

Nominal Syntax at the Interfaces

Nominal Syntax at the Interfaces:

*A Comparative Analysis
of Languages With Articles*

By

Giuliana Giusti

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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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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>i</i> F	interpretable F
<i>ind</i> _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 phrase)
NOM	Nominative case
OBL	Oblique case
perf(P)	perfective (phrase)
PL	Plural
possAP	possessive AP
Prog(P)	progressive (phrase)
pron	pronoun
SG	singular
strike through	silent segment of a remerged element
T(P)	Tense (phrase)
Top(P)	Topic (phrase)
μ 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 Livius [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 Vocabolario 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 Vocabolario 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 (*fatǎ* + *-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 non-familiar 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 pronominal 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.

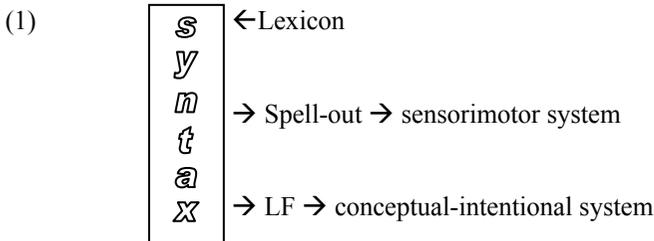
CHAPTER ONE

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):



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 (i) 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 *fata* 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 Hjelmlev’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 lunonem 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, $u\phi$ must be deleted before the computation reaches the interpretive component (LF). In order to be deleted, $u\phi$ 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.