Chapter 1 Introduction

1.1 THE ISSUES OF NOUN PHRASE STRUCTURE

This dissertation examines the internal syntax of noun phrases in Serbian, a South Slavic language. One of the goals of this dissertation is to show that in Serbian, a language with no articles, noun phrases are headed by a Noun and not by a functional category, Determiner. I hypothesize that headedness of a noun phrase is a language specific property, related to the presence/absence of definite/indefinite articles in a given language. I show that the semantic class of determiners employed in Serbian (demonstratives and the indefinite determiners *jedan* 'one' and *neki* 'some') corresponds to a syntactic category, adjective. I further show that the semantic notion of a quantifier corresponds to two syntactic categories in Serbian, an adjective or a noun, and not to a functional category, Q(uantifier). Finally, I point out that there is no empirical evidence that Serbian inflectional affixes, marking number, gender and case, form their own functional projections.

Thus, the functional categories used by many researchers working in derivational frameworks to account for word order variation cannot be used to account for word order in the Serbian noun phrase. Rather, I show that a non-derivational theory, such as Head Driven Phrase Structure Grammar (HPSG), is

more suitable for explaining both the word order and the agreement facts pertaining to the Serbian noun phrase.

Other issues discussed in this dissertation are the argument structure and case assigning properties of nouns in Serbian. I discuss the semantics of nominalization, illustrating how the semantic distinction between process and result nominals is reflected morphologically and syntactically in Serbian. I show that only process nominals retain some of the syntactic characteristics of the verbs from which they are derived. As a consequence, they have the same argument structure as their morphologically related verbs. The distinction between process and result nominals becomes relevant in anaphor binding, where only subjects of process nominals bind reflexives, paralleling the obligatory binding of reflexives by clausal subjects. I propose a binding theory that makes reference to the highest argument on the argument structure (ARG-S) list, calling it a-subject.

With respect to case, I distinguish between structural and inherent case. Nominalization and word order facts provide direct evidence for this distinction. Specifically, nominative and accusative case, as prototypical structural cases assigned by verbs, become genitives in nominalizations. These genitive NPs must obey a condition of adjacency to the head noun, whereas other, inherent cases do not have this restriction.

Since the issue of headedness of noun phrases, and consequently, noun phrase structure is rather controversial (e.g. Zwicky 1985, Hellan 1986, Hudson 1987, 1996, Abney 1987, Bowers 1987, Radford 1993, Payne 1993, Meyers 1995), in Section 1.2, I summarize arguments for two major views on noun phrase

structure, namely, the DP and the NP analysis of noun phrases. In Section 1.3, I describe various criteria proposed in the literature for determining headedness, illustrating how the same criteria are interpreted differently by different researchers, resulting in different choices for the head, especially in the Determiner + Noun constructions.

1.2 COMPETING ANALYSES OF NOUN PHRASE STRUCTURE

The Standard X-bar theory treats noun phrases as single-headed constructions, having the noun as the head. All other elements in the noun phrase are either specifiers, modifiers or complements of the head noun. This traditional view lost its support with the development of the Extendend X-Bar theory (e.g. Chomsky 1986a) which introduces functional categories as heads of sentences (C) or clauses (I). Following this spirit, researchers such as Reuland (1986), Hellan (1986), Abney (1987) and Bowers (1987), introduce another functional category, Determiner (D), as the head of the noun phrase. Since then, many other functional categories have been proposed both in the clause and in the noun phrase.

Some of the main differences between lexical and functional categories can be summarized as follows.

- Functional categories are closed class lexical items, while lexical categories are open class (e.g. determiners vs. nouns).

- Functional categories have no 'descriptive content'. "Their semantic contribution is second-order, regulating or contributing to the interpretation of their complement" (Abney 1987 : 65). Lexical categories, on the other hand, have descriptive content.

- Functional categories select only one complement, which is a predicate, while this restriction does not hold for lexical categories.

- "Functional elements are usually inseparable from their complement" (Abney 1987: 65) (e.g. *I like the/a *(book)*).

Recently, some researchers (e.g. Spencer 1992, Payne 1993, Meyers 1995, Hudson 1996) have begun questioning a DP, or doubly-headed analysis of noun phrases and began defending a single-headed analysis. In the following two subsections, I provide a summary of arguments for these two views of headedness, starting with the presently more popular one, the DP-analysis of noun phrases.
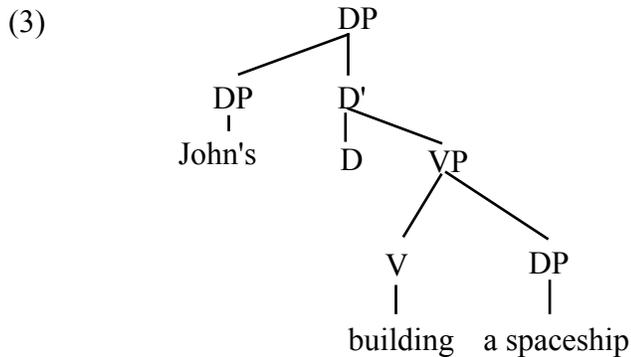
1.2.1 The DP Analysis

The most persuasive argument for the functional category Determiner as the head of the noun phrase comes from Abney's (1987) and Bowers' (1987) analyses of the structure of gerundive nominals in English. An example of a gerundive nominal is shown in (1) below (reproduced from Abney, 1987 : 14).

(1)   John's building a spaceship

English gerundive nominals show characteristics of both nominal and verbal phrases. Externally, they behave like regular noun phrases, appearing in embedded subject position, subject position in inverted yes-no questions, the object of preposition, and in focus position in cleft constructions. Internally, gerundive nominals show verbal behavior, for example, taking nominal complements, aspectual auxiliaries, adverbial modification. This mixed behavior of gerundives has presented a problem for the Standard X-bar theory, since gerundives were exceptions to it. For example, one of the assumed structures of the gerundives in this framework was the following (reproduced from Abney, 1987 : 17).

(2)
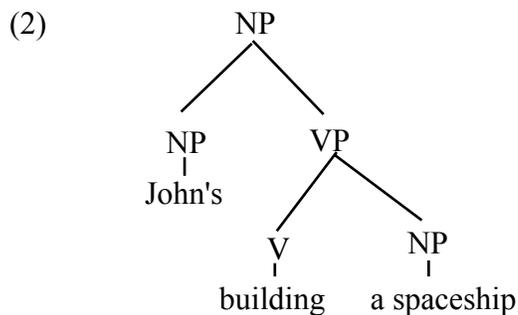
The main requirement of X-bar theory, that all phrases have heads, is violated in (2) since the topmost NP has no head N. A DP-analysis of noun phrases solves the above problem. Assuming the DP-hypothesis, the gerundive construction in (1) would have the following structure.

(3)

```
                        DP
                ┌───────┤
              DP         D'
              │      ┌────┤
            John's   D     VP
                        ┌───┤
                        V    DP
                        │     │
                    building  a spaceship
```

The structure in (3) correctly captures the distributional facts of English gerundives. Externally, gerundives have a nominal distribution, hence they are DPs, but internally, they have the characteristics of verbs, hence they are VPs. In other words, the functional category D, which heads the noun phrase, takes a VP as its complement. The only difference between gerundive nominals and regular nominals lies in the choice of a complement that a Determiner takes, the former taking a VP as a complement (as in (3)) and the latter an NP as a complement (as in (4)).[1]

(4)

```
        DP
        │
        D'
        ┌───┐
        D    NP (= Complement)
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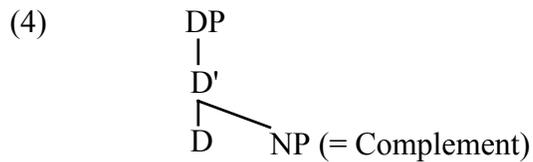
[1] In addition, Abney (1987) and Radford (1993) argue that the functional head D, may also select an AP as a complement , since "pre-nominal restrictive Adjectives are modifying heads which select NP complements" (Radford, 1993 : 91). According to Radford, the phrase: *an interesting book* would have the following structure.

    i. $[_{DP}[_D$ an$][_{AP}[_A$ interesting$]$ $[_{NP}[_N$ book$]]]]$

Most importantly, the DP-analysis of noun phrases is able to account for the word order facts in English. For example, the following syntactic co-occurrence restrictions can be explained if the DP-hypothesis is adopted. (The examples below are taken from Radford 1988 : 171, 1993 : 93.)

(5) a. *the/a my book   a'. a book of mine

   b. *this your tie   b'. this tie of yours

   c. *some your friends   c.' some friends of yours/

                                        some of your friends

   d. *the president's this/that/a/the friend   d.' a/the friend of the president/

                                        this/that friend of the president

The above examples illustrate that 'determiners' (definite and indefinite articles, demonstratives, the quantifier *some*) cannot occur with (pro)nominal possessives (*my*, *your*, *president's*). That the ungrammaticality of examples (a-d) above is not due to semantic factors is shown by the respective grammatical paraphrases of each. According to the DP-hypothesis, the reason why the above co-occurrence restrictions arise, is because the above mentioned elements occupy the same syntactic position within the noun phrase. More precisely, elements like *this/that/a/the/some/my/your* are all heads, more precisely, Ds. In the case of nominal possessives like *the president's*, *John's*, the possessive morpheme *'s* is the head D which "licenses (indeed, *requires*) a possessor DP as its specifier"

(Radford, 1993 : 93).   It should be pointed out, however, that this analysis fails to account for the co-occurrence of the above elements in other languages, such as Norwegian, Hungarian, Italian, Modern Greek, and Serbian.   For this reason, Abney (1987 : 85) prefers an analysis of the possessive suffix *'s* not as a head D, but rather as a case assigner, corresponding to AGR.[2]   Abney suggests that English has a co-occurrence constraint (i.e. a filter) which states that "AGR in D does not co-occur with lexical determiners" (Abney, 1987 : 271).   However, as Abney (1987 : 270) notes, an exception to this constraint is the determiner *every,* which can occur with possessives, as in *John's every book*.

Abney (1987 : 277) takes the fact that determiners, such as *the* and *a* cannot stand alone (e.g. *I saw *the/*a*) as evidence that they obligatorily take an NP as a complement, and hence, head the noun phrase.   However, other determiners, such as demonstratives, can stand alone while occurring in the same positions as regular noun phrases (e.g. *That was nice* /*I saw this/that*).   Due to these distributional facts, Abney (1987 : 280) suggests that demonstratives are like pronouns, being intransitive determiners with the following structure.

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[2]However, the DP-hypothesis is still unable to account for the fact that some languages have double determiners in the noun phrase (e.g. Rumanian, Hungarian, Icelandic, Greek).   For example, in Hungarian, a demonstrative must occur with a definite article, as in the example below reproduced from Spencer (1992) and attributed to Szín (1981).

      i.   ez   a   k?nyv...
          this the book

If every mophosyntactic feature corresponds to a functional head, in the above examples we would need to posit two functional heads.

(6)   DP
             |
             D'
             |
             D
             ı
           that/he
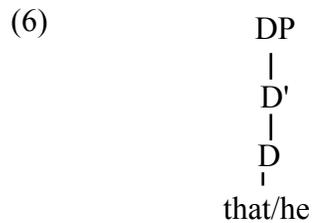
      By extending the projection of the noun phrase to a functional category D, it is now possible to define grammatical relations, such as subject and direct object, across categories.   More precisely, the subject can be defined as the nominal specifier of a functional category (D or I), and the direct object can be defined as a nominal sister to a lexical head (e.g. N or V).[3]   In addition, with respect to case assignment, Abney (1987) suggests that the nominal functional head, Determiner (D), performs the same function as the clausal functional head, Inflection (I). They both assign case to their specifiers (Genitive and Nominative, respectively).[4]   This parallelism in the structure and the case assignment in the clausal and nominal domain is illustrated below.[5]
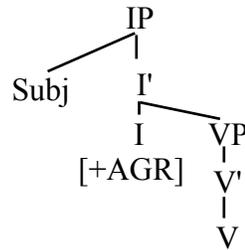
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[3]Note that if we assume a predicate-internal subject hypothesis, this generalization will not hold, at least at some deep level of representation, i.e., before the subject is raised to the Spec of a functional category to check its case features.

[4]In some languages, e.g. Hungarian, the subject of the noun phrase (i.e. a possessor) bears nominative case, just like the subject of the clause. Furthermore, the possessor imposes agreement in phi-features with the possessed noun, thus fully paralleling the subject-verb agreement in these features within the clausal domain.
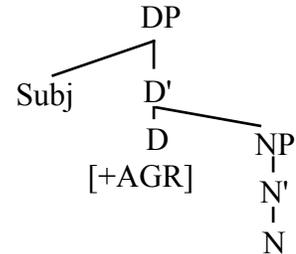
[5]The phrase marker in (7a) is a representation of clauses in which IP is not split into two separate functional projections, AgrP and TP, as originally proposed by Pollock (1989).

(7)　　　　　　　　a. Clause　　　　　　　b. Noun Phrase

```
              IP                           DP
             /  |                         /  |
          Subj  I'                     Subj  D'
               /  \                         /  \
              I    VP                       D    NP
          [+AGR]   |                    [+AGR]   |
                   V'                            N'
                   |                             |
                   V                             N
```

As the phrase markers in (7) show, "case assignment to the possessor is parallel to case-assignment in the sentence: *'s* corresponds to AGR in assigning Case to its subject" (Abney 1987 : 79).　Furthermore, as Abney points out, the parallel syntactic status of I and D is also reflected in the parallel semantic function of these two elements.　Namely, "the function of the determiner is to specify the reference of a noun phrase" (Abney 1987 : 76-77) while the function of the I(nflection), more precisely tense, is to specify the time of an event denoted by the predicate, i.e. VP.

　　　　Some researchers (e.g. Hellan 1986, Abney 1987, Szabolsci 1987, Ritter 1988, Löbel 1989, Bernstein 1991, Valois 1991, Radford 1993) add more heads (functional and non-functional) to the noun phrase, thus making the noun phrase look like a 'nominal hydra' (Payne's 1993 term), a multi-headed construction.　By positing multiple heads in the noun phrase, the word order facts in the respective languages are easy to account for.　However, there seems to be no principled way of limiting functional categories to some small number.　As an illustration, in order to account for the ordering of various classes of adjectives in the Italian

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noun phrase, Cinque (1993) favors positing seven different functional categories that would host these adjectives.

1.2.2 The NP Analysis

As mentioned earlier, traditional X-bar syntax considered the noun to be the head of the noun phrase, the other elements being either spec(ifiers), mod(ifers) or comp(lements). In the Standard X-bar theoretic framework, the assumed noun phrase structure was roughly the following.

(8)

```
                NP
              /  |
            /    N'
        Spec   / |
            /    N'
        Mod   N'
            / |
           N   Comp
```
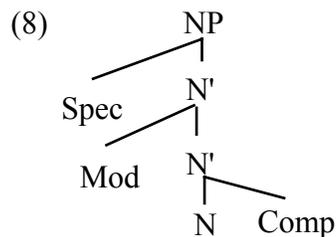
There was a disagreement among researchers working within the Standard X-bar theoretic framework as to the maximal number of bar-levels in phrases, especially in the noun phrase. The main debate was whether the maximal number of nodes is two or more than two. For example, in order to account for the word order of constituents in the English noun phrase, Jackendoff (1977) proposed that the noun phrase has maximally three bar-levels. The prevailing view, however, was that the maximal number of bar levels should be fixed at two, i.e. $NP = N^2$. As Payne (1993) points out, proliferation of bar levels in order to account for the

syntactic distribution of elements within the noun phrase is unnecessary, since the word order facts can be derived from semantic type-theoretic principles and by utilizing recursive N' nodes.

With respect to the headedness properties discussed in the following section, the standard X-bar theory, in which only lexical categories project, is superior to the Extended X-bar theory, which includes projections of functional categories. For example, with respect to headship, in the Standard X-bar theory, the head can simply be defined as a daughter constituent of a category with the same feature specifications that immediately dominates an item of a terminal string, whose other properties (discussed in the next section) naturally follow from the X-bar structure. Furthermore, the obligatory constituent criterion for headship follows automatically from the phrase-structure principles, known as X-bar schemata, given below.

(9)   a. $X^2 \longrightarrow$ (Spec) X^1

            b. $X^1 \longrightarrow X^0$ Complement*

In the above schemata, the only obligatory constituent is the head. By extending X-bar theory to non-lexical categories, this generalization cannot follow automatically. For example, functional categories like Determiners or Quantifiers are not always obligatory (e.g. with English bare plurals or mass nouns). And, they are hardly obligatory in languages that lack articles, which includes most Slavic languages, Korean, Japenese, Chinese. Furthermore, Payne (1993) offers

some cross-linguistic evidence against positing functional category Determiner as the head of the noun phrase. I briefly summarize some of the evidence.

The first piece of evidence comes from the permutation of elements within the noun phrase in a language called Dama. In the neutral word order, all nominal modifiers occur in a fixed order and precede the noun. The inflectional ending, marking person, number and gender, occurs after the noun, i.e., it is attached to the entire noun phrase. Payne illustrates this fact by the following example.

(10)   [horaga ne !nona kini]- di

      all   this three book -3.F.PL

      'all these three books'

In the marked word order, however, noun modifiers can occur after the noun, in which case each postposed constituent bears independent person, gender and case marking. Furthermore, the order of these postposed elements is free. This is shown below.

(11)   [kini]-di   [ne !nona]-di   [!Gombate-s   di]-di

      book -3.F.PL this three -3.F.PL !Gombate -3.F.SG of -3.F.PL

      'the books, these three, the ones of !Gombate'

That these postposed elements are not separate noun phrases is indicated by the fact that they do not bear separate case marking. Rather, the case marking is

"obligatorily suffixed only to the end of the whole global noun phrase. This shows that the entire construction is a single noun phrase. Thus, by assuming a single-head analysis of noun phrases we are able to state a simple generalization that refers to the head noun: apposition is allowed if the elements move after the head noun and carry their own inflectional markings" (Payne 1993).

The second argument against the multi-head analysis of noun phrases deals with a difference between the verbal subcategorization of clauses and the verbal subcategorization of noun phrases. Specifically, a verb selects or subcategorizes for a specific type of clause with a specific complementizer, as in (12) below (reproduced from Payne 1993 : 129).

(12) a.   I wonder whether/if hydras ever die.

      b.   I wonder whether/*if to slay a hydra.

In (12), the verb *wonder* select a clause with the complementizers *whether* and *if*. These complementizers in turn select the appropriate type of clauses. Specifically, the complementizer *whether* selects both finite and nonfinite clauses while the complementizer *if* selects only finite clauses. However, verbs or any other lexical items do not generally subcategorize for a noun phrase that has a specific determiner.[6] For example, the verb *like* can take all types of noun phrase

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[6]However, Dowty (1986 :106) gives the following examples with verbs that select the determiner of their object NP.

      i.   She counted/enumerated the proposals.
     ii.   She counted/enumerated all the proposals.
   iii.   ?She counted/enumerated each of the proposals.

complements, without requiring any specific determiners or quantifiers to go with the noun phrases. This is shown below.

(13)   a.   I like the/a/every/each dog.

        b.   I like the/all/many/ dogs.

In sum, Payne shows that the double-head analysis of noun phrases does not have any significant advantages over the single-head analysis. In fact, the single-head analysis of noun phrases, in which the noun is the head, is better able to explain the above facts than the multi-head analysis. In conclusion, Payne suggests that the nominal hydra "should rather be slain". The Serbian facts illustrated in Chapter 2, provide further evidence for the single-head analysis of noun phrases. In the next section, I describe various criteria for headedness proposed in the literature (e.g. Zwicky 1985, Hudson 1987), applying them to noun phrases in English.

1.3 CRITERIA FOR HEADEDNESS

The notion of syntactic head plays an important role in many theories of grammar. As Zwicky (1985 : 2) points out, "the intuition to be captured with the notion HEAD is that in certain syntactic constructs one constituent in some sense 'characterizes' or 'dominates' the whole". Various theories try to capture this

intuition by defining the notion of a head in various ways. For example, in Government and Binding (GB) theory a head is defined configurationally, i.e. in X-bar theoretic terms, as a daughter constituent of a category with the same feature specifications, one that immediately dominates an item of a terminal string. In this theory the notion of a head is not a primitive notion, rather it is derived from the phrase structure configuration. In other theories, however, the notion of a head is a primitive notion. For example, in some versions of dependency grammar theory (e.g. Hudson, 1984) the head is schematically designated (e.g. by vertical lines and arrows) as the word on which all other words depend. Similarly, in the Head Driven Phrase Structure Grammar (e.g. Pollard & Sag 1987, 1994) the head is lexically designated and has its own label, called HEAD-DAUGHTER, which must obey the Head Feature Principle (see Section 3.1 of Chapter 3).

The notion of a head is important for determining word order typology, especially the order of the head in relation to its complements. For example, English belongs to head-initial languages since heads precede their complements, while Japanese belongs to head-final languages since heads follow their complements. In addition, the notion of a head plays a central role in other parts of grammar, such as subcategorization (or category selection), argument structure, case theory, and agreement.

Since one of the goals of this dissertation is to examine the internal structure of the Serbian noun phrase, it is important to determine first what the head of the Serbian noun phrase is. In other words, the question is whether the

Serbian noun phrase is headed by a Noun or a Determiner. In pursuing this goal, I first describe various criteria for headedness proposed in the literature (e.g. Zwicky 1985, Hudson 1987) applying them to noun phrases in English. In Chapter 2, I apply these tests to noun phrases in Serbian.

1.3.1 Zwicky 's (1985) Criteria

In his 1985 paper, Zwicky proposed the following criteria for determining the head of a given phrase.

(14)   i.   the semantic argument

ii.   the subcategorizand

iii. the morphosyntactic locus

iv. the governor

v.   the determinant of concord

vi. the distributional equivalent

vii. the obligatory constituent

Zwicky (1985 : 4) explains the first criterion for headedness, the semantic argument, as follows, applying it to the noun phrase:

"... in a combination X + Y, X is the 'semantic head' if, speaking very crudely, X + Y describes a kind of the thing described by X. On this

basis, N is the semantic head in Det[etrminer] + N (*those penguins* describes a kind of penguin)."

The second criterion, the subcategorizand, is defined as the constituent, i.e. the lexical category that is subcategorized with respect to its sister constituents. Zwicky argues that in the Det + N' construction in English, it is Det that functions as a subcategorizand, because Det is the lexical, i.e. zero-level category, that combines with the N', a non-zero level category.

The third criterion of headedness, the morphosyntactic locus, Zwicky defines as the constituent on which morphosyntactic inflectional markings (potential or actual) are located. The morphosyntactic locus is related to a general principle of Percolation, which roughly says that all the relevant features of the head must percolate up to the mother. For Zwicky, it is the most reliable criterion for determining the head of a phrase. Therefore, it can be the sole criterion for determining headedness. In the Det + N construction in English, N is the morphosyntactic locus since, for example, "the distinction between singular *the child* and plural *the children* is linked to number distinctions in VP" (p. 6).

The fourth criterion of headedness, the governor, is defined as the constituent that selects the morphological form of its sister constituents. Although in most cases, subcategorizands coincide with governors, Zwicky points out the difference between the two. While the subcategorizand is a lexical category that selects the major syntactic category of its sister constituent, the governor determines the inflectional form of these constituents.   In V + NP constructions in inflectional languages like Latin, V is the governor that

determines the morphological case of the NP complement, while V itself does not vary with respect to case distinctions. Although Zwicky does not discuss the status of the governor in the Det + N construction, considering that Det is a subcategorizand in this construction, it is natural to assume that Det is also a governor, at least in the case of 'uninflected' determiners, such as *the/a/each/every*.

The fifth criterion, the determinant of concord, is defined as the constituent that determines the 'concord' (i.e. agreement) features of other co-constituents. Zwicky says that "N is the concord determinant in Det + N, given English facts like *this penguin* versus *these penguins* and the clear directionality of determination in languages with arbitrary gender, like French and German" (p. 9).

Zwicky emphasizes the difference between the governor and the determinant of concord. While the governor determines the morphological form of its sister constituent, the governor itself does not vary in that specific form. The determinant of concord, on the other hand, not only determines the morphological form of its sister constituent but also inflects for that feature. Given this distinction, it is interesting to note that English determiners would be split into two groups. Specifically, 'uninflected' determiners (e.g. *the/a/each/much*) would have the status of a governor, determining the morphological form of the common noun phrase (see also Cann 1993), while 'inflected' determiners (e.g. *this/these/that/those*) would not be governors, since these vary in form depending on the noun they specify.

The last two criteria for headedness, the distributional equivalent and the obligatory constituent, Zwicky calls 'operational' tests that seem to be "imperfect guides to the head in syntactic percolation" (p. 11). He defines the distributional equivalent as the constituent that "belongs to a category with roughly the same distribution as the construct as a whole" (p. 11). According to Zwicky, in the Det + N construction, N is the distributional equivalent. Finally, the obligatory constituent is defined as the constituent that must always be present. For this test, Zwicky excludes elliptical constructions in which heads can be omitted and whose interpretation depends on the context. "In Det + N, the N is the obligatory constituent; *problems* and *rice* are simply determiner-less NPs, but most noun-less NPs, like *Timmy's* and *the pink*, are elliptical" (p. 13).

In sum, according to Zwicky, all the criteria in (14) except the second and fourth (the subcategorizand and the governor) indicate that the N is the head in the Det + N construction in English.

1.3.2 Hudson's (1987) Criteria

Hudson (1987), working in the dependency grammar framework,[7] revised Zwicky's criteria for headedness by eliminating two of Zwicky's criteria and reinterpreting some of the remaining ones. Hudson eliminated the semantic argument criterion. In its place, he proposed the notion 'semantic functor' as a

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[7]A Dependency grammar is a theory of grammar, originally developed by the French linguist Lucien Tesniere in the 1920s, which deals with dependency relations between words, not constituents. Instead of constituents, a group of words depends on one word, called the ruler or the governor.

'head-like' notion. Contrary to Zwicky, Hudson treated Det (being a semantic functor taking N as an argument) as the head of the Det + N construction. He also eliminated Zwicky's fifth criterion for headedness, the determinant of concord. Instead, he proposed an independent concord rule that does not refer to heads.

Hudson reinterpreted the remaining criteria listed in (14). I will discuss how Hudson's interpretation of the above criteria influences the choice of the head in the Det + N construction. Hudson argued, contra Zwicky, that the morphosyntactic locus of the Det + N construction is the Det, not the N. He based his argument on the behavior of certain determiners in English that make the number distinction, such as *this/these, that/those,* and according to Hudson, also determiners such as *much, many, few, both, either.* Hudson admits that it is still debatable "whether number is indicated by the noun rather than by the determiner" (p. 122). Serbian facts discussed in Chapters 2 and 3 show that not all determiners are the source for number features. I will point to these facts in appropriate chapters. The source for gender features, however, is unquestionably the noun rather than the determiner. This is especially evident in grammatical gender languages, in which a specific gender is lexically assigned to all common nouns. In some of these languages, determiners simply agree in gender with the noun (e.g. French: *la chaise* 'the-F.SG chair-F.SG', *le livre* 'the-M.SG book-M.SG').

With respect to criterion vi of (14), the distributional equivalent criterion, Hudson argued that the Det is the head in the Det + N construction, since there is no clear evidence that the N has the same distribution as the Det + N (cf. *I know the boys/boys/*the* vs. *I know this boy/this/*boy*). Without any persuasive

evidence of what the distributional equivalent is, Hudson picks out the Det as the head of the noun phrase. With respect to criterion vii of (14), the obligatory constituent criterion, Hudson assumed that the determiner is the head in the Det + N construction, since there is no persuasive evidence that nouns cannot be omitted. He cited as an example *I did not read either book/either/*book* to show this (the first omission involving ellipsis).

In sum, Hudson's analysis of headedness uniformly argues for the Determiner as the head of the Det + N construction in English. However, in some cases such a conclusion is not supported by persuasive evidence. As Manfred Krifka (personal communication) suggested, a solution might be to treat some noun phrases as NPs and some as DPs, within a single language. Such a solution has been proposed by Cann (1993), who treats English noun phrases with demonstratives differently from noun phrases with definite and indefinite articles. According to Cann, in the latter construction, a D(eterminer) is the head of the noun phrase, whereas in the former, the noun is the head.[8]

Hudson's treatment of headedness of noun phrases is in line with proposals by other researchers such as Hellan (1986), Abney (1987), Bowers (1987), Szabolcsi (1987), Ritter (1988), Valois (1991). It should be mentioned, however, that all these researchers worked with languages that have definite and indefinite articles (i.e. Norwegian, English, Hungarian, Hebrew, French). By examining the headedness of noun phrases in Serbian, a language with no articles,

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[8] See also de Hoop (1992) who proposed to treat noun phrases with 'weak' D-structural case as NPs while noun phrases with strong S-structural case as DPs.

we are able to extend an analysis of noun phrase structure to a typologically different group of languages, i.e. articleless languages. Such a study could answer the question whether the headedness of a given construction is a language specific property (perhaps correlated with the presence/absence of articles) or whether it is a constant across languages. This task is undertaken in the following chapter.

1.4 ORGANIZATION

The rest of this dissertation is organized as follows. Chapter 2 is an introduction to the Serbian noun phrase. Based on word order patterns and the results of tests for determining headedness, I show that noun phrases in Serbian are headed by Nouns and not by Determiners. In that chapter, I also describe various means for expressing (in)definiteness in Serbian. I show that Serbian uses lexical, morphosyntactic and pragmatic means to distinguish definite from indefinite noun phrases. These devices seem to compensate for the lack of definite/indefinite articles as prototypical lexical items denoting (in)definiteness.

Chapter 3 discusses three major issues pertaining to the Serbian noun phrase, namely, phrase structure, syntactic category of prenominal elements and NP-internal agreement. With respect to phrase structure, I show that both determiners and universal quantifiers are NP-adjuncts. By treating them as NP-adjuncts we account for the fact that they can permute with other NP-adjuncts, such as universal quantifiers, but not with N'-adjuncts, such as adjectives, and not

with possessives, which are specifiers. I further show that all the prenominal constituents, such as determiners, universal quantifiers and possessives, have the categorial status of an adjective. With respect to NP-internal agreement, I account for the fact that all prenominal elements must be in concord with the head noun by adopting Kathol's (1995) and Wechsler & Zlatiœ' (1997) theory of agreement. In this theory, NP-internal agreement involves structure sharing of CONCORD features specified on all agreeing elements. Finally, in Section 3.5, I discuss the categorial status and the internal structure of quantified noun phrases.

Chapter 4 deals with the argument structure and case assigning properties of nouns. I argue that the argument structure must be distinct from both the VALENCE attribute, where grammatical functions are listed, and from the CONTENT attribute, where thematic roles of a predicate's arguments are encoded. With respect to case, I show that a distinction must be made between inherent and structural case. Inherent case is associated with thematic role types, while structural case is not. In addition, Serbian has a condition of adjacency on structural but not inherent case assignment, which applies to noun-object adjacency, as well as preposition-object adjacency (discussed in Chapter 3, Section 3.5).

Chapter 5 offers an analysis of the following syntactico-semantic processes in the Serbian noun phrase: left branch extraction and anaphor binding. With respect to extraction, it is shown that whether something is extractable depends on the syntactic category of the extracted element. The generalization is that only adjectival-like elements can be moved out of the noun phrase. An

agreement-based theory is proposed that accounts for the distribution of left-branch gaps. With respect to anaphor binding, it is shown that only subjects of process nominals are able to bind reflexives, paralleling the obligatory binding of reflexives by clausal subjects, and accounting for the so-called subject-orientation of reflexives.   An argument-structure based binding theory is proposed that accounts for these facts.