Noun Phrases and Nominalizations

The Syntax of DPs

Tal Siloni

Studies in Natural Language & Linguistic Theory

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PREFACE

As is clear from its title, this book deals with two main topics. First, it explores various aspects of the syntax of noun phrases. Second, it suggests a systematic investigation of the categorial nature and syntactic characteristics of nominalizations, which can be formed prior to lexical insertion or in the syntactic component.

The syntactic nature of structures showing a categorially ambiguous behavior is not always easy to determine, as the distinction between syntactic phenomena that merely echo lexical information and those that result from an actual syntactic operation is sometimes blurred due to miscellaneous factors. In fact, the tension between the lexicon and the syntactic component is natural under any approach assuming a separate lexical component. This tension, which, of course, is fed by theoretical developments and empirical discoveries, is methodologically healthy as it encourages the theory to reexamine the division of labor between its components. The present study sheds some light on this issue as it arises in the domain of nominalizations.

The book concentrates mainly on empirical data taken from (Modern) Hebrew. The nominal system (in the broad sense) that characterizes Semitic languages in general and Hebrew in particular is rich and intriguing. It shows rather unique properties, whose investigation has significant consequences for universal issues such as the characteristics of syntactic nominalization or the relationship between functional and lexical categories. It is thus not a mere coincidence that led me, a native speaker of Hebrew, to explore the wonders of nominal expressions. As is by now a common practice in syntactic research – which aims to deepen our understanding of what is a possible variation between related grammars and between language families, and what remains constant across languages – this study adopts a comparative methodology. The book often compares characteristics of Hebrew grammar to properties shown by other grammars, Semitic or non-Semitic, drawing conclusions of theoretical interest.

As its subtitle indicates, the book adopts the claim that syntactic nominalizations share with noun phrases (whether simple nouns or outputs of lexical nominalization) the same external layer, the functional

projection DP. It argues that the discrepancies between noun phrases (in particular, event nominals) and syntactic nominalizations follow from the fact that noun phrases have an internal nominal structure, while syntactic nominalizations entail a verbal projection that is allowed to be dominated by the functional projection DP because it lacks temporal specifications. If my proposals are on the right track, then the nominal properties of syntactic nominalizations never stem from a syntactically present NP.

The first part of the book is devoted to noun phrases. It examines different sorts of genitival constructions, analyzes their structure and justifies a lexicalist approach to deverbal event nominals. The second part of the book examines instances of syntactic nominalization, defines the context required for propositions to be nominalized in syntax and discusses some (a)symmetries between nominalized propositions and their sentential counterparts.

The book has grown out of my doctoral dissertation completed at the University of Geneva in March 1994. While working on the material in the book, I have had fruitful discussions and exchanges with many linguists and colleagues. It would hardly be possible to acknowledge all those who have contributed to my work in one way or another. I would nonetheless like to thank again the many people acknowledged in my dissertation, in particular, Luigi Rizzi and Hagit Borer, who have been of central influence from the beginning, both through their comments and suggestions, and through the example set by their own research. Among those who have read earlier versions of the manuscript or various components thereof and extensively commented are Adriana Belletti, Guglielmo Cinque, Marc-Ariel Friedemann, Liliane Haegeman, Tanya Reinhart, Ur Shlonsky, and an anonymous SNLLT Reviewer. The material in the book has benefitted from presentations at the University of Leiden, the Hebrew University of Jerusalem, MIT, CUNY, Ben Gurion University of the Negev, the University of Nice, Bar-Ilan University and the University of Geneva. Audiences at these places made helpful suggestions. Those attending my classes at Tel Aviv University also provided valuable discussions of much of the material in the book. Finally, I would like to thank all those who supplied data, judgments, observations regarding Hebrew, French and other languages, and in particular Aminadav Dykman and Marc-Ariel Friedemann for their endless patience.

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Tel Aviv

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CHAPTER 1

THEORETICAL ISSUES

1.0. PRELIMINARIES

The ultimate goal of linguistic inquiry in the particular tradition known as generative grammar is to understand the nature of the language faculty. The central assumption is that humans are endowed from birth with a system predisposed to the acquisition of a natural language (e.g. Chomsky 1965, 1975). This assumption suggests a way to account for the rapidity and apparent ease with which children acquire the remarkable complexities of languages, without systematic instruction, on the basis of incomplete data, and with no negative evidence.

The innate component of the human mind yields a particular language through interaction with a particular linguistic experience. The idealized model of language acquisition takes the initial state of the language faculty to be a function mapping linguistic experience into a natural language. The theory of the initial state of the language faculty, prior to any exposure to linguistic data, is called *universal grammar* (UG). UG determines the class of possible languages. The theory of the steady state, that is the state of the language faculty of a person who knows a particular language, is often called *grammar*.

UG must reconcile two seemingly conflicting requirements: it must be predetermined enough to explain the process of native language acquisition, and at the same time sufficiently flexible to allow the diversity of natural languages. In the beginning of the eighties, certain ideas regarding UG crystallized into the *principles and parameters* approach (e.g. Chomsky 1981). Under this approach, UG consists of certain invariable principles that hold of any natural language, and finitely valued parameters to be set through the particular linguistic experience of the learner. UG supplies a format of principles and parameters; a particular instantiation of this format constitutes a specific language. The parameters provide UG with flexibility and account for the diversity of languages, apart from Saussurean arbitrariness (the phonological encoding of concepts in the lexicon). Often, clusters of different properties distinguishing two or more languages can be reduced to a single difference, to a distinct setting of one single parameter (for instance, see Rizzi 1982, 1986a for discussion of the

Null Subject parameter and related characteristics). Linguistic variation is constrained by the principles and parameters of UG, which suggests a way to explain the considerable rapidity and ease of native language acquisition. The parametric range may be restricted to functional elements and general properties of the lexicon (Borer 1984, Chomsky 1991, 1993).

Many specific variants of the approach have been developed and explored in recent years. The current diversity of notions within the generative approach necessitates a short introduction of the specific path adopted here (section 1.2). Prior to this introduction, however, I briefly discuss the goals of the research (section 1.1).

1.1. NOMINALIZATIONS AND DPs

1.1.1. *Background*

1.1.1.1. *Nominalizations.* It is well known that verbs and their corresponding deverbal nouns appear to share some basic semantic properties. Thus, for example, the noun *examination* in (1a) appears to bear the same semantic relation to the noun phrases *Dan* and *the papers*, as the verb *examined* does in (1b). However, while the appearance of those noun phrases is optional with *examination* (2a), it is obligatory with *examined* (2b):

(1) a. Dan's examination of the papers

b. Dan examined the papers.

(2) a. the examination

b. * Examined.

The issue of the relationship between verbs and their corresponding deverbal nouns already enjoyed an important position among inquiries in the earliest works in generative grammar. Lees (1960) had deverbal nouns generated as clauses and mapped onto a noun phrase structure by a series of nominalization transformations. This derived the fact that the contexts in which a verb and its derived noun appear are closely related. The differences between the two categories were accounted for by ordering certain rules after the nominalization transformations.

Within the framework of the theory available at that time, there was,

in fact, no alternative way to express the similar properties of verbs and their related nouns. Chomsky's *Syntactic Structures* (1957) lacked a lexical component in the current sense, and could not formulate the affinities between verbs and nouns in lexical terms. These affinities had to be handled by the syntactic-transformational component. With the introduction of a separate lexicon (Chomsky 1965), it became possible to express the relationship between verbs and deverbal nouns via lexical representations, without assuming that deverbal nouns entail a syntactic transformation of the source verb. The restricted productivity that characterizes the formation of deverbal nouns, certain idiosyncrasies they show, their nominal behavior, among other things, led Chomsky (1970) to take a *lexicalist* position with respect to deverbal nouns. In rough terms, this means that entries like verbs and deverbal nouns share their lexical representations as far as their thematic properties are concerned.

During the eighties, variants of the lexicalist approach to deverbal nouns have been dominant. Linguists have generally agreed that deverbal nouns are inserted in the syntactic component as nouns, and have been concerned with the extent and character of similarities and differences nouns and verbs show with respect to argument structure and θ-theory (Cinque 1980, 1981, Milner 1982, Anderson 1983-84, Kayne 1984, Safir 1987, Zubizarreta 1987, among others). It has often been asserted that nouns, contrary to verbs, take arguments only optionally (see, for example, Higginbotham 1983, Dowty 1989).

In a consequential study of the nominal system, Grimshaw (1990) has established clear diagnostics to distinguish between two types of nouns that are often homophonous: *event* nouns, which express an event (or a process), and *result* nouns, which name the output of the event or an entity related to it. This disambiguation enables Grimshaw to show that event nouns obligatorily have an argument structure as part of their lexical representation; they assign specific θ-roles, just like verbs. The lexical representation of result nominals, which do not express an event, does not specify an argument structure; result nouns do not take real arguments, which bear specific θ-roles, but rather a kind of semantic participants that are more loosely associated with them.

For example, Grimshaw shows that certain modifiers, like *frequent*, can modify a (singular) noun only when it expresses an event. They can thus serve to diagnose eventhood. Once a noun is disambiguated, it becomes clear that a noun without arguments cannot have an event interpretation. In (3a) the referent of *Dan* is somehow associated with the referent of *construction*, which is a concrete entity. Dan can be the owner, the caretaker, the admirer, or the creator of this entity. Thus,

Dan is not a real argument of *construction* as it does not bear a specific θ-role; rather it has some claim of possession over the concrete entity. When the modifier *frequent* is added, *construction* is forced to have an event interpretation, and consequently it assigns specific θ-roles (3b), just like its corresponding verb (3c). Hence, *Dan* must be interpreted as the agent of *construction*, and the appearance of the constructed element becomes obligatory:

(3) a. Dan's construction impressed us.

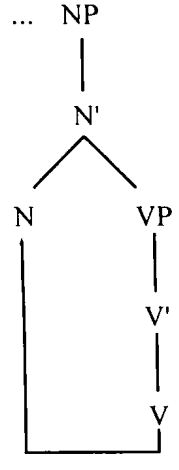
b. Dan's frequent construction *(of sailing boats) impressed us.

c. Dan constructs *(sailing boats).

In short, lexical entries that denote an event (whether verbs or nouns) have an argument structure. The clear split between event and result nominals undoubtedly highlights the common properties verbs and event nouns share. Certain important asymmetries between verbs and deverbal nouns are in fact to be associated only with result nominals. This has paved the way for the revival of the syntactic approach to event nominals.

The modern syntactic approach takes the presence of an event reading and an argument structure to be a lexical property of verbs, not nouns (e.g. Borer in progress). It inserts deverbal nouns as verbs that raise to incorporate with a nominal head in the course of the syntactic derivation, as schematized in (4). Event nouns thus have an event reading and an argument structure because they contain a verbal projection in syntax:

(4)



A priori, the syntactic approach simplifies the lexicon, dispensing with the need to lexically represent the nominal ambiguity (event/result). It does so at the cost of greater complexity of the syntactic component, which must allow structures of the type in (4). The lexicalist approach, in contrast, simplifies the syntactic component at the price of a richer lexicon. As noted by Chomsky (1970), there do not seem to be general considerations that settle the matter; deciding between the two approaches is mainly an empirical problem.

Alongside event nominals, languages also exhibit gerundive forms such as the English gerund given in (5). On a par with event nominals, English gerunds of the type in (5) have the distribution of noun phrases and take a genitive subject (5a). Unlike event nominals, however, they are formed fairly freely, their semantic interpretation is straightforward with regard to the source verb, and their internal structure is not nominal (e.g. they cannot be modified by adjectives, nor realize their article (5b-c)), but rather verbal (e.g., they can take an accusative argument (5a)):

(5) a. John's constructing sailing boats impressed us.

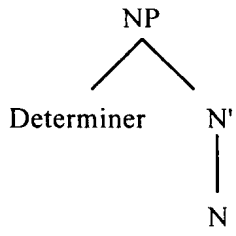
b. *John's rapid constructing sailing boats impressed us.

c. * The constructing sailing boats impressed us.

Any study of nominalizations has to take up the challenge of accounting for the discrepancies and similarities between event nominals and their gerundive counterparts. If there are good empirical reasons to believe that both event nominals and gerunds are derived from the base verb in the syntactic component, the more verbal nature of gerunds is a priori unexpected and requires an explanation. In contrast, if it can be shown that event nominals are the output of a process of lexical nominalization and gerunds are the product of syntactic nominalization (as suggested in Chomsky's *Remarks on Nominalization* 1970), the discrepancies between the two nominalizations follow rather straightforwardly.

1.1.1.2. *Functional structure.* A more recent issue in the investigation of noun phrases concerns the functional structure they entail. Traditionally, noun phrases were naturally taken to be the maximal projections of N, as depicted below (Jackendoff 1977, among others):

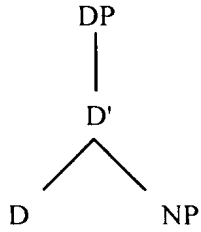
(6)



The theoretical developments in the eighties alongside the growing interest in the nominal system have called this structure into question. More specifically, the extension of the X-bar schema to the sentential functional elements (Chomsky 1986b) and the increasing understanding of the workings of head movement (Chomsky 1986b, Baker 1988) have led linguists to elaborate a more articulated syntactic representation for the noun phrase.

Arguing that the functional nominal material, too, should fit into the X-bar schema, Abney (1987) has hypothesized that noun phrases, like clauses, are headed by a functional element. He has proposed that noun phrases are the maximal projections of D, the base position of articles (see also Szabolcsi 1983-84, Fukui and Speas 1986):

(7)



This proposal has received strong empirical support by a series of studies arguing that the head noun overtly raises to D in Semitic (Ritter 1987, 1988, Mohammad 1988, Ouhalla 1988, Fassi Fehri 1989, Hazout 1990, Siloni 1990b, 1991a) and Scandinavian languages (Delsing 1988, Taraldsen 1990). Longobardi (1994) has shown that instances of noun raising to D are also likely to occur overtly in Romance and covertly in English and German. Subsequent studies of Semitic, Romance and Germanic languages have suggested that the structure of noun phrases is even more articulated and includes additional inflectional structure between DP and NP (Ritter 1991, Valois 1991, Cinque 1993, Bernstein 1993, Fassi Fehri 1993, Penner and Schönenberger 1993, among others).

Alongside the accumulating empirical evidence, several studies have developed a principled explanation of why the nominal expression is the

maximal projection of D (Szabolcsi 1987 ,1989, Stowell 1989, 1991, Longobardi 1994). Somewhat simplified, their insight is that D is the element that converts the nominal expression into a referential phrase, which consequently is able to serve as an argument. In this respect, it can be argued that D parallels the complementizer of sentential complements: each turns its complement (NP and IP, respectively) into an expression that is able to appear in an argument position, that is, to bear a θ-role (Szabolcsi 1987 ,1989).

While the discussion of nominalizations is particularly concerned with their categorial structure, recent investigations of the structure of noun phrases are interested in defining their functional structure and its workings. These related issues, which I informally phrase below, form the grounds for this research on noun phrases and nominalizations, which concentrates on a variety of constructions in (Modern) Hebrew, often comparing them to parallel constructions in Semitic and non-Semitic languages:

A. The categorial syntactic structure of event nominals and other nominalizations.

B. The functional structure of DPs and the different facets of D.

In the subsequent section I outline the main claims advanced in this work.

1.1.2. *Outline*

The first part of this work (chapters 2-3) has two major goals: examining the functional structure of noun phrases, and justifying a lexicalist approach to event nominals. I supply empirical evidence that event nominals are purely nominal and do not contain a syntactically projected VP. Yet they share with the corresponding verbs their argument structure (Grimshaw 1990), which they equally map onto a hierarchical syntactic structure (Giorgi and Longobardi 1991). I present the empirical arguments Hebrew offers in favor of viewing noun phrases as maximal projections of D. Further, I motivate the projection of an agreement phrase between NP and DP in noun phrases involving the so-called *construct state*. This allows a straightforward account of the distinct syntactic behavior of three types of genitival constructions in Hebrew: the construct state, the *free state*, and the *clitic doubling* construction.

The second part (chapters 4-5) is devoted to cases of "mixed" structures, DPs containing a verbal projection (the structures show typical verbal characteristics). The question immediately arises as to what it is that enables D to take a verbal complement instead of its standard nominal complement. Observing that verbal projections embedded under D are non-tensed propositions, I suggest that their untensed nature is the crucial factor that makes them legitimate complements of D. This is what they share with NPs and this is what renders them compatible with D. According to my proposal, embedding by D of a verbal projection is what syntactic nominalization is in essence. Syntactic nominalization does not involve a syntactic transformation incorporating a verb into a noun. Rather, it entails a DP dominating a verbal projection that does not contain tense specifications. Thus, English gerunds, Hebrew gerunds, or Italian nominalized infinitives may all be cases of syntactic nominalization. I suggest a detailed analysis of Hebrew gerunds along these lines.

Inspired by the analogy between articles and complementizers outlined by Szabolcsi (1987, 1989), I characterize D as the equivalent of C with regard to non-tensed phrases. Both C and D turn the expression they head into a referential argument, which is consequently able to bear a θ-role. But while C heads tensed propositions, D introduces non-tensed phrases. Following Stowell (1982), I assume that the CP level is obligatory in tensed clauses (whether finite clauses or infinitivals). Stowell entertains the idea that the tense operator has to raise to C (COMP) at LF to take scope over its clausal operand (see Enç 1987 for a detailed discussion of the Anchoring Conditions, which link tense to C). Now, if C must be associated with a tense operator, whereas D cannot do so, it becomes clear why C must introduce tensed clauses, while D is the "complementizer" of non-tensed expressions, whether noun phrases or gerund clauses.

The investigation of participial relatives strongly reinforces this functional parallelism between CP and DP. In Hebrew (or Standard Arabic), these non-tensed relative clauses surface headed by D. In other languages (e.g. French), they do not manifest any overt element of this type. Various considerations, however, suggest that they do contain a covert D. This strengthens the claim that verbal projections can be embedded under D only if they are not tensed. To the extent that syntactic nominalization means the occurrence of a verbal constituent as a component of DP (say, *DP-zation* of a VP), participial relatives constitute an additional instance of this syntactic phenomenon. Moreover, the occurrence of D as the head of participial relatives suggests that D can not only introduce non-tensed argumental phrases,

but also non-tensed modifying phrases. This brings to light a novel facet of D and extends the functional analogy between complementizers and articles: C as well as D can head arguments as well as modifiers.

Let me summarize the main arguments of the following chapters in rough lines.

(a) Event nouns basically share the same argument structure with the corresponding verbs (see Grimshaw 1990), and map it, like verbs, onto hierarchical syntactic structures (Giorgi and Longobardi 1991) (chapter 2).

(b) Given the hierarchical structure of noun phrases and the order of constituents they exhibit, it must be concluded that overt noun raising is obligatory in Hebrew. I suggest that D is the landing site of the raised noun, thus supplying support for the claim that noun phrases are the maximal projections of D (Abney 1987) (chapter 2).

(c) Genitival relations in Hebrew can be expressed via the construct state, the free state, or a clitic doubling construction. The construct state avails itself of structural Case, the free state involves inherent Case assigned via the Case marker *šel* ('of'), and the clitic doubling configuration has recourse to both Case assignment mechanisms. If structural Case is always the realization of Spec-Agr^0 relation (Chomsky 1991, 1993), construct states and clitic doubling configurations entail an agreement projection. The syntactic properties of all three genitival constructions fall out (chapter 2).

(d) Hebrew event nominals show some arguably verbal properties: they can take accusative arguments and be modified by adverbs. This seems to justify a syntactic approach to event nominals (Hazout 1990, 1995, Borer in progress). I show that the verbal properties of Hebrew event nominals are only apparent: the accusative Case of event nominals is an inherent Case assigned by a Case marker, and the adverbs that can modify them are all adverbial PPs and not genuine adverbs. There are no empirical reasons to believe that Hebrew event nominals in particular, and event nominals in general, contain a verbal projection. On the contrary, a lexicalist approach can better handle the data. I suggest that syntactic incorporation of V into N is not a process allowed by UG (chapter 3).