scolding [her], [he] runs the girl through." (Liv. 1,26,3,30)
c. quod pater *puellae* abesset locum iniuriae esse ratus.
"that the father of the girl was not there [was believed] to be a good opportunity for the injury." (Liv. 3,44,5, 183)
d. quod sororem suam, festivissimam omnium *puellarum*, quam omnes Venerem vocarent, maluit Iunonem vocare.
"because his sister, the nicest of all girls, whom everybody would have called Venus, [he] preferred to call Juno." (Sen. *apocol*. 8,2,12,161)

Case must clearly be a feature with a number of values,[4] the combination of which is dependent on the syntactic position occupied by the NE in the clause. This, in turn, depends on thematic and ultimately semantic relations occurring between the NE and the head that assigns it a theta-role. Note that the notion of "grammatical function" (namely, the syntactic position) must be kept apart from the notion of "thematic role" (namely, the semantic relation with a selecting predicate). This becomes particularly clear when we deal with the notion of "subject".

A subject is what the predicate is about (cf. §2.1 for a semantic analysis of this). In Nominative-Accusative languages, the subject of a finite clause displays nominative case (which in English can only be detected on pronouns) but may have very different thematic roles according to the semantics of the predicate, as is the case of the subjects of the sentences in (10):

(10) a. The enemy / They sank the ship.
b. The ship / It sank.
c. The ship / It cost 1 million pounds.
d. Mary / She looks tired.
e. This ship / It carries 2000 people.

[4] Probably hierarchically organized (direct/indirect, structural/lexical, etc.) and not just listed as Nominative, Accusative, Dative, etc.; cf. Caha (2009). For the sake of this work, I will abstract away from this possibility, given that my proposal foresees the possibility of feature bundles directly merged with the lexical head to which they are related.

The roles that the subjects play in the situations expressed by the predicates are very different. Only in (10a) is *the enemy* the Agent of the event. In (10b) *the ship* is a Patient, undergoing movement. In (10c) it is attributed a transactional value (there is no event going on). In (10d) it is the location of a state (containment) attributed to the object (*2000 people*). In (10d) *Mary* is attributed a property (*tired*) to be perceived by the eye (*look*). Hence, the subject of (10c) and (10d) is the Theme of the situation, whereas in (10e) *the ship* has the Locative role.

Grammatical function and thematic role are also independent as regards direct and indirect objects. This is shown by the interchangeability of the three arguments in (11):

(11) a. Queen Isabella gave three caravels to Columbus.
b. Queen Isabella gave Columbus three caravels.
c. Queen Isabella provided Columbus with three caravels.
d. Three caravels were given/provided to Columbus.
e. Columbus was given three caravels.
f. Columbus was provided with three caravels.

In (11a), the direct object *three caravels* is the Theme of the transaction and immediately follows the verb, the indirect object *Columbus* is the Goal of the transaction and is introduced by the preposition *to*. In (11b), we observe a double object construction, which is also possible with the verb *give*. In this case, the role of the direct object is the Goal, while the second object (which is, in some sense at least, less direct) is the Theme. A direct object can express the Goal of the situation even without participating in a double object construction, as is the case of *Columbus* in (11c), where the Theme *three caravels* is embedded by the preposition *with*. Whatever role the direct object has in the active sentences (11a–c) it will be the subject of the passive counterpart (11d–f) respectively.

Autonomy of grammatical function and thematic role also holds of the arguments of N. In English, most of them are realized as Saxon genitives, but can have very different roles indeed, as shown in (12):

(12) a. the enemy’s destruction of the city
b. the city’s destruction (by the enemy /*of the enemy)
c. the city’s main monuments
d. the girl’s father (cf. Latin (9c) *patris puellae*)
e. Mary’s book

In (12a) the Saxon genitive is the Agent of the event noun *destruction*; while the second genitive is the Patient and is embedded by the preposition *of*. In (12b) we observe a "passivized" nominal, with its Patient (*the city*) "promoted" to the Saxon genitive position. This is confirmed by the observation that an optional agentive *by*-phrase but not an *of*-phrase could express the Agent. In (12c) the Saxon genitive expresses the Location of the monuments; we can infer this only from our knowledge of the world (we know that monuments are in places and that cities are places). In (12d) we have a kinship term *father*, which selects an argument with which it entertains the kinship relation. In (12e) we cannot decide what the relation is between the noun *book* and its genitive argument without having recourse to a more extended context: it could be the book that Mary just bought, or sold, or talked about, or just finished writing, or the one she has just published, etc. We can conclude that at least the five instances of grammatical functions observed here point to the conclusion that the grammatical function is independent of the role but it is directly related to the morphological case. This is clear in Latin, which is a language with no article but a rich case morphology. But it is also clear in English, even if Case is never overt on nouns and the only distinction to be observed is between subject and non-subject pronouns, and between Saxon genitive and prepositional genitive.

To summarize, case morphology and other elements like prepositions are the means to signal the grammatical function of an NE which is not its thematic role but a structural consequence of it. The grammatical function does not participate in the interpretation of the role, and for this reason – parallel to what we have observed with expletives – it is a problem for Economy and Full Interpretation. In fact, if Case is a syntactic feature that is irrelevant to the thematic role, it should also be irrelevant to interpretation. But then how can it be that it may and must be merged even if it does not contribute to interpretation?

Instead of giving an answer to our first question regarding expletives, we have thrown another problem on the table. Before attempting any solution, let us present a third problem: namely, feature sharing, another widespread property of natural languages that appears to contradict Full Interpretation and Economy.

Let us go back to (9d) for a moment. We find the singular accusative marker *-m* not only on the noun *sororem* ("sister"), but also on its modifiers: the possessive adjective *suam*, and the descriptive adjective *festivissimam* ("the nicest"), as well as on the relative pronoun *quam* ("whom"), whose Gender [FEMININE] and Number [SINGULAR] match with *sororem* ("sister") but whose case depends in turn on the grammatical

function it carries in the relative clause (namely, as the object of the verb *vocare*). Feature sharing also occurs between the feminine plural genitive *puellarum* and the quantifier *omnium* ("all"), which does not have overt Gender specification (it has a unique form for the genitive plural). 3rd Person Plural feature sharing is found between the subject *omnes* and the verb *vocarent*; whereas the verb *maluit* ("preferred") has 3rd Person Singular features that are clearly taken from a non-overt subject.

Feature sharing constitutes the major source of redundancy in natural languages. The features [FEMININE], [SINGULAR] on the NE *sororem suam, festivissimam* [...] *quam* [...] ("his sister, the nicest ... whom...") are to be interpreted only once, since there is only one singular feminine referent in the discourse, but they are repeated on each element of the NE. This is particularly problematic in view of a general principle of Economy, which should force languages to be as economical as possible and in principle should allow for no redundancy at all.

Unfortunately, this kind of redundancy is quite pervasive in natural languages and intuitively serves to make syntactic relations visible. In our examples, it clearly allows us to individuate the subject of the clause which is preverbal in the relative clause *quam omnes* [...] *vocarent* (9d), postverbal in the main clause *fit concursus* (9a), and null in *transfigit puellam* (9b) and in *maluit Iunonem vocare* (9d). Inside the NE, it allows for adjectives and relative pronouns to be unambiguously associated to the noun they modify or refer to. This is also the function of case morphology, which allows for an NE to be immediately associated with its grammatical function in the clause and as such both with the predicate assigning the role and with the syntactic structure in which this role and other relations are assigned and checked. So feature sharing and Case are two sides of the same coin: namely, the consequence of the syntactic representation of semantic relations.

As a matter of fact, Nominative Case is generally found across languages when the predicate displays finiteness. In many languages, finiteness is syncretic with or cooccurs with a copy of the Person (and Number) of the subject. This is apparent even in English, despite its well-known poverty of nominal and verbal inflection. In (13a), *Jane* is assigned nominative case, as is apparent from the morphology of the subject pronoun *she*, which spreads its 3rd Person singular features on the auxiliary *is*. In (13b), the NE *Jane and Tom* is also nominative, as is apparent from the morphology of the subject pronoun *they*, which spreads its 3rd Person Plural features onto the copula *are*. In (13c), the subject *Jane (and Tom)* of the infinitival complement of *believe* has accusative case and does not spread any Person (or Number) feature onto the infinitival verb:

(13) a. Jane / She is nice.
*Jane / She are nice.
b. Jane and Tom / They are nice.
*Jane and Tom / They is nice.
c. I believe Jane (and Tom) to be nice.
I believe her / them to be nice.

If nominative Case assignment and sharing of the Person features of the subject onto the verb are related phenomena, we should aim to find a unified solution. In the Principles-and-Parameters framework (Chomsky 1981), a special functional category Agr was assumed to be part of the extended projection of the verb (Pollock 1989, Belletti 1990, Speas 1994, Cinque 1999, among many others) in whose specifier the external argument of the verb was attracted. In current minimalist accounts, from Chomsky (1995) on, a similar result is achieved by assuming that finite T is endowed with a nominal feature φ, which is uninterpretable on T because T has verbal nature. Being uninterpretable, *u*φ must be deleted before the computation reaches the interpretive component (LF). In order to be deleted, *u*φ must find the value of its nominal feature in the c-command domain of T. This occurs at a distance, with T targeting the external argument of the verb. I will introduce the technical notion of Agreement in §1.3.1, when presenting the toolkit to analyse the clause, and in more detail in §3.1, where I show how this toolkit works in the NE. The point to be made here is that the necessity of a subject is a mandatory component of the clause. NEs do not have an obligatory subject (namely, a possessor). This crucial difference will be related to the different nature of clauses (predication structures) and NEs (referential structures).

With this in mind, let us go back to expletives. These elements are also strictly related to Case assignment and feature sharing. In fact they occupy the position of the subject (to which nominative Case is assigned) in special cases in which the subject appears in a non-canonical position. In (14) we find the cases of insertion of expletive *it* seen in (5) above, and in (15) we find the case of expletive *there* seen in (7). I will show that *it* occupies a subject position when no NE is inserted in the clause that can compete for it; whereas *there* occupies a subject position when there is an NE in the same clause that is associated to that position. In fact in (14a) there is no other argument while in (14b–c) the subject position is related to a clause (and clauses cannot be assigned Case). On the contrary, in (15) not only is an NE present, but it also shares its Person features with the auxiliary in (15b–c):

(14) a. It is raining.
b. It seems [that Mary is ill].
c. It is impossible [to omit the subject].

(15) a. There occurred [a terrible accident].
b. There are [three women] working in the team.
c. There is [a mess] here / there.

So *there* allows for the Person feature of the subject to be targeted by T and for nominative Case to be assigned to the subject in the low position;[5] while *it* absorbs nominative Case and transfers its 3rd Person singular features to the tensed verb.

Even if we have not really answered the question of how to make expletives, morphological case, and feature sharing compatible with Economy and Full Interpretation, we have made a first step towards an explanation in recognizing that we are not dealing with three independent problems, since they are strictly related. The solution to be aimed at, therefore, should be able to give a unitary answer to the three problems.

In the course of this sketchy introduction, we have already had the chance to observe that whatever reasons are given for the surfacing of Case, expletives, and redundant features, these are usually obligatory. We cannot omit any of the inflections or functional words discussed above. This actually complies with a general consequence of Economy: namely, that there should be no optionality. Optionality is banned on the grounds that if we can omit an element or fail to do an operation, this would be the optimal choice, ruling out the possibility to do otherwise.[6]

This is the reason why in Italian, a language where pronominal subjects must be non-overt if unstressed, the lexicon does not even have expletive pronouns. In fact expletives cannot be focalized or stressed. For this reason, the sentences in (16)–(17), which directly correspond to (14)–(15) above, can have no overt element in subject position:

(16) a. Piove.
[it] rains.
b. Sembra [che Mary sia malata].
[it] seems that Mary is ill.
c. È possibile [omettere il soggetto].
[it] is possible to omit the subject.

[5] It is irrelevant here to establish which position. This will be dealt with in §1.3.1.
[6] This is not to deny the fact that optionality is actually found in certain contexts and as such constitutes a further problem for Ockham's razor, which we will not deal with at this point.

(17) a. È accaduto [un terribile incidente].
[there] happened a terrible accident.
b. Ci sono [tre donne che lavorano nel gruppo].
There are three women (that are) working in the team.
c. Qui è [un disastro].
Here [it] is a mess.

To conclude this section, we have reached an intermediate step towards unifying three widespread properties of language in a single phenomenon; namely, the existence of expletives in some kinds of clauses, the necessity for NEs to be assigned Case, and the phenomenon of redundancy created by feature sharing. The point in common to the three properties is the necessity for some NEs to be marked as having a given grammatical function, e.g., to be the subject of a clause, that is in turn realized in a given syntactic position. We left open the question of other grammatical functions and cases, which should hopefully be solved in a parallel fashion. In the following section, we concentrate our attention on how syntactic structure is built and how grammatical functions are generated in the syntactic tree.

1.3. Building Syntactic Structure

I now give a brief sketch of how syntactic structure is construed in the minimalist framework, assembling overt and non-overt elements which realize a number of lexical and functional features. The simple operation Merge creates asymmetric relations between a selecting element and an argument, or between a modifier and the modified element. We will first observe the clause and then turn to the NE which is the main topic of our study.

In the discussion, we will see that clauses and NEs display a number of parallels. They are built around the selection requirements of a vocabulary item (V and N respectively), which can take arguments (e.g., NEs or clauses in both cases) and modifiers (e.g., adverbials or adjectives respectively). They project functional structure realizing semantic reference (Time reference or Individual reference, respectively), and further project functional structure that connects the extended projection (in the sense of Grimshaw 1991) or the phase (in the sense of Chomsky 2008, Arsenijević 2007, Hinzen 2012) to a higher level of recursion or to the discourse.

This creates a tripartite structure, which can be represented as in (18), following seminal work by Luigi Rizzi (1997):

(18) Complementation layer > Inflectional layer > Lexical layer

In the lexical layer, the argument structure of the head is projected. In the inflectional layer, the referential features associated to the lexical head (T with V, and Number with N) is projected. This intermediate layer is where modifiers are inserted according to a hierarchy (Adverbs modifying V, Adjectives modifying N). Finally, in the complementation layer the extended projection of the lexical head is related to the next portion of structure, or to the discourse, in case this is a root element.

The main topic of this volume is the complementation layer of the NE, which is filled by elements that are traditionally unified under the label "determiner" and for this reason has been labelled DP since the seminal work by Abney (1987). As will be clear from the discussion, I claim that this label is spurious and covers different elements that undertake different kinds of relations with the head N. For example, possessive adjectives and Saxon genitives are arguments of N; demonstratives are indexicals that link the NE to the discourse. But I will use the term "determiner" and the label "D" throughout the discussion for ease of exposition.

I will also review well-known facts differentiating NEs and clauses, which make NEs appear "defective" with respect to clauses. In previous work (Giusti 1996, 2006, 2012c) I have claimed that these can all be reduced to the semantic property of nouns to combine with individual reference and of verbs to combine with time reference.

1.3.1. The Clause

In the minimalist framework, syntactic structure is built starting from a set of elements retrieved from the lexicon, called the "lexical array" or "numeration". The operation Merge picks two linguistic items A and B and creates a new linguistic item C which does not symmetrically include the two but takes one as the pivot and the other as having some relation to the pivot. The operation Merge further proceeds by targeting a new linguistic item in the numeration D, merging it with C, until it exhausts the items in the numeration.

For example, in (19a), a transitive V is merged with an NP, and the resulting node V′ is a projection of V. In (19b), V′ combines with another NP, and the resulting node VP ends the projection possibilities of V:

(19) a. $V + NP_y \rightarrow [_{V'} V [NP_y]]$
b. $NP_z + V' \rightarrow [_{VP} NP_z [_{V'} V [NP_y]]]$

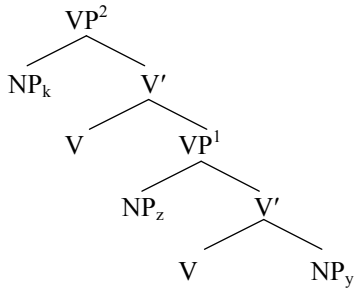
The order of the elements is determined by the type of language,[7] but the hierarchical relation between two elements in the same pair is universal. In (19a) V selects NP_y, and we say that NP_y is the complement of V. In (19b) NP_z is merged with an intermediate projection V′, and we say that NP_Z is the specifier of V.

At this point V can either be targeted by a different head selecting a VP, or remerge and further project, as is the case of a three-argument verb which needs a position for its most external argument NP_k, which is then merged in (20b) with the V′ resulting from the first remerger of V in (20a):

(20) a. $V + VP \rightarrow [_{V'} V [_{VP1} NP_z [_{V'} V [NP_y]]]]$
b. $NP_k + V' \rightarrow [_{VP2} NP_k [_{V'} V [_{VP1} NP_z [_{V'} V [NP_y]]]]]$

The resulting structure (20b) has two instances of the same item V which entertains different relations with the elements it has been merged with (NP_k, NP_z, NP_y). We say that a remerged head is "split". In other words it has two (or more) segments. The higher segment, but not the lower one, also entertains a head complement relation with its own lower projection VP^1. This can be captured by a tree diagram as in (21):

(21)



Those who are familiar with the Principles-and-Parameters theory will note that Merge has the twofold function to create structure and to displace elements that can be computed in more than one position. For example, a verb like *give* is computed as being made of two segments, roughly

[7] For the moment, I abstract away from the question as to whether the Complement > Pivot order is derived from a universal Pivot > Complement order, as proposed in much of the literature inspired by Kayne's (1994) antisymmetric approach.

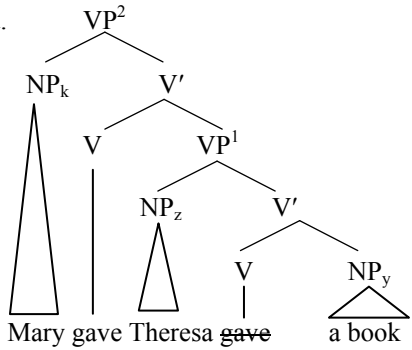
corresponding to [CAUSE [HAVE]] or to [CAUSE [BELONG]] in (22). In the former structure, we observe a double object construction; in the latter case, we find the preposition *to* introducing the most internal object:

(22) a. $[_{VP2}\ NP_k\ [_{V'}\ CAUSE\ [_{VP1}\ NP_z\ [_{V'}\ HAVE\ [NP_y]]]]]$
Mary gave Theresa a book
b. $[_{VP2}\ NP_k\ [_{V'}\ CAUSE\ [_{VP1}\ NP_z\ [_{V'}\ BELONG\ [_{PP}\ P\ [NP_y]]]]]]$
Mary gave a book to Theresa

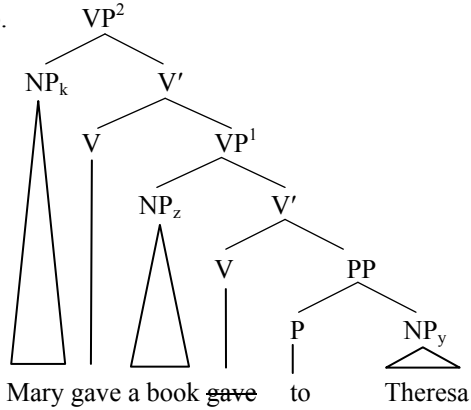
The idea underlying this kind of analysis comes from the seminal proposal by Larson (1988, 1990) suggesting on the one had that what is often taken to be the direct object is in fact the "subject" of a small clause whose predicate contains the other internal argument. So VP1 in (22a) would roughly correspond to "Theresa has a book", and in (22b) to "a book belongs to Theresa". Causative predicates, such as *let*, *make*, and *cause*, take VPs as their internal arguments and assign an Agent or Cause role to their subject (according to whether it is animate or inanimate), parallel to what happens in VP2 in both structures in (22), which are quasi-synonymous to *Mary let Theresa have a book*, *Mary made a book belong to Theresa*. Note that both *have* and *belong* have a Theme in their argument structure, but, crucially, these Themes have different grammatical functions: *have* has an object Theme while *belong* has a subject Theme. In the former case, the subject of *have* has a possessor role assigned by the predicate (V′); in the latter case, the possessor role is assigned by means of the preposition *to*.

According to (22), the "split" verb is made of smaller lexical features, each heading a different VP. In the case of *give*, we can even find two different combinations each of which gives a different argument structure. In other words, we have two different verbs *give*, both formed by [CAUSE]. $Give_1$ combines [CAUSE] with [HAVE]. $Give_2$ combines [CAUSE] with [BELONG]. Remerger of V in the structures in (23) allows us to represent this hierarchy and establish the hierarchical relation with and among the arguments. Only the higher merger position is realized. The lower one remains non-overt, for economy reasons. The structure of (22a) will therefore be (23a); and the structure of (22b) can be found in (23b), the strikethrough notation indicating the non-overt remerger point:

(23) a.



b.



The verb *gave* is not only made of two lexical features, but also contains a [PAST] Tense feature – and if the verb was in the present simple, it would also contain a subject agreement specification (*gives*). Thus, the building of the sentence proceeds by merging a head (T) that provides the Time reference of the clause[8] and covertly copies the Person feature of the subject in analogy with what happens in the simple present.

To pin down the structural position of these abstract features, let us insert a modifier of the temporal reference such as the frequency adverb *often*, and observe that this adverb crucially appears between the subject and the verb in (24a) and between the focussed auxiliary *DID* and the verb in (24b):

[8] For the moment let us abstract away from complex tenses and different voice, aspect, and modality; but – as may already be clear – complex features may resolve in multiple mergers of one and the same head, with just one copy being realized phonologically.

(24) a. Mary *often* gave Theresa a book.
b. Mary DID *often* give Theresa a book.

Other positions for the adverb would be either marked with specific discourse features (topic, focus, contrast, etc.) or ungrammatical.

Let us assume that the auxiliary *did* (which appears only in contrastive focus cases) can realize the feature [PAST] or the complex bundle of features [[PAST], [HABITUAL]], which we call T(ense) here for ease of presentation. In (25a) T merges with the complete projection of V (VP). Then the frequency adverb merges with the projection of T (T′) to overtly express the semantic feature [HABITUAL], as in (25b):

(25) a. $T+VP_2 \rightarrow [_{T'}\ T\ [_{VP2}\ NP_k\ [_{V'}\ V\ [_{VP1}\ NP_z\ [_{V'}\ V\ [NP_y]]]]]]$
b. $AdvP + T' \rightarrow [_{TP}\ [_{AdvP}\ \textit{often}]\ [_{T'}\ T\ [_{VP2}\ NP_k\ [_{V'}\ \ldots]]]]$

The order obtained in (25b) is completely ungrammatical both in the case that we realize the past feature in T, as in (26a), and in the case that we leave the past feature on the verb, as in (26b):

(26) a. *often did $[_{VP2}$ Mary give Theresa a book]
b. *often T $[_{VP2}$ Mary gave Theresa a book]

In order to obtain the correct order, we must remerge T and the subject. As we have observed for the VP in (21) above, a single merger of the head is not enough if the head (V or T) entertains more than two relations (one with a complement and one with a modifier. Remerger of T can be due to the fact that T is split into two features [PAST] and [HABITUAL], the former having scope over the latter and also over the habitual adverbial in the Spec of the first merger of T, as in (27):

(27) $T+TP \rightarrow [_{T'}\ T\ [_{TP}\ [_{AdvP}\ \textit{often}]\ [_{T'}\ T\ [_{VP2}\ NP_k\ [_{V'}\ V\ldots]]]]]$

Remerger is not limited to one application. There can be more than one adverb in the clause.

The last remerger of T above the adverbial hierarchy is triggered by the necessity for T (which realizes the Time Reference of the clause) to be in relation with an NP (which realizes Reference to an Individual). This relation produces the "aboutness" interpretation of the clause.[9]

[9] I assume here, following Arsenijević (2007), that vPs (corresponding to VPs in our simplified machinery) are expressions that establish reference in terms of ordering relations, DPs are expressions referring in terms of distance relations, and CPs are expressions referring in terms of aboutness, or of determining a spacetime.

The first NP found in the domain of T is NP_k, as in (28a). This NP values the uninterpretable Person features on T, as in (28b):[10]

(28) a. $[_{T'}\ T_{uN}\ [_{TP}\ [_{AdvP}\ \textit{often}]\ [_{T'}\ T\ [_{VP2}\ NP_k\ [_{V'}\ V\ldots]]]]]] \rightarrow$

b. $[_{T'}\ T_{Nk}\ [_{TP}\ [_{AdvP}\ \textit{often}]\ [_{T'}\ T\ [_{VP2}\ NP_k\ [_{V'}\ V\ldots]]]]]$

In English, NP_k further remerges to the left of T′, obtaining the preverbal subject position (29a). Note that in (29b) the features of T are realized on *did* and so are separate from V, while in (29c) the verb *gave* incorporates Tense, so that the two copies of T are non-overt:

(29) a. $[_{TP2}\ NP_k [_{T'}\ T\ [_{TP1}\ [_{AdvP}\ \textit{often}]\ [_{T'}\ T [_{VP2}\ \sout{NP_k} [_{V'}\ V\ldots]]]]]$

b. Mary $[_T$ did$]$ $[_{TP1}$often $[_T$ ~~did~~$]$ $[_{VP2}$ ~~Mary~~ give Theresa a book]]
c. Mary $[_T$ ~~past~~$]$ $[_{TP1}$often $[_T$ ~~past~~$]$ $[_{VP2}$ ~~Mary~~ gave Theresa a book]]

The structures in (29) have two copies of NP_k. Only the higher one is spelled out at PF. This is related to Economy of Spell-out, which requires that if multiple instances of the same copy are present, only one is overt.

But why does NP_k remerge? Chomsky (1995) claims that T in English has an uninterpretable nominal feature which must be checked and deleted, while NP_k has an uninterpretable T-feature (nominative Case) that must be checked with finite T and deleted. T acts as a **probe** that searches in its c-command domain for an element bearing such a nominal feature, the **goal**. This probe–goal relation does not *per se* imply movement but only a transfer of the value of the interpretable nominal feature of NP_k on the uninterpretable nominal feature of T which gets deleted. As a by-product of such a relation, NP_k is assigned nominative Case, thereby deleting its Case feature. The Agreement relation between the T probe and the subject NP goal also takes place in a language like Italian, where the subject may remain in the low position (30), contrary to what happens in English.

(30) a. Hanno appena telefonato Maria e Gianni
a′ *Have just called Mary and John.

[10] This is not so clear in English, except for the case of present tense, but is very clear in many other languages, as for example Latin and Italian as discussed above.

b. Maria e Gianni hanno appena telefonato.
b′ Mary and John have just called.

In Italian, the subject moves to the left of T only in case it also carries a Topic feature; namely, when it is not part of the new information portion of the clause. The English / Italian contrast in (30) suggests that when the verb has a richer morphology, as is the case of Italian which displays a six-person paradigm (1.SG *ho*, 2.SG *hai*, 3.SG *ha*,1.PL *abbiamo*, 2.PL *avete*, 3.PL *hanno*), the Agree relation between T and the subject does not require movement of the latter.

In order to motivate the mandatory preverbal position of the subject in English, Chomsky (1995) makes the assumption that an uninterpretable feature may be further specified to remerge the element with which it agrees as its specifier.[11]

At this point, we have some more tools to understand the mechanism underlying *there*-insertion observed in §1.2. In existential sentences, such as those in (7) and (15) above, *there* occupies the SpecTP position allowing for the thematic subject to remain in the VP-internal position as in (31):

(31) a. [$_{TP}$ There T [$_{VP2}$ occurred [$_{VP1}$ [$_{NP}$ a terrible accident] ~~occurred~~]]]
b. [$_{TP}$ There [$_{T'}$ are [$_{VP1}$ [$_{NP}$ three women] [$_{V'}$working [$_{PP}$ in the team]]]
c. [$_{TP}$ There [$_{T'}$ is [$_{VP1}$ [$_{NP}$ a mess] [$_{V'}$ ~~is~~ [$_{AdvP}$ here / there]]]]]

Between *there* and the NP in (31), we have the same relation we find between the two copies of NP_k in (29). So it is not completely true that *there* does not contribute to the interpretation of the sentence. In fact, it allows for the subject to remain in the VP-internal position where it can be interpreted as a weak quantifier (or non-specific), differently from the parallel sentences in (32) where the quantified expression is in preverbal subject position and is interpreted as a strong quantifier (also specific). Note that (32c) is ungrammatical because the NP *a mess* cannot be interpreted as being specific, as is instead the case of *three women* in (32d):

(32) a. A terrible accident occurred.
b. Three women are working in the team.
c. *A mess is here / there.
d. Three women are here / there

[11] §1.4 and §3.1 will introduce the notion of Agreement as involving a *probe* (the uninterpretable feature) and a *goal* (the constituent valuing such a feature).

Cinque (1999) convincingly argues that clausal adverbs are merged according to a universal hierarchy. He proposes that the hierarchy is always projected, being the result of a principle governing the formation of syntactic structures (cf. also Cinque & Rizzi 2008). In §3.3, I propose instead that hierarchies rule the application of Merge to the elements in the numeration. This allows one to capture the fact that a modal adverb like *presumably* in (33), an aspectual adverb like *generally* in (34), and a manner adverb like *carefully* in (35) are hierarchically ordered in the clause but not in entirely fixed positions:

(33) a. Presumably, Mary will have finished her assignment.
b. Mary presumably will have finished her assignment.
c. Mary will presumably have finished her assignment.
d. *Mary will have presumably finished her assignment.
e. *Mary will have finished her assignment presumably.

(34) a. Generally, Mary hasn't finished her assignment.
b. Mary generally hasn't finished her assignment.
c. Mary hasn't generally finished her assignment.
d. Mary hasn't finished her assignment generally.

(35) a. *Carefully, Mary has been writing her letters.
b. *Mary carefully has been writing her letters.
c. ?*Mary has carefully been writing her letters.
d. Mary has been carefully writing her letters.
e. Mary has been writing her letters carefully.

The range of the modal adverb *presumably* in (33) is between the left peripheral position of the clause and the preverbal position. The aspectual adverb *generally* in (34) can also appear in the postverbal position. The manner adverb *carefully* in (35) ranges over the lower part of the clause between the immediately preverbal position and the postverbal position (without interrupting the VO sequence). The occurrence of *carefully* as in (35c), where the adverb is placed between PerfP and ProgP (cf. (40) below), is not completely ungrammatical, but definitely not preferred.

Adverbs must respect a much stricter hierarchy with respect to one another. For example, the three different adverbs can appear in the same sentence strictly respecting the order Modal > Aspectual > Manner, as in (36) and differently from (37):

(36) a. Presumably, Mary has usually been carefully writing her letters.
b. Mary presumably has usually been carefully writing her letters.
c. Mary has presumably been usually writing her letters carefully.

(37) a. *Carefully Mary has usually been presumably writing her letters.
b. *Usually Mary presumably has been carefully writing her letters.
c. *Mary has usually been presumably writing her letters carefully.

Cinque's (1999) cartographic work on adverbs has uncovered fine-grained hierarchies inside each different class of adverbs. While modal adverbs merged alone can all have the position of *presumably* in (33), three modal adverbs such as illocutive *frankly*, evaluative *luckily*, and evidential *apparently* merged together must respect the order in (38):

(38) Illocutive > Evaluative > Evidential
a. Frankly, Mary had luckily been apparently finishing the job.
b. *Luckily, Mary had frankly been apparently finishing the job.
c. *Apparently, Mary had luckily been luckily finishing the job.
d. *Frankly, Mary had clearly been luckily finishing the job.

Sentences (38b–d) are ruled out not for the position of one or more adverbs with respect to the neighboring words, but for the relative position of one adverb with respect to the other adverbs. Minimally different counterparts, as those provided in (39), are grammatical:

(39) a. Luckily, Mary had been apparently finishing the job.
b. Apparently, Mary had been carefully finishing the job.
c. Frankly, Mary had been luckily finishing the job.

Another strict hierarchy is represented by the different auxiliaries we find in English. The hierarchy here is T > Perfective > Progressive > Voice. The morphological form of each verbal element is selected by the immediately higher one. In (40), future *will* selects the base form of perfective *have*, which selects the past participle form of progressive *be*, which in turn selects the *-ing* form of passive *be*, which then selects the past participle form of the V:

(40) Mary will have been being observed.
i. future = *will* + base form
ii. perfective = *have* + past participle
iii. progressive = *be* + *-ing* form
iv. passive = *be* + past participle

We assumed in (26)–(27) that T remerges only if it is necessary for the auxiliary to appear at the left of the adverb. Here in (40), we have stronger empirical reasons to observe that the inflection of the verb, which we have

labelled T, remerges, given that the different features of Tense and Aspect are realized by different heads.

It is interesting to make a parallel between the split V in (22)–(23) above and the split T in (27) and (40). In both cases what looks like a single category can be decomposed into different features that merge as many times as necessary. This may be due to the need to create specifiers where arguments or modifiers are merged, or to spell out the features as separate words, as is the case of the verbal inflection of English. What is crucial is that when more than one element of the same category is present, the merging operation obeys the hierarchy.

My approach is strongly influenced by cartography. But unlike cartography, it does not adopt the heuristic principle "one morpho-syntactic property – one feature – one head". It is at the same time more permissive and more restrictive than that: on the one hand, it allows even for one and the same feature to remerge when it combines with more than one specifier; on the other hand, it directly merges bundled features without creating vacuous structures.

For example, unlike future *will*/*shall*, past and present T can merge with the verb (41) but only in the absence of any other intervening verbal feature, such as the aspectual elements in (40) above, or sentential negation in (42):

(41) a. Mary [$_{T}$ will] [$_{V}$ win]
b. Mary [$_{V+T}$ wins]
c. Mary [$_{V+T}$ won]

(42) a. Mary [$_{T}$ will] not [$_{V}$ win]
b. Mary [$_{T}$ does] not [$_{V}$ win]
c. Mary [$_{T}$ did] not [$_{V}$ win]

Merger of sentential negation in (42b) is similar to merger of the adverbial in (24) above, repeated here in (43a) for convenience and compared to the temporal negative adverb in (43b):

(43) a. Mary T often [$_{V+T}$ wins]
b. Mary T never [$_{V+T}$ wins]

Remerger of a silent T is necessary in (43), because the propositional value of the clause requires the subject *Mary* to be in Spec–Head configuration with T. Merger of the adverb forces the feature T to merge independently of V. However, in simple sentences like those in (41b–c), the subject already is in a Spec–Head configuration with T, which is

bundled with V. Having exhausted the numeration and having satisfied all the requirements, there is no further trigger for remerge and the structure is limited to a single projection which is at the same time a VP and a TP:

(44) a. [$_{VP/TP}$ Mary [$_{V+T}$ wins]]
b. [$_{VP/TP}$ Mary [$_{V+T}$ won]]

In Italian, not only is the position of the auxiliary in (45a) captured by the remerge proposal, but also the position of a finite verb in simple tenses as in (45b):

(45) a. Maria ha spesso vinto la gara.
Mary has often won the game
b. Maria vince spesso la gara.
Maria wins often the game

The proposal that V bundled with T can raise the ladder of the extended projection of the clause according to interesting dimensions of variation across languages was first put forth by Pollock (1989) and has produced a very large amount of empirical research across languages, which is impossible to do justice to here. In the next section, I will discuss parallel remerger of N in more detail.

This section ends by adding a last functional feature to the structure of the clause, which is labelled C(omplementizer). We will see that this is necessary in the structure of both embedded and main clauses.

Embedded clauses can be the argument of a superordinate predicate: for example, they can be the object of verbs denoting mental states, such as *hope* or *wonder* in (46). In this case they are introduced by a different element according to the clause type they select (e.g., declarative in the complement of *hope* and dubitative in the complement of *wonder*):

(46) a. I hope [$_{CP}$ that [$_{TP}$ Mary will give this book to Theresa]]
b. I wonder [$_{CP}$ whether [$_{TP}$ Mary will give this book to Theresa]]

In (47a) the verb *say* selects a declarative clause optionally introduced by *that*. The minimally different *appreciate* in (47b) requires that the declarative clause it selects is introduced by *that*. In (47c) *ask* requires a different complementizer *if* in its complement clause:

(47) a. I said [(that) you cooked dinner]
b. I really appreciated [*(that) you cooked dinner]
c. They asked me [if / *that you cooked dinner]

In (48), we observe two relative clauses, the one in (48a) with the empty category *e* in object position has optional *that*, while the one in (48b) with the empty category *e* in subject position has obligatory *that*:

(48) a. The dinner [(that) he cooked *e*] was delicious
b. The dinner [*(that) *e* was cooked by him] was delicious

In root contexts, C hosts movement of an auxiliary and / or of another element. In (49), the different orders of subject and auxiliary signal the illocutionary force of the clause type:

(49) a.	You were cooking dinner.	(statement)
b.	Were you cooking dinner?	(yes / no question)
c.	Don't cook dinner!	(order)
d.	Hadn't you cooked dinner!	(wish)
e.	What are you cooking?	(wh-question)

We have established in (29) above that the subject position in English is SpecTP. The structure of the clauses in (49) must therefore concern further displacements above TP as represented in (50):

(50) a. $[_{CPstatement}$ Ø $[_{TP}$ John was $[_{VP}$ ~~John~~ cooking dinner]].
b. $[_{CP\text{-}int}$ Were $[_{TP}$ you ~~were~~ $[_{VP}$ [~~you~~] cooking dinner]]?
c. $[_{CP\text{-}imp}$ Don't $[_{TP}$ (you) ~~don't~~ $[_{VP}$ [~~you~~] cook dinner]]!
d. $[_{CP\text{-}excl}$ Hadn't $[_{TP}$ I ~~hadn't~~ [cooked dinner]!
e. $[_{CP\text{-}excl}$ What are $[_{TP}$ you ~~are~~ $[_{VP}$ [~~you~~] cooking [~~what~~]]]]!

In English, it is apparent that the illocutionary force of most clause types is obtained by movement of the auxiliary carrying the finite Tense into the complementation layer, which is the external part of a root clause and interfaces it with the discourse. This is not immediately clear in Italian, where questions and imperatives have the same form as statements (51). Null subjects are generalized in and not limited to imperatives, to the extent that even in cases in which Subject Auxiliary Inversion may occur, this is not detectable due to the invisibility of the subject:

(51) a.	Preparate la cena.	(statement)
b.	Preparate la cena?	(yes / no question)
c.	Preparate la cena!	(order)
	[you] cook the dinner	

d. Avessi preparato la cena! (wish)
[I] had cooked the dinner
e. Cosa preparate? (wh-question)
What [you] cook

The relation of the matrix CP to the discourse is also detectable from certain displacements that occur very often in Italian, but are also possible in English, to realize discourse pragmatic interpretations. In order for this to be possible, the CP must split in several phrases.

Haegeman & Guèron (1999) show that in English, CP can host a Focus and a Topic phrase. The sentences in (52) introduce further observations. The Topic must precede the Focus. If the focussed element also has a negative feature, Subject Auxiliary Inversion is triggered. The order is maintained in the subordinate clause, after the CP headed by an overt complementizer:

(52) a. [$_{TopP}$ During the holidays, [$_{FocP}$ never in my life would [$_{TP}$ I write a paper]]]
b. I told you [$_{CP}$ that [$_{TopP}$ during the holidays, [$_{FocP}$ never in my life would [$_{TP}$ I write a paper]]]]

The parallel order in main and in subordinate CPs in (52) is striking if one considers the asymmetry in the presence vs. absence of subject auxiliary inversion in root vs. embedded interrogative CPs:

(53) a. [$_{CP}$ What did [$_{TP}$ you ~~did~~ [$_{VP}$ buy ~~what~~]]]
b. I asked [$_{CP}$ what [$_{TP}$ you T [$_{VP}$ bought ~~what~~]]]

The different orders in (53), and in particular the lack of subject auxiliary inversion in the embedded clause ((53b) cannot be due to a different nature of the embedded vs. matrix CP, because negative focus fronting is insensitive to the matrix vs. embedded nature of the clause in (52b) and there is no apparent reason why the interrogative feature should make a difference.

A way out of this paradox is offered by Haegeman & Guéron (1999) who note that the order of Topic and Wh-pronoun found in matrix clauses is reversed in embedded clauses. The assumption that subject auxiliary inversion is due to remerger of the head T in the lower projection of the split CP (here labelled FocP), and that a wh-element is focalized in root clauses but not in embedded clauses, can solve the paradox:

(54) a. [$_{TopP}$ During the holidays, [$_{FocP}$ what would [$_{TP}$ you ~~would~~ [$_{VP}$ write ~~what~~]]]
b. I asked you [$_{CP}$ what [$_{TopP}$ during the holidays, ([$_{FocP}$) [$_{TP}$ you would [$_{VP}$ write ~~what~~]]]]

In other words, the wh-element in embedded clauses is remerged to a higher projection of CP, while the wh-element in root clauses is remerged lower. Only the lower position (SpecFocP) triggers subject auxiliary inversion.

In Italian subordinate clauses, we find left dislocated elements, such as *il tuo libro* in (55). In finite clauses (55a), the left dislocated element follows the complementizer *che*. In infinitival clauses (55b), it precedes the complementizer *di*:

(55) a. credo {che} il tuo libro{*che} loro lo apprezzerebbero molto.
[I] believe that your book they will appreciate it a lot
b. credo {*di} il tuo libro{di} apprezzarlo molto.
[I] believe your book 'of' to appreciate it a lot

From the contrast in (55), Rizzi (1997: 288) concludes that Italian finite clauses realize declarative Force as *che*, which selects a null [+finite] Fin, while infinitival clauses have null Force combined with an overt [-finite] Fin *di*:

(56) a. credo [$_{ForceP}$ che [$_{TopP}$ il tuo libro [$_{FinP}$ 0 [$_{TP}$ loro lo apprezzerebbero molto]]]]
b. credo [$_{ForceP}$ 0 [$_{TopP}$ il tuo libro [$_{FinP}$ di [$_{TP}$ PRO apprezzarlo molto]]]]

A similar effect can be found in English. In (57a) a Topic can appear between the complementizer and the subject of a finite clause, but not of an infinitival clause (57b) where the overt infinitival complementizer *for* must be adjacent to an overt subject in order to assign it Case, and does not split, opposite to Italian *di*:

(57) a. ... [$_{ForceP}$ that [$_{TopP}$ tomorrow [$_{FinP}$ 0 [$_{TP}$ John will leave]]]
b. ... [$_{ForceP}$ 0 [$_{TopP}$ *tomorrow [$_{FinP}$ for [$_{TP}$ John to leave]]]

Rizzi claims that, when the Top-Foc system is not merged, Force and Fin are realized as a single head (or as immediately adjacent phrases with obligatory incorporation of Fin into Force, cf. his fn. 28). The distinction

between a split Force-Fin system with one of the two heads overt and the other null, and a syncretic [Force+Fin] realized in a single head C, is crucial to account for the following (anti-)adjacency effects.

A well-known subject-object asymmetry in French shows that in this language an extracted subject, but not an extracted object, must be adjacent to an agreeing complementizer, cf. the *que*/*qui* contrast in (58b). A split CP, where the trace is not immediately adjacent to its antecedent *qui*, gives the same effect as in (59b):

(58) a. A qui crois-tu ... [$_{CP}$ que [$_{TP}$ Marie va parler [*t*]?]]
To whom do you believe that Mary is going to speak?
b. Qui crois-tu [$_{CP}$ *que / qui [$_{TP}$ [*t*] va parler à Marie?]]
Who do you believe that is going to speak to Mary?

(59) a. Je ne sais pas ... [$_{ForceP}$ à qui [$_{TopP}$ ton livre [$_{FinP}$ 0 [$_{TP}$ je pourrais le donner [*t*]]]
I don't know to whom, your book, I could give it.
b. *Je ne sais pas [$_{ForceP}$ qui [$_{TopP}$ ton livre [$_{FinP}$ 0 [$_{TP}$ [*t*] pourrais l'acheter]]]
I don't know who, your book, could buy it.

Extractability of subjects in English requires the complementizer to be null. Rizzi takes it to show that the null Fin in English is somewhat parallel to French *qui* in (58b) above. A null Fin with a subject agreement feature is incompatible with overt *that* in (60a). This explains why only the null complementizer realizing Fin in English allows for the extraction of the subject. But a fronted circumstantial like *next year* in (60b) improves the extractability of the subject across *that*, showing that if the CP system is split, due to the presence of the topicalized adjunct, the lower null Fin (agreeing with the subject) can do its job, cooccurring with the higher Force hosting the complementizer *that*:

(60) a. An amendment which they say [$_{CP}$ (*that) [$_{TP}$ [*t*] will be law next year]]
b. An amendment which they say [$_{ForceP}$ *(that) [$_{TopP}$ next [$_{FinP}$ 0 year [$_{TP}$ [*t*] will be law]]]]

The adjacency effect of French and the anti-adjacency effect of English can be accounted for only if the null complementizer has distinctive properties from the overt complementizer and if the split is allowed only when the Top-Foc system is activated. When Top or Foc are not inserted,

the complementizer is realized as a unique head which can be null or overt according to the language, but cannot combine the properties of both.

This is motivated by Rizzi as a principle of Economy that is formulated as **Avoid Structure**, similar to the principle of Economy mentioned in §1.1 above, proposed by Cardinaletti & Starke (1999) to account for the preference of weaker elements (with less structure) over stronger elements (with more structure). It is apparent that in clauses as well, a weaker C (in one projection) is to be preferred to a stronger C realized as separate Force and Fin. Thus Force is different from Fin but must be bundled with it when there is no reason for them to split.

We can briefly speculate on the different function of Force and Fin. Rizzi (1997: 285) observes that in many languages the higher complementizer is "nominal" in nature; for example, the complementizer *that* in English is clearly related to the demonstrative. This is confirmed by Heine & Kuteva's (2002) observation that demonstratives across languages can grammaticalize into complementizers, as is the case not only for other Germanic languages such as Faroese, but also for !Xun, Sango, Samaraccan, and Haitian. In this perspective, Force could be taken as the clausal counterpart of Case. And this is in fact what is proposed by Pesetsky & Torrego (2004), who claim that overt *that* in the clause is parallel to Nominative Case in NEs.

But this runs against the well-known fact that CP and Case are in complementary distribution, an observation originally made by Stowell (1981). In fact, the positions filled by an expletive pronoun, as the subject *it* in (5) above, and the object *it* in (61a) below, cannot host argument clauses. Note that if instead of a clause, we have an NE like *this rule* in (61b), the NE could only occupy the direct object position and not the right-dislocated position of the complement clause; neither could an object NE be resumed by an expletive pronoun, as in (61c):

(61) a. She made [it] clear [that this would not be tolerated].
b. She made {this rule} clear {*this rule}.
c. *She made [it] clear [this rule].

Finally, observe that the clause could never occur in the internal object position as in (62a); and that the extraposed position of the object clause is possible even if the object position is not filled by an overt expletive as in (62b):

(62) a. *She made [that this would not be tolerated] clear.
b. She made [0] clear [that this would not be tolerated].

In the brief introduction to the structure of the VP above, I have already hinted at the fact that what we call a "direct object" is in fact the subject of a sub-predication, and this is apparent given the causative meaning of *make*, which takes a VP with a silent copular V whose structural complement is the adjective *clear*. The structure of (61) is given in (63), with the sentence being extraposed out of the VP:[12]

(63) a. [$_{VP}$ She [$_{V'}$ made [$_{VP}$ [it] V [$_{AP}$ clear]]]] [that ….]
b. [$_{VP}$ She [$_{V'}$ made [$_{VP}$ [this rule] V [$_{AP}$ clear]]]]

The case of subordinate clauses has served to illustrate two different and yet related points: a C makes a propositional structure function as an argument, but C cannot be nominal in nature, considering the fact that nominal features can be assigned Case and C cannot. In other words, only NEs can fulfill the grammatical function in which an argument is interpreted as having the thematic / semantic role assigned by the predicate.

Another direct piece of evidence is the position of clausal subjects. We have observed in (14b–c) above, repeated here as (64), that expletive *it* fills the subject position when the subject is a clause. But a subject in preverbal position is also possible and in this case *it* cannot appear, as in (65):

(64) a. *(It) is possible [that the subject is missing].
b. *(It) is possible [to omit the subject].

(65) a. [That the subject is missing] (*it) is possible.
b. [To omit the subject] (*it) is possible.

This may suggest that the preverbal subject clause is in the same position as the expletive. But Haegeman & Guéron (1999) show that a clausal subject does not participate in Subject Auxiliary Inversion as shown in (66a–b), thus differing from an expletive or from an NE, as in (66c):

(66) a. *Is [that the subject is missing] possible?
b. *Is [to omit the subject] possible?
c. Is [it/omission] possible?

[12] Dealing with the position of the embedded clause would lead us too far afield from our topic.

The length of the clause cannot be the reason why the copula cannot be fronted; in fact if we embed the clausal subject into an NE which makes it even longer, the sentences become acceptable:

(67) a. Is [the possibility [that the subject is omitted]] accounted for?
b. Is [the possibility [to omit the subject]] accounted for?

It is apparent that despite the complementary distribution of the subject and the expletive in (65), we cannot assume without further specifications that the subject clause is in SpecTP, thus receiving nominative Case. Once again, although we have not yet solved the problem of why expletives are necessary, we have observed that their insertion is related to an important difference between clausal and nominal arguments, and their behavior with respect to Case requirements.

In this section, we have observed that the clause is divided into three layers. Each is the locus of given hierarchies. The lexical layer is the projection of the lexical-semantic features composing the verb (we saw that verbs like *give* can even be ambiguous as regards their subcomponents), which are merged with the arguments they select. The inflectional layer (the C-T system) turns the predicate into a proposition and is the projection of the Tense features that are interpretable on the head V and uninterpretable on the arguments. It is also the locus of modification hosting adverbial hierarchies, modals, and polarity. Finally, the complementation layer links the complete extended projection to the outside, either an external selecting element or the discourse.

1.3.2. The Nominal Expression (NE)

In all of the examples above, the NEs had very little structure (just proper names like *Mary* or art-N sequences, like *a girl*, *the girl*). For this reason, they have been labelled as NPs. But NEs can be much richer. It is currently agreed (cf. Alexiadou, Haegeman & Stavrou 2007) that nominal structure is parallel and virtually as rich as clauses, especially as regards three main areas: the lexical features which provide the denotation and instantiate thematic relations with arguments (DPs or PPs), a layer which hosts optional modifiers (parallel to adverbs with respect to TP), and a layer that provides the indexicality of the NE, namely DP. Thus, we can envisage that the noun *description* selects an internal argument (Theme) *the city* and an external argument (Agent) *Mary*. This generates a structure, as in (68), where the two arguments are assigned different

markers of the genitive: the internal argument is embedded in a PP, while the external argument has the so-called Saxon genitive:

(68) $[_{NP}$ [Mary's] $[_{N'}$ description $[_{PP}$ of [the city]]]]

But if the structure in (68) is expanded with an adjective (parallel to what we have done with an adverbial above), we observe that the adjective intervenes between the Saxon genitive and the rest, as in (69), where two functional heads, namely F and D, have been merged: the former to host the adjective in its specifier and the latter to allow for the referential index of *Mary* to contribute to further determine the referential index of *description*:[13]

(69) $[_{DP}$ $[_{DP}$ Mary's] D $[_{FP}$ $[_{AP}$ detailed] F $[_{NP}$ $[_{DP}$ ~~Mary's~~] $[_{N'}$ description $[_{PP}$ of $[_{DP}$ the city]]]]

It is interesting to observe that the *'s* marker of prenominal possessors in English is in complementary distribution with an overt determiner. If no Saxon genitive is present, we can either have the internal argument still realized as a PP, as in (69), and in this case we would have a definite article filling D, as in (70a); or we could promote the internal argument to the Saxon genitive position, as in (70b), again with a null D:

(70) a. $[_{DP}$ the $[_{FP}$ $[_{AP}$ detailed] F $[_{NP}$ $[_{N'}$ description $[_{PP}$ of $[_{DP}$ the city]]]]
b. $[_{DP}$ $[_{DP}$ the city's] D $[_{FP}$ $[_{AP}$ detailed] F $[_{NP}$ $[_{N'}$ description $[_{DP}$ ~~the city~~]]]]

The strict parallel in structure and interpretation of (68)–(70) suggests that the insertion of *of* is related to Case assignment and poverty of case morphology in English, and not to semantic / thematic requirements, since the P disappears when the NP is assigned (Saxon) genitive.

There are striking parallels and apparent differences in the extended projection of V and N. First of all, as noted by Grimshaw (1990), Vs and Ns appear to have a parallel argument structure, as in (71)–(75):

(71) *transitive predicate*
a. Mary described the events.
b. Mary's description of the events

[13] Since both *Mary* and *the city* are complete NE, we attribute the DP label to them as well, without discussion. The analysis of the Saxon genitive will be revised in Chapters 3 and 4.

(72) *unaccusative predicate*
   a. The train arrived at the station.
   b. the train's arrival at the station

(73) *psychological predicate*
   a. John fears Thelma.
   b. John's fear of Thelma

(74) *intrasitive predicate*
   a. Mary is crying.
   b. Mary's cry

(75) *ditransitive predicate*
   a. Peggy donated a museum to the city.
   b. Peggy's donation of a museum to the city

It is, however, apparent that while Vs obligatorily project their complete argument structure, Ns may omit their arguments:

(76) a. The doctor examined *(the patient).
   b. The doctor's examination (of the patient) was successful.

(77) a. They attempted *(to reach the top).
   b. Their attempt (to reach the top) was successful.

This optionality, however, does not always hold. The event noun *destruction* must have an overt internal argument in the presence of the external argument (78a) vs. (78b). An internal argument may be promoted to prenominal position, parallel to a passive subject, provided the Agent is realized as an adjunct, the *by*-phrase, or is not merged at all as in (78c):

(78) a. the enemy's destruction of the city ([AGENT] > [THEME])
   b. the city's destruction (*of the enemy) (*[THEME] > [AGENT])
   c. the city's destruction (by the enemy) ([THEME], [by [AGENT]])

Possessive adjectives are the subject of the NE. This is the case both in Italian and in English, despite the different distribution of possessive adjectives and other determiners in these two languages, as in (79)–(80):

(79) a. la loro distruzione della città
   b. their destruction of the city

(80) a. la sua distruzione da parte del nemico
b. its destruction by the enemy

From nouns like *destruction*, one can conclude that the argument structure of some Ns is as obligatory as that of Vs. But we had already had a hint in (72)–(73) above that this is not the case for the majority of Ns. Thus, for example, *description* can only have one argument in (81a) irrespective of whether this is the internal or the external argument. When both are merged, however, the hierarchy remains unchanged (81b–c):

(81) a.	Mary's description	([THEME] / [AGENT])
b.	Mary's description of the city	([AGENT] > [THEME])
c.	*the city's description of Mary	([THEME] > *[AGENT])
d.	the city's description by Mary	([THEME], by [AGENT])

We therefore face a paradox. In some cases Ns appear to behave like Vs and require the projection of their argument structure, with the possibility of omitting the external argument parallel to a passive construction. In other cases, the merger of an argument appears to be optional. Grimshaw (1990) solves the paradox by proposing that complex event nouns have a thematic structure which differs from that of object-referring nouns. The latter do not have real arguments, but can enter into a relation with another NE that is interpreted *via* our knowledge of the world or from the context. This kind of relation is totally optional. Only complex event nouns have an argument structure. The problem is that in many cases the same N is ambiguous between the two interpretations.

Empirical support for her proposal comes from the fact that some contexts force the complex event interpretation, as is the case of the predicate denoting duration in (82a)–(83a), or the adjective *constant*, in (82b)–(83b). Compare (82) with (76) and (83) with (77) above:

(82) a. The doctor's examination *(of the patient) took a long time.
b. The doctor's frequent examination *(of the patient) is advisable.

(83) a. Their attempt *(to reach the top) took a long time.
b. Their frequent attempt *(to reach the top) was never successful.

We may conclude that both object referring and event nouns have a thematic selection, but only event nouns have an argument structure; while object referring nouns combine with a referential index, that is apparently provided by a determiner. This is confirmed by Grimshaw's observation

that event nouns are only compatible with a definite article. In the proposal to be developed in this work, definite articles are not determiners but realization of features on N, crucially not including a referential index.

Haegeman & Guéron (1999: 439–46) report a number of missing parallels in the selection of Ns as opposed to Vs. There are no ECM or raising Ns. Prepositional genitive Case cannot be assigned to the subject of a clausal IP-complement of a noun such as *consideration* or *belief*, as shown in (84)–(85):[14]

(84) a. John considers Mary (to be) the best candidate.
b. *John's consideration of Mary (to be) the best candidate.

(85) a. John believes Mary to be leaving soon.
b. *John's belief of Mary to be leaving soon.

Nor can the Saxon genitive be assigned to the subjects of the subordinate NE through raising from the embedded NE, as is the case of a raising verb like *appear*, which does not correspond to a raising noun in (86). Neither can *consideration* or *belief* have a "passive" structure with a raised possessive "subject", as shown in (87):

(86) a. John appears (to Mary) to be eating too much.
b. *John's appearance (to Mary) to be eating too much.

(87) a. *Mary's consideration (by John) to be the best candidate.
b. *Mary's belief (by John) to be leaving soon.

Furthermore, there are restrictions on the type of Ns that can be subjects of NEs. Unaffected objects as in (88)–(89), expletives as in (90), and secondary predication as in (91) are excluded:

(88) a. Mary is feared by John.
b. *Mary's fear by John

(89) a. Mary is known by John.
b. *Mary's knowledge by John

(90) a. It appears that Mary loves John.
b. *its appearance that Mary loves Johns
c. *the appearance that Mary loves John

[14] Note that *-ing* nominals retain verbal properties: the external argument is expressed by a possessive but the Theme is an accusative NE, e.g., in *my considering Mary* (*to be*) *a member of this commission*.

(91) a. Mary looks sad.
b. *Mary's look sad
c. Mary's sad look

Finally, N cannot license a null complementizer (92) and does not allow for P-stranding (93):

(92) a. Mary claimed (that) the earth is round.
b. Mary's claim *(that) the earth is round.

(93) a. They talked about the boy.
b. the talk about the boy
c. The boy was talked about.
d. *the boy's talk about

The missing properties above can be related to the possibility for verbs to impose selectional requirements on the Time reference of their clausal argument. Raising and ECM are clearly a form of restructuring which causes two verbal elements to share the same event index and, as a consequence, to have a unique Time reference. The same holds of secondary predication, which is a property associated to a state which must be true at a given Time. Apparently, a verb or an adjective cannot restructure with a noun. Even if in principle they all make reference to properties, they have different types of intension (property of being an individual vs. property of being a situation) which cannot restructure into a unique type.

The impossibility for a nominal projection to bind an embedded T can also be the ground for the impossibility of a null complementizer and of preposition stranding, if Pesetsky & Torrego (2004) are correct in proposing that *that* in C is an instance of T-to-C, and Ps have interpretable T features of their own.

The impossibility for unaffected objects and expletives to appear as the subject of an NE is the other side of the coin. If it is the case that the projection of N must murge with an index of individual reference, and that the reference of the possessor contributes to determining the referent of the NE, we can hypothesize that in order for the index of the possessor to intersect the index of the possessee, the index of the possessor must be thematically associated to the denotation of N by a relation of affectedness. I will come back to this in §3.1 below. For the sake of this introduction, it suffices to say that the imperfect parallels between Ns and Vs in the projection of the lexical layer can be captured by assuming that the intension of V refers to a situation which is associated to a point in

TIME, while the intension of N refers to an INDIVIDUAL.[15] This difference is immediately mirrored in the inflectional layer.

In a seminal study which has had great impact on the current literature, Cinque (1994) proposes that the hierarchy of adjectival modification is universal, parallel to what he later proposed for adverbs, which was briefly illustrated in §1.3.1 above. *Mutatis mutandis* the adjectival hierarchies in (94) are parallel to the adverbial hierarchy. The two hierarchies are minimally different according to the head noun. In (94a) we have an event denoting N, in (94b) an object denoting N:

(94) a. Possessive > Cardinal Numerals > Ordinal Numerals > Speaker oriented > Subject oriented > Manner > Thematic > Event denoting N
b. Possessive > Cardinal Numerals > Ordinal Numerals > Quality > Dimension > Shape > Color > Nationality > Object denoting N

An example of the effects of the adjectival hierarchy is given in (95), where only one order is allowed:

(95) a. Mary's probable usual careful answer to the question
b. *Mary's usual probable careful answer to the question
c. *Mary's probable careful usual answer to the question
d. *Mary's careful probable usual answer to the question
e. *Mary's careful usual probable answer to the question
f. *Mary's usual careful probable answer to the question

In English, the hierarchy is observed entirely at the left of N, because parallel to V in the same language, N appears in the low projection of the NE, only preceding PPs, relative clauses, and some predicative APs.

To the contrary, in Italian N is preferably situated at the left of the lower adjective, as shown in (96), where the only prenominal possessive is the possessive adjective, which is in turn preceded by a determiner:

(96) a. la sua probabile solita risposta attenta alla domanda
the his/her probable usual answer careful to-the question
b. * la sua solita probabile risposta attenta alla domanda
c. * la sua probabile attenta risposta solita alla domanda
d. * la sua attenta probabile risposta solita alla domanda
e. * la sua attenta solita risposta probabile alla domanda
f. * la sua solita attenta risposta probabile alla domanda

[15] TIME and INDIVIDUAL are taken to be semantic features, which is why they are given in capital letters.

Nothing rules out (96b–f) apart from the hierarchy of modification, as witnessed by the acceptability of (97), which are minimally different in that the adjectival order does not offend the hierarchy. All the three adjectives can in fact be pre- or postnominal:

(97) a. la sua probabile risposta solita alla domanda
the his/her probable answer usual to-the question
b. la sua attenta risposta alla domanda
the his/her careful answer to-the question
c. la sua risposta probabile alla domanda
the his/her answer probable to-the question

The proposal made above – i.e., to take cartographic hierarchies as relevant to the merger of large areas of lexical and functional items, such as adjectival modification, and not as holding of syntactic structure *tout court* – makes the correct prediction with respect to the variable position between each adjective and the head in Italian (96)–(97).

On top of the adjectival hierarchy, we find elements that contribute to picking the referential index of the NE, such as ordinal and numeral adjectives, vague numerals, and the adjective meaning "other":

(98) a. her other / first / three interesting answers to the question
b. le sue altre / prime / tre risposte interessanti alla domande

In §3.1, I will discuss the properties of possessive adjectives that mark the upper intermediate projection of the NE.

There are cases in which the hierarchy is apparently violated. In (99), adjectives of any class seem to appear at the left of the possessive, provided it has emphatic intonation:

(99) a. la PROBABILE sua ~~probabile~~ solita risposta attenta
the probable his/her usual answer careful
b. la SOLITA sua probabile ~~solita~~ risposta attenta
the usual his/her probable answer careful
c. l'ATTENTA sua probabile solita risposta ~~attenta~~
the careful his/her probable usual answer

There are two ways to account for such a phenomenon. One could renounce the universal hierarchy, claiming that adjectives may stack in different orders due to different scope relations. This has been proposed by Bouchard (1998, 2002) and Bošković (2005). A possible alternative is to

propose that an adjective is fronted when it is endowed with a pragmatic feature that makes it remerge with the higher portion of the NE. This is the line of research I took in previous work (Giusti 1996, 2006, 2012c) to deal with a number of crosslinguistic properties.

First of all, languages differ as regards the kind of constituents that can be displaced in the left peripheral position. In Italian only non-restrictive adjectives that are already known as attributes of N allow this kind of fronting. For example, despite the fact that the unmarked position of color adjectives is after N, therefore quite low in the hierarchy (100), the prenominal position is possible if the property denoted by the adjective is part of our shared knowledge (101), but not if it conveys new information (102):[16]

(100) a. la soffice neve bianca delle montagne
the soft snow white of the mountains
b. le aride terre rosse ai lati del deserto
the dry lands red at the side of the desert

(101) a. la BIANCA soffice neve delle montagne
the white soft snow of the mountains
b. le ROSSE aride terre ai lati del deserto
the red dry lands at the side of the desert

(102) a. #la NERA soffice neve delle montagne
the black soft snow of the mountains
b. #le VERDI aride terre ai lati del deserto
the green dry lands at the side of the desert

But if an adequate context is given, for example if a natural disaster has turned the snow black or a magic spell has turned the dry land around the desert green, the NEs in (102) become grammatical / acceptable.

We can conclude that an AP can remerge at the Left Periphery of the NE only if it is topical and emphatic, to check such discourse feature. A special prosodic contour will consequently be applied at Spell-out.

Following Rizzi's (1997) split CP, Giusti (1996) proposes that DP should host Focus or Topic features. The split DP was marked as DP > dP:

(103) a. ForceP > TopP* > FocP > TopP* > FinP Rizzi (1997)
b. DP > TopP > FocP > dP Giusti (1996)

[16] This was first noted by Zamparelli (1993), who gives a different account of the phenomenon.

Apart from the infelicitous placement of little d lower than big D, the labelling of the discourse features in the NE was also problematic. Topic and Focus are discourse features that are confined to the clausal level, at least as regards the point at which they are checked. Anna Rita Puglielli and Mara Frascarelli (p.c.) have pointed out to me that Focus is a unique feature in the clause. This would not be the case if it appeared in the NE, given that a clause may have more than one NE. Furthermore, Valeria Molnár (p.c.) has pointed out to me that the prosodic emphasis in the Italian examples cannot be due to Focus, given that the adjectives are shared knowledge, and therefore Topics. She suggests that a Contrast feature can combine with Topic in this case (cf. Molnár 2002).

Following these suggestions, in Giusti 2006 I proposed that the only feature that can project in a split DP is Contrast, labelled as KonP (Topic and Focus being limited to the Left Periphery of the clause), and suggested that the split features in DP are Case and Num, which I further elaborated upon in a recent paper (Giusti 2012c). My working hypothesis is given in (104):

(104) CaseP > TopP / FocP > NumP Giusti (2006, 2012c)

In (99) above, we observed that in Italian any adjective can appear at the left of the possessive adjective. The structure is given in (105):

(105) a. [$_{CaseP}$ la [$_{KonP}$ PROBABILE [sua ~~probabile~~ solita risposta attenta]]]
the probable his/her usual answer careful
b. [$_{CaseP}$ la [$_{KonP}$ SOLITA [sua probabile ~~solita~~ risposta attenta]]]
the usual his/her probable answer careful
c. [$_{CaseP}$ l'[$_{KonP}$ ATTENTA [sua probabile solita risposta ~~attenta~~]]]
the careful his/her probable usual answer

Despite the presence of KonP, Case and Num are bundled together in (105), given that Num appears on the article in CaseP. The structure in (104), with a unique KonP, predicts that only one element in the NE can be fronted, unlike what is found in the clause. In a preliminary crosslinguistic search, this appears to be confirmed. Furthermore, it allows for a restricted kind of variation across languages as regards the type of constituents that can front (AP or DP or PP, but in any case a complete projection), and where the split DP is realized, whether in the higher Case position or in the lower Num position.

In Italian, DP possessives are embedded into a PP. These PPs never front. But in other languages possessors with an emphatic interpretation appear to be able to move to the Left Periphery. This is the case for Albanian bare genitives in (106)–(107), taken from Giusti 1996, and of Bulgarian PPs in (108)–(109) studied by Dimitrova-Vulchanova & Giusti (1998, 1999). As regards this part of the DP, Albanian is like Italian in realizing the higher CaseP, but the very high position of N could be taken as evidence for movement of N to NumP (parallel to T-to-C in the clause). In Bulgarian we find N in the lowest possible position (cf. Dimitrova & Giusti 1998), but the Wackernagel position of the article can be taken to be marking the low NumP. Let us observe two Balkan languages, namely Albanian and Bulgarian, in turn.

In Albanian, the unmarked order in the NE has the head N preceding even the highest adjectives, as the determiner-like adjective *tjetër* "other", and being preceded only by a free determiner, as is the case of the demonstrative in (106a). Note that the adjective *e bukur* is preceded by an adjectival article which is simply part of its inflectional morphology. In (106b), we have instead the adjective *plak* which does not have an adjectival article. A genitive possessor is preceded by a genitival article if it does not immediately follow N+art:

(106) a. [$_{\text{CaseP}}$ kyo [$_{\text{NumP}}$ vajzë/a [tjetër ~~vajzë~~ [e bukur ~~vajzë~~]]]]
this girl(-the) other ADJ.ART nice
"this other nice girl"

b. [$_{\text{CaseP}}$ ky [$_{\text{NumP}}$ libër [tjetër ~~libër~~ [plak ~~libër~~ [i Benit]]]]]
this book other old GEN.ART Ben.GEN
"this other old book of Ben's"

The possibility of a redundant enclitic article on N in the presence of the demonstrative in (106a) supports the hypothesis that in Albanian the DP is split in CaseP and NumP. Note that in both cases of (106) the adjectival hierarchy is respected in the postnominal position, with "other" preceding the lower adjective. But at least some speakers of Albanian allow a prenominal adjective in the marked word order triggered by a Contrast feature on an AP. In this case, any adjective can front, irrespective of the hierarchy (107a–b). Note that a DP possessor can also front, as in (107c):

(107) a. [$_{\text{CaseP}}$ kyo [$_{\text{KonP}}$ shumë e bukur(a) [$_{\text{NumP}}$ vajzë tjetër ...
this very ADJ.ART nice(-the) girl other
"this other VERY NICE girl"

b. [$_{\text{CaseP}}$ kyo [$_{\text{KonP}}$ tjetër/tjetra [$_{\text{NumP}}$ vajzë (shumë) e bukur ...
this other(-the) girl (very) ADJ.ART nice
"this OTHER very nice girl"

c. [$_{CaseP}$ ky [$_{KonP}$ i Benit [$_{NumP}$ libër plak ...
this GEN.ART Ben.GEN book old
"this old book of JOHN'S"

The possibility for the definite article to appear on the prenominal adjective may suggest that KonP is merged separate from NumP. Albanian provides us with a case in which the DP is always split in CaseP and NumP, and the intervening KonP, when present, can host either an AP or a possessive DP. I will discuss the internal structure of AP with and without adjectival articles in §6.1.

Bulgarian offers a different case in point. Dimitrova-Vulchanova & Giusti (1999) study the distribution of possessive phrases in Bulgarian in many respects, including the possibility, limited to object referring nominals, to front a possessive PP resumed by a possessive clitic. In (108), we find the unmarked order, with the article (108b–d) in a Wackernagel-like position attached to the first lexical element (cf. Dimitrova-Vulchanova & Giusti 1998):

(108) a. tazi nova kniga na Ivan
this new book of Ivan
b. negovata nova kniga
his-the new book
c. novata kniga
new-the book
d. knigata
book-the

Bulgarian makes a strong point in favor of the parallel between NEs and clauses, in that a fronted PP can be resumed by a clitic, as in (109a–b), if it is a Topic but not if it is a Focus (109c–d) (cf. Dimitrova-Vulchanova & Giusti 1999):

(109) a. na Ivan tazi mu nova kniga
to Ivan this his.CL new book
b. na Ivan novata mu kniga
to I. new-the his. CL book
c. NA IVAN tazi (*mu) nova kniga
to Ivan this (his.Cl) new book
d. NA IVAN novata (*mu) kniga
to I. new-the (his.Cl) book

In Bulgarian, fronting is however restricted to possessors and therefore only possible in object-referring or result nouns, as in (110), and never with event nouns, as in (111), also taken from Dimitrova & Giusti (1999):

(110) a. na Aristotel portretut (*Theme)
b. na Rembrand portretut (*Agent)
c. na Ivan portretut (Possessor)
of A./R./I. portrait-the

(111) a. unishtozhavaneto na grada / na Ivan
destruction-the of city-the / Ivan
b. *na grada / na Ivan unishtozhavaneto

Dimitrova & Giusti (1999) note that the adjectival hierarchy is respected in Bulgarian, as in (112a), and no adjectival fronting is permitted (112b-c):

(112) a. novata shekspirova kniga
new-the sheakspeare.GEN.ADJ book
b. shekspirovata (*nova) kniga
sheakspeare.GEN.ADJ -the new book
c. *nova(ta) tazi kniga
new(-the) this book

From the discussion of (105)–(112), I conclude that there is a higher portion of structure in the NE devoted to hosting displaced elements associated with a discourse feature. Parametric variation is found according to (i) the category of this constituent, (ii) the type of N that allows for the split DP, and (iii) whether the higher, the lower, or both portions of the DP are merged.

1.4. Phases

This chapter has set the "tools of analysis" for our research. I have started by showing that Economy and Full Interpretation are general principles that comply with the requirement that any theory of language be simple and parsimonious (a general requirement on scientific theories, also known as Ockham's razor). I then pointed out how Case, Expletives, and feature sharing are general properties of language that challenge these two general principles.

I have sketched a structural proposal that presents the clause as the product of two "phases": the lower one satisfying the need of the predicate to merge with arguments saturating its roles and referring to a situation; the higher one combining the situation with Time reference as well as

creating the subject–predicate dichotomy which is the base of propositional content. Turning to the structural analysis of the NE, we have observed that reference to an individual is the only interpretive requirement. In other words, the basic difference between NEs and clauses is that clauses are compositionally made up of reference to an event embedded into reference to a propositional content, while NEs refer to an individual, existing at a certain Time.

This pre-theoretical presentation is consistent with Arsenijević's (2007), Arsenijević & Hinzen's (2007), and Hinzen's (2012) attempts to reduce phases to complete referential expressions. According to Arsenijević (2007), reference is computed in terms of distance and spacetime. Thus, the C–T system refers to a discourse domain, the v*–V system[17] refers to an event / state (ordering relations), and the D–N system refers to an individual (in terms of distance relations).

According to Hinzen (2012), phases compose in the following way:

(113) **Principle of Phasal Composition** (Hinzen 2012: 327)
When a referential argument becomes part of a higher phase, it functions as a descriptive predicate that helps to identify the referent of the higher phase.

Agreement and Case assignment are the processes that allow for phasal composition. The relevant structural relation is given in (114), where the dotted line frames the lower phase α whose denotation is YP, while the continuous line frames the upper phase β whose denotation is XP. P stands for probe, a functional head carrying an uninterpretable feature that must be valued. LE stands for Left Edge and contains an element that carries the interpretable counterpart of such a feature. In (114), the LE of α is targeted by the probe (P) of β to be interpreted as part of the intension of β:

(114) [$_{\beta}$ LE [P [XP]]] [$_{\alpha}$ LE [P [YP]]]

In other words, the Left Edge of a phase (the highest specifier) remains transparent to the next phase, while the rest of the phase becomes opaque after being sent to the interfaces. Agreement is the relation that occurs

[17] For simplicity in exposition, I did not introduce the head v* which is the extended projection of the predicate V and constitutes the head of the lower clausal phase, including Aspect, assigning accusative Case to the internal argument of V and introducing in its Left Edge the subject NE, which is to be targeted by T, which is the head of the next phase.

between the subject and T in a finite clause, but also between a possessor and N.

The many parallels between clauses and NEs can therefore be reduced to the fact that they are phases. They both display a denotation layer combined with a layer that expresses a referential value. Both have a Left Edge, which makes it possible for them to be part of the denotation of the higher phase. In both, the Left Edge that can be split to merge discourse features, such as Topic and Focus in the clause, and Contrast in the NE.

But the parallels end here. Clauses are made of two phases: a situation embedded into a proposition[18]. NEs are made of just one phase, which refers to an individual (*pace* Cornilescu & Nicolae 2011). The different referential value also makes a crucial difference. Even embedded clauses can host various types of discourse features in their Left Edge, while NEs can only host contrasted elements (which are probably interpreted as Topics or Focus at the root level). Situations can restructure with another situation, with the effect that a situation-denoting predicate can select another situation-denoting predicate, as is the case for raising verbs and ECM constructions. A proposition can probe any individual as its subject, while an N denoting an individual can only probe another individual with which the referent has some relation (namely, a possessor).

In Chapter 2, after a brief overview of the basic semantic concepts related to NEs, I provide an introduction to the most influential approaches to the syntax of the Left Edge of the NE, in particular as regards definite descriptions, which are introduced by a definite article in article languages. The rest of the volume develops a proposal that tries to reconcile the promising features of apparently competing approaches.

In Chapter 3, I distinguish Agreement from two other processes that trigger feature sharing, which I call Concord and Projection. Only Agreement involves a probe that targets the Person features of an argument (the goal) and results in Case assignment on it. In the course of this volume I will propose that the referential index of the NE, including the Person feature, is not part of the nominal features bundled with N (which are relevant to what I call Projection) but merges with N as the

[18] According to Arsenijević (2007), CP "establishes reference in terms of the discourse relation of aboutness, which can be understood as the spacetime resulting from the relation established between the verbal and the nominal pivots of the clause: the subject and the finite verb". This accounts for the fact that not all CPs have propositional value. Whatever stand is taken on the referential value of the three phase types, CP differs from DP in exactly what we have observed: CPs are made of a predicate which holds of an individual (the subject) at a given time (Tense), while DP refers to an individual.

highest specifier, the Left Edge, which is the only position transparent to the next phase, and is therefore transparent to the probe of the next phase. I will also propose that Case assignment is valuation of an uninterpretable feature bundled with the phasal head of the goal. This means that before being sent to the interfaces, the phasal head P of the goal is valued for the categorial feature of the (phasal head of the) next phase.

Chapter 4 shows that so-called determiners are merged at the Left Edge (in specifier position), except for articles, which are phasal heads and can cooccur with other determiners, whereas genuine determiners do not cooccur with one another.

Chapter 5 and Chapter 6 discuss the interaction of Concord and Projection, two processes that take place inside the Phase. These two chapters show that what we call definite articles are the overt realization of features bundled with the lexical head (N and A, respectively).

CHAPTER TWO

ARTICLES AT THE INTERFACES

2.1. The Semantic Tradition

According to Allwood et al. (1997: 47) "Semantics is the study of how those expressions which are allowed by the syntax are related to what the expressions are about".

In logic, the meaning of a sentence is equivalent to setting the conditions the world must meet for such a sentence to be true. Propositional logic is concerned with "how the truth values of compound sentences are determined by the truth values of their constituent sentences and the choice of logical connectives". Predicate logic is concerned with the truth values of simple sentences. I will limit my brief overview to predicate logic.

Let us start from one-argument sentences, like those in (1). They are formed by a subject and a predicate:

(1) a. Mary is nice.
    b. Mary is a doctor.
    c. Mary is sleeping.
    d. Mary frowned.

In logic they have all the same form, with the predicate constant indicated by a capital letter, and the individual constant (the subject) indicated by a lower case letter. The logical form of the sentences in (1) is given in (2). Note that it makes no difference in logic whether a predicate is an adjective (*nice*), a noun (*doctor*) or a mono-argumental verb (*sleep*, *frown*):

(2) a. N(*m*)
    b. D(*m*)
    c. S(*m*)
    d. F(*m*)

Not all arguments, however, are constants, they can also be variables, indicated with lower case letters *x*, *y*, *z*. A logical form like (3) does not have a truth value; it is an open sentence because the individual variable needs to be restricted, as we will see below:

(3) a. N(*x*)

Individual variables or individual constants are grouped under the label of individual terms (*t*). This unifying terminology is important because a predicate can take either type of individual term as its argument.

As observed in §1.3.1, predicates can take more than one argument:

(4) a. Mary is nicer than John.
b. Mary saw John.
c. Mary gave a book to John.
d. Mary offered Jill a watch for five pounds.

The logical form of the predicates in (4) is given in (5). Note again that there is no difference between adjectives (*nicer than*) and verbs (*see*, *give*, *offer*), and between a complex predicate, such as *nicer than*, and one-word predicates, such as *see*, *give*, *offer*:

(5) a. N(t_1, t_2)
b. S(t_1, t_2)
c. G(t_1, t_2, t_3)
d. O(t_1, t_2, t_3, t_4)

Let us now go back to individual variables, which create open sentences as with (3) above. In order for (3) to be meaningful, the variable must be bound by a quantifier. Take the famous statement by Heraclitus *Everything is in flux*. Its logical form is given in (6):

(6) a. $\forall x$, F(*x*)
b. "For all individual objects in the universe of discourse, it is true that such object is in flux."

It is important to note that we quantify over open sentences, not over sentences. Thus if a constant is inserted in the scope of a quantifier, as in (7), the sentence makes no sense:

(7) $\forall x$, F(*b*) "vacuous quantification"

Thus, all variables must be bound, because open sentences do not have meaning, and all quantifiers must bind a variable, because vacuous quantification has no meaning.

It is often the case that a quantifier binds more than one variable at the same time. Even a simple sentence such as *Every woman is mortal* has the universal quantifier having scope over two predicates, as in (8):

(8) a. $\forall x, \mathrm{W}(x) \rightarrow \mathrm{M}(x)$ "Every woman is mortal."
b. For every *x*, if *x* is a woman then *x* is mortal.

The logical form of a simple syntactic clause containing a quantifier such as *Every woman is mortal* has the structure of a complex sentence, as given in (8a), which must be read as (8b) and clearly has two different predicates (*be a woman*, and *be mortal*). The expression in (8a) can also be read as any of the propositions in (9):

(9) a. For every *x*, it holds that if *x* is a woman, then *x* is mortal.
b. For everything, it holds that if it is a woman, then it is mortal.
c. If something is a woman, then it is also mortal.
d. All women are mortal.

It is clear that logical forms are less refined than syntactic structures, as regards the properties of natural languages. In fact, the sentences in (9) have the same truth conditions, but do not have exactly the same meaning.

Another aspect of the richness of natural languages and their lexical properties that cannot be captured by the simple logical form introduced above is the large number of lexical elements having quantificational meaning, *all*, *every*, *each* on the one hand and *many*, *few*, *some*, *several*, *one*, *two*, *three*, etc. Predicate logic cannot capture this difference, since it has just one symbol for each larger class of quantifiers: $\forall$ (for universal quantification) and $\exists$ (for existential quantification). The picture must therefore be complicated.

In the semantic literature, the analysis of definite descriptions is grounded on a tradition that dates back to Frege, and Russell's criticism of Frege's treatment.[1] Frege (1893) classifies NEs into "singular terms", as with the proper name in (10a), and "general terms", as with the quantified

[1] For an in-depth treatment and a defense of the Russellian proposal in current semantic terms cf. Neale (1990), from which the discussion about (12) and (13) is taken.

NE in (10b). In Frege's system, it is not clear what class a definite description like (10c) belongs to:[2]

(10) a. Peter frowned.
b. Every man frowned.
c. The head of the department frowned.

Russell (1905) shows that definite descriptions have the properties of general terms and are different from singular terms. More specifically, (10c) is similar to (10b) and different from (10a), for the following reasons:

(11) a. Definite descriptions are subject to the truth conditions of quantified NEs, cf. (12).
b. Definite descriptions have scope like quantified NEs, cf. (13).

With respect to truth values, (12a) can be uttered felicitously even if the speaker does not have a particular individual in mind as the referent of the expression in brackets. For example, it may be the case that the speaker knows that Mary is a particularly difficult person to love and (s)he says that whoever loves Mary is insane. Note that the utterance of (12a) does not even imply the existence of a referent for the bracketed NE. This is parallel to the proposition containing a quantified expression in (12c) and opposite to the one containing a proper name in (12b):

(12) a. [The man who loves Mary] is insane.
b. [John] is insane.
c. [Any man who loves Mary] is insane.

With respect to scope-taking, the sentence in (13) is ambiguous in the usual way in which quantified NEs are known to be ambiguous. It can either be interpreted with the definite description in brackets as having narrow scope with respect to the modality operator, as in (13a), or as having wide scope over the modality operator, as in (13b):

[2] The sentences in (10) were suggested by Larson (p.c. 2001) as counterexamples to my proposal. I hope that the discussion in this chapter and in the following ones will show that my proposal is in no way incompatible with Russell's semantic proposal. Quite the contrary, much in the spirit of Russell's (1944) reply to Moore (1944), I predict that the theory of definite descriptions is independent of the various different syntactic functions that the article will be shown to have.

(13) [The number of planets] is necessarily greater than 7
  a. ι-OP ([the *x*: number of planets (*x*)] [*x* is greater than 7])
  b. [the *x*: number of planets (*x*)] ι-OP ([*x* is greater than 7]) (*de re*-reading)

(13a) means that it is necessary, perhaps due to some principles of physics, that the number of planets, whatever it is, is greater than 7. (13b) is parallel to "9 is necessarily greater than 7".

However, the presence of a definite article, even in English, is not confined to definite descriptions. A definite article also occurs in a singular kind-referring NE, as in *The whale is a mammal*. This was already pointed out by Moore (1944), to whom Russell (1944:690) replied in the following way, as reported by Neale (1990):

> Mr. Moore points out, quite correctly, that the Theory of Descriptions does not apply to such sentences as 'the whale is a mammal'. For this the blame lies on the English language, in which the word 'the' is capable of various different meanings.

It is clear that Russell was uninterested in the grammatical morpheme *the*, and all the other morphemes that are irrelevant to his theory of definite descriptions. Russell's concern is a "more abstract" level of representation, which can afford to disregard certain peculiarities of the English language without losing its force and appeal.

In the framework I presented in Chapter 1, the case of singular kind-referring nominals can be dealt with in two ways. One is to claim that the English language has an operator, *the*, which corresponds to Russell's ι-operator and maintains a fixed semantic value for it. This would amount to claiming that in some sense singular kind-referring nominals (different from plural ones) are semantically similar to definite descriptions. This is the semantic path taken by Neale (1990), on the basis of the fact that even when missing the indexical property, the article conveys a uniqueness interpretation, which can also be considered a property of a quantifier. A competing view is to say that we have two '*the*'s in English: one carries a referential index, the other is "expletive". In other words, one of the two *the*'s does not count for interpretation. This is the line of reasoning taken by Longobardi (1994, 1996).

A synthesis of these two positions is to assume that Russell's ι-operator is non-overt and the grammatical morpheme *the* is the syntactic realization of a portion of structure that can but does not need to cooccur with the ι-operator. This predicts that the grammatical element *the* does not always appear with indexical interpretation and *vice versa*, that we can have

indexical interpretation even without *the*, under particular syntactic conditions. This is the path that I will pursue in the present study.

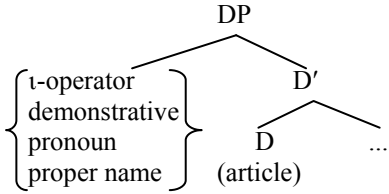
Note that denying that *the* is the morphological realization of Russell's ι-operator is in no way denying the validity of Russell's proposal. It only asserts that there is no biuniqueness relation between the morpheme *the* in English and the ι-operator. They often cooccur because the empty ι-operator, like many other phonologically null interpretable elements, must be licensed in specific structural configurations by a non-interpretable element (the article *the*) which has phonetic content. In a cross-linguistic perspective, the two approaches make very different predictions.

A narrow interpretation of Russell's theory, which biunivocally identifies the morpheme *the* in English with the ι-operator, predicts that in all languages, definite descriptions are construed by means of a morpheme parallel to *the* with the same or similar semantic properties, as is crosslinguistically the case for quantifiers, such as *all*, *some*, *every*, and other determiners such as *this* and *that*. The syntactic version of this proposal must take inconsistent instances of *the* as simply not related to definite descriptions, running the risk of being circular: what does not comply with the theory is labelled as expletive.

A broad interpretation of Russell's theory, such as the one I am proposing here, considers the morpheme *the* as a syntactic means of making a portion of the syntactic tree visible to Spell-out operations and does not identify *the* with the ι-operator (or the unicity operator). It predicts that in certain languages these semantically pregnant operators are non-overt and need to be licensed by cooccurring elements (as is the case of other null elements), according to particular parametric choices.

In this work, I adduce cross-linguistic evidence in support of this approach. I propose that the syntactic configuration in which we find the ι-operator in the languages under discussion is the one I give in (14). The ι-operator, parallel to other determiners such as demonstratives, personal pronouns, and proper names, makes the DP an individual constant, which cannot be in the scope of a quantifier (also cf. Campbell 1996). These elements occupy the Left Edge of the NE, which I label here as SpecDP, for convenience:

(14)



Articles will be conceived as the overt realization of a functional feature, i.e., abstract Case (*u*T, according to Pesetsky & Torrego 2004). If this feature is made visible otherwise, it does not need to be overt in D. Thus, in compliance with Economy (Avoid Structure), in some languages it is never realized, while in other languages it is realized only in some syntactic contexts.

2.2. Competing Syntactic Accounts

The mainstream analysis of determiners and in particular of articles in the generative tradition is based on three independent assumptions: a one-to-one syntax–semantics mapping, a generalized notion of determiner, and a unified notion of determiner.

The first assumption concerns the syntax–semantics mapping and assumes that syntactic categories are directly mapped onto the corresponding semantic types at the LF-interface (this is a common trait of all accounts reviewed in this section). In this perspective, both Longobardi (1994) and Chierchia (1998a) take a semantic analysis as their starting point.

The second assumption concerns the notion of functional head and its exploitation in the formal syntactic analysis of the last three decades. Abney's (1987) seminal work locates those morphemes that are generally defined as determiners in a high functional head (D), on the observation that these often mark the peripheral position of the NE (cf. Lyons 1999: Ch. 8). The parallels that have been noted between NEs and clauses (also cf. Alexiadou, Haegeman & Stavrou 2007 for an extensive overview) have supported the assumption of a number of functional heads in the nominal structure. In more detail, DP (the Left Edge of the NE) is often taken to be similar to CP (the Left Edge of the clause), or to TP which realizes reference to Time and propositional value in the clause (cf. Roehrs 2009, Boskovic 2005).

The third assumption is inherited by traditional grammar which unifies under the notion "determiners" what we will observe as being quite heterogeneous vocabulary items, including (in)definite articles, quantifiers, demonstratives, possessives, and pronouns, grounded on the complementary distribution of these elements in some languages / constructions. This traditional assumption has induced many syntacticians to propose that these elements are all of the same category and are merged in the same syntactic position.

In §2.2.1–3, I review three syntactic approaches that have been particularly influential on the debate about nominal structure: the first is at the

base of all those who argue for a universal DP layer which hosts any kind of determiners including but not limited to articles; the other two take the absence of articles in a language as a possible hint of the lack of the DP layer. They all have in common the three assumptions above.

In §2.2.1, I show that Longobardi's (1994) aim is to provide the counterpart of Neale's (1990) Narrow Russellian Approach in syntax. Recall that Russell proposes that the definite article is similar to a quantifier. Longobardi attributes to the head of DP the function of turning a property (assumed to be of category NP) into an argument. Thus, all arguments would need to be of category DP, by definition. The different interpretations are reduced to different elements in D: a demonstrative (*this boy*), a proper name (*John*), a meaningful article (*the boy*), an expletive article (*The dog has four legs*), a zero determiner (phonologically null but syntactically active, as in *I saw boys*), or a null D (completely void of features, as in *Boys are noisy*). Parametric variation would account for N-to-D displacements, expletive insertion, and licensing of zero elements and empty positions. The appeal of this proposal lies in that it correlates argumenthood to referential interpretation and makes general claims for Universal Grammar and Parameter setting.

In §2.2.2, I will discuss Chierchia's proposal that the presence of D (and its projection DP) is subject to parametric variation. His analysis is grounded in Carlson's (1977) proposal that the complex properties of bare plurals can be explained by assuming that they unambiguously refer to kinds. Chierchia also assumes a one-to-one syntax–semantics mapping and a generalized concept of determiner, and attributes to parameter setting whether NPs can function as arguments in a language. A child would actually go for the minimal option (NPs can be arguments) and develop a DP layer only if exposed to sufficient evidence, in the fashion of the subset principle of Wexler & Manzini (1987). Chierchia's theory is very appealing in that it captures quite a large degree of variation, at the same time providing an interesting ground for language acquisition (children appear to start with no articles in all languages, cf. Guasti (2004), Giusti (2012a) and language change (articles are developed in later stages of given languages, e.g., Latin has no article, but all Romance languages have one, cf. Lyons 1999). Chierchia (1998a) inspired the ambitious research project by Bošković (2005, 2008) and followers, which is however quite different in many respects.

In §2.2.3, I review the large number of quite independent properties that Bošković & Gajewski (2011) claim to be derived from the presence or absence of an article in a language. The underlying idea is that lack of article is a more general sign of lack of functional structure, not just in the

NE but also in the clause. I will go over some of the properties attributed to lack of DP/TP in an articleless language such as Latin to conclude that Latin in fact behaves like a DP-language in many crucial aspects of Bošković's framework.

Finally, in §2.3, I try a synthesis of the three views. I reject the assumption that determiners of all classes belong to the same category and have the same syntactic position, and claim that each class of determiner is universally the same across languages.

2.2.1. A "Narrow" Russellian Approach

Longobardi (1994) implicitly assumes that the head D is the structural position where all nominal operators are merged and interpreted. The minimal NE must therefore contain the lexical layer NP (of predicate type), and the functional layer DP (binding the variable introduced by the predicate).[3] The different interpretations obtained for the different types of NEs are given in (15):

(15) a.	$[_{DP}\ \iota\ [_{NP}\ x]]$	definite descriptions
b.	$[_{DP}\ [_{D}\ N]\ [_{NP}\ \cancel{N}]]$	proper names
c.	$[_{DP}$ (expl) $[_{NP}\ N]]$	kind-referring noun phrases
d.	$[_{DP}\ \exists\ [_{NP}\ x]]$	weak existentials

Let us consider each case of (15) in detail.

According to (15a), definite descriptions are quantified NEs, with the variable (*x*) realized as NP, and the ι-operator in D. In a sentence like (16a), the NP *bambina* would be the variable bound by the operator *la* in Italian, parallel to its English counterpart given in (16b). In this case the article that fills D is substantive, it has meaning. If the subjects did not have the article (or another determiner), the sentences in (16) would be open sentences:[4]

(16) a. La bambina è contenta.
b. The girl is happy.

[3] Intermediate projections are not excluded, but are irrelevant for Longobardi's proposal and are therefore omitted by him. This may look like a trivial detail, but it may become relevant from the perspective of Grohmann's (2003) anti-locality condition, which I discuss in §2.3.

[4] As briefly introduced in the discussion of (3) above, open sentences do have propositional value.

According to (15b), a proper name, which has "rigid designation" and no extension, is generated in N but moved to D by substitution, to provide a filler for D which is the only element interpreted in a proper name. There is no apparent difference between the Italian (17a) and its English counterpart in (17b):

(17) a. Gianna è contenta.
b. Joan is happy.

But if the proper name is modified by an adjective, there are reasons to claim that English does not move N to D in overt syntax. Consider the contrast in (18). In English, proper names are productively modified by prenominal adjectives, as in (18a). Opposite to this, Italian adjectives precede the noun only if the article is inserted and follow the noun in the absence of an article: [5]

(18) a. Old John (/ *John old) came in.
b. La sola Maria è arrivata.
The only Maria has arrived
c. Maria sola è arrivata.
Maria only has arrived.

This is taken by Longobardi to show that N-to-D is procrastinated to LF in English; while in Italian, procrastination in syntax is possible only if D is filled with an expletive, to be replaced by covert N-to-D at LF. This is formulated in the parameter in (19):

(19) N raises to D (by substitution) in the syntax in Italian but not in English. (Longobardi 1994:641 (67))

In (15c), kind-referring nominals represent the opposite situation in respect of proper names: they do not have an interpreted D; they are interpreted in N because N is the locus of kind interpretation. According to Longobardi, to ensure that a noun is interpreted in N as a kind and not in D as a proper name, an "expletive article" is inserted in D in Italian. In (20a), the expletive article has no substantive value and is therefore not

[5] It is impossible to construe parallel examples with adjectives and proper names in Italian and English that are comparable in naturalness. This is certainly not just chance, since proper names resist modification by any other element, including adjectives, due to their nature of rigid designators. This point will be dealt with in more detail in §4.5.

interpreted at LF. English (20b) does not insert any expletive article in this case, because N never moves to D in this language:

(20) a. Le bambine sono (sempre) contente.
b. Girls are (always) happy.

In English kind-referring expressions, the article is missing with plural count nouns (21a) and with (singular) mass nouns (21c), but is present with singular count nouns (21b); while in Italian the article is present in all kind-referring expressions (22):

(21) a. Dogs have four legs.
b. The dog has four legs.
c. Dog (meat) is eaten in some countries.

(22) a. I cani hanno 4 zampe.
b. Il cane ha quattro zampe.
c. In certi paesi si mangia il cane / la carne di cane.

According to Longobardi, expletive insertion is "a last resort procedure". As already said, in Italian kind-referring nominals (20a) and (22), insertion of an expletive article occurs to prevent N-to-D movement. The need for an expletive article only in kind-referring singular count nouns in English (21b) is due to the need to avoid the ambiguity with mass interpretation, which is obtained with a null article (21c).

To summarize so far, Longobardi assumes three different definite articles in Italian: the interpretable one realizing the ι-operator (16a), and two different expletive articles, one for proper names (18b), which triggers N-to-D movement at LF, and one for kinds (22), which blocks N to D *tout court*. He also assumes two different definite articles in English: the interpretable one realizing the ι-operator (16b), and the expletive article with mass nouns interpreted as kinds (21b). The English expletive does not have the function of blocking N-to-D movement, because this movement never occurs in English syntax, even with proper names (18a), which Longobardi assumes to display N-to-D movement at LF in these languages. The function of the expletive in this case is to avoid confusion with the zero article in the singular, which would trigger indefinite mass interpretation, whose structure is (15d). Thus the two expletives are inserted for totally different reasons.

Let us now turn to plural indefinite NEs, whose LF structure is also (15d). Longobardi proposes an interpreted zero-determiner realizing the ∃-operator in all contexts in English and only in properly governed contexts

in Italian; notably, postverbal subjects and direct objects (23)–(24), but not prenominal subjects (25a), except coordinations, such as *donne e uomini* in (26) and complements of prepositions, such as *di insegnanti* in (27):

(23) a. C'erano bambine.
b. There were girls.

(24) a. Ho incontrato bambine (ma non bambini).
b. I met girls (but not boys).

(25) a. *Bambine erano presenti.
b. Girls were present.

(26) a. Donne e uomini si sono riversati in piazza.
b. Women and men poured out into the square.

(27) a. I figli di insegnanti sono avvantaggiati nella scuola.
b. Children of teachers have an advantage at school.

The analysis of indefinites in (15d) is exactly like the one given for definite expressions in (15a), with the only difference that the indefinite operator is null, and must be lexically governed as many other empty categories. Thus, there is a crucial difference between the empty D of proper names, the null D in kind-referring expressions (15b–c), and the non-overt D of indefinites. Only the latter is interpreted as such.

To summarize so far, the syntax–semantics mapping of four different typologies of argument NEs is derived by Longobardi through a proposal that assumes a uniform structure made of an NP realizing the variable and a DP realizing the closure. This runs parallel to the classical semantic analysis of definite and weak existential expressions. For an unspoken principle of uniformity, kind-referring expressions and proper names are also taken to have the same structure.

Differences and similarities between English and Italian (taken to represent Germanic and Romance) are derived by postulating independent parametric choices. In particular, English and Italian display the same distribution of substantive articles (16), while they differ in the other three cases, two of which (proper names and kind-referring expressions) are captured by the presence or absence of N-to-D movement in syntax and / or LF. English does not operate N-to-D movement in Syntax, but only at LF (when it is required by the interpretive property of proper names).

Longobardi's analysis of indefinites does not hinge on a parameter imposed on N-to-D movement, but on different properties of the null existential operator in the two languages: in Italian it needs to be licensed,

in English it does not (for no obvious independent difference between the two languages). The licensing requirement on null articles in Italian supports the hypothesis of a phrase above NP in this kind of NE as well.

Longobardi's proposal has had a major impact in the literature. Even though it only concerned the parametric variation between English and Italian, it raised general issues that produced a large amount of empirical research across languages. There are, however, questions that are still open and which have become more and more urgent in the last two decades of the minimalist framework: first of all the proliferation of meanings / functions on the same functional head even in one and the same language.

A number of questions arise from the observation of missing parallels between nominal and clausal expletives. First, clausal expletives are coindexed with a complete NE or clause to procrastinate movement in syntax. LF movement of such constituents results in expletive replacement, crucially deleting the uninterpretable expletive and saving the derivation from crashing. *Mutatis mutandis*, this is parallel to Longobardi's analysis of Italian proper names (where the article is deleted by N-to-D movement at LF), but is very different from his account of Italian kind-referring NEs, where the article is inserted to block N-movement *tout court*, and of the English singular expletive article, where the article is inserted to avoid mass interpretation. One could envisage that the expletive article is more similar to the expletive subject of weather predicates as *it is cold*, *it is raining*, where there is no element that will delete the expletive by substitution at LF. However, exactly for these predicates the status of the subject has been assumed to receive a quasi-theta-role, thereby eliminating expletives that do not get deleted by substitution. Thus, it is not clear how expletive articles in kind-referring expressions get deleted at LF or, if not deleted, why they do not violate Full Interpretation.

A second question is raised by the maximal status of expletives vs. the head status of articles. In the perspective of clausal / nominal parallels, articles are similar to auxiliaries, which clearly interact with V blocking V-to-I or to complementizers, and not to expletive *it* or *there* (cf. Doehrs 2009 for a similar proposal). This intuition cannot be captured in Longobardi's framework.

A third, quite important question is why it should be the case that in English, a non-pro-drop language, with poor inflection and supposedly "weak licensors", a null existential operator is freely licensed, while the opposite is the case in Italian, a language which can license null pronouns and requires null expletives in subject positions. Apparently, the presence of expletive pronouns and expletive articles would have to depend on

opposite parameters. This would be an unwelcome result, especially in view of the fact that pronouns cooccurring with nouns have generally been taken to be identical or very similar to determiners since Postal (1967).[6]

Related to this is the question why Italian kind-referring expressions and proper names could not be blocked in their base position by just inserting a null expletive in D, parallel to postnominal subjects, which procrastinate movement to SpecTP, supposedly in the presence of a null expletive in SpecTP (as in: [pro] *È arrivato Gianni*, lit. [pro] Has arrived Gianni). It is also unclear whether N-movement is, as should be, parallel to V-movement. In Italian common nouns (which include kind-referring expressions), N-movement targets an intermediate position (which derives the Art N A order observed in §1.3.2 above, also cf. Cinque 1994), not D. In this perspective, it is not clear why kind-referring expressions need an expletive to prevent N from moving to D, and keep it in the intermediate position. If kind-referring expressions are not proper names, what attracts N to D at all?

Furthermore, Longobardi does not formulate explicit predictions for articleless languages. Do they have null counterparts of the different D-fillers: namely, a null ι-operator, a null weak quantifier, and maybe one or two null expletives? Are we to expect variation in the licensing of some of these null elements in articleless languages, as we observe to be the case of the null indefinite in Italian?[7] This is not a flaw in the proposal *per se*, but becomes problematic if the proposal is taken to support the assumption of DP in articleless languages (Progovać 1998, Pereltsvaig 2007, a. o.).

Finally, despite the underlying assumption that the proposal holds for Romance and Germanic, the parameter does not hold for other Romance and Germanic languages, which behave quite differently from Italian and English with respect to the possibility of inserting an article with proper names or with kind-referring nouns. For example, much work on Brasilian Portuguese (Schmitt & Munn 1999, Dobrovie-Sorin 2012, among many others) has shown that this Romance language is even more liberal than English in using bare nouns as kind-referring nominals as well as indefinites. On the opposite side, German displays overt definite articles in

[6] Cardinaletti (1998) and Cardinaletti & Starke (1999) take pronouns to be Ns moved to D. Longobardi (1994) claims that pronouns are directly merged in D. I discuss pronouns as determiners in §4.4.

[7] This seems to be the case in Mandarin and Cantonese indefinites, according to Cheng & Sybesma (1999), with a quite interesting distribution of classifiers in plural NEs. Unlike Bošković (2010), I believe that Cheng & Sybesma's analysis does not favor a bare NP-account, but is more in line with a DP-account.

some instances of kind-referring nominals (cf. Brugger 1994). The picture to be drawn is much more complicated than Longobardi predicts.

2.2.2. A Neo-Carlsonian Approach

Chierchia (1998a) focuses on determinerless NEs in argument position. Reviving Carlson's (1977) proposal, according to which NPs can be arguments in some languages, he proposes that languages vary in what they let NPs denote: in some languages NP denotes a predicate, but in other languages NP denotes a kind and a weak indefinite, and in other languages still, NP denotes referential expressions.

According to Chierchia, mass / count, definite / indefinite and argument / predicate interpretation is obtained in the semantic component by application of type shifters (most of which are non-overt, while some are overt, according to language-specific lexical properties). Type shifters have the property of turning elements from arguments into predicates or *vice versa*, from properties into kinds or *vice versa*, or from kinds into generalized quantifiers or *vice versa*. Chierchia therefore challenges the assumption of a universal DP category for argument nominals but, crucially, does not assume NP status for all arguments in all articleless languages, unlike the subsequent literature inspired by his work.

According to Chierchia's (1998a: 400) *Nominal Mapping Parameter* (28), UG attributes two binary features [±pred, ±arg] to NPs, thereby distinguishing three language types ([-pred, -arg] languages cannot exist):

(28) *The Nominal Mapping Parameter (NMP)*: N ⇒ [±pred, ±arg]
[–pred, +arg] every (lexical) noun is mass ⇒ Chinese

Mass / count languages

[+pred, +arg] bare arguments allowed
- articles ⇒ Germanic
- no article ⇒ Slavic

[+pred, –arg] bare arguments disallowed
- ∂ ⇒ Italian
- no ∂ ⇒ French

According to (28), in [-pred, +arg]-languages, all NPs are arguments and refer to kinds. This has the semantic consequence that all NPs have mass denotation and cannot be plural, as is the case of Chinese. The other two combinations yield languages that encode the mass / count distinction in syntax and can pluralize count nouns. The [+pred, +arg] type allows bare

NPs as arguments only in case of kind-referring expressions, while indefinite and referential arguments are DPs. This type divides into two subtypes: languages with articles, such as Germanic (which realize the ι-operator as the definite article, the existential operator in the singular as the indefinite article, and have a null existential operator in D for mass nouns and plural count nouns), and languages with no articles (no overt realization of the ι-operator or of the existential operator in D), such as most Slavic languages, and presumably Latin. Finally, languages of the [+pred, -arg]-type project a DP for all arguments. This type also divides into two subtypes: languages with a zero filler (∂) for the null existential operator like Italian (which allows for plural bare nouns only in governed positions, but also allows for the weak indefinite marker *dei* in all positions) and languages with only overt fillers for indefinite D: French *des*, Spanish *unos* and, we can add, Romanian *nişte*.

It is important to emphasize that Chierchia's framework predicts a pure NP-system only for languages without the mass / count distinction, like Chinese. Latin and Slavic languages are taken to have kind-referring and indefinite NPs, and definite DPs with a null D. In fact, Chierchia follows Longobardi and assumes N-to-D movement in Italian proper names. Like Longobardi, he makes no prediction about the internal structure of NEs in the three possible language types, and draws no correlation between the NE-internal word order, the positions of arguments in the clause, the (im)possibility of Left Branch Extraction (cf. §2.2.3 below), and the NP- or DP-type.

Chierchia's analysis makes the development of articles in all Romance languages look like a change from the [+pred, +arg] to the [+pred, -arg] type. But no claim is made as to the trigger of such a change. It would be intuitive to propose that Indo-European never was of the [-pred, +arg] type, since there is no reason to consider the mass / count distinction as an innovation. Thus, all the Indo-European languages that developed an article must have first turned from the Slavic subtype to the Germanic subtype remaining in the [+pred, +arg] type; and later on only some of them must have turned from the Germanic [+pred, +arg] type to the Romance [+pred, -arg] type.

The trigger of the type-internal change and / or of the later type-external change is not obvious. If it is the semantic weakening of a determiner (usually the distal demonstrative) and a consequent statistically higher presence of it in the input, one would expect kind-referring and indefinite expressions to remain articleless much longer than definite descriptions. Unfortunately there is no hint that this was the case. Furthermore, a satisfactory account along these lines would require

singling out a second trigger of the type-external change (from [+pred, +arg] to [+pred, -arg]). Given that Germanic-type languages display quite a different degree of richness in inflectional morphology (from very poor English to rather rich Icelandic), weakening of nominal inflection cannot be the trigger for the Romance / Germanic diversification.

2.2.3. The NP/DP Parameter

In several papers published or circulated over the last decade, Bošković (2005-2012) has formulated a number of generalizations to be derived by the assumption that articleless languages have no DP. Furthermore, in the spirit of a parallel between NEs and clauses, Bošković claims that lack of DP goes hand in hand with lack of TP, with consequences for sentential phenomena.

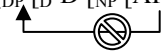
As regards intermediate phrases, Bošković (2005) follows an original proposal by Corver (1990) according to which in NP-languages, adjectives are stacked as adjuncts to NP. This is taken to derive the most striking property of articleless languages, known as Left Branch Extraction (henceforth LBE); namely, the possibility of extracting an adjective from its NE and placing it in a discontinuous position at the left of N:

(34) a. *Expensive he saw [~~expensive~~ cars]
b. Skupa je vidio [~~skupa~~ kola] (Serbo-Croatian)

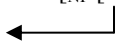
Bošković's (2008) proposal is based on three assumptions: (i) DP and NP are phases, and extraction from them must therefore take place through an intermediate movement to their Left Edge (according to the Phase Impenetrability Condition (PIC), cf. Chomsky (2000)). (ii) APs are adjoined to NP in articleless languages, while they are merged in hierarchically ordered functional specifiers in article languages. (iii) Movement to the Left Edge of a phase is subject to anti-locality, a principle that rules out the remerger of an element in an equidistant position (Grohmann 2003).

In DP-languages, PIC forces movement out of DP to take the intermediate step in SpecDP, which is however banned in (29a) by anti-locality (Grohmann 2003): a principle that prohibits movement to a "too near" position. This is not the case in NP-languages (29b), where APs are assumed to be adjoined to NP, thus not completely included in NP:

(29) a. ... [$_{DP}$ [$_{D'}$ D [$_{NP}$ [AP] N]]]



b. … [$_{NP}$ [AP] [$_{NP}$ N]]



The large number of predictions apparently give great strength to the proposal. However, none of them is a bidirectional conditional (if language *x* has / does not have an article, then it must / cannot have property *y*). On the contrary, they are all tendencies or possible features. This makes many of these generalizations impossible to falsify in or irrelevant to a number of languages, as I have argued in joint work with Rossella Iovino (cf. Giusti & Iovino 2011, forthcoming), based on Iovino's (2012) corpus of Latin complex NEs.

The properties in (30) are an incomplete list of such predictions, taken from Bošković & Gajewski (2011) and Bošković (2012) and reformulated here for coherence of exposition. (30a–e) are related to the missing DP, while (30f–h) are related to a missing TP, which would be the direct counterpart of a missing DP in the clause:

(30) a. Only articleless languages allow Left Branch Extraction.
b. Only articleless languages allow adjunct extraction from NEs.
c. In articleless languages D-like elements are adjectival in nature.
d. In articleless languages, transitive nominals with two genitives are not allowed.
e. Only articleless languages allow radical pro-drop.
f. Only articleless languages lack sequence of tenses.
g. Articleless languages disallow negative raising.
h. Only articleless languages allow long distance scrambling.

The weakest point in Bošković's proposal is that there is no single property in (30) uncontroversially related to one or the other language type, apart from the possibility of LBE, which is predicted to be possible only in NP-languages.

Let us for a moment recapitulate the argument. The possibility of extraction of adjectives is derived by the structure given in (29b), which crucially hinges on the fact that there is no intermediate phrase between the AP adjunct and the Left Edge of the NE.[8] Zlatić (1997) notes that in

[8] In answer to Pereltsvaig's (2007) criticism, however, Bošković (2008) argues that DP-less structures do not necessarily imply lack of functional structure above NP

Serbo-Croatian adjectival elements, including demonstratives, quantifiers and possessives can extract, as in (31a), whereas genitive complements of N, first merged inside NP, such as *ovog studenta* in (31b), cannot. Following Zlatić, Bošković proposes that only adjuncts can extract because they are adjoined to NP, whereas genitive complements cannot because NP is a phase. The same rationale is adopted to rule out extraction of an AP from the genitive possessor, as in (32b):

(31) a. Ova / Neka / Jovanova je vidio [~~ova / neka / jovanova~~ kola]
this / some / John's Aux 3P.SG see car
"He saw HIS / SOME / JOHN'S car."
b. *Ovog studenta sam pronašla [$_{NP}$ knjigu [$_{NP}$ ~~ovog studenta~~]]
this student.GEN am found book

(32) a. On cijeni [$_{NP}$ prijatelje [$_{NP}$ pametnih [studenata]]]
he appreciates friends smart students
"He appreciates friends of smart students."
b. *Pametnih on cijeni [$_{NP}$ [$_{NP}$ prijatelje [$_{NP}$ ~~pametnih~~ [studenata]]]

According to Zlatić, the AP belonging to the genitive NP in (32b) is blocked by the higher NP-boundary and not by the genitive NP-boundary to which it is adjoined. DP-languages do not allow extraction of a demonstrative (33a) but they do allow genitive extraction, because the SpecDP of the superordinate NE serves as an escape hatch and, consequently, anti-locality does not apply:

(33) a. *Questa / Una ha visto [~~questa / una~~ macchina]
this / una [(s)he] has seen car
" She/He saw THIS CAR."
b. Di quale studente hai trovato [$_{DP}$ [~~di quale studente~~] il [$_{NP}$ libro [$_{DP}$ ~~di quale studente~~]]?
of which student.GEN. did you fine the book
"Which student's book did you find?"

The NP/DP-hypothesis therefore predicts that possessor extraction is possible in DP-languages and impossible in NP-languages. It also predicts that LBE is possible in NP-languages and impossible in DP-languages. Finally it predicts that subextraction from a genitive possessor is impossible in both.

(where adjectives could be merged). The issue of the internal functional structure of the NE is therefore not completely clear, as will be discussed shortly.

But Giusti & Iovino (2011, forthcoming) show that Latin, despite lack of articles and possible adjective extraction (34a), can extract a complete genitive argument (34b), as well as an adjective belonging to it (34c):

(34) a. maximam habet [~~maximam~~ opinionem [virtutis]]
greatest.ACC.F.SG [he]-has opinion.ACC.F.SG virtue.GEN.F.SG
"He has the greatest consideration of Virtue." (Caes. *Gall*. 7,59,5)

b. [summi oratoris] habuit [$_{NP}$ laudem [$_{NP}$ ~~summi oratoris~~]]
great.GEN.M.SG orator.GEN.M.SG [he]-had reputation.ACC.F.SG
"He had the reputation of [bein] a great orator." (Cic. *Brut*. 110, 33, 12)

c. Quorum in consilio [...] pristinae
whose.GEN.M.PL in decision.ABL.NT.SG […] old.GEN.F.SG
residere [$_{NP}$ [$_{NP}$ ~~pristinae~~ virtutis] memoria] videtur
stay.INF.PRES virtue.GEN.F.SG memory.NOM.F.SG seems
"The memory of the old virtue seems reflected in their decision."
(Caes. *Gall*. 7,77,4)

Giusti & Iovino (2011, forthcoming) then argue that this paradox can be solved by proposing that Latin is a DP-language which overcomes anti-locality because its DP is split in two layers. The split DP provides an escape hatch for any kind of element, either AP or genitive DP. In (35) I label the heads of the split DP as Case and Num, as I have proposed in §1.3.1.(104). Case is bundled with Contrast:

(35) a. ... [$_{Case/KonP}$ AP [$_{NumP}$ Num [$_{NP}$ [AP] N]]]

b. ... [$_{Case/KonP}$ DP [$_{NumP}$ Num [$_{NP}$ [DP$_{GEN}$] N]]]

The rest of this section focuses on other properties attributed to NP-languages by Bošković that seem to hold in Italian or English, two DP-languages that can be taken to represent Chierchia's [+pred, -arg] and [+pred, +arg] types.

The assumption that determiners are adjectives in articleless languages (30c) is consequent to the assumption of lack of DP. There would in fact be no other way to merge a determiner with N. The support for the adjectival nature of determiners, however, reduces to the adjectival morphology of demonstratives, quantifiers, and possessives (36), to the possibility for possessives to be predicates (37a), and to the possibility for these elements to cooccur (37b):

(36) a. tim nekim / mnogim mladim djevojkama (FEM.PL.INSTR.)
these some / many young boys
b. tih nekih / mnogih mladih djevojaka (FEM.PL.GEN)
these some / many young girls

(37) a. Ova knjiga je moja.
this book is my
b. ta moja slika
the my picture

These properties can only be stated as one-way generalizations: "If DP is missing then determiners must be adjectives". The opposite generalization: "If DP is present then determiners are not adjectives" does not hold. Italian demonstratives, quantifiers, and possessives have exactly the same morpho-syntactic properties as adjectives. In (38a) we observe the full adjectival inflection of the demonstrative *queste* and of quantifiers *alcune / poche* in Italian. Full inflection is irrelevant as to what cooccurs with a determiner. In fact, *alcune* behaves differently from *poche* in the word order, but not in inflection. The English counterpart in (38b) is the perfect mirror image of Italian in that quantity adjectives do not agree, and yet only one of them, *few*, but not the other, *some*, can cooccur with a demonstrative. Thus, in (38) we have evidence to claim that some quantifiers can be adjectives in DP-languages, while others cannot, irrespective of their inflectional paradigms:

(38) a. queste poche ragazze / *queste alcune ragazze
b. these few girls / *these some girls
c. tutte queste poche ragazze
d. all these few girls

Examples (38c–d) also show that there are two series of quantity items: quantifiers like *all* appear at the left of the NE, higher than the determiner; whereas quantity adjectives like *few* can appear after the determiner (cf. Cardinaletti & Giusti 1992, 2006, and §4.1 below).

In (39a), we observe that the possessive adjective can be a predicate in Italian, a DP-language with an adjectival possessor (cf. *il mio libro*, *il libro mio*). In Italian, it is therefore possible to differentiate the adjectival predicative *mio* from the nominal predicate *il mio*, where the possessor is preceded by the article. In (39b), we see that the identificational construction with the pronominal predicate is the only possibility in English, a DP-language with a possessive adjective that only has "determiner status":

(39) a. Questo libro è il mio / mio.
b. This book is mine / *my.

If we compare Serbo-Croatian (37) and Italian (39a) with English (39b), we can formulate the generalization that a possessive can have adjectival status independently of the presence or absence of an overt article in the language. In fact, Italian has the same pattern as Serbo-Croatian in this respect. Note that lack of articles only makes (37a) ambiguous between predicational and identificational interpretation.

The possible categorial ambiguity or the straight adjectival status of determiner-like elements is therefore no evidence for the NP-status of a language, as Bošković (2012) also acknowledges. But if the adjectival status of demonstratives, possessives, and quantifiers is forced by lack of the DP in a given language, why should DP-languages have adjectival determiners at all? Why is it not the case that when a child has compelling evidence for a DP in her language (supposedly given by enough exposure to definite and indefinite articles), she immediately attributes the status of determiner to all of these elements? Or *vice versa*, if certain elements can be adjectival in nature, why are they not of the same kind in all languages? And ultimately, what are articles for, if they can be dispensed with in some languages but not in others? These issues are not really addressed in Bošković's work.

Anticipating what I am going to propose in Chapter 3, if articles are Case morphology realized as a scattered head in the extended projection of the NE, we can derive the fact that languages with rich case morphology on N on the one side, and languages with totally missing morphology of N on the other side, do not have articles.

Another property that should distinguish NP- from DP-languages is (30d): "In languages without articles, transitive nominals with two genitives are not allowed." This point is taken from Willim (2000), who claims that the contrast between German or Italian on the one hand and Polish or Czech on the other is due to the fact that DP-languages assign two different structural genitives (presumably one in each phase, taking NP to be an independent phase) irrespectively of whether they are realized by case morphology or by a PP.

German and Italian can have two genitive arguments (40). Polish and Czech can only have one (41). The second argument must receive oblique Case or be embedded in a preposition equivalent to *by* (42):

(40) a. Kolumbus' Entdeckung Amerikas (German)
Columbus' discovery of America
b. ?la scoperta dell'America di Cristoforo Colombo (Italian)
the discovery of America of C.C.

(41) a. *odkrycie Ameryki Kolumba (Polish)
discovery America.GEN Columbus.GEN
b. *zničení Říma barbarů (Czech)
destruction Rome.GEN Barbarians.GEN

(42) a. odkrycie Ameryki przez Kolumba (Polish)
discovery America.GEN by Columbus
b. zničení Říma barbary (Czech)
destruction Rome.GEN Barbarians.INSTR

However, the difference between NP- and DP-languages looks less dramatic if we consider that in Italian, two PPs also give doubtful results, as will be discussed in detail in §3.1. For example, even if Italian runs parallel to German as regards *Columbus' discovery of America* (40b), it runs parallel to Czech as regards *the Barbarians' invasion of Rome* (43), where the two arguments are possible only if the Agent is introduced by the equivalent of a *by* phrase, which in Italian is a complex preposition (probably formed by a functional N *parte*):

(43) a. l'invasione di Roma ?*(dei barbari)
the invasion of Rome of the Barbarians
b. l'invasione dei barbari ?*(di Roma)
the invasion of the Barbarians of Rome
c. l'invasione di Roma da parte dei barbari
the invasion of Rome from part of the barbarians

The data in (43) suggest that the restriction to one structural Case, whether realized as genitive inflection or as a PP, is not just limited to NP-languages. It must be independent from DP structure. Two *di*-PPs in a row are not very good in Italian, and are found only if the first PP somehow forms a compound with the noun, as is the case of *la scoperta dell'America*. But if the higher possessor is realized as a possessive adjective or a genitive pronoun, the second argument realized as a *di*-PP becomes perfectly grammatical, as in (44):

(44) a. la sua scoperta dell'America
the his discovery of America
b. la loro invasione di Roma
the their invasion of Rome

Note that in English the singular form *his* is clearly a form of genitive pronoun (*-s* on *his* being the ending of a Saxon genitive), as well as *her* and the plural form *their* whose *-r* marks genitive in old Norse. On the contrary, Italian *loro* is an oblique pronoun (homophonous to weak dative *loro* discussed by Cardinaletti 1994, 1998) and *sua* clearly is an adjective which concords in Gender and Number with the head noun. In §3.1, I claim that in Italian all possessors entertain an Agree relation with the higher portion of the nominal structure (not DP but the immediately lower projection); while PPs are too heavy, pronominal possessives are pied-piped to the specifier of such a phrase irrespective of whether they are adjectival or purely pronominal. Thus, the Italian data suggest that two identical cases in a row are avoided as a form of haplology.

Another substantial counterexample to (30d) is provided by Latin (Giusti & Iovino 2011, forthcoming). It is generally noted that Latin can have two genitive possessors, *pace* Willim and Bošković.[9] In (45a) *Helvetiorum* is the Agent and *populi Romani* is the Patient of *iniuriis*. In (45b) *eius* is the Agent and *Gavini* is the Patient of *defensionem*. The two cases are also representative of the relative order with subject genitive preceding object genitive:

(45) a. veteribus Helvetiorum iniuriis
old.ABL.F.PL. Helvetii.GEN.PL offence.ABL.F.PL.
populi Romani
people.GEN.M.SG Roman.GEN.M.SG.
"the old offences by the Helvetii to the Roman people"
(Caes. *Gall*. 1,30,2, from Giusti & Oniga 2007)

b. repentinam [$_{NP}$ [$_{DP}$ eius] [$_{N'}$ [$_{N}$ defensionem] [$_{DP}$ Gabini]]
sudden.ACC his defence.ACC Gabinius. GEN
"his sudden defence of Gabinius"
(Cic. *fam*. 1,9,20, from Ledgeway 2012: 207)

[9] See Devine & Stephens (2006), Giusti & Oniga (2007), Gianollo (2007), Ledgeway (2012).

The data above highlight the unexpected resemblance of Italian with Serbo-Croatian on one side and English with German and Latin on the other side.

What seems to be different is therefore not the presence or absence of a DP-projection (signalled by the overt realization of the article) but the possibility to have a prenominal genitive (cf. German in (40a), and its English gloss). The prenominal genitive in Latin can follow (45) or precede (46) a prenominal adjective:

(46) a. miserorum fidelem defensorem
miserable.GEN.M.PL true.ACC.M.SG defender.ACC.M.SG
"a true defender of the down and out" (Cic. *Mur.* 50,26,16)
b. in hoc orbis terrarum vetere famulatu
in this.ABL.M.SG world.GEN.M.SG old.ABL.M.SG slavery.ABL.M.SG
"in this old slavery of the world" (Tac. *Agr*. 31,2)

If the genitive can appear lower or higher than a prenominal adjective, it is reasonable to assume that it is assigned structurally, involving Agree in the NE, cf. §3.1. In fact, even in the presence of a single genitive there is a quantitative preference for prenominal subject genitive and postnominal object or unaccusative subject genitive (cf. the references in fn. 9).

Furthermore, Latin also displays genitive of quantification, as exemplified with a quantifier in (47a) and with a superlative adjective in (47b), which is taken by Bošković (2012) as evidence for the structural nature of genitive in a language.

(47) a. multi praesentium militum (Svet. *Caes*. 12, 2, 281,15)
many.NOM.M.PL. present.GEN.M.PL. soldier.GEN.M.PL.
"many of the soldiers (who were) present"
b. sororem suam, festivissimam *omnium puellarum*, quam ...
"his sister, the nicest of all girls, whom ..."
(Sen. *apocol*. 8, 2,12,161)

The last property that concerns the NE is (30e): "Only languages without articles may allow radical pro-drop". Radical pro-drop is defined as the "productive argumental pro-drop of both subjects and objects in the absence of rich verbal agreement". This is related by Bošković (2012) to the fact that only NP-languages may lack Number. The argument goes as follows. First, a condition on D is imposed such that Number on D must be overt (either on D or on N, subject to variation). This condition derives the possibility for languages missing D to also miss Number. In null

pronouns Number is obviously not realized on either N or D, and for this reason radical pro-drop can only go with articleless languages (which do not impose Number to be realized). I find this motivation rather problematic. It predicts the existence of four types of languages: article languages with Number on D, article languages with Number on N, articleless languages with Number on N, articleless languages with no Number at all. First of all, it is not clear whether semantic Number is represented as a non-overt feature in (some of) the languages with no Number. Second, it is not clear why languages without article but with interpretable Number on N should allow radical pro-drop.

The properties listed in (30f–h) are reduced to lack of T in languages that lack D. Sequence of tenses and negative raising are taken by Bošković (2012) to be possible only when the two Ts are in a special relation (anaphoric relation of the lower T in sequence of tenses, quantifier–variable relation parallel to definite descriptions in negative raising[10]). If the low clause has no T, such special relation cannot be instantiated.

Latin again provides counterexamples to this claim. First of all, the famous *consecutio temporum* rule, which has been a nightmare for students of Latin, straightforwardly defines Latin as having the first grammatical tradition formalizing the very notion of sequence of tenses. Second, verbs of opinion such as *puto* "believe" take an infinitival that can but does not have to display negative raising, suggesting that the infinitival clause has an independent T that may function as a variable (48a), exactly as the finite clause in English, and differently from Russian (49):

(48) a. Pars quare sit, non puto te
part.NOM.F.SG why be. 3.SG.SUBJ not I-think you.ACC
interrogaturum [esse]
interrogate.INF.FUT
"I do not think that you will ask [me] why [the Earth] is part [of the world]" (Sen. *nat*. 2,5,1,57,82)

b. Putas non fieri quod volo
you-think not happen.INF.PRES what.ACC.NT.SG I-want
"You think that what I want will not happen" (Sen. *contr*. 1,5,6,38,20)

(49) a. John didn't believe that Mary would leave until tomorrow

b. *Ivan ne veril, čto Marija uedet až do zavtrašnego dnja

[10] Negative raising consists in placing on the matrix verb a negation that is interpreted in the embedded clause, something like "I don't believe it's true" which can be interpreted as "I believe it is not true".

The Latin T-system is very complex with different moods and tenses, with present and future in the imperative Mood, and present, past, and future in the infinitive. Even if these features are bundled with V, it would be incorrect to claim that T is only on V, as implied by the assumption that NP-languages lack the functional head T, *tout court*. In fact, Latin has a form of passive auxiliary ("be") with full Tense and Person inflection, and displays a free order of V, including some clear V/2 structure, that suggest that V is realized in functional heads.

It is not completely clear to me how the actual analysis of long distance scrambling (30f) should be reduced to lack of T. Bošković (2005, 2008, 2012) is not specific about this. In a parallel fashion to the analysis of LBE, I suppose that lack of TP should involve lack of a phase, which in turn results in the possibility for arguments and adjuncts of the low clause to be scrambled to the middle field of the higher clause. Whether this is really the case in all null article languages is such a complex matter that it cannot be discussed in this volume, which focuses on NEs (for a discussion cf. Bošković & Takahashi 1998, Bošković 2012, Baylin 2001). I simply remark on some theoretical consequences considered by Bošković (2012). Lack of TP should bring with it lack of subject–object asymmetries and lack of overt expletives. These properties are typical of pro-drop languages; they are therefore also present in Romance DP-languages.

To conclude, I hope to have shown that taking the absence of a vocabulary item that realizes the head of a functional projection (D, T, or Num) as implying the total absence of such a projection in a language raises more problems than it solves, both in a language-internal perspective and cross-linguistically. In general, it is not compatible with Chomsky's (1995) idea that "Parametric variation is attributable to differences in the formal features of functional heads as specified in the lexicon." If the child starts with no functional heads, and if functional heads in a language can be null, how can the child fix the parameters? For example, how can the child acquire the adjectival vs. determiner status of demonstratives in Serbo-Croatian vs. Italian, if they have basically the same semantics (deictic, ostensive, anaphoric reference), the same distribution (always leftmost in the NE), the same inflectional morphology (Concord for all the features of N), and if the child has not yet established whether her language has a DP or not? How could languages develop a DP layer, if this projection does not exist in the initial stage? Why is it the case that all Romance varieties developed a DP if Latin, even at its latest stages, never displayed a definite article?

There are, however, minimalistic issues that call for the application of Ockham's razor in the use of functional heads, and there are empirical tendencies to be accounted for. I will try to sketch a unifying hypothesis in the next section to be developed in the next chapter.

2.3. Towards a Unifying Account

As is apparent from the discussion so far, the mainstream analyses of the (definite) article in the generative tradition are based on three independent assumptions (also highlighted in Lyons 1999): (i) the extension of the Russellian analysis of definite descriptions as quantified nominal expressions to all determiners; (ii) the DP-hypothesis as originally formulated by Abney (1987) that locates all determiners in the functional head D at the edge of the NE; (iii) a traditional notion of "determiner" which includes not only articles, demonstratives, and quantifiers, but also possessives and pronouns, grounded on the complementary distribution of these elements in some languages / constructions (for a complete discussion cf. Alexiadou, Haegeman & Stavrou 2007).

The interaction of these assumptions makes a number of false predictions that are well known in the literature, but are treated separately with more or less *ad hoc* solutions. They can be divided into two large families.

The first prediction is that the definite article should have the same semantics at least in the languages that have such a vocabulary item, as other determiners generally do. This has been shown in §2.2 not to hold across Romance and Germanic in which reference to kind may or may not require the insertion of a definite article. In Chapters 4–6 we will observe many cases of article insertion partially or totally unrelated to the interpretation of the NE.

Matthewson (1998: 25) observes that articles do not have a unique semantic value across languages, so that definiteness is only one of the possible interpretations, as shown by the list in (50):

(50) a. definiteness English
b. specificity Turkish (Enç 1991), Polynesian (Chung 1978)
c. visibility Bella Coola (Davis and Saunders 1975)
d. proximity St'at'imcets (Van Eijik 1997)

Based on this evidence, she proposes that different languages assign different interpretations to the occupant of D. According to this proposal, the semantics of articles is subject to crosslinguistic variation. But it is expected that it is consistent at least in one and the same language,

contrary to what has been observed above about expletive determiners. Matthewson's solution, therefore, does not accommodate the facts observed in §2.2 and other facts to be discussed in Chapters 4–6.

The second prediction made by the interaction of the three assumptions above and the ban on vacuous quantification is that only one determiner should be present in the nominal structure. This does not hold in languages with and without articles, where determiners cooccur with quantifiers:

(51) a. tutti i ragazzi (Italian)
b. kol ha-yeladim (Hebrew)
c. all (the) boys (English)
d. tákem i smelhmúlhats-a (St'at'imcets)
all art.PL woman(PL).art
'all the women'

On the basis of St'at'imcets (51d), Matthewson (2001) claims that quantification takes place in two steps. "The first is the creation of a DP of type <e>; the second involves quantification over parts of the plural individual denoted by the DP." If quantifiers select their complement as regards definiteness but not for proximity, Matthewson predicts that in languages like St'at'imcets, all quantifiers select a DP with an overt determiner, while in languages like English this only takes place with universal quantifiers that are compatible with definite DPs. This is in fact what was independently argued for in Giusti (1991), Cardinaletti & Giusti (1992, 2006) to account for data such as (51a–c).

The distinction between determiners constructing a DP and quantifiers taking DP as their complement is not, however, sufficient to capture all the cooccurrences found across languages. For example, demonstratives and possessives can cooccur with one another as already seen in §2.2.3. Demonstratives can cooccur with an article. In some languages they must, as we see in (52) and will further observe in Chapters 4–6:

(52) a. băiatul acesta N-art Dem (Romanian)
b. el noi aquest art N Dem (Catalan)
c. an fear seo art N Dem (Irish)
d. ez a fiú Dem art N (Hungarian)
e. afto to pedì Dem art N (Greek)
f. to pedì afto art N Dem (Greek)
"this boy"

Related to this, but different from it, is the observation that multiple occurrences of an article are found in some languages, as is the case of the free standing and enclitic definite article in some Scandinavian varieties (53a), of the enclitic definite article in Arvantovlaxika (a Romanian dialect spoken in Greek Macedonia, cf. Campos 2005), of the proclitic articles of Hebrew, which appear on every adjective (53c) (cf. Siloni 1997, Shlonsky 2003, Danon 2010):

(53) a.	det store huset "the big house"	art A N-art	(Norwegian / Swedish)
b.	pul'il'i ñitsl'i birds-the these small-the "the small birds"	N-art A-art	(Arvantovlaxika)
c.	ha-dira ha-gdola the-apartment the-big "the big apartment"	art-N art-A	(Hebrew)

We will observe in the following chapters that the presence of an article, independently of its free standing, proclitic, or enclitic form, is often unrelated to the interpretation of the NE and is due to low level parameters related to inflectional morphology and its realization at the syntactic level.

This volume proposes a minimalist approach to the Left Edge of the NE that is compatible with the Russellian analysis but, crucially, does not imply (i) that the definite operator or other quantifiers are functional heads of the NE in syntax; nor (ii) that the highest functional head of the NE is labelled as D (also considering the fact that labels have a quite different status in minimalism (cf. Chomsky 2013)); nor (iii) that determiners constitute a homogeneous lexical category.

Chapter 3 provides a novel analysis of feature sharing. *Contra* recent proposals (cf. Baker 2008), I claim that not all instances of feature sharing are instances of **Agreement** in the sense of Chomsky (1995). On the contrary, both the Specifier–Head relation and the relation between a lexical head and a functional head may result in the sharing of features on one or both the constituents involved, without having recourse to the complex Agree relation, which involves c-command of a goal by a probe. I will call the Specifier–Head relation **Concord**. An adjective specifies the noun and concords with the (functional features of the) noun. This relation is the opposite of Agree where the predicate searches for the functional feature of an argument. I will call the merger of functional heads **Projection**. Projection builds the spine of the extended projection, in the sense of Grimshaw (1991). Whether one or more of the extended heads are

realized depends on the interaction of general principles of Economy and micro-parameters regarding the paradigm of the lexical head on the one hand and of the lexical head of the modifier in Spec on the other hand.

The subsequent chapters apply the proposal that articles are purely inflectional morphology to a number of empirical areas. Chapter 4 compares articles with other determiners to show that the functional features displayed by articles are noun morphology (e.g., Case, Number and Gender, in European languages) and that articles do not have inherent semantic features. This makes them different from all other determiners, which are in turn different from each other. Quantifiers belong to different categories, and none of them are merged at the Left Edge of the NE. Demonstratives, pronouns, and proper names are indexicals that combine with N and ultimately merge at the Left Edge. Possessives are independent phases and contribute to the specification of the referent of the NE by agreeing with it and remerging their Person features (or entirely) as the specifier of the highest non-phasal projection. Chapter 5 shows how the theory of Concord and Projection can account for four apparently unrelated phenomena such as the enclitic article as a pronominalizer in Romanian; the proclitic article in different "expletive" functions in Italian; the multiple occurrence of free standing and enclitic articles in Scandinavian "double definiteness"; and the insertion of articles as oblique Case markers in German. Chapter 6 represents the other side of the coin, showing how Concord and Projection interact to produce three apparently unrelated effects of adjectival inflection: namely, adjectival articles in Balkan languages, the special inflection on prenominal *quel* ("that") and *bel* ("nice") in Italian, and weak and strong adjectival declension in German.

CHAPTER THREE

ON FEATURE SHARING AND FEATURE SPREADING

Feature sharing is a pervasive property of natural languages and is the major source of redundancy (Barlow & Ferguson 1998). As discussed at length in §1.2 above, it is problematic in the minimalist approach which aims to reduce language to a conceptually necessary system (cf. Chomsky 2005), obeying principles of Economy and Full Interpretation. For this reason, it is one of the main topics of research in the minimalist program.

In this chapter[1] I propose that feature sharing results from the application of Merge. This is not very different from what is proposed by Pesetsky & Torrego (2004); but unlike them and many others (notably Bosque & Picallo 1996, Carstens 2000, and Baker 2008), I claim that it should not be unified under one and the same process: Agreement, triggered by a probe seeking a goal, each having an uninterpretable feature to be valued and deleted. I propose instead that there are at least two other types of feature sharing that I call Concord and Projection.

Selection and Modification are two basic relations in predicate logic (cf. §2.1). I propose to restrict application of Merge to the satisfaction of these two semantic relations:

(1) Merge operates to satisfy Selection or Modification.

In (2), Selection merges a lexical head (X or K), specified in the lexicon for selectional features,[2] with a fully fledged constituent, or "complete

[1] This chapter is a reelaboration of Giusti (2008) and two working papers: Giusti (2009, 2011). The proposal of Projection put forth here is similar in some respects to accounts recently proposed by other linguists to rescue head movement, cf. Suranyi (2005), Georgi & Müller (2010), Roberts (2010), and to Adger's (2013) notion of self-projection. For reasons of space, and because this proposal has been developed independently of those accounts, I do not engage in a comparison with them, limiting my observations to footnotes when relevant.

[2] I remain agnostic here as to how these features are represented in the lexicon.

projection[3]" (KP and WP respectively) that can satisfy such selectional features. Selection is satisfied by the head–complement relation as well as the Spec–Head relation according to the argument structure of the head.[4] Thus LP could be the external argument of K. Modification merges an extended projection (GP, HP) as a modifier of a head K. Modifiers are optional. Selection and Modification are asymmetric binary relations between a head and an extended projection (argument or modifier). In order for Selection or Modification to take place between a head and all of its arguments and modifiers, I propose that the head remerges as many times as needed (one for each argument or modifier). Projection remerges a head (e.g., K) bundled with the (interpretable and uninterpretable, valued and unvalued) features associated with it. Some features in the bundle will have to be checked or valued at a given point in the derivation. Projection is also asymmetric in that it remerges a head with a (lower level) projection of itself, limiting merger of heads to the structural environment of a single extended projection:[5]

(2) $X\,[_{KP}\,(GP)\,[_{K'}\,K\,[_{KP}\,(HP)\,[_{K'}K\,[_{KP}\,LP\,[_{K'}K\,[WP]]]]]]]$

Agreement, Concord, and Projection have a common core: namely, the presence of uninterpretable features. But they crucially differ in many respects.

Agreement is the relation between an argument and the head selecting it. Both have an uninterpretable feature. Concord is the relation between a modifier extended projection and a modified head. In this case, only the modifier has uninterpretable features to be deleted. Projection is the process that builds extended projections remerging the head bundled with the interpretable and uninterpretable features associated to it. The features of the head are present at all points of the remerger operation. Agreement results in Case assignment (valuation of a feature) to the goal and in checking *u*φ-features of the probe by the goal. Only Agreement has the symmetric property of satisfying an uninterpretable feature of the probe

[3] Similar but not identical to the notion of "perfect projection" in Grimshaw (1991).

[4] It would be interesting to further formalize the special status of the head–complement relation that is limited to internal arguments. Some recent accounts (Cinque class lectures 2013) claim that such a relation does not hold. My proposal has nothing to contribute to this debate at this stage.

[5] In this frame, roll-up movement can be considered as a particular kind of projection, the portion of structure created by previous applications of projection. I will leave the actual implementation of this for future work.

(e.g., *u*φ on T) and of the goal (Case, namely *u*T on D, according to Pesetsky & Torrego 2001, 2004). I will claim that this is the only process that involves a probe c-commanding a goal.

Concord is the transfer of features of the head onto a first-merged specifier and does not involve a c-commanding probe. These features do not involve Person, differently from the φ-feature involved in Agreement. Furthermore, in the languages where this is morphologically detectable, Gender is involved in Concord, while it is not relevant to Agreement.

Projection does not involve a probe–goal relation and the apparent feature sharing is the result of a scattered realization of the bundle of features of the head. I follow Giorgi & Pianesi (1997) in assuming that functional features are ordered hierarchically by the *Universal Ordering Constraint*. The hierarchy is not violated if two or more ordered features are represented in one and the same head, as implied in the *Feature Scattering Principle* (Giorgi & Pianesi 1997:14–16):

(3) a. **Universal Ordering Constraint**
Features are ordered so that given $F_1 > F_2$, the checking of F_1 precedes the checking of F_2.
b. **Feature Scattering Principle**
Each feature can head a projection

Giorgi and Pianesi's (1997) proposal dispenses with empty (or inert) functional heads and specifiers. A head is projected only if needed, e.g., in order to extend the projection, otherwise more features can be bundled in one and the same head provided that they do not violate the hierarchy. The projection extends as much as needed, merging each specifier present in the numeration with the head, according to the hierarchy of modification.

This chapter aims to reconcile general issues regarding phrase structure, such as the motivation for uninterpretable features, the question whether feature-sharing is the result of a single or multiple operations, the (dis)advantages of assuming or eliminating head movement, the status of the hierarchies investigated by cartographic approaches, and the nature of extended projections and functional categories. All these issues have been on the agenda in recent years and have until now received independent treatments.[6] The ambition here is to give a unified answer to (some of) them, grounded in a principled theory of Merge as in (1).

[6] Reasons of space prevent me from doing justice to the literature, which obviously deserves a more thorough discussion than I am providing here.

A crucial part of this proposal is the concept of head as a bundle of features (cf. Matushansky 2006) whose hierarchy is given by UG (Giorgi & Pianesi 1997) and whose realization is acquired through exposure to the inflectional paradigm of vocabulary items. In this view, the notion of paradigm becomes crucial. In one and the same language, the form of paradigms certainly shares many properties, but at the same time leaves space for idiosyncratic properties of individual (classes of) items. This novel notion of paradigm is taken to include not only the traditional forms of single words but also and crucially the free morphemes that realize their extended projection, which are taken in this proposal to be part of the bundle and the (partial) realization of a scattered head.

In §3.1, I review the general properties of Agreement in the minimalist framework and claim that it should be restricted to argument selection. Then, I show that arguments of N are assigned Genitive Case through Agreement. In §3.2, I argue that modifiers do not agree (but only concord) with N and show that all the differences found with respect to arguments are related to the lack of a probe–goal configuration, thereby supporting the proposal that Concord takes place in a Spec–Head configuration, differently from Agreement where the Spec–Head configuration is the consequence of attraction of the features of the goal into the specifier of the probe. In §3.3, I introduce the notion of Projection. I claim that head movement is an effect of internal merger of a head bundled with all its interpretable and uninterpretable features. I claim that an article is a segment of a scattered N, bundled with Case, which is the highest feature in the nominal hierarchy. Other features such as Number or Gender may redundantly appear on this segment, as well as on other segments of the scattered N.

3.1. Argument Selection and Agreement

In §1.1.2, I showed that Case, expletives, and at least one instance of feature sharing, namely *u*φ on T, should be treated as a unified phenomenon: namely, the apparent necessity for T to copy the Person features of the subject and delete its *u*φ. Predicate logic requires not only that the sentence have a given Time reference, but also that all the arguments of the predicate, including the subject, be existent at the given time T. Only if the stated existence holds at T can the proposition be valued as true or false. From this, it can be concluded that Case is the morpho-syntactic counterpart of the semantic requirement to anchor the referential index of any nominal argument to the temporal index of the

clause.[7] If this is on the right track, we no longer face the problem created by Case as being the only purely uninterpretable feature, with no interpretable counterpart.

The proposal to analyse Case as *u*T has been put forth by Pesetsky & Torrego (2001, 2004, 2007) in different papers that aimed to explain the distribution of DP, PP, and CP in the complement of Vs, As, and Ns. The motivation and the empirical support for their proposal are independent from mine, which aims to derive in a unified way the subject requirement imposed on clauses and the Case requirement imposed on NEs.

Pesetsky & Torrego (2001) adopt Brody's (1997) Thesis of Radical Interpretability, here given in (4), as a more refined version of Economy and Full Interpretation:

(4) **Thesis of Radical Interpretability** (Brody 1997)
Each feature must receive a semantic interpretation in some syntactic location.

According to (4), only one instance of a feature can be interpreted, other instances should not. In this perspective, redundancy is not a problem provided that it is related to the spread of an interpretable feature. Thus, each *u*F must be checked against an *i*F. Furthermore, more than one instance of the same *u*F or *i*F can be merged provided that in the final computation, one and only one instance of *u*F is valued and deleted against an *i*F and one and only one instance of *i*F is interpreted.

According to general assumptions in the minimalist framework, Agree is the relation between a c-commanding head with an uninterpretable feature that acts as a probe seeking for an element in its c-command domain specified with an interpretable counterpart of it. The classical example is finite Tense seeking for the φ-features of the highest argument of vP,[8] as in (5). Tense is the highest feature of a number of functional features in the clause, it is therefore not immediately adjacent to vP. For reasons of simplicity I have omitted intermediate projections, as indicated by [...].[9]

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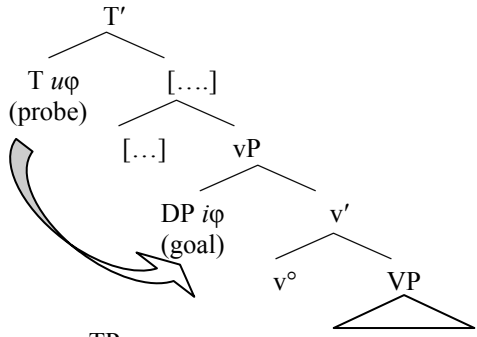
[7] The Time reference of subordinate clauses is anchored to the temporal reference of the main clause, as studied in detail in much of the generative literature inspired by Reichenbach (1947). Cf. among many others Giorgi & Pianesi (1997).

[8] The proposal of a v-head is not dissimilar to the remerger of V presented in §1.1.3 above.

[9] This makes the structure obedient to general anti-locality requirements (Grohmann 2003), if they are to be considered valid.

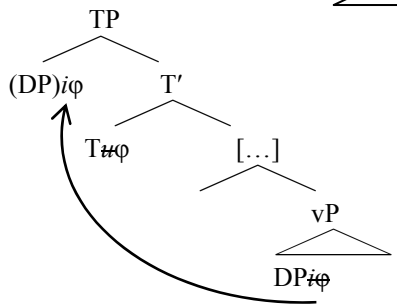
The Agree relation has a symmetric component: the targeted DP is assumed by Chomsky (1995) to have a Case feature to be assigned "in exchange". Both uninterpretable features of the probe and of the goal are satisfied by the Agree relation in (5a). Remerge of the *i*φ of the subject to SpecTP values and deletes *u*φ on T in (5b). Whether the whole DP is pied-piped or not depends on the "strength" of the probe and / or on the "heaviness" of the goal:

(5) a.



"Agreement"

b.



"Remerge[10]"

Pesetsky & Torrego (2004) propose that Nominative Case is *u*T probed by interpretable T_s, namely the Tense feature associated to the clause (targeting the subject), while Accusative is *u*T probed by T_o, namely a Tense associated to the lower part of the VP (between vP and VP), targeting the object. Merger of a T_o is a constitutional part of V. They justify the assumption of two Ts in the same clausal predicate by taking the case of telic verbs, e.g., *read*, whose meaning involves two sub-events: namely, the process (a predicate with an Agent argument, the reader) and

[10] XP-movement is therefore Remerge. In the discussion the terms Movement and Remerger are used as synonyms.

the completion of the process (a predicate with an additional argument, i.e., the thing being read). This is not different from the remerger of V proposed in §1.3.1 above. Following Hale & Keyser (1993) and Chomsky (1995, ch. 4), they label the higher predicate assigning the Agent role *v*; and the lower predicate V, obtaining the structure in (6), where *v* and T are bundled in a single head:[11]

(6) **Verbal predication structure**
SUBJ T_s [$_{vP}$ *v* T_o [$_{VP}$ V OBJ]]

This makes Accusative assignment parallel to Nominative assignment.[12]

In a theory that analyses the clause as being made of two phases, one referring to a situation (event or state) and one referring to a discourse environment (cf. Arsenijević 2007, Hinzen 2012, and §1.4 above), it is envisaged that the internal argument of the verb receiving accusative is targeted by a probe in the vP phase in order to become part of the denotation of the event to which the vP refers. The external argument of the vP is targeted by T, the head of the next phase, which refers to a propositional value and needs a subject to establish the subject–predicate relation that is the ground of propositional value.

I follow Hinzen (2012) who proposes that Agree is the means to make a phase reenter the derivation as part of the denotation of the superordinate probe. If Case is the other side of the coin, it is an uninterpretable feature that signals the categorial nature of the head of the superordinate phase. In other words, Nominative is *u*T, Accusative is *u*Asp, etc. Since the nature of the superordinate category cannot be part of the lower projection, I propose that Case is an uninterpretable unvalued feature that is valued when the NE is assigned a theta role by the superordinate predicate.

My reformulation of Pesetsky & Torrego (2001, 2004) is given in (7):

(7) Agree is a by-product of Selection and Theta-assignment.
   a. A theta-role needs to be associated to a referential index [ind].
   b. [ind] is made of at least a [Person] feature.
   c. A theta assigning head is bundled with an uninterpretable indexical feature [*u*φ].

[11] If probes are non-phasal heads (Richards 2007), *v* and T_o should not be bundled. But this is not really an issue at this point.

[12] It is not important here to define the very nature of T_o, but it is possible that it is an Aspect feature, that searches for the index feature of the referent of the object (definite or indefinite) that is often strictly related to the aspect of the event (cf. Kiparsky 1998, a.o.).

d. For *u*φ to be checked and deleted, it must probe the first [ind] containing an *i*φ in its c-command domain.
e. The NE bearing the *i*φ reenters the computation as part of the denotation of the selecting predicate.
f. Case is *u*Pred, to be valued against the category of the selecting predicate.
g. Remerger of the complete projection of the goal (pied-piping) in the specifier of the probe is subject to cross-linguistic variation, according to parametrized properties of the goal and / or the probe.

Pesetsky & Torrego (2004) assume that T_o is a property of Verbs that is not shared by adjectives. In this way, they derive the well-known fact that adjectives cannot select a DP, but only a PP or a CP as their internal object. Furthermore, they also propose that adjectives do not combine with T_s either, and for this reason APs must be selected by a copula in order for the AP to function as the predicate of a clause. This is coherent with Arsenijević's (2007) and Hinzen's (2012) observation that properties do not refer, with the consequence that APs are not autonomous phases, cf. Giusti (2013).

Let us now substantiate Agree in the NE. Pesetsky & Torrego (2001, 2004) propose that Ns have a special T-probe that targets *i*T and that for this reason, Ns can only have CP complements (with overt C) or PP complements, and never DP complements (which are *u*T). They do not discuss in detail how genitive Case is assigned inside the NE. Since it is crucial for their proposal that Ns do not take DP complements, and since genitive is assigned to DP in DP, they propose that genitive is assigned by T_s in N, without further discussion.

Presence of T in the NE is controversial, however (cf. Nordlinger & Sadler 2004, 2008, vs. Tonhauser 2006, 2007, 2008, Panagiotidis 2011). The supporting data for the presence of T in NEs are more related to the possibility of interpreting the individual as existing at a given time related to speech time (also cf. Lecarme 1996, 1999 on Somali). In this section, I develop a slightly different proposal that does not have recourse to nominal T.

I see two strong reasons to deny the introduction of T-features in the functional bundle associated to N. First, nouns do not refer to Time, but to an individual (in space, according to Arsenijević (2007)). Second, the possessee–possessor relation does not match the time span of the existence of either individual. Thus, the supposed T to be inherited by a possessee from the inherited T of the possessor does not appear to be semantically

anchored to it. The referent of the possessee is in turn well anchored to the T of the clause. In other words, *the crown of the king of France* can refer to an individual existing at present (as the present T in the clause) and in no way requires that the referent of the possessor *the king of France* also exists at present. For this reason (8a) is perfectly acceptable, while (8b) is anomalous:[13]

(8) a. The crown of the King of France can be seen at the Louvre.
b. #The king of France can be met at the Louvre.

If nominative or accusative Case on NEs is motivated by the semantic requirement to anchor the reference of the DP receiving Case to the Time reference of verbal predicate, what seems to hold for the argument of N is to anchor the reference of the possessor not to a given time but as having a relation to the referent of the possessee (the R-relation in the sense of Higginbotham (1985, 1987)).

I propose to label the uninterpretable feature checked as genitive Case or its PP equivalent as *u*D (according to the phasal head from which the probing feature is inherited). This will be motivated in §3.3. In the rest of this section, I substantiate the proposal that Agree involves Person features also in the NE.

Szabolcsi (1987, 1994) argues for the parallel status of NEs and clauses on the ground of the fact that in Hungarian, the possessor receives nominative Case and the possessee is inflected for the Person and Number features of the possessor:

(9) a. az en kalapom
the I.NOM. hat.1P.SING
b. a te kalapod
the you.NOM hat.2P.SING
c. a Mari kalapja
the Mari.NOM hat.3P.SING

In Giusti (2008), I claim that this is also the case for possessive adjectives in Italian, despite the fact that they inflect for the Gender and Number of N like all other adjectives, and the possessee does not inflect for the Person feature of the possessor. I will now review the empirical evidence supporting this claim.

[13] For further discussion of the analysis of the well-known anomalous sentence "the king of France is bald" along these lines, cf. (85)–(86) below.

Possessive adjectives can be found in two different positions with respect to the adjectival hierarchy: either very high, before a descriptive adjective, or very low after the noun, as in (10). On the contrary, relational (group-denoting) adjectives (11) and PPs (12) must follow the noun:

(10) a. il nostro insensato intervento in Albania
the our insane intervention in Albania
b. ?l'insensato intervento nostro in Albania
the insane intervention our in Albania

(11) a. *l'italiano insensato intervento in Albania
the Italian insane intervention in Albania
b. l'insensato intervento italiano in Albania
the insane Italian intervention in Albania

(12) a. **il dell'Italia insensato intervento in Albania
the of Italy insane intervention in Albania
b. l'insensato intervento dell'Italia in Albania
the insane interventions of Italy in Albania

Possessive PPs can cooccur in a rather free order. Consider the following situation: browsing through a photo album at my parents' place, I found an old faded picture of the Ducal Palace, taken by my uncle and now belonging to my parents. This is the meaning of all examples (13):

(13) a. ?Ho trovato una vecchia fotografia sbiadita del palazzo ducale, di mio zio, (ora) dei miei genitori. [Theme > Agent > Poss]
"I found an old faded picture of the Ducal Palace, of my uncle, (presently) of my parents"
b. ?Ho trovato una vecchia fotografia sbiadita del palazzo ducale, (ora) dei miei genitori, di mio zio. [Theme > Poss > Agent]
"I found an old faded picture of the Ducal Palace, (presently) of my parents, of my uncle"
c. ?Ho trovato una vecchia fotografia sbiadita di mio zio, del palazzo ducale, (ora) dei miei genitori. [Agent > Theme > Poss]
"I found an old faded picture of my uncle, of the Ducal Palace, (presently) of my parents"
d. ?Ho trovato una vecchia fotografia sbiadita (ora) dei miei genitori, del palazzo ducale, di mio zio. [Poss > Theme > Agent]
"I found an old faded picture, (presently) of my parents, of the Ducal Palace, of my uncle"

e. ?Ho trovato una vecchia fotografia sbiadita (ora) dei miei genitori, di mio zio, del palazzo ducale. [Poss > Agent > Theme]
"I found an old faded picture, (presently) of my parents, of my uncle, of the Ducal Palace"
f. ?Ho trovato una vecchia fotografia sbiadita di mio zio, (ora) dei miei genitori, del palazzo ducale. [Agent > Poss > Theme]
"I found an old faded picture, of my uncle, presently of my parents, of the Ducal Palace"

The NEs in (13) are all marginal in an out-of-the-blue context, but are rather acceptable with due intonation, indicated by the commas, provided the relations of each PP and the head N can be interpreted from the context. In other words, all relations are possible in any order, unlike what has been claimed by Giorgi & Longobardi (1991).

It is well known that possessive PPs in Italian cannot appear at the left of N (14a–b), except in high or bureaucratic registers of early modern Italian (14c) (also cf. (32) below), where a prenominal PP embeds a personal pronoun:

(14) a. *Ho trovato la **di mio zio** vecchia fotografia sbiadita
[I] found the of my uncle old picture faded
b. *Ho trovato la vecchia **di mio zio** fotografia sbiadita
[I] found the old of my uncle picture faded
c. … la pena […] cade sulla **di lui** famiglia; …ma la **di lui** pena non dev'essere infamante
… the punishment […] falls on the of him family; …but the of him punishment must not be ignominious (Beccaria, ch. 32-33)

As anticipated in (10), possessive adjectives have a very different distribution from possessive NEs in (14). In standard Italian and in northern varieties, they appear immediately after the determiner, as in (15a). In no variety do they appear in a medium position before or after N, as in (15b–c). In central and southern varieties or in case of a focused possessive, they are in postnominal position after all adjectives of direct modification, as in (15d):[14]

[14] The ?? are given instead of a flat * because all orders can be rescued by marked intonation. This is made possible by the hypothesis that the NE has a complex left peripheral layer where a topicalized adjective can be remerged. Cf. Laenzlinger (2005: 231ff.).

(15) a. Ho trovato una **sua** vecchia fotografia sbiadita.
[I] found one **his** old picture faded
b. ??Ho trovato una vecchia **sua** fotografia sbiadita.[15]
[I] found one old **his** picture faded
c. ??Ho trovato una vecchia fotografia **sua** sbiadita.[16]
[I] found one old picture **his** faded
d. Ho trovato una vecchia fotografia sbiadita **SUA**.
[I] found one old picture faded **HIS**
'I found an old faded picture of his'

Indeed, possessive adjectives have a parallel distribution to possessive pronouns *loro* and *cui* in Italian, which bear overt genitive case and belong to the formal register. In fact, *loro* can be found in postnominal position only if focused. *Cui* cannot appear in the low position due to the fact that it is a relative pronoun. Its [+rel] feature must reach the Left Edge of the NE in order for the whole NE to be interpreted as a relative operator:

(16) a. la {loro} vecchia {*loro} fotografia sbiadita {LORO}
the {their} old {*their} picture faded {?their}
"their old faded picture"
b. la {cui} vecchia {*cui} opinione razzista {*cui}
the {whose} old {*whose } picture faded {*whose }
"whose old faded picture"

Following Cardinaletti (1998), Giusti (2008) captures the different positions of the possessive adjective or pronoun with the hypothesis that it is the subject of the NE. Parallel to a clausal subject, which is first merged in VP, a possessive adjective is first merged in NP, and then targeted by a probe in the higher portion of the complete projection of the NE, above all possible adjectives as in (17):

(17) $[_{DP}\ D\ [_{FP}\ PossAP\ [_{F^{\circ}}PROBE_{u\varphi}]\ [...\ N\ ...\ [_{NP}\ [PossAP_{i\varphi}]\ ...\ \sout{N}]]]]$

The proposal in (17) complies with Richards's (2007) observation that a probe is a non-phasal head which inherits an uninterpretable feature of the

[15] The example in (15b) is grammatical with a marked intonation of contrast on *vecchia*, as predicted by my discussion in 1.3.1(104), but I am abstracting away from this possibility here.
[16] The example in (15c) is grammatical if there is a pause between *sua* and *sbiadita*, resulting in the interpretation of *sbiadita* as a reduced relative clause.

edge. The head of the nominal edge D is immediately above the probe and, in the Projection proposal developed in §3.3, it is a segment of it.

The Agree relation between a non-overt probe below D and the possessor holds in all Italian varieties, but remerger of the PossAP generally holds in the northern and standard variety, obtaining a prenominal possessive: *un mio amico* (lit. a my friend) while central and southern Italian dialects display postnominal possessive adjectives: *un amico mio* (lit. a friend my). If the possessive adjective is focused and has an extra feature that makes it "heavier", all varieties including the standard can keep it in the low position: *un amico* MIO. This is similar to what is observed with postverbal subjects in Italian:

(18) Ha comprato MARIA la macchina, non Gianni.
Has bought Maria the car, not Gianni.
"MARIA bought the car, not Gianni."

In (11) above, we have observed that remerger at a higher position is not found with relational adjectives. Another difference between possAP and relational adjectives is that only the former can be the antecedent of an anaphor, as shown by the contrast between (19) and (20):

(19) a. La loro$_i$ rappresentazione di se stessi$_i$ è distorta.
Their representation of themselves is distorted.
b. La loro$_i$ invasione li$_i$ ha resi invisi alla popolazione.
Their invasion made them [be] hated by the people

(20) a. *La rappresentazione italiana$_i$ di se stessi$_i$ è distorta.
"The Italian representation of themselves is distorted."
b. *L'invasione italiana$_i$ dell'Albania li$_i$ ha resi invisi al mondo.
"The Italian invasion of Albania made them hated by the world."

That Agreement and Binding concern the same features has been already noted (cf. Watanabe 2000). Binding clearly concerns the identification of a referent in the world or in the discourse. It is therefore related to a referential index [ind]. The minimal elements that carry this index are personal pronouns. For this reason, in (7c) above I proposed that the feature involved in Agreement is Person. Note that Person is always bundled with Number in the languages under investigation. We can now explain the particular status of possessive APs, in contrast to relational APs. The crucial difference is the presence of a Person feature in possessive adjectives (19) but not in relational adjectives (20).

No ingredient of the proposal forces relational adjectives to lack Person features. Cross-linguistic variation is expected. Czech[17] gives us a good example of two types of relational adjectives: individual-denoting adjectives like *děkanov* in (22), and group-denoting adjectives like *italská* in (23). The former but not the latter behave like pronominal adjectives, such as *tvoje* in (21), in being able to bind an anaphor or pronoun:

(21) a. Tvoje predstava sebe sama je zkreslená.
Your image of yourself is distorted.
b. Tvoje invaze te učinila dost nepopulárními.
Your invasion CL.2.P.SG made rather unpopular.

(22) a. Děkanova reprezentace sebe sama je dost zkreslená.
[The] dean's representation of himself is rather distorted.
b. Děkanovo opatření ho učinilo dost nepopulárním.
[The] dean's measure CL.3.SG. made rather unpopular.

(23) a. *Italská reprezentace sebe samých je zkreslená.
[The] italian representation of themselves is distorted.
b. *Italská invaze je učinila dost nepopulárními
[The] italian invasion CL.3.P.PL. made rather unpopular.

The expectation – which is born out – is that the adjectives that have a referential index and therefore binding capacity must be or at least can be (re)-merged as the highest in the hierarchy.

With pronominal adjectives, (24–25b) sound poetic and could be found in literary style but not in 'everyday' Czech. The opposite is true with group-denoting adjectives, since (26a) sounds marginal or poetic:

(24) a. jejich strasna invaze
their terrible invasion
b. #strasna jejich invaze
terrible their invasion

(25) a. naše strasna invaze
our terrible invasion
d. #strasna naše invaze
terrible our invasion

[17] I thank Lucie Medová for data and discussion.

(26) a. #italská strasna invaze
[the] Italian terrible invasion
b. strasna italská invaze
[the] terrible Italian invasion

Individual-denoting adjectives are perfectly acceptable in either high or low position (27):

(27) a. děkanovo strasne rozhodnuti
dean's terrible decision
b. strasne děkanovo rozhodnuti
terrible dean's decision

The analysis of these rather puzzling data is straightforward in my framework. In Czech, pronominal possessives and individual-denoting adjectives are targeted by the nominal probe because they have a Person feature, parallel to the 3rd Person genitive pronoun *jejich* (also cf. Italian *cui* and *loro*) and differently from group-denoting adjectives. Pronominal possessives (whether adjectival like *tvoie*/*naše* or genitival like *jejich*) are "light" and therefore remerge as Specifiers of the probe preceding the descriptive adjective *strasna* (24)–(25).[18] Individual-denoting possessives, being heavier than pronominal possessives, may remain in their basic position, which is the same as the position of group-denoting adjectives, explaining the variability in word orders found in (27). Group-denoting adjectives, lacking Person features, are not targeted by the probe and do not remerge.

The Czech data are quite different from what Dimitrova-Vulchanova & Giusti (1999) observed in Bulgarian, cf. §1.3.(112a–b), repeated here as (28). In Bulgarian, individual-denoting adjectives like *šekspirova* cannot appear in the remerged position above *nova* ("new"):

(28) a. novata šekspirova kniga
new-the Shakespeare.GEN.ADJ book
b. *šekspirovata nova kniga
Shakespeare.GEN.ADJ -the new book

[18] The marginal order of (24–25b) is possibly due to further topic-fronting of the descriptive adjective (cf. §1.3.2 from ex. (99) onwards) and not to optionality of pied-piping.

If this is due to lack of Person features, I predict correctly that they cannot be the antecedent of an anaphor, as shown by the ungrammaticality of both cases in (29), (Dimitrova-Vulchanova p.c. 2014):

(29) a. *vasovata$_i$ kniga na sebe si$_i$
Vasov.GEN.ADJ-the book about himself
Cf. Vasov's book about himself
b. ??vasovata$_i$ kniga na nego si$_i$
Vasov.GEN.ADJ-the book about himself

Individual-denoting adjectives in Bulgarian behave like group-denoting adjectives: they are not independent phases, because they do not have Person features. I leave the issue open whether group-denoting adjectives saturate the thematic structure of the noun or are interpreted as having a relation to it thanks to the adjectival hierarchy (cf. Cinque 1994, and §1.3 above). In the former case, I would have to assume that some theta-roles can be saturated by non-referential projections. This is actually the case for manner adverbs in clauses, but it seems that it is not possible for the agent role. If the latter solution is adopted, the problem does not arise.

Possessive PPs are probably also targeted for [Person] feature by the nominal probe, but they are too "heavy" to be pied-piped. That they are targeted is shown by the fact that they have scope over the NE and contribute the referential index. In (30), the distributive vs. collective interpretation of the quantifier is pied-piped over the whole NE. In (31) the specific vs. non-specific nature of the determiner is also pied-piped:

(30) a. Ho la / una fotografia di tutti i miei nipoti sulla scrivania.
I have the / a picture of all my grandchildren on the desk.
ambiguous (distributive / collective / sloppy)
b. Ho la / una fotografia di ciascuno dei miei nipoti sulla scrivania.
I have the / a picture of each of my grandchildren on the desk.
non-ambiguous (distributive / *collective / *sloppy)

(31) a. Maria vuole sposare il figlio di una femminista.
Maria wants to marry the son of a feminist.
ambiguous (specific / non-specific)
b. Maria vuole sposare il figlio di quella femminista.
Maria wants to marry the son of that feminist.
non-ambiguous (specific / *non-specific)

That PPs are just too heavy to remerge in Italian is supported by the observation of marginal cases of remerger of a PP just containing a

personal pronoun. This is acceptable only in the bureaucratic register. Examples (32a–b) have a joking tone, (32c) is from a 19th c. chronicle:

(32) a. con una nuora autoritaria e le *di lei* tre figlie[19]
with a bossy daughter-in-law and the of her three daughters
b. mentre il *di lui* cane …, e la *di lui* figlia …, e la *di lui* band ...[20]
the of him dog ... the of him daughter ... the of him bad
c. Allora i de Cristofaro scaricano i *di loro* schioppi contro Ramaglia.[21]
Then the de Cristofaros fire the of them rifles against Ramaglia

In (32c), we observe the use of strong *loro*, which is not marked for oblique case, parallel to *lui* and *lei*. For this reason, it is embedded in a PP.[22]

If the prenominal position of the possessive is due to a strong probe, variation is expected. In Germanic, DPs move (33a) on a par with pronominal possessives (33b), PPs do not (33c–d):

(33) a. his daughter
b. the man's daughter
c. the daughter of the man
d. *of the man (the) daughter

Hebrew presents a clear-cut distinction between prepositional (34) and construct state (35) possessives, with no distinction in their pronominal or fully nominal nature. In the construct state the genitive appears in second position after N. N is in D, displaying reduced morphology (cf. Borer

[19] http://www.pannostrale.it/scheda.php?compagnia=I+TEATRANTI (acc. March 2007).
[20] http://www.mybestlife.com/ita_anima/Jovanotti_Autobiografia_di_una_festa_sito.htm (acc. March 2007).
[21] http://www.ripamici.it/barbieri/titopadre.html, L'uccisione di Tito Barbieri ("T. B.'s Murder"), 1821 (acc. March 2007).
[22] Cardinaletti (1994) distinguishes between strong *loro* parallel to *lui/lei* and weak *loro*, which has a dedicated position and cannot be embedded in a PP:

(i) Ho dato un libro a lui/lei/loro
[I] gave a book to him/her/them
(ii) Gli/Le/*Loro ho dato un libro
[I] CL.3P.SG.M/F. gave a book
(iii) Ho {(*a) loro} dato {(*a) loro} un libro {*loro}
[I] CL.3P.PL gave CL.3P.PL a book CL.3P.PL

1984, Ritter 1991, Siloni 1997). From this position, it licenses (abstract) Genitive Case, since the goal (a complete NE or a pronoun) is not introduced by a P:[23]

(34) a. ha-bayit ha-gadol šel ha-iša
the-house the-big of the-woman
b. ha-bayit ha-gadol šel-a
the-house the-big of-him

(35) a. beyt ha-iša ha-gadol
house the-woman the-big
b. beyt-a ha-gadol
house-her the-big
"her big house"

In Hebrew, the probe is strong enough to attract all sorts of possessors. This should correlate with lack of PP possessors or generalized prenominal PP possessors. Hebrew takes the latter choice. PP possessors are obviously heavier than bare possessors and therefore cannot move. The optionality is not on movement but on the realization of the possessor. This could be due to a number of reasons related to how Hebrew reprojects the head N, which I cannot deal with here.

Romanian presents apparent similarities to the second position of the genitive in Hebrew (cf. Grosu 1988, Longobardi 1996, Dobrovie-Sorin 2000, Cornilescu 1995, 2003). A genitive NE or a pronominal possessor can appear in second position following the noun inflected for a definite article (36). But an adjective cannot follow the genitive NE (36a), while it can follow a pronominal possessor or a possessive adjective (36b).

(36) a. casa fetei (*frumoasă)
house-the girl-the.GEN nice
b. casa sa / ei frumoasă
house-the possAP.3P.SG.FEM / pron.3P.F.SG.GEN nice

Furthermore, the adjective cannot appear between the N bundled with the article and a possessor of any nature:

(37) a. *casa frumoasă fetei
house-the nice girl-the.GEN
b. *casa frumoasă sa / ei
house-the nice possAP.3P.SG.FEM / pron.3P.F.SG.GEN

[23] I thank Grabriela Hermon and Ur Shlonsky for providing the Hebrew data.

Another contrast arising between a pronominal possessor and a genitive NE is the possibility for the former but not for the latter to be licensed by an adjective inflected for the definite article, as in (38):

(38) a. frumoasa sa / ei / *fetei casă
nice-the possAP/ pron.3P.F.SG.GEN/ girl-the.F.SG.GEN house
"her nice house / *'the nice house of the girl"
b. biata sa / ei / *fetei prietenă
poor-the possAP / pron.3P.F.SG.GEN / girl-the.F.SG.GEN friend
"her poor friend / *the poor friend of the girl"

The facts in (36)–(38) clearly point to the conclusion that possessive adjectives and pronouns have a common property that distinguishes them from NEs. This property can be directly captured by my proposal that Agreement targets Person features and moves them to its specifier. Pronominal elements are therefore the first candidates to be remerged in secondo position, as they are not made of much more material than just Person (cf. Cardinaletti & Starke 1999).

In Romanian, the probe is overt and has the form of the definite article. If it is realized on N, as in (36) and (39a), or on the prenominal A, as in (38), the NE is interpreted as a definite expression. It can also appear on a preposition-like dummy: namely, *a*, forming a genitival articles, as in (39c–d), independently of the definite or indefinite interpretation of the possessee:

(39) a. copilul fetei
friend-the.M.SG.DIR girl.GEN
"the girl's friend"
b. acest (*fetei) copil
this.M.SG.DIR girl.GEN friend
c. acest copil *(al) fetei
this.M.SG.DIR friend *a*.the-M.SG.DIR girl.GEN
"this friend of the girls"
d. un copil *(al) fetei
a.F.SG.DIR friend *a*.the.F.SG.DIR girl.GEN
"a friend of the girls"

Let us assume, following Rizzi & Shlonsky (2007), that checking of Agree "freezes" the structure-building procedure, blocking the probe and the goal in the position in which the phase of the goal is sent to the interfaces. I assume that in Romanian, for reasons related to the

inflectional properties of N,[24] a complete DP merged as a specifier of N must be immediately sent to interpretation.

In (40), N bundled with a probe feature (N_{+PROBE}) remerges, and operates Agree from the remerged position. The empty specifier of NP2 is the Left Edge where the covert indexical of the NE will be merged (cf. the discussion on (55) below). Structure (40a) corresponds to (36a) and (39a). If an AP is merged, N_{+PROBE} remerges to create such a Left Edge, as in (40b) which is the structure of grammatical sentences in (37). If a pronominal possessor encliticizes onto the probe, it moves along with it, as in (40c), which corresponds to (36b):

(40) a. $[_{NP2=DP}\ [N_{+PROBE u\varphi}\ [_{NP1}\ [NE_{i\varphi}]\ \sout{N_{+PROBE u\varphi}}]]]$
b. $[_{NP3=DP}\ [N_{+PROBE u\varphi}\ [_{NP2}\ AP\ [\sout{N_{+PROBE u\varphi}}\ [_{NP1}\ [NE_{i\varphi}]\ [\sout{N_{+PROBE u\varphi}}]]]]]]]$
c. $[_{NP3=DP}\ [[\sout{N_{+PROBE u\varphi}}]\ \sout{pron}_{i\varphi}\ [_{NP2}\ AP\ [[\sout{N_{+PROBE u\varphi}}]\ [_{NP1}\ [\sout{pron}_{i\varphi}]\ [\sout{N_{+PROBE u\varphi}}]]]]]]$

Adjectives in Romanian can be inflected for the article, which I take to be overt Concord with N_{+PROBE}, which is non-overt. They can be the host of the encliticization of the weak (pronominal) goal but not of an NE goal which apparently needs to be immediately c-commanded by an overt probe. The structures of (38) are given in (41). (41a) is the ungrammatical structure with a genitive NE; (41b) is the grammatical structure with the clitic possessive:

(41) a. $[_{NP3=DP}\ [\sout{N}\ [_{NP2}\ AP_{+PROBE}\ [\sout{N_{PROBE}}\ [_{NP1}\ [*NE_{i\varphi}]\ [N]]]]]]]$
b. $[_{NP3=DP}\ [\sout{N}\ [_{NP2}\ AP_{(+PROBE)}{+}cl_{i\varphi}\ [\sout{N_{PROBE}}\ [_{NP1}\ [\sout{cl_{i\varphi}}]\ [N]]]]]]]$

This proposal keeps the generalization that the nominal probe is weak in Romance without exceptions and can be summarized as follows. (i) The φ-feature targeted by a nominal probe is Person. (ii) Variation is found as regards the strength of the probe pied-piping the whole NE_{goal}. A different kind of variation regards the possibility to pied-pipe an NE_{goal} embedded in a PP. (iii) In NEs, merger of a probe is optional, due to the nature of nominal reference (which does not require a possessor), differently from the propositional/aboutness value of a clause which requires a subject and therefore a probe to make it part of the higher clausal phase.

[24] Like other Balkan languages, Romanian has syncretive dative-genitive case. For an NE to be interpreted as genitive, it must appear adjacent to the probe assigning genitive, otherwise it is interpreted as dependent on the verbal phase, as an argument of the verb, or as a Benefactive.

These three points can derive the generalizations in (7) above. More research is needed to motivate the two kinds of variation discussed above; namely, what makes the insertion of a preposition necessary, thereby differentiating between DP and PP possessors; and how the obvious difference between strong pronouns and even the lightest N should be represented in syntax.

The parallel between possAPs and personal pronouns fails to capture two basic facts; namely that, parallel to APs and unlike possessive personal pronouns, possAPs concord with the head N for Gender and Number and cannot be in complement position. The former property is displayed by all examples above and does not need to be further exemplified. The latter property is worth further attention.

Since the seminal work by Cinque (1980), and later by Giorgi & Longobardi (1991), the possessive adjective has been shown to be the "subject" of the NE. In fact, it can bear the role of Theme, supposedly assigned to the complement of N, only if no other role is present (42).

(42) a. la sua invasione (da parte degli italiani)
the its invasion (by the Italians)
b. *la sua invasione italiana
the its Italian invasion

Note that even if the thematic hierarchy Agent > Theme is respected, the cooccurrence with a Theme possessor gives ungrammaticality, as in (43). This contrasts with the possibility for strong pronouns to bear the Theme role while remaining in their theta-assigned position, which is completely parallel to the English counterparts in (44):

(43) a. *l'invasione italiana sua
the invasion Italian its
b. *la loro invasione sua
the their invasion its
"its invasion by the Italians / by them"

(44) a. la mia descrizione di te
"my description of you"
b. la tua descrizione di me
"your description of me"

The contrasts in (42) and between (43) and (44) suggest that the Person feature of the possAP allows it to bear any role, parallel to personal pronouns and differently from relational adjectives that cannot take the internal role. But we also see that adjectival status is incompatible with the

complement position; it is compatible with a theme role only if this role ends up in a "subject" position, as in "passive" nominals like (42a).

A second property that distinguishes possAPs from possessive pronouns and unifies them with other adjectives is that they do not have overt genitive morphology, but display the typical Concord for Gender and Number. Since adjectives are never complements of N, I take this as the crucial property that makes possAPs never appear in the complement of N. In other words, complements of N can only be targeted from a distant position and must be overtly marked as genitive. In Italian the only available marker is the preposition *di*. As regards the adjectival inflection, in the next section, we will see that this is due to Concord, which takes place in a Spec–Head relation, not in a c-command configuration.

To recapitulate this section, I have claimed that Agreement can be present in the NE, but unlike clauses it is not mandatory. The probe is a *u*Person feature (*u*φ) associated with the possessee N that targets the *i*Person (*i*φ) feature of the possessor.

The probe in the NE is not T but a non-phasal head below D, which denotes an individual that has a different index from the individual referent of the possessor with which it entertains Hingginbotham's (1985, 1987) R-relation. In a phase theory, the possessor phase must be sent to the interfaces before reentering the computation as part of the denotation of the possessee. For this reason the possessee must be endowed with a probing feature.

In this approach, it is understood that overt feature sharing is a possibility in natural languages that is expected to vary with non-overt counterparts. This is clearly so for abstract Case which is non-overt in many languages, but is often present as a residue, as in English or Italian pronouns. It is no surprise that many languages do not show overt Agreement on the possessee for the Person feature of the possessor. The fact that this is found in some languages, such as Hungarian (9) above, is sufficient evidence to support the assumption that the process also takes place in languages where it is non-overt.

3.2. Modification and Concord

In this section, I claim that feature sharing between an adjective and a noun is not the result of Agreement. In (45), I list some of the well-known differences between subject-V Agreement and adjective-N Concord, often noted in the literature (cf. Stassen 1997, Lehmann 1998, Corbett 2006, Baker 2008), restated here in the terms of our discussion:

(45) General differences between Agreement and Concord
   a. While Agreement is a symmetric Person-T or Person-D feature sharing, Concord consists in sharing Case, Number, and Gender features (never Person).
   b. While subjects move to SpecTP, adjectives do not move to obtain Concord.
   c. While Agreement targets a unique argument, all adjectives concord (overtly and presumably also non-overtly) for the same bundle of features.
   d. While arguments discharge a theta-role of the selecting head, adjectives are not selected by N.
   e. While arguments are obligatory, adjectives are optional.

Contra Baker (2008), I take these differences to show that the two processes are different in many respects. My proposal is more minimalistic than Baker's in that it does not stipulate a probing feature every time we have feature sharing, but only when we target an independent phase. Furthermore, it does not stipulate that Agree may target downwards or upwards according to different properties of the probe, but can keep Agreement strictly under c-command (thus only downwards).

Concord on adjectives is the syntactic counterpart of the semantic modifier–head relation entertained between an adjective and a noun. The adjective has an open position that must be saturated. This position is not parallel to the external argument of a verb. In fact, when an adjective is the predicate of a clause, it does not provide the argument to be probed by T. Furthermore, differently from verbs, adjectives do not denote an event or a situation which can have Reference. Adjectives denote properties, and according to Hinzen (2012) properties are not referential. In order for properties to be the predicate of a clause, they need to merge with a copular verb that denotes the state of having such a property.

These quite reasonable informal semantic considerations can derive a fact that appears to hold cross-linguistically; that is, adjectives do not agree for the Person features of their subjects and, in general, they need to be associated with semi-functional verbal elements (e.g., copulas). In their overview of the properties of T_s associated with different lexical categories, Pesetsky & Torrego (2004) briefly suggest that adjectives do not have T. Following Heim & Kratzer (1998: Ch. 4–5), I take A to have an open position that is saturated by a constant (a null anaphor, *e*). This constant is identified through binding by an external antecedent. In the case of predicate adjectives, such an antecedent is the external argument of

the state denoted by the copular predicate that selects them in the clause, something like (46):

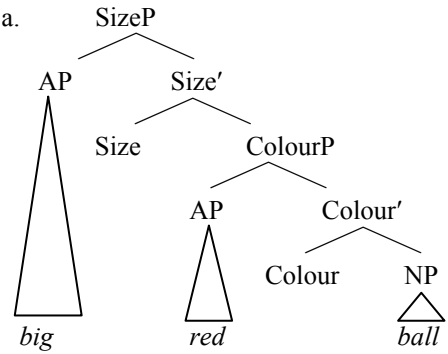
(46) $[_{TP}$ John$_j$ $[_{TP}$ is $[_{VP}$ ~~is~~ $[_{AP}$ $[e]_j$ $[_{A'}$ ill]]]]]

I leave the syntactic analysis of predicate adjectives in this sketchy state for the sake of this volume, as I approach this long-standing problem only from the perspective of nominal syntax.

I follow the seminal proposal by Cinque (1994), according to whom adjectival modifiers occur in Specifier positions and obey a strict hierarchy of modification which is universal. The resulting structure is, however, less complex than the one proposed by Cinque in different papers, which I briefly review in the following.

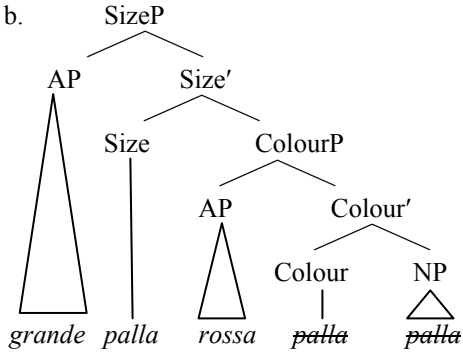
According to Cinque (1994), adjectives are merged as specifiers of functional heads such as Color, Size, Manner, etc., that actually contribute to provide the adjectives with the semantic interpretation, as in (47a):

(47) a.



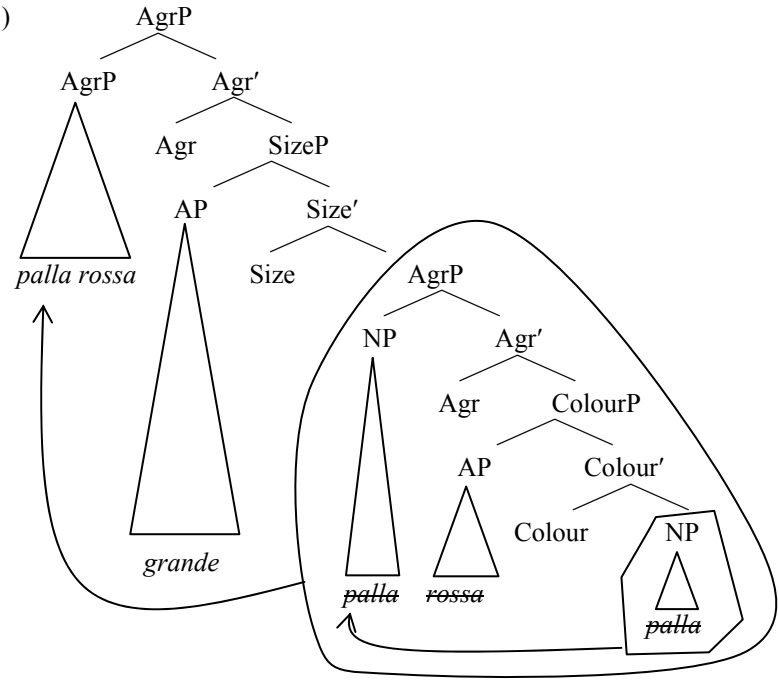
The functional heads in (47a) are also avalable for N movement, subject to parametrization. This makes it possible to capture the postnominal position of colour adjectives in Italian by assuming that N moves to an intermediate position, roughly identified as Size in (47b):

(47) b.



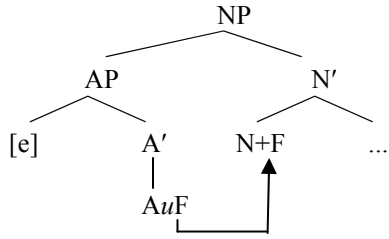
In more recent work Cinque (2005, 2010) eliminates head movement in favor of roll-up, and proposes that for each functional head representing the universal adjectival hierarchy there is an AgrP whose specifier is available as the host of roll-up movement. This derives the mirror order found in postnominal position, as sketchily represented in (48):

(48)



In my Projection approach presented in (2) above, to be detailed in §3.3 below, I do not need to assume two types of functional projections (AgrP and semantic functional projections), since N can remerge as many times as necessary. The structure in (49) represents the first merger of a modifier adjective:

(49)



The AP can also be a larger remerged head, but this is not what we are after at the moment; we can therefore keep our structure as minimal as possible. With the same aim of economy, I do not specify what level of (re)merger of N we are at. What is crucial here is that the complete projection of the AP is merged as the specifier of NP. The AP carries uninterpretable features directly valued by the remerged N, while N has a number of interpretable and uninterpretable features, some of which have already been valued, while others have not; but none of them are discharged by the Spec–Head relation with AP.

Let us briefly consider the formal features usually associated with N, such as Gender, Number, Case. English is not very telling in this regard; I therefore turn to Italian, which gives us a simple paradigm with overt Gender and Number, rich enough to make some relevant considerations.

Italian has adjectives of three different inflectional classes: Class 1 displays Gender and Number distinctions (*-a*, *-e*, *-o*, *-i*), Class 2 only Number distinctions (*-e*, *-i*). Class 3 is uninflected:

(50) Class1: overt Gender and Number
  a. la mi*a* amica italian*a*
  b. le mi*e* amiche italian*e*
  c. il mi*o* amico italian*o*
  d. i mie*i* amici italian*i*
    the my Italian friend.F.SG/M.SG/F.PL/M.PL

(51) Class2: overt Number, no Gender
  a. la gentil*e* ragazza olandes*e*
  b. le gentil*i* ragazze olandes*i*
     the nice Dutch girl(s)
  c. il gentil*e* ragazzo olandes*e*
  d. i gentil*i* ragazzi olandes*i*
     the nice Dutch boy(s)

(52) Class3: uninflected
  a. la maglietta rosa / blu
  b. le magliette rosa / blu
     the pink / blue T-shirt(s)
  c. il maglione rosa / blu
  d. i maglioni rosa / blu
     the pink / blue sweater(s)

Generally, Gender is semantically relevant for NEs that have [+HUMAN] reference, while it has no semantic counterpart in [-ANIMATE] reference, as is clear from the contrast between (53a), where *ragazzo* and *ragazza* share the same root, which plausibly refers to a young human being, and the inflection for Gender further refines the denotation to young human male, and young human female. In all other cases, grammatical gender has no semantic weight:

(53) a. ragazzo ("boy") vs. ragazza ("girl"),
  b. casa ("house / home.F") vs. caso ("chance / casualty.M");
  c. tavola vs. tavolo ("table.F/M"),
  d. sedia ("chair.F") vs. sgabello ("stool.M"),

More precisely, there is no relation between *casa* (feminine, concrete) and *caso* (masculine, abstract) in (53b) and their Gender specification, and there can be no rationale in the metaphoric extension of Gender to inanimate denotata. In particular, while the two quasi-synonyms *tavola* and *tavolo* in (53c) may at first sight suggest that masculine *tavolo* is more formal or less related to everyday use than the feminine *tavola* (which is the only one of the two that can denote a table set for a meal), feminine *sedia* is a larger and more formal piece of furniture than masculine *sgabello* ("stool"), and the same for *libreria* ("book case") vs. *scaffale* ("shelf") or other amenities.

Number is part of the referential value of the NE in the obvious sense. In fact it must be an intrinsic part of the Person feature, and is directly related to the mass / count distinction which is a crucial part of the

denotatum of the NE, as we have observed in Chapter 2. It can, however, be formal and not matching with the denotatum, and specified in the lexicon for given vocabulary items such as *pluralia* (54b–c) or s*ingularia tantum* (54d):

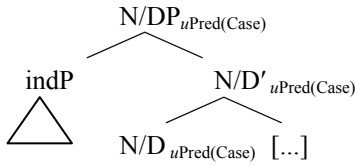
(54) a. ragazza ("girl") vs. ragazze ("girls")
b. forbici ("scissors"), pantaloni ("pants")
c. Police / People are.PL ...
d. La polizia / La gente è.SG ...

Differently from Gender and Number, Person does not bundle with N, which in no language (as far as I know) is inflected for the Person of its own referent. This is striking, given that some languages do have Ns inflected for the Person feature of their possessor, like Hungarian in §3.1.(9) above. Furthermore, I am not aware of any language in which indexical features are specified on given Ns in the lexicon, parallel to what happens for Gender quite generally, or for Number in *pluralia* or *singularia tantum*.

For this reason, I take Person, reference, or deixis, to be separate features from those that belong to the bundle of N (which denotes a property). Person is part of the indexical element that saturates the open position of N, turning N from a property into a referential expression (Higginbotham 1985, 1987). Like all other arguments, this element must be merged as a specifier (in the lexical layer, as proposed in §4.2, or directly in DP according to Cinque 2005, Adger 2013) and checked in the nominal Left Edge (SpecDP).

The head of the Left Edge also contains the *u*Pred feature that relates the NE to the external syntactic context, namely Case, which remains uninterpretable even after valuation and is needed only to make the NE be part of the next phase. The Left Edge of N, traditionally called DP since Abney (1987), is therefore to be represented as in (55), where the label N/DP indicates that we are dealing with the highest remerger of N:

(55)



If indP is merged lower in the structure, as is the case of demonstratives (§4.2) and possessives (§4.3), its movement to SpecDP is triggered by some probing feature, which does not target an independent phase, but remerges indP at the Left Edge of the phase in order for the Person features of the NE to be visible from outside the phase and be available to external Agreement. I leave the treatment of this aspect for work in progress. The point in this chapter is that indP is in a Spec–Head relation with N/D and must concord with it for Gender, Number, and Case, parallel to adjectival modifiers in (49). In many languages it is this Concord relation that ends up being satisfied as an overt N/D in the form of the definite article.

In my proposal, there are many segments of the remerged N that are not to be overt. For this reason, I assume the Principle of Economy in (56), with it corollaries (56a-b):

(56) Economize Merge.
  a. Do not reproject unless necessary.
  b. Do not realize a reprojected head unless necessary.

The visibility requirement (57) limits the power of (56) which would otherwise predict that no language have articles or other scattered inflectional morphology:[25]

(57) A Spec–Head relation created by Merge must be visible
  a. on the specifier, and / or
  b. on the head.

The *either/or*-choice is more frequent than the *and*-choice. In the rest of this work, I show that the ultimate decision is related to micro-parametric variation related to the very vocabulary items that fill the Spec and the head. Let us review some cases.

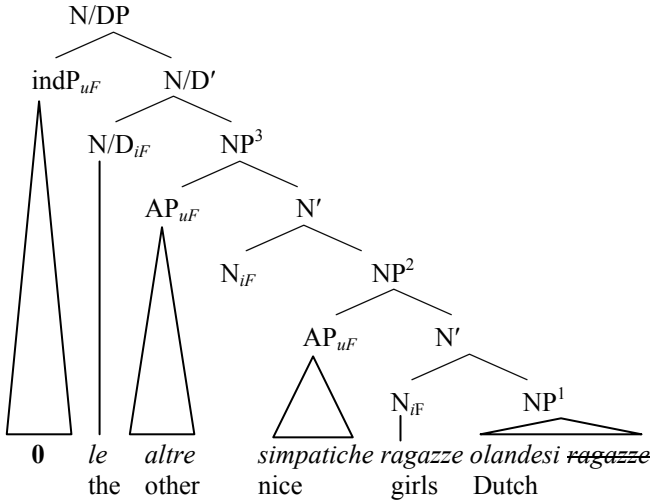
Starting from the lexical array in (58), we now derive the NE *le altre simpatiche ragazze olandesi* "the other Dutch girls". Note that N is bundled with Gender, Number, and Case (*u*Pred), but the paradigm scatters it in two segments {*ragazze*, *le*}; Gender and Number appear on both. This scattered realization of the head will be motivated in §3.3:

[25] Here I am elaborating an old proposal put forth in Dimitrova-Vulchanova & Giusti (1998), where we assumed functional heads to be merged independently of the lexical head.

(58) a. {*ragazz*,*i*F,*i*PL,*u*Pred}→
{{*ragazze* [[[N]*i*F]*i*PL]},{*le*[[[*u*Pred]*i*F]*i*PL]}},
b. {*olandes*,[[A]*u*NUM]},
c. {*simpatic*, [[[A]*u*GEND]*u*NUM]},
d. {*altr*, [[[A]*u*GEND]*u*NUM]},
e. {[[[[ind]*u*GEND]*u*NUM]*i*Pers]}

The structure in (59) gives an idea of the interaction between (1), which restricts Merge to the instantiation of Selection or Modification, and principles (56)–(57) as applied to Italian, a language where adjectives inflect for nominal features and therefore make the functional features of the remerged N visible:

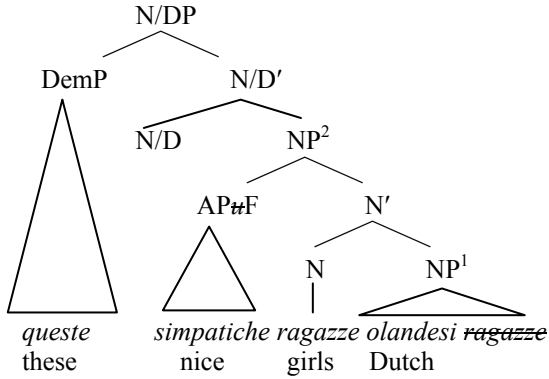
(59)



In (59), N^1 and N^3 are non-overt because the AP *altre* and *olandesi* make the feature bundle visible. IndP is non-overt. In order to make Concord visible, the feature bundle is made visible in N/D, which is nothing other than the highest projection of N (I could have labelled it N^4). NP^2 has both the head and the specifier visible. This is due to the fact that in both positions there is lexical material with descriptive content.

If we compare (59), which displays a null indP, with (60), which displays an overt demonstrative, we observe that the overt demonstrative dispenses with the realization of the highest N/D segment:

(60)



As observed for adjectives, Gender may be non-overt on nouns. In (61), *patente* ("license"), *cantante* ("singer"), *diserbante* ("weed-killer") are three out of many nouns derived from present participles (Class 2 adjectives) that are typically underspecified for Gender. In (61) we observe that in all cases, whether Gender is interpretable as for [+HUMAN] *cantante* (which can refer to either a man or a woman singer), or grammatical as for [-ANIMATE] *patente* or *diserbante*, it is provided to the modifiers: namely, the Class1 adjectives *nautica* (61a) and *chimico* (61c), and the demonstrative *questa / questo* (61b). There is no overt Gender on *forte* (61c), which is a Class2 adjective, and no Gender or Number on *pop* (61b), a borrowing from English, which is uninflected like many other borrowings. This is a property of the paradigm of the adjective and is totally independent of the paradigm of the noun:

(61) a. la patente nautica
the.F.SG license.SG nautical.F.SG
"the sailing permit"

b. questa / questo cantante pop
this.F.SG / this.M.SG singer.SG pop
"this pop singer"

c. un forte diserbante chimico
a.M.SG strong.SG weed-killer.SG chemical.M.SG
"a strong chemical weed-killer"

Trivial evidence leads us to assume that Gender and Number inflection for a given adjective is part of its paradigm. In predicate position, the three classes of adjectives discussed in (50)–(52) display the same inflection (62) as in adnominal (63) position:

(62) a. La giacca è rossa / verde / blu
The jacket.F.SG is red.F.SG / green.SG / blue
b. Le giacche sono rosse / verdi / blu
The jacket.F.PL are red.F.PL / green.PL / blue
c. Il cappotto è rosso / verde / blu
The coat.M.SG is red.M.SG / green.SG / blue
d. i cappotti sono rossi / verdi / blu
The coat.M.PL are red.M.PL / green.M.PL / blue

In Italian, the different positions of the adjectives do not generally depend on the paradigm. Uninflected adjectives are few and in the largest part denote color or restrict the class of the noun. They are therefore postnominal:[26]

(63) a. la grande / piccola giacca rossa / verde / blu
the large.SG / small.F.SG jacket.F.SG red.F.SG / green.SG / blue
b. le grandi / piccole. giacche rosse / verdi / blu
the large.PL / small.F.PL jacket.F.PL red.F.PL / green.PL / blue
c. il grande / piccolo cappotto rosso / verde / blue
the large.SG. / small.M.SG coat.M.SG red.M.SG / green.SG / blue
d. i grandi / piccoli cappotti rossi / verdi / blu
the large.M.PL / small.M.PL coat.M.PL red.M.PL. / green.M.PL / blue

Interestingly, they cannot be moved to a prenominal position even in those contexts of contrastive topicalization (cf. §1.3.2 above), which would allow movement of a fully inflected adjective (as also noted by Zamparelli 1993). Compare *verdi* and *rosse* in (64a) with *blu* and *rosa* in (64b). The ungrammaticality of *rosa* suggests that it is not prosody that makes the monosyllabic *blu* unsuited for topicalization.[27]

(64) a. le VERDI colline della Toscana, le ROSSE peonie del suo giardino
the green its hills of Tuscany, the red peonies of her garden
b. *i BLU cieli della Puglia, *le ROSA peonie del suo giardino
the blue skies of Apulia, the pink peonies of her garden

[26] Numeral adjectives are all uninflected and mandatorily prenominal: *le due amiche, i due amici* "the two friends.F/M", cf. Cardinaletti & Giusti (2015) and §5.2 below for a different way to license uninflected modifiers in Italian.

[27] But it cannot just be lack of inflection either, given that *marroni* in (i), which has a paradigm in no way different from the paradigm of *verde*, is also ungrammatical:
(i) *le MARRONI bucce di castagna
the brown chestnut peels

This is not limited to color adjectives, which are naturally postnominal, but also extend to subclasses that can be prenominal, such as subject oriented adjectives, like *elegante* as compared to its uninflected synonym *trendy:*

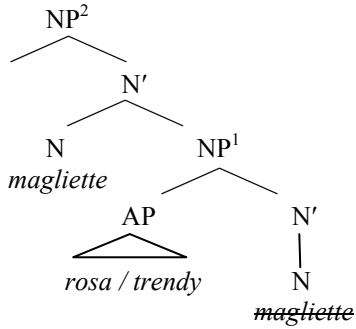
(65) a. Complimenti per il tuo {elegante} abbigliamento {elegante}!
b. Complimenti per il tuo {*trendy} abbigliamento {trendy}!
Congratulations for you trendy outfit!

Note however that even if numerals are not inflected, they are mandatorily prenominal, as *tre* in (66):

(66) a. le tre ragazze, i tre ragazzi
the three girls, the three boys
b. *le ragazze tre, *i ragazzi tre

In terms of Concord, we can state that while Class1 or Class2 adjectives concord with N or with a null functional head of the complete nominal projection, Class3 adjectives apart from numerals concord with a head which is c-commanded by the full bundle, including the lexical N, as in (67):

(67)



Whether Concord is made visible or not depends on the property of the paradigms of the two vocabulary items involved in the modification relation (both the modifier and the modified head). In English, for example, the overt realization of Number on N satisfies the Concord relation of AP and N in a full NE such as *the good boys*, but in the absence of N such a feature must be carried by a dummy as in *the good ones*.

In the next section, we see other cases in which the lexical element in the Spec of a remerged N requires that the head N is realized, thereby

choosing the *and*-option in (57). In Chapters 5 and 6, I will discuss different ways in which Concord is made visible across languages by means of what looks like a definite article.

3.3. Minimal Syntax and Projection

In (1), above, I proposed that "Merge operates to satisfy Selection or Modification". A given head entertains multiple relations of Selection and / or Modification, each with a different complete projection. The head remerges as many times as needed to instantiate every single relation. Thus, (re-)projection of the head is a necessary consequence of the syntactic representation of Selection or Modification. If we adopt the anti-symmetric view (Kayne 1994) according to which Merge can only create asymmetric binary structures, the two merged elements cannot be of the same bar-level (head and head, XP and XP, or X′ and X′), but they must have different status, to the effect that selection can only merge a head with a maximal projection and modification can only merge a maximal projection with an X′. If this holds true, merger of a modifier must necessarily be preceded by the (re)merger of the head to create the appropriate X′-node, with which the modifier can merge.

This iterated head-merger builds the spine of a "complete projection" in the spirit of Grimshaw's (1991) extended projection[28]. But differently from it and from what is generally assumed in the literature, I propose that the spine of the extended projection is not formed by different functional features that may incorporate with one another (as in Giorgi & Pianesi 1997) or be merged as single heads (as in the cartographic approach, cf. Cinque & Rizzi 2008). My claim is that we have a unique bundle of features, including all the functional features, associated to the lexical head. This complex bundle remerges as many times as necessary. Language variation resides in exactly how the multiply merged head is spelled out. This is relevant at the Syntax–Spell-out interface. As regards the Syntax–LF interface, the head and all its features is interpreted only once, given that we are not creating copies (in the spirit of Chomsky 2013) but are remerging one and the same element.

At Spell-out, the realization of a multiply merged head must obey the Principle of Economy (56), so that we never (or rarely) see the same

[28] I use the term "extended projection" to refer to a structure whose head has merged more than once and the term "complete projection" to refer to the final step in the Projection process, which corresponds to a phase for those heads that project a phase.

vocabulary item (lexical or functional) realizing more than one segment of the same remerged head. But we may find one or more features appearing bundled with more than one segment in those languages that have scattered paradigms (as in Italian art.GEND.NUM N.GEND.NUM). This gives a redundancy effect which is neither Concord nor Agreement.

Inside the bundle, features are hierarchically ordered, complying with Giorgi & Pianesi's Universal Ordering Constraint (3a). I assume the hierarchical order of nominal features on N to be Case (=*u*Pred) > Number > Gender > N. The prediction is that if such features are all overtly realized on a single segment, they appear in the reverse order. If they are realized on scattered heads, they can bundle in two (or more) segments, with overlap of features on the two segments, provided that the hierarchy is not violated. Taking articles as the highest segment of scattered heads, we expect that a high feature such as Case cannot appear on N without also appearing on the article, or that a low feature such as Gender cannot appear on the article without Number also appearing on it. How the bundle is realized on each segment (for example if Case is realized as a preposition or as a scattered morpheme of N in the shape of the article, or as a morpheme on N, or a combination of these) will depend on the inflectional paradigm of individual vocabulary items. We will also see that this interacts with the inflectional paradigm of the concording constituent, e.g., adjectives, or determiners (including the covert indP with the interpretation of definite descriptions).

In (68), I give some of the possible combinations with bisegmental N-heads, to be further specified in what follows. In article languages, I propose that N is bundled with a probe searching for the Person features of an indP. For this reason, feature spreading for (in-)definiteness can appear on the N-bundle, but for the moment I abstract from this complication:

(68) a. [Case, Number, Gender] [Number, Gender, N]
della *ragazza*
[P+art.F.SG.] [N.F.SG]
b. [Case, Number, Gender] [Case, Number, Gender, N]
des *Mädchens*
[art.N.SG.GEN] [N.N.SG.GEN]
c. [Case, Number, Gender, N]
puellae
[N.F.SG.GEN]
"of the girl"

This proposal can give an original answer to the doubts expressed by Hudson (2000) against the very notion of functional category. In my perspective, what is generally labelled as "functional category" is a segment of a scattered head (as is the case for articles, complementizers, and some prepositions) or is a kind of indP (as is the case for personal pronouns). In the rest of this section, I make concrete the claim that N-movement is nothing else but Projection, namely the realization of (segments) of remerged heads.

Let us now concentrate on the properties of a (re)merged N. The lexical head and its features are merged in a bundle. This claim can be instantiated in two ways: either assuming that all features are bundled at the same level, as e.g., Murakami (2011), and the realization of the bundle is given by PF-rules (Adger p.c.), or that the bundle is internally structured in a hierarchy. My preference for the latter choice is not just suggested by anti-symmetric requirements at the X° level, but is in line with the general idea (also presented in Giusti 2002, a.o.) that the hierarchies of functional features proposed in the cartographic approach can be captured in a more minimalistic fashion as a result of a general principle of UG that rules merge, thereby reconciling the apparent opposites of cartographic and minimalistic approaches.

This proposal differs minimally from the cartographic approach. Instead of assuming that the hierarchy represents the actual structure to be merged in all cases and in all languages, with the unwelcome assumption of inactive positions or void structure, I propose that Merge obeys the hierarchy every time it combines two elements in anti-symmetric fashion. Something similar has been proposed by Giorgi & Pianesi's (1997) Universal Ordering Constraint given in (3) above. If this holds true, we expect that the parametrized Spell-out of the multiply merged head, as well as checking and valuation of the features in the bundle, also obeys a Universal Ordering, as will be shown in a moment. Unlike Giorgi & Pianesi (1997), I propose that the features constituting the head of a projection merge in a complete bundle. The bundle itself is not created in the syntax, at the cost of extending the application of Merge to subparts of terminal nodes (*pace* nano-syntactic approaches). I propose that the bundles are given in the part of the lexicon that stores the paradigm of the lexical head. In this perspective, the internal hierarchy of the bundle does not concern syntax, but concerns how paradigms are structured.

My proposal needs to be integrated with a formal notion of paradigm, which has never been elaborated in the minimalist framework. In my view, a promising perspective is presented by works inspired by Aronoff's (1994) seminal work, as for example Pirrelli & Battista (2000), Maiden

(2004), and Thornton (2007). In what follows, I present a tentative sketch of how this can be implemented, postponing a more formal proposal for future research.

Remerged heads create a chain that must be spelled out according to economy principles like the one proposed in (56) above. In general, it is not economical to realize the same identical bundle more than once. This is the reason why we never find examples like (69), but we find (70) instead:

(69) a. *Children healthy children like to play outdoors.
b. *Copiilor sănătoşi copiilor le place să se joace afară.
c. *I ragazzi sani ragazzi amano giocare all'aperto.

(70) a. Healthy children like to play outdoors.
b. Copiilor sănătoşi le place să se joace afară.
c. I ragazzi sani amano giocare all'aperto.

Whatever features the paradigm of a noun overtly realizes in English, Romanian, or Italian, it would be against Economy to Spell-out multiple instances of the same head at different points of the projection, as in (56).

The paradigm of N is scattered in English (*the…child*) and Italian (*il…ragazzo*) (71a-b/b′), but not in Romanian (*băiatul*) (71c). Note that Italian gives two possibilities in the realization of the lower segment of the paradigm, one similar to English with N in the lowest position (71b), the other more similar to Romanian with N preceding the adjective (71b′):

(71) a. the nice child
b. il simpatico ragazzo
b′. il ragazzo simpatico
c. băiatul frumos

I propose, elaborating on an old suggestion of mine (Giusti 1995, 1997), that the article is the counterpart of a Case morpheme: in particular, English and Italian nominal paradigms would only have a partitive vs. non-partitive distinction and the definite article is the realization of non-partitive case, which occurs when the NE has the non-overt indP carrying referential interpretation.

Case is the highest feature (it allows for the NE to reenter the computation after Spell-out). For this reason, it is realized as the highest segment if the head is scattered, as in English (72a) or Italian (72b–b′), and as the rightmost element if it is bundled with N, as in Romanian (72c):

(72) a. [$_{NP2}$ [$_{N}$ the] [$_{NP1}$ nice [$_{N}$ child]]]
b. [$_{NP2}$ [$_{N}$ il] [$_{NP1}$ simpatico [$_{N}$ ragazzo]]]
b′. [$_{NP3}$ [$_{N}$ il] [$_{NP2}$ [$_{N}$ ragazzo [$_{NP1}$ simpatico [$_{N}$ ~~ragazzo~~]]]]
c. [$_{NP2}$ băiatul [$_{NP1}$ frumos [$_{N}$ ~~băiatul~~]]]

Note that in English, the non-partitive Case disregards Gender and Number (*the*), while the form of partitive case is sensitive to Number (*a* for singular count, zero for plural count and singular mass nouns). In Italian, Case is redundantly bundled with Gender and Number. In (73)–(76) the (a)-examples show the form of non-partitive *il/lo*.M.SG, *i/gli*.M.PL., *la*.F.SG, *le*.F.PL. while the (b)-examples show the form of partitive *un(o)*.M.SG. (75), *una*.F.SG, and zero for plural:

(73) a. Ho visto il ragazzo / lo scolaro
I have seen the boy/ the pupil.M
b. Ho visto un ragazzo / uno scolaro
I have seen a boy/ a pupil.M

(74) a. Ho visto la ragazza / la scolara.
I have seen the girl/ the pupil.F.
b. Ho visto una ragazza / una scolara.
I have seen a girl / a pupil.F.

(75) a. Ho visto i ragazzi / gli scolari.
I have seen the boys / the pupils.M.
b. Ho visto ragazzi / scolari.
I have seen boys / pupils.M.

(76) a. Ho visto le ragazze / le scolare.
I have seen the girls / the pupils.F.
b. Ho visto ragazze / scolare.
I have seen girls / pupils.F.

In Romanian, non-partitive direct case (here nominative) forms a unique bundle with N, Gender, and Number (77)–(78), partitive singular is realized as a free morpheme bundled with Gender and Number, while partitive plural does not display Gender morphology (79)–(80):

(77) a. Băiatul / Fratele a venit.
The boy / The brother arrived.
b. Băieţii / Fraţii au venit.
The boys / The brothers arrived.

(78) a. Fata / sora a venit.
The girl / The sister arrived.
b. Fetele / surorile au venit.
The girls / The sisters arrived.

(79) a. Un băiat / un fratele a venit.
A boy / A brother arrived.
b. Nişte băieţi / Nişte fraţi au venit.
boys / brothers arrived.

(80) a. O fată / O soră a venit.
A girl / A sister arrived.
b. Nişte fete / Nişte surori au venit.
girls / sisters arrived.

Oblique case can be found on the noun (81)–(82), or on the quantifier *un* (83)–(84), but not on the partitive segment *o* or *nişte*. This falls naturally if (in)definiteness is related to Case morphology in a non-arbitrary way (cf. Cardinaletti & Giusti 2006 for partitive Case assignment):

(81) a. L-am dat băiatului / fratelui.
I have given it to the boy / to the brother.
b. L-am dat băieţilor / fraţilor.
I have given it to the boys / to the brothers.

(82) a. L-am dat fetei / surori.
I have given it to the girl / to the sister.
b. L-am dat fetelor / surorilor.
I have given it to the girls / to the sisters.

(83) a. L-am dat unui băiat / unui frate.
I have given it to a boy / to a brother.
b. L-am dat unor băieţi / fraţi.
I have given it to some boys / brothers.

(84) a. L-am dat unei fete / unei surori.
I have given it to a girl / to a sister.
b. L-am dat unor fete / surori.
I have given it to some girls / sisters.

Case is uninterpretable by definition. As reported in §1.2, it is so uninterpretable as to be a real problem for the Full Interpretation Principle, which can only be accommodated by assuming that Case makes theta-roles visible (cf. Haegeman & Guéron 1999; Ch 5), anchoring the referent

that receives the theta-role to the time reference of the clause. We have seen in §3.1 that Pesetsky & Torrego (2001: 361) suggest that Nominative Case is $u\mathrm{T}_s$ on D, while accusative is $u\mathrm{T}_o$ on D. Thus, N should come with an uninterpretable T feature to be further specified as $u\mathrm{T}_s$, $u\mathrm{T}_o$ according to the grammatical function of the NE, or better said, according to the probe that is going to target it (T or little v).

Let us for a moment go back to the uninterpretable feature assigned by a nominal probe which turns out to trigger genitive case. In §3.1 above, I have argued that it cannot be *u*T because it does not anchor the possessor to the time reference to which the possessee is anchored in a predicate or in a clause. Consider once again the case of a definite expression that refers to no individual in our modern world, in which France is a republic:

(85) a. #The king of France is bald.
b. The crown of the king of France is at the Louvre.

The sentence in (85a), and its negative counterpart *The king of France is not bald*, famously analysed by Russell (1905), cannot in fact be assumed to be either true or false because the definite expression "the king of France" has no referent at the present time in the real world.[29] However, the sentence in (85b) does not display the same kind of interpretive anomaly. So there is no anchoring of the reference of the possessor to the time to which the possessed noun is anchored. Conversely, *France* in *the king of France* does make reference to an existing country at the present time in the real world, but this does not help avoid the anomaly of (85a).

The referent of the possessor is anchored to the referent of the possessee not in Time but in (conceptual) Space (the R-relation is a relation between individuals). In fact, it restricts the denotation of the possessee. So *France* restricts the denotation of *king* and *the king of France* restricts the denotation of *crown*.

Note that the most natural interpretation of Italian (86a) is that I have seen five different portraits, since only one king of France at a time can have been portrayed as a living person.[30] The definite description in

[29] On the other hand, Strawson (1950: 325) adopts a pragmatic approach and takes an utterance like (85a) as being absurd rather than false, arguing that the same propositional content, whose truth or falsity entirely depends on the speaker and not on the words composing it, can be used with different purposes in one or another communicative context.

[30] This does not exclude that the expression is ambiguous with the interpretation of a collective portrait of five kings made *a posteriori* by some modern artist. This would correspond to a collective interpretation of "five kings of France".

English (86b) can appear in an existential construction, despite the fact it is introduced by a definite article, because its possessor contains an existential quantifier:

(86) a. Ho visto il ritratto di cinque re di Francia al Louvre.
[I] have seen the portrait of five kings of France at the Louvre
b. Is there the portrait of any king of France at the Louvre?

For this reason, I suggested in §3.1 that genitive Case is the valuation of *u*Pred as *u*D, which is the syntactic realization of the R-relation suggested in seminal work by Williams (1980), Higginbotham (1985, 1987). When N is merged with a possessor, obviously carrying a different index (φ-feature), N bundles with a probe that targets the different index of the possessor and makes it reenter the computation as part of the denotation of N, thereby enriching the denotation with the relation with the referent of the possessor.

This proposal requires that the *u*Pred associated to the possessor N is the highest feature in the bundle. This makes the complete projection of N (NE) reenter the next complete projection, which can be a clausal or nominal phase. I tentatively formulate this generalization as in (87):

(87) N is bundled with *u*Pred.
When an NE is targeted by a probe associated with a *u*φ,[31] it values its *u*Pred according to the categorial nature of the probe.

Speculating on the typology of probes that can value the nominal *u*Pred, I envisage the interface configurations listed in (88):

(88) Structural Case is a *u*Pred on a goal to be valued as:
a. Accusative *u*Asp (cf. Pesetsky & Torrego (2004) T_o)
b. Nominative *u*C (cf. Chomsky 2005, Richards 2007)
c. Genitive *u*D
d. Vocative *u*Disc(ourse)
e. Prepositional Case *u*P
f. Partitive Case *u*Q

It must be kept in mind that T, C, D, P, Q, and Disc are the features that turn lexical projections into phases. Slightly revising Pesetsky & Torrego (2004) and following Richards (2007), I propose that Case is assigned by a

[31] The *i*φ of the NE are not bundled with N (thus, they are not in D), but are in the Left Edge of the NE (SpecDP). N is just bundled with a probe feature that whatever element carries *i*φ (indP, a demonstrative, etc.) to the Left Edge.

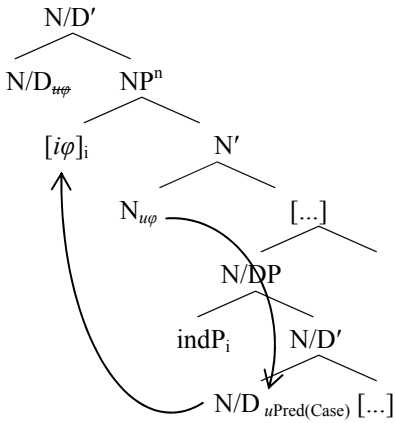
probe bundled with the head of the phase and activated in its highest non-phasal segment. This, Accusative is assigned by a probe Asp in vP, the phasal head of V. Nominative is assigned by a probe bundled with C, the phasal head of T. Genitive is assigned by a probe bundled with D, the phasal head of N. Vocative is assigned by a probe bundled with a discourse head related Disc to the participants (cf. Giorgi 2010b) in the root clause. Prepositional Case is assigned by a Preposition and is probably to be distinguished in further subcases. Finally, partitive Case is assigned by a probe bundled with an existential quantifier. But a detailed treatment of all the Cases would take us too far afield from our discussion of the nature of articles at the interfaces. [32]

The label *u*D for genitive (the subject of the NE) is parallel to *u*C for nominative (the subject of the clause). But this gives us an apparently contradictory situation, in which a *u*Pred bundled with an N/D is valued as *u*D. The puzzle is solved if we consider that N/D is already in Spec–Head configuration with an indP or another determiner that gives a Person feature and an index to the whole NE, as in (55) above. In the discussion on (85) above, I have shown that the denotation of the upper phase is interpreted as having a relation to the referent of the lower phase. Genitive Case (valuation of the *u*Pred feature of the possessor against the category N/D of the possessee) is part of this interpretive process at the Syntax–LF interface.

In (17) above, I represented the Agreement process between an N and a possessive adjective in two steps. In (89) I represent the two steps between an N and a genitive NE: in (89a) the possessee N targets the φ-feature of the possessor (provided by indP in SpecN/DP). As a consequence of this, the *u*Pred feature of the possessor N/DP is valued as *u*D, which marks the fact that the possessor, after being sent to the interfaces, reenters the computation as part of the upper N, which remerges at the phasal level as N/D:

[32] Note that in the projection proposal the lexical vs functional distinction is less obvious, as there is a single head of a phase bundled with features.

(89)



In this section, I have proposed that N, bundled with all its interpretable and uninterpretable features, remerges as many times as necessary. In the spirit of Chomsky (2001), I have proposed that this does not create copies. At the interpretive interface, the multiply projecting head is interpreted only once but its features spread on the modifiers by virtue of Concord. At the sensorimotor interface, the different points of remerge can give rise to scattered heads, subject to very low level parameters which are basically represented in the paradigm of each (class of) item.

I have reformulated Giusti's (1993) proposal that articles are free Case morphemes as follows. (i) Case is the highest uninterpretable feature with which N is bundled; (ii) it is a *u*Pred to be valued according to the category of the phasal head bundled with the selecting probe; (iii) it allows the NE to reenter the next phase as part of the denotation; (iv) heads can be realized in a scattered fashion with apparent redundancy of features, but complying with the Economy principles (56), e.g., "Economize Merge".

This proposal reinterprets head movement in a fashion that makes it compatible with Chomsky (2001, 2013). First of all, Projection is triggered by the need to instantiate a new selection or a modification relation with the head, it therefore satisfies the Extension Condition. Second and most importantly, it provides an explanation for apparent head movement, which is identified with the structure building operation Merge extending the projection of a head that can have multiple selectional requirements and may be involved in multiple modification relations. Third, it does away with a typology of head movement by adjunction and substitution, which was necessary in the representation approach of GB-theory, in that Projection is the result of internal merge of a head, therefore perfectly

parallel to XP-movement. Fourth, it gives an original answer to the doubts raised by Hudson (2000) about the legitimacy of considering the notion of functional category as a primitive. Functional categories no longer exist, there are only segments of scattered (lexical) heads or indexicals (Person features that saturate an open position in the denotation of N.

Unlike other proposals recently advanced in favor of head movement, notably Matushansky (2006), Donati (2006), and Roberts (2010, 2011), my proposal does not assume an Agreement-like procedure for head movement, and restricts Agreement to the properties of a head bundled with a probing feature to be checked and a maximal NE, the goal, whose head is bundled with an uninterpretable feature to be valued. Head movement has none of these properties.

A second difference between head- and XP-movement that comes as a consequence of my proposal is that in what position(s) the head is realized is a matter of the Spell-out interface.

CHAPTER FOUR

ON THE DIFFERENT NATURE OF SO-CALLED DETERMINERS

Since Abney's (1987) seminal work, functional categories have been defined as having the properties listed in (1):

(1) a. They constitute a closed class.
b. They can be sisters only to one kind of category.
c. They can be phonologically and / or morphologically dependent.
d. They are usually inseparable from their sister projection.
e. They display a high degree of cross-linguistic variation (and micro-variation).
f. They may be phonologically null.
g. The conditions on their merging are syntactic in nature.
h. They lack substantive content.

In this chapter, I elaborate on Giusti (1997) and later work of mine to show that only articles among determiners display all of these properties while other determiners only display a subset of them. In the hypothesis developed in Chapter 3, this is derived by the proposal that only articles among determiners are segments of a scattered nominal head; in other words, articles are nothing else than inflectional morphology of N.

Parallel to inflectional morphology, they constitute a genuinely closed class (1a); they are directly associated to the lexical category N (1b); they are phonologically and morphologically dependent (1c) (like proclitic articles in Italian and enclitic articles in Romanian and Scandinavian); they cannot be targeted by an external probe and extracted out of the nominal phase (1d); they display a high degree of variation (1e) even in one and the same language; they can be missing (1f) in some languages or in different syntactic contexts; their insertion or realization depends on morpho-syntax (1g). Finally, they not only lack substantive or descriptive content (1h), but their interpretation is quite different across languages, as already noted in

§2.3(50).[1] In this chapter, I show that other determiners, such as quantifiers (§4.1), demonstratives (§4.2), possessive adjectives, pronouns or NEs (§4.3) behave differently from articles and from one another.

I also show that the scattered head hypothesis combined with the proposal that the referential index of the NE is interpreted at the Left Edge (a specifier position) correctly predicts that articles (segments of a scattered N-head) can cooccur with other determiners located at the Left Edge (namely, SpecDP), like demonstratives (§4.2) and personal pronouns (§4.4), while possessives can be remerged in the highest non-phasal specifier (§4.3). I conclude the chapter with an analysis of proper names (§4.5), which are directly referential and in some languages cooccur with articles and no other determiner, showing that articles do not provide a referential index.

4.1 Quantity items

Quantifiers are quite different from one another in that they can express all sorts of proportion (existential, universal, distributive, collective, cardinality, vague quantity, etc.). They are virtually infinite in number, if we include cardinal numerals in this category. Furthermore, there is an easy transfer from the category adjective to the category quantifier. For example, English adjectives such as *different*, *additional*, *numerous*, *entire* can behave like quantifiers and, *vice versa*, quantifiers such as *many*, *few*, *both* can behave like adnominal or even predicative adjectives. Thus, quantity items do not constitute a closed class, but a very open one, contra (1a).

Quantification is a general property of language that applies not only to NEs but to any gradable properties, and can bundle not only with N but also with A, V, and Adv. The sentences in (2) provide an example of the ways we can express a large quantity associated to different categories:

[1] The typological search carried out by Dryer (2013) reveals that the majority of language systems possess definiteness or anaphoric markers (377/620), which may be bound (92) or unbound morphemes (216) and can sometime coincide with a special demonstrative (69). A robust minority of languages (198/620) have neither definite nor indefinite articles. A few other languages (45/620) only display an indefinite article. The search does not clearly separate articles from what Dryer calls special demonstratives (possibly the overt realization of the ι-operator, which I take to be in SpecDP); neither does it take into consideration those articles (bound or free) that do not express definiteness or anaphoricity (cf. Chapter 2, ex. (50)). However, it clearly points to the direction that articles can be free, bound, or missing, as is typical of functional features expressed as inflectional morphology.

(2) a. Mary doesn't have a lot of / much time.
Mary doesn't have a lot of / many friends.
b. Mary is very nice, much nicer than Julie.
Mary is very elegant, much more elegant than Julie.
c. Mary works a lot / very much.
d. Mary can run very fast / much faster than Julie.
Mary drives very carefully / much more carefully than Julie.

As is apparent in (2), different categories are modified by different quantifiers. Plural Ns are modified by *many*, singular Ns are modified by *much*. The quantifying expression *a lot of* is insensitive to Number. *Much* and *a lot* can also modify Vs and comparative adjectives or adverbs. Adjectives and adverbs are graded by the dedicated element *very* in English.

In Italian, gradability and quantification can be expressed by the same lexical element, e.g., *molto*, showing that the two semantic processes are cognate. The examples in (3) are the direct counterpart of the English examples in (2):

(3) a. Maria non ha molto tempo.
Maria non ha molti amici.
b. Maria è molto simpatica, molto più simpatica di Giulia.
Maria è molto elegante, molto più elegante di Giulia.
c. Maria lavora molto.
d. Maria corre molto veloce, molto più veloce di Giulia.
Maria guida attentamente, molto più attentamente di Giulia

Thus, quantity items are not sisters to a single category, contra (1b). In the English and Italian examples above, we also observe that quantifiers are neither phonologically nor morphologically dependent, contra (1c).

It is well known that Qs are easily separable from their sister projection, contra (1d), as is the case of floating quantifiers (4) and clitic extraction (5):

(4) a. Le ragazze hanno tutte mangiato una mela.
The girls have all eaten an apple.
b. (Ragazze) Ne sono arrivate molte.
(Girls) CL are arrived many
(5) a. (I ragazzi) Li ho salutati tutti.
(The boys) CL [I]-have greeted all.
b. (Ragazzi) Ne ho salutati molti.
(Boys) CL [I]-have greeted many.

In English, which does not have resumptive clitics, Quantifiers can have pronominal value as in (6):

(6) a. Many have arrived.
b. I have met many at school
c. (Books) I usually read many during the summer.

A comparison between (4)–(5) and (6) reveals that quantifiers have a very similar distribution in Italian and English. This is true cross-linguistically in the sense that Qs do not display the degree of variation usually found with functional heads, but are more similar to lexical categories such as adjectives and nouns, that distribute over a limited number of patterns.

In some languages, a subclass of quantifiers assigns case, usually genitive, as in Slavic, while others are similar to adjectives. In the Russian examples (7), from Franks (1995: 600–602), "three" assigns genitive singular (7a), "five" assigns genitive plural (7b), while "one" concords with the noun (7c):

(7) a. Ivan kupil tri mašiny.
Ivan.NOM bought three car.GEN.SG
"Ivan bought three cars."
b. Ivan kupil pjat′ mašin.
Ivan.NOM bought five car.GEN.PL
c. Ivan kupil odnu mašinu.
Ivan.NOM bought one.acc.SG car.ACC.SG
"Ivan bought one car."

This suggests that quantity items are lexical heads bundled with functional features. For those that assign case, we must assume that they are bundled with a probe (an uninterpretable Person feature) which targets a goal (the NE selected by Q). If this is so, the quantifier Q is not part of the genitive NE, but of a higher phase. This is the case for (7a–b), where the different numerals, which I take to be of category Q, impose different selectional requirements on the Number of the selected NE. In (7c), on the contrary, the numeral concords with N. In my proposal, in order to do that, it must be an A, bundled with a *u*F to be checked by Concord when the AP is merged as SpecNP.

There is a strict correlation discussed by Giusti & Leko (1996, 2005) in the extractability of the complements of Q and the non-extractability of the NP modified by a qA, in Slavic languages.

Let us observe how root *mnog-* is categorially ambiguous between A and Q. The Bosnian/Croatian/Serbian examples (8)–(9) are taken from

Giusti & Leko (2005). In (8a), we see the Q *mnogo* which assigns genitive to a full NE (*studenata*). The complement of Q can be substituted by a personal pronoun which can be strong, as *njih* in (8a), or weak, as *ih* in (8b). In this case it must remerge in the Wackernagel position:

(8) a. Vidio sam mnogo studenata / njih.
(I) saw many students.GEN.PL / them.GEN.PL
b. Vidio sam ih mnogo.
(I) saw CL.3P.GEN.PL many
"I saw a lot of them."

Comparing (8) with (9), we observe that the concording adjective *mnoge* does not assign case, cannot have a pronominal complement, and does not allow clitic extraction:[2]

(9) a. Vidio sam mnoge studente / *njih.
(I) saw many.ACC.PL students.ACC.PL / them.ACC.PL
b. Vidio sam (*ih) mnoge.
(I) saw CL.3P.ACC.PL many.ACC.PL

The possibility to separate a quantity item from the NE it quantifies over depends on its Q vs. A status and on the behavior of Q and A in the given language. Qs separate more easily than APs. But in neither case do they comply with (1d). Furthermore, the syntactic variation displayed in the above examples is more reminiscent of the variation found among lexical categories (with different selectional properties or Case assignment possibilities) than of the micro-variation found even in one and the same language with articles, as will be shown at different points in this chapter.

There are two cases in which quantifiers could be claimed to be null (1f). It could be claimed that definite expressions include a universal quantifier, making *all the boys* syntactically and semantically equivalent to *the boys*. It could also be claimed that indefinite expressions include an existential quantifier, making indefinite *boys* syntactically equivalent to *some boys* and semantically equivalent to "an indefinite quantity of boys", with a null quantifier meaning "an indefinite number of". This latter possibility is exploited to derive the so-called "partitive article", namely, indefinite plural *dei* / *des* in Italian and French, by Chierchia (1998b), and

[2] The forms *ih*, *njih* are ambiguous between accusative and genitive plural, while the noun *student* has different inflection (genitive plural *studenata* vs. accusative plural *studente*).

Zamparelli (2008).[3] This hypothesis cannot hold in its simplest formulation, since it would imply that all languages have two null Qs which have opposite meanings (universal and existential) and compete with their overt counterpart. In any case, the very possibility to have a null counterpart of a category cannot be taken as direct evidence for its functional status, given that in nominal ellipsis, what is null is the lexical head or a larger chunk including it. In any case, no language is reported to miss quantifiers; thus no language exists where quantifiers are always null, differently from articles, which are missing in a substantial number of languages.

Finally, merger of a quantity item is never triggered by syntactic necessity, differently from articles, contra (1g). Thus, even if quantifiers have a relational and non-substantive content, we can conclude that they are not functional categories, and more precisely they are not part of the projection of N.

In joint work with Anna Cardinaletti (Cardinaletti & Giusti 1992, 2006), I have claimed that quantifiers have argument structure, selecting full DP-arguments. Even if this proposal should prove wrong, quantifiers must be treated as determiners of a higher level than demonstratives,[4] which are shown in the following section to be high modifiers carrying the referential index to be interpreted at the Left Edge of the NE.

4.2 Demonstratives

Demonstratives are rather limited in number. They are therefore good candidates for functional status, according to (1a). However, Diessel (2006) observes that they are very different from functional words such as articles or auxiliaries, at least along the following lines: (i) they are among the first words acquired in child language; (ii) they are universally present in all languages; (iii) they appear to be very ancient roots and do not derive from other words; on the contrary, they are often the base of articles and other "functional" words; (iv) finally, they can be tied to a particular gesture.[5] His proposal is that demonstratives (and adverbial deictics like

[3] Chierchia's and Zamparelli's proposals assume that such null Q in D incorporates with the P+D heads of the partitive complement of Q in the languages that have a partitive article. The analysis of partitive articles given in Cardinaletti & Giusti (2015) dispenses with this type of *ad hoc* treatment of indefinite determiners.

[4] This is in line with what is proposed by Matthewson (1998, 2001) reported in §2.3 above.

[5] Properties (i), (iii), and (iv) have no counterpart in (1). Property (ii) is the counterpart of (1f).

here and *there*) should be analysed as a third type of category (neither lexical nor functional), which serves "the function to coordinate the interlocutors' joint focus of attention", which is at the base of human communication.

Diessel (2013) argues that languages divide demonstratives mostly along two or three dimensions. From a typological point of view, the languages with two (127/234) or three (86/234) demonstratives prevail, whereas the other types are quite rare: 7/234 have one, 8/234 have four and 4/234 have five.[6]

All in all, it seems that variation across languages and varieties does not really concern the syntactic distribution, contra (1e) and (1g), but their pragmatic value. Furthermore, they are clearly not phonologically or morphologically dependent, contra (1c). Finally, contra (1f), there is no language missing demonstratives.

Parallel to quantification, deixis is cross-categorial. It includes locative adverbs and even verbs, which certainly have substantive content. In (10), we observe two motion verbs, and in (11), we observe two ditransitive verbs in English that imply a distal or proximal feature of the goal that must be matched if the goal is overtly realized by an adverbial:

(10) a. Mary came (here / *there)
b. Mary went (there / *here)

(11) a. Mary brought the book (here / *there)
b. Mary took the book (there / *here)

[6] Here are some examples of languages and of the types of space dimensions:

(i) a. Northern Estonian (one dimension)
see = proximal/distal
b. English (two dimensions)
this = proximal; *that* = distal
c. Japanese (three dimensions)
kore = proximal; *sore* = distal; *are* = away from speaker and hearer
d. Somali (four dimensions)
kán/tán = proximal; *káa(s)/táas* = distal; *kéer/téer* = in the middle distance; *kóo/tóo* = in the far distance
e. Maricopa (five dimensions)
vda = proximal, in hand; *da* = proximal, near; *va* = medial; *sva* = distal; *aas* = distal, out of sight.

Deictic adverbs can also be associated to demonstratives, and in this case they must match the distal / proximal feature of the demonstrative:[7]

(12) a. this book (here / *there)
b. that book (there / *here)

Note that a deictic adverb can be freely associated to a verb that does not contain a distal / proximal feature of the goal (13a), but a noun introduced by a definite or indefinite article cannot have a freely adjoined adverbial (13b):

(13) a. Mary put the book (here / there).
b. The / A book (?*here / ?*there) is interesting.

The contrast in (13) can be captured by the observation that deictic spatial adverbs can be associated to verbs but not to nouns. The possibility of having a deictic spatial adverb in an NE is dependent on the presence of the appropriate deictic determiner. In chapter 5, I will adopt and further support Brugè's (1996) hypothesis that demonstratives are complex structures that can be modified by a deictic adverb. This is clearly very different from the semantic and syntactic behavior of definite or indefinite articles.

There is no consensus as regards the merging point of demonstratives. Mainstream literature takes it for granted that demonstratives are in D (cf. Longobardi 2001). This assumption directly leads to the conclusion that all languages have a DP (e.g., Progovać 1998 for Serbo-Croatian), because demonstratives are universal (cf. Diessel 2006: 472). Alternative approaches take the categorial nature of demonstratives as subject to parametric variation and attributes specifier status to demonstratives only in languages without articles (cf. Bošković 2005, Trenkić 2004, and §2.2.3). A third unifying hypothesis is that demonstratives are specifiers in all languages (Giusti 1993, 1997, Brugè 1996, 2002). This predicts that demonstratives can cooccur with other determiners such as possessive pronouns, which can be considered specifiers of a different nature (cf. §4.3). It can also account for the fact that when demonstratives grammaticalize

[7] For example, Italian *questo*/**quel libro qui* vs. *quel*/**questo libro là*. In German and French, where the demonstrative pronoun is basically distance-neutral (cf. the discussion of (6)–(7)), the distal vs. proximal distinction may be expressed by means of deictic adverbs, e.g., in German *dieses Buch hier*/*dieses Buch da* and French *ce livre-ci*/*ce livre-là*. For a recent study of this phenomenon and an overview of previous research cf. Roehrs (2010).

into articles or complementizers, they change status from XP (in specifier position) to segments of a scattered nominal or propositional head (D or C) (cf. Heine & Kuteva (2002) and §1.3 above). But above all, this proposal predicts that demonstratives can cooccur with an overt segment of a scattered N, namely the article. This holds in a number of unrelated languages. In (14) a demonstrative immediately precedes a prenominal (definite) article. In (15), the demonstrative is postnominal and the article is prenominal. In (16) we have a prenominal and a postnominal demonstrative cooccurring with an affixal article:

(14) a. afto to vivlio (Modern Greek)
this the book
b. ika n anak (Javanese)
this the child
c. ez a fiú (Hungarian)
this the boy

(15) a. el chico este (Spanish)
the boy this
b. an fear seo (Irish)
the man this
c. y din hwn (Welsh)
the man this
d. pan wig jainan (Gothic)
the way this

(16) a. sa madrinn (old Icelandic)
this man-the
b. băiatul acesta (Romanian)
boy-the this

An issue that arises in the approach to demonstratives as specifiers is their merging point. If demonstratives carry, together with other features, the referential index of the NE, which is an argument of N parallel to the event-argument of V (cf. Davidson 1967, Kratzer 2003), it is reasonable to assume that such an index is merged as the highest argument of N (assuming that N can have internal arguments), lower than any modifier. This is what is independently proposed by Brugè (1996, 2002) based on Spanish data and Giusti (2002, 2005) based on Romanian data.

In these two Romance languages, a demonstrative can appear in post-nominal position:

(17) a. băiatul acesta (Romanian)
boy-the this
b. el chico este (Spanish)
the boy this

Even abstracting from the enclitic vs. free status of the article, there are important differences in the distribution of the postnominal demonstrative. First, in Romanian, a postnominal demonstrative is the left-most modifier, basically in second position in the NE, only following the inflected N; while in Spanish, it is the rightmost specifier, only preceding a postnominal possessive:

(18) a. băiatul {acesta} frumos {*acesta} (Romanian)
boy-the this nice
b. el chico {*este} hermoso {este} (suyo) (Spanish)
the boy nice this his / her
"this nice boy of his / hers"

A second important difference is the possibility in Spanish and the impossibility in Romanian to associate a locative adverbial to the demonstrative in either position. In Spanish, the adverbial strictly concords with the demonstrative in the distal vs. proximal dimension, and must be adjacent to it, when the demonstrative is postnominal; while it must be discontinuous from it when the demonstrative is prenominal:

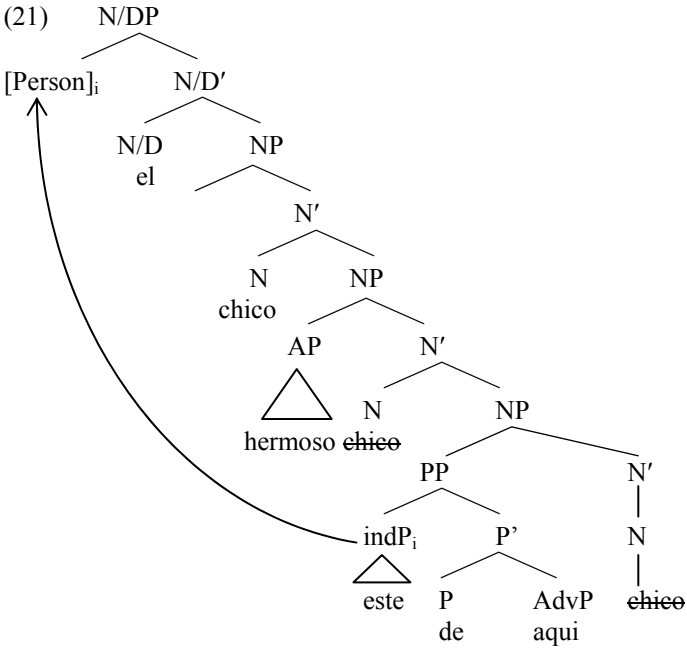
(19) a. *băiatul acesta (de) aici (Romanian)
boy-the this of here
b. *acest băiat (de) aici
this boy here

(20) a. el chico este de aqui (Spanish)
the boy this of here
b. este chico de aqui
the boy this of here

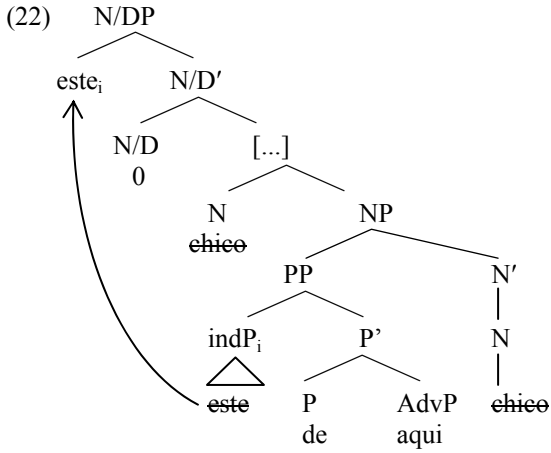
Brugè (1996, 2002) argues that in (20a) the demonstrative and the locative adverbial build a complex constituent with the preposition *de* heading a predicative-like construction. The demonstrative is in the specifier of *de* and can move as a complete projection to the highest nominal specifier in order to check its referential features, leaving the locative in place, yielding (20b), parallel to what Sportiche (1988) has suggested for floating quantifiers. The arrow in (21) shows remerger of the Person features of indP to SpecN/DP, which requires an overt N/D. If remerger involves the

whole indP, as in (22), indP is spelled out as SpecN/DP and the head N/D is null:

(21)



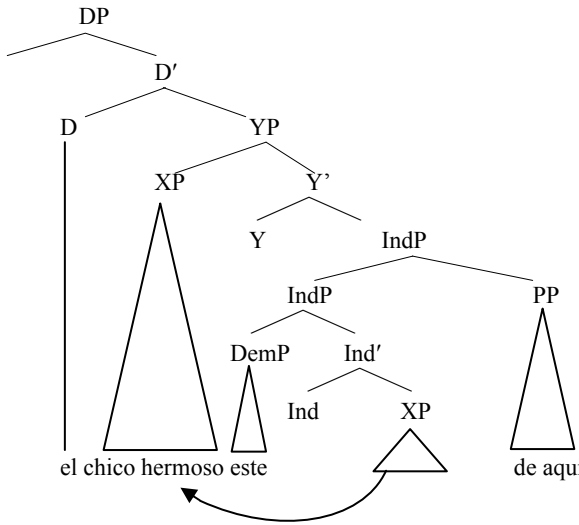
(22)



An alternative to this is proposed by Bernstein (1997), Leu (2008), and Roehrs (2010), according to whom the demonstrative is not the lowest

specifier, but an intermediate one. In particular, Roehrs takes up Bernstein's idea that the complete nominal projection displays the intermediate functional head IndP in whose specifier the demonstrative is first merged. This projection would make space for a PP reinforcer, as a right adjoined modifier as depicted in (23) which reproduces Roehrs (2010: ex. (10)):

(23)



I have one theoretical and two empirical objections to this. First, IndP is so high in (23) as to resemble my probe feature (as discussed for possessives in §4.3). It is therefore a good candidate for a landing site of DemP, rather than its first-merge position. Furthermore, I do not see how a PP adjoined to IndP should concord for locative features with DemP in SpecIndP, as is required to account for the occurrence of *allì* / *aqui* in (24):

(24) a. el chico este de aqui / *allì (Spanish)
the boy this his / her
b. el chico aquel de allì / *aqui
his / her boy this

Finally, the demonstrative in postnominal position in Spanish not only must precede a postnominal possessive (25a–b), but is also incompatible with a prenominal possessive (25c). In other words, a demonstrative must always appear higher than a possessive adjective (25d):

(25) a. el chico hermoso este suyo (Spanish)
the boy handsome this his / her
b. *el chico {hermoso} suyo {hermoso} este {hermoso}
c. *su chico {hermoso} este {hermoso}
his / her boy this
d. este chico hermoso suyo
this boy his / her

The hierarchical ordering of the demonstrative and the possessor is directly derived by the proposal that the possessor is an independent phase (cf. §3.1 above and §4.3 below) and must be sent to the interfaces before the phase of the possessee is completed, while the demonstrative is part of the Left Edge of the NE. The data in (25) also provide counter-evidence for the remnant movement of XP to YP, at the left of the demonstrative, proposed in (23), which would predict that a postnominal possessor included in XP should precede the demonstrative, contrary to fact.

The Romanian examples in (26) apparently provide evidence for the high position of the demonstrative in (23). But the postnominal demonstrative must be immediately lower than the N inflected for the definite article, and cannot follow an adjective seemingly inflected for the article:

(26) a. băiatul (acesta) foarte frumos (Romanian)
boy-the this.*a* very nice
b. foarte frumosul (*acesta) băiat
very nice-the (this.*a*) boy

In Giusti (1993, 1997, 2002), I have taken this to show that the demonstrative in Romanian is not a head, given that it does not block head movement in (26a), but rather a specifier, given that it blocks AP-movement in (26b). In Giusti (2005), I have proposed that the postnominal demonstrative is merged as the specifier of a KonP, which is part of the split DP (cf. §1.3.2) because it must precede adjectives of any class, as in (27) and (30) below). The idea is that the demonstrative is attracted to SpecKonP, but still needs to check its features at the Left Edge. For this reason, SpecN/DP is empty in (27a) and N/D is filled by the noun, inflected for the definite article, which is the realization of Case features. AP cannot remerge in SpecN/DP across DemP in (27b), for relativized minimality (Rizzi 1990) or Shortest Move (Chomsky 1993) or the like:

(27) a. [$_{N/DP}$ [$_{N/D}$ băiatul][$_{KonP}$ [$_{DemP}$ acesta] Kon [$_{NP}$ [$_{AP}$ foarte frumos] ~~băiat~~]]]
b. *[$_{N/DP}$ [$_{AP}$ foarte frumosul] N/D [$_{KonP}$ [$_{DemP}$ acesta] Kon [$_{NP}$ [$_{AP}$ ~~foarte frumos~~] băiat]]]

The analysis in (27) predicts that any type of adjective can follow a postnominal demonstrative. This is not completely true. For example, a prenominal adjective like *biet*, which cannot be preceded by N, gives an ungrammatical result (28); *ultim* changes its meaning in prenominal ("last") and postnominal ("ultimate") positions, after the demonstrative, only the postnominal interpretation is possible (29):[8]

(28) a. acest {biet} băiat {*biet}
this poor boy
b. *băitul acesta biet

(29) a. acest {ultim} sacrificiu {ultim}
this last sacrifice ultimate
b. sacrificiul acesta ultim
sacrifice this ultimate

All postnominal adjectives can appear in this construction. Thus, not only can indirect modification adjectives, as *foarte frumos* in (26), unproblematically appear after the demonstrative, but also the relational adjectives in (30), which are low direct modifiers, cannot be predicates, and occur postnominally (as shown in detail in Cornilescu and Nicolae (2012):

(30) a. materialul acesta nisipos / *materialul nisipos acesta
material-the this sandy
"this sandy material"
b. productia aceasta cerealieră / *productia cerealieră aceasta
production-the this cereal.ADJ
"this production of cereals"
c. conflictul acesta territorial / *conflictul territorial acesta
conflict-the this territorial
"this territorial conflict"

[8] I thank Alexandru Nucolae and Iulia Zegrean for commenting on these data and much more. This does not mean that they necessarily agree with the proposal.

d. veniturile acestea comerciale / *veniturile comerciale acestea
incomes-the these commercial
"these commercial incomes"
e. palatul acesta regal / *palatul regal acesta
palace-the this royal
"this royal palace"
f. vinul acesta alb / *vinul alb acesta
wine-the this white
"this white wine"

The data in (30) are fully compatible with Bernstein/Roehr's middle-merger analysis. But they are also compatible with Brugè's low-merger analysis and my own (Giusti 2005) in (27), where the middle merger is not the first-merge position; the postnominal demonstrative is attracted to the Left Periphery of the NE, in a projection that hosts Contrast features (KonP), which is in fact part of a split DP layer (cf. §1.3.2). The data in (30) confirm the hypothesis that the postnominal position of the demonstrative in Romanian is due to the possibility of realizing N inflected for the definite article as the highest segment of N. A roll-up analysis around a high demonstrative, as in (23), would predict that the demonstrative be at the right side of the direct modification adjective, contrary to fact.

Under any of the above analyses, the Spanish and Romanian data support the hypothesis that demonstratives are specifiers while articles are merged as inflectional morphology of N (scattered morphology in Spanish, bundled with N in Romanian). In both languages, the realization of the article complies with the Visibility requirement (57) submitted to the Principle of Economy (56), formulated in §3.2 and repeated here for ease of exposition:

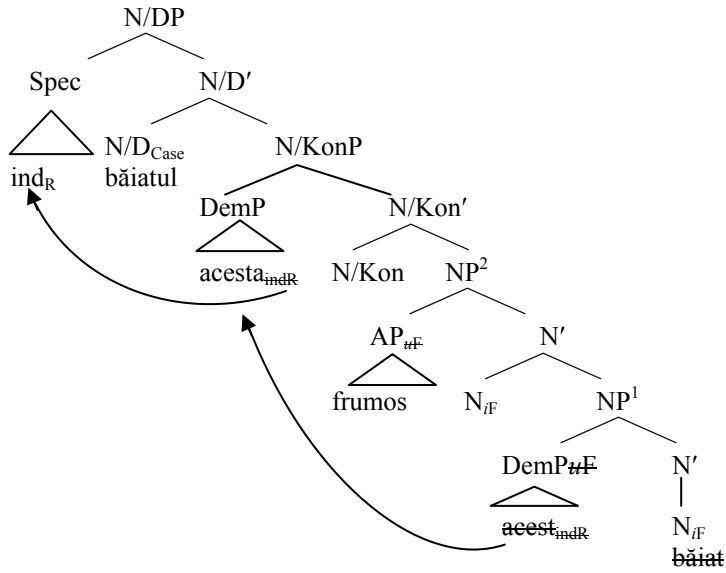
§3.2(56) Economize Merge:
a. Do not reproject unless necessary.
b. Do not realize a reprojected head unless necessary.

§3.2(57) A Spec–Head relation created by Merge must be visible
a. on the specifier, and / or
b. on the head.

Both Spanish and Romanian make the *either/or*-choice for the highest nominal projection, which I have labelled NP/DP for ease of exposition. The referential index [ind_R] of the demonstrative is remerged as SpecN/DP

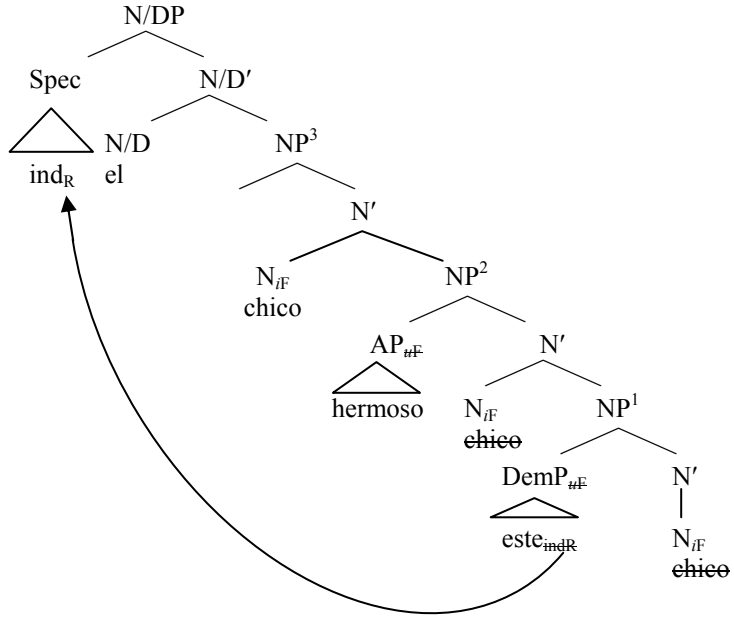
before the nominal phase is transferred to the interfaces, but the demonstrative may remain in SpecKonP in Romanian or in the low first-merge position in SpecNP in Spanish. When this is the case, the head of DP is overtly realized, to make the functional features (notably, Case bundled with Gender and Number) visible. We see the detailed structure of Romanian and Spanish in (31) and (32) respectively, where DemP provides the indexical feature required at the Left Edge of the NE. The postnominal position of the demonstrative is marked as contrasted in both languages. In the unmarked case, the whole DemP would be pied-piped with ind_R filling the SpecDP position:[9]

(31)



[9] The *-a* ending in the postnominal demonstrative is of dubious origin but could be related to the locative reinforcer and is obligatory both on pronominal and on postnominal demonstratives. In Giusti (1993, 2002), I proposed that it is the licenser of a null N. In the present framework, I can reformulate the proposal suggesting that it occurs when the demonstrative is contrasted.

(32)



Since both languages chose the *either/or* parameter of §3.2(57), the highest segment of N (labelled N/D here for ease of presentation) must be null, ruling out (33):

(33) a. *[$_{\text{N/DP}}$ este [$_{\text{N/D}}$ el] [$_{\text{NP}}$ ... chico]]
b *[$_{\text{N/DP}}$ acest [$_{\text{N/D}}$ băiatul] [$_{\text{NP}}$ ...]]

Other languages, including Hungarian and Greek, go for the *and* parameter choice, irrespective of pied-piping of the demonstrative to the highest specifier of NP, which is optional in Greek (34a) vs. (34c) and mandatory in Hungarian (34b):

(34) a. [$_{\text{DP}}$ afto [$_{\text{D}}$ to] [$_{\text{NP}}$ oreo vivilio]] (Greek)
b. [$_{\text{DP}}$ ezt [$_{\text{D}}$ a] [$_{\text{NP}}$ szép könyvet]] (Hungarian)
this the nice book
c. [$_{\text{DP}}$ *ind*$_{\text{R}}$ [$_{\text{D}}$ to] [$_{\text{NP}}$ oreo vivlio [$_{\text{NP}}$ afto ~~vivlio~~]]] (Greek)
the nice book this

We can conclude that demonstratives are not functional heads. They are merged with N to saturate an open position and allow for N to have an

individual index. They are very different from articles with which they are in a Concord relation. The realization of both the demonstrative and the article depends on micro-parameters concerning: (i) the inflectional property of the demonstrative; (ii) the position in which the demonstrative is spelled out; (iii) the inflectional properties of N, whose bundle of features includes those that are realized as the article.

4.3 Possessives

In some languages, some possessives have clear adjectival status, in the sense that they concord with N for the same Gender and Number features as other adjectives, as is discussed in §3.1 above. This is irrespective of whether the language has articles, as shown by the strict similarity in the inflection of a possessive adjective in Italian and Latin:

(35) a. *(quella / la) mia sventura
b. illam meam cladem
that.ACC.F.SG. my.ACC.F.SG misfortune.ACC.F.SG.
"that misfortune of mine" (Cic. *Sext*. 31,19,20, from Iovino 2012)

Irrespectively of their adjectival nature, possessives have a referential index which contributes to the determination of the referential index of the possessee but is crucially distinct from it.

In §3.1, I claimed that a possessor, having independent reference (Person features), must be sent to the interfaces independently of and before the NE to which it is related, and must reenter the computation through Agreement. The probe of the possessee targets the Person features of the possessor, and remerges them into its specifier, namely the specifier immediately lower than SpecDP. I have also claimed that this is very different from what happens with adjectives and determiners, which do not agree with N but concord with it (for Gender, Number, and in some languages Case). In other words, the possessor (regardless of its nominal or adjectival status) is the "subject" of the NE, never a determiner. A reformulation of (17), in §3.1 above, is given in (36):

(36) $[_{N/DP}\ N/D_i\ [_{NP}\ AP/DP_j\ N_{probe} \dots [_{NP}\ [\ AP/DP_j] \dots \cancel{N}]]]]$

The proposal fully complies with Richards's (2007) observation that a probe is a non-phasal head which inherits an uninterpretable feature of the

edge. In the Projection proposal presented in §3.3, the feature of the probe cannot be inherited from above, because Projection goes bottom-up. It must be part of the bundle associated with the projecting lexical head, possibly hierarchically lower, if the bundle is structured. The probe feature that targets the Person feature of the possessor is activated immediately lower than the Left Edge which attracts the indexical of the possessee.

The structure in (36) predicts that in case of a "heavy possessor" or a "weak probe" the possessor remains in its first-merge position, following any adnominal adjective; while in case of a "light possessor" or a "strong probe", the possessor remerges in the specifier of the highest non-phasal head, namely of the NP segment immediately lower than DP. Variation in the position of possessive APs in Italian was discussed in §3.1(15) in support of this proposal.

Remerger of the possessor from a low SpecNP to a higher one is also supported by the presence of "floating reinforcers" parallel to what we have done for demonstratives. Old Italian is particularly rich in examples. Possessives can be reinforced by a personal pronoun or a full NE embedded in a PP, such as *di lui* in (37a), or *di Castruccio* (37b). They can be modified by the adjective *proprio* ("own"), which can remain *in situ* as in (38b), or be adjacent to the possessor in either position (38a) and (38c) (cf. Giusti 2010a):

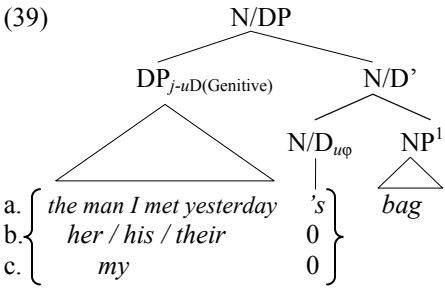
(37) a. a' suoi succiessori [~~suoi~~ [di lui]] nella seggia di Roma,
to his followers of him in the seat of Rome (Marsilio, 308)
"To those who succeded him on the Roman Chair"
b. molti di sua gente [~~sua~~ [di Castruccio]]
many of his people of Castruccio (Villani, 2,414,5)
"many of Castruccio's folks"

(38) a. la vertude [sua propia], (Dante, *Conv.,*393,10)
the virtue his own
b. la sua vertude [~~sua~~ propia] (Dante, *Conv.,* 368,10)
the his virtue own
"his own virtue"
c. la [sua propia] vertude (Dante, *Conv.,* 368,12)
the his own virtue

The analysis in (36) predicts prenominal possessors to be preceded by determiners, because determiners are at the Left Edge while possessors are attracted to the immediately lower projection. An apparent exception to this is provided by English, where nominal (39a), pronominal (39b), and

adjectival possessors (39c) are in complementary distribution with determiners, and in generative grammar are usually assumed to be in D(P). In my approach, Saxon genitive *'s* can be analysed as a segment of the possessee N and not as an inflection of the possessor N, given that it encliticizes onto the last word of the possessor constituent. I take Saxon genitive to be overt Agreement (an overt probe, for the 3rd Person feature of DP_j), a segment of the scattered head D/N. Agreement is apparently covert with pronominal possessives:

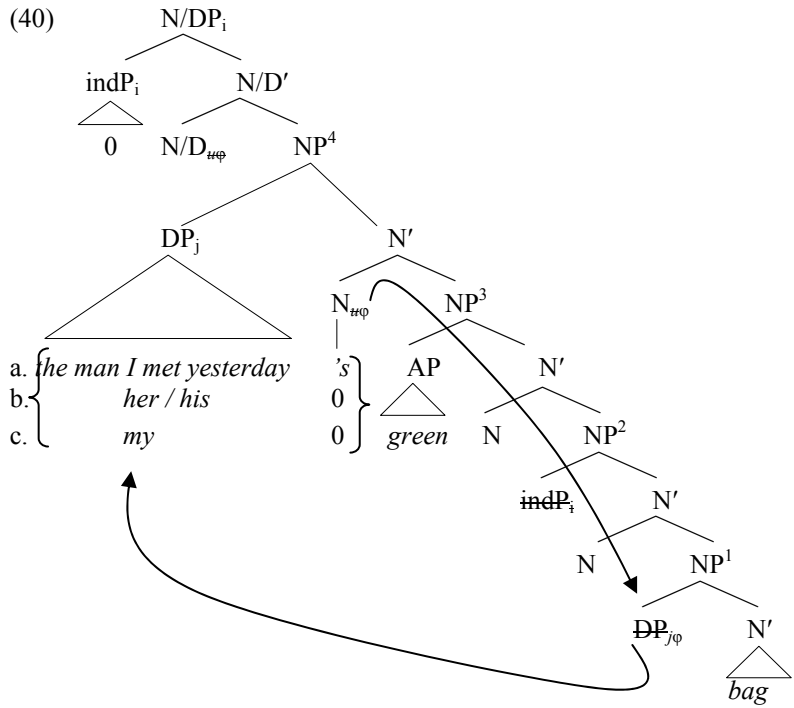
(39)



Assuming that *'s* and its null counterpart are in D, as in (39), would not only theory-internally run counter Richards's (2007) ban on a probe at the Left Edge; it would also leave no place for the covert indexical carrying the *i*-index of *bag*, which must be distinct from the *j*-index of the possessor.

The obvious alternative is to propose that when there is a probe in the non-phasal head valuing *u*Pred as Genitive (*u*D) on a possessor, the phasal head D must be covert, as in (40). Its specifier (SpecDP, the Left Edge of the NE) is then available for the covert referential operator. The *'s*-morpheme is therefore the highest non-phasal segment of N, which attracts the possessor phrase (DP_j) into its specifier. The complementary distribution of possessors and articles in English (and possibly in other languages) can be motivated through the Principle of Economy §3.2.(56b), which does away with the overt realization of remerged heads:[10]

[10] In (40), the strike-out ~~*u*φ~~ on the head of the Left Edge N/D does not indicate that the uninterpretable features survive after being deleted in the non-phasal position; quite on the contrary, it indicates that they are no longer active in the bundle.



Thus in English a possessor DP needs an overt probe (the morpheme *'s* in the Saxon genitive) to value genitive case (*u*D), while possessive adjectives like *my* or pronouns like *her / his* do not. This micro-parameter must be specified in the inflectional morphology of these vocabulary items: genitive pronouns *her / his* can be assumed to have overt genitive inflection which dispenses with making the segment in D overt. Possessive adjectives have Person features encapsulated in an adjectival head which requires Concord with the possessee. This Concord is covert in English, parallel to what occurs with all other adjectives.

A second assumption I am led to make is that a probing head in English can only remerge with a null indP (the minimal determiner). The definite feature is actually inherited from the possessor, as it occurs with so-called "expletive" articles, presented in §2.2 above, and more in detail in §5.2 below. The (in)-definiteness of DP$_i$ in English depends on the (in)definiteness of DP$_j$, as shown in the existential sentences (41). In (41a) the NE introduced by a definite article can be the subject of the existential

sentence provided its possessor is indefinite. In (41b) the same effect is obtained with the Saxon genitive, which does not have any overt article:

(41) a. There is the hat of a / *this man on the table.
b. There is a / *this man's hat on the table.

To summarize so far, the apparent complementary distribution of demonstratives and possessives is due to the fact that in English, the phasal head N/D (in NP4 in (40)), which remerges after the probe feature (*u*φ) has been checked, can only merge with a null indP, namely a 3rd Person index with no further specification for definiteness, anaphoricity, deixis, etc.

Let us now consider Italian, which allows for all kinds of determiners to cooccur with a possessor but only pied-pipes possessive adjectives and the 3rd Person plural pronoun *loro* to the specifier of the probe (42a), leaving full genitive DPs in place (42b), as already argued for extensively in §3.1 above. The presence of the prenominal adjective *bella* and postnominal adjective *verde* allows us to detect the high position of the possessive adjective (which must precede *bella*) and the low position of the possessive NE introduced by *di* (which must follow *verde*):[11]

(42) a. la mia / tua / sua / nostra / vostra / loro bella borsa verde
the my / your / his / her / our / your / their nice bag green
"my / your / his / her / our / your / their nice green bag"

[11] Other orders are possible but marked, therefore derived through further movement or by different structures. In particular, a prenominal adjective like *bella* in (42a) can precede a prenominal possessive only if it has a contrastive topic feature; the postnominal adjective *verde* can follow the genitive PP only if it has predicative interpretation, parallel to a reduced relative clause (ib):

(i) a. la BELLA mia/tua/sua/nostra/vostra/loro borsa verde
the NICE my/your/his/her/our/your/their bag green
b. la borsa verde di Maria, molto bella,
the bag green of Mary, [which is] very nice

In §1.3.2 above, I have given a detailed analysis of adjectives remerged at the Left Periphery of the NE as carrying a contrast feature. In §6.1, I will discuss the internal structure of two different types of postnominal modifiers introduced in Greek by what looks like a definite article. I will analyse it as a special pronoun introducing a reduced relative clause, or as a determiner licensing an appositive DP with an elliptic NP. The AP following the genitive PP in (ib) could be a similar structure introduced by a null counterpart, as suggested by the gloss.

b. la bella borsa verde di Maria
the nice bag green of Mary
"Mary's nice green bag"

As apparent from (42), the presence of an article is independent from either pied-piping or Concord on the possessor. This is not surprising in the present proposal, which captures the complementary distribution of article and possessor, primarily as an inflectional property of the possessee.

In fact, some kinship terms such as *madre* ("mother") in (43), but also *padre* ("father"), *sorella* ("sister"), *fratello* ("brother"), *nonna/o* ("grandmother / grandfather"), etc., cannot be accompanied by a definite article when preceded by a possessive adjective, as in (43), but not by the possessive pronouns *loro* or *cui*, as in (44):

(43) a. (*la) mia madre
b. (*la) tua madre
c. (*la) sua madre
d. (*la) nostra madre
e. (*la) vostra madre
the my / your / etc. mother

(44) a. *(la) loro madre
the their mother
b. *(la) cui madre
the whose mother

Giorgi and Longobardi (1991) argue that possessive adjectives are located in D when cooccurring with kinship terms in light of their complementary distribution with articles, as in (43). Cardinaletti (1998) accounts for the ungrammaticality of (44a) as resulting from the occurrence of a prenominal weak, non-clitic possessive *loro* in the absence of an overt definite article, hypothesizing that kinship terms select for a *clitic* possessive in D.

My analysis goes in the opposite direction. I claim that the non-phasal head probing a possessive adjective into its specifier can be dominated by a null phasal head in these particular cases, as in English (40). How phasal and non-phasal heads are realized ultimately depends on the (scattered) inflectional morphology of both N and the possessive element with which N agrees. We have observed that in English all Ns behave in the same way, but there is little difference between full DP possessors, which

require an overt probe (*'s*), and pronominal possessors (adjectival or pronominal) that are targeted by a null probe. I propose that in Italian, some kinship terms have a special paradigm that permits economy in the realization of the highest segment of D/N. Support for this proposal is provided by dialectal micro-variation.

For example, the endearing kinship terms *mamma* ("mom") and *papà* or *babbo* ("dad") do not dispense with the article in the presence of a prenominal possessive in central Italian, while they are commonly articleless in northern Italian (45):

(45) a. %(la) mia mamma ("my mom")
b. %(il) mio papà ("my dad")
c. *(il) mio babbo[12] (my dad)

Furthermore, we find a finer-grained variation as regards other kinship terms such as *bisnonna/o* "grandgrandmother / grandgrandfather"), *matrigna* / *patrigno* ("stepmother / stepfather"), or *sorellastra* / *fratellastro* ("stepsister / stepbrother"); or kinship terms inflected for a diminutive *sorellina* / *fratellino* ("little sister / little brother"), or modified by a classificatory adjective such as *maggiore* / *minore* ("elder / younger"):

(46) a. %(la) mia sorellastra ("my step-sister")
b. %(la) mia bisnonna ("my grandgrandmother")
c. %(la) mia sorellina ("my little sister")
d. %(la) mia sorella maggiore ("my elder sister")

In all Italian varieties, the presence of a prenominal adjective such as *bella* makes the article appear again, as in (47) to be contrasted with (43) above:

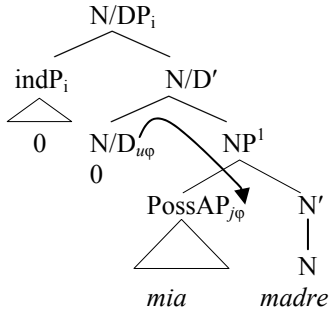
(47) *(la) mia / tua / sua / nostra / vostra bella madre
the my / your / his / her / our nice mother

Thus, it seems that some nouns are specified in the lexicon as being able to dispense with the realization of the highest segment (the overt realization of the head of the Left Edge) only in the presence of an adjectival possessor and provided their projection is not "too scattered".

[12] The vocabulary item *babbo* is not found in northern Italian. This is the reason why *mio babbo* is ungrammatical, as the lack of article with the endearing terms *mamma*, *papà/babbo* only occurs in the northern varieties.

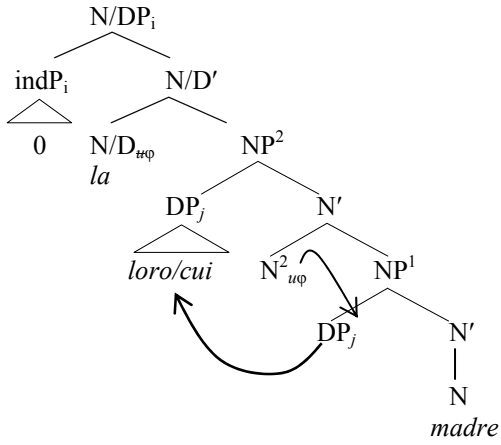
I propose that the adjectival possessor remains *in situ* (SpecNP[1]), because, being an adjective, it does not carry a *u*Pred to be valued. This allows for the kinship-N to decompose only in two segments (the phasal D- and the lexical N-projections) instead of three (phasal, non-phasal, and lexical projections), as in (48):

(48)



This is possible when the Person features of the possessor are encapsulated in A, which does not receive Case, while it is not possible with the genitive pronouns *loro* and *cui*, which in fact must be preceded by a determiner, as exemplified in (44) and represented in (49), where there are three segments: the phasal head N/D, a non-phasal head N[2], which inherits *u*φ from D and deletes it probing the *j*-index on the possessive pronoun and copying it into its specifier. In doing so, the possessive pronoun is pied-piped with the index:

(49)



Remerger of the possessor pronoun labelled as DP_j in (49) is not detectable in the absence of a prenominal adjective, but the position of *loro* with kinship terms is the same as with other nouns, and it has the same distribution as possessive adjectives: it is the highest of the prenominal ones, such as *bella* in (50a) vs. (50b) or more marginally the lowest of the postnominal ones, such as the relational adjectives *adottiva* and the classificatory adjective *elettrica* in (50c) vs. (50d):

(50) a. la loro bella madre / automobile
the their nice mother / car
b. *la bella loro madre / automobile
the nice their mother / car
c. ?la madre adottiva loro / ?l'automobile elettrica loro
the mother adoptive their / the car electric their
d. *la madre loro adottiva / *l'automobile loro elettrica
the mother their adoptive / the car their electric

Thus, kinship terms in Italian can license a PossAP *in situ*, projecting only two segments as in (48), and not three as in (49). This does not hold when the genitive possessor is a pronoun. What, then, is the nature of this property? I propose that it is due to the thematic relation established by the kinship term with the possessor. It must be a formal feature associated to the lexical entry, given that not all kinship terms display it. This particular state of affairs may be the result of reanalysis.

In old Italian, a prenominal possessive, whether pronoun or adjective, allowed total optionality in the cooccurrence with a determiner. In this regard, there was no difference between kinship terms and other nouns (cf. Giusti 2010a). In (51), *viltate* is an abstract noun with a prenominal possessive and no article.[13] In the two examples in (52), the same common noun *partita* preceded by the possessive adjective *mia* appears with or without an article. In (53) the same kinship term *madre* preceded by the possessive adjective *mia* appears with or without an article:

(51) paura di dimostrar con li occhi *mia viltate*.
fear to show with the eyes my cowardice (Dante, *Vita,* 35,5-8)
"fear to show my cowardice through my eyes"

[13] Note *in passim* that *lo cor* and *li occhi* have a null possessive and an overt article, as is the case with nouns of inalienable possession in Italian.

(52) a. Lo re … prese *la sua partita* e teneva. (*Novellino* 18)
The king took the his party and kept.
"The king took his party and kept it"
b. io difenderò *mia partita* (*Novellino* 81)
I will-defend my party

(53) a. giustamente uccisi *la mia madre*
[I] rightly killed the my mother (Brunetto, *Rett*, 191)
"I rightly killed my mother"
b. Vogliolo sapere da *mia madre*
[I] want-it to-learn from my mother (*Novellino* 2)
"I want to hear it from my mother"

Optionality in the insertion of the article is also found with the possessive pronoun *loro*:

(54) a. Come li capitani possano adunare *loro consiglio* et fare sindaco.
How the captains can gather their council and elect [their] president (*Stat. Fior.* 667)
b. Possano li capitani fare richiedere e adunare *il loro consiglio*
Can the captains make require and gather the their council (*Stat. Fior.* 667)
"The captains can require to gather their council"

I propose that old Italian was similar to English in allowing (40), namely a covert indexical in SpecDP when the head D remerges bundled with a no longer active ~~uφ~~, regardless of the class of the noun. This is supported by the fact that prenominal possessives without determiners can cooccur with a prenominal or postnominal adjective (55):

(55) a. per mia laida cotta (*Novellino*, 188)
for my ugly dress
b. contar mia ragion bona (Dante, *Vita*, 50.03)
to-tell my good reason

But differently from English, old Italian allowed possessive adjectives to cooccur with adjectival determiners, such as *tre* and *questo* in (56):

(56) a. tre loro sugelli (*Doc. fior.*, 549)
three their seals
b. questa vostra servente (Cavalcanti, 542)
this your servant

Cooccurrence with a determiner goes hand in hand with cooccurrence with a definite article, which was freely found with a prenominal possessive, as in (52)–(54), and appears mandatory with a postnominal possessive (57):

(57) a. e prega da mia parte (*Novellino*, 121)
and ask on my behalf
b. diteli dalla parte mia (*Novellino* 230)
tell him on the behalf my

Italo-Romance varieties, where the article is generally obligatory in the presence of a possessive adjective or pronoun and impossible with kinship terms, have operated two changes in the opposite directions. A subset of kinship terms have been reanalysed as projecting only two segments, as in (48), while all other nouns projecting three segments have an overt highest segment (the article), as in (49). The English-like structure with three segments and a non-overt highest segment, as in (40), no longer exists, being in competition with the more economical (48), which has less structure, and with (49), which coexisted with it from the very beginning.

I propose to reduce this change to the interaction of the Principle of Economy §3.2(56) and the Visibility Requirement §3.2(57). An overt head D (the article) was already generally needed in definite descriptions without a possessor (Renzi 2010). As observed above, the presence of a prenominal possessor could only optionally dispense with the overt D, and there were two cues to set the visibility requirement with the "overt" option: namely, the possibility of cooccurrence with a lexical determiner and the possibility to find the possessor in a postnominal position. Assuming that optionality is "costly" in the system, it is expected that the Visibility requirement be set on the "overt" option for all classes of nouns. Under the pressure of the Principle of Economy (56), however, a subset of kinship terms (those of highest frequency) developed the special property depicted in (48); namely, they can license a possessive adjective only scattering in two projections (phasal and lexical) instead of three (phasal, non-phasal, and lexical). This reduced scattering is incompatible with the insertion of any other modifier apart from the possessive.

The general conclusion to be drawn from this section is that possessive adjectives or pronouns are never determiners, in the sense that opposite to determiners, they carry an index which is distinct from the index of the NE they modify and must be sent to the interfaces before the phase of the possessee ends. Their determiner-like behavior is due to the fact that the probe feature that makes them reenter the computation as part of the denotation of the possessee, as occurs to all probes, is immediately lower than their phasal head. The realization of such a head is subject to our by-

now-familiar Principle of Economy and Visibility Requirement (§3.2, (56)–(57)), and gives rise to wide cross-linguistic variation.

4.4. Personal pronouns

Since Postal (1969), personal pronouns introducing NEs have been taken to be in the same position as other determiners. In my proposal, I have separated the referential index of the NE, which provides the Person features targeted by Agreement from an external head, from the functional features bundled with the lexical head. I must therefore claim that personal pronouns, when combined with an NE, are the highest specifiers providing the referential index, parallel to the null indexical and overt demonstratives. This predicts that the complementary distribution of personal pronouns and articles in some languages is due to the Principle of Economy (§3.2(56)), while it is expected that in other languages, pronouns can cooccur with articles, but not with demonstratives.

The prediction is borne out, as shown in (58), which compares three strictly related languages: Italian on the one hand and Romanian and Spanish on the other. In Italian the pronoun is incompatible with an overt D, (58a). In Romanian (58b) and Spanish (58c), it requires an overt D, irrespective of the enclitic vs. proclitic or free standing nature of the article in these two languages:[14]

(58) a. Voi (*i) professori credete che sia facile ma per noi (*gli) studenti è difficile.
b. Dumneavoastră profesori*(i) credeți că e ușor, dar după noi elevi*(i) este greu.[15]
c. Vosotros *(los) profesores creeis que es fácil, pero para nosotros *(los) estudiantes es difícil.
"You (the) professors believe that it is easy, but for us (the) students it is difficult."

Pronouns cannot cooccur with demonstratives, as in (59). This holds not only in Italian, where they are in complementary distribution with articles, but also in Romanian and Spanish, where cooccurrence with articles is

[14] It is highly possible that the Spanish article is to be considered as free standing, as it can be used as a pronominalizer. It is however not crucial here to distinguish between free standing and proclitic articles and I will leave this for future research.
[15] The Romanian example is taken from Lombard (1974:96). It is interesting to note that, although Lombard poses the nouns following the pronouns in commas, he explicitly remarks that comma-intonation is not obligatory.

required. Note also that cooccurrence is impossible even with postnominal demonstratives:

(59) a. *noi questi ragazzi
b. *noi aceşti băieti / *noi băietii aceştia
c. *nosotros estos chicos / *nosotros los chicos estos
we these boys / we the boys these

This is expected if we consider that pronouns provide the referential index to the NE. Thus they play the same function as demonstratives; namely, they saturate the open position associated with N.

Cardinaletti (1994) claims that strong pronouns have a complex structure and that the pronoun starts as N and moves to D, as in (60a). This differentiates a strong pronoun from a clitic pronoun, which is proposed to have a reduced structure, only including D, as in (60b):

(60) a. $[_{DP}$ N+D $[_{NP}$ ~~N~~]]
b. $[_{DP}$ D]

Cardinaletti's proposal is incompatible with Postal's (1969) idea that pronouns are determiners (directly merged in D), and with its reformulation in the DP hypothesis by Longobardi (1991).

According to Cardinaletti, articles, clitic pronouns and strong pronouns clearly have different morphology and different syntax. Articles and clitic pronouns cannot stand alone, (61a–b), while strong pronouns can (61c):

(61) a. (Ho dato il libro) alla *(ragazza)
([I] have given the book) to-the girl
b. Le *(ho dato il libro)
cl.f.sg.dat [I] have given the book
c. (Ho dato il libro) a lei
[I] have given the book to her

The examples in (61) also show that despite the common property of being bound morphemes, articles and clitics do not share the same inflection. In (61a), the article incorporates with the preposition *a*, yielding *alla*; in (61b), the clitic has dative inflection *le* and could never be embedded into a preposition. The strong pronoun (61c) does not incorporate onto the preposition either, parallel to demonstratives, and differently from the article or the clitic.

I have proposed that articles are segments of N with which a null indexical (indP) concords. The presence of indP provides 3rd Person features and referential value to a definite description. But it seems natural that other overt or non-overt indPs can exist with different Person features. I propose that these are the pronouns that occur in complex NEs like those that appear in (58).

I have no empirical reason in favor of or against the claim that these indPs start as low modifiers of N, parallel to demonstratives. Thus, in analogy to what Brugé and I have claimed for demonstratives, I assume that they do:

(62) $[_{N/DP}\ [_{indP}\ pron]\ N/D\ [\ldots\ [_{NP1}\ [_{indP}\ \sout{pron}]\ N]]]$

In (62), N/D is the phasal head and can be overt or non-overt, according to the inflectional properties of N as well as the Concord requirements of the pronouns. Variation in the possibility of cooccurrence with an article is correctly expected, as in (58). The non-occurrence with a demonstrative is also correctly expected, as in (59), because the demonstrative is in direct competition with the pronoun, being of the same nature (indP) and having the same function (providing the referential index to the NE).

Cardinaletti (1994) is led to claim that in structures like (58), the pronoun is merged with an appositive DP adjoined to it. But, as observed by Lombard (1974) for the Romanian example 58b, the intonation that characterizes the apposition, indicated with a comma here, is possible, but certainly not requested. Furthermore, with such an intonation, occurrence of an article is possible in Italian, thereby suggesting that (63a) and (63b) are different structures:

(63) a. voi, (gli) ultimi arrivati, dovete accontentarvi
b. voi (*gli) ultimi arrivati dovete accontentarvi
you (the) last arrived must content yourselves

Cardinaletti's strongest evidence to claim that pronouns are not just determiners is the impossibility in many languages for 3rd Person pronouns to cooccur with nouns, as in Italian (64a) or English (64b):

(64) a. *loro / *essi / *esse linguisti/e
b. *they linguists

But the data in (64) are not straightforward. In my judgment, *loro linguisti* is marginal because it competes with the more economic option of a null indP, but is not ungrammatical in a contrastive context: *noi filologi contro*

loro linguisti ("we philologists vs. them linguists"). My judgment with *essi/esse* is marred by the fact that this pronoun is not present in the modern standard. In old Italian, it was both a pronoun and a determiner with anaphoric function, as in (65), which are representative examples of a large number of occurrences:

(65) a. ora diremo de' vizj; e prima de' principj de' peccati, e poi d'**essi** vizj. (Bartolomeo, dist. 21 proemio, 337)
Now we will talk about the vices; and first about the principles of the sins, and then about them vices.
b. fare levare la parte de la casa et de le ballatoia, d'**essa** casa de' filliuoli di Squarcialeone (*Stat. Sen*., 3,15, 2,21)
to have the part of the house and of the balconies taken away, of it house of the sons of S..

One could assume that in old Italian *esso* has the status of a demonstrative. Note however that it is not listed among old Italian demonstratives by Vanelli (2010)). And this is in fact the point: we have an element that has at the same time the function of an indP, as well as the ambiguous status of weak and strong pronoun (cf. Cardinaletti (2010), Egerland (2010)). My proposal, which unifies demonstratives and adnominal pronouns under the label indP, captures the behavior of *esso*.

The proposal also explains the possibility for pronouns to include more than one element. In old and modern Italian, for example, pronouns with any Person specification can be modified by determiner-like adjectives such as *stesso* or *medesimo* that are clearly part of the indexical specification and I take as being included in a complex indP. In old Italian, it is also possible to find an invariant form of *esso* which contributes the special anaphoric content of "previously mentioned" compounded with 3rd Person pronouns such as *lui* / *lei* yielding *essolui* / *essolei*. This is expected if personal pronouns are parallel to demonstratives and possessives, which can include modifiers that further specify the referential features.

We can now construct the same argument regarding the possibility to "float" such modifiers in the NE to detect the basic first-merge position of these indexicals, thereby providing some evidence for the derived position of the pronoun providing the Person features in the indP combined in a constituent with the anaphoric element *stesso*, as given in (66):

(66) a. [$_{indP}$ noi stessi] linguisti italiani [$_{indP}$ ~~noi stessi~~]
we selves linguists Italian

b. [$_{PersP}$ noi] linguisti italiani [$_{indP}$ [~~noi~~] stessi]
we linguists Italian selves

The Romance data discussed in this section show that pronouns can in fact be determiners. In the framework developed here, according to which Person features are not part of the projection of N but are merged as specifiers of N, this is not in contrast with Cardinaletti's (1994) original idea of attributing different internal structure to articles, clitics, and weak and strong pronouns. The only difference with Cardinaletti's proposal is that in my view, pronouns are not (necessarily) the head of full DPs, but are indPs which can stand alone or be merged with N. In the next section, I will make a similar claim for proper names.

4.5. Proper Names

Current analyses of proper names hinge on the seminal work by Longobardi (1994), which derives the general lack of articles with proper names from the nature of proper names as rigid designators. Thus both article and proper name compete for the D position which Longobardi assumes to be the position in which the referent of the NE is computed at the interpretative interface. In §2.2.1 above, I have listed a number of problems with this proposal, leading to the assumption of different types of D-fillers: interpretable articles, expletive articles, non-overt counterparts of both, N-to-D movement by substitution, and N-to-D movement by adjunction. The proposal presented in Chapter 3 views D as the highest segment of a reprojecting N. The locus of indexical interpretation is instead its specifier. This proposal provides two possible reformulations of Longobardi's analysis of proper names: one is to say that proper names are realized as the highest segment of the D/N-projection at least in some languages; the other is to say that they are endowed with indexical properties, and are (re-)merged as SpecDP. This section will show that the two different analyses apply to different structures. In order to do this, we must further investigate contexts in which proper names occur with other elements.

In central Italian varieties, proper names can be modified by a postnominal possessive adjective. In this respect, they are very similar to a restricted number of kinship terms which can occur "bare" or followed by a possessive adjective, with a slightly different degree of acceptability that concerns naturalness more than grammaticality:

(67) a. È arrivata mamma (mia / tua / sua).
Has arrived mom (my / your / her)
"Mom has arrived"
b. È arrivata Teresa (mia / ?tua / ??sua).
Arrived Teresa (my / your / her)

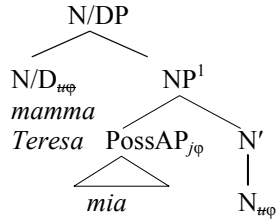
In both cases the referents of *mamma* and *Teresa* are known by speaker and hearer. The possessor is part of the rigid designation, and does not turn it into a definite description.

In English, proper names can be modified by a descriptive adjective: *old John*, *clever Mary*, *young Patrick*, *silly Joan*, etc. As with common nouns, these adjectives can only be prenominal, but differently from common nouns in definite descriptions, they are not preceded by an article. Parallel to English, and differently from Italian common nouns, if a descriptive adjective modifies an Italian proper name, the adjective must be prenominal. Furthermore, differently from English and parallel to Italian common nouns, the [AP + proper name] construction must be preceded by a definite article: *il vecchio Gianni* (the old G.), *l'astuta Maria* (the clever M.), *il giovane Patrizio* (the young P.), *la sciocca Giovanna* (the silly G.). The postnominal position is only allowed for age adjectives in some contexts, as in Longobardi's example *Cameresi vecchio* ("old Cameresi"), and is not productive with all adjective classes: **Maria astuta* (Maria clever), **Irma dolce* (Irma sweet), etc. The same is true for kinship names: *nonna vecchia* ("old grandma", in the sense of grand-grandmother) vs. **nonna buona* (grandma good).[16]

I propose to extend to proper names my analysis of kinship terms in (48) above, where the noun is endowed with a special feature that allows it to directly merge with a possessive adjective, immediately checking the *u*φ-feature, which is no longer active in the remerged bundle:

[16] In all these cases the interpretation remains one of rigid designation. It is however always possible to use a proper name as a common noun with the extended metonymic meaning of "person with such a name" e.g., *tutte le Marie sono allegre* ("all [the] Maries are jolly"). In this case the syntactic structure is the same as that of common nouns.

(68)



The difference between *madre* in (48) and *mamma* in (68) is reduced to which of the two segments of N is realized. This information is part of the inflectional paradigm of a given lexical item, and wide variation is expected. In central Italian varieties *mia madre* and *mamma mia* have the same interpretation and occur in the same contexts / varieties in which **madre mia* or #*mia mamma* (cf. (45)) are ungrammatical.

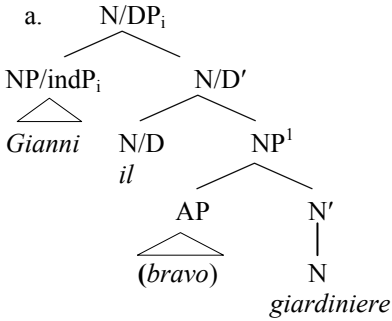
Structures (48) and (68) are crucially made of only two projections of N. I assumed above that this is the condition under which the *u*φ feature of N can be deleted without Agreement; namely, without N being bundled with a probe targeting the *i*φ-feature of the specifier of the probe. In fact, the specifier of the DP must host the referential index of the whole NE. I propose that proper names, and these quasi-proper names kinship terms, do not project such a specifier because they are endowed in the lexicon with an intrinsic referential index.

In §3.1 I proposed, following Williams (1980) and Higginbotham (1985, 1987), that a noun comes with an open position to be saturated. IndP has this function, thereby closing the nominal phase. But proper names do not have this open position. They are inherently referential, do not entertain thematic relations with arguments, and cannot be modified. For this reason, they do not merge with modifiers that restrict their denotation like adjectives or probed possessives, and do not build a scattered structure. However, proper names can be stacked like compound nouns as in (69):

(69) [$_{N/DP}$ [$_{N}$ [$_{N}$ *Francesco*][*Maria*]] [$_{N}$ [$_{N}$ [$_{N}$ *Finzi*][*Contini*]]]

Parallel to other inherently referential elements such as indexicals and pronouns, proper names can be merged at the Left Edge of an NE, as in *Gianni il (bravo) giardiniere* (lit. Gianni the (good) gardener) (70a). The projecting N may be null, as in *Lorenzo il magnifico* (lit. Lorenzo the magnificent) in (70b):

(70) a.



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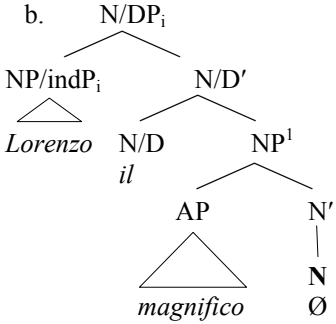
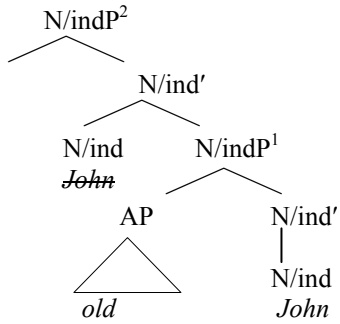


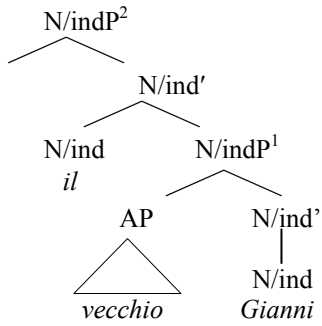
According to my analysis, proper names are nothing other than indexicals, parallel to demonstratives and personal pronouns. They can therefore stand alone, since they have an indexical feature which also contains Person; namely, the minimal feature for an NE to be interpreted as an independent phase. But they can also be merged with a noun. In this case, they behave like other indexicals in being interpreted in SpecN/DP. In Italian, differently from the demonstrative *questo*, they require the realization of the highest nominal features in N/D.

Now we can come back to Longobardi's observation that in English, proper names can be preceded by an adjective as in (71a), while in Italian either an "expletive" article is inserted, as in (71b), or N is realized as N/ind, as in (71c). In my proposal, the three structures in (71) are equivalent. In particular (71a) is completely parallel to (71c) in that the head N/ind is realized as a single word, with the only difference that in English it is realized as the lower segment, while in Italian it is realized as the higher segment. The difference with (71b) is that here the head is realized as scattered, with Gender and Number features (redundantly) overt on the higher segment:

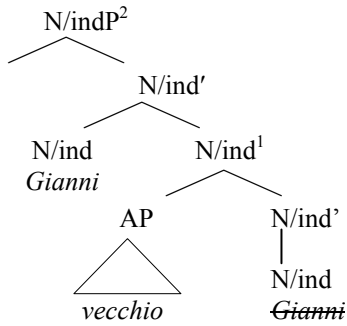
(71) a.



b.



c.



Now we can give a (partial) explanation of the quite puzzling fact observed above; namely, that a proper name (and some kinship terms) can only be modified by possessive or age adjectives in Italian; while English appears to be more liberal in this respect. Italian distinguishes (71), where N/ind is the head of the construction, from (70), where N/ind merges as a specifier of an overt or null N. English does not. The adjectives that can modify an indexical are those that can be part of the referential index, while the adjectives that can modify N are of a much larger set.

4.6. Interim conclusions

In this chapter, I have analysed a number of cases in which determiners such as quantifiers, demonstratives, possessives, and proper names cooccur with articles. I have claimed that this is due to the fact that articles are not genuine determiners but segments of scattered Ns with which the determiner or the proper name merges. I have also proposed that not only pronouns and demonstratives but also proper names are inherent indexicals. For this reason, they do not need to project further functional structure and can satisfy the selectional requirement of argument-taking predicates. They can also provide the index to a full NE. In this case they are merged (at the latest) at the Left Edge of the NE. Whether the head of the Left Edge is overt or covert and, if it is overt, how it is realized at the Spell-out interface, depends on the inflectional properties of the projecting head as well as on the inflectional properties of the indexical concording with it.

In the next two chapters, I substantiate this proposal.

CHAPTER FIVE

ARTICLES AS SCATTERED NS

In this and the following chapter, I argue that definite articles associated to Ns and As are scattered N- or A-heads respectively. In Chapter 3, I argued that whether and how a head scatters is specified in its paradigm. Inflectional paradigms are subject to micro-parametric variation in the sense of Biberauer & Roberts (2012). In this chapter, I take individual languages or groups of languages to exemplify the fact that only articles and no other determiners comply with the properties of functional heads listed in (1) of Chapter 4. In Chapter 6, I will do the same to show that a (scattered or unscattered) A inflecting for the definite article does not project its own (Gender, Number, and Case) features, but concords for such features with the N it modifies.

In Chapters 2–3, I argued implicitly that there is no [±DEF] feature in the nominal paradigm, because definiteness is a feature provided by an indexical which can however be non-overt. What looks like inflection for definiteness can actually be captured as the realization of the scattered head with which such a non-overt indexical is merged (namely, an uninterpretable feature (*u*Pred) to be valued by the probe (as e.g., *u*T (nominative), *u*D (genitive), *u*Q (partitive), etc. cf. §3.3 above)), bundled with other nominal features with which the non-overt indexical must concord (namely, Gender and Number).

I have also claimed that (i) a head is bundled with all its features; (ii) it reprojects as many times as necessary; (iii) the realization of the scattered head is specified in its inflectional paradigm; (iv) Concord copies the features of the projected head onto the specifier. This holds whatever features are claimed to be part of the bundle.

Thus, the scattered head hypothesis and the Projection–Concord hypothesis are not incompatible with the view that definiteness is an inflectional feature. For the sake of the discussion here, I will often use the term "definiteness" in a descriptive way, but it should be kept in mind that in my proposal we are dealing with an unvalued *u*Pred feature, that is present in the NE for it to reenter the computation as part of the upper predicate, or as having a discourse function.

The chapter is organized as follows. In §5.1, I focus on how the proposal can account for the occurrence of an apparent "definite article" in Romanian, a language that has an enclitic definite article, and therefore instantiates the type which realizes the head as a single word in one of its segments. We will see that the morpheme labelled as "definite article" occurs in many cases in which the definite interpretation is not present, in particular in oblique case; and *vice versa*, it does not appear in other NEs which are interpreted as definite, in particular in direct case and in simple NEs. In §5.2, I take Italian as the opposite case; namely, a language with a free definite article. As I have already shown with one instance of proper names in §4.5, the article can be taken as the realization of Gender, Number, and Case features scattered from the lexical head. In this chapter, we will observe many other cases occurring with common nouns. In §5.3, I address the case of double definiteness in Scandinavian, which presents an interesting mix of enclitic and free articles. I show how the Projection proposal developed in §3.3 can capture in a unified way the micro-variation in the three main Scandinavian types (Swedish / Norwegian, Danish, and Icelandic) without assuming a deep difference in the position of merging and / or interpreting semantic features, which can remain at a more general level of parametrization (if any). Finally, §5.4 analyses German as a language with free articles and case morphology, showing that parallel to what was observed in Romanian (where case morphology was realized by the enclitic article), the German free article appears to license oblique case in generic NEs, where definiteness is not at stake.

5.1 The Enclitic Article in Romanian

In many languages, including three Balkan languages: Albanian, Bulgarian, and Romanian, the definite article is a suffix, phonologically and morphologically dependent on N. In (1)–(3), the MASC.SING.NOM article has different forms according to the morpho-phonological properties of the words it attaches to. In the (a)-examples the article is attached to N; in the (b)-examples it is attached to a prenominal adjective:

(1) a. shok*u* fatmirë / djal*i* besnik (Albanian)
friend-the M.SG happy / boy-the M.SG faithful
b. fatmir*i* shok / besnik*u* djalë
happy-the.M.SG friend / faithful-the.M.SG boy
"the happy friend / the faithful boy"

(2) a. frate*le* bun / om*ul* mare (Romanian)
brother-the.M.SG good / man-the.M.SG big
b. bun*ul* frate / mare*le* om
good -the.M.SG brother / big -the.M.SG man
"the good brother / the big man"

(3) a. mužut (Bulgarian)
man-the
"the man"
b. vernij*at* muž
"the faithful man"

In these languages, the enclitic article is clearly part of the inflectional paradigm of the lexical head (N or A). For example, in Albanian (1) the M.SG.NOM article of a word ending with *-k* is not *-i*, as in the unmarked case, but *–u*, despite the fact that there is no ban on the phonological sequence *ki*: cf. *kishin* ("[they] had"), *arkiv* ("archive"). In a similar fashion, there is no phonological ban on *el* in final position in Romanian (cf. *cordel* "thread, cord"), but M.SG.DIR words in *-e* do not add just *-l* (**fratel*) or *-ul* (**fratul*) but *-le* (*fratele*). Thus, we can assume that in (1)–(3), the article is not directly determined by phonological constraints but is part of the inflection of N or A.

This is not the case for other determiners. In (4), we observe indefinite NEs, which have an independent indefinite article, in initial position in Albanian and Romanian, while it is null in Bulgarian:

(4) a. një shok fatmirë, një djalë besnik (Albanian)
a friend.M.SG happy, a boy.M.SG faithful
b. un frate bun / un om mare (Romanian)
a brother good / a man big
c. vernij muž (Bulgarian)
[a] faithful man

If we consider articles as inflectional morphology on N or A in these three languages, we can describe the nominal and adjectival inflection by stating that in Albanian and Romanian the noun is realized as a scattered head when it is indefinite (and has partitive Case, namely *u*Q), while it is realized as a single head when it is definite (all other possible valuations of *u*Pred). In Bulgarian it is always unscattered, with zero inflection for *u*Q.

The fact that articles can appear on adjectives is an apparent deviation from the generalization that "functional heads can be sisters only to one category". This is surprising if functional heads are elements "selecting"

or "agreeing" with the portion of structure in their c-command domain, as is often assumed in the literature, in two possible ways represented in (5a) and (5b). In (5a) the AP is the complement of the functional head D and in turn it selects an NP, parallel to what is proposed by Bouchard (1998), Bernstein (2001) a.o. In (5b) the article D targets the specifier (AP) of a lower functional head triggering Agreement with it, parallel to what is proposed by Bosque & Picallo (1996) and Carstens (2000). My proposal is represented in (5c), where articles are the realization of a scattered head bundled with its functional features (Gender, Number, and Case) and are therefore different from all other determiners that are inserted for semantic reasons:

(5) a. $[_{DP}\ D\ [_{AP}\ A\ [NP]]]$
b. $[_{DP}\ D\ [_{FP}\ AP\ [NP]]]$
c. $[_{N/DP}\ N_{GEND.NUM.CASE}\ [_{NP}\ AP\ [N_{GEND.NUM.CASE}]]]$

On adjectives we find the same or similar morphemes that we find on nouns to realize interpretable and uninterpretable features; and this reinforces my proposal, which predicts that the syntactic representation of an adjective inflected for an article can be scattered or unscattered, as we will see in Chapter 6.

Romanian allows us to reflect on the scattered vs. unscattered nature of a paradigm. This section elaborates on Giusti (1994a). Examples are taken from Lombard (1974: 26–28). Romanian bare nouns inflect for Gender and Number, and only partially for case, as is clear from the masculine nouns *lup* and *carbune* in (6). The only case morphology on a bare N is in the feminine paradigm, shown in (7), which has the same form for DIR.PL and OBL.SG/PL:

(6)

M	DIRECT	OBLIQUE	
SG	lup / cărbune	lup / carbune	"wolf / coal"
PL	lup**i** / cărbun**i**	lup**i** / cărbun**i**	"wolves / coals"

(7)

F	DIRECT	OBLIQUE	
SG	casă / vulpe	case / vulp**i**	"house / fox"
PL	case / vulp**i**	case / vulp**i**	"houses / foxes"

When N is inflected for the definite article, it has Case and Number marking in all four cells of the paradigm (8)–(9), Gender marking occurs in DIR.SG on *lup* vs. *casă* but not on *carbune* vs. *vulpe*, and no Gender marking occurs in OBL.PL, cf. *lupilor / cabunilor* vs. *caselor / vulpilor*:

(8)

M	DIRECT	OBLIQUE	
SG	lup**ul** / cărbun**ele**	lupu**lui** / carbun**elui**	"the wolf / coal"
PL	lupi**i** / cărbuni**i**	lupi**lor** / cărbuni**lor**	"the wolves / coals"

(9)

F	DIRECT	OBLIQUE	
SG	cas**a** / vulpe**a**	cas**ei** / vulp**ii**	"the house / fox"
PL	case**le** / vulpi**le**	case**lor** / vulpi**lor**	"the houses / foxes"

Thus, it seems that on the suffixed definite article, Case morphology is more marked than Gender and as marked as Number, while this is not so on bare nouns.

Case is also more marked on demonstratives (which in the present proposal are independent words interpreted in SpecN/DP and therefore concording with N/D, the highest segment of N), as in (10)–(11), and on indefinite articles (that in the present proposal are scattered heads), as in (12)–(13):

(10)

DIRECT	OBLIQUE	
acest	acest**ui**	"this.M.SG"
aceşti	acest**or**	"this.M.PL"

(11)

DIRECT	OBLIQUE	
această	acest**ei**	"this.F.SG"
aceste	acest**or**	"this.F.PL"

(12)

DIRECT	OBLIQUE	
un	un**ui**	INDEF.M.SG
nişte	un**or**	INDEF.M.PL

(13)

DIRECT	OBLIQUE	
o	un**ei**	INDEF.F.SG
nişte	un**or**	INDEF.PL

Note that the four cells of each paradigm are filled by four different forms in the case of determiners, while in the case of nouns we only have two forms to fill the four cells of the paradigm in (6)–(7).

If the indefinite determiner is used in the absence of N, the zero morphology is no longer possible and, surprisingly, what is a semantically indefinite determiner surfaces as apparently inflected for a definite article, to which a further pronominalizing morpheme *–a* appears in the oblique (14)–(15):

(14)

M	DIRECT	OBLIQUE	
SG	un**ul**	un**ui*a***	"one.M"
PL	uni**i**	un**or*a***	"some.M"

(15)

F	DIRECT	OBLIQUE	
SG	un**a**	un**ei*a***	"one.F"
PL	une**le**	un**or*a***	"some.F"

The apparently definite morphology in direct cases is shared with complex determiners formed with *un* such as *vreun*(*ul*) ("some") and *nici un*(*ul*) ("none"). An even more striking fact is provided by *un alt*, *o altă* (another.M/F) which has the pronominal form *un altul / o alta* with the apparent definite article on the determiner-like adjective *alt* and not on the determiner *un*/*o*. On the other hand, the complex forms like *celălalt*, *ălălalt*, *cestălalt*, *ăstălalt* do not inflect with *–ul*/*a* when they are used as pronouns, presumably because the required features crucially including case are already present on the morphemes *cel-*/*ăl-*.

The morpheme *-ul* on pronominal determiners is therefore more similar to the M.SG morpheme *-o* that appears on the pronominal singular quantifiers *uno* and *nessuno* in Italian, than to a definite article. The examples in (16)–(21) in fact provide perfect parallels:

(16) a. Un uomo ha detto che …
b. Un om a spus că…
"A man said that…"

(17) a. Un**o** ha detto che…
b. Un**ul** a spus că…
"One said that..."

(18) a. Am cumpărat un ziar
b. Ho comprato un giornale
"I bought a newspaper"

(19) a. Am cumpărat un**ul**
[I] have bought one
b. Ne ho comprato un**o**
CL have bought one
"I bought one"

(20) a. N-am cumpărat niciun ziar
b. Non ho comprato nessun giornale
NEG have bought no newspaper
"I didn't buy newspapers"

(21) a. N-am cumpărat niciun**ul**
NEG have bought none-the
b. Non ne ho comprato nessun**o**
NEG CL have bought none
"I didn't buy any"

The point here is not to give an account of the complicated morphological patterns of Romanian determiners and their pronominal use, but rather to show that the direct case morphemes *-ul*, *-a*, *-ii*, *-le* have a further function, compatible with indefinite determiners, and appear only when needed for morpho-syntactic reasons; namely, when the NE has an empty head N, or when the QP has an empty DP complement.

Romanian also provides us with the reverse case; namely, definite interpretation can be obtained with bare nouns in the complement of most prepositions. Observe the simple NEs in direct case in (22)–(23) and compare them with the prepositional object in (24) or with the prepositional circumstantial in (25):

(22) a. profesor**ul** a mers la Paris
b. *profesor a mers la Paris
professor(*-the) went to Paris
c. *(il) professore è andato a Parigi
*(the) professor went to Paris

(23) a. am citit carte**a**
b. *am citit carte
(I) have read book*(-the)
c. ho letto *(il) libro
(I) have read *(the) book

(24) a. l-am văzut pe profesor
b. *l-am văzut pe profesor**ul**
CL.3P.SG have seen PE professor(*-the)

(25) a. îţi mulţumesc pentru scrisoare
b. *îţi mulţumesc pentru scrisoare**a**
(I) CL.2P.SG thank for letter(*-the)
c. ti ringrazio per *(la) lettera
(I) CL.2P.SG thank for *(the) letter

In (22)–(25), we are always dealing with definite descriptions. But in (22)–(23) the article is mandatory, while in (24)–(25), it is ungrammatical. To account for this contrast, in Giusti (1993, 1994a, 2002) I observed that the article marks case, and can be dispensed with in the presence of a preposition, which performs the same function as case. In current terms, it allows for an NE to be interpreted as part of the upper phase. In Romanian

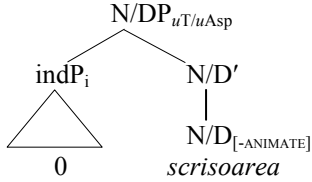
definite descriptions embedded in PPs, the definite article becomes obligatory again when the NE is modified, as in (26):

(26) a. l-am văzut pe profesor*(**ul**) tău
CL.3P.SG have seen PE professor(the) your
"I have seen your professor"
b. îţi mulţumesc pentru scrisoare*(**a**) interesantă
CL.2P.SG thank for letter(the)
"I thank you for the interesting letter"

Given that N/D can and therefore must be lexically empty when the NE is governed by a P, and that the adjectives in (26) should not interfere in the relation between P and N/D, the mandatory overt article in N/D must be due to a richer segmentation of the lexical head N in (26) than in (24)–(25). The phenomenon reminds us of the lack of articles found with kinship terms merged with possessives in Italian (cf. §4.5 (48) above). In that case, I proposed that for economy reasons the projection of N was not tripartite (with a phasal, a non-phasal, and a lexical projection), but was somehow reduced to a phasal and a lexical projection. In this case, the overt realization of the phasal head would be dispensed with. This line of analysis can be extended to Romanian definite NEs embedded in a PP.

Let us first make the case for [-ANIMATE] *scrisoare* ("letter"). In (27), N is combined with a null indexical and realized as inflected for the article which realizes case. We here observe direct case, namely nominative (*u*T) or accusative (*u*Asp):

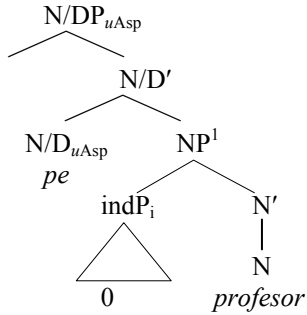
(27)



If N is [+HUMAN], like *professor*, it has the same structure as (27) when in nominative case. But if it is accusative (*u*Asp), it is realized as a scattered head with the preposition *pe* realizing the highest segment (accusative Case), as in (28). Gender and Number are realized on N and the article-like morpheme is not part of the paradigm:[1]

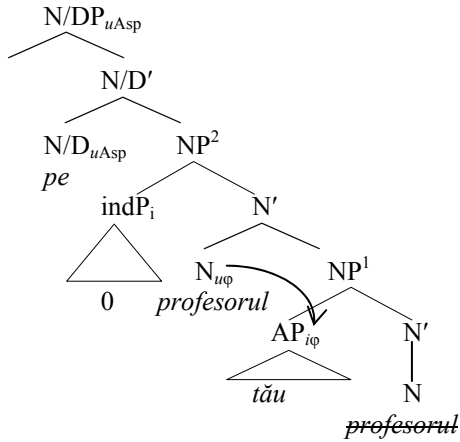
[1] The reason why *pe* is inserted, triggering clitic doubling when N is [+HUMAN], is beyond the scope of our discussion. I refer the interested reader to the seminal work by Dobrovie-Sorin (1987) and much literature after her.

(28)



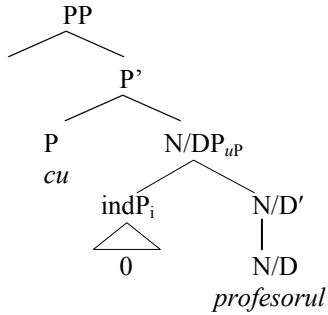
When any of the above NEs in (27)–(28) contains a modifier, the noun reprojects in as many segments as necessary, cf. (29). This results in N realized as scattered in two segments: the phasal segment filled with *pe* and the highest non-phasal segment, made of N bundled with an article:

(29)



The preposition *cu* (“with”) does not have this effect (*cu professor**(*ul*) “with the professor”). I propose that this is due to its lexical status. Semi-lexical prepositions can be analysed as being segments of N, cf. (27); lexical prepositions cannot, cf. (30):

(30)



A fully developed analysis of prepositions in Romanian is beyond the scope of this volume. The goal of this section was to show that what is considered an enclitic definite article in Romanian is part of nominal inflectional morphology and is not biunivocally related to definiteness. I have first observed that the definite article occurs in indefinite NEs in (17) and (19), and that when N can dispense with reprojecting, or when it reprojects as a scattered head, with the higher segment spelled out as a functional preposition, the so-called "definite article" must be missing precisely in definite descriptions, as in (24) and (25). This supports the proposal that the definite interpretation is due to a null indP at the Left Edge of the NE, which is made visible by concord with the highest segment N/D in different ways. In simple NEs, such a segment of N is non-overt, while in complex NEs it is realized as a complete bundle including N and all its inflectional features.

5.2 The Proclitic Article in Italian

Articles are known to be inseparable from their sister projection (cf. Chapter 4, ex. (1d)). This holds even in languages in which articles are free morphemes, like English, and clearly contrasts with other determiners such as demonstratives or quantifiers. In English only universal quantifiers can appear in a discontinuous fashion from a complete NE, while demonstratives and indefinite quantifiers cannot appear as discontinuous from their NE, but can occur with a null nominal:

(31) a. (As regards tables), I bought these / many / *the.
b. The children have all / *these / *the eaten a cake.
c. *Children have many / the eaten the cake.

Note that in Italian, a clitic pronoun can be extracted leaving in place a universal or existential quantifier, but not a demonstrative or article:

(32) a. Di bambine, ne ho viste molte / *queste / *le in giardino.
of girls, CL.PART [I] have seen many / these / the
b. Le bambine, le ho viste tutte / *queste / *le in giardino.
the girls, CL.ACC [I] have seen many / these / the

The impossibility of occurring with a null head may only in part be related to the phonological weakness of articles. In fact, if a weak element can be phonologically enclitic, it is important for it to be preceded by a suitable element. If this condition is satisfied, there should be no reason to need an overt element after it.

Italian articles in object position can be enclitic to a preceding word, e.g., the verb in (33a) (cf. Crisma & Tommasutti 2000). Thus, at least in object position an article does not need to procliticize onto the following word. However, an article is ungrammatical in the absence of N (33b), as it is in English (31). In (33c), we observe that a pronominal demonstrative is perfectly acceptable:

(33) a. Ho comprato (i)l tavolo.
[I] bought the table
b. **Di tavoli, ho comprato (i)l.
of books, [I] bought the.
c. (Di tavoli) Ho comprato questo.
of books, [I] bought this.

The presence of an adjective after the article, as in (34), saves the construction only in some varieties. Although some speakers accept (34a) with the interpretation of an anaphoric NE, others find it only acceptable with *nuovo* and *vecchio* interpreted as nouns and therefore inappropriate to the context. In elliptic NEs, the latter (among whom I count myself) require the pronominal form *quello*, as in (34b), which is also acceptable for speakers who allow (34a). Note that *quello* in this case introduces a definite description and not a deictic expression (no pointing or discourse anaphoric / space interpretation is present). In other words, *quello* is more similar to the scattered pronominal head *the ... one* in English (34c) than to the demonstrative *that*:

(34) a. %Ho tenuto il tavolo vecchio e ho dato via il nuovo.
b. Ho tenuto il tavolo vecchio e ho dato via quello nuovo.
c. I kept the old table and got rid of the new *(one).

If articles are the realization of a scattered N, as proposed here, it is natural that their occurrence with a null N is subject to micro-parametric restrictions. In this case, one Italian variety allows the upper portion of a scattered N to be proclitic onto the specifier of the lower projection; another variety requires that the upper portion of the scattered head be encliticized onto a dummy determiner, the root *que-* (cf. Cardinaletti & Giusti, 2015 and §6.2 below)

Cross-linguistic variation, typical of functional categories, is also a distinctive feature of articles across languages. We have already seen in §2.2 that the assumption of a biunivocal syntax–semantic mapping of the distribution of the definite article runs into problems due to the different distribution of articles across languages. Italian provides a good example of this. Longobardi (1994) assumes a number of "expletive" articles in Romance: one occurring in kind-referring NEs (35a), one in indefinite NEs (36a), and a third one occurring in proper names only in some cases, for example when the proper name is preceded by an adjective (37a). In the English counterparts, the articles are impossible, according to Longobardi, because the NEs are not interpreted as definite:

(35) a. Le ragazze sono più studiose dei ragazzi.
b. (*the) girls are more hard-working than (*the) boys.

(36) a. Ho messo lo zucchero nel sugo di pomodoro.
b. I put (*the) sugar in the tomato sauce.

(37) a. Il vecchio Gianni è morto.
b. (*The) Old John died.

Furthermore, the distribution of proper names with modifiers in Italian is much more complex than as envisaged in (37a), especially if we consider regional varieties, as well as toponyms.

First of all, even in Standard Italian, bare feminine last names are often preceded by the article (*la Nannini*), opposite to what happens with masculine family names ((**il*) *Ramazzotti*); and to what happens when the first name is present ((**la*) *Gianna Nannini*, (**l')Eros Ramazzotti*). This suggests that the definite article carries the semantic feminine Gender feature of the referent, which is apparently not present in a last name. Variation is also found in the occurrence of the article with first names. In northwestern varieties (Piedmontese, Lombard) all names of either gender are preceded by articles (*la Maria*, *il Mario*); but in northeastern varieties only feminine names are, cf. *Mario* but *la Maria*.

Toponyms are nothing else than proper names of places. In Italian, names of regions and countries are preceded by a definite article: *(*il*) *Veneto*, *(*la*) *Lombardia*, *(*l'*)*Italia*, *(*la*) *Francia*, contrary to English: (**the*) *Lombardy*, (**the*) *Italy*, (**the*) *France*. Proper names of villages, towns, or cities do not have articles in either language: e.g., *Venezia*, *Murano*,[2] *Cambridge*, *Grantchester*. Names of rivers have an article in both: *il Po*, *il Brenta*, *il Danubio* and *the Thames*, *the Cam*, *the Danube*. Mountains behave differently in the two languages. In Italian they are always preceded by the definite article; e.g., *l'Everest* / *il monte Everest* contrary to English (**the*) *Everest / (*the) Mount Everest*. When toponyms are plural and / or include an adjective or a PP modifier, articles are more often inserted even in English, as in *the United States*, *the Netherlands*, *the Cape of Good Hope* vs. *Cape Horn*.

If articles are ultimately part of the inflectional paradigm of individual vocabulary items, they are expected to vary in this fashion. This again takes us back to the hypothesis that when N reprojects in more segments, it is more possible that it is scattered, and *vice versa*, when it only projects a phasal and a lexical projection, it is more possible that it is realized as a single word.

The proposal that articles are inserted only to make the nominal features overt on a segment of N captures the fact that articles can be phonologically null in many languages. This is trivial in languages with no articles, such as Latin, old Germanic, and most modern Slavic languages. But it is also true in particular syntactic contexts in languages with articles, as we have observed in Romanian (22)–(25) above. Thus, parallel to other functional features in the clause (complementizer, Tense, Aspect, etc.), some languages do not display the functional features realized by articles. Since Giusti (1993, 2002), I have claimed that this feature cannot be "definiteness", contrary to what is generally held. If we take the definite interpretation to be triggered by an operator (the ι-OP, in Chapter 2 above, labelled as indP in Chapter 4), this cannot be the article, because in article languages we find NEs with the article and no definite interpretation; and

[2] Other toponyms have an article which is never omitted, e.g., *il Terraglio*, *il Lido*. They could be historically related to definite descriptions which have been reanalysed as rigid designators. In other cases, the local people add an article which is not found in the standard, as in *il Dolo*, which is simply named *Dolo* on official maps. A direct syntax–semantic mapping of the definite interpretation of the article would have to list these cases one by one as exceptional, and is therefore much more "expensive" than our proposal that sets the article as part of the paradigm of the vocabulary item. This is not a property of Italian, as is for example shown by Bayer, Bader & Meng (2001) for German.

vice versa, we find NEs with definite interpretation and no article. As other modifiers of N, ι-OP/indP must be in Spec–Head relation with an overt head in some languages but not in others. In what follows, I substantiate this point by grounding the claim in evidence provided by Italian.

Longobardi (1994) claims that articles are the ι-OP and that this is the reason for the contrasts in (38)–(39), where each article appears to introduce a different index. In (38) the subject is a coordination of two NEs each with a different article and the sentence has plural subject agreement. Conversely, in (39) there is only one article and the subject agreement in the clause is singular:

(38) a. *È arrivata la mia segretaria e la tua collaboratice
is arrived.F.SG the my secretary and the your collaborator
b. Sono arrivate.F.PL la mia segretaria e la tua collaboratrice
are arrived the my secretary and the your collaborator
"My secretary and my collaborator arrived"

(39) a. È arrivata la mia segretaria e tua collaboratrice
is arrived.F.SG the my secretary and your collaborator
b. *Sono arrivate.F.PL la mia segretaria e tua collaboratrice
are arrived the my secretary and your collaborator
"My secretary and collaborator arrived"

In English, if we have two occurrences of the article we interpret the two NEs has having two distinct referents. But the opposite does not hold when we have one occurrence, which results in ambiguous interpretation, as shown by the possibility of plural Concord in (40b). Note that a demonstrative in (40c) has a different behavior from the article:

(40) a. The secretary and the friend of John Smith are / *is coming
b. The secretary and friend of John Smith is / ?are coming
c. That secretary and friend of John Smith is / *are coming

Romanian presents the opposite situation, in that a coordination of singular NEs mandatorily presents the article on each N, preserving the ambiguity:

(41) a. Directorul de departament şi presidentele de facultate a / au venit.
director-the of department and president-the of faculty came.SG/PL
b. *Directorul de departament şi presidente de facultate a / au venit.
director-the of department and president of faculty came.SG/PL

The contrasts in (38)–(41) show that Longobardi's proposal to attribute a referential index to the definite article could only account for the Italian free article and not for the English free article or for the Romanian enclitic article. My proposal to treat articles as part of the inflectional paradigm of N predicts that there may be a correlation between the realization of a feature in the bundle and the insertion of a null operator carrying the referential index, but it should not be a one-to-one correlation. Thus I expect both that a referential index appears in the absence of an article, as can be the case in English (40b), and that no referential index appears in the presence of a definite article, as can be the case in Romanian (41a).

I also expect to find language-internal variation with respect to this. In fact, even if, in Italian coordinated singular terms, the insertion of a second article introduces a second referential index, we find articles that do not induce referential interpretation, as in the four different cases in (42).

In (42a) a definite article is parallel to an indefinite article in introducing an NE with a relative clause in the subjunctive mood which induces a non-referential interpretation. In (42b), it is like an indefinite article inducing ambiguity between narrow scope interpretation of the quantifier in the possessor (a single picture of all my daughters) or wide scope interpretation (a different picture for each daughter). In (42c) it is transparent for negative concord between the negation of the predicate and the negative feature of the possessor. In (42d) it is transparent to extraction:

(42) a. Cerchiamo una / la persona che riesca a risolvere il problema.
we are looking for a / the person who could.SUBJ solve the problem.
b. Ho una / la foto di tutte le mie figlie sulla scrivania.
[I] have a / the picture of all my daughters on my desk.
c. Non voglio vedere i film di nessun regista.
[I] don't want to watch the movies of no director.
d. Di chi hai ricevuto la / una cartolina?
of whom [did you] get the / a postcard?

This semantically and structurally transparent behavior is not shared with discourse anaphoric NEs.

Compare (43) with (42a). In (43a), the relative clause in the subjunctive mood cannot occur in the discourse anaphoric R-expression. Note that the predicate *avere bisogno* is compatible with a subjunctive complement whose subject is a discourse anaphoric R-expression (43b),

but this does not improve the acceptability of the subjunctive relative clause, which implies lack of specificity or definiteness of the antecedent:

(43) Abbiamo eletto una direttrice nuova.
"We have elected a new director"
a. Abbiamo bisogno di questa / della direttrice
(*che risolva il problema).
we need this / the director who solve.SUBJ the problem.
b. Abbiamo bisogno che questa direttrice risolva il problema.
We need that this director solve.SUBJ the problem.

Now compare (44) with (42b). In (44a), the discourse anaphoric expression is incompatible with the multiple interpretation required by a context in which my daughters were born at different times. The only possible continuation of (44) is (44b) with a plural anaphoric subject:

(44) Appena sono nate, alle mie figlie ho fatto fare una foto.
"As they were born, I had a picture taken of my daughters."
a. *Ora tengo quella / questa / la foto delle mie figlie sulla scrivania.
Now [I] keep that / this / the picture of my daughters on my desk.
b. Ora tengo quelle / queste foto delle mie figlie sulla mia scrivania.
Now [I] keep those / these pictures of my daughters on my desk.

Then compare (45) with (42c). In (45a) the presence of an R-expression makes negative concord impossible with the possessor. Negative concord is of course satisfied by the negative quantifier in (45b) and extends on the possessor:

(45) Non mi piacciono i film horror.
[I] don't like horror movies.
a. *Non voglio vedere quei film di nessun regista.
[I] don't want to watch that (kind of) movie of no director.
b. Non voglio vedere nessun film horror di nessun regista.
[I] don't want to watch no horror movie of no director.

Finally, compare (46) with (42d). Extraction of a possessor is best in Italian through articles but it is also possible with quantifiers (46a), while it is completely disallowed with demonstratives (46b):

(46) a. Di chi hai messo in forno molte / le torte?
of whom did you put many cakes in the oven?
b. *Di chi hai messo in forno quelle torte?
of whom [did you] put those cakes in the oven?

The data in (42)–(46) can be accounted for if the referential index of the NE is interpreted at the Left Edge. A definite article can have a referential ι-OP at its Left Edge, but it can also have an indP just carrying 3rd person features.[3] This derives the different grammaticality judgements of the definite article which in some cases patterns with the indefinite article (42), and in other cases with a discourse anaphoric demonstrative (43–45a). It is compatible with current literature to assume that this is what carries the *i*φ targeted from above in the Agreement relation that the NE has to entertain in order to be part of a higher phase. It is therefore perfectly compatible with current assumptions that these features are at the Left Edge. Thus Agreement targets the specifier of the NE and values its *u*Pred feature in the highest segment of N.

5.3 Scandinavian "Double Definiteness"

Scandinavian provides a good example of articles as functional heads, with respect to the last two properties listed in (1) in Chapter 4: the conditions on their merging are syntactic in nature (1g) and they lack substantive content (1h). Once again, these properties are not shared by other determiners. This section elaborates on the analysis I provided in Giusti (1994b).

Norwegian, Swedish, and Danish have the same type of paradigm for NEs including just a noun: in all cases, N is bundled with a morpheme that is usually taken to be the article No./Swe./Da. *huset*, Ice. *húsið* "house-the". But they display different strategies when the noun is modified by an adjectival modifier, which must be prenominal in all Scandinavian languages, as is the case in Germanic. Norwegian and Swedish (47a) keep the suffix bundled with N but also insert a free article. Danish (47b) only realizes the free article and dispenses with the suffix. Only Icelandic (47c) has the suffix:[4]

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[3] If extraction takes place from the Left Edge, I must assume that ι-OP and indP occupy different positions and that whne indP is inserted, N must further project in order to provide and empty specifier at the Left Edge. Another possibility is to claim that indP, being void of referential features can concord with the referential features of the possessor, thereby functioning as intermediate category in the extraction chain. A third possibility is to say that those NEs that allow for extraction have no indP at all, and that the 3rd Person feature on the is a default. This third possibility would allow me to claim that there is the ι-OP is indP and that indP is merged with the LE only when definite interpretation is obtained. I will leave the choice among these three possibilities for future research.

[4] Cf. Delsing (1988), Dimitrova-Vulchanova & Giusti (1998), Julien (2005).

(47)	a.	*det* store hus*et* Art AP N-art	Norwegian / Swedish
	b.	*det* store hus Art AP N	Danish
	c.	gamla húsið AP N-art "the big house"	Icelandic

The presence of two articles in (47a) clearly suggests that one of the two cannot be the Spell-out of the ιOP. Furthermore, the two different options in (47b–c) suggest that establishing which of the two is the operator and which is the redundant concord morpheme should be a matter of micro-parametric choice. In this perspective, we would be forced to assume that in Danish the ιOP is the free morpheme *det* in (47b), which in simple nominals is clearly non-overt. This proposal will therefore lead us to have one language in which the ιOP is non-overt when it is adjacent to an overt head bundled for some definiteness Concord feature, the same definiteness Concord feature that is apparent in Norwegian / Swedish (47a).[5] In this perspective we would have two parameters: the Mainland Scandinavian choice with the ιOP in the high portion of structure, and the Icelandic choice with the ιOP in the low portion. The Mainland Scandinavian choice would be further split into the Danish choice with non-agreeing N and the Norwegian / Swedish choice with an agreeing N.

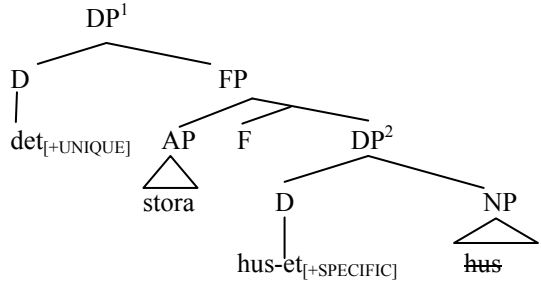
Parametrization of the hierarchical position of an interpretable feature such as definiteness in cognate languages such as Danish and Icelandic is at odds with cartographic results. If we are seeking for a universal hierarchy of functional structure, which has important consequences at the semantic interface, the position where definiteness is computed should be the same in all languages, especially if we look at close cognates.

The assumption of a DP split into two projections (as proposed for example by Delsing (1988, 1993)), is a stipulation to accommodate the observed data, unless it can be proved that the ιOP is split in two features. This is in fact what is proposed by Julien (2005). In order to capture the

[5] Since I am arguing against this possibility, it is not important here to distinguish between a hypothesis that considers the ιOP as a functional head c-commanding (and agreeing with) N, as in Roberts (2010), or as a functional specifier concording with a projection of N, as the indP proposed above. In the former case, we would have the additional problem of positing an adjacency requirement, while in the latter case we would capture the adjacency with the local nature of the Spec–Head relation.

relevant data, the adjective must be merged higher than the [SPECIFIC] feature and lower than the [UNIQUE] feature, as in (48):

(48)



Evidence for the split is provided by the fact that in a coordination, the presence or absence of the second unbound article marks reference to a single individual, as in (49a) or two individuals as in (49b):

(49) a. den talentfulle akademikern og den dyktige administratorn
the talented scholar.DEF and the accomplished administrator.DEF
b. den talentfulle akademikern og dyktige administratorn
the talented scholar.DEF and accomplished administrator.DEF

But this kind of evidence has already been shown to be misleading in the discussion of the English / Italian / Romanian contrasts in (38)–(41) above. Furthermore, this proposal cannot explain why the two features must split in the presence of a prenominal adjective but cannot split when the noun is bare or modified by a postnominal possessive (cf. *huset* (*mitt*) "house-the (my)") in Swedish and Norwegian. It does not explain why the prenominal adjective does not trigger the split in Danish or Icelandic, and why the unsplit articles are realized differently in these two languages. It does not explain why in most other languages the two features are not split. Finally, it predicts that indefinite specific nominals in Swedish and Norwegian should have the enclitic article, contrary to fact: **ett huset* "a house-the".

If the article is instead viewed as a segment of a scattered N, micro-variation is expected, given that inflectional paradigms are by definition the typical example of micro-parameters (in the sense of Biberauer & Roberts 2012).

In the proposal developed here, the apparent definiteness feature (Case or any other, for what matters here) is bundled with N in UG. This is so in all Scandinavian languages. The parametric choice concerns the realization of the bundle. In Scandinavian, the paradigm of N allows for N to be spelled out as a unique bundle when it does not reproject (50a)

because it is not merged with an AP. When it reprojects to merge with an AP, different varieties spell out the scattered head in different ways. Danish spells out Case bundled with Gender and Number in the higher segment of N while the lower segment has no case (50b). Swedish and Norwegian minimally differ from Danish in that the lower segment of N is spelled out fully (50c). Icelandic spells out the lower segment fully and does not spell out the higher segment at all:[6]

(50) a. $[_{N/DP}$ ι-OP $[N/D_{GEND.NUM.CASE}]]$
b. $[_{N/DP}$ ι-OP $[\sout{N}/D_{GEND.NUM.CASE}]$ $[_{NP}$ AP $[N_{GEND.NUM.\sout{CASE}}]]$
c. $[_{N/DP}$ ι-OP $[\sout{N}/D_{GEND.NUM.CASE}]$ $[_{NP}$ AP $[N_{GEND.NUM.CASE}]]$
d. $[_{N/DP}$ ι-OP $[\sout{N}/D_{\sout{GEND.NUM.CASE}}]$ $[_{NP}$ AP $[N_{GEND.NUM.CASE}]]$

The variation is due, on the one hand, to the morphological properties of the reprojecting N; on the other hand, to the Concord requirements (and the morphological properties) of the modifiers, in this particular case an overt AP and the null indP. In Icelandic the richness of morphology on N (and possibly on AP) is sufficient to allow for the higher reprojection of NP to be null when concording with the null indP. This is not the case in the rest of the Mainland Scandinavian languages, where the null indP requires it to be in Spec–Head configuration with an overt segment of N. How the scattered head N is realized is, again, a matter of micro-variation, as it concerns the inflectional paradigm of N.

5.4. Articles as Oblique Case Markers in German

German provides a fourth case for the claim that the article is inserted in some cases as a filler of the highest functional head in the NE, in my terms as the highest segment of the projecting head.

Mass nouns in generic sentences must be bare in German, as is shown by the impossibility of an article on the accusative *Kaffee* in (51a). But in oblique Case assignment contexts such as the dative (51b) and the genitive (51c), the mass noun must have an overt definite article:

(51) a. Ich trinke gerne (**den*) Kaffee.
I.NOM drink willingly (*the.ACC) coffee.

[6] It is probably not correct to talk about Gender here, as it is more like nominal class. The relevant split is between Number (on which Gender/nominal class is parasitic) and Case.

b. Ich ziehe (**den*) Kaffee *(*dem*) Tee vor.
I.NOM prefer (*the.ACC) coffee *(the.DAT) tea PRT.
c. die Zubereitung *(*des*) Kaffees
the.NOM preparation *(the.GEN) coffee

Vater (1991: 19–20) proposes that the realization of the article *dem* in (51b) is triggered to avoid ambiguity between the two arguments of the verb *vorziehen* "prefer". But it is not clear why it should be the oblique case that requires an overt article and not the other way around. The avoid-ambiguity reason furthermore does not hold in other cases, as in (53) below, and could not explain why the genitive NE in (51c) should require an article, especially if we consider that *Kaffees* has an overt genitive *-s*.

This line of reasoning also applies to indefinite plural genitive, in (52).[7] Adjectives inflect for genitive plural, whether they are pronominal as in (52a), or in the absence of N as in (52b). But when genitive is not overt, the NE must be embedded in a PP as in (52c) (cf. Plank 1980), even if no ambiguity would arise in case the preposition *von* was not inserted:

(52) a. Benachteilungen andergläubiger Frauen / Männer / Schotten
discriminations heterodox.GEN women / men / Scots
b. Benachteilungen Andergläubiger
discriminations heterodox.GEN
c. Benachteilungen *(von) Frauen / Männern / Kindern
discriminations of women.DAT / men.DAT / kids.DAT

Ambiguity is in fact tolerated in German in the case of proper names. Bayer, Bader & Meng (2001:466) claim that in a context like (53a) the preferred interpretation is the one given in (53b), in which the first NE is a subject and the other two are the internal arguments of the verb *vorstellen* "introduce". It is interesting to note that the unmarked interpretation does not pose any constraints as to the order of the post-INFL objects: in (53a) the articleless NEs *Hans* and *Johannes* may be construed either as appearing in the order DO > IO (53b) or IO > DO (53c), with no apparent preference for one or the other:

(53) a. Maria hat Hans Johannes vorgestellt.
Mary has Hans John introduced.
b. Die Maria hat dem Hans den Johannes vorgestellt.
the.NOM Mary has the.DAT the.ACC John introduced.

[7] I thank Nicholas Catasso for providing the points made in (52)–(54).

c. Die Maria hat den Hans dem Johannes vorgestellt.
the.NOM Mary has the.ACC the.DAT John introduced.

As we have seen in (51c) and (52), some case morphology also appears on N, e.g., M/N.SG.GEN *-s* and PL.DAT *-(e)n*, and M/N.SG.DAT *-(e)* on some vocabulary items like *Hause* in (54b), but it is becoming weaker and weaker in modern German, as shown by the comparison between (54a) the famous title of Goethe's novel, published in 1774, where the genitive is on both the article *des* and the noun *Werthers*, and (54b) current German, where the genitive is only on the article:

(54) a. Die Leiden des jungen Werthers
the.NOM sorrows the.GEN young.W Werther.GEN
"The sorrows of Young Werther"
b. Er starb in dem Hause des (jungen) Peter
he.NOM died in the.DAT house.DAT the.GEN young.W Peter
"He died at the home of young Peter"

Just as in Romanian, Case seems to be primarily realized on determiners and, in the absence of determiners, on adjectives rather than on nouns. This may easily be explained by the constant erosion of Case morphology on Ns that is witnessed at all stages of European languages.

As is apparent in the contrasts in (55), if strong morphology (marked in bold) is not on the determiner, it appears on the adjectives (55a). If strong morphology is on the determiner, the adjectives have weak morphology (marked in italics) in (55b). I take strong morphology to be overt Case:

(55) a.	ein / kein / mein / ihr	gut**er**	alt**er**	Roman
	a / no / my / her	good.M.SG.NOM	old.M.SG.NOM	novel
b.	d**er** / jen**er** / dies**er**	gut*e*	alt*e*	Roman
	the / that / this.M.SG.NOM	good.W	old.W	novel

Note that strong morphology on the determiner is independent from (in)definiteness, as in (55a) indefinite *ein* / *kein* behaves like definite *mein* / *ihr*.

If the article is considered as pure inflectional morphology appearing on the dummy morpheme *d-*, we can derive the distribution of the German weak/strong morphology by assuming that if the highest segment of N has strong morphology, the lower segments are weak; if on the contrary the highest segment has no morphology, the lower segments are strong. In §6.3 I will discuss in some detail how nominal Case happens to surface on prenominal adjectives and not on N.

At this point, I want to ask what kind of element is the *d-* morpheme which not only appears as the definite article (56a) but also as an independent pronoun, as in (56b):

(56) a. Hans hat eine Frau gesehen. Die Frau stand am Fenster.
Hans has a woman seen. The woman stood at-the window.
b. Hans hat eine Frau gesehen. Sie / Die stand am Fenster.
Hans has a woman seen. She stood at-the window.

If *die* in (56a) is the same element as *die* in (56b), then the definite article in German is different from the article in Italian and English, which cannot appear in an elliptic NE. Furthermore, a *d-* determiner can be associated to a locative adverb, a property that distinguishes demonstratives with deictic force as in *die Frau da* ("the woman there"). But there is evidence to support the hypothesis of two different *d-* morphemes: one which can stand alone, and the other which is more similar to the Italian article.

In German, some monosyllabic Ps like *an* ("at") in (57) provide a good test to distinguish between an article and an anaphoric pronoun. In (57a), the referential expression displays the MASC.SG.DAT morpheme *-m* directly realized on the preposition. This element cannot cooccur with the deictic adverbial which requires a demonstrative and is incompatible with definite articles (cf. §4.2). I take this particular morpheme to be the scattered projection of N, which in the absence of a preposition is realized on a free-standing *d-*. In (57b), incorporation to the preposition does not occur when a *d-*determiner is merged with a deictic adverb:

(57) a. Wir treffen uns **am** Eingang des Bahnhofs (??**dort drüben**).
"We'll meet at the entrance of the station."
b. Wir treffen uns **an dem** Eingang des Bahnhofs (**dort drüben**).
"We'll meet at that entrance of the station (over there)"

Evidence for a different analysis of article and pronominal *d-* comes from the fact that in one cell of the paradigm, namely in the dative plural, the pronoun displays a richer multisyllabic form *denen*:

(58) a. mit den / *denen Kindern
"with the children"
b. mit *den / denen
"with them / whom"

The almost completely homomorphic form of the article and the *d-* pronoun takes us back to the original distinction which is crucial in my

proposal between free morphemes that are the realization of a scattered head, and what I called lexical determiners, which are the realization of semantic features merged as arguments or modifiers of N. In both types of elements, we expect to find feature sharing. But the sharing is due to two different relations: determiners are modifiers, and they are expected to concord with N, while articles are part of the projection of N.

5.5. Interim conclusions

This chapter has presented four case studies that can be dealt with in a unified way by proposing that (i) N-heads are directly bundled with all their functional features (which do not include definiteness); (ii) they remerge as many times as necessary; and (iii) the remerged head can be realized in a scattered fashion: articles are high segments of an N-projection.

Despite the different nature of the phenomena, in all cases the article is a morpheme that makes nominal features overt when they are needed. In Romanian it is a pronominalizer; in Italian it is an expletive that is present whenever the nominal Left Edge is null; in Scandinavian it is a head that occurs when N is split to merge with adjectives; in German it is a marker of oblique case morphology. If the proposal is on the right track, the syntactic distribution of the article is only partially related to the presence of the ι-operator that is responsible for the referential interpretation of the NE. This is a welcome result, if we consider that referential interpretation can be proposed to be obtained crosslinguistically with a null ι-operator, thereby unifying languages with and without articles.

CHAPTER SIX

ARTICLES AS ADJECTIVAL CONCORD

In the previous chapter I claimed that articles are in many cases pure realizations of nominal inflection. In this chapter, I show that in other cases, articles are inserted to realize Concord between the adjective and the noun.

I briefly recall here that Concord is the feature sharing relation between a modifier and the head. In §3.2, I claimed that it differs from Agreement in that it is not instantiated by a probe–goal relation and therefore does not trigger any application of internal merge. This is because the uninterpretable features to be deleted are in the projection of the modifier, which is not an independent phase and is sent to interfaces as part of it.

The chapter is structured as follows. In §6.1, I show that the article that appears on adjectives in Balkan languages is not the result of one and the same phenomenon. In particular, I claim that only in Albanian it is part of the inflectional morphology of the adjective, which is scattered in some cases. In Greek and Romanian, it is instead an overt pronominal element introducing an indirect modification structure. In §6.2 I report recent work in collaboration with Anna Cardinaletti, where we claim that the inflection on three prenominal modifiers – namely, demonstrative *quel*, indefinite *del*, and adjectival *bel* – is in fact an overt scattered N head with which the uninflected modifier concords. Cardinaletti & Giusti (2015) call "Compensatory Concord" the configuration in which the head is overt to compensate for the lack of overt Concord in the Specifier. In §6.3, I claim that this kind of Concord applies to prenominal adjectives in German, thereby deriving the strong vs. weak inflection on adjectives and the head-final configuration that is only found in adnominal APs.

6.1. Adjectival Articles in Balkan Languages

This section deals with the realization of adjectival Concord in three different Balkan languages that display determiner spreading. Elaborating on Giusti (1994b, 1997, 2002) and Dimitrova-Vulchanova & Giusti (1998), I argue that while in Albanian the prefixal element is part of the

paradigm of A, in Greek and Romanian it is part of a more complex structure, where a pronominal element coindexed with the referent of the whole NE introduces an indirect modification adjective, which is the predicate of a small clause. In neither language is the adjectival article a real determiner.

Albanian adjectives divide into two major classes: those that are preceded by an article-like morpheme, like *i mirë* in (1a), and those that are not, like *besnik* in (1b); also cf. Turano (2002), Campos (2009), Manzini & Savoia (2013):

(1) a. djali i mirë
boy-the the nice
"the nice boy"
b. djali besnik
boy-the faithful
"the faithful boy"

Let us compare the paradigm of two adjectives (*i lig* "bad" and *plack* "old"). Both distinguish Gender and Number, but only *i lig* has a prefixal article. Table (2) gives us the nominative indefinite form of the prefix:

(2)

	SG		PL	
M	*i lig*	*plak*	*të ligj*	*pleq*
F	*e ligë*	*plakë*	*të liga*	*plaka*

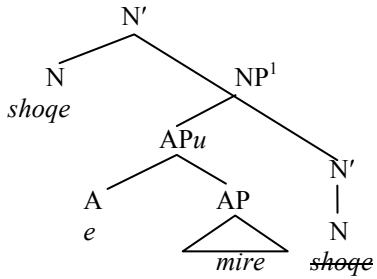
In table (3), we observe the feminine singular paradigm, which is the richest in inflection. The prefix inflects for Gender, Number, Case, and definiteness (in our view a form of differential case marking). In the indefinite paradigm *e / të* on the adjective *ligë* distinguishes nominative from accusative / oblique. While the form of the noun *shoqe* / *shoqeje* distinguishes nominative / accusative from oblique. In the definite paradigm *e / së* on the adjective *ligë* distinguishes nominative / accusative from oblique, while the inflected noun has three different case endings: *-ja / -en* / *-es*:

(3)

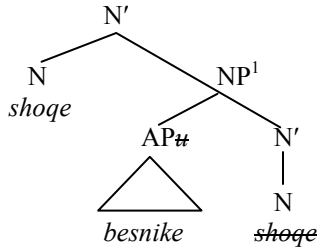
	INDEFINITE		DEFINITE	
NOM	*shoqe **e** ligë*	*shoqe plakë*	*shoqja **e** ligë*	*shoqja plakë*
ACC	*shoqe **të** ligë*	*shoqe plakë*	*shoqen **e** ligë*	*shoqen plakë*
OBL	*shoqeje **të** ligë*	*shoqeje plakë*	*shoqes **së** ligë*	*shoqes plakë*
	[a] bad / old friend.F.SG		the bad / old friend.F.SG	

Based on these data, in Giusti (2012b) I claimed that adjectival articles in Albanian are part of the paradigm of A. In (4), the AP is merged as a specifier of N and concords with the features of N. Thus *e mire* reprojects in (4a) and is realized as a scattered head, while *besnik* does not in (4b): [1]

(4) a.



b.



The hypothesis according to which the presence of what Manzini & Savoia (2013) label a "linker" barely depends on the paradigm of the adjective, is supported by the observation that it also occurs in predicate position (5a). The linker in this case is certainly part of the adjectival inflection, as shown by the fact that predicate nouns do not show this type of Concord.

(5) a. Agimi është i lumtur
Agim.the.nom is the happy
"Agim is happy"
b. Agimi është mësues
Agim.the.nom is teacher
"Agim is a teacher"

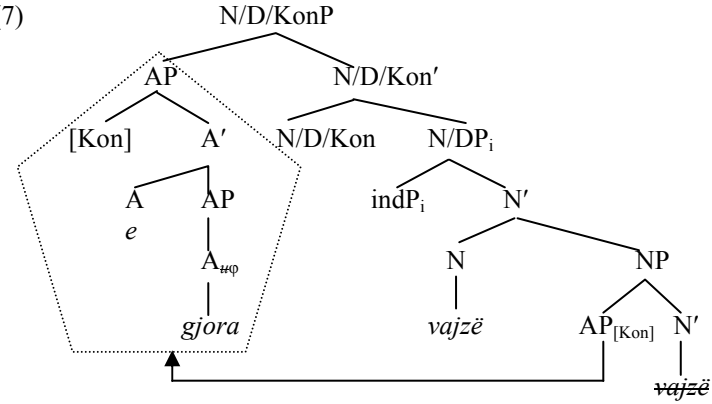
[1] In (4), the features relevant to adjectival Concord are the same as the nominal features. I represent them as *i*φ on N and *u*φ on A, to say that their occurrence on A is not required by A itself but for the A(P) to be interpreted as a modifier of N.

As seen in §1.3.2, all adjectives in Albanian can appear inflected with the enclitic article if they are in prenominal position. The small capitals stand for contrastive prosodic contour:

(6) a. BESNIKA vajzë
faithful-the girl
'the FAITHFULL girl'
b. e GJIORA vajzë
the poor-the girl
"the NICE girl"

In (6), AP (but not NP) is associated with Focus. Given that Focus is a clausal feature and cannot be checked in the NE (cf. Giusti 2006), AP must be at the Left Edge of NP, as in (7), to be transparent to the clausal phase. The "definiteness / Case" morphology (also an edge feature) appears on the adjective. The null referential operator is in the immediately lower Specifier of N. The label KonP stands for Contrast Phrase, which I take to be part of a split DP-projection (cf. Giusti (1996, 2006), and §1.3.2, §3.2 above):

(7)

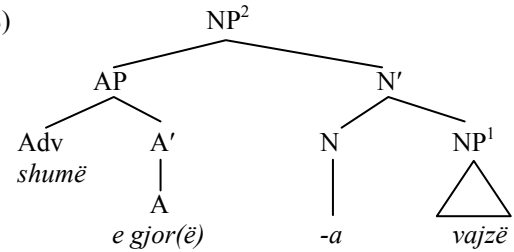


The interplay of Projection and Concord in (7) is such that N, bundled with all its functional features including *u*Pred (to be valued by a probe in the next phase), first merges with AP, then with the null indP. The projection would end at this point obtaining *vajza e gjorë*, but since the AP comes with a contrast feature [+Kon], it remerges as the specifier of KonP, a reprojection of the N bundled with [Kon]. Since the contrasted AP is

higher than the overt noun, the highest segment of N is null but triggers Concord for case / definiteness on A.[2]

An alternative analysis, also possible in this framework, is that the morpheme on the fronted A is not part of A but a segment of N enclitic on A, as represented in (8):

(8)



The analysis in (8) is excluded by the empirical observation, originally made by Dimitrova-Vulchanova & Giusti (1998), that Albanian (and Romanian) coordinated prenominal adjectives must be inflected for the nominal article. If the affixal article was in the head of N2 in (8), (9a) would be ungrammatical, and (9c) possible, contrary to fact:

(9)	a.	e gjora	dhe e	vogla	vajzë
		art poor.the	and art	little.the	girl
	b.	*e gjora	dhe e	vogël	vajzë
		art poor.the	and art	little	girl
	c.	*e gjorë	dhe e	vogla	vajzë
		art-poor	and art	little.the	girl

The paradigm of the adjective must therefore include affixal syntactic definiteness / case, which is overt when the AP is not c-commanded by a segment of N, as is the case of the AP in (7). This complies with the Principle of Economy §3.2(56b), which prescribes economy in the realization of reprojected heads.

The presence of redundant articles in the nominal expression is common to other Balkan languages, notably Greek and Romanian. However, they present quite different properties.

[2] A simpler derivation would be to propose that the Kon feature makes the adjective directly merge higher than the referential index, overriding the hierarchy of modification. Here I take a more cartographic stance, which is more widely accepted.

An independent difference between Greek and Albanian is that in Greek, adjectives are strictly prenominal as in (10), while in Albanian they are mainly postnominal, as observed in §1.3.2(105)-(106):

(10) a. i griza gata — the gray cat
a′. *i gata griza — the cat gray
b. i ploty potami — the navigable rivers
b′ *i potami ploty — the rivers navigable

Postnominal adjectives in Greek definite NEs are possible only if they are preceded by a definite article (11).[3] This phenomenon is called "determiner spreading" or "polydefinite construction". It can also be found with a prenominal adjective (11b) which in this case receives a contrast interpretation:

(11) a. to vivlio *(to) megalo
the book *(the) big
b. to MEGALO (to) vivlio
the big the book
"the big book"

Kolliakou (1998) notes that the unmarked order Det A N allows an ambiguous interpretation of the adjective as either restrictive or non-restrictive, while the polydefinite order is limited to the restrictive interpretation (12b):

(12) a. O dhiefthindis dhilose oti i ikani erevnites
the director declared that the competent researchers
tha eprepe n' apolithun.
FUT.PRT should SUBJ.PRT fired (ambiguous)
b. O dhiefthindis dhilose oti i ikani i erevnites
the director declared that the competent the researchers
tha eprepe n' apolithun.
FUT.PRT should SUBJ.PRT fired (exclusively restrictive reading)
"The director declared that the competent researchers should be fired."

Alexiadou & Wilder (1998) capture the restrictive interpretation of polydefiniteness along the lines of Kayne's (1994) representation of all

[3] Indefinite NEs, which have no article, can also invert the order, but with no article on A. All the authors who note this, analyse it as the same phenomenon with a null indefinite article.

types of adjectival modification as reduced relative clauses, and analyze the adjectival article as the D head of a relative. Marinis & Panagiotidis (2002) reduce polydefiniteness to adposition and analyse the adjectival article as the D of an elliptic NE. Campos & Stavrou (2004) propose that the adjectival article is the overt predicate head of the small clause.[4] Despite being very different from each other, these accounts have in common the assumption that the restrictive interpretation is obtained through a reduced relative clause.

Cinque (2010:104-8) highlights five different properties of polydefinite NEs that support the hypothesis that they are indirect modification constructions and, as such, reduced relative clauses. We have already reported in (12) that they are interpreted as having restrictive interpretation. They also have intersective function (Campos & Stavrou 2004:144):

(13) a. Gnorises tin orea tragudistria?
meet.2sg the beautiful singer
b. Gnorises tin orea tin tragudistria?
meet.2sg the beautiful the singer
'Did you meet the beautiful singer?'

They display a less rigid order than direct modification adjectives. Alexiadou & Wilder (1998) judge (14a), which displays the unmarked order size > colour, as slightly degraded by the presence of a prenominal adjective in the polydefinite construction. But they judge (14b), which displays the opposite order, as totally degraded if the article on the second adjective is not inserted, and only slightly degraded if the article is inserted:

(14) a. to megalo (?to) kokkino vivlio
the big (the) red book
b. ??to kokkino *(to) megalo vivlio
the red (the) big book
"the big red book"

The postnominal position with obligatory polydefiniteness shows a larger degree of freedom (15) and, when prenominal, it is higher than direct modification (16):

[4] I refer the interested reader to the overview of the literature beautifully provided by Campos & Stavrou (2004).

(15) a. to vivlio *(to) megalo *(to) kokkino
the book the big the red
b. to vivlio *(to) kokkino *(to) megalo
the book the red the big
"the big red book"

(16) a. i megali kenuria (*i) kokini valitsa
the big new the red suitcase
b. i megali (i) kenuria kokini valitsa
the big the new red suitcase

Finally, the adjectives that cannot occur in polydefinite constructions cannot occur as predicates of a relative clause. But the opposite does not always hold true: some adjectives that cannot appear as predicates can appear in polydefinite constructions. There is a striking contrast between (17) and (18): *proin* and *prohigoumenos* as predicate adjectives are both ungrammatical in (17), but they give different grammaticality results in prenominal position, as shown in (18):

(17) a. *o ipurgos itan proin.
the minister is former
b. *o prothipoughos itan proighoumenos.
the prime minister is former

(18) a. o proin (*o) ipurgos
the former the minister
b. o proighoumenos (o) prothipoughos.
the former the prime minister

This piece of evidence, from Androutsopoulou (2001), leads Cinque (2010) to propose that the prenominal adjective followed by an article in (18b) is a special type of reduced relative clause. If I understand it correctly, it is like a DP with a prenominal adjective preceding a null noun. Thus it seems that the reduced structures involved are two: genuine reduced relatives with an adjectival predicate, which can be prenominal or postnominal, and appositions which can only be prenominal. Adjectival articles in Greek are therefore very different from Albanian "linkers". The latter are part of the adjectival inflection, they are therefore the realization of Concord for nominal features on A.

Adjectival articles in Greek are the realization of interpretable nominal features, either the pronominal determiner of a null N in a prenominal adposition, as in (18b), or a relative pronoun in a prenominal or postnominal reduced relative, as in (11). Therefore, they cannot be part of the scattered adjectival head, *contra* my previous analysis in Giusti (2002). I will address the structural analysis of these different constructions at the end of the section, after presenting the third case of a Balkan adjectival article, namely Romanian *cel*, which also appears in very different constructions and will therefore be analysed as realizing different elements.

The Romanian adjectival article *cel* has the form of a weak demonstrative (cf. the minimally different distal demonstrative *acel* "that"). In Giusti (1993), I observed that it can only occur with predicate adjectives:

(19) a. privirea (cea) înlacrimată
sight-the the tearful
b. privirea (*cea) ultimă
sight-the the last

Many authors have focused on *cel* constructions. In particular, Dobrovie-Sorin (1987) and Coene (1999) claimed that *cel* constructions always have a null noun. This idea is also shared by Cornilescu and Nicolae (2012), and Nicolae (2013, ch.3). In the rest of this section, I follow this line of research and suggest that Romanian *cel* has all the functions displayed by the Greek article in double definite constructions: it is the relative pronoun introducing reduced relative clauses; it is also the determiner licensing elliptic NEs; and it is a segment of N. Differently from Greek, an elliptic NE cannot be adnominal; the reduced relative can only be postnominal; finally, *cel* is a segment of N only in case of the merger of a prenominal numeral adjective.

Let us first investigate the determiner function of *cel*. In (20a), we observe that it appears before the numeral adjective *trei* but not before the quantity adjective *mulţi*. In (20b), we observe that *mulţi* but not *trei* can be inflected for the definite article:

(20) a. cei trei / *mulţi băieţi, cele trele / *multe fete
"the three / many boys, the three / many girls"
b. mulţii / *treii băieţi, multele / *trele(le) fete
many-the / three-the boys, many-the / three-the girls
"the many / three boys, the many / three girls"

The contrast in (20) could be due to the different inflectional properties of the two adjectives. In fact, even if some numerals as *doi / două* ("two"), *trei / trele* ("three") inflect for Gender, they do not inflect for definiteness, differently from *mult*. Furthermore, other numerals such as *patru* ("four") *cinci* ("five") do not inflect at all. It is therefore a fact that numerals do not have a proper inflectional morphology to appear in the SpecDP in definite expressions, which must contain a "properly inflected" adjective. The alternative cannot be one of realizing N/D with the lexical noun bundled with the article, as in (21a), because in Romanian, as in all Romance languages, N cannot precede numerals. Neither does it precede a restricted group of adjectives, e.g., *biet* ("poor, pitiful") in (21b):

(21) a. *băieţii trei / *fete trele
boys-the three / girls-the three
b. *băieţii bieţi / *fetele biete
boys-the poor / girls-the poor

Prenominal *cel* with numeral adjectives in (20a) should therefore be analysed as the only free-standing definite article in Romanian. It is a last-resort device and does not occur in any other context in which the noun is overt.[5] There are at least two other functions of *cel* licensing a null N.

One is *cel* as the pronominal introducer of a reduced relative, which can only occur with indirect modification adjectives (in the sense of Cinque 2010); namely, adjectives that can occur in predicate position, like "good" but not classifying adjectives like "Romanian":

(22) a. vinul (cel) bun
wine-the (the) good
"the good wine"
b. vinul (*cel) românesc
wine-the (the) Romanian
"the Romanian wine"

[5] Another context could be the case of ordinal adjectives formed with *-lea* as in *cel (de) al doilea băiat* ("the second boy"). There are however many differences with the cardinal numeral. The most notable is the fact that **cei trei* with a null N is ungrammatical while *cel al doilea* can be elliptic. Probably related to this is the fact that *cei trei* cannot be postnominal (**băieţii cei trei*) while *cel al doilea* can (*băietul cel al doilea*). But the analysis of this construction would take us too far afield.

The other is *cel* in elliptic constructions, which is possible with all postnominal adjectives, of both indirect and direct modification, as in (23), cf. Nicolae (2013: Ch. 3):

(23) a. vinul bun şi cel rău
wine-the good and the bad
"the good and the bad wine"
b. vinul românesc şi cel franzusesc
wine-the Romanian and the French
"the Romanian and the French wine"

In (24) we find the three functions of *cel* parallel to the Greek article. It can be a segment of N, as represented in (24a); it can be an overt pronominal introducing a reduced relative clause, as represented in (24b); or it can be a determiner licensing a null N, as in (24c). Both in (24a) and (24c), *cel* is in a DP with a projecting N, which is overt in (24a) and covert in (24c); while in (24b), it is a pronoun (an independent DP) subject of the reduced relative clause (RCC):[6]

(24) a. $[_{DP}$ *cei* $[_{NP}$ *trei* $[_{NP}$ *băieţii*]]]
b. $[_{DPi}$ $[_{NP}$ *băiatul* $[_{NP}$ *românesc* ~~N~~]] $[_{RRC}$ *cel*$_i$ $[_{AP}$ *frumos*]]]]
c. $[_{DPi}$ *vinul românesc*] *şi* $[_{DPj}$ *cel* $[_{NP}$ $[_{AP}$ *franzusesc*] $[_{NP}$ 0]]]

Although I have attributed to *cel* the same functions highlighted for the Greek article, the differences with Greek are notable. We have already observed that free-standing *cel* is a last-resort article, while in Greek the free-standing article is the unmarked choice. A second major difference is that reduced relative clauses can also be prenominal in Greek, while they are only postnominal in Romanian, as shown by the contrast in (25):

(25) a. to vivlio to megalo, to megalo to vivlio
the book the big, the big the book

[6] I do not take a stance on the actual position of such modifiers inside the NE, and in particular whether their postnominal position is obtained by movement of a chunk of the NE to the left of a left-hand merge position (as in Cinque 2010) or as a right-hand merged adjunct or predicate as in Abels & Neeleman (2012). The latter approach is more suitable to my projection proposal. In case Cinque's proposal is adopted, I would have to propose that N-projection stops when relative clauses are merged. The reason could be that relative clauses (full or reduced) do not merge as specifiers of N but as complements/modifiers of a predicated head, as proposed by many.

b. carta cea mare, *cea mare carte / carta
book-the the big, the big book / book-the

This difference is easily captured by the general property of Greek to realize the lower segment of N. If N is realized lower than direct modification, it is necessarily lower than indirect modification (cf. Cinque 2010). The postnominal position of indirect modification in Romanian is due to roll-up of the whole portion of the direct modification including N.

The third difference is that, in Romanian, elliptic DPs with strictly prenominal adjectives – namely, those that usually occur prenominally, like *fost* "previous" – do not have *cel*, because *cel* is a last-resort determiner inserted when no other element can host the enclitic article either in SpecDP or in D:

(26) a. o proighoumenos (o prothipoughos).
the former (the prime minister)
b. fostul (president)
former-the (president)
c. *cel fost (president)
"the former president"

Let us focus for a moment on the internal structure of the reduced relative clause (RRC) that is left unspecified in (24b). There is no well-established theory of the internal structure of reduced relative clauses, despite the fact that they are quite often assumed to be the basis of what Cinque (2010) calls "indirect modification", which includes, but is in no ways limited to, the notion of restrictive modification. For this reason, my proposal will be quite tentative.

An RRC is different from a full relative clause at least in three respects. First, most languages that have overt relative pronouns, like those discussed here, do not have overt introducers of the RCC (cf. *the stars which / that are visible today* vs. *the stars* (**which / *that*) *visible today*). A second difference is that the only possible predicate of an RCC is an AP (including past and present participles) or a PP, while relative clauses can also have VP and NP predicates (cf. *the stars shining*, *the stars in the sky* vs. *the stars* *(*which / that*) *shined*, *the stars* *(*which / that are*) *in the sky* or *the stars* *(*which / that are*) *the topic of our discussion*). The third difference is that appositive relative clauses are possible, for example with

a deictic expression, while they have no reduced conterparts (*This star* *(*which is*) *visible*).[7]

These differences have gone unnoticed, to my knowledge, and this is not the place to deal with them. But they point towards an intermediate status of RCC between full relatives and adnominal APs. Thus, if functional heads are segments of the projecting lexical head, as is proposed here, the N segment merged with a reduced relative clause can be different from the segment merged with a full relative clause, and also different from the one merged with a direct modification adjective.

In §3.2, I claimed that direct modification adjectives only come with uninterpretable nominal features, which are checked and deleted by Concord in their first-merge position (Spec–Head configuration). Differently from them, a full relative clause, whether restrictive or appositive, is endowed with full propositional content with a subject, Time reference, a vP, as well as the operator which is anaphoric to the referent of the NE head of the relative. If the status of the RRC is inbetween these two extremes, it is reasonable to propose that indirect modification is a reduced predication structure with a subject which is at the same time the relative operator, and a predicate which is apparently limited to properties; it cannot denote an event or have time reference or refer to an individual. The three structures of increasing complexity are given in (27):

(27) a. $[_{AP}\, u\varphi\, [_{A'}\, A]]$ (adnominal AP)
b. $[_{PredP}$ RelOp / SUBJ $[_{Pred'}$ Pred $[_{AP}\, u\varphi\, [_{A'}\, A]]]]$ (RCC)
c. $[_{CP}$ RelOp $[$ C $[_{TP}$ SUBJ $[_{T'}$ T $[_{vP}$ v $[_{AP}\, u\varphi\, [_{A'}\, A]]]]]]]$ (RelClause)

On the basis of German, as discussed by Fanselow (1986), Cinque (2010) suggests that the subject of the RCC is PRO. Fanselow first shows that the floating reciprocal has the same case as its antecedent (e.g., accusative in (28a)); then shows that in control clauses, the reciprocal coindexed with PRO has nominative case (28b). Finally, he shows that also inside a prenominal RRC of an accusative NE, the anaphor appears in nominative case (28c), showing that its antecedent is the same as the subject of the control clause:

(28) a. Maria hat die Männer einen nach dem anderen geküßt.
M has the.ACC men.ACC one.ACC after the.DAT other.DAT kissed
"Maria kissed the men one after the other."

[7] Note that adpositions are only DPs and cannot be APs (*Mrs Smith,* (*who is*) *the owner/*angry*).

b. weil ich die Männer überzeugte [PRO Renate einer nach dem
because I the.ACC men.ACC convinced R one.NOM after the.DAT
anderen zu küssen.
other.DAT to kiss
"beacause I convinced the men to kiss R. one after the other"

c. Wir sahen die [PRO einer nach dem anderen angekommenen]
we saw the.ACC one.NOM after the.DAT other.DAT arrived.ACC
Studenten.
students.ACC
"We saw the students [who had] arrived one after the other"

My proposal for Greek polydefinite and Romanian *cel* RRC, as in (27b), is that they are an overt counterpart of the German PRO in (28c), which is anaphoric to the referent of the NE they modify. This is not surprising, if one considers that Balkan languages like Greek and Romanian do not have infinitival clauses (Joseph 2009) and presumably do not have PRO.

The proposal here elaborates on previous ones. I follow Alexiadou & Wilder (1998), Campos & Stavrou (2004), and Cinque (2010), in considering at least some polydefinite constructions as predicate structures, but unlike Alexiadou & Wilder and parallel to the other two proposals I take this to be a property that distinguishes polydefinite RRC from adnominal adjectives and appositive DPs. Unlike Campos & Stavrou, I propose that the article realizes the subject of the predication and not the predicate. In this respect, my proposal is more similar to Marinis & Panagiotidis's (2002). My proposal claims that Greek has (at least) another type of polydefiniteness, in which the article is the highest element in an elliptic DP (following Cinque 2010). Finally, my proposal extends to Romanian *cel*, which is usually treated as a separate phenomenon.

6.2 Prenominal *Quel* and *Bel* in Italian

In Italian the definite article is clearly an independent morpheme, whose form is morpho-phonologically dependent on the phonological form of the following word. Table (29) gives the possible allomorphs in the four cells of the paradigm:

(29)

	M	F
SG	il/lo/l'	la/l'
PL	i/gli	le

"the"

Note that the plural forms do not delete the vowel morpheme that realizes Gender and Number, while the singular forms do so before a vowel: *l'amico*, *l'amica*, **l'amici*, **l'amiche* ("the friend(s)"). The latter two plural forms are possible in some dialects and are found in old Italian.

Also note that apart from M.PL all forms have an *l-* root which has developed from Latin ILLE. The two masculine plural forms *i/gli* are the results of different developments of a no-longer-existent form **li* which would be the regular inflection of *l-* for these features. Also, *li* is attested in some dialects and in old Italian. The form *i* is the result of deletion of *l-*; while the form *gli* [ʎi] is the result of palatalization of [l]. Thus, it seems that *l-* cannot survive before *i*, resulting in either palatalization [ʎ] or deletion [i].

Let us now look in detail at the phonologically dependent distribution of the allomorphs. The paradigm in (30) shows that if the following word begins with a vowel, the singular articles consist simply in the *l*-morpheme but in the plural we have a palatalized form *gli* for masculine. As observed above, no other form is possible:

(30)

	M	F
SG	l'amico	l'amica
PL	gli amici	le amiche
	"the friend(s)"	

If the following word starts with an extra-syllabic consonant, we have *lo/la* in the singular and *gli*/*le* in the plural:

(31)

	M	F
SG	lo scolaro	la scolara
PL	gli scolari	le scolare
	"the pupil(s)"	

If the following word starts with a simple consonantal onset, we find *il*/*la* in the singular and *i*/*le* in the plural:

(32)

	M	F
SG	il compagno	la compagna
PL	i compagni	le compagne
	"the mate(s)"	

These forms cannot be captured by general phonological rules and are the result of standardization. In fact, phonology does not rule out **i scolari* in

(33a) or **lo sonno* in (34a), which are compatible with the Italian syllable structure and sandhi rules, as shown by the possible phonological sequences in (33b)–(34 b), and are also attested in both modern dialects and old Italian:

(33) a. *per i scolari [pe.ris.co.la.ri]
for the students
b. Perisco. [pe.ris.co]
[I] perish

(34) a. *lo sonno [lo.son.no]
the sleep
b. Lo sono. [lo.so.no]
so am [I]

The idiosyncratic allomorphs of the article in Italian suggest that although they are free morphemes, they are part of a scattered inflectional morphology. This is confirmed by the observation that two modifiers of the noun, the demonstrative *quel* ("that") and the prenominal adjective *bel* ("handsome / nice"), display the same inflectional paradigm as the definite article and are different from other adjectives also ending in *-l*(*lo*), like *novello* ("novel") in (35d), or *giallo* ("yellow") in (36d):

(35)a.	il/*lo vicino "the neighbour.M.SG"	gli/*li amici "the friends.M.PL"	i/*li vicini "the neighbours.M.PL"
b.	quel(*lo) vicino "that neighbour"	quegli/*quelli amici "those friends"	quei/*quelli vicini "those neighbours"
c.	bel(*lo) vicino "nice neighbour"	begli/*belli amici "nice friends"	bei/*belli vicini "nice neighbours"
d.	novel*(lo) vicino "novel neighbour"	novelli/*novegli amici "novel friends"	novelli/*novei vicini "novel neighbours"

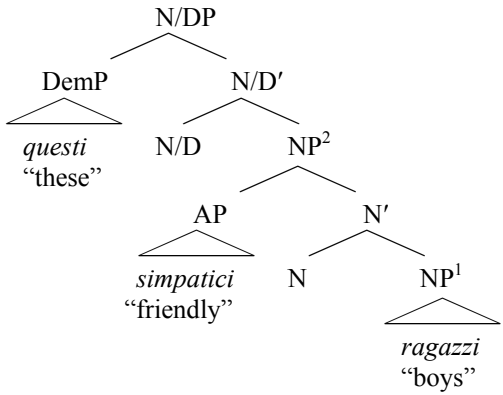
(36) a.	il/*lo mare "the sea.M.SG"	gli/*li occhi "the eyes.M.PL"	i/*li soli "the suns.M.PL"
b.	quel(*lo) mare "that sea"	quegli/*quelli occhi "those eyes"	quei/*quelli soli "those suns"
c.	bel(*lo) mare "nice sea"	begli/*belli occhi "nice eyes"	bei/*belli soli "nice suns"
d.	gial*(lo) mare "yellow sea"	gialli/*giagli occhi "yellow eyes"	gialli/*giai soli "yellow suns"

Note that the same point can be made for mass and plural count indefinite *de-* in (37):

(37) a.	il/*lo vino “the wine”	l(*a) acqua “the water”	i/*li fiori “the flowers”	gli/*li agrumi “the citruses”
b.	del(*lo) vino “some wine”	dell(*a) acqua “some water”	dei/*delli fiori “some flowers”	degli/*delli agrumi “some citruses”

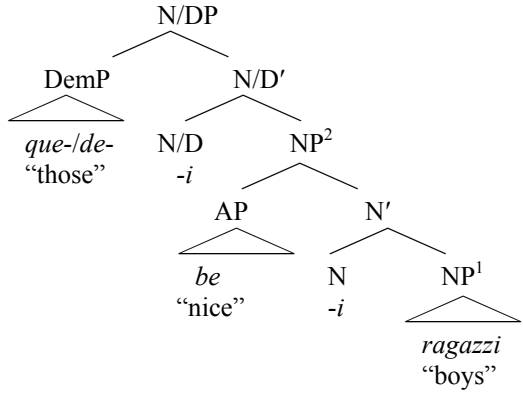
In recent work with Anna Cardinaletti (Cardinaletti & Giusti 2011, 2015), we argue that this particular allomorphic pattern is not the idiosyncratic morphology of selected vocabulary items, but the highest segment of the projection of N. As stated in §3.3, whether a head is scattered or not depends on its paradigm and obeys general principles of economy. In Italian if SpecN/DP is filled by a determiner such as *questo* in (38), the features of N/D are fully realized on the determiner, which concords with it. The same is the case for N and the prenominal adjective *simpatici* in SpecNP^2:

(38)



We propose that the distal demonstrative *que-*, the indefinite determiner *de-*, and the prenominal adjective *be-* are themselves uninflected but must nevertheless concord with N. For this reason, the scattered head with which they concord must be overt:

(39)



We call this process “Compensatory Concord” to distinguish it from cases in which the Specifier is filled by an uninflected element that does not require that the Concord be made visible on the head, as is the case for uninflected adjectives in Italian, observed in §3.2(52) above. This approach captures the otherwise mysterious identity of forms in three categorially very different items, such as the definite article, the indefinite determiner, the demonstrative, and a prenominal adjective, highlighted in (35)-(37).

Note that throughout the volume I have claimed that what looks like a definite article is the overt realization of a scattered N. Its appearance as part of a vocabulary item that has nothing to do with definiteness, such as the adjective *bei*, or which is in fact opposite to definiteness, such as the indefinite determiner *dei*, is not surprising. This I take as a very strong argument in support of the proposal.

6.3 Adnominal adjectival declension in German

Compensatory Concord, in which a segment of N is realized to compensate for lack of overt Concord on its specifier, can also account for the well-known weak / strong inflection on adnominal adjectives in German, which we have already encountered in §5.4 above.

Unlike in Italian, adjectives in German have different inflections according to predicate or adnominal function. When they are predicates they appear to be completely uninflected, as in (40). On the contrary, when they are adnominal, they display two different paradigms which are traditionally defined as weak and strong inflection, as in (41). As above, I highlight weak inflection in italics and strong inflection in bold:

(40) a. die Frau / der Mann, / das Kind ist sympatisch
the.F.SG woman / the.M.SG man / the.N.SG child is nice
b. die Frauen / die Männer, / die Kinder sind sympatisch
the.PL woman.PL / the.PL man.PL / the.PL child.PL are nice

(41) a. d**ie** sympatisch*e* Frau / ein**e** sympatisch**e** Frau
"the / a nice woman"
b. d**er** sympatisch*e* Mann / ein sympatisch**er** Mann
"the / a nice man"
c. d**as** sympatisch*e* Kind / ein sympatisch**es** Kind
"the / a nice child"

Note that weak or strong inflection is not related to definiteness. In (42a), we observe strong morphology on the adjective following two indefinite determiners (*ein* and *kein*) and two possessives (*mein* and *ihr*), while the definite article and the demonstrative in (42b) trigger weak morphology. The irrelevance of definiteness is further reinforced by the observation that the masculine singular genitive realized as *-es* on all the determiners in (43) triggers weak inflection in all cases. The empirical generalization to be made here is that if the determiner, whatever its value may be, has strong inflection, the following adjectives have weak inflection; on the contrary, if the determiner has "defective" inflection, the following adjectives have strong inflection:

(42) a. ein / kein / mein / ihr gut**er** alt**er** Roman
a / no / my / her good old novel
b. d**er /** jen**er /** dies**er** gut*e* alt*e* Roman
the / that / this good old novel

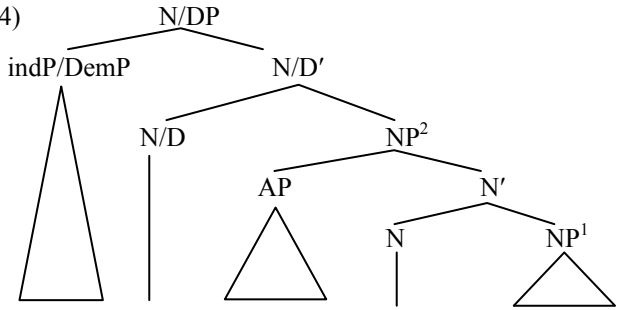
(43) a. ein**es** / kein**es** / mein**es** / ihr**es** gut*en* alt*en* Romans
of a / no / my / her good old novel
b. d**es /** jen**es /** dies**es** gut*en* alt*en* Romans
of the / that / this good old novel

In describing the inflectional properties observed above, it is generally assumed that German adjectives have three different paradigms: one, totally lacking Concord, for predicate position; and two different paradigms sensitive to the relevant features in the structure, to be used in adnominal position. But in the scattered head proposal presented here there is a more economical alternative to this.

I propose that adjectives are always uninflected in German, as we observe in predicative position and in the citation form. I also propose that

the morphology that appears on adnominal adjectives (40) is a segment of the scattered N. *Mann* in (44) is therefore scattered in three segments. The lowest is realized as the pure lexical head, the intermediate one (*-e*), which is iterated as many times as there are adjectives, is underspecified for Gender, and the highest (*-er*) is specified for all features bundled with N, namely Gender, Number, and Case. This can either be realized on the root *d-* of the definite article (which I take to be a dummy and is therefore merged with it in N) or attached onto the overt demonstrative *dies-* merged as SpecN/DP:

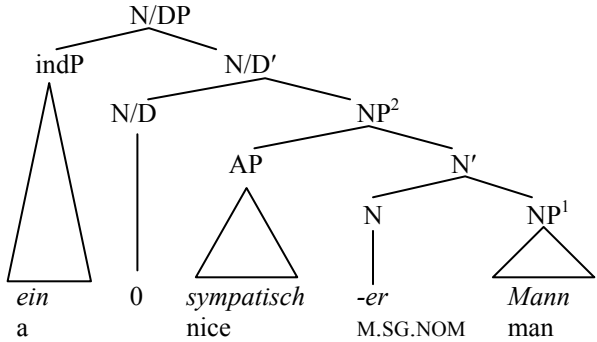
(44)



a.	**ind$_R$**	*der*	*sympatisch*	*-e*	*Mann*
b.	*dies-*	*er*	*sympatisch*	*-e*	*Mann*
	this-	M.SG.NOM	nice-	SG.NOM	man

When the Specifier of the highest projection does not trigger an overt head, the highest realized segment of the scattered head appears attached to the adjective, as in (45), and can be iterated on as many adjectives as are merged (cf. (42)–(43) above):

(45)



ein	0	*sympatisch*	*-er*	*Mann*
a		nice	M.SG.NOM	man

Note that I abstract away from the agreement process that first merges the possessor in the lowest projection of N and then moves it to the highest Specifier, cf. §3.1 and §4.3 above.

Also note that in oblique case, the possessor needs to concord with an overt head and the scattered heads below it are weak:

(46) a. mein**es**/mein**em** sympatisch*en* Mann
my.M.SG.GEN/DAT nice.OBL man/husband
b. mein**er** sympatisch*en* Frau
my.F.SG.GEN/DAT nice.OBL woman/wife

The proposal that in German the head of adnominal adjectives fuses with the segment of N in whose specifier it is merged also derives the well-known fact that predicative APs can display both head-complement and complement-head orders (47), while adnominal APs can only display the complement-head order, as in (48):

(47) a. Maria ist sehr stolz auf ihren Sohn.
Maria is very proud of her son
b. Maria ist auf ihren Sohn sehr stolz.

(48) a. *die sehr stolze auf ihren Sohn Frau.
b. die auf ihren Sohn sehr stolze Frau.
the of her son very proud mother

Note that the PP complement in preadjectival position also precedes the modifier *sehr*. This suggests that the PP complement first merges with the head A; and then after the first AP-projection is completed with a modifier in SpecAP, as in (49a), it remerges with a silent segment of the projecting head A as in (49b):

(49) a. [$_{AP}$ sehr [$_{A'}$ stolz [$_{PP}$ auf ihren Sohn]]]
Maria is very proud of her son
b. [$_{AP}$ [$_{PP}$ auf ihren sohn] A [$_{AP}$ sehr [$_{A'}$ stolz ~~PP~~]]]

German is parallel to Bulgarian in being able to merge a fully projecting AP as a nominal modifier. But in Bulgarian the adjective inflects for the definite article independently of the presence of a complement. Dimitrova-Vulchanova & Giusti (1998) proposed that this is to be taken as evidence that the article appearing on prenominal adjectives, as *vernijat* in Bulgarian (50a), is an inflection of the adjective

concording with D, and not D itself, as shown by the ungrammaticality of (50b):

(50) a. [$_{DP}$ [$_{AP}$ mnogo [$_{A'}$ vernjat [$_{PP}$ na žena si]]] D [$_{NP}$ muž]]
very proud-the of wife his man
b. *[$_{DP}$ [$_{AP}$ mnogo [$_{A'}$ verni [$_{PP}$ na žena si]]] [$_{D}$ -jat] [$_{NP}$ muž]]
very proud of wife his the man
"the man very proud of his wife"

Thus, while in Bulgarian Concord between the highest AP and D allows for the nominal D to be silent, given the fact that the features of D are made visible by the AP in SpecDP, in German Concord between AP and N is always overt on N. For this reason the only possibility for German to have a complement in an adnominal AP is to dislocate it to a higher projection above the adverbial modifier.

6.4 Interim Conclusions

This chapter on articles as Concord phenomena has shown that the Principle of Economy §3.2(56) is sensitive to the requirements of the paradigm of the scattered head as well as of the paradigm of the AP that is merged as the Specifier. More than one identical copy of a scattered head may be overt, as we have observed in Italian (39) and in German (42)-(43); this also depends on the inflectional requirements of both the projecting N and the head of its modifier.

The contrast between German and Bulgarian can give us a hint of why adnominal adjectives in many languages cannot project a complex structure at all. It may be the case that Concord between the AP and the relevant segment of N triggers some sort of fusion of N and A, which is overt in German but could be non-overt in other languages.

Unlike German, many languages may not be able to remerge the complement of A as a higher AP-internal projection (a sort of left dislocation in the Left Periphery of AP) for reasons that cannot be dealt with here. In this perspective, the proposal of Concord as a special case of feature sharing can give us a key for analysis of many apparently independent phenomena.

CONCLUSIONS

The main aim of this work has been to offer an approach to so-called determiners across languages that is not biased by certain long-standing assumptions concerning the syntax–semantics mapping, which I have shown to lack empirical support and miss important generalizations.

I hope I have convinced the reader that articles are to be set aside from other determiners, in that they are part of the inflectional morphology of N, and are not directly responsible for the interpretation of definite descriptions. In other words, the presence or absence of articles in a language, or in given syntactic structures, depends on the inflectional properties of either N or A, or both in that language. The features realized by inflectional morphology concern the three feature-sharing processes I have discussed, namely Agreement, Concord, and Projection. By definition, a spreading feature is the result of checking uninterpretable instances. Their realization therefore only concerns the interface with the sensori-motor system and not that with the conceptual-interpretive system, as is rather the case for other determiners.

I have therefore distinguished articles from other determiners that provide the referential index to the NE, among which we find, notably, the null indexical occurring with the definite article in article languages, but also demonstratives, personal pronouns, and even proper names. I have claimed that these determiners saturate the open position of N, providing a referential index which makes the phase refer to an individual.

I have also claimed that possessors, including possessive adjectives and pronouns, have independent reference from the possessee. For this reason they are independent phases, which must be sent to the interfaces separately from the possessee and before the phase of the possessee reaches completion. This has the consequence that they must be targeted by a probe feature bundled with the head of the possessee that targets the Person feature of the possessor and assigns it genitive case (covertly as is the case for possessive adjectives *my book*, *il mio libro*, or overtly as is the case for possessive pronouns *his book* and NEs *John's book*). Thus the possessor is the "subject" of the NE, while other role-taking adjectives as group-denoting adjectives (*the Italian invasion of Albania*) are not.

In doing so, I have developed an independent theory of feature sharing, which runs counter to a unified treatment of this phenomenon (*pace* Baker

2008). I have argued that we must distinguish at least three different structural relations instantiated by applications of Merge in which feature sharing takes place.

Projection is the configuration that builds the structure and merges a head with its arguments and / or modifiers. I have proposed that all the functional features associated to a lexical head N are bundled with it from the first instance of Merge, and can be realized as scattered heads if N projects more than once (as is always the case). When these features are found repeatedly in the scattered projection of the phase, they are not the result of Agreement. It is in fact not clear how and why a probe should target part of its own projection. They are the result of the possibility in some languages to realize segments of a reprojected head with overlapping features. After all, the reprojected head contains all the features associated with the lexical head at all points of the projection. Segments of the spine created by remerger of the head are realized parsimoniously, therefore only if they are needed to make part of the projection visible. If the head is realized as scattered (in more than one segment), some features can appear on more than one segment.

These features include Gender and Number, as well *u*Pred, which I identify with what has been generally called "abstract Case". In fact, NEs have independent referential value. This means that they are interpreted separately at the interfaces: in other words, they are phases. In order to reenter the structure building procedure, the *u*Pred feature must reach the Left Edge, and be valued against the category of the next selecting head. Valuation of this feature results in Case assignment. This takes place through Agreement, which is a complex operation involving a probe (a functional feature associated with the selecting head) which c-commands the goal (the argument, a complete projection). The probe carries an uninterpretable Person feature, which is deleted when the Person feature of the goal is remerged as its specifier. This remerge operation often pied-pipes the whole goal, resulting in "movement". But it could also be limited to feature remerge. In some cases, the Agreement process also results in overt realization of the features remerged in the Specifier onto the probing head (overt Agreement). This is rarely the case in NEs, where N does not often inflect for the Person of a possessor (but cf. the case of Hungarian and of kinship terms in southern Italian dialects).

Different from arguments, modifiers are not (necessarily) independent phases. In fact, APs are not phases at all. They do not have Person features to spread on the modified head; on the contrary, they have a null constant, which needs to be bound by the referent of the modified expression. In order for this to be possible, they have uninterpretable Gender and Number

(crucially not Person) features, which must be valued by the modified N. This takes place in the first-merge position and triggers no movement at all. The Concord relation "freezes" the AP in the first merge position, unless it carries some further discourse features that in some languages are checked at the Left Edge of the NE, and through the Left Edge in the clause. I predict that only in those languages in which an AP can reach the nominal Left Edge overtly, can it be remerged as discontinuous to the NE to check the discourse feature in a further phase (vP or CP).

My proposal is minimalistic in the sense that it dispenses with a number of operations, such as vacuous movements and the projection of empty functional heads. It gives a reinterpretation of head movement (which is a side effect of Projection) that can motivate its major differences with XP-movements (triggered by Agreement). It is compatible with cartography and nano-syntax, only as long as they provide hierarchies of feature bundling. Finally it reinterprets the notion of "functional head", whose primitive status has been debated in recent literature.

There are many points which I have left unfinished, postponing them to future research, as is inevitable in any piece of work. I did not elaborate on the notion of paradigm, which is crucial in my work. It is my intention that it would combine the recent achievements of work in inflectional morphology with the featural hierarchies of nano-syntax. Of course, this enterprise, if possible at all, would require a volume of its own.

I have only dealt with European languages, with sporadic glances at Hungarian and Hebrew. For this reason I did not consider word-class as a feature involved in Concord. However, in my 2008 paper on Bantu–Romance parallels, I have claimed that word class is certainly one other feature present in the nominal bundle and spreading through Concord.

Polysynthetic languages pose a different challenge, namely how the words that spread onto more than one phase are formed. In my framework this could be done by allowing paradigms to bundle more than one lexical head. If the paradigm is to be limited to the single phase, it could be envisaged that the words that cover more than one phase are formed in the syntax by some kind of incorporation. The predictions are obviously different and the work to be done would involve more extensive study and research.

There are other, less wide-ranging issues that I have left open. Some of these are the subject of work in progress.

One is the difference between remerger triggered by Agreement with an already interpreted phase and phase-internal remerge of the indexical carrying the Person feature, which I claim to be first merged as the lowest

modifier / highest argument and then remerged at the Left Edge of the NE. This is a sort of "internal Agreement", which should target the Person feature of substantive determiners.

A second issue that needs to be addressed in parallel is the internal structure of APs, as the prototypical non-phasal projections. There are many questions to be asked here: (i) what the open position of AP is and how it is interpreted, if it cannot be the target of Agreement, opposite to subjects; (ii) whether APs have a Left Edge for displacements, which is unexpected if the Left Edge is only possible in a phase; (iii) exactly how nominal features are valued on APs, in that even low adjectives concord for morphological case, which is valued when the NE reenters the computation.

A third issue concerns the internal genitive assigned to possessive adjectives in many languages and to denominal possessive adjectives in some Slavic languages. These elements are targeted by Agreement but they also concord. The two processes are different and can occur between an element in a specifier and different features of the head. This was in fact one of the main reasons behind the division of the two processes in my (2008) paper on Bantu–Romance parallels. In that paper I noted that Bantu prepositions assigning genitive agree with N, but also concord with it. An urgent project would be to apply this notion to analysing the internal morphology of concording possessives in European languages.

There are of course many other issues that I am not able to explain, or even that I have neglected altogether. But the very fact that so many have arisen is, I think, testament that this proposal has rich prospects for development. Even if part or all of it should prove wrong, as is the fate of most formal proposals, I hope to have raised new empirical questions and to have presented old and new data in a novel way, drawing parallels that have gone unnoticed, and denying parallels that have often been taken for granted.

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