

## Noun Modification in English: A Syntactic Analysis

**Hicham Lahlou, PhD**

School of Humanities, Universiti Sains Malaysia,  
11800 Pulau Penang, Malaysia  
hlahlou2003@hotmail.com  
Tel: (60)46533342

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### Abstract

Several classical syntactic frameworks, including phrase structure grammar, have failed to explain a variety of linguistic phenomena, including the existence of intermediary phrases that are smaller than a full phrase but larger than the head of a phrase and the distributional difference between nominal modifiers. The main aims of the current study are to determine how X-bar syntax depicts differences between noun modifiers and how analytical evidence supports such differences. In order to accomplish this goal, the author first compared and contrasted X-bar syntax and phrase structure grammar. Employing X-bar syntax theory, he then compared and contrasted prenominal and postnominal modifiers. The findings of the study revealed that X-bar syntax can explain a wide range of linguistic phenomena that other syntactic frameworks, particularly PS grammar, cannot.

**Keywords:** constituency, prenominal modifiers, postnominal modifiers, adjuncts, complements, X-bar syntax

### 1. Introduction

Several linguistic phenomena remained unexplained by the classical phrase structure rules. They cannot, for example, account for the existence of intermediary phrases that are smaller than a full phrase but larger than the head of a phrase. X-bar syntax is one of the alternative syntactic frameworks that can account for such phenomena. The present paper offers a valuable insight into noun modification in English. It adopts the X-bar syntax theory to explore noun phrase structures and differentiate between noun modifiers. The study's findings support the assertion that X-bar syntax may explain a variety of linguistic phenomena that diverse syntactic frameworks, including PS grammar, cannot explain. In other words, the study attempts to explore how the differences between noun modifiers are expressed in X-bar syntax and how analytical evidence backs up such distinctions.

Given the above, the current study will address two research questions:

1. How are the differences between noun modifiers expressed in X-bar syntax?

## 2. How does analytical evidence back up these distinctions?

This work is divided into four chapters. The first chapter briefly provides the statement of the problem and research questions. It is worth mentioning that the diagnostics that the researcher will present in the second chapter will serve as the foundational arguments for the complete study. The researcher will next go through some of the fundamental phrase structure rules for generating well-formed sentences. Finally, the researcher will compare and contrast two syntactic frameworks, PS grammar and X-bar syntax, to show that the latter is better than the former.

The third chapter's goal is to discuss the diverse prenominal modifiers. This chapter is divided into two sections. The first section will mainly contrast predeterminers and determiners, determiners and prenominal APs, prenominal APs and prenominal NPs, and ultimately complements and attributes. In the second section, the researcher will concentrate on illustrating the distinctions between complement clauses and adjunct clauses, as well as complement PPs and adjunct PPs. In addition, in each of these sections, the researcher will begin with a sort of introductory subsection, demonstrating the basic types of noun modifiers, their function, and distribution.

The present paper is the author's Bachelor monograph. Despite the author's long journey from BA to MA to PhD a few years ago, as well as his early shift in research interests, he has published his BA thesis. This is because the author disagrees with advocating for the general debunking of linguistic approaches that develop harsh judgements rather than seeking to comprehend the questioned theories. According to the author, every linguistic theory and research era has its own merit. The author believes this paper will be remarkably beneficial to students and scholars of syntax because it provides access to one of the most important contemporary syntactic theories, which, while now superseded, remains the most powerful and appealing syntactic approach, resolving several issues that other syntactic frameworks had, including PS grammar.

## 2. Phrase Structure Grammar V X-Bar Syntax

### 2.1 Introduction

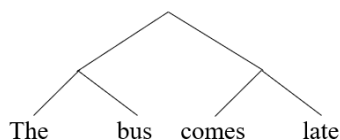
This chapter will be broken down into two sections. The constituent structure of sentences will be discussed in the first section, based on theoretical (or rather intuitive) and empirical evidence. It will include movement (preposing and postposing), sentence fragment, coordination (ordinary and shared constituent coordination), and pronominalization. Then a classic sort of generative grammar, phrase structure grammar, will be discussed to show how this system may generate an infinite set of phrase markers. The second section will focus on a distinct syntactic framework known as X-bar syntax, illustrating why it is preferable to phrase structure grammar (PS grammar, for short).

### 2.2 Phrase Structure Grammar

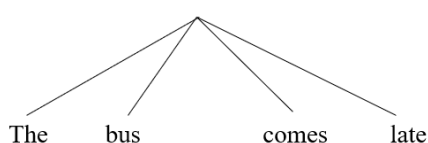
### 2.2.1 Constituency

A sentence is not a set of elements haphazardly grouped together, but rather a sequence of accurately organized constituents- that is, structural units. To illustrate this point, consider the following structures.

(1) (a)



(1) (b)



The structures above show that (1) (a) is better than (1) (b) in the sense that (1) (a) states that a sentence has a constituent structure, whereas (1) (b) shows that a sentence has a linear structure. In other words, while (1) (a) indicates that the sequence *The bus* and *comes late* both form constituents, (1) (b) does not provide such information.

In light of this, Fowler (2016) observes:

Syntactically, a sentence is not a simple linear concatenation of formatives like this:

*The +student +s +like +the +new +library.*

The sentence is rather an ordered construct in which small units are progressively built up into large on regular structural principles (p.21).

The question here is whether there is evidence for recognizing the linear structure of sentences.

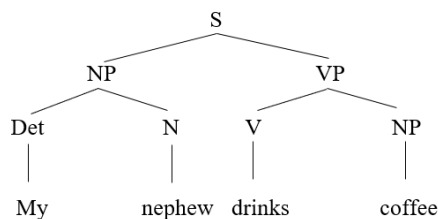
The fact that a native speaker has intuitions about the structure of his or her language adds to the evidence that a sentence has a non-linear structure. Radford (1988) distinguishes between two types of structural intuitions: those about how sound sequences in sentences are organized into successively bigger units called constituents, and those concerning whether specific sets of constituents belong to the same category. By way of illustration, consider the following sentence.

(2) *My nephew drinks coffee*

A native speaker knows that *My* and *nephew* combine to form *my nephew*, that *drinks* and *coffee* combine to produce *drinks coffee*, and that both constituents *My nephew* and *drinks coffee* can be linked together to make *My nephew drinks coffee*. After demonstrating how sound sequences are extended into constituents, the question of whether constituents have the same status will be examined.

Continuing with the same example, it can be said that *My* belongs to the same category as *a*, *this*, and *those*, and thus is a determiner, that *nephew* belongs to the same category as *coffee*, *sister*, and *man*, and thus is a noun, and that *drinks* belongs to the same category as *eats*, *smiles*, and *reads*, and thus is a verb. By the same token, *My nephew* has the same status as *a neighbour*, *the cat*, and *this window*; *drinks coffee* has the same status as *helps his wife*, *throws the ball*, and *reads the books* and *My nephew drinks coffee* is like *Alfred cooks the meal*, *Susan despises her colleague*, and *Mohamed bought a white car*. Therefore, the constituent *My nephew* is a noun phrase, *drinks coffee* a verb phrase, and *My nephew drinks coffee* a sentence. Given the above information, the structure (1) (a) can be revised to (3).

(3)



One would now wonder how much reliance can be placed on native speakers' intuitions about constituents and categories. The explanation is that this piece of evidence is far from conclusive since expert linguists tend to gain quite strong intuitions about syntactic structure, but inexperienced informants tend to have extremely weak, uncertain, and unreliable intuitions (Radford, 1988). But what empirical evidence exists to support the concept of constituent structure? There appears to be a lot of empirical evidence to back up this notion, but because this study is about the structure of noun phrases, the analysis will be limited to one type of constituent, namely NP.

One of the arguments for saying that sentences have a hierarchical structure is syntactic in nature. This type of evidence extends across the following diagnostics: distribution (movement and sentence fragment), coordination, and pronominalization. To begin with, consider the example below.

(4) *Susan respects Simon.*

First, the underlined NP can be preposed (that is, moved to the initial position), as in:

(5) *Simon, Susan respects.*

In addition, in (6) below, the NP *her new car* can be postposed, that is, transferred to the final position.

(6) (a) *Susan showed her new car to Simon.*

(b) *Susan showed Simon her new car.*

As seen from the above example, the NP *her new car* is moved from the middle position to the final one without affecting the grammaticality of the sentence. It can be concluded then that *Simon* and *her new car* are constituents since only phrasal constituents can undergo movement from one position to another (Radford, 1988).

Second, as seen in (7), the NP *her new car* can function as a sentence fragment.

- (7) (a) *What did Susan show Simon?*  
(b) *Her new car.*

Thus, it can be inferred that *her new car* is a constituent in connection to the rule below.

“Only constituents can serve as sentence-fragments (in an appropriate context)”  
(Radford, 1988, p. 72).

Third, the NP *her new car*, in the example above, can be conjoined with another NP such as *house*, as in the example in (8).

- (8) *Susan showed Simon her new car and house.*

Given that “only constituents can be conjoined; nonconstituent sequences cannot be conjoined” (Radford, 1988, p.75), it can be said that *her new car* is a constituent. Furthermore, the sequence *cheese* in (9) below can function as a shared constituent.

- (9) *Susan likes-but Simon hates- cheese.*

The sequence *cheese*, in the above example, forms a constituent, for “Shared Constituent Coordination is only possible where the shared string is a possible constituent of each of the conjuncts” (Radford, 1988, p. 78).

Finally, a string like *Alexander* can be replaced by a pro-form, as we see from the subsequent discourse.

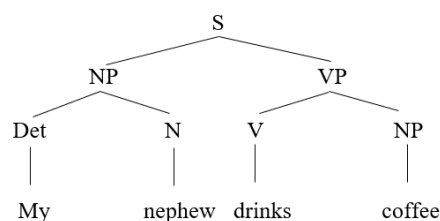
- (10) (a) *Are you sure that Susan showed her new car to Alexander?*  
(b) *No, she detests him.*

In the above dialogue, the pro-form *him* is a pro-NP, as it occupies the same position as the NP *Alexander*. What needs to be emphasized here is the fact that for a constituent to be descriptively adequate, it should conform to both linguistic components: Syntax and Semantics. Syntactically speaking, the pro-form *him* in (10) occurs in the same position as *Alexander*, and hence functions as a pro-NP. Semantically speaking, the pro-form *him* is characterized as replacing an animate, human, and singular antecedent *Alexander*. Having supported the claim that noun phrases are constituents, the author will move on to examine the way in which sentences are generated.

### 2.2.2 Phrase Structure Grammar

Sentence (2), as seen in the preceding subsection, has the structure shown in (3) below.

- (3)



One would ask, looking at the tree diagram above, how words are expanded into phrases, and phrases into sentences. Let us begin by recalling Chomsky's (2015) statement that language makes infinite use of finite means. In other words, a restricted set of principles can generate an unlimited number of sentences. These principles are known as phrase structure rules (PS rules). To illustrate this, consider the following example.

(11) *My brother has three children.*

The sentence consists of an NP and a VP, the VP consists of a V and an NP, and the NP consists of a Det and an N. This information can be summed up in a set of schemas like the following.

(12)

(a) S → NP VP

(b) VP → V NP

(c) NP → Det N

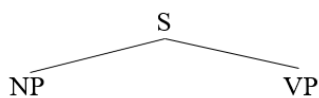
It is worth noting that the arrow represents “may consist of” or “may be rewritten as”. The above rules account not only for grammatical sentences, but ungrammatical ones as well, as shown in (13) below.

(13) (a) *That man is my neighbour.*

(b) *\*man that my neighbour is.*

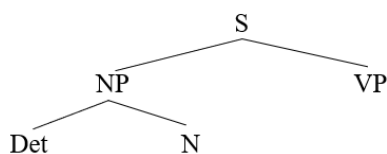
It can be deduced that (13) (a) is syntactically well-formed since it complies with rule (12) (a), while (13) (b) is ill-formed because it does not comply with it; in other words, (13) (b) has an opposite order, namely “VP NP”. Now, let us see how Phrase markers (P markers) can be generated by the PS rules listed in (12) above. The outcome of applying rule (12) (a), which states that S can be rewritten as NP and VP, is (14).

(14)

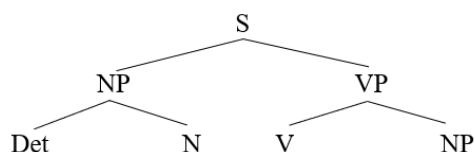


In addition, given that NP can be expanded into Det and N, the following structure can be produced.

(15)



Finally, using rule (2) (c), which states that VP may be divided into a V and an NP, (16) can be obtained. (16)



It is important to note that the PS rules given above only generate a finite number of sentences. For in the case of NPs, an NP can be composed of an N, a Det and N, an AP and N, a Det, AP, and N, etc. To provide a generalized set of PS rule for all English sentences, we need to bracket the optional elements. In this connection, Baker (1978) states:

When two or more grammars satisfy the terms of the phrase structure framework, and both are compatible with a certain set of basic data, select the grammar having the smallest number of symbol occurrences as a guide to sentences outside the limited set of basic data (p. 46).

Consider, by way of example, the following NPs.

- (17) (a) *A lady* (Det + N)  
 (b) *A respectful lady* (Det + AP + N)  
 (c) *A respectful lady of honesty* (Det+AP+N+PP)  
 (d) Etc.

These phrases can be generated by a set of PS rules such as:

- (18) (a) NP → Det N  
 (b) NP → Det AP N  
 (c) NP → Det AP N PP  
 (d) Etc.

What is interesting about the above rules is that each NP consists of a head N. So, instead of listing a large number of classificatory rules like the ones listed above, a generalized PS rule can be obtained, as shown below.

- (19) NP → (Det) (AP) N (PP)

However, this rule does not include all the elements that modify the head N. That is why rule (19) should be revised into (20).

- (20) NP → (Det) (AP) N  $\left. \begin{array}{l} (PP) \\ (That-S) \end{array} \right\}$

(20) can generate an infinite set of NPs, as in (21) below.

- (21) (a) *Mountains*  
 (b) *The mountains*  
 (c) *The high mountains*  
 (d) *The high mountains that reduce the power of the wind*  
 (e) *The high mountains in Asia*  
 (f) Etc.

Another point which is worthy of note is that PS rules should permit constituents to recur indefinitely many times in order to generate an unlimited set of sentences, as demonstrated by (22).

- (22) (a) *The policeman arrested the criminal.*  
 (b) *The policeman arrested the criminal who killed the man.*  
 (c) *The policeman arrested the criminal who killed the man who got married with Fatima.*  
 (a) Etc.

Thus, clauses can be stacked on top of each other indefinitely, and this recursion is accounted for by PS rules. Eventually, PS grammar is composed of a set of finite rules which generate an infinite number of sentences. Following this brief examination of sentence constituent structure and PS grammar's function, a different syntactic system known as X-bar syntax will be investigated.

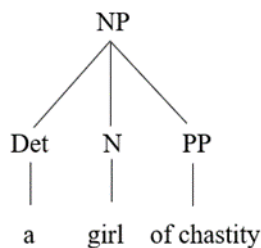
### 2.3 X-bar Syntax

In this section, two advantages of X-bar syntax will be discussed. First, it recognizes that there is an intermediate constituent larger than the head and smaller than the phrase. Second, it offers more constrained categorial rules than those of PS grammar. So, this section will attempt to demonstrate that there exists a nominal constituent larger than a noun but smaller than a noun phrase, a verbal constituent larger than a verb but smaller than a verb phrase, and so on and so forth. The author will not go into the depth of these constituents; instead, he will focus on the constituent under investigation, NP.

#### 2.3.1 Small Nominal Phrases

As seen in the preceding section, there are only two categories: lexical categories such as N, V, A, P, Adv, etc., and phrasal categories like NP, VP, AP, PP, AdvP, etc. Actually, this analysis is deficient, as it ignores the existence of a third category which is not accounted for by PS grammar. This defect is overcome by X-bar syntax. More precisely, PS grammar does not recognize that the sequence *girl of chastity* in (23) below forms a constituent.

(23)



As the following discussion will illustrate, the view that *girl of chastity* is a constituent enjoys much support. First, it can occur in the beginning of a sentence, as in (24) below.

(24) *Girl of chastity though she is, everybody disturbs her.*

With reference to this, Radford (1981) remarks that the constituent that comes before *though* is an intermediate nominal phrase, not an NP. As a result, sentences like (25) (a) and (25) (b) are not possible or grammatical.

(25) (a) \*that girl of chastity though she is, everybody disturbs her.

(b) \*the girl of chastity though she is, everybody disturbs her.

Second, it can undergo ordinary coordination, as demonstrated in the following example.

(26) *The girl of chastity and man of honour got married last week.*

Given that only identical phrases can be coordinated, *girl of chastity* is a constituent.

Third, it can serve as a shared constituent in shared constituent coordination.

(27) *She is the prettiest -but some girls say the ugliest- girl of chastity.*



So, taking into account the fact that only unitary constituents can function as shared constituents, it can be inferred that *girl of chastity* is a constituent.

Fourth, it can serve as the antecedent of the pro-form *one*, as can be seen from (28) below.

(28) *He likes the pious girl of chastity more than the sceptical one.*

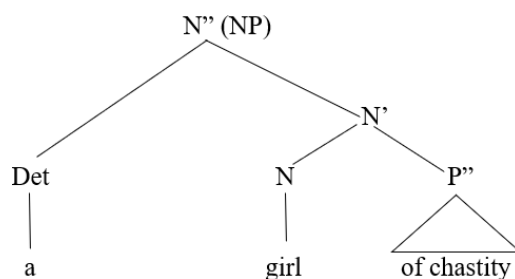
As seen from the above sentence, the pro-form *one* replaces *girl of chastity*. Because only a constituent can function as the antecedent of a pro-form, it can be said that *girl of chastity* forms a constituent. Having dealt with some arguments supporting the existence of a third constituent, the status of the above small nominal phrase will be examined. This small nominal phrase does not have the same category as NP, as it cannot occupy the same position as that of a typical NP, as shown in the following.

- (29) (a)  $\left\{ \begin{array}{l} \text{That girl of chastity} \\ * \text{ girl of chastity} \end{array} \right\}$ , most people love.
- (b)  $\left\{ \begin{array}{l} \text{That girl of chastity} \\ * \text{ girl of chastity} \end{array} \right\}$ , usually fasts.
- (c) Most people love  $\left\{ \begin{array}{l} \text{that girl of chastity.} \\ * \text{ girl of chastity.} \end{array} \right\}$
- (d) Ann always takes advice from  $\left\{ \begin{array}{l} \text{that girl of chastity.} \\ * \text{ girl of chastity.} \end{array} \right\}$

In the light of the above examples, it is noted that whereas NPs can serve as a direct object, subject, and prepositional complement, the small nominal phrases cannot occur in such positions.

Equivalently, it is implausible to assign the small nominal phrase the category noun, because a noun only includes one word, namely the head, while the small nominal phrase may comprise an AP and N, an N and PP, an AP, N, and PP, and so on. Another important point is that a small nominal phrase is a noun phrase without a determiner. The question raised here is what is the syntactic system that can account for small nominal phrases? An obvious answer is that only X-bar syntax can account for such phrases. Using this system, the constituent structure of the NP *a girl of chastity* would be as follows:

(30)



As can be seen from the above tree diagram, the N *girl* is extended into N' by the addition of the PP *of chastity*, and the N' *girl of chastity* is expanded into N'' by the addition of the determiner *a*. It is clear then that PS grammar is limited, and thus deficient and inadequate. While PS grammar only consists of one phrasal projection (i.e., N is expanded into NP), X-bar syntax is composed of a number of phrasal projections, namely X' and X''. In actual fact, the number of bars used varies from one linguist to another. For instance, Jackendoff (1977) states that in Chomsky's original formulation, *n* equals 2 for nouns and 3 for verbs. Vergnaud (1974) and Siegel (1974) have *n* equal to 4, at least for nouns. Jackendoff (1969; 1974) has *n* equal 2 for all categories. He concludes that *n* equals 3 for all categories.

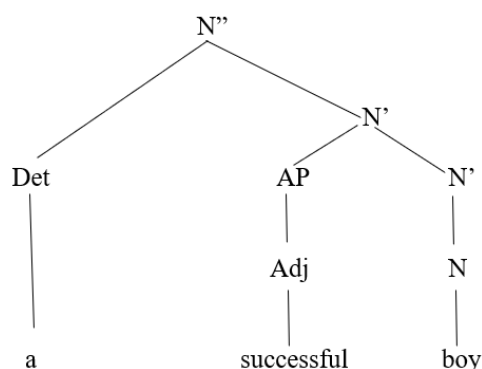
One might, at first glance, be sceptical about the fact that X-bar syntax is preferred to PS grammar, for it might be argued that the latter is more constrained than the former, and hence better. This is not correct, because the recognition of categories other than N and NP is necessary to account for a lot of linguistic phenomena. For example, it makes it possible for us to differentiate between determiners and adjective phrases on the one hand, and between complements and attributes/adjuncts on the other hand.

As said above, a Det expands an N' into N'', and hence is the sister of N', not N. By contrast, an AP that functions as a complement expands N into N', and thus is the sister of N, whereas an AP that functions as an attribute expands N' into another N'. Therefore, unlike PS grammar which only says that a Det precedes an AP, X-bar syntax answers the question why APs come closer to their head N than determiners, and distinguishes APs that are used as attributes and those that are used as complements. Consider by way of example the NP in (31) below.

(31) *a successful boy*

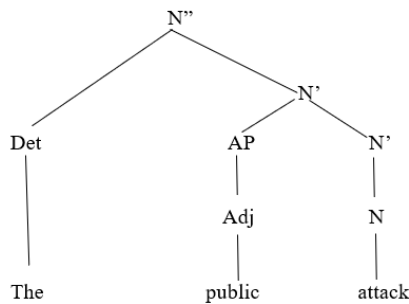
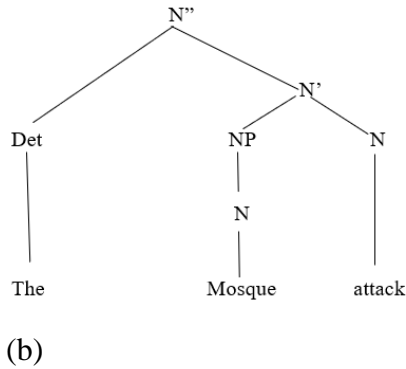
This NP would have a tree diagram like the one given in (32).

(32)



As seen from the above structure, the Det *a* expands the N' *successful boy* into N'', whereas the AP *successful* expands the N' *boy* into another N'. What is interesting about this expansion is that it is recursive. This type of adjective phrase is an attribute, functionally speaking. To see the difference between complements and attributes, consider the following examples.

(33) (a)



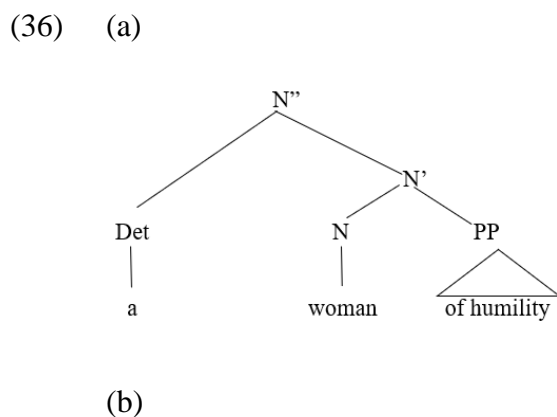
It can be said that *Mosque* is a complement since it expands N into N', while *public* is an attribute, for it expands N' into another N'. Thus, a complement modifies the head N, whereas an attribute modifies N'. Moreover, attributes differ from complements in that attributes occur farther from their head N than complements, as shown in (34).

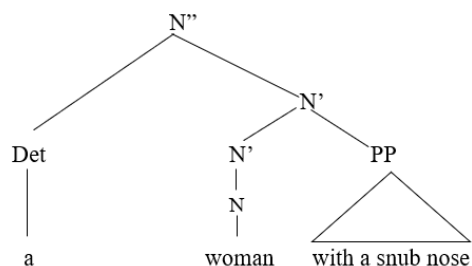
- (34) (a) *The public mosque attack*  
 (b) \**The mosque public attack*

Having seen the difference between determiners and APs and between attributes and complements, let us move to consider the structural difference between complements and adjuncts. To illustrate this, consider (35) below.

- (35) (a) *a woman of humility*  
 (b) *a woman with a snub nose*

The constituent structures for these NPs are given in (36) (a) and (36) (b), respectively.





The PP *of humility* in (36) (a) expands N into N' and hence is the sister of the head N *woman*; in other words, N and PP are both immediate constituents of N'. Conversely, the PP *with a snub nose* in (36) (b) recursively expands N' into another N' and hence is the 'aunt' of the head N *woman* (i.e., the sister of the mother of N). It is important to note that nothing may be inserted between an N and its complement, while adjuncts can be separated from their head N, as in the following examples.

(37) (a) *a woman of humility who is respected (by people)*

(b) *\*a woman who is respected (by people) of humility*

(38) (a) *a woman with a snub nose who is respected (by people)*

(b) *a woman who is respected (by people) with a snub nose*

It can be deduced from the above that the complement *of humility* cannot be separated from its head N without affecting the grammaticality of the sentence, whereas the adjunct *with a snub nose* can be separated from its head N *woman* without affecting the grammaticality of the sentence. Furthermore, when both complements and adjuncts co-occur in the same sentence, complements always come closer to their head N than adjuncts, as can be seen from (39).

(39) (a) *a woman of humility with a snub nose*

(b) *\*a woman with a snub nose of humility*

### 2.3.2 Constraining Categorical Rules

Another advantage of X-bar syntax is that it provides us with more restricted categorial rules. As shown in the preceding section, sentences can be generated by PS rules like those given in (40).

(40) (a)  $S \rightarrow NP \ VP$

(b)  $VP \rightarrow V \ (NP) \ (PP)$

(c)  $NP \rightarrow (Det) \ (AP) \ N \ (PP)$

One might say that PS rules are unconstrained in that VP contains an obligatory V, NP contains an obligatory N, and so on and so forth. Linguists prefer to use the cross category to represent any word level category, and the nodes before and after the X to represent any modifier that can occur with the head X. Thus, PS rules shown in (40) above would be reduced to the following formula.

(41)  $XP \rightarrow \dots X \dots$

This rule does not account for the clausal category S; rather, it accounts for phrasal expansions. However, such a formula has the same form as the traditional PS rules. So, let us see how X-bar syntax can present generalized categorial rules. This it does as follows:

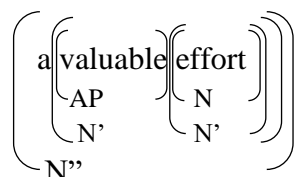
- (42) (a)  $X' \rightarrow \dots X \dots$   
 (b)  $X'' \rightarrow \dots X' \dots$   
 (c)  $X''' \rightarrow \dots X'' \dots$   
 (d) Etc.

These classificatory rules can be collapsed into one rule, via (43).

(43)  $X^n \rightarrow \dots X^{n-1} \dots$

Still, this rule is deficient since it does not account for recursion and coordination. As said before, an attribute recursively expands  $N'$  into  $N'$ .

(44)

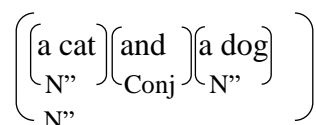


It is worth noting that this bracketed schema is similar to the other structures: P markers. Thus, the rule generating this phrasal projection would be as follows:

(45)  $N' \rightarrow \dots N' \dots$

The second point to note is that when two categories are coordinated, they have the same category as the conjunct.

(46)



So, this phrasal expansion is generated by formula (47).

(47)  $N'' \rightarrow N'' - \text{Conj} - N''$

To overcome these problems, (43) will have to be revised to (48).

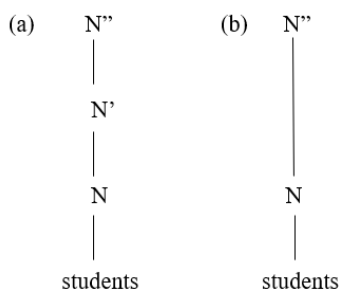
(48)  $X^n \rightarrow \dots X^m \dots$  (where  $m = n$ , or  $n-1$ )

But this rule is not without limitations. Radford (1988) argues that in a sentence like:

(49) *Some people think students are parasites.*

the NP *students* could have either structure (50) (a) or (50) (b).

(50)



Therefore, he asserts that the rule (48) would have to be revised as:

(51) Endocentricity Constraint (revised)

All Constituent Structure Rules are of the form:

$X^n \dots X^m \dots (n \geq m)$

So far, it has been argued that X-bar syntax provides constrained rules that generate all the well-formed structures of English, and that PS grammar has proved to be deficient in this regard.

### 3. Noun Modification

#### 3.1 Introduction

What this chapter aims to do is explore some of the noun modifiers in English. It is divided into two sections. The first section will primarily deal with the distinction between predeterminers and determiners, determiners and premodifiers (chiefly nominal premodifying APs), prenominal APs and prenominal NPs, and finally complements and attributes. The second section will in the first place be concerned with the difference between complement clauses and adjunct clauses, and between complement PPs and adjunct PPs.

#### 3.2 Prenominal Modification

##### 3.3.1 Types of Prenominal Modifiers

Before moving on to look at the difference between nominal premodifiers, it is crucial to display some of the major nominal premodifiers. Burton-Roberts (2016) argues that within the structure of an NP, three kinds of elements can appear to the left of the head noun, notably predeterminers, determiners, and premodifying phrases like APs, NPs, and AdvPs.

To begin with, predeterminers are elements that precede determiners, and so they occur in the leftmost position in an NP. Strang (1968) calls them “NP-initiators”. Examples of predeterminers are *all*, *both*, *half*, *what*, and *such*, as seen in (1) below.

- (1) (a) all the teenagers  
(b) both these pens  
(c) half the melon

As pointed out by Selkirk (1977), a determiner either immediately precedes the head noun or is separated from it by an adjective phrase, as in *some rich individuals* (Selkirk, 1977). But this does not mean that only an AP can occur between a determiner and the head noun; rather, an AdvP and NP can occur between a determiner and the head noun, as will be seen later on. Some examples of determiners are the definite article *the*, the indefinite article *a/an*, and demonstrative adjectives/determiners (*this*, *these*, *that*, and *those*). By way of illustration, consider the following NPs.

- (2) (a) an arrogant lady  
(b) a nostalgic person  
(c) the black shirt  
(d) this ugly cat

Premodifying APs, NPs, and AdvPs are constituents that precede the head noun and follow a determiner. Baker (1978) contends that prenominal adjectives can be between a determiner and a noun in this context. Consider the following NPs as examples.

- (3) (a) *a crazy neighbour*  
(b) *a ferocious soldier*
- (4) (a) *a science teacher*  
(b) *an Oxford dictionary*
- (5) (a) *the then owner of the house*  
(b) *the down street*

It is worth noting here that unlike prenominal APs and prenominal NPs, prenominal AdvPs can premodify the head noun only when they comprise one word, i.e., the head adverb, as Aarts and Aarts (1982) point out. To clarify this point, consider the following contrasts.

- (6) (a) *a very ferocious soldier*  
(b) *\*the very then owner of the house*
- (7) (a) *an invaluable science teacher*  
(b) *\*the very down street*

An important question to ask is what is the function of the prenominal modifiers? The answer to this question is provided by Berry (1975), who asserts that a modifier or premodifier is any word which occurs before the head word, modifies, qualifies, describes, or identifies it. After going over some of the basic nominal premodifiers, their distribution and function, the distinction between predeterminers and determiners will now be discussed.

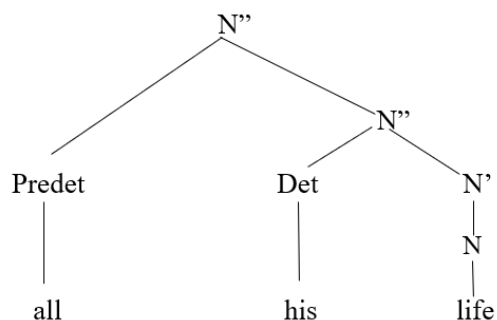
### 3.2.2 Predeterminers and Determiners

As mentioned in the previous subsection, a Predet comes before a Det, whereas a Det occurs before a premodifier (AP, NP, or AdvP) or an N when this latter is unaccompanied. By way of example, consider the NP in (8) below.

- (8) *all his life*

(8) says that *all* predetermines *his life* and hence is the sister of it. So, while the Predet *all* is the sister of his life, the Det *his* is the sister of *life*. This distinction is reflected in the following P marker.

- (9)



This tree diagram is an amalgamation of two P markers, namely the P marker of Radford (1988) and that of Burton-Roberts (2016), i.e., the node Predet substitutes for the node QP. (9) amounts to saying that the N' *life* is expanded into N'' by the addition of the Det *his*, and that the N'' *his life* is expanded into another N'' by the addition of the Predet *all*. This raises a number of structural distinctions between the Predet *all* and the Det *his*. First, the Predet *all* modifies the N'' *his life*, whereas the Det *his* modifies the N' *life*. Second, the Predet *all* is the daughter and sister of N'', while the Det *his* is the daughter of N'' and sister of N'. Therefore, the Predet *all* is like the Det *his* in the sense that it is the daughter of N'', but it differs from it in that it is the sister of N''. In this connection, Burton-Roberts (2016) states that a predeterminer should be represented as the sister of a NP as a whole. Third, if the phrase structure rules that generate the structure (9), given in (10) below, is considered,

- (10) (a) N'' → Predet N''  
 (b) N'' → Det N'  
 (c) N' → N

it can be found that the rule whereby N'' is expanded into N'' by the addition of the Predet is recursive, whereas the rule whereby N' is expanded into N'' by the addition of Det is not recursive.

One might suspect that predeterminers precede determiners. Indeed, one of the most conclusive proofs that supports the fact that predeterminers appear to the left of determiners comes from word order facts. For instance, consider the following contrasts.

- (11) (a) *what a crafty painter*  
 (b) \**a what crafty painter*  
 (12) (a) *all the researchers*  
 (b) \**the all researchers*  
 (13) (a) *half the pear*  
 (b) \**the half pear*

As noticed from the above contrasts, the (a) phrases are well-formed, whereas the (b) phrases are ill-formed. That is, the noun phrase where the determiner follows the predeterminer is grammatical, while the noun phrase where the determiner precedes the predeterminer is ungrammatical. The question asked is why are the (a) phrases grammatical while the (b) phrases are ungrammatical? The answer is that the (a) phrases are grammatical since they obey the principle given below, while the (b) phrases are ungrammatical as they violate this principle.

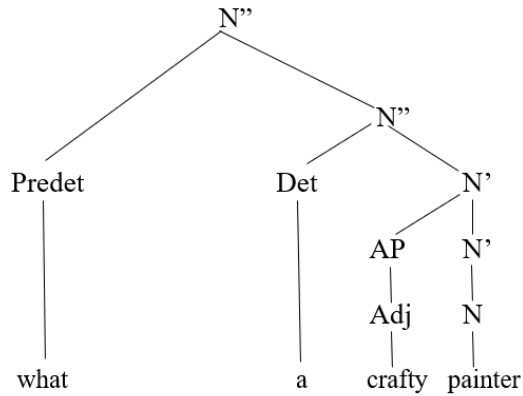
If one node X precedes Y, then X and all descendants of X must precede Y and all descendants

of Y (A is a descendant of B iff [if and only if] A is dominated by B (Radford,1988, p.21)

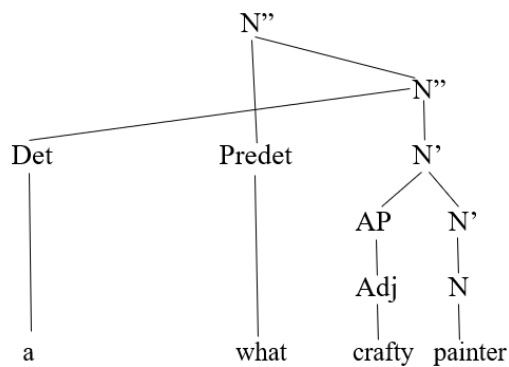
To illustrate, contrast (14) (a) to (14) (b).

- (14) (a)





(14) (b)



If the above tree diagrams are looked at closely, it can be found that (14) (a) is well-formed because it comprises no crossing branches, while (14) (b) is ill-formed because it has crossing branches. Also, taking into account the fact that predeterminers modify full NPs while determiners modify N-bars, we can say that determiners must occur to the right of predeterminers. Having shown the difference between predeterminers and determiners, the focus will now shift to another distinction, the distinction between determiners and premodifying APs.

### 3.2.3 Determiners and Premodifying APs

Since the concern of this subsection is to display the distinctions between determiners and premodifying APs, predeterminers will not be referred to. An NP that consists of a Det, AP, and N can be generated by such PS rules as:

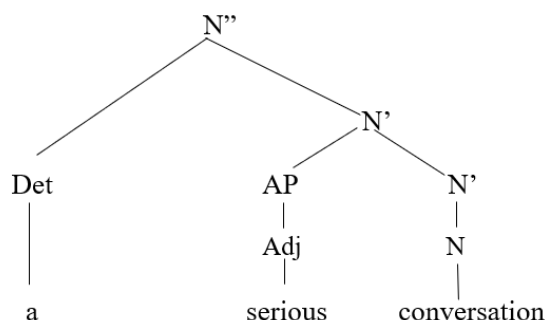
- (15) (a)  $N'' \rightarrow Det N'$
- (b)  $N' \rightarrow AP N'$
- (c)  $N' \rightarrow N$

On the basis of the above rules, the NP given in (16) below.

(16) *a serious conversation*

would be visually represented in (17) below.

(17)



A tree diagram such as (17) seems to suggest that the AP *serious* expands the N' *conversation* into *serious conversation*, while the Det *a* expands the N' *serious conversation* into the N'' *a serious conversation*. This shows that while the Det *a* is the sister of N' and the daughter of N'', the AP *serious* is both the sister and daughter of N'. So, the Det *a* is like the AP *serious* in that it is the sister of N', but differs from it in that it is the daughter of N''. It also means that whereas the rule whereby N' is expanded into N'' by the addition of the Det is not recursive; in other words, the node N' does not occur on both sides of the arrow, the rule whereby N' is expanded into another N' by the addition of the AP is recursive. Radford (1988) points out that when the rule generating a given node is recursive, it means that the node in question can co-exist with other nodes of the same category indefinitely many times. So, determiners cannot co-occur in the same environment in that the rule generating them is not recursive; on the contrary, premodifying APs can co-occur in the same environment indefinitely many times, for the rule generating them is recursive. With reference to this, Culicover (1982) alludes to the fact that unlike determiners, an indefinite number of APs can occur within an NP. Consider by way of example the contrast in (18) below.

- (18) (a) *a clumsy silly funny person*  
 (b) \**this a the that person*

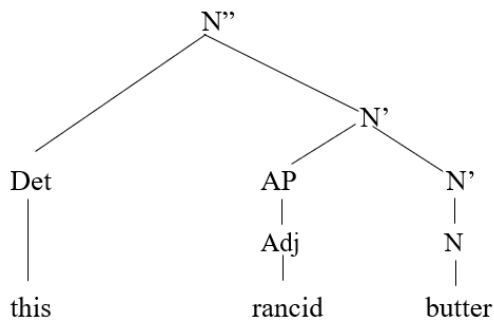
Thus, this contrast goes in favour of the distinction drawn between a determiner and adjective phrase in (18).

A second argument comes from word order facts. As mentioned before, an AP must follow a Det. This shows that an AP is more closely linked with its head N than a Det. By way of illustration, compare (19) (a) with (19) (b).

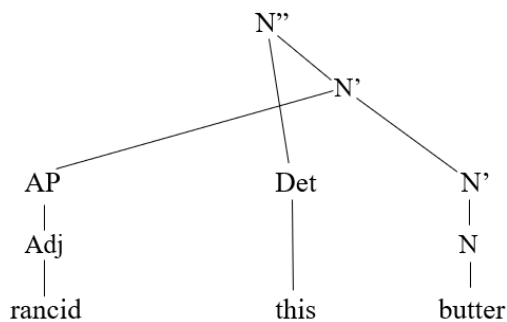
- (19) (a) *this rancid butter* (Det + AP + N)  
 (b) \**rancid this butter* (AP + Det + N)

The grammaticality of (19) (a) follows from the fact that it complies with the above-mentioned "no crossing branches constraint", whereas the ungrammaticality of (19) (b) follows from the fact that it does not comply with this principle. To illustrate, consider (20) (a) and (20) (b).

- (20) (a)



(20) (b)



(20) (a) is well-formed because it does not have any crossing branches. On the contrary, (20) (b) is ill-formed, as it comprises crossing branches.

A third argument can be formulated in relation to ordinary coordination. Given the fact that only similar constituents can be coordinated, it can be said that it is possible to conjoin two determiners, as in (21) below:

(21) *my and your friend*

As shown in (22) below, two adjective phrases can also be conjoined.

(22) *this malicious and crafty woman*

A determiner, on the other hand, cannot be coordinated with an adjective phrase because they are realized by completely different categories. In other words, since determiners and adjective phrases are not identical constituents, they cannot be coordinated without incurring ungrammaticality, as (23) shows.

- (23) (a) *\*every and graceful lady*  
 (b) *\*that and beloved gentleman*  
 (c) *\*spontaneous and his knowledge*

A fourth argument stems from the fact that within a premodifying AP, the head adjective can be premodified by an AdvP, as alluded by Baker (1978), whereas a Det cannot be premodified, as in

(24) below:

(24) (a) *a very handsome teenager*

(b) *that fairly clever person*

However, one might suspect the claim that determiners cannot be premodified, since one might suggest that determiners can be premodified by predeterminers. This assumption, in actual fact, is incorrect. For predeterminers do not modify determiners, but rather they premodify full NPs. For instance, Burton-Roberts (2016) asserts that a predeterminer should be represented as the sister of an NP in the NP as a whole. That is to say, the predeterminer determines the full NP, but not part of the constituent, i.e., the Det.

A last argument comes from selection restrictions phenomena. As Radford (1988) points out, there are severe restrictions on the kind of nouns to whose left APs can appear, whereas determiners can occur to the left of whatever head N. Consider, for example, the subsequent contrast.

- (25) (a) *a talkative man/? window/? pen*<sup>1</sup>  
(b) *the man/ window/pen*

By the same token, determiners have to agree with head nouns in number, as shown in (26).

- (26) (a) *the woman /women /freedom*  
(b) *a man/ \*men / \*freedom*  
(c) *these \*man/men/ \*freedom*

Contrariwise, prenominal APs must not agree with their head N in number, as we see in (27).

- (27) (a) *crafty typewriter*  
(b) *crafty typewriters*  
(c) *desirable liberation*

As seen in the examples above, prenominal APs can premodify any type of head noun, whether it is singular, plural, or non-count. After confirming the claim that determiners differ from prenominal APs, the distinction between prenominal APs and prenominal NPs will be examined.

### 3.2.4 Prenominal APs and Prenominal NPs

Before moving on to look at the difference between prenominal APs and prenominal NPs, it is important to explore some of the similarities found between them so as to show that the difference between determiners and prenominal APs is similar to that found between determiners and prenominal NPs.

First of all, because prenominal APs have the same function as prenominal NPs, that is, they function as attributes, the former can substitute for the latter. Consider the following noun phrases as an example.

- (28) (a) *Morocco leather*  
(b) *Moroccan leather*  
(29) (a) *a gold watch*  
(b) *a golden watch*

---

<sup>1</sup> The question mark used in (25) (a) stands for the unacceptability of the NP concerned.

Finally, saying that the rules generating attributive APs and attributive NPs are recursive

(a)  $N' \rightarrow AP \ N'$  [Attribute Rule: optional]

(b)  $N' \rightarrow NP \ N'$  [Attribute Rule: optional]

means that they can occur in sequence with each other in any order. Let us compare (30) (a) and (30) (b).

(30) (a) *the authentic Arab horse*

(b) *the Arab authentic horse*

(30) seems to say that the NP *Arab* can appear either to the left or to the right of the AP *authentic*. It also means that like attributive APs, attributive NPs can co-occur with each other within an NP indefinitely many times, as shown in the following examples.

(31) (a) *a generous faithful person*

(b) *an intelligent generous faithful person*

(32) (a) *a wood floor*

(b) *a club wood floor*

For this reason, Radford (1988) suggests that the categorial rules presented above can be fused into a single rule like the following.

$N' \rightarrow [+NP] \ N'$  [Attribute Rule: optional]

By the phrasal supercategory [+NP], Radford (1988) means the feature that is shared by both attributive APs and attributive NPs. In light of the above discussion, it can be deduced that the difference between determiners and attributive APs, discussed in the preceding subsection, is equivalent to that between determiners and attributive NPs. However, this does not mean that they should not be thought of as being different. While attributive APs can be realized by such words as *hot*, *successful*, and *strong*, attributive NPs can be realized by words like *heat*, *success*, and *strength*. Moreover, as stated by Burton-Roberts (2016), while an N can be premodified by an AP within the attributive NP, an adjective can be premodified by an AdvP within the attributive AP. Consider, by way of example, (33) (a) and (33) (b).

(33) (a) *a very patient person*

(b) *an old patient*

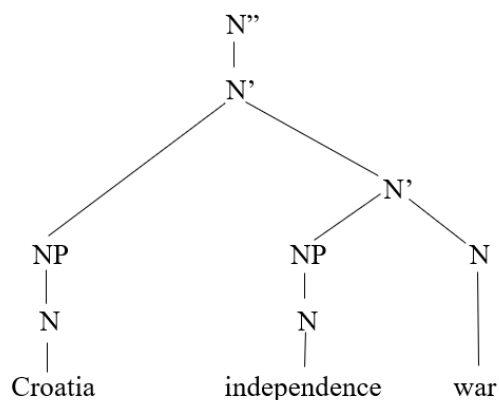
After briefly presenting the relationship between attributive APs and attributive NPs, let us now move to the distinction between attributes and complements.

### 3.2.5 Complements and Attributes

In the last subsection, complements were not discussed; rather, the main concern was with the examination of attributes. The question raised here is what is the difference between complements and attributes? Matthews (1996) distinguishes between two types of dependents, notably complements and attributes. For him, a complement is a ‘completing’ element, that is, an element which is essential, whereas an attribute is a ‘non-completing’ element. So, let us see how this distinction is manifested in the X-bar framework. An NP such as (34) below would have the structure given in (35).

(34) *Croatia independence war*

(35)

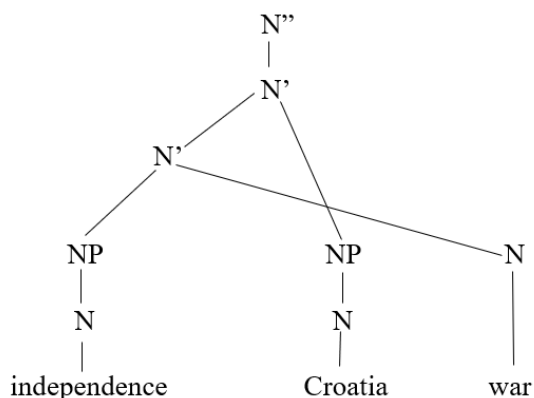


It seems from the above P marker that the NP *Croatia* modifies the N' *independence war*, while the NP *independence* modifies the head N *war*. More precisely, the NP *Croatia* is the sister and daughter of N', whereas the NP *independence* is the sister of N and daughter of N'. So, *Croatia* is similar to *independence* in the sense that it is the daughter of N'. But it differs from it in the sense that the former is the sister of N', while the latter is the sister of N. Given the fact that only attributes can recursively expand N' into N', it can be inferred that the NP *Croatia* is an attribute. Moreover, it follows from the fact that only complements can expand the head N into N' that the NP *independence* is a complement. A relevant question to ask is whether there is any empirical evidence for differentiating complements from attributes. The bulk of evidence that complements are different from attributes is distributional in nature. Taking into account the fact that complements modify the head N whereas attributes modify the N', it can be said that complements are more closely linked to their head N than attributes. Consider (36) (a) and (36) (b).

- (36) (a) *Croatia independence war*  
(b) \**independence Croatia war*

The well-formedness of (36) (a) follows from the fact that it obeys the 'no crossing branches' condition, whereas the ill-formedness of (36) (b) derives from the fact that it permits two of its branches to cross (see (37) below).

(37)



Another piece of evidence is related to pronominalisation phenomena. As seen before, the pro-form *one* can only replace full constituents- that is, N'. Consider the following examples.

- (38) (a) *which Croatia independence war?*  
*the one in Yugoslavia*  
 (b) *which independence war?*  
*the Croatia one*  
 (c) *\*which war?*  
*the Croatia independence one*

The grammaticality of (38) (a) follows from the fact that the pro-form *one* replaces the N' *Croatia independence war*, and hence it is a pro-N'. In much the same way, the grammaticality of (38) (b) stems from the fact that the pro-form *one* substitutes for the N' *independence war*, and so it is a pro-N'. Contrariwise, the ungrammaticality of (38) (c) derives from the fact that the pro-form *one* refers to a non-constituent, notably the N *war*. Thus, the difference between the complement NP *independence* and the attributive NP *Croatia* lies in that the former cannot appear to the left of the pro-form *one*, because it is part of the pro-formed constituent, that is, part of the N' *independence war*, whereas the latter can occur to the left of the pro-form *one*, since it is not part of the pro-formed constituent.

Facts about ordinary coordination provide another piece of evidence. To begin with, two complement NPs can be coordinated by virtue of the fact that they are identical, as in (39) below.

- (39) *the self-determination and independence war*

Two attributive NPs can be conjoined in the same way because they are similar, as seen in (40) below.

- (40) *the Georgia and Croatia war*

Yet, a complement NP cannot be conjoined with an attributive NP, because they are dissimilar, as the ungrammaticality of (41) below illustrates.

- (41) *\* the Croatia and independence war*

Following this brief analysis of the difference between prenominal modifiers, employing the X-bar analysis and syntactic diagnostics such as distribution, pronominalisation, and coordination, the focus will now shift to the difference between some of the major postnominal modifiers, which will be examined using the same analysis as before.

### 3.3 Postnominal Modification

#### 3.3.1 Types of Postnominal Modifiers

Quirk and Greenbaum (1973) state that there are two kinds of postnominal constructions: phrasal and clausal. The phrasal constructions are of three types: prepositional phrases, adjectival phrases, and adverbial phrases. The clausal constructions can be divided into finite and non-finite clauses. To illustrate, consider the following examples.

- (42) (a) *the shirt in the suitcase*  
 (b) *a person, abusive and deceitful, is never trusted*  
 (c) *the bus outdoors*

When the postnominal modifiers in the examples above are examined closely, it can be seen that each of them occurs to the right of its head N and postmodifies it. What is of interest here is that adjectival phrases rarely function as postmodifiers of nouns (see (46) below).

- (43) (a) \**a cake creamy*  
 (b) \**water pure*  
 (c) \**a husband clumsy*

Quirk (1973) states that an AP can postmodify an N in terms of three cases: (a) if the modifier N is an indefinite pronoun, (b) if a sequence of coordinated APs non-restrictively modify the head N, and (c) if the postmodifying AP is itself modified by an adjunct not an intensifier, *very*. The fourth condition under which an AP can postmodify an N is when it takes place in a marked (i.e., exceptional) construction, as pointed out by Radford (1988). Consider by way of illustration the following sentences.

- (44) (a) *somebody cruel could have slapped that person*  
 (b) *the child, nervous and noisy, broke a cup*  
 (c) *a student always ambitious realises his wishes*  
 (d) *Adam has never gone to the court martial*

A relevant point to bear in mind is that the phrasal postnominal modifiers are reduced clauses. To clarify this point, compare the following sentences.

- (45) (a) *the tree there is fruitful*  
 (b) *the tree which is there is fruitful*  
 (46) (a) *the student, lazy and indifferent, fails the exam*  
 (b) *the student who is lazy and indifferent fails the exam*  
 (47) (a) *a work on Syntax needs much patience*  
 (b) *a work which is on Syntax needs much patience*

In the examples above, each phrasal nominal postmodifier has its clausal counterpart. But this does not mean that all phrasal postmodifiers have their clausal analogues, especially postnominal PPs. For instance, Liles (1975) proposes that there are exceptional cases in which postnominal PPs have no relative clause counterparts, as illustrated in the following examples.



- (48) (a) *the owner of the house*  
 (b) *\*the owner who is of the house*
- (49) (a) *the cause of famine*  
 (b) *\*the cause which is of famine*
- (50) (a) *the reason behind violence*  
 (b) *\*the reason which is behind violence*

In contrast to the phrasal nominal postmodifiers, the clausal nominal postmodifiers appear to the right of the head N and so postmodify it, as shown in (51) below.

- (51) (a) *the building which Ahmed bought last Monday is large*  
 (b) *the boy playing with the bicycle is my brother-in-law*  
 (c) *the first baby to bear was a girl*

In this subsection, postnominal modifiers were presented in general so as to explore the different types of postnominal modification in English. The emphasis in the next subsections will be on the distinction between complement clauses and adjunct clauses, as well as between complement PPs and adjunct PPs.

### 3.3.2 Complement Clauses and Adjunct Clauses

Radford (1988) considers that postnominal complements are characterized by the use of PPs and clauses, particularly appositive clauses, whereas postnominal adjuncts are specified by the use of PPs, NPs, APs, and restrictive relative clauses. For instance, consider (52) and (53) respectively.

- (52)
- (a) the beauty<sub>PP</sub> [of life] (Complement PP)
- (b) the theory<sub>S'</sub> [that syntax is autonomous] (complement clause)
- (53)
- (a) a watch<sub>PP</sub> [from Japan] (Adjunct PP)
- (b) the death of Bill<sub>NP</sub> [yesterday] (Adjunct NP)
- (c) the father of Bob<sub>AP</sub> [proud of his house] (Adjunct AP)
- (d) the daughter of Mary<sub>Adjunct Clause</sub> [who wandered last week] (Adjunct Clause)

One might at first glance suggest that relative clauses are like appositive clauses. This, in fact, is wrong, as there is a number of differences between them.

Quirk (1973) says that the appositive clause differs in that the particle *that* is not an element in the clause structure (subject, object, etc.) as it must be in a relative clause. That is to say, in a relative clause, *that* can function as a subject, object, etc., as in (54).

- (54) (a) *the toy that Farid plays with is very expensive*  
 (b) *Dick likes people who are humble*  
 (c) *Ernest talks with girls who are serious*

Conversely, the particle *that* in appositive clauses does not have such functions, as the example in (55) shows.

- (55) *the proposition that women are like men*

To support this distinction, Liles (1975) asserts that the particle *that* can be omitted from the appositive clauses without causing ungrammaticality, while it cannot be omitted in a relative clause. For example, contrast (56) and (57).

- (56) (a) *the thought that men are nasty is ridiculous*  
 (b) *men are nasty*  
 (57) (a) *the thought that he expressed is wise*  
 (b) *\*he expressed*

It can be deduced from the contrast above that the particle *that* in (56) can be deleted without affecting the completeness of the sentence, whereas the relative pronoun *that* in (57) cannot be deleted without affecting this completeness.

The difference between relative and appositive clauses is that, whereas relative clauses freely permit *who* and *which*, as well as *that* under certain conditions, noun clauses (appositive clauses) allow only *that* (Liles, 1975). In other words, *that* can substitute for *which* in (58) (a), but not in (58) (b).

- (58) (a) *the thought that / which he expressed is ridiculous*  
 (b) *the thought that /\*which she is pregnant disturbs Ann*

Relative clauses also differ from appositives in that relative clauses can modify nouns with any determiners, and the nouns can be either singular or plural, whereas noun clause appositives follow only singular nouns that have the determiner *that* (Liles, 1975). Consider the contrasts below.

- (59) (a) *a proposition that he said was logic*  
 (b) *\*a proposition that talkative people are unbearable is logic*  
 (60) (a) *Simon suggests some ideas that are arbitrary*  
 (b) *\*Simon suggests some ideas that some wives are greedy*

Moreover, Quirk (1973) and Liles (1979) agree that relative clauses can qualify any kind of nouns, while appositive clauses can only qualify factive abstract nouns, namely *fact*, *proposition*, *idea*, *belief*, *remark*, *answer*, and the like.

Besides, Quirk (1973) claims that the copular verb *be* can be connected with the apposed constituents, as evidenced by (61) below.

- (61) (a) *the belief that smoking is harmful is neglected*  
 (b) *the belief is that smoking is harmful.*

On the contrary, the copular verb *be* cannot be placed between the head N and the relative clause, as in (62) below.

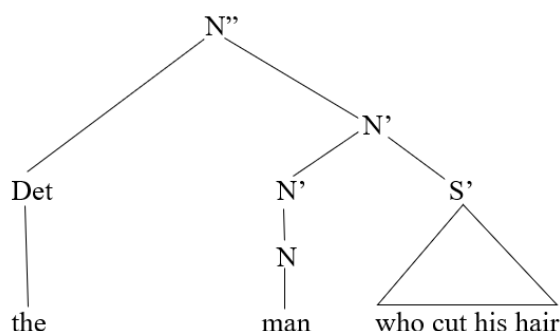
- (62) (a) *the book that Mike reads is very old*  
 (b)\**the book is that Mike reads*

Now, let us see how the difference between complement clauses (appositives) and adjunct clauses (relative clauses) is reflected in X-bar analysis. The P marker of the following NPs,

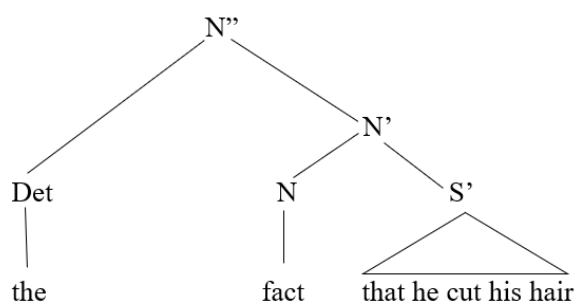
- (63) (a) *the man who cut his hair*  
 (b) *the fact that he cut his hair*

would be given in (64) (a) and (64) (b) respectively.

(64) (a)



(64) (b)



(64) (a) is different from (64) (b) as far as the embedded (i.e., the lower) sentences are concerned. In (64) (a), the relative clause *who cut his hair* is the sister and daughter of N', whereas in (64) (b), the appositive clause *that he cut his hair* is the sister of N and daughter of N'. Thus, *who cut his hair* resembles *that he cut his hair* in that it is the daughter of N' but the former differs from the latter in that it is the sister of N', while the other is the sister of N. This shows that while *who cut his hair* modifies an N', *that he cut his hair* modifies an N. It also means that while the modified noun *man* in (64) (a) is both an N and an N', the head noun *fact*

in (64) (b) is only a N. Yet, one might feel sceptical about the validity of the distinction provided by (64).

First, let us approach this by considering Quirk's (1973) statement that deverbal nouns like *belief* may be replaced by the corresponding verb + object clause. In other words, we can substitute factive nouns like *thought*, *proposition*, and *answer* for their verbal analogues, notably *think*, *propose*, and *answer*.

This gives the following pairs.

- (65) (a) *the thought that Mary is lazy bothers her*  
(b) *he thinks that Mary is lazy*
- (66) (a) *the proposition that Roger succeeded is wrong*  
(b) *he proposed that Roger succeeded*
- (67) (a) *the answer that Susan has got three children is true*  
(b) *he answers that Susan has got three children*

Second, it is possible to conjoin two complement clauses since they are equivalent.

(68) *the claim that the earth is round and that it revolves around the sun*

Similarly, because two adjunct clauses are identical, they can be coordinated, as in (69).

(69) *the girl who failed the exam and who fainted yesterday*

However, a complement clause and an adjunct clause cannot be conjoined because they are different constituents, as evidenced by the ungrammaticality of (70).

(70) *\*the claim that the earth is round and which is plausible*

Lastly, a constituent can be replaced by the pro-form *one* without affecting the relative clause attached to the constituent in question, but a constituent cannot be replaced by *one* without affecting the appositive clause related to the constituent concerned. By way of illustration, consider the contrast given in (71) below.

- (71) (a) *the man who punished his son and the one who punished his student*  
(b) *\*the idea that people should not smoke in public and the one that children should not speak with strangers*

It appears from the contrast above that (71) (a) is grammatical because the pro-formed constituent *man* is an N', whereas (71) (b) is ungrammatical because the pro-formed sequence is only an N. In other words, the grammaticality of (71) (a) arises from the fact that *who punished his student* modifies a pro-N', while the ungrammaticality of (71) (b) stems from the fact that *that children should not speak with strangers* modifies a pro-N.

In light of what has been said so far, it can be said that complement clauses are different from adjunct clauses. Let us now turn our attention to a related topic, the distinction between complement PPs and adjunct PPs.

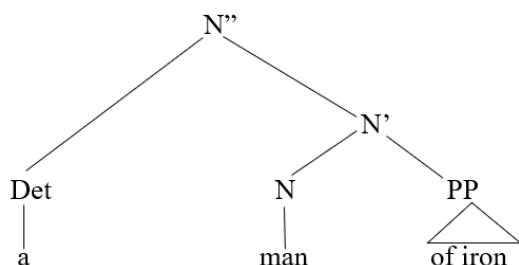
### 3.3.3 Complement PPs Versus Adjunct PPs

By way of example, consider the following NPs.

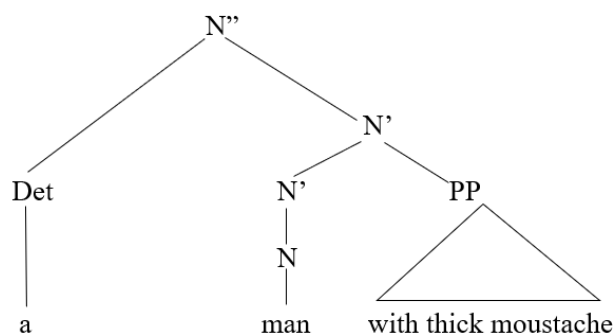
- (72) (a) *a man of iron*  
 (b) *a man with thick moustache*

(72) (a) and (72) (b) would have the structures (73) (a) and (73) (b) respectively.

- (73) (a)



- (73) (b)



(73) seems to suggest that the PP *of iron* in (73) (a) expands N into N', and so it is a complement. On the other hand, the PP *with thick moustache* in (73) (b) expands N' into N'. This shows that *of iron* is the sister of N and daughter of N', while *with thick moustache* is both the sister and the daughter of N'. Thus, *of iron* is like *with thick moustache* in that they are both daughters of N', but it is unlike *with thick moustache* in that while *of iron* is the sister of N, *with thick moustache* is the sister of N'. It also shows that the complement PP *of iron* modifies the head N *man*, whereas the adjunct PP *with thick moustache* modifies the N' *man*. So, the sequence *man* in (73) (a) is only assigned N, whereas in (73) (b) it is assigned N and N'. Of more interest is the question whether there are any arguments in favour of the structural distinction between complement PPs and adjunct PPs. Actually, there is plenty of evidence in favour of the aforementioned distinction.

First, within an NP the one-substitution must affect complement PPs but not necessarily adjunct PPs, as mentioned by Haegeman and Wekker (2002).

To explain, in an NP like the following,

- (74) *the collection of money in the bank*

the pro-form *one* can substitute for the N' *collection of money* without affecting grammaticality, but it cannot substitute for the N *collection*, as the following contrast shows.

- (75) (a) *the collection of money in the bank and the one in the factory*  
 (b) *\*the collection of money in the bank and the one of letters in the post office*

Second, N complements, unlike adjuncts, correspond to V complements.

- (76) (a) *a representative of actors*  
 (b) *he represents actors*  
 (87) (a) *a representative with a scanty beard*  
 (b) *\*he represents a scanty beard*

However, this does not rule out the possibility of distinguishing between N and V complements. Noun complements, unlike V complements, are syntactically optional (Haegeman & Wekker, 2002). (78) and (79) are examples of this.

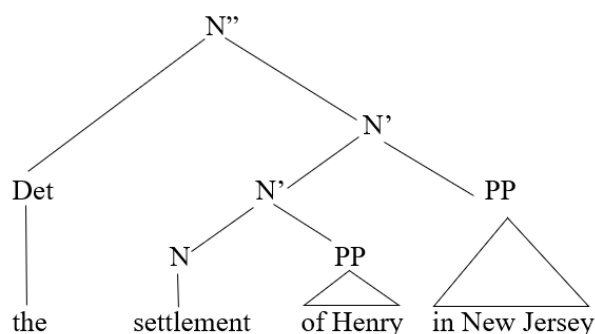
- (78) (a) *their claim for independence was rejected*  
 (b) *their claim was rejected*  
 (79) (a) *they claim for independence*  
 (b) *\* they claim for*

Third, Haegeman and Wekker (2002) state that nouns, like verbs, take a complement, and this complement (here realized by PP) is much more closely linked to the N than the modifiers (adjuncts). Consider the following contrast as an example.

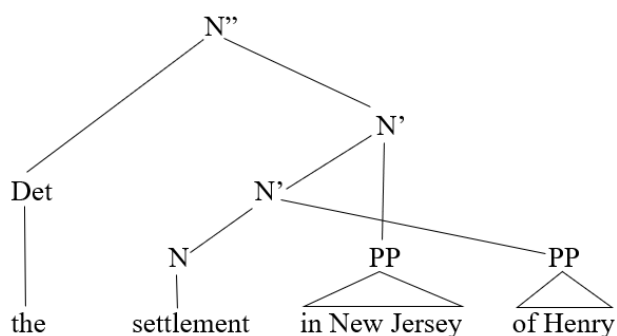
- (80) (a) *the settlement of Henry in New Jersey*  
 (b) *\*the settlement in New Jersey of Henry*

Consider their structures in (81) (a) and (81) (b), respectively, to show why (80) (a) is well-formed, while (80) (b) is ill-formed.

(81) (a)



(81) (b)



(81) amounts to saying that (80) (a) is grammatical in that it conforms to the “no crossing branches” principle, whereas (80) (b) is ungrammatical in that it does not comply with the “no crossing branches” constraint. This confirms that complement PPs must occur to the left of the adjunct PPs. In a similar way, Jackendoff (1997) states that we cannot account for the ungrammaticality of *the King from France of England* and the grammaticality of *the King of England from France* without taking into account the fact that *of England* is a complement and *from France* is an adjunct.

Fourth, while complement PPs cannot occur in sequence with each other in an NP, an indefinite number of adjunct PPs can occur together in the same environment. Radford (1988) imputes this difference to the fact that while the rule generating complement PPs given in (a) below is non-recursive, the rule generating adjunct PPs given in (b) is recursive.

(a)  $N' \rightarrow N \quad PP$  [Complement Rule: optional]

(b)  $N' \rightarrow N' \quad PP$  [Adjunct Rule: optional]

To make this clear, compare (86) (a) and (86) (b):

(82) (a) *\*a woman of fashion of modernism*

(b) *a woman with black boots with black scarf in the red car*

Fifth, a complement can be coordinated with another complement, as in (83).

(83) *a woman of fashion and of modernism*

Similarly, an adjunct PP can be conjoined with another adjunct PP.

(84) *a girl with old shoes and with dirty clothes*

The grammaticality of (83) and (84) follows from the fact that in each of them the conjoined constituents are equivalent. Yet, complement PPs cannot be coordinated with adjunct PPs, as the ungrammaticality of (85) below shows.

(85) (a) *\*a woman of modernism and with dirty clothes*

(b) *\*a woman with old shoes and of fashion*

It seems from the examples above that *of modernism* in (85) (a) is adjacent (i.e., attached) to an N node, whereas *with dirty clothes* is adjacent to an N'; therefore, (85) (a) is ungrammatical. Likewise, (85) (b) is ill-formed because the PP *with old shoes* is adjacent to an N', whereas the PP *of fashion* is adjacent to an N. Thus, the ungrammaticality of (85) derives from the fact that it does not conform to the principle that “only constituents attached to the same level can be coordinated” (Radford, 1988, p.190).

Furthermore, the fact that a complement PP is nearer to its head N than an adjunct explains why its movement is impossible. To put it another way, the closer a PP is to its head, the less freely it can be extraposed (Radford, 1988). Consider the following contrast as an example.

- (86) (a) *the war began in 1991 in Georgia*  
(b) \**the war began in 1991 for Independence*

Seventh, whereas the NP that functions as the object of a preposition within a complement PP can be preposed, the NP that functions as the object of a preposition within an adjunct PP cannot. By way of illustration, consider (87) (a) and (87)(b) below.

- (87) (a) *what kind of party are you a member of?*  
(b) \**what types of clothes are you a member with?*

Finally, only some complement PPs can modify the head N (Radford, 1988).

- (88) (a) *a Doctor of sociolinguistics*  
(b) \**a merchant of sociolinguistics*  
(c) \**a kid of sociolinguistics*  
(d) \**a man of sociolinguistics*

Contrariwise, adjunct PPs can occur to the right of all the head nouns.

- (89) (a) *a Doctor with thick eye-brows*  
(b) *a merchant with thick eye-brows*  
(c) *a kid with thick eye-brows*  
(d) *a man with thick eye-brows*

In light of the above contrast, it can be concluded that the N *Doctor* allows only an of-NP complement like *of sociolinguistics*, but nouns such as *merchant*, *man*, and *kid* are free to occur with any PP. Conversely, the adjunct PP *with thick eyebrows* can appear in sequence with any noun without causing ungrammaticality. The reason why complement PPs can occur to the right of particular nouns while adjunct PPs can appear to the right of every N is that since adjunct PPs are aunts of N and complement PPs are sisters of N, it can be inferred that (88) (b), (88) (c), and (88) (d) are ill-formed because nouns subcategorise their sisters, not their aunts.

#### 4. Conclusion

As seen in Chapter I, the goal of this work is to identify how the differences between noun modifiers are expressed in X-bar syntax and how analytical evidence backs up such distinctions. The results of the analysis showed the idea that X-bar syntax can account for various linguistic phenomena that other syntactic frameworks, especially PS grammar, cannot explain.

The second chapter contrasted X-bar syntax with PS grammar, confirming that the former is preferred to the latter for several reasons. First, X-bar syntax is more constrained than



PS grammar. Second, unlike PS grammar, X-bar syntax admits the existence of intermediary phrases smaller than a full phrase and larger than the head of a phrase. Finally, whereas PS grammar only shows the distributional difference between nominal modifiers, X-bar syntax also gives the reasons they differ. The study also attempted to show that NPs, in particular, and sentences, in general, are not sequences of words randomly juxtaposed one after the other, but they are hierarchically structured. This was done based on biological and analytical evidence. The research also explained how a set of rules (i.e., PS rules) can generate an infinite number of sentences. Some of the main categorial rules that generate noun phrases were also discussed. The study examined the view that there are nominal phrases smaller than an NP and larger than an N, showing how they are manifested in the X-bar analysis and how they are supported by analytical evidence. Finally, how X-bar syntax comprises a more restricted number of categorial rules than PS grammar was explored.

The second chapter dealt with the difference between prenominal and postnominal modifiers. First, the different N premodifiers, their function, and distribution were generally explored. Second, the distributional difference between pre-determiners and determiners was investigated. Third, it was argued that there are several phenomena wherein determiners and prenominal APs differ. Determiners can occur in sequence with each other in an NP, while prenominal APs cannot. They always precede prenominal APs. They also cannot be conjoined with a premodifying AP. An adjective can be premodified by an AdvP within a prenominal AP, while a determiner cannot be so premodified. While a determiner can precede any noun, an AP can only precede an N, which has the same feature as the AP concerned. By the same token, whereas determiners must agree in number with the N they determine, APs do not. Prenominal APs resemble prenominal NPs in that they are both generated by recursive categorial rules, function as attributes, and can co-occur with each other in the same environment. But prenominal APs differ from prenominal NPs in that they are realized by different lexical items and premodified by different constituents. Fourth, some arguments that go in favour of positing the differences between complements and attributes, distribution, pronominalization, and ordinary coordination were investigated. Fifth, some of the principal N postmodifiers, their function and distribution were discussed. Sixth, a set of differences between complement clauses, i.e., appositive clauses, and adjunct clauses (relative clauses), was listed. Last, several distinctions between complement PPs and adjunct PPs were discussed.

Overall, the current research has attempted to argue that X-bar syntax can account for a variety of linguistic phenomena that other syntactic frameworks, particularly PS grammar, cannot explain. The findings obtained through the analysis of prenominal modifiers and postnominal modifiers support and confirm the arguments.

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