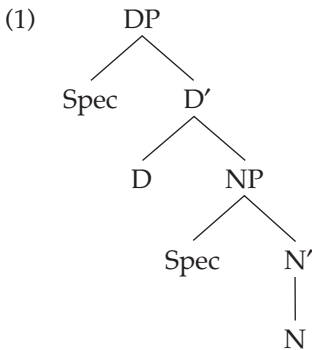# 17 The DP Hypothesis: Identifying Clausal Properties in the Nominal Domain

JUDY B. BERNSTEIN

0 Introduction

Significant advances in X'-theory came about with Chomsky's (1986b) *Barriers*. In this work, Chomsky proposed that not only lexical elements like nouns and verbs, but also functional elements like complementizers and auxiliaries, project to the phrasal level. So, in addition to VP, *Barriers* advocated the functional categories Complementizer Phrase (CP) and Inflection Phrase (IP), which now constituted the "extended projection" (Grimshaw 1991) of the lexical head, the verb. In *Barriers*, Chomsky never applied this revised notion of X'-theory to the nominal domain, which continued to be represented as NP. In particular, determiner elements, such as definite articles, continued to be generated in SpecNP, although this sort of configuration was inconsistent with at least two aspects of X'-theory: (i) the idea that lexical as well as functional elements project to the phrasal level, and (ii) the notion that specifier positions host phrasal categories (e.g. *wh*-phrases in SpecCP, sentential subjects in SpecIP). These issues were addressed by Abney (1987), whose important work on noun phrases benefited from earlier work by, for example, Szabolcsi (1983) on Hungarian, and Brame (1982).[1] Abney, building on the work of his predecessors, provided theoretical and empirical arguments for the idea that a functional category, Determiner Phrase (DP), is the maximal category projected by the class of determiner elements and heads the noun phrase. Put another way, the DP represents the extended, and maximal, projection of the lexical head, the noun. This pioneering proposal had the immediate advantage of resolving the problems posed for X'-theory by the traditional characterization of NPs, and of unifying the treatment of noun phrases and clauses. The structure Abney proposed for DPs is given in (1):

(1)

```
              DP
            /    \
         Spec    D′
                /   \
              D      NP
                    /   \
                 Spec    N′
                          |
                          N
```

This basic representation has been adopted in much of the subsequent work on nominal structure.

This chapter and the following one by Giuseppe Longobardi are intended as an overview of some of the major issues in and contributions to the study of the syntax of DPs. The advent of what has been labeled "the DP Hypothesis" facilitated the (re-)examination of various aspects of noun phrases. In preparing this chapter, I have focussed on those aspects of DPs that I feel to be most relevant to the issue of parallels between noun phrases and clauses, as well as on those aspects that I am most knowledgeable about. The reader who is intent on pursuing things further is therefore encouraged to track down the relevant sources.

In section 1, I begin by reviewing several proposals that led the way towards assimilating noun phrases to their counterparts in the clausal domain. Of central importance are crosslinguistic morphological, syntactic, and semantic arguments for assuming a nominal counterpart to CP, namely DP. A productive area of inquiry concerns language internal and crosslinguistic word order variations, which are taken up in section 2. A natural question to consider here is whether word order variations reflect fundamental crosslinguistic differences or more superficial differences in syntactic operations. Section 3 addresses the issue of functional categories in DPs. Work on the clause has revealed evidence for functional projections corresponding to, for example, agreement, tense, and negation. This then raises the issue of whether parallel evidence exists for functional projections internal to DP. Indeed, proposals have been made for DP-internal functional projections corresponding to, for example, number (i.e., singular, plural), gender, and case, as well as for a functional category projected by quantifier elements. Several of these proposals will be reviewed and evaluated. Section 4 offers some concluding remarks and observations.

1   From "NP" to "DP"

The DP hypothesis resolves what was a theoretical inconsistency between the treatment of noun phrases and clauses. That is, according to this approach

nouns, like verbs, project to a functional category. But is there empirical evidence to support such a proposal?

As it turns out, the theory internal advantages of adopting a DP hypothesis are matched by the compelling empirical arguments for doing so. I will demonstrate that there are morphological, syntactic, and semantic arguments for adopting a DP structure, recalling the sorts of argument made for IP/CP in the clausal domain. In the following subsections, I briefly review some of the most striking empirical support for the DP hypothesis. It is important to keep in mind that these data, in addition to lending support to the DP hypothesis, could not easily be accommodated in a pre-DP framework.

1.1 *Morphological evidence for DP*

Abney (1987: 37–53) discusses languages in which the agreement morphology in the clause and the noun phrase match in terms of both the type of agreement expressed and the manner of expression. In other words, what is observed in these languages is that a possessed noun agrees with its subject in the same way, and with the same agreement morphology, as a verb agrees with its clausal subject. A language falling into this category is Yup'ik, a Central Alaskan Eskimo language. Consider the examples in (2) (from Abney 1987: (24), 39). In Yup'ik, both the verb and its subject are marked with matching ergative case, expressed via an identical agreement suffix (-*t* in this instance), as illustrated in (2a).[2] Similarly, a noun and its possessor are marked for agreement and the morpheme involved (i.e., -*t*), as illustrated in (2b), matches that found in the clause:

(2) a. angute-t kiputa-a-t   (Yup'ik)
         man-Erg (Pl) buy-OM-SM
         "the men bought it"
     b. angute-t kuiga-t
         the man-Erg (Pl) river-SM
         "the men's river"

Matching nominal and clausal agreement morphology also characterizes Mayan languages. Abney illustrates the patterns with data from the Mayan language of Tzutujil (data drawn from Dayley 1985).

Hungarian, a nominative/accusative language, also exhibits identical agreement affixes on nouns and verbs. The data in (3) (Abney 1987: (36), 44, data drawn from Szabolcsi 1983) illustrate the Hungarian nominal agreement pattern, where case is expressed on the possessor and the head noun agrees with the possessor in person and number. In (4) (Szabolcsi 1983: (4), 90), I have illustrated the parallel subject agreement pattern in the clause, where the sentential subject is marked for case and the verb displays number and person agreement with the subject:

(3) a. az én-ø vendég-e-m   (Hungarian)
        the I-Nom guest-Poss-1Sg
        "my guest"
    b. a te-ø vendég-e-d
        the you-Nom guest-Poss-2Sg
        "your guest"
    c. (a) Mari-ø vendég-e-ø
        (the) Mary-Nom guest-Poss-3Sg
        "Mary's guest"

(4) Mari-ø alud-t-ø   (Hungarian)
     Mary-Nom sleep-Past-3Sg
     "Mary slept"

As Abney discusses and illustrates, Turkish also displays DP-internal agree-ment (patterns and data Abney examines are from Underhill 1976, Kornfilt 1984). In this language, the possessor displays genitive case and the head noun agrees in number and gender with the possessor. Although Turkish nominal agreement morphology is not identical in form to the corresponding verbal agreement morphology, Kornfilt has shown that both nominal and verbal agree-ment morphology licenses pro-drop, a property which is apparently also found in the other languages discussed above.

On the basis of patterns and properties of the type reviewed here, both Szabolcsi and Kornfilt have advocated approaches whereby these "sentential NPs" are represented clausally, that is, as (nominal) IPs. An approach along these lines, if strictly adopted, would involve a switch of syntactic category from NP, the category relevant for non-possessive noun phrases, to IP, the category relevant for possessive noun phrases. Abney, building on these basic insights, proposed and developed the idea that the nominal equivalent of the clause is DP. This DP-hypothesis established parallel structural representa-tions for sentences and noun phrases, as suggested by Szabolcsi and Kornfilt and as supported by the Hungarian and Turkish data they examined. At the same time, Abney's distinguishing the sentential functional projections (IP, CP) from the nominal functional projection (DP) obviated a situation where a single clausal projection simultaneously served as the functional category relevant for nouns and verbs.[3]

1.2   *Syntactic evidence for DP*

Within syntax, there are a number of areas that provide evidence of parallel-isms between the nominal and clausal domains. Among these are argument structure, word order, and ellipsis. In this section, I briefly discuss only the first two of these areas of correspondence, namely, argument structure and word order.[4] A more in-depth examination of DP word order phenomena follows in sections 2 and 3.

The basic similarity in argument structure between nouns and verbs may be represented by the well-known examples in (5), adapted from Chomsky (1970). These examples show that nouns, like verbs, may take both internal and external arguments:

(5)   a.   Rome destroyed Carthage
      b.   Rome's destruction of Carthage

Moreover, there is compelling evidence from binding and control phenomena that the arguments in the nominal domain are hierarchically arranged in a manner parallel to that in the clausal domain. Important work by Cinque (1980), for example, demonstrated that only the highest argument in the noun phrase could be extracted (that is, possessivized), lending support to the idea of a hierarchical organization of nominal arguments. The topic of argument structure in the nominal domain has been addressed in recent work by various linguists, including Grimshaw (1990), Picallo (1991), Valois (1991), Siloni (1991, 1994), Taraldsen (1990), and Giorgi and Longobardi (1991). Longobardi (this volume) addresses the topic of the hierarchy of DP arguments (possessor, subject, object), including empty arguments.

An influential proposal concerning the organization of clausal arguments was developed in Sportiche (1988) and Koopman and Sportiche (1991). Their idea was that the internal and external arguments of the verb are generated VP-internally, within the lexical structure of the verbal head, and it is within this VP-projection that thematic roles are assigned. In particular, their analysis incorporated the idea that the subject of the verb is generated in Spec VP rather than directly in SpecIP, as previously assumed. Under this sort of approach, referred to as "the VP-Internal Subject Hypothesis," the specifiers of functional heads are positions moved into, either for case assignment, as in the case of A-movement to SpecIP, or for checking of *wh*-features, as in the case of A′- (e.g. *wh*-)movement to SpecCP.[5] Support for this proposal comes from so-called quantifier float in French, illustrated in the examples in (6) (examples adapted from Sportiche 1988):

(6)   a.   Toutes les filles ont reçu les notes.   (French)
           all the girls have received the grades
           "All the girls received the grades."
      b.   Les filles ont toutes reçu les notes.
           the girls have all received the grades
           "The girls all received the grades."

In the example in (6a), the subject of the sentence *toutes les filles* is assumed to occupy the sentential subject position, SpecIP. Notice that in (6b), the sentential subject *les filles* is separated from the quantifier *toutes*, which nevertheless exhibits morphological (gender and number) agreement with *les filles*. These and other facts argue that *toutes les filles* is generated as a constituent in SpecVP and raises as a unit to SpecIP in (6a). In (6b), on the other hand, only *les filles*

raises, stranding the quantifier *toutes* in its base generated position internal to SpecVP.

The internal structure of the DP may be treated along parallel lines. That is, the subject argument of the DP (for example, a possessive) would be generated in SpecNP and the object argument(s) as complement(s) of the noun head.[6] This approach has been taken in work by, for example, Ritter (1988) on Hebrew, whose proposals are examined in section 3.1 in a discussion about DP functional projections. Similarly, Picallo (1991) and Valois (1991) extended proposals about clausal arguments and thematic hierarchy in Romance languages to the domain of the DP, although not all DP-arguments are generated NP-internally in their work. An issue that has not yet been extensively addressed is whether these DP-arguments raise, and if so, to which specifier positions (see, however, Picallo 1994 for an analysis on possessive pronouns in Catalan).

Within the general area of thematic structure, another topic that has been pursued concerns the distinction between A-positions (that is, argument positions) and A'-positions (that is, non-argument positions). Within the domain of the clause, SpecIP is an A-position that hosts the sentential subject and SpecCP is an A'-position that may host *wh*-phrases. Valois (1991), extending proposals made by Szabolcsi (1987), Tellier (1988), and others, developed the idea that SpecDP is an A'-position, on a par with proposals about SpecCP in the clause. Szabolcsi has argued that DP-arguments in Hungarian move to this position, where they receive dative case, and that SpecDP is the landing site for DP-internal *wh*-movement. Tellier proposed that empty operators may occupy SpecDP in French, licensing traces that would not be accessible for *wh*-extraction. Similarly, Valois appeals to the idea of the A'-status of SpecDP to account for the impossibility of extraction from embedded DPs and PPs in French.

The second important area of correspondence between the syntax of noun phrases and clauses concerns word order phenomena. Probably the most compelling type of evidence for assuming syntactic movement in the clause comes from word order variation found across languages, particularly among closely related languages. In early and pioneering work on the clause, Emonds (1978), and later Pollock (1989), argued that word order differences between French and English can be accounted for by assuming the relative presence of verb movement in French and its relative absence in English. This by now famous work appealed to several syntactic properties distinguishing French and English. Of particular significance are facts about the position of adverbs with respect to the verb in French versus English. Simplifying somewhat, the basic pattern in French is that adverbs follow finite verbs (and precede complements), and in English that they precede. The analysis that Pollock developed is that the underlying order of these elements crosslinguistically is adverb followed by verb, and that the surface order found in French is a result of the verb crossing over the adverb. Specifically, it was proposed that the verb in French raises to the relevant functional head in the clause (either T of TensePhrase or Agr of AgrPhrase, corresponding to Pollock's more articulated

structure for IP). Pollock claimed that the robustness of verb movement in French, compared with its relative absence in English, correlates with the "rich morphological agreement" characterizing French (see Pollock's article for a formalization of the notion "rich morphological agreement").

Within the nominal domain, the obvious candidate for the correlate of the adverb is the adjective. A natural question to pursue is whether there are similarities between adverbs and adjectives with respect to their position in the clause. In fact, across Romance languages, not only do adverbs tend to be postverbal, but adjectives tend to be postnominal (and they precede noun complements). Recent work on DPs by Cinque (1994a), Crisma (1990, 1996), Bernstein (1991a, 1991b, 1992, 1993a, 1993b), Valois (1991), Picallo (1991), Zamparelli (1993), and others has advanced the idea that, crosslinguistically, the underlying word order in the DP is adjective–noun, which happens to correspond to the surface order found across Germanic languages. According to this approach, the surface order noun–adjective found across Romance languages is the result of the noun raising across the adjective(s) to a functional head situated on the path from N to D.

What about the D-position itself? Is there evidence that the N may raise all the way up to D? In fact, several proposals for N-to-D-raising have been advanced, and for a diverse set of languages. The topic of N-to-D-raising will be taken up in some detail in sections 2.1 and 2.2. The important point to make here is that evidence of N-to-D-movement provides yet another correspondence to what has been discovered about the clause. In particular, it is natural to take N-raising to the highest functional head in the nominal domain (i.e., D) to be equivalent to V-raising to the highest functional head in the clausal domain (i.e., C).[7]

1.3   *Semantic evidence for DP*

The more highly articulated representation of the clause encoded in Chomsky's (1986b) revision to X'-theory provides a structural correlate for a traditionally semantic partition, namely, the distinction between sentential arguments and non-arguments (propositions).[8] I follow the traditional idea that an argument is a syntactic constituent that bears a thematic role. In Higginbotham's (1987: 45–6) terms, an argument is "saturated" and can be assigned a thematic role. In a CP system, matrix sentences (propositions) would correspond to IP and sentential arguments to CP. Consider the examples in (7)–(9):[9]

(7)   a.   [Isabel llegó].   (Spanish)
      b.   *[Que Isabel llegó].
           "(That) Isabel arrived."

(8)   a.   [Que Isabel llegó] sorprendió a su padre.   (Spanish)
      b.   *[Isabel llegó] sorprendió a su padre.
           "(That) Isabel arrived surprised her father."

(9)   a.   Creo [que Isabel llegó].   (Spanish)
      b.   *Creo [Isabel llegó].
           "I-believe (that) Isabel arrived."

In (7), the Spanish equivalent of the bracketed sentence *Isabel arrived* can only function as a matrix sentence, not an argument, and so the complementizer does not appear. In contrast, the complementizer must introduce the same sentence when it functions as an argument of a verbal predicate (corresponding to the sentential subject in (8) and the verbal complement in (9)). The complementizer may be thought of as a lexicalized marker of the argumenthood of a sentence or, following Szabolcsi (1992: 130), as a "subordinator" that allows a clause to function as an argument.[10]

The CP-system apparently manages the semantic argument/non-argument distinction straightforwardly, treating a proposition as an IP and assigning to the head of CP the complementizer that introduces a sentential argument. Does the DP-system afford the same advantages in the nominal domain? In other words, is there parallel semantic justification for distinguishing NP and DP?

Indeed, semantic properties of noun phrases indicate that the argument/non-argument distinction is relevant there as well, and furthermore, that non-arguments (i.e., nominal predicates) correspond to NP and arguments to DP (Szabolcsi 1987, Abney 1987, Longobardi 1994, among others) or, alternatively, that NPs are non-referential and DPs are referential (Stowell 1989b). Let us briefly examine some of the applications of these ideas.

Higginbotham's proposal about saturation and its role in the semantics of arguments predicts noun phrase arguments to be saturated and bear thematic roles and noun phrase predicates to be unsaturated and lack theta-roles. Generally speaking, an article may serve to "convert" a predicate NP into an argument DP. Consider the examples in (10) (discussed in Longobardi 1994: 618–19), which display a contrast absent in a language like English:

(10)   a.   Gianni é medico (*che . . .).   (Italian)
            "John is (a) doctor (that . . .)."
       b.   Gianni é un medico (che . . .).
            "John is a doctor (that . . .)."

The articleless nominal expression *medico* in (10a) functions as a predicate of the copula and may be taken to correspond to NP. That (10a) involves an NP-predicate and not a DP-argument is supported by the fact that the nominal expression may not serve as the "head" of a relative clause. Indeed, as Mandelbaum (1994: 14) observes, predicate NPs seem to be adjectival in nature. Predicative NPs also typically appear in vocative contexts. In contrast, the same nominal expression is introduced by an indefinite article in (10b), suggesting that the entire nominal expression is a DP. That this nominal expression is a DP, and therefore an argument, is supported by the fact that *un medico* may serve as the head of a relative clause.

Szabolcsi's proposals about subordinators and their role in establishing argument-hood apply in the nominal domain as well. According to this approach, an NP cannot, on its own, serve as an argument because it is not introduced by a subordinator, which may take the form of, among other things, the definite article.[11] Szabolcsi's analysis is consistent with the accounts put forth by Longobardi, Mandelbaum, and others.

Longobardi (1994, this volume) observes that certain articleless nominal expressions may nevertheless function as arguments. In many European languages, for example, plural and mass nouns may function as arguments, subject to parametric variation in distribution and interpretation. It is natural to assume, as Longobardi does, that these nominal expressions are (DP) arguments introduced by a determiner devoid of lexical content. Also extensively developed is the idea, somewhat simplified here, that another argument-forming strategy is available (subject to parametric variation), namely, raising the N-head to D. This strategy may form DP-arguments from articleless nominal expressions involving proper names (see section 2.1 for further discussion on N-to-D-raising and proper names).

This brief discussion has highlighted some of the ideas developed about structural correlates to semantic functions in the clausal and nominal domains. In particular, there is support for the claim that propositions and clausal arguments correspond to IP and CP, respectively. Analogously, under a DP analysis, nominal predicates correspond to NP and nominal arguments to DP. Another advantage of the DP-analysis is that it provides a functional head (that is, D) that encodes semantic features of determiner elements. Some of the features claimed to be encoded in D are (in)definiteness, specificity, referentiality, and deixis. On these and related topics see, among others, Longobardi (1994), Mandelbaum (1994), Crisma (1997), Zamparelli (1995), Schmitt (1996), and Vangsnes (1996a).

2   Word Order and Movement

Syntactic work on the clause has provided evidence that certain word order patterns (e.g. verb second in Germanic languages) involve verb movement to C, higher than the verb movement proposed by Pollock to account for verb–adverb order in French. Subsequent investigation on Romance languages (see, for example, Belletti 1990) has in fact revealed evidence for a more fine-grained characterization of movement. In other words, verb movement is not necessarily an all-or-nothing phenomenon, but rather, may be characterized in more relative terms. The positing of additional functional categories facilitated proposals for so-called partial verb movement, a situation in which the verb raises somewhat, but not to the highest available (functional) head. What exactly determines how high a verb can raise has not yet been made precise, although some hypotheses have been posited. A distinction must also be made between head movement of a verb to functional heads within CP, and phrasal

movement to specifier positions, such as raising of a clausal subject from SpecVP to SpecIP.

A closer look at word order variation within DPs should take into account these clausal patterns and the analyses developed to account for them. In particular, it is important to ask the following three questions: (i) is there evidence for noun movement to D, the highest functional head in the DP?; (ii) is there evidence for movement to positions intervening between N and D, and if so, what is the nature of these positions?; and (iii) is there evidence for phrasal movement internal to DP? As I will demonstrate in the following subsections and have previewed in earlier sections, the answer to all three questions is, remarkably, yes. In other works, there is evidence for N-raising to D, for partial noun movement to functional heads intervening between N and D, and even for phrasal movement internal to DP, further supporting in a strong way the idea that clausal CP and nominal DP are parallel maximal projections.

Arguments for N-to-D-raising have been proposed for Romance languages in Longobardi (1994, 1995) and Bernstein (1991b), for Hebrew in Ritter (1988, 1991) and Siloni (1991), and for Scandinavian languages in Taraldsen (1990), Delsing (1988), Santelmann (1993), and Kester (1993). Some of this work will be discussed in sections 2.1 and 2.2.

Evidence for partial noun movement comes from the variation in the position of the noun relative to the adjective(s) in various Romance varieties. As I will discuss in section 2.2, both the position of a particular type of adjective relative to the noun, and crosslinguistic differences in the basic position for adjectives, support a more fine-grained approach to noun movement.

There have also been proposals for DP-internal phrasal movement. To my knowledge, Szabolcsi (1983) was the first to propose movement of this kind. In particular, she proposed that SpecDP, on a par with SpecCP, is an "escape hatch" for extraction from DP, an idea adopted by Valois (1991) for a language like French. Picallo (1994), in a study of possessive pronouns in Catalan, develops the idea that these elements, which bear thematic roles and which she argues are generated in SpecNP, raise through the specifiers of nominal functional projections (below DP), the highest of which, NumberPhrase (see section 3.1), is a raising category. Another line of proposals (see Bernstein 1993a, Sánchez 1995a, and Martin 1995) argues that the position of (certain) postnominal adjectives in Romance languages is derived by phrasal movement of the extended NP. In addition to these analyses there have been proposals for several other types of phrasal movement internal to DP, two of which I will review in sections 2.3 and 2.4.

In section 2.3, I discuss Kayne's (1994) analysis of relative clauses, which resurrects the idea that the position of the "head" of a relative clause is actually a derived one. In other words, the head noun (and its modifiers) raises leftward from its underlying argument position to its final position to the left of the complementizer. In section 2.4, I review Bernstein's (1997) proposal that the DP-final demonstrative reinforcers found in several Romance languages

are the result of a leftward movement of the extended projection of the noun. I show how this analysis generalizes to crosslinguistic (Romance vs. Germanic) differences in the expression of DP-internal focus.

2.1   *Proper names and common nouns*

To the best of my knowledge, the earliest proposals for movement of the noun to D were based on constructions found in Semitic and Scandinavian languages (see, for example, Ritter 1988, Siloni 1991, for Semitic languages, and Taraldsen 1990, Delsing 1988, for Scandinavian languages; see also Longobardi in this volume for more extensive discussion and references). For both Semitic and Scandinavian languages, arguments of the noun appear postnominally. For both groups of languages, it has been argued that the noun may raise to D, deriving the postnominal position of the arguments. Further support for N-to-D-raising in Hebrew comes from the fact that the definite article does not co-occur with the noun in the genitive "construct state" construction (see section 3.1), arguing that the DP-initial noun substitutes into the D-position. The Scandinavian languages differ from the Semitic in that in Scandinavian the so-called definite article is postnominal and suffixed on the noun, which so far appears consistent with an analysis where N left-adjoins to the definite article in D (but see section 2.2 for a reinterpretation of the Scandinavian facts). Similarly, the postnominal enclitic definite article in Romanian is arguably derived via N-raising and leftward adjunction to D, as essentially suggested in Dobrovie-Sorin (1987) and Grosu (1988) in a pre-DP-framework.

   Longobardi (1994) has provided independent evidence for N-to-D-movement in Romance languages. In particular, he argued that proper names raise to the D-position, the locus of referentiality. Longobardi proposed that this noun movement is parameterized, taking place overtly in Romance languages generally, and covertly in Germanic languages. The examples in (11) (from Longobardi 1994) support the idea that proper names not introduced with a definite article must raise to D in the overt syntax in a language like Italian:

(11)   a.   [$_{DP}$ Il mio Gianni] ha finalmente telefonato.   (Italian)
     b.   *[$_{DP}$ Mio Gianni] ha finalmente telefonato.
     c.   [$_{DP}$ Gianni mio] ha finalmente telefonato.
         (the) my John has finally called
         "My John has finally called."

Example (11a) illustrates how the definite article co-occurs with proper names, and (11b) shows that the entire DP is ungrammatical without an overt D-element. In (11c), the proper name *Gianni* heading NP has crossed over the possessor *mio* and substituted into the D-position, obliterating the definite article. This derivation is detailed in (12):

(12)   [$_{DP}$ [$_{D'}$ Gianni$_i$] [$_{AgrP}$ mio [$_{Agr'}$ t$'_i$] [$_{NP}$ t$_i$]]]

Longobardi (1995) has more recently extended the N-to-D-raising analysis to what is arguably a residual case of construct state in Romance languages.

2.2   Representing adjectives

Various proposals have been developed about the internal structure of the noun phrase based on the position of the adjective(s) relative to the noun. This phenomenon has been examined both crosslinguistically and language internally. Crosslinguistically, one of the most salient observations is that across Romance languages, adjectives tend to follow nouns, whereas across Germanic languages, they tend to precede. Even for those languages exhibiting postnominal adjectives, it has been observed that certain classes of adjective must precede nouns, in a sense disobeying the otherwise unmarked position for adjectives. These sorts of fine-grained distinction might be missed in a study focussing exclusively on Germanic languages due to the relative absence of exceptions to the fairly rigid adjective–noun order obeyed in these languages.

I will adopt the idea that adjectives are organized according to a universal hierarchy that relates to their semantic properties, as developed by Cinque (1994a), whose work relies on crosslinguistic generalizations uncovered by Sproat and Shih (1991; see also Longobardi in this volume for further discussion and references). If so, the variation in the position of the noun relative to the adjective(s) cannot be due to variation in the position of the adjective, but rather, it must be a result of variation in the position of the noun.[12] A rough and informal comparison of Germanic and Romance languages easily confirms the tendency toward adjective–noun order in Germanic languages and noun–adjective order in Romance languages. However, careful consideration of a wide range of Romance varieties suggests that there is parametric variation with respect to how high a noun raises. An observation that can be made is that adjectives have a relatively greater tendency to precede the noun in a language like French than in languages like Spanish and Italian. Under the assumption that noun movement is the mechanism that derives the postnominal surface position of the adjective, the crosslinguistic data suggest that nouns in French do not raise as high as nouns in Spanish and Italian do. Consideration of several less-studied Romance varieties further supports the idea of a continuum between relatively robust and relatively weak noun movement. In Walloon, a moribund Romance language spoken in Belgium, adjectives are overwhelmingly prenominal, contrasting with what I consider to be only a tendency in French (relative to other Romance varieties). The Walloon pattern and how it contrasts with French is illustrated in (13)–(15) (data from Remacle 1952):

(13) a.   on neûr tchapê   (Walloon)
           "a black hat"
      b.   un chapeau noir   (French)
           a hat black
           "a black hat"

(14) a. lès cûts pans   (Walloon)
          "the baked bread"
      b. les pains (bien) cuits   (French)
          the bread (well) baked
          "the well-baked bread"

(15) a. one bèle bleûve cote   (Walloon)
          "a nice blue dress"
      b. une belle robe bleue   (French)
          a nice dress blue
          "a nice blue dress"

These examples highlight several striking differences between French and Walloon word order. (13) illustrates that color adjectives precede nouns in Walloon, unlike French and the other major Romance languages; (14) illustrates that participial adjectives precede the noun in Walloon, unlike French and other Romance languages; (15) illustrates that the adjectives *nice* and *blue* precede the noun in Walloon, while only *nice* precedes in French.[13] These same two adjectives would both follow the noun in a Romance language like Spanish.

   At the other end of the spectrum are Sardinian dialects, spoken on the Italian island of Sardinia. In these dialects, the position of the adjectives is even more rigidly postnominal than that found in Italian, as shown in (16) and (17) (examples from Blasco Ferrer 1986):[14]

(16) a. una dí trista   (Sardinian)
          a day sad
          "a sad day"
      b. una triste giornata   (Italian)
          "a sad day"

(17) a. tempus malu est faendi   (Sardinian)
          weather bad is making
          "the weather is bad"
      b. sta facendo mal tempo   (Italian)
          is making bad weather
          "the weather is bad"

Interestingly, the pattern of variation observed across Romance languages with respect to the relative position of the adjectives follows a geographical continuum: the north-western Romance varieties tend progressively toward prenominal adjectives, and the south-eastern Romance varieties toward post-nominal adjectives. From a syntactic perspective, this translates into relatively robust noun movement in the south-eastern Romance varieties and relatively weak noun movement in the north-western varieties.

This discussion of noun raising to derive the postnominal position of adject-ives raises an important question about landing sites. Specifically, what posi-tion does the noun raise to? So far in this chapter only D has been identified as a potential landing site for a raised noun. As I have mentioned, compelling evidence supports the idea that proper names across Romance languages and common nouns in Romanian overtly raise to D (via substitution in the former cases and adjunction in the latter). Conspicuously absent, however, are equally compelling arguments for assuming noun movement to D to derive noun–adjective order across Romance languages generally. Indeed, there are strong arguments against such an analysis. For one thing, all of the examples dis-cussed in this section have overt prenominal determiner elements, unlike the suffixed definite articles found in Romanian. Presumably these prenominal determiners occupy D. It is unlikely that the nouns also occupy D (for example, via rightward cliticization to D) because of the possibility for intervening lexical material. The French example in (15b) nicely illustrates this point. In this case one adjective precedes and another follows the noun, arguing that the noun has raised to a position between N and D. The generalization that emerges from the crosslinguistic data examined may be stated as follows: the higher the landing site of the noun, the greater the tendency for adjectives to appear postnominally. At this point, I will simply adopt the idea that the landing sites between N and D correspond to functional projections that are included in the "extended projection" of the noun within DP. In section 3, I take up the ques-tion of what the precise nature of these landing sites might be.

I return briefly to the Scandinavian word order facts, since the patterns found in these languages are relevant both to the discussion of N-to-D-movement and to that of the position of the adjective within DP. Languages like Norwegian and Swedish exhibit postnominal enclitic definite articles, as illustrated in (18). This suggests that the N raises to D, as proposed by Taraldsen and others, and apparently parallel to the pattern found in Romanian:

(18)   mannen   (Swedish)
       man-the
       "the man"

Recall next that Germanic languages, including Scandinavian ones, are charac-terized by prenominal adjectives. Consider the construction in (19), which is found in several Scandinavian varieties:

(19)   det store huset   (Swedish)
       the big house-the
       "the big house"

In this example, the prenominal adjective co-occurs with both a prenominal adjectival determiner and the postnominal enclitic definite article. The label "double definiteness" has been applied to these types of example. Examples

like (19) are incompatible with an N-to-D-raising analysis for two basic reasons: (i) the adjectival article, rather than the noun plus enclitic article, occupies the DP-initial position, and (ii) the adjectives appear prenominally. Delsing (1988, 1993), Santelmann (1993), and others have suggested that there is a second lower determiner projection hosting the enclitic article and that the noun raises and left-adjoins to the article in this lower functional head. In order to "block" N-raising to D in examples with prenominal adjectives (cf. (18)), these authors have claimed that the adjectives occupy head positions between N and D.

   This sort of analysis has been challenged by several authors (see Giusti 1993b, Bernstein 1997, Kester 1996, Longobardi this volume), who advocate a uniform approach to adjectives, on the one hand, and N-to-D-raising, on the other. The idea adopted is that adjectives uniformly and crosslinguistically occupy specifier positions and that true instances of N-to-D-movement should result in postnominal adjectives and absence of a prenominal (definite) article. These patterns in fact characterize the distribution of proper names across Romance languages as well as common nouns in Romanian, whose definite article is postnominal and phonologically enclitic. Under such a uniform approach to adjectives and N-to-D-raising, the so-called postnominal definite article in Scandinavian languages may be reanalyzed either as a (base generated) nominal agreement marker or the spell-out of an agreement relation between a noun and its specifier in, say, AgrP, a projection lower than what has been proposed for Romance languages. Longobardi (personal communication) has suggested that such a projection could be the landing site of a noun that has raised over argument structure (but not functional structure). This approach is consistent with the fact that nominal arguments appear postnominally across (the relevant) Scandinavian languages.

2.3   Relative clauses

Recent work by Kayne (1994) has renewed the idea (going back to Vergnaud 1974) that the relationship between the "head" of the relative clause and the non-adjacent verb that it serves as an argument for involves a disassociation through syntactic movement. Rather than assuming the head to be generated in situ and the relative clause phrase to lower, Kayne maintained that the functional XP containing the noun and its modifiers raises leftward to SpecCP. Kayne's relative clause analysis, which assumes both the CP structure for clauses and the DP structure for noun phrases, involves that underlying structure in (20), where the relative clause CP is a complement of D:[15]

(20) $[_{DP}\ D^o\ CP]$

So in an example like (21), the extended NP *picture of John*, which corresponds to the head of the relative clause, raises from the complement position of the verb *saw* to SpecCP (Kayne 1994: 87). Notice that according to this approach,

the definite article is not directly associated with the (raised) noun, but external to the relative clause CP:

(21)   [$_{DP}$ the [$_{CP}$ [$_{NP}$ picture of John]$_i$ [$_{C'}$ that [Bill saw [e]$_i$]]]]

   Support for this approach comes from facts about reflexive binding and the relativization of idiom chunks. In the example in (22) (Kayne 1994: (8)), the antecedent of the reflexive may be either *John* or *Bill*. The only way for *Bill* to be the antecedent for the reflexive is for *Bill* to c-command it at some level of representation, supporting Kayne's proposal that *picture of himself* raises to its surface position:

(22)   John bought the picture of himself that Bill saw.

Another argument in favor of this approach concerns facts about relative clause formation with idiom chunks. A natural approach to idiom chunks is to assume that they involve a relationship rather distinct from, and more fundamental than, that between an ordinary verb and its object. In the example in (23), therefore, the verb *take* and its object *advantage* must be associated with each other at some very basic level, presumably the lexicon:

(23)   a.   to take advantage of
       b.   to make headway

In order to explain the facts in (24), where a piece of the idiom chunk has become the head of the relative clause, Vergnaud argued that the object must have been separated from the verb via movement:[16]

(24)   a.   the advantage that he took . . .
       b.   the headway that we made . . .

   Kayne's relative clause analysis is interesting for at least two reasons. If on the right track, it provides evidence that noun phrases, like clauses, admit DP-internal movement, further supporting the assimilation of noun phrases and clauses. A second interesting aspect of the analysis is that it involves a derivation already familiar from work on the clause, namely, phrasal movement (e.g. *wh*-movement) to Spec,CP. It will be interesting to see what other properties these two parallel constructions share.
   I turn next to another sort of construction that arguably involves DP-internal movement of an XP.

2.4   *Demonstratives, reinforcers, and focus*

In Bernstein (1997), I observed that demonstratives and their associated reinforcers must precede the noun in Germanic varieties like non-standard English and the Scandinavian languages, as illustrated in (25):[17]

(25) a. this here guy   (non-standard English)
      b. den här mannen   (Swedish)
          the there man-the
          "this man"

The parallel construction in several Romance languages is formed with a prenominal demonstrative and a postnominal reinforcer, as illustrated for French and Italian in (26):

(26) a. ce livre-ci   (French)
          this book here
          "this book"
      b. questo libro qui   (Italian)
          this book here
          "this book"

I argued that the Germanic-type construction and the Romance-type construction are alike underlyingly. In other words, in the relevant Germanic and Romance languages, both the demonstrative and its reinforcer are generated to the left of the noun as the specifier and head, respectively, of a functional projection FP. I adopted Giusti's (1993a) proposal that demonstratives are generated in the specifier position of a functional projection below DP (see also Carstens 1991, Schmitt 1996).[18] Unlike Giusti, however, who argued that the demonstrative raises to SpecDP universally, I followed the idea in Bernstein (1993a) that the demonstrative head in the Germanic and Romance languages raises and substitutes into D. This is consistent with the fact that the demonstrative may not co-occur with the definite article in these languages. My modification to Giusti's approach does not preclude the possibility that the demonstrative raises to SpecDP in some languages, particularly those with co-occurring prenominal demonstrative and definite article.[19]

What then accounts for the pre- vs. postnominal position of the reinforcer element crosslinguistically? An obvious possibility is that movement derives the postnominal position of the reinforcer in the Romance languages. Indeed, Brugè (1996) would derive the postnominal position of the reinforcer, as well as postnominal demonstratives, via noun movement.[20] That is, an underlyingly prenominal reinforcer is crossed over by the noun in a manner consistent with the derivation of postnominal adjectives in Romance. Brugè's proposal requires a revision to Giusti's basic analysis, namely, that the demonstrative starts out in the specifier of a low (i.e., close to NP) functional projection. This revision yields the DP-final position of the demonstrative after N-raising. It would also derive the postnominal position of the reinforcer in the examples in (26).

I challenged this approach in light of examples like those in (27):

(27) a. ce livre jaune ci   (French)
          this book yellow here
          "this yellow book"

b. ce délégué du ministère ci
    this delegate of-the minister here
    "this delegate of the minister"

In (27a) the noun is modified by a postnominal adjective and in (27b) by a postnominal complement. Based on these types of example, I argued that the extended NP (including modifiers) crosses over the reinforcer and adjoins to the left of it. The account incorporated the idea that the postnominal position of the adjective(s) is derived by noun movement. Under the assumption that the demonstrative and reinforcer are generated in a functional projection just below DP, it is difficult to see how noun movement alone would derive the phrase final position of the reinforcer. If *livre jaune* raises as a phrasal unit, however, the surface order may be straightforwardly derived. Note that under Brugè's account, which assumes that elements like *cette-ci* are generated below the adjective(s) and above the head noun, the order demonstrative, noun, adjective, reinforcer may be derived by crossing the noun over the reinforcer and the adjective. So (27a), on its own, does not provide convincing evidence for the XP-movement hypothesis, although it is perfectly consistent with such an approach.

The example in (27b), however, provides evidence for the phrasal movement analysis and against the head movement analysis. In order for the head movement analysis to be tenable here, the noun (*délégué*) and its complement (*du ministère*) would somehow have to be reanalyzed as a syntactic head. It is not obvious how to execute such a procedure. Under the XP-movement approach, the noun and its complement would raise as a phrasal unit, thereby unifying the analysis for this example and the one in (27a). The derivation for an example like (27a) under my analysis is given in (28):

(28) $[_{DP} \text{ce}_i [_{FP} [_{XP} \text{livre}_k \text{ jaune} \ldots t_k]_j [_{FP} t_i [_{F'} \text{-ci}]]] [_{XP} t]_j]$

In current work (Bernstein 1999), I observe that the demonstrative reinforcement construction found in languages like French and Italian is only one case of what is actually a more general strategy found in Romance languages, and regularly absent in Germanic languages. Across Romance languages, the right periphery of the DP hosts a series of contrastively focussed elements: reinforcers (e.g. in French and Italian), possessive adjectives (e.g. in Spanish and Italian), quantifiers (e.g. in Spanish and Catalan), and demonstratives (e.g. in Spanish, Catalan, and Romanian; see Roca 1996). All of these elements appear prenominally in the unmarked (i.e., neutral) case in Romance languages and must appear prenominally in most Germanic languages, where focus is typically expressed via contrastive stress. Building on Bernstein (1997), I extend the XP-raising analysis to these DP-final elements and link this movement to general properties of focus constructions.[21] I further observe that properties of the DP-internal focus construction are analogous to properties of "Scrambling," a clause internal focus construction that has been identified in several languages. For

example, in both the nominal and clausal focus constructions, the focussed material appears at the right periphery of the constituent and the defocussed material appears in a position that is to the left of its neutral position and to the focussed material.

In this section I have illustrated and discussed examples of what I take to involve DP-internal movement. The patterns uncovered and the analyses developed to account for them contribute to our understanding of the syntactic nature of DPs and further the justification for assimilating noun phrase and clauses. Nevertheless, several important and interesting questions remain. Among them are the following: (i) is there a DP-internal focus position involved in the relevant constructions and if so what is its nature?; (ii) how exactly are DP-internal head and phrasal movement related – for example, is it possible that phrasal movement involves N-raising with pied-piping?;[22] and (iii) what are the parameters determining the availability and robustness of these movement operations crosslinguistically?

3　The Identification of Functional Categories

Throughout this chapter, I have provided arguments for several types of syntactic movement internal to the DP. That is, there is evidence that the noun, in cases of head movement, or the (extended) NP, in cases of phrasal movement, raises to functional projections within DP. This raises the issue of what the nature of these intermediate landing sites might be. Various DP-functional projections have been introduced, recalling proposals developed for clausal functional categories (e.g. TenseP, AgrP). In many cases, these functional projections, although assumed, have not been specifically identified. For example, Cinque's (1994a) universal hierarchy of adjectives entails a highly articulated functional structure, although details about what the functional projections might correspond to have not yet been sufficiently elaborated. In some other cases, however, specific characterizations have been proposed. Among them, DP-functional projections corresponding to number (i.e., singular/plural), gender, and case have been proposed. Shlonsky (1991b) and Giusti (1991) argued that quantifiers are syntactic heads projecting their own functional projection, QP. Due to space limitations, I focus here on proposals for only two DP-functional projections, the first corresponding to number (NumP) and the second to gender (GenP).

3.1　*Representing number*

As far as I know, Ritter (1991) was the first to propose a functional projection corresponding to a noun's singular/plural marking. In particular, she proposed that Num(ber)P, not NP, is the complement of D in modern Hebrew.

Her arguments appealed to facts distinguishing the construct state noun phrase from the free state noun phrase, both of which Hebrew employs to express genitive.

The construct state construction consists of a head noun followed by its possessor, as in (29). Based on binding facts, Ritter shows that the subject (S) must asymmetrically c-command the object (O), arguing that the NSO-surface order is derived by movement. Ritter proposed that the noun raises from N to D, crossing over the possessor (which occupies a specifier position). This is supported by the fact that the head noun may not be modified by a prenominal definite article (although the postnominal possessor may be). The structure Ritter assigned to an example like (29) is given in (30). In this type of construction, the N must move to D in order for D to be identified and able to assign genitive case to the subject:

(29)   parat ikar   (Hebrew)
       cow farmer
       "a farmer's cow"

(30)
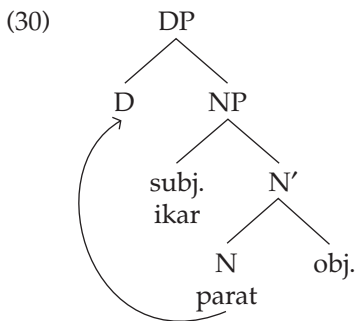
In the free state construction, illustrated in (31), the binding facts and NSO-order are parallel to those of the construct state, arguing that the noun also raises in this construction. However, the head noun in the free state construction cannot raise all the way to D, since free state noun phrases admit the definite article. Ritter argues that the N must raise to a functional head intervening between N and D. Ritter provides evidence from plural formation and word formation processes in Hebrew that the relevant functional head is Num(ber)P, where the singular/plural features of the noun are encoded. Ritter's idea is that, in a language like Hebrew, the noun will raise to NumP to amalgamate with (or check) its number specification.[23] Ritter's derivation for the free state genitive example in (31) is provided in (32):

(31)   ha-axila shel Dan et ha-tapuax   (Hebrew)
       the-eating of Dan of the-apple
       "Dan's eating of the apple"

(32)
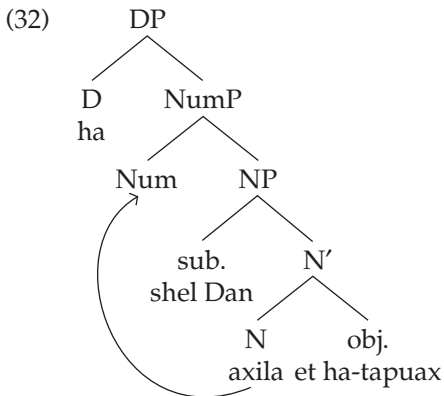
Ritter's basic proposal has been widely adopted and generalized to other languages. For example, Valois (1991) and Picallo (1991) have adopted Ritter's number projection for French and Catalan, respectively. Data from Walloon, discussed in Bernstein (1991a, 1993a), provide some independent support for the adoption of NumP in Romance languages. In particular, Walloon (unlike French) exhibits a special prenominal plural marker that appears (in writing) attached to prenominal adjectives. The masculine plural form appears orthographically as *-s* and the feminine form as *-ès*, as illustrated in the examples in (33) (Walloon examples drawn from Remacle 1952, Morin 1986).[24] Note that word final orthographic *-s* (appearing with both masculine and feminine forms) is not pronounced unless followed by a vowel, a sandhi phenomenon known as *liaison* and indicated in the examples in (33) by the hyphen. Further note that Walloon word final *è* is unstressed (and equivalent in pronunciation to *e* in French *et* "and"):

(33) a. dès vètè̱s-ouh (FPl)   (Walloon)
           "some green doors"
       b. dès nêuṟs-ouy (MPl)   (Walloon)
           "some black eyes"

Building on work by Morin (1986), I argued that these apparent (orthographic) suffixes should not be analyzed as adjectival suffixes, but rather as the spell-out of the contents of the functional head Num. What evidence is there to support such an analysis? There is, in fact, substantial evidence, which I briefly summarize here.

As I noted earlier, one striking property of Walloon is that adjectives are prenominal, arguing that noun movement is relatively absent in this language. Another remarkable fact about Walloon is that nouns are never marked (except in the orthography) for plural. This contrasts with French, which exhibits plurality on nouns, although not in a particularly robust fashion. The third crucial property about the plural markers, as discussed in Morin (1986), is that they are not phonologically part of the adjective. Instead, Morin provides

several arguments supporting the idea that they are phonologically part of the following word, usually a noun. I developed the idea that the syntactic, morphological, and phonological characteristics of the plural marker and its associated noun support the idea and that the prenominal plural marker corresponds to the head of the NumP projection. If on the right track, this work provides evidence for a specific, intermediate, functional projection on the path from N to D, and also for the identification of its role in the functional structure of the noun.

3.2   Is gender a syntactic phenomenon?

My impression is that the idea of a NumP projection has been relatively uncontroversial and therefore rather generally accepted. This is probably owing in part to the morphological and syntactic evidence supporting such an assumption, and also to the fact that number (and its expression) in DPs, like tense in the clause, plays an integral role in the interpretation and legitimacy of a noun phrase. Proposals for a projection corresponding to gender have not been accepted with such unanimous enthusiasm. Nevertheless, it is instructive to examine the arguments and evidence for such a projection.

Unlike the case in English, where the expression of gender is restricted to singular pronominal forms, in many languages gender may be expressed on nouns, determiner elements, adjectives, and/or other modifiers. A relatively simple, yet often robust, gender system is exhibited in European languages, where the inventory of genders expressed is masculine, feminine, and neuter. A familiar pattern from Romance is the distribution of gender in Spanish, where masculine nouns typically end in -o and feminine nouns in -a, as illustrated in (34). Note that an accompanying determiner and adjective(s) will agree in gender (and number) with the noun. Also note that the gender system applies to all nouns in the language, whether or not they happen to be animate and whether or not they exhibit the typical -o/-a alternation:

(34)   a.   el niño pequeño   (Spanish)
            the-MascSg child-MascSg small-MascSg
            "the small child"
       b.   la niña pequeña   (Spanish)
            the-FemSg child-FemSg small-FemSg
            "the small child"

Picallo (1991) claimed that gender projects to a functional phrase within the DP, which she labelled Gen(der)P. This functional projection was situated between NP and NumP, reflecting the fact that gender is expressed directly on the noun stem and that number is expressed outside gender, as shown in (35):

(35)   mes-a-s   (Spanish)
       table-FemPl
       "tables"

The proposal Picallo made was that the affixes for gender and then number were "picked up" (or checked; Chomsky 1995b) by the noun stem on the path from N to Num, the highest functional head below D (in her system).

Bernstein (1993a, 1993b) suggested a modification to Picallo's GenP. I argued that gender, a morphological property, is expressed in the form of "word markers" (in the sense of Harris 1991), the terminal vowels appearing in a robust way in Spanish- and Italian-type languages. I claimed that it is the word markers, and not gender *per se*, that are responsible for syntactic licensing in certain constructions. Put another way, the word markers in Romance languages represent another instantiation of what has been labeled "rich morphological agreement," a notion which has played an important role in analyses of clausal phenomena such as verb movement (recall Pollock's work discussed in section 1.2) and "pro-drop."

The idea of syntactic licensing by word markers contributed to an analysis for the construction illustrated in (36), where an indefinite determiner element and an adjective appear without an overt noun in Romance languages like Spanish and Italian. The example in (37) shows that the basic form of the masculine singular indefinite article is *un*:

(36)   <u>Uno</u> rojo está encima de la mesa.   (Spanish)
          a red is on the table
          "A red one is on the table."

(37)   <u>Un</u> libro rojo está encima de la mesa.   (Spanish)
          a book red is on the table
          "A red book is on the table."

Based on the distribution of this elliptical nominal construction across Romance languages, I claimed that the word marker appearing on *uno* in (36) corresponds to the head of a functional projection that I labeled WordMarkerP.[25] I further claimed that word markers in these languages are able to license an NP lacking lexical content. The licensing mechanism appealed to was head government, but this licensing can be reformulated in other ways. The basic analysis applied straightforwardly to Italian, and was adapted for and extended to French and Catalan (see Martin 1995 for discussion and revision of the account to accommodate the Catalan data).

Ritter (1993) challenged the idea that gender (or presumably word markers) corresponds to a functional category. Instead, she maintained that gender is a feature and that there is parametric variation in the location of this gender feature crosslinguistically. In a language like Hebrew, she argued, the gender feature is located on the noun stem "at all levels of syntactic representation" (Ritter 1993: 802). In contrast, in Romance languages gender would be located together with the noun's number specification on the functional head Num. In support of her hypothesis about the gender feature in Hebrew, Ritter

illustrates derivational (i.e., lexicon internal) word formation processes in Hebrew, where gender manipulation forms new and unpredictable words with non-compositional meanings. Such manipulation does not generally form new words in Romance, except when the words have animate or human reference and in a few other predictable cases, all resulting in compositional interpretations. Ritter appealed to Walloon data of the sort illustrated in (33a), where gender and number are both expressed on the prenominal plural marker, to support her hypothesis about the location of gender (on Num) in Romance languages. The argument rests on the idea (from Bernstein 1991a) that the plural marker may not be decomposed into gender (i.e., Fem -*è*) and number (i.e., Pl -*s*). I suggested (in Bernstein 1993a) that perhaps they may. The matter is far from settled.

4   Conclusions

In this chapter, I have surveyed only a sample of the issues addressed and analyses developed on the syntax of DPs. Nevertheless, I believe that even these brief remarks convey the overwhelming theoretical and empirical advantages afforded by the DP-analysis. What is particularly extraordinary is how much progress has been made in the little more than a decade since the pioneering work of Szabolcsi, Abney, and others. As with all progress, however, each step forward raises new questions, fueling further research. Indeed, progress and developments in the investigation of DP syntax have led to a widening of the domains of inquiry, providing fertile testing ground for existing hypotheses, as well as fresh raw data on which to develop new hypotheses. I conclude this chapter by mentioning just two of the expanded domains of study, both of which are contributing in important ways to the growing body of knowledge on the syntax of DPs.

One area of expansion is in the inventory of languages examined. In this chapter, I have mainly focussed on the relatively well-studied western European languages. However, a wide group of languages is now represented in the literature. Among the languages and language families that have been examined are Maori, Japanese, Greek, Kiswahili, Slavic languages, Semitic languages, creole languages, and American Sign Language. The field of language acquisition is another growing and promising domain of investigation. Various aspects of the acquisition of DPs provide insights into the representation of DPs in child vs. adult grammars as well as in L1 vs. L2 grammars. Of particular interest and importance is evidence of correlations between acquisition of functional structure of the clause and functional structure of the noun phrase. The DP properties that have been investigated in the acquisition literature include case marking, plural marking, word order, and the absence vs. appearance of articles and clitics.

Needless to say, much more work remains to be done.

NOTES

* Thanks to Mark Baltin and Chris Collins for comments on an earlier draft of this chapter. Thanks also to Giuseppe Longobardi for his unfailing optimism (despite evidence to the contrary). The usual disclaimers apply.

1 "Noun phrase" is used only as a descriptive term and hence implies no direct correspondence to a particular syntactic projection (e.g. NP or DP).

2 Following Abney (1987), I employ the following abbreviations: OM for object marker and SM for subject marker.

3 On the issue of why DP corresponds to CP rather than IP, see Szabolcsi (1989).

4 Recent work on ellipsis within DPs may be found in Torrego (1987), Lobeck (1995), Kester (1996), Martí (1995), Bernstein (1993a, 1993b), and Sleeman (1996), among others.

5 In this chapter, I abstract away from whether case assignment or checking (Chomsky 1995b) is the relevant notion.

6 It is important to keep in mind that nominal arguments, unlike verbal ones, are often optional.

7 Although beyond the scope of this chapter, so-called verb second effects provide evidence for verb movement to C in Germanic languages (see work by den Besten 1983, Haider and Prinzhorn 1986, Vikner 1995, among others).

8 I am essentially ignoring a vast semantics literature on the subject. In light of the focus (on syntax) of this volume and the necessary brevity of this chapter, I am able to discuss only a small subset of the literature that addresses this subject and that simultaneously advances the claim that DP is the nominal analog of clausal CP.

9 The inclusion of Spanish examples in (7)–(9) obviates the issue of optional complementizers in English.

10 Szabolcsi (1992: 134–5), following Bhatt and Yoon (1992), shows that the subordinator and clause type indicator (e.g. for declarative) in English are both instantiated as an identical element, the complementizer. This is apparently not the case in all languages. In Hungarian, for example, the element introducing clause type is different from that introducing an argument. Only the latter would correspond to C and function as a subordinator, introducing a sentential argument. Conflation of subordinator and clause type indicator would also apply in the nominal domain in English, but not Hungarian.

11 Mandelbaum (1994) argues that the mere presence of a definite article does not guarantee that a noun phrase is a (DP) argument. The details of this proposal are beyond the scope of this chapter.

12 See Lamarche (1991) and Bouchard (1998) for discussion of problems with and alternatives to an N-raising approach to adjectival position.

13 In fact, there is parametric variation across Walloon dialects with respect to the position of participial adjectives relative to the noun. The position of the participial adjective correlates with other properties of DPs across Walloon varieties (see Bernstein 1993a for discussion).

14 The examples are in the Campidanese dialect of Sardinian.

15 This recalls Szabolcsi's (1983) early work on DPs and re-establishes a blurring of the distinction between nominal projections and verbal ones (see discussion in section 1.1).

16 Mark Baltin points out that an example like (i) (due to Jim McCawley) compromises Kayne's promotion approach to idiom chunks, since *headway* would have to be promoted from within the relative clause:

(i)   John made the headway that got us out of here.

He also observes that the grammaticality (for him) of (ii), involving logophoric reflexives in picture NPs, would weaken Kayne's argument based on (22):

(ii) The picture of myself that John took is on the table.

17 I do not consider standard English *this guy here* to be equivalent to non-standard *this here guy*. In this latter type of example, the reinforcer is dependent on the presence of the demonstrative, its absence resulting in ungrammaticality (e.g. *a here guy*). In standard English *this guy here*, substitution of the definite or indefinite article for the demonstrative yields a grammatical result (e.g. *a guy here*).

18 The "phrasal" nature of demonstratives, as implied by the structure assigned to them, can be based on an analogy with adjectives (see Dryer 1992: 120–2). See also Brugè's (1996) discussion of what arguably involves modification of demonstratives in Spanish.

19 See also proposals by Roca (1996) and Vangsnes (1996a) that the demonstrative corresponds to the head of a functional projection, and by Cornilescu (1992) that the demonstrative may correspond to a specifier or a head.

20 Brugè focussed on postnominal demonstratives, but extended her analysis to reinforcers. I suggest that my proposal for the reinforcers generalizes to the postnominal demonstratives.

21 Androutsopoulou (1997) develops an analysis of DP-focus constructions in Greek that also involves XP-movement. However, the movement operation involved in the Greek construction, unlike what I have described for Romance languages, involves phrasal movement to a focus position outside the DP.

22 This possibility was suggested to me by Giuseppe Longobardi.

23 In a language with noun raising it is not obvious whether amalgamation or checking is the relevant notion. In a language like English, however, the fact that nouns are marked for number and that there is no evidence of overt noun raising suggests that (covert) checking is the correct characterization.

24 The masculine/feminine distinction of the plural marker is not present in all dialects, a fact I am ignoring here (see Bernstein 1993a for discussion of this dialectal variation and its possible significance). The important point for the present discussion is that all dialects will show a prenominal plural marker orthographically attached to a prenominal adjective, regardless of whether there is an accompanying gender distinction in the forms.

25 Delfitto and Schroten (1991) also argued that word markers have syntactic relevance. However, for them word markers correspond to the head of the functional projection NumP.