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A Comparative Study of Phrase Structure in Arabic, Korean and English Using Theories in Generative Syntax

Graduate School of Chosun University

Department of Oriental Studies

Dawud Izza

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생성이론에 근거한 아랍어, 한국어,
영어의 구문구조 비교 연구

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요약

생성이론에 근거한 아랍어, 한국어, 영어의 구문구조 비교 연구

본 연구는 생성 문법이론을 이용하여 아랍어, 한국어, 영어 3개 언어의 명사구와 동사구의 간단한 구문을 비교하였다. 3개 언어의 비교를 통해 생성통사론의 이론을 적용할 수 있는 언어가 특수한 언어에 한정되지 않고 언어 일반에 적용될 수 있음을 확인할 수 있었다. 즉 3개 언어가 통사적으로 다른 언어구조를 가지고 있으나 이 3개 언어에 생성이론이 광범위하게 적용되었다. 이 연구를 위해서 "원칙과 매개변인 이론이 (Principles and Parameters) (Chomsky, 1981-1989) 주요 비교의 수단으로 채택되었으며 분석을 위해서 특별히 X-bar이론을 활용하였다. 연구 방식으로는 영어의 기존 데이터를 사용하여 아랍어와 한국어의 간단한 명사구문과 동사구문의 구조상 유사점과 차이점을 제시하는 형식을 취하였다. 또한 3개 언어의 구문구조 변형을 설명하는데 필요한 언어학적 프로세스를 논하였다. 본 연구의 결과로서 각 언어의 명사와 동사구문의 표층구조와 심층구조가 규명되었으며, 이들 구조로부터 어순변형이 어떤 방식으로 파생되었는지를 밝혔다.

키워드

원칙과 매개변인 이론, 명사구, 동사구, 구문 구조, 생성 문법, X-bar이론, 표층구조, 심층구조, 통사론.

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﴿ وَمِنْ ءَايَٰتِهِۦ خَلْقُ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضِ وَٱخْتِلَٰفُ أَلْسِنَتِكُمْ وَأَلْوَٰنِكُمْ إِنَّ فِى ذَٰلِكَ لَءَايَٰتٍ لِّلْعَٰلِمِينَ ﴿٢٢﴾ ﴾

(سورة الروم 22/30)

《And of His signs is the creation of the heavens and the earth and the diversity of your languages and your colors. Indeed in that are signs for those of knowledge.》
(Quran, Sūrah Al-rūm 30/22)

《천지를 창조하시고 너희의 언어들과 피부색을 달리 창조 셨음도 그분 예증의 하나이시니 실로 그 안에는 전 인류 위한 예증이 있노라》
(코란, 제30장 22절)

1. Introduction

1.1 Purpose of study

Generative Grammar (GG) focuses on the state of the mind or brain after having acquired a particular language, and is concerned with the form and meaning of expressions in that language determined by a component of the human mind referred to as the "language faculty" (Chomsky, 1986). It is an approach to the study of the human language faculty that tries to create a general theory capable of only generating grammatical sentences in a language. The study of Syntax within a GG framework has produced a series of key theories dedicated to understanding how sentences and phrases are generated in the mind. Among the most important of these is the theory of Principles and Parameters (Chomsky 1981-1989), otherwise known as Government and Binding Theory. Work within this framework is dedicated to explaining common principles that are consistent across all human language as well as parameters which account for linguistic variability. The X-Bar schema is one of the main modules of the P&P approach where hierarchical syntactic structure is represented by binary branching trees. It was first introduced and developed by Ray Jackendoff and Noam Chomsky in the 1970s and its main concern is the deep structure representation of phrases, as well as imposing certain constraints in order to generate grammatical sentences only while excluding ungrammatical ones. As such, this study seeks to work with some of the main modules belonging to the principles and parameters (P&P) approach, and will utilize the X-Bar schema to analyse the syntax of Arabic, Korean and English simple noun and verb phrase structures.

The benefit of comparing these languages is that they provide us with a wide scope of linguistic variation to apply against the prominent theories in generative syntax. Arabic for example belongs to a branch of

Afroasiatic languages known as the Semitic group which includes languages such as Aramaic, Amharic, Hebrew and Syriac. Languages in this group display a number of similar characteristics including "triradicalism, presence of emphatic/glottalised consonants, consonantal root structure, and a system of morphological templates, paratactic constructions, verbal system with a prefix and a suffix conjugation, as well as a large number of lexical correspondences" (Versteegh, 2014:13). Korean on the other hand is commonly linked with the Altaic language family which share common features such as vowel harmony, verb-final word order and agglutination (Lee and Ramsey, 2011). The ultimate goal therefore is to present points of consistency and difference between simple noun and verb phrase structures of Arabic, Korean and English, using existing data from English as a point of comparison, in addition to explaining the linguistic operations that take place in order to account for syntactic variations across the three languages.

In accordance with the X-bar theory, this study will operate on the premise that all languages have similar deep structures and provide an analysis which can generate subsequent surface structure representations for phrases each language. It is expected that this approach of comparing Arabic, Korean and English syntax will uncover several similarities between the languages that could otherwise not be observed analysing their surface structures alone. This research is hoped to contribute to the academic literature in comparative syntax as well as lead to further comparative studies in this field, particularly between Arabic and Korean.

1.2 Methodology

Research comparing the syntax of two or more languages is concerned with the structure of sentences and how words how combine to express meaning according to different language systems. Of course, the rules

for combining words to form sentences vary in each language, and the extent of this variation can be observed easily even in simple sentences as shown in the following examples.

Arabic
(1)

<div dir="rtl">ذَهَبَ الْوَلَدُ إِلى الْمَدْرَسَةِ</div>

   dhahaba   ʾal-waladu   ʾilā ʾal-madrasati
   go[3p.m.sg past] the-boy[nom] to the-school[gen]
   The boy went to school.

Korean
(2) 소녀가 학교에 갔다
   sonyŏ-ka hakyo-e kass-da
   girl-NOM school-to go[past]
   The girl went to school.

Comparative syntax is fundamental within a generative framework in order to test certain hypotheses against the grammars of other languages for verity. Although much research has been carried out comparing the syntax of different languages, few have attempted an in-depth study comparing languages belonging to different family groups like Arabic and Korean. This is mainly because data from related languages is useful for uncovering syntactic phenomena, or for supporting a certain hypothesis about a specific language. Studying unrelated languages together is consequently less common among linguists, but as this study attempts to show, doing so can uncover unexpected similarities and open areas for future discussion. With regard to simple phrases in English, analyses are relatively more straight forward than phrases in Arabic and Korean because extensive research on English phrase structure has in general reached conclusions that are for now widely accepted. On the other hand, limited research on Arabic and Korean means there are still many disputed points in the literature

and several issues left unresolved.

This study will begin with a overview of the literature within the P&P framework in order to explain some of the theories and notions that will be covered. Once the relevant notions have been explained with reference to data from English, they will be implemented for the analysis of Arabic and Korean phrases. Rather than attempting to provide novel solutions to some of the issues regarding Arabic and Korean syntax, this study aims to bring together some of the existing hypotheses and approaches across the academic literature and present possible ways of analysing the above mentioned languages within the specified frameworks. Finally, areas of consistency and difference in the syntax of each language will be presented and discussed. Among the topics of discussion include the deep structure and surface structure representations of noun and verb phrases and how default word orders are derived from these. Issues to be explored also include the analyses of Arabic and Korean noun phrases in light of the determiner phrase (DP) hypothesis (Abney, 1987), which has been widely adopted for English noun phrases, but in turn provoked plenty of academic discourse particularly for languages like Korean which seem to lack determiners. Moreover, verb phrases in Arabic, Korean and English each exhibit different word orders, so the positioning of heads will be explored for each language and the mechanisms available in the X-bar schema to account for this variation such as movement. Examples from this research will be taken from a number of sources including grammar books and existing data from the academic literature on generative syntax. As shown in sentences (1) and (2) above, Arabic and Korean examples will be given first in original script followed by a transliteration, word-for-word translation, then finally a normal translation into English. When examples are meant to demonstrate incorrect sentences they will be marked with an asterisk (*). Due to the limitations of this research, the scope of analysis will focus mainly on simple noun and verb phrases.

2. Literature Review

2.1 X-Bar Schema

Constituency and hierarchical structure are important notions in generative syntax for capturing relations between words and phrases within a sentence, and are reflected using phrase structure grammars such as the X-Bar schema. Hierarchical structure refers to units called constituents forming one inside the other to produce larger constituents. These constituents or phrases can be further classified into lexical and functional categories. Before describing what these phrasal categories are, it is important to first clarify some of the evidence in support of the notions of phrase structure and constituency. One such argument comes in the form of constituency tests like the "pronoun replacement test", where a group of words can be replaced by a single pronoun which carries the same meaning. The fact that this is possible suggests that a group of words can be a constituent belonging to the same phrasal category as a single pronoun. Applying constituency tests like this to Arabic and Korean proves that this is consistent even among different languages.

Korean
(3) a) 저 잘 생긴 남자를   알아?
     chǒ **chal saengin namja-lǔl** ara?
     that handsome man-ACC know[pres]?
     Do you know **that handsome guy**?

   b) 응 걔 잘 알아
      ǔng, **kyae** chal ara.
      yeah, **that person** well know[pres].
      Yeah, I know **him** well

                              (Lee, Madigan, Park M-J, 2015: 115)

Arabic

(4) a)

<div dir="rtl">هَلْ تَعْرِفُ ذَلِكَ الْرَجُلَ الْوَسِيمَ؟</div>

hal   taʿrifu   **dhalika ʾal-rajula ʾal-wasīma**?

[question] know[2p.m.sg.pres] that the-man-acc the-handsome-acc?

"Do you know that handsome guy?"

b)

<div dir="rtl">نَعَمْ أَعْرِفُهُ</div>

naʿam, ʾaʿrifu-**hu**

yes, know[1p.sg.pres]-**him**

Yes, I know **him**

In the above examples, the words in bold can be replaced with certain pronouns. The Korean "kyae" and the Arabic "hu" both refer to and carry the exact same meaning as *"that handsome guy"*, showing that these constituents have the same distribution despite one containing more words than the other. As such, it is possible to claim that pronouns are themselves full noun phrases, similar to larger sequences of words.

Lexical words are items which carry complete meaning and as a result constitute the foundation of a sentence. Some of the lexical categories that will come up in this study include the noun phrase (NP), adjective and adverb phrases (AP/AdvP), prepositional (or postpositional) phrase (PP), and the verb phrase (VP). It is worth noting that these categories are often subject to change or reanalysis, some of which will be discussed in later chapters. Functional items are those which have grammatical functions but unlike lexical items, do not necessarily carry any meaning. The functional categories which will be of particular relevance in this study include categories such as the determiner phrase

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(DP), inflectional phrase (IP) and the complement phrase (CP). The X-Bar schema, which claims all phrases have a comparable structure, provides a general scheme for phrases of these different categories. Verb phrases containing just an object for example contain a head (V) and its complement (object), creating a constituent like in figure 1. This constituent then combines with the specifier (subject) to create an even larger constituent (figure 2).

Fig 1   Fig 2

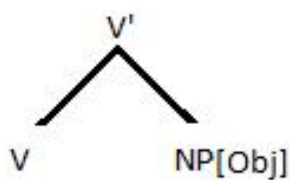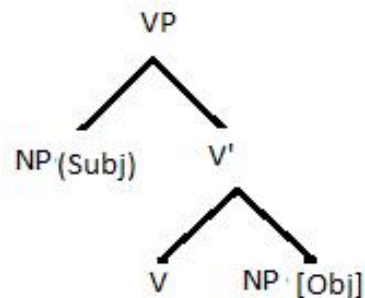The type of phrase that is generated depends on the phrasal head. As all phrases are expected to have similar structures, those that are headed by prepositions (PPs) (figure 3) or Adjectives (APs) (figure 4), are also comparable to that of VP. The X-Bar schema represents this by taking a variable X to stand for all phrasal categories as in figure 5.
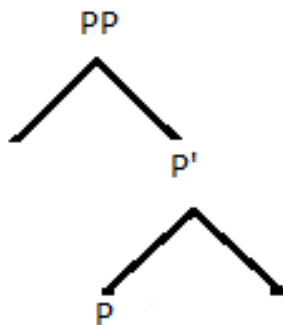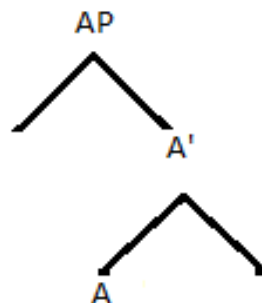
Fig 3   Fig 4
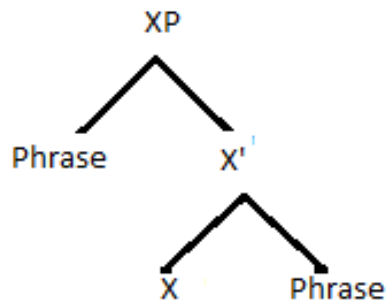
Fig 5 (XP)

So the head (X) can represent any of the phrasal variables projecting first to the X-bar which contains the head and the complement to the head, and second to an XP which may or may not contain a specifier. Adjuncts can also be added to this structure as extra optional elements (figure 6). Adjuncts are usually PPs or AdvPs referring to time, place and manner, and can occur an unlimited number of times in the tree structure.
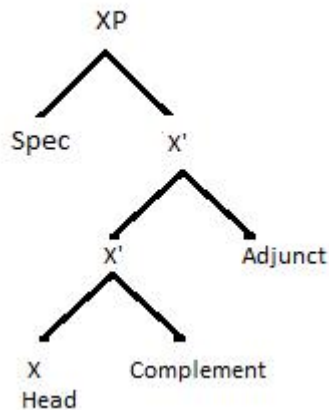
Fig 6

The same idea presented for VPs, APs, PPs and other phrasal categories can also be applied to the structure of noun phrases, assuming that the head (N) also projects an N-bar containing the complement of the nominal head, and then projects further to an NP. However, there are

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other ways of understanding NPs in that rather than being projections of the noun, they are projections of the determiner. In which case, the structure of the nominal phrase would be more accurately labelled a determiner phrase (DP). This idea is known as the DP hypothesis and will be discussed in more detail in the next chapter.

For the coming discussion on verb phrases, two more functional categories need to be clarified. The S(entence) and aux(iliary) categories used under general phrase structure rules change in the X-bar format. It is assumed that the auxiliary is the actual head of an S, and rather than the term auxiliary (aux), inflection (I) is adopted to stand for phrases with inflectional properties such as tense and agreement. So what was previously referred to as S is actually an IP which can take an NP as its specifier and a VP as its complement (figure 7). Similarly, the rule for clause (S') has also been revised in light of the X-Bar theory, and much like the case with S, the S' is understood to be headed by another functional element known as the complement (C). As a result, C projects a complement phrase (CP) containing an empty specifier position (figure 8).
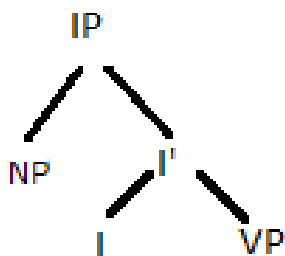
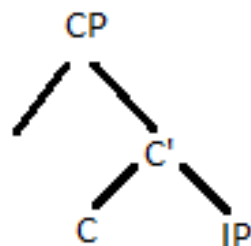Fig 7   Fig 8

To summarize, the X-bar schema dictates that all phrases roughly follow the structure in figure 6. Furthermore, it constrains the forms that structures can take, meaning that specifiers, adjuncts and complements

must themselves be phrases and branching must be strictly binary. Each phrase can contain only one specifier and one complement but there can be an unlimited number of adjuncts operating at the X-bar level. As shown above, the X-bar schema is intended as a general scheme for phrases of different categories. In addition to the features mentioned in this section, it will be necessary to discuss other important notions connected with the schema during this analysis, in particular that of parameters, binding theory, theta theory, case theory and movement.

2.2 Parameters

Most languages are believed to have a basic word order which reflects neutral sentence pattern. As previously mentioned, English (SVO), Arabic (VSO) and Korean (SOV) all have different basic word orders. In order to capture the difference in sentence structure across the world's languages, the existence of a language-specific directionality parameter is assumed which determines the position of heads within a language. Whether a language displays head initial or head final word order is dependant on this parameter setting. For example, the complement rules below in (5) for Arabic and English show that the complement (WP) normally follows the head (X), however for Korean, a head-final language, the rule should be adapted as illustrated in (6).

Arabic/English	*Korean*
X'= X (WP) (verb-object)	X'= (WP) X (object-verb)
(5)	(6) 시험을 봤다

أَدَّى الامْتِحانَ

ʾadda ʾal-imtiḥāna   shihŏm-ŭl bwass-da

take[3p.m.sg.past] the-exam[acc]   Exam-ACC see[past]

(He) took the exam.

English is head initial, and Korean is head final, so by applying this

directionality parameter to complement, specifier or adjunct rules, it is possible to generate the following tree diagrams based on the basic word orders of each language.

English

Korean
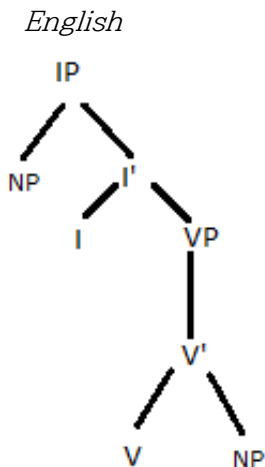
Fig 9
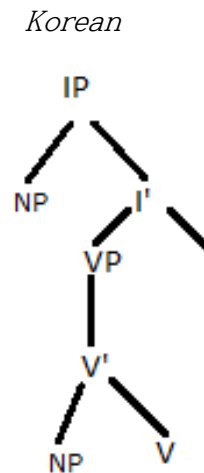
Fig 10

However, a problem arises when applying this to VSO languages like Arabic, because Arabic and other VSO languages seem to allow specifiers (subjects) to occur between the verb and its complement. Attempting to exercise these parameters and placing the specifier of IP to the right generates a VOS order instead of the desired VSO order. As a result, it was previously believed that the X-Bar theory couldn't account for VSO languages like Arabic, or more accurately, the X-Bar schema alone couldn't generate such sentences. For a long time linguists therefore believed that languages with VSO word order simply had flat structures, meaning there were no structural distinctions between the subject, object and verb. However, flat structures are problematic because they suggest subjects and objects have no distinction when only one NP argument appears because they are both postverbal. In other words, verb-subject sequences and verb-object sequences should behave

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identically with respect to various syntactic processes, which is not the case for VSO languages (Carnie, 2002). In an attempt to solve this problem, it was proposed that VSO languages are in fact underlyingly SVO at their deep structure with the subject located in the specifier position of the verb, and that the correct order is derived following certain transformational rules known as "movements". The idea that subjects appear in the specifier position of VP and not IP is known as the "VP-internal subject hypothesis" and will be revisited in more detail in chapter 4.

2.3 Binding Theory and Theta Theory

Binding Theory divides NPs into three different categories in order to capture the syntactic distributions of different NP types. NPs which depend on other NPs in a sentence for meaning are classed as anaphors and these usually include reflexives and reciprocals. The second category is that of pronouns and they also rely on other NPs for meaning which may or may not be in the same sentence, or simply through context. R-expressions are the third group which all other NPs belong to and they attain their meaning by referring to an entity in the world. Binding principles may be satisfied even if a sentence is illogical, a problem which is covered by another important module of the P&P framework known as the Theta Theory. Without the constraints provided by the theta criterion, the X-Bar schema is liable to generate ungrammatical or illogical sentences, so the theta criterion dictates that verbs have particular roles that need to be filled in order to satisfy their argument structure. These are known as theta roles and they describe the function and meaning of a sentence. Roles like agent are assigned for words that perform some kind of action, and experiencer for those that experience a state or emotion. Themes are for arguments that undergo an action or goal for the end point of a journey. The number of arguments a verb needs is encoded in ones mental representation, so a verb like eat automatically require us to generate an agent (the

subject) and a theme (the object) to make the sentence logical. Verbs need a specific number of arguments to make sense, and these arguments need to fill a theta role. Consequently, the theta criterion ensures that every sentence contains the correct number of arguments and can therefore act as a constraint for over-generated and ungrammatical sentences. Each argument is assigned only one theta role and each theta role is assigned to only one argument. However words like "*it*" in English can be used with verbs like "*to seem*" which don't assign any arguments. In this case, "*it*" is classed as a dummy pronoun (expletive) which can be found in sentences like *"it's cold"* or "*there are many people*", where *"it"* and *"there"* are expletives. Expletives of this kind are mandatory in languages like English which require an overt subject in the specifier position, but not in languages like Arabic and Korean where verbs may operate without any overt subject. This has led linguists to propose another type of parameter to account for this variation known as the "null-subject parameter". Null-subject languages like Arabic and Korean do not have any overt expletives but languages like English do as shown in the examples below.

(7) **It** is getting cold

(8) 추워지고 있다
   ch'uwŏ chigo-iss-da
   cold [pres] becoming

(9)
    يَبْرُدُ
   yabrudu
 (become) cold [3p.m.sg pres]

"It" in (7) doesn't receive a theta role and its only purpose in the sentence is to fill in for a subject as English always requires a noun phrase in the subject position, so it employs the pronoun "*it*" or takes an NP from a lower position in the sentence structure. This null subject

is also referred to as "pro" which is different from PRO (upper case). The latter refers to null-subjects which only occur in caseless positions, and the former refers to subject NPs which appear in cased positions. The extended projection principle (EPP) ensures that there is at least one obligatory argument for the verb, which due to the null subject parameter, is consistent even in "pro-drop" languages like Arabic and Korean. For Arabic, the morphology of the language enables us to identify the subject from the verb itself, allowing the actual subject to be null (Saidat, 2006). Korean is also a pro-drop language, but despite not having as rich of an agreement morphology as Arabic, the agreement markings on verbs are rich enough to recover the content of a null subject (Huang, 1984).

2.4. Movement

In order to expand the scope of phrase structure grammars like the X-Bar schema, there is another important feature known as "movement". Applying this notion makes it possible to take the output of X-Bar trees and change their form. Transformational rules assume that there is an underlying mental representation referred to as the deep structure (D-structure). This D-structure then goes through transformations enabling words to be moved around within a sentence to produce a subsequent surface structure (S-structure). Such transformational rules could potentially produce a limitless variety of sentences, which understandably defeats the purpose of having a phrase structure grammar to begin with. These rules must therefore have motivations which may be in the form of output constraints like the EPP, or due to morphophonological reasons. Furthermore, it isn't possible to create a transformational rule that will violate an output constraint. There are several types of transformational rules that will be used and explained further in the following sections, some of which are of particular importance for this discussion such as "affix lowering" and "verb raising". Both of these movements occur due to morpholonological reasons so

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that dependent elements like inflectional affixes can attach to the verb. Another type of movement which will be discussed in the next section is "NP movement", where NPs move to specifier positions to satisfy case features. Note here that in X-Bar tree structures, movements are generally represented in the following way (figure 11), where "t" refers to "trace" and alludes to the area where a word has moved from its D-structure position to its subsequent S-structure position. The dotted or broken line represents the direction and path of movement.
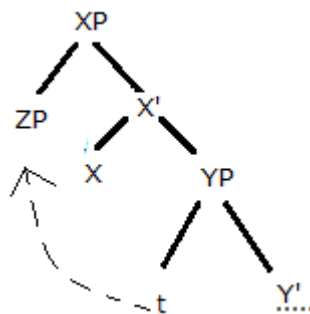
Fig 11

2.5 Case Theory

Thematic relations represent meaning whereas case represents grammatical relations in a sentence which are usually expressed morphologically in nouns. Cases such as the nominative, accusative, genitive and others are realized differently in Arabic, Korean and English. The latter is relatively limited morphologically compared to Arabic and Korean. As a result, word order plays an important role in English for identifying case, whereas Arabic and Korean allow free word order due to overt case markings removing ambiguity from the sentence. As case is marked overtly for Arabic and Korean, it allows for a more flexible word order than in English as the examples below demonstrate.

(10)

حَضَرَ ٱلْموتُ يَعْقوبَ

ḥaḍara ʾal-mawtu yaʿquba (VSO) *(Death approached Jacob)*

approach[3p.m.sg past] death[nom] Jacob[acc]

(11)

ٱلْموتُ حَضَرَ يَعْقوبَ

ʾal-mawtu ḥaḍara yaʿquba (SVO)

death[nom] approach[3p.m.sg past] Jacob[acc]

(12) a)

حَضَرَ يَعْقوبَ ٱلْموتُ

ḥaḍara yaʿquba ʾal-mawtu (VOS)

approach[3p.m.sg past] Jacob[acc] death[nom]

Here the first sentence is seen as the more conventional VSO order in Arabic. The subject *"'al-mawtu (death)'* is marked with the nominative case (marfūʿ) ending *"-u"* (ḍammah), and the object *"yaquba"* has the accusative (manṣūb) case ending *"-a"* (fat-ḥa). As a result, even when the word order is changed as in (11) and (12), the meaning remains the same. The unconventional VOS sentence in (12a) is in fact from the original verse found in the Quran (2:133).

(12) b)

﴿ أَمْ كُنتُمْ شُهَدَآءَ إِذْ حَضَرَ يَعْقُوبَ ٱلْمَوْتُ ... ﴾ (١٣٣)

ʾam kuntum shuhadāʾa ʾidh ḥaḍara yaʿquba ʾal-mawtu

or be[2p.pl past] witnesses when approach[3p.m.sg past] Jacob[acc] death[nom]

Or were you witnesses when death approached Jacob" (Quran, 2:133)

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Korean also permits elements of the sentence to be moved around freely due to overt case markings as shown in the examples below.

(13) 냇물이   남쪽으로   흐른다.
   naenmul-i namtchŏk-ŭro hŭrŭn-da. *(The stream flows south)*
   stream-NOM south-via   flow [pres]
    The stream flows south

(14) 남쪽으로   냇물이   흐른다.
   namtchŏk-ŭro naenmul-i hŭrŭn-da.
south-via stream-NOM flow [pres]

(15) 남쪽으로   흐른다, 냇물이.
   namtchŏk-ŭro hŭrŭn-da, naenmul-i.
south-via   flow [pres] stream-NOM

(16) 냇물이   흐른다,   남쪽으로.
   naenmul-i hŭrŭn-da, namtchŏk-ŭro.
 stream-NOM flow [pres] south-via

All four sentences express exactly the same meaning in the English translation due to the overt case markers in Korean. As an agglutinative language, all grammatical morphemes typically appear at the end of the root or stem of words, so case markers appear after nouns in Korean as the sentences above demonstrate. On the other hand, the English equivalent to examples (13)-(16) is only grammatical with one specific word order. Take the following sentence, *"John hit Mary"*. It is obvious that John is the subject NP and is in the nominative case with Mary being in the accusative case. Reversing this sentence to *"Mary hit John"*, assumes a reversal of case without any morphological change to the noun. Interestingly, pronouns in English behave differently and appear to express case morphologically.

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(17) He (nom) hit her (acc)

(18) She (nom) hit him (acc)

It can be argued therefore that even full NPs in English carry case, although not realized overtly like in Arabic and Korean. This kind of case is known as abstract case. As case is a syntactic phenomenon, Chomsky (1981) proposed through the Case Theory that NPs only acquire case in certain positions. Case Theory is an important notion for NP movement as it provides a legitimate motivation for NPs to move to specifier positions. The various positions where NPs receive case include, but are not limited to the specifier of finite I for the nominative, and the complement of V for the accusative case. Case Theory states that all NPs must be marked with case and can be implemented using a feature checking mechanism known as the case filter. This is the idea that words are composed of atomic features that reflect features like person, number and gender, and are represented in a feature matrix like the one below for NPs with case as well as case assigners like I. It is a requirement that a noun is close enough to its case assigner in order for the features to be checked.

NP	I	(Carnie, 2002:232)
He	is	
Masculine	Present	
3rd person	3rd person	
Singular	Singular	
Nominative	Nominative	

Having covered some of the main modules in the P&P framework, the following chapters will be dedicated to applying these ideas to Arabic and Korean simple noun and verb phrases using data from English as a starting point for analysis.

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3. Noun Phrases

3.1 The DP Hypothesis

As mentioned in the previous chapter, it is possible to apply the same X-Bar tree model to NPs, where the NP is a projection of the noun. An alternative analysis however suggests that determiners dominate the NP structure. Determiners include functional words such as (in)definite articles, demonstratives and quantifiers. There purpose within a sentence is to highlight definiteness or indicate the quantity of a noun. The DP hypothesis (Abney, 1987) supposes that the determiner and not the noun, heads the NP, and that it takes the NP as its complement. Motivation for this hypothesis came about in order to fulfil one of the basic underlying principles of the X-Bar theory that all non-head material must be phrasal. Before the DP hypothesis, determiners were placed in the specifier position of the NP which was therefore problematic according to the above mentioned principle. The behaviour of determiners in English provides evidence to suggest that determiners do indeed dominate the NP structure. Subsequently, phrases which were previously given structures like the one in figure 12, with the determiner located in the specifier position of NP, would now be reanalyzed to a structure similar to that of figure 13.
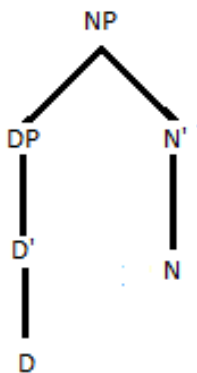
Fig 12
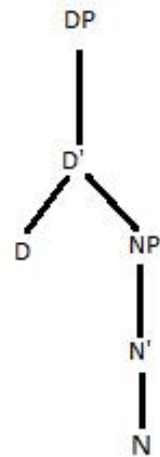
Fig 13

3.2 English Noun Phrases

Data from English and other languages provide strong support for the DP hypothesis. One such example is the behaviour of the clitic *"s"* in possessive NPs which can appear after full NPs as in *"[the teacher with the big car]'s hat"*. It is also in complementary distribution with other determiners in English, so sentences like *"The student's the car"** is ungrammatical because the clitic *"s"* is followed by a determiner. Providing that the DP hypothesis holds true, it neatly explains the complementary distribution of determiners and the possessor *"s"* by including it in category D (figure 14) which wasn't possible under the traditional NP theory.

(19) The student's book.

Fig 14

Another example is the observation that nouns in English generally cannot function as arguments on there own, but must be accompanied by a determiner.

(20) Assignment is not difficult*
(21) You should hand in assignment*

(22) (The, that, this) assignment is not difficult
(23) You should hand in (the, this, that) assignment
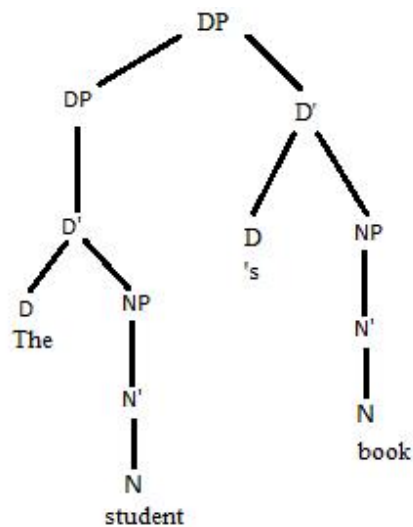
(Beatrice and Kroch, 2007:6)

As such, the understanding of structures which have been traditionally called noun phrases are more accurately determiner phrases and are projections of the determiner. Understanding functional categories in this way also provides a close correspondence with the structure of VPs and NPs because they are both dominated by there respective functional categories DP and IP.

To summarise, the DP hypothesis suggests that phrases containing nouns are actually projections of the determiner, at least as far as English sentences are concerned. Taking this into consideration, this study will be approaching NPs in Arabic and Korean in light of the DP hypothesis. However, as will be explained below, elements that are classified as determiners in English tend to behave differently in Arabic and Korean, so analysing NPs according to the DP hypothesis is not as straight forward as in English, particularly with Korean being a so-called "determinerless" language.

3.3 Arabic Noun Phrases

Having discussed the shift in understanding from NP to DP and its various properties, the analysis of DP structures in Arabic with regard to definite and indefinite articles is now possible. Definiteness in Arabic is realized with the definite article "'al-" which attaches as a prefix to the noun. Nouns without this article are therefore indefinite and there seems to be no indefinite article resembling the English "a(n)". Instead, the

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noun usually ends with a final indefinite marker *"-n"* known as "tanwīn" in traditional Arabic grammar. In accordance with the DP hypothesis, the following structure is possible where the noun is a projection of the DP.

(24)

الْبَيْتُ

ʾal-baytu
the-house[nom]
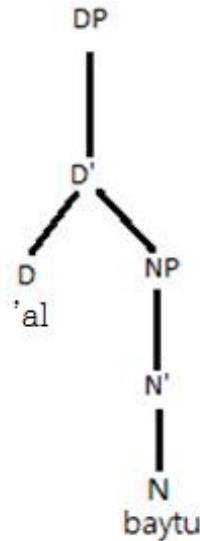
Fig 15

Like the English definite and indefinite articles, *"ʾal-"* (the) and the indefinite marker "*-n*" are in complementary distribution with one another. Following Beina (2013), it can be argued that the suffix "*-n*" is actually an indefinite article in Arabic which shares the same D-structure with the definite article in position D of the DP, and as a result of movement they acquire different positions in their surface structures. The kind of movement that seems to take place in Arabic DPs with regard to definite and indefinite articles is N to D movement and occurs in order for the articles "*ʾal-*" and "*-n*" to acquire an N host. Following the assumption that adjectives in the D-structure always appear on the left of the noun they modify, Beina (2013) argues that D to N movement is unlikely in Arabic as it would generate an ungrammatical word order where the adjective precedes the noun like in (25).

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(25)

الْكَرِيمُ الْرَجُلُ*

ʾal-karīmu ʾal-rajulu*
the-kind[nom] the-man[nom]
(The kind man)

The most reasonable solution therefore would be to assume that Arabic nouns undergo N to D movement in order to attach with the definite or indefinite article.

(26)   (27)

الْكِتَابُ   كِتَابٌ

ʾal-kitābu   kitābu-n
the-book [nom +def]   book [nom -def]
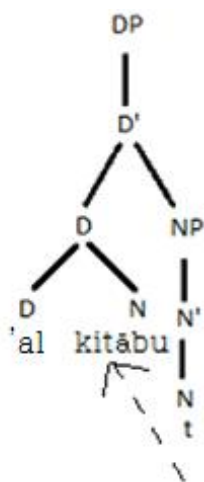The book   A book

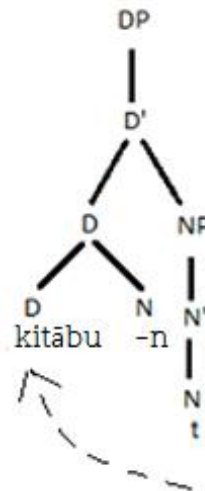Fig 16 (definite)   Fig 16.1 (indefinite)

As shown in the diagrams above, if D is occupied by the definite article *"'al-"*, N right adjoins to host the affix, whereas if it is hosted by the indefinite article *"-n"*, then it right adjoins to D presumably due to syllable constraints (Beina, 2013).

The characteristics of demonstratives vary from language to language, and the distinctions that Arabic and Korean demonstratives display are an example of this. Arabic has thirteen demonstratives compared to only four in English and three in Korean. In English, demonstratives and the definite article are in complementary distribution with each other, which suggests that they are instances of the same category. For Arabic on the other hand, the coexistence of demonstratives and the definite article provides a perfectly grammatical sentence. Removing the definite article in Arabic NPs changes the meaning and converts the phrase into a sentence like in (28).

(28)

هٰذا كِتَابٌ

hādhā   kitābu-n
this book [nom -def]
This is a book

There is plenty of other cross-linguistic evidence proving that demonstratives in different languages behave differently and may not necessarily belong to the same category as their English counterparts. Findings from Bernstein (1997) show demonstratives to display adjectival features like occupying adjectival positions and having full adjectival inflection. This holds true in Arabic as prenominal demonstratives agree with the head noun in number and gender. In particular, the dual of the proximity demonstrative can be inflected for both case and gender.

(29)

هَذَا الْبَيْتُ

hādhā ʾal-baytu

This [m] the-house[m.nom]

This house.

(30)

هَذِهِ الْسَّيَّارَةُ

hādhihi ʾal-ssayyāratu

This [fem] the car [fem.nom]

This car.

(31)

هَذَيْنِ الْبَيْتَيْنِ

hādhayni ʾal-baytanyi

This [acc.dl] the house [acc.dl]

These two houses.

(Kremer, 2003:66)

As a result, demonstratives which are of category D in English, seem to differ from those in Arabic in several ways and are therefore more suitably assigned a separate category (DemP). In contrast with English then, Arabic demonstratives are not classified as determiners but instead have their own category which take the DP as it's complement (Kremer, 2003).

3.4 Korean Noun Phrases

For languages like Korean which lack overt (in)definite articles, it has been the tradition since Abney (1987) to assume that the D position is filled by a null determiner. However, the question of whether DPs exist

at all in the Korean NP structure is still a matter of debate. Jo (2000) observes that languages without an article system similar to that of Arabic or English choose a language-specific NP subordinator from among its NP functional categories. Her argument is supported with evidence from Chinese which like Korean also lacks articles, but has other functional categories which subordinate definite and indefinite NPs. For Korean, this role of subordinating the NP seems to be carried out by phrasal case markers such as *"ka/i"* (nominative) and *"(l)ŭl"* (accusative) which belong to the category case phrase (KP). This kind of functional category is explained in detail by Hale and Bittner (1996) using examples from head final languages which like Korean, also have case markers. Their theory is based on the notion that case is a functional head and is the nominal counterpart of CP. This parallel is shown below.
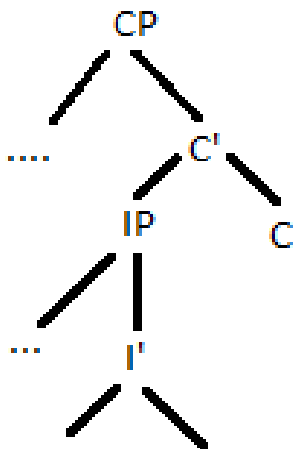

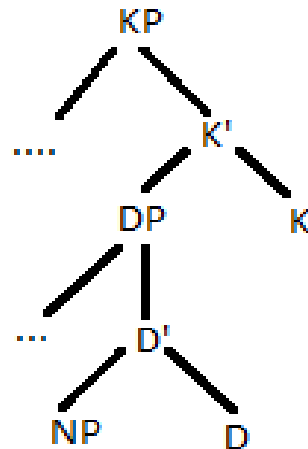Fig 17   Fig 17.1

(Hale and Bittner, 1996:7)

Arguing that case is a syntactic head and that it should have head-like behaviour, Hale and Bittner (1996) show that in the head-final languages

Miskitu and Shokleng, the overt case markers (accusative and ergative respectively) are final as expected, which is also consistent with Korean case markers. So there seems to be cross-linguistic evidence in support of a KP functional category. Interestingly, unlike Korean, Miskitu has an overt determiner between the noun and the case marker. Assuming that Korean has a covert determiner in the same position, the same structure can be applied to Korean NPs while keeping consistent with its head-final directionality parameter.

(32) a) 학생이
    haksaeng-i
    student-NOM
    (the) student.
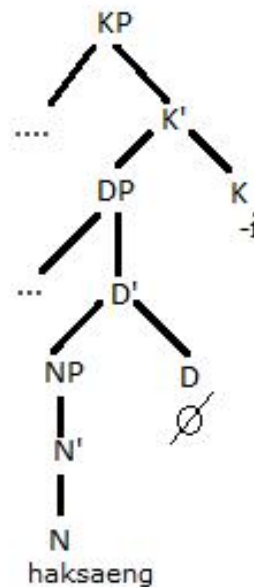
Fig 18

However, there is another problem linguists face applying the DP hypothesis to languages like Korean. Functional elements classified as determiners in English, such as possessive markers and demonstratives, display very different behaviour in Korean. For example, in accordance with the DP hypothesis and data from English on the clitic ″s″, it would be expected that the genitive marker ″-ŭi″ in Korean is also a determiner, and exists in complementary distribution with other determiners. This is not true as Suh (2005) explains, because it is

possible for demonstratives and the genitive case marker to occur together. Instead, the genitive marker is more suitably treated as a case marker belonging to category KP like *"ka/i"* (nominative) and "*(l)ŭl*" (accusative) with whom they happen to be in complementary distribution.

The issue still remains however, whether there is any place for the DP in Korean. As previously mentioned, the role of subordinating the NP seems to be carried out by another functional category, KP. Recent research on the issue of DPs in languages which lack articles has raised the possibility of an NP/DP parameter (Boskovic, 2008, 2010). This idea suggests that the DP isn't necessarily required for argumenthood in all languages. Evidence for this can be found in the fundamental differences between traditional NPs for languages with and without articles. In the case of Korean, there is strong evidence that it should be analysed as an "NP language" due to several generalizations of syntactic and semantic nature that Korean shares with other languages without articles. This is somewhat in line with Jo (2000) who after drawing on evidence from Mandarin and Cantonese, concludes that the KP seems to play the role of subordinating the NP in Korean. Adopting this approach provides the favourable option of removing unnecessary categories from the NP structure and is therefore the preferred analysis for this study.

(32) b) 학생이
　　　haksaeng-i
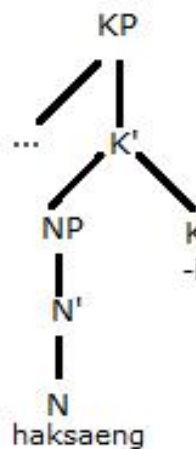　　　student-NOM
　　　(the) student.

Fig 18.1

If there is no DP in Korean then the distribution and position of demonstratives also needs to be dealt with. As was the case with Arabic, demonstratives in Korean similarly display very different behaviour to those in English. The latter can by themselves act as pronouns which are also determiners as in (33), but demonstratives in Korean require dummy nouns such as *"kŏs"* (thing), implying that demonstratives in Korean may not share the same category as their English counterparts.

English   *Korean*

(33) **This** is good.   (34) 이가 좋다 *
                                    i-ka choh-ta *
                                    this-NOM good-DECL

                                  (35) 이 것이   좋다
                                    i-kŏs-i choh-ta.
                                    this-thing-NOM good-DECL

                                         Suh (2005:14)

Following Yoon J.Y (1990), demonstratives in Korean seem to be of the specifier type and are maximally projected in case marked positions, however in his analysis he doesn't identify to which category they belong. Based on the above data it seems that they are not of category D like in English. Instead a more suitable solution would be to assume that like in Arabic, demonstratives also belong to category DemP, as was the approach in Suh (2005).

3.5 Summary

This section has discussed some basic features of Arabic, Korean and English NPs in order to account for the distribution of certain phrasal

categories in the NP structure of each language. It is worth mentioning that the internal structure NPs cover far more complex issues, not least regarding modifiers and the existence of additional functional categories such as number and gender phrases, which have been left out of this section in order to keep the focus on simple phrase structures only. The complexity of these issues means there is still a lack of consensus regarding them and they remain interesting topics for future research. Moreover, the lack of consensus surrounding Korean NPs makes it difficult to decide upon a single structure for final analysis. Whether DPs exist in Korean or not remains a matter of future academic research, as are the natures of certain items which resemble determiners in English such as possessives and demonstratives. The final basic NP structures in each language according to the proposals above are as follows:
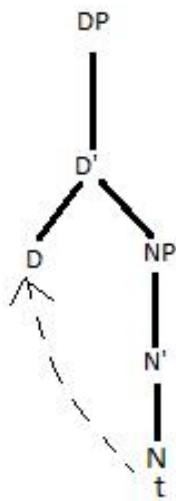
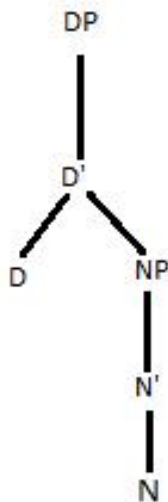*Arabic*   *English*   *Korean*

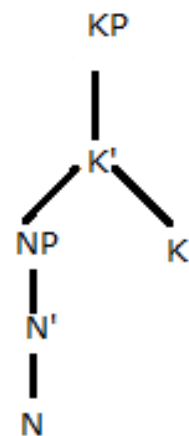Fig 19   Fig 19.1   Fig 19.2

4. Verb Phrases

4.1 The VP Subject Internal Hypothesis

Since Koopman and Sportiche (1988), common notions on where subjects are generated in the D-structure have been challenged. The idea they put forward known as the "VP-internal subject hypothesis" supposes that subjects start out in the specifier of VP, and in certain languages like English, move to the specifier of IP to satisfy case features. Evidence in support of this hypothesis comes from the observation that subjects receive their participant roles from the verb, meaning that they are not arguments of the modal (IP) but are instead arguments of the verb. This also provides an explanation for VSO languages like Arabic, which previously did not fit the X-bar schema and were believed to have flat structures due to the impossibility of setting X-bar parameters to produce VSO word order. The VP-internal subject hypothesis provides a solution for this problem in the claim that subjects have been traditionally generated in the wrong position. Instead of generating subjects in the specifier position of IP, they are in fact underlyingly generated in the specifier of VP, and as a result of movement, the grammatical word orders are generated for each language. The general underlying structure for verb phrases in most languages according to this hypothesis can be seen in figure 20.
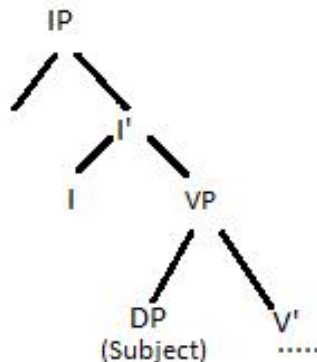

Fig 20

Under the VP-internal hypothesis it is further implied that there are two types of languages when it comes subjects attaining nominative case. The first type requires subjects to move to the specifier position of IP (spec IP) in order to gain nominative case, and in the second type, subjects gain nominative case when they remain in the VP specifier position (spec VP) due to government principles. With this clear, it is possible to claim that for English active and transitive VPs, all subjects move to the specifier of finite I (inflection) for case. However languages like Arabic and Korean are different. Subjects in these kinds of languages can remain in their D-structure positions, where the subject is assigned case when it is immediately C-commanded by finite I in the specifier of VP (Carnie, 2002). The implied nominative case positions for subjects in each of the languages under analysis can be seen below.

Arabic   *English*   *Korean*
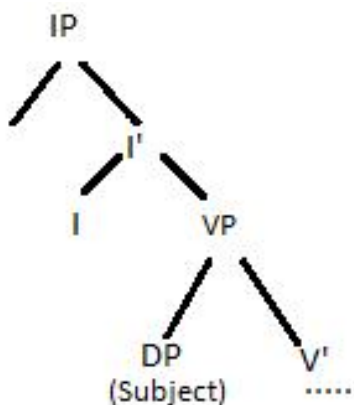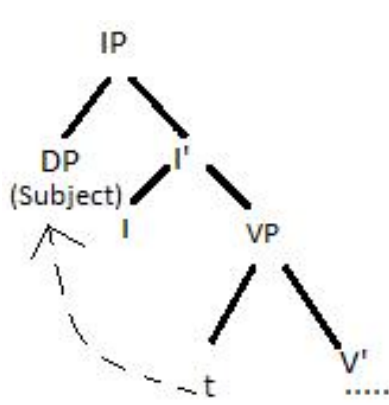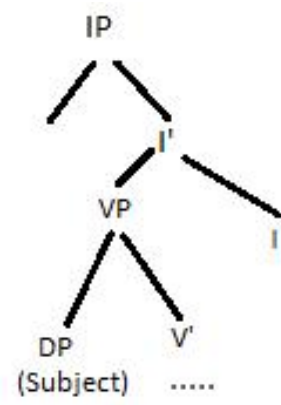

Fig 21   Fig 21.1   Fig 21.2

Having clarified the basic structure for analysis across the three languages, the next sections will implement these frameworks using examples from English, Arabic and Korean simple verb phrases.

4.2 English Verb Phrases

In SVO languages like English, two key movements take place in order to generate basic word order, specifically, NP movement and affix lowering. It should be noted that a language is parameterized as to whether it has verb raising or affix lowering. French for example also has an SVO basic word order but has been observed to adopt verb raising from head V to I. Evidence from English suggests that affix lowering takes place from I to V (Pollock, 1989). Taking a simple past tense phrase for illustration, the following diagram shows how these movements take place resulting in correct word order.

(36) Mary drank coffee.
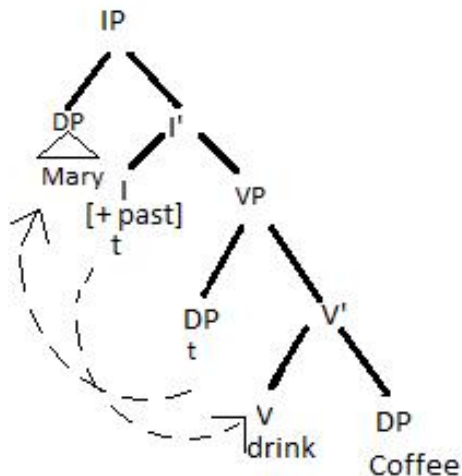
Fig 22

So as mentioned above, the basic English VP undergoes two transformations in order to generate the correct sentence structure. The first is NP movement which involves the subject NP moving from the specifier position of VP where the subject gets its theta role to the specifier position of IP motivated by feature checking for nominal case.

The second movement is known as "affix lowering" from head I to the verb position for inflection before pronunciation.

Adverbs generally operate as adjuncts due to their optional nature in the phrase. This is reflected in the following diagrams where the AdvP is a "sister" to the V-bar (V'). Adverbs can appear both before and after the head verb in English sentences.

(37) He runs quickly.   (38) He quickly runs.
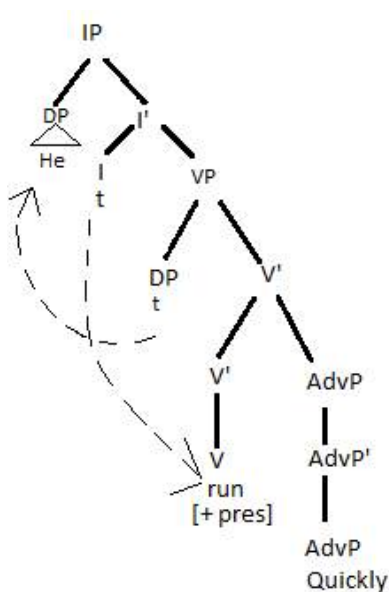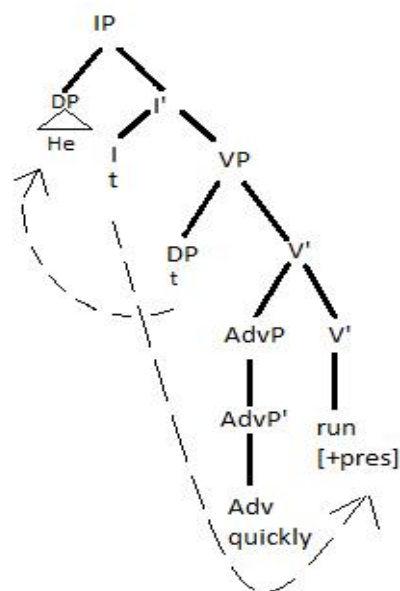
Fig 23   Fig 24

The observation of adverbs in English also provides interesting evidence for its affix lowering parameter. This is because if English verbs were to raise, it would generate an ungrammatical sentence structure where the adverb appears between the finite verb and its object. Languages like French where this word order is permitted is therefore viewed as a verb

raising language.

English

(39) He often eats apples.
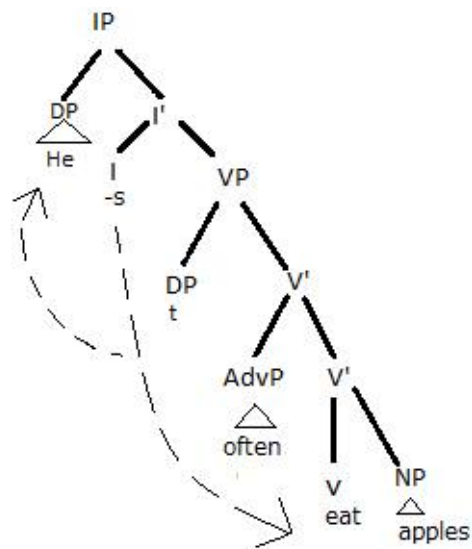
Fig 25

French

 (40) Il mange souvent des pommes.
he eat[3p.m.sg pres] often (of) the apples
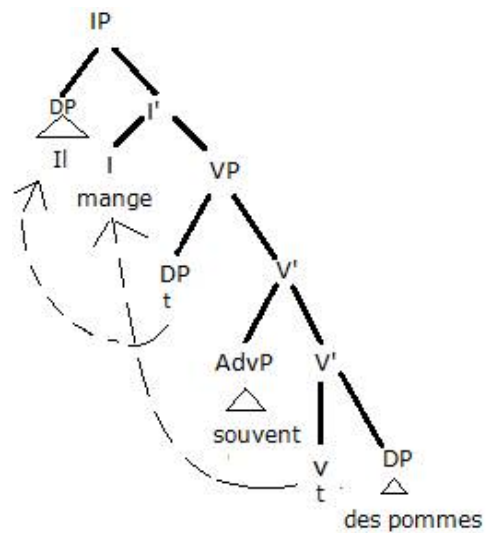
Fig 26

Carnie (2002:192-194)

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Interestingly in English, the above mentioned affix lowering movement doesn't take place if the I position is already occupied by a modal auxiliarly (might, will, have).

(41) He will pay.
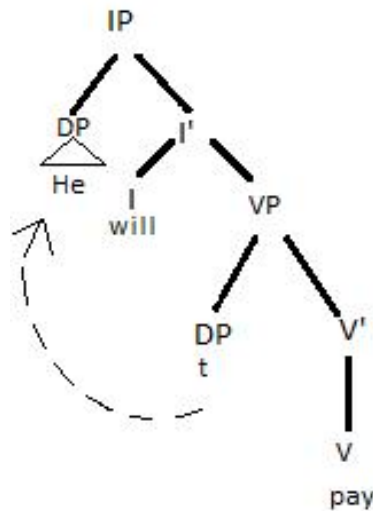
Fig 27

Evidence in support of this statement comes in the observation that when verbs are preceded by a modal, they are never inflicted for tense. If they did, the subsequent sentence would prove ungrammatical as in (43).

(42) John might go.
(43) John might goes.*

This sentence is clearly ungrammatical in English as the verb "to go" should remain in the infinitive, supporting the previous claim that affix lowering doesn't take place when the I position is already occupied by a modal because the modal assumes the role as the inflectional element. It can be assumed therefore that English sentences with finite verbs and sentences with modals have exactly the same distribution as demonstrated above.

4.3 Arabic Verb Phrases

It's also possible to apply the structure proposed in the introduction of this section to generate basic verb phrases in Arabic following the assumption that subjects start out in the specifier of VP and not IP as was traditionally thought. As previously discussed, subjects in Arabic receive nominative case when they are immediately C-commanded by finite I so can remain in the specifier of VP. The verb then raises for tense generating the respective VSO word order, giving Arabic a "verb raising" status. An example of a simple Arabic VP following the neutral VSO word order can be seen below.

(44)

أَكَلَ أَحْمَدُ الْخُبْزَ

'akala   'aḥmadu   'al-khubza.
eat[3p.m.sg past]   ahmed[nom] the-bread[acc]
  Ahmed ate the bread.
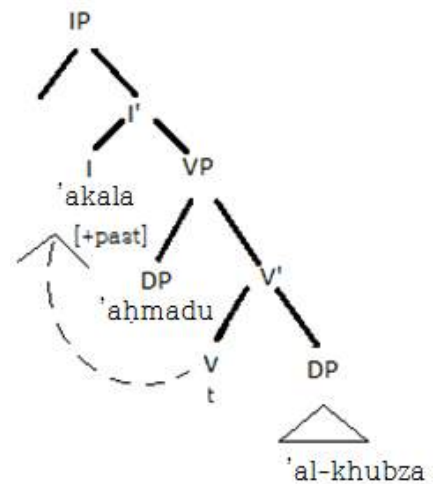
Fig 28

As the example above shows, the verb agrees with the subject DP in gender only but not in number. It is also possible in Arabic for the subject to precede the verb giving an SVO word order similar to English. This subject movement is known in traditional Arabic grammar as

- 37 -

"taqdīm wa ta'khīr" (bringing forward and delaying) and is not uncommon in classical Arabic, particularly in cases where greater emphasis is placed on the subject. Interestingly when sentences follow the SVO word order, the verb not only agrees with the noun in gender, but also in number.

(45)

<div dir="rtl">

يَدرُسُ الْطُّلَابُ في الْمَكْتَبِةِ

</div>

 yadrusu   'al-ṭullābu   fī 'al-maktabati.
 study[3p.m.sg pres]   the-students[nom] in the-library[gen]
 The students study in the library.

(46)

<div dir="rtl">

الْطُّلَابُ يَذرُسونَ في الْمَكْتَبِةِ

</div>

 'al-ṭullābu   yadrusūna   fī 'al-maktabati.
 the-students[nom]   study[3p.m.pl pres] in the-library[gen]
 The students study in the library.

The reason for having partial agreement in verb-subject sentences and full agreement in subject-verb sentences in not entirely clear, but one hypothesis could be that when Arabic has SVO word order, the subject DP moves from its underlying position in spec VP to the specifier position of IP as in English, where the noun then checks the verb for number features. Mohammed (1990, 2000) attempts to explain this phenomenon of partial and full agreement in more detail proposing what he calls the "null-expletive analysis". This idea follows the notion that agreement takes place when there is a spec-head relation between a subject in the specifier position of IP and the head I (Kanye, 1989). In the case of verb initial phrases in Arabic, partial agreement is explained to occur due to the existence of a null-expletive (pro) in the specifier of IP, causing partial agreement between pro and the head I. It is further suggested that pro possesses third person singular agreement features

because of evidence from verbs like *"yabdū"* (to seem) which do not take any arguments but by default also display third person singular features. Because these types of verbs tend to take third person singular agreement features despite having no overt subject, the assumption is that in VSO structures, the verb and the null-expletive are in a spec-head relation leading to partial agreement. When subject DPs precede the verb in SVO sentences, it is assumed under this hypothesis that the subject DP moves from the spec VP position to spec IP, resulting in a spec-head relation between the subject and the head I causing full agreement. A comparison of VSO and SVO phrase structures in Arabic for sentences (45) and (46) according to this hypothesis is represented in figures 29 and 30 respectively.
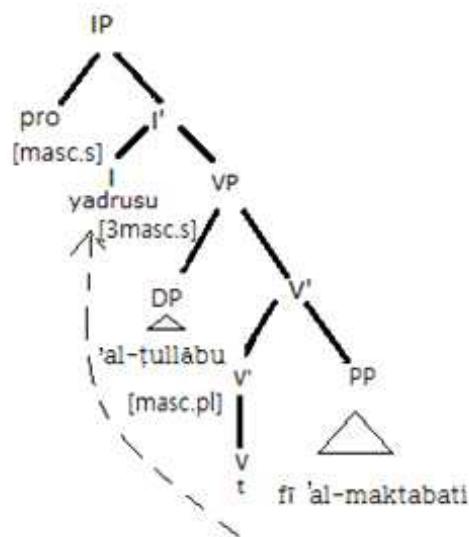
Fig 29 (VSO)
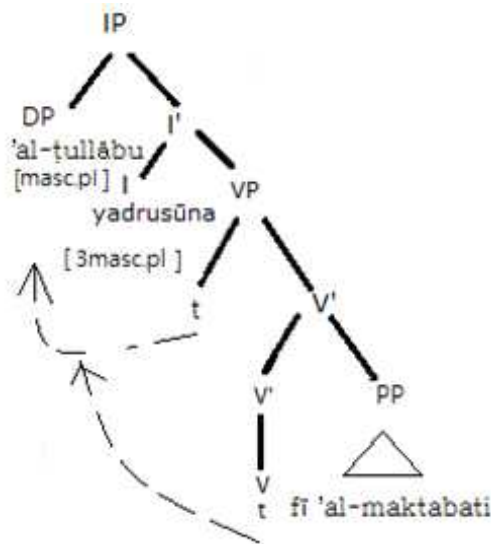
Fig 30 (SVO)

However, Fehri (1993) points out that this analysis isn't consistent with data from Moroccan or Jordanian varieties of Arabic where full agreement occurs even in VSO word orders, postulating that the null-expletive doesn't seem to be limited to third person singular features only. In addition, this explanation comes short in that it fails to account for how post-verbal subjects receive nominal case when in the specifier VP position (Al-Horais, 2009). Several linguists have proposed different analyses to explain the issues of agreement in Arabic under the minimalist program (refer to Fehri, 1993; Soltan, 2006; Al-Horais, 2009), but due to the limitations of this study and the extent of the subject, this study will conclude with the above analysis.

Standard Arabic permits a degree a flexibility for the position of adverbs as do English and Korean. There are instances in Arabic when the adverb which usually takes the accusative case (manṣūb), must come at the end of the sentence such as in certain negative/*"illa"* (except) phrases shown in (47). In other instances, if the subject comes after *"illa"* (except), the adverb must precede the subject like in (48).

(47)

<div dir="rtl">

ما جاءَ آدَمُ إِلَّا ضاحِكًا
</div>

mā jāʾa   ʾādamu   ʾilla   **ḍāhikan.**
neg come[3p.m.sg past] Adam[nom] except **laughingly**[acc]
Adam only ever came laughing.

(48)

<div dir="rtl">

ما جاءَ ضاحِكًا إِلَّا آدَمُ
</div>

mā   jāʾa   **ḍāhikan** ʾilla ʾādamuʾ.
neg come[3p.m.sg past] **laughingly**[acc] except Adam[nom]
Only Adam came laughing.

For most other cases, the adverb may freely precede or appear after the verb, although the preferred option in general is for the adverb to come after the head verb and subject (Hassan, 2014).

(49)

<div dir="rtl">

يَجْري الْوَلَدُ مُسْرِعًا
</div>

yajrī   ʾal-waladu   **musriʿan.**
run[3p.m.sg.pres] the-boy[nom] **quickly**[acc]
The boy runs quickly.
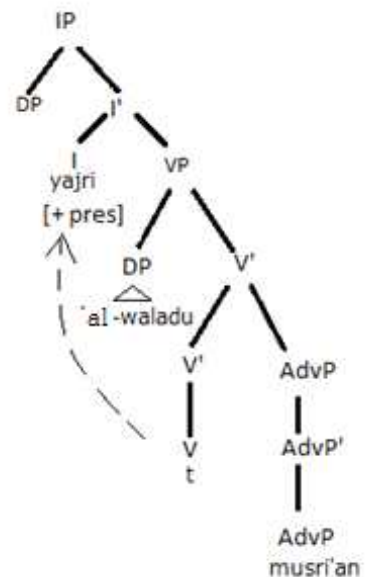
Fig 31

For Arabic future tense constructions, the particle "*sawfa*" can precede the verb, or the affix "*sa-*" can attach to the present tense form of the verb to give future meaning. The latter is used to express the near future whereas "*sawfa*" expresses the distant future (Hassaan, 1994). However, even when "*sawfa*" or "*sa-*" is included for future tense meaning, the verb is still finite. This is in contrast with the English modal "*will*", which occupies the I position making the verb non finite. In addition, the present tense form can in some instances also carry future meaning by itself without the "*sa-*" affix or "*sawfa*" particle depending on the context. So the future particles seem to be optional elements regarding their use in Arabic and display different characteristics to the English Modal "*will*", particularly in that it is not followed by an infinitive. We can conclude then that future tense is also achieved in Arabic through verb raising similar to past and present tense agreement and that tense constructions are represented largely through a change in morphology of the verb itself.

4.4 Korean Verb Phrases

As mentioned earlier, Korean is head final language with an SOV basic word order. Based on the underlying structure proposed at the beginning of this section, the following diagram depicts a simple past tense verb phrase in Korean.

(50) 철수가 빵을 먹었다.
ch'ŏlsu-ka ppang-ŭl mŏgŏss-da.
Ch'ŏlsu-NOM bread-ACC eat [past]
Ch'ŏlsu ate bread.

Fig 32

Here the subject and object nouns are followed by the case markers "*-ka*" and "*-ŭl*" respectively, which were previously argued to subordinate the NP in Korean. Additionally, the verb head which takes the object as its complement comes after the noun, giving Korean a head final parameter. Similar to Arabic, Korean subjects also seem to receive nominative c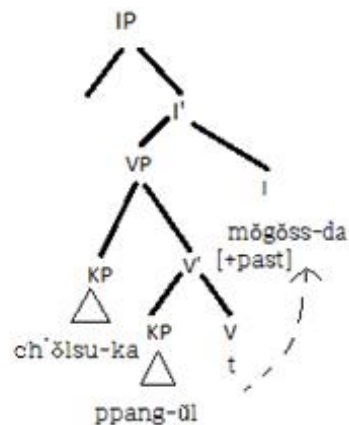ase without movement and therefore remain in the specifier position of VP. There is a lack of consensus as to whether like Arabic, Korean verbs also raise to the I position for tense or inflection, or whether like English, no verb movement takes place. This is because head final languages like Korean don't reveal any clues on the issue of verb movement, as whether the verb moves or not, the word order at S-structure is the same. As such, this has led to a split of opinions in the literature regarding the topic of verb movement in Korean, with some scholars (Han and Park 1994) holding that verb raising doesn't occur, and others arguing that it does (Yoon J.M, 1990; Otani and Whitman, 1991). However, arguments presented by both sides have been largely scrutinized as inconsistent and indefinitive (Hans, Lidz, Musolino, 2007). This analysis will suppose that Korean undergoes verb raising like Arabic, and will use evidence from the behaviour of adverbs to support this view.

Adverbs tend to precede the verb in Korean and may even appear before both the object and the verb. Despite having relatively free word order, there are instances where movement is restricted and the position of adverbs is limited like in the examples below.

(51) 그   학생이   그림을   열심히   그린다.
   kŭ   haksaeng-i   kŭrim-ŭl   **yŏlshimhi**   kŭrin-da.
   that   student-NOM   picture-ACC   **diligently** draw[pres]
   That student draws diligently.

(52) 그   학생이   열심히   그림을   그린다.
   kŭ   haksaeng-i   **yŏlshimhi**   kŭrim-ŭl   kurin-da.

that   student-NOM   **diligently** picture-ACC   draw [pres]

(53) 그   학생이   그림을   그린다   열심히.∗
     kŭ   haksaeng-i   kŭrim-ŭl   kŭrin-da   **yŏlshimhi.∗**
     that   student-NOM picture-ACC draw[pres] **diligently**

(54) 열심히   그   학생이   그림을   그린다.∗
     yŏlshimhi   kŭ   haksaeng-i kŭrim-ŭl   kŭrin-da.∗
     diligently   that   student-NOM picture-ACC draw[pres]

Adverbs such as ″*yŏlshimhi*″ (diligently) or ″*chŏnchŏnhi*″ (slowly) can
come between the verb and its object as well as before both the verb
and object. Although sentence (51) is usually the preferred word order,
(52) is still considered grammatical and not uncommon. The prominent
view among linguists is that adverbials are always left-adjoined in strict
head-final languages like Korean, which gives an S(adverb)OV word
order, and that due to optional object scrambling, the SO(adverb)V word
order is also made possible. Further to this, there are certain adverbs in
Korean like "chal" (well), "da" (all) and "kkok" (firmly), which can only
appear between the verb and it's object.

(55) 그   학생이   그림을   잘   그린다.
     kŭ   haksaeng-i   kŭrim-ŭl   **chal** kŭrin-da.
     that   student-NOM   picture-ACC **well** draw[pres]
     That student draws well.

(56) 그   학생이   잘   그림을   그린다.∗
     kŭ   haksaeng-i   **chal**   kŭrim-ŭl kŭrin-da. ∗
     that   student-NOM   **well** picture-ACC   draw[pres]

(57) 그   학생이   그림을   다   그렸다.
     kŭ   haksaeng-i   kŭrim-ŭl   **da** kŭryŏss-da.
     that   student-NOM picture-ACC **all** draw[past]

That student finished drawing the picture

(58) 그 학생이 다 그림을 그렸다.*
kŭ haksaeng-i **da** kŭrim-ŭl kŭryŏss-da. *
that student-NOM **all** picture-ACC draw[past]

One explanation for this could be that these kinds of adverbs are somehow part of the verb itself and therefore cannot be separated. On the other hand, an alternative analysis is to suggest that Korean permits adverbs to right-adjoin as postulated by Choi (2013), who highlights the fact that the plural marker ″*dŭl*″ can attach to these adverbs proving they are not bound words or part of the verb, because ″*dŭl*″ cannot appear within a word.

(59) 존과 메리가 숙제를 잘들 했다.
john-gwa mary-ka sukche-lŭl chal-dŭl haess-da.
John and Mary-NOM assignment-ACC well-PL do[past]
John and Mary did their assignments well.

(Choi, 2013:39)

Similar to the French example in figure 26 then, a possible solution to this is to suppose that monosyllabic adverbs which appear after the object are actually right adjoined, and as a result of feature checking, the verb raises to I thus producing the correct order. This proposal is further supported by the observation that manner adverbs like "yŏlsimhi" cannot appear to the right of monosyllabic adverbs.

(60) a) 존이 {열심히} 숙제를 잘 했다.
john-i {yŏlshimhi} sukche-lŭl chal haess-da.
 John-NOM {diligently} assignment-ACC well do[past]
 John did his assignment well {diligently}.

  b) 존이 숙제를 잘 {열심히} 했다.*

john-i   sukche-lŭl chal {yŏlshimhi} haess-da.∗
John-NOM assignment-ACC well {diligently} do [past]
John did his assignment well {diligently}.

(Choi 2013:40)

Assuming the structure proposed below is correct, it provides an interesting argument in support of verb raising in Korean. A VP structure with a non-monosyllabic adverb is therefore left adjoined and is reflected in figure 33, and VPs with a right-adjoined adverb between the verb and its object is shown in figure 34.

(61) 철수가   천천히   그림을   그렸다.
    ch'ŏlsu-ka **ch'ŏnch'ŏnhi** kŭrim-ŭl   kŭryŏss-da.
    Ch'ŏlsu-NOM **slowly** picture-ACC draw[past]
    Ch'ŏlsu drew the picture slowly.
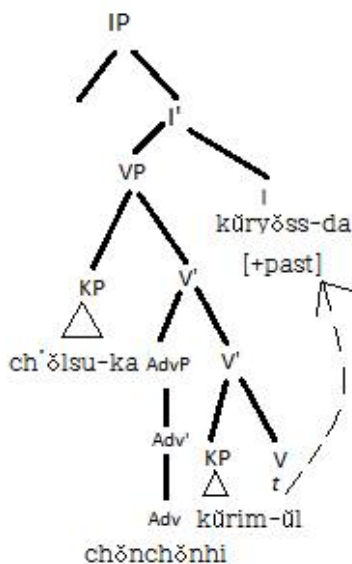
Fig 33

(62) 철수가 　　 그림을 　　 잘 　　 그렸다
　　　ch'ŏlsu-ka kŭrim-ŭl chal　kŭryŏss-da
　　　Ch'ŏlsu-NOM picture-ACC **well** draw[past]
　　　Ch'ŏlsu　drew the picture well.
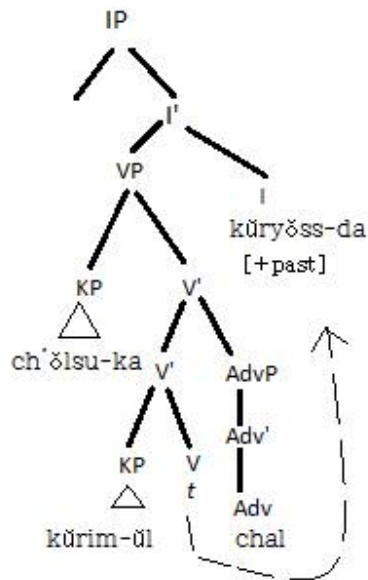
Fig 34

So adverbs in Korean optionally appear between the verb and its object, or before both the object and verb, while there is also a class of adverbs which may only directly precede the verb. The former provides some evidence to suggest that verbs in Korean raise for inflection to generate the correct word order. Otherwise, the X-bar tree for sentence (62) would produce an undesired word order where the adverb appears after the verb.

There seems to be no additional modals or markers for future tense constructions in Korean that resemble the English modal "*will*" or the Arabic future particle "*sawfa*". All future tense constructions are

represented in a change in morphology of the verb itself. This change takes place after the verb stem as shown in figure 35.

Fig 35

In this regard Arabic and Korean verbs seem to share more features in common than English as all tenses can be represented morphologically without the addition of any modals.

4.5 Summary

This section has demonstrated how simple verb constructions can be represented in Arabic, Korean and English, showing the transformations that take place in each language from the D-structure to the S-structure representations resulting in the basic word order for each language. Evidence for verb raising in Arabic and Korean to derive their respective grammatical word orders was observed, whereas English was shown to display affix lowering. In addition, the positions in which subjects gain nominative case in each language and the associated movements for this was discussed. In this regard, Arabic and Korean proved to show more similarities as subject NPs in neither language require movement for case in order to generate their default word order. The inclusion of AdvPs to the VP structure showed relative flexibility in all three languages. Past and present tense VPs didn't vary much, however the future tense VP in English differed from Arabic and Korean through the use of the modal "*will*" making the verb non finite.

Arabic and Korean future tense VPs were similar in that they were both essentially realized morphologically, although Arabic can make use of an optional future tense particle or affix for emphasis. The basic structure for generating simple verb phrases in each language according to the analysis above is as follows:
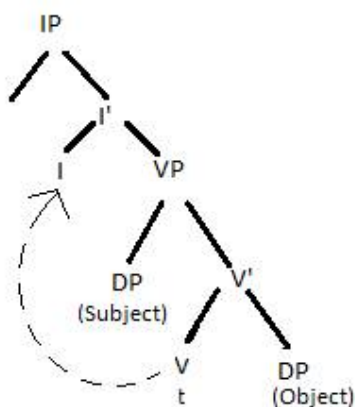
Arabic   *English*   *Korean*

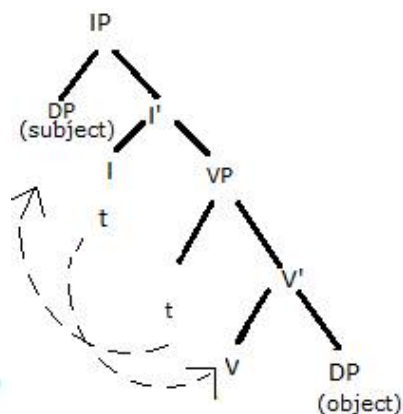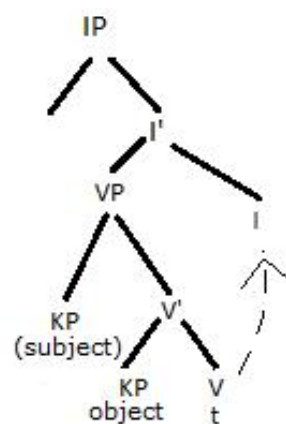Fig 36   Fig   36.1   Fig 36.2

5. Conclusion

This study set out to compare and contrast the simple phrase structures of Arabic, Korean and English as well as provide an account for the syntactic variations across the three languages. As theories and hypotheses in generative syntax are constantly developing, numerous approaches of analysing phrase structures constantly arise that are dedicated to understanding the syntax of languages. In this regard, among the challenges of this research was identifying a consistent scheme that would satisfy the scope of this research. With this being a generic comparative study between three languages, I was forced to refrain from focussing extensively on one language or one grammatical aspect of a particular language which could in itself, comprise a separate research topic. It was therefore not possible to do justice to the literature in this field and this study was forced to compromise on including more complicated proposals in order to maintain balance and provide a generic overview of Arabic, Korean and English phrase structures. One such example was the choice to use the inflectional phrase (IP) as a generic item for inflection and not dividing this into further functional categories such as tense (TP) or agreement (AgrP) following the split-inflection-hypothesis (Pollock 1989). In addition, the scope of analysis was limited to simple phrases meaning more complex aspects of phrase structure in this study were inevitably neglected.

The study found that Arabic and Korean seem to have more syntactic features in common than they do with English. This is largely due to the rich morphology in each language which permit free movement and other features which allow expletives to be covert. English on the other hand depends a lot more on word order for grammatical sentences due to a relatively poor morphology, and also require overt expletives to fill subject positions. According to Chomsky (1970), this is to be expected because the enrichment of one component of grammar tends to permit

simplification in other areas. In the case of NPs, the existence and behaviour of articles in Arabic and English suggest that nouns are dominated by the DP in both languages. On the other hand, the KP was found to be more likely to close off the lexical domain for nouns in Korean. In accordance with the X-bar theory, this study operated on the premise that all languages have similar deep structures and provided an analysis which generated their subsequent surface structure forms. Arguing that subjects are underlyingly generated in spec VP following the VP-internal subject hypothesis, the study showed that English VPs display two movements, affix lowering and DP (NP) movement motivated by feature checking that leads to an SVO word order generation. The existence of modals was observed to prevent affix lowering. In such cases only NP movement takes place. In the Arabic and Korean examples, subjects remain in spec VP where they receive nominative case, and the verb raises for tense generating the respective VSO and SOV word orders. Furthermore, the relevant parameter setting for head final languages was implemented for Korean allowing complements to be on the left of heads. Avoiding some of the more technical issues that were not discussed in this research, the analysis showed that as far as simple phrases are concerned, the X-Bar theory was successful in generating and accounting for some of the linguistic variation in basic word orders for Arabic, Korean and English, displaying more similarities between Arabic and English NPs, whereas VPs in Arabic and Korean proved to share more common features.

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McCune-Reischauer Romanization System for Korean Language:
http://www.library.illinois.edu/asx/koreancollection/KoreanRomanizationTable.html

Appendix A

Arabic Transliteration Chart[1]

Vowels	Roman	Consonants	Roman
ا	ā	ء	ʾ
ي	ī	ب	b
و	ū	ت	t
	a	ث	th
	i	ج	j
	u	ح	ḥ
ي	ay	خ	kh
	aw	د	d
		ذ	dh
		ر	r
		ز	z
		س	s
		ش	sh
		ص	ṣ
		ض	ḍ
		ط	ṭ
		ظ	ẓ
		ع	ʿ
		غ	gh
		ف	f
		ق	q
		ك	k
		ل	l
		م	m
		ن	n
		ه	h
		و	w
		ي	y

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[1] Institute of Islamic Studies, Mcgill University, transliteration chart.
http://www.arabicresearchguide.com/thesis-writing-standardization/transliteration/systems-of
-transliteration/

Appendix B

Korean Transliteration Chart[2]

Vowels	Roman	Consonants	Roman (Initial)	(Medial)	(Final)
ㅏ	a	ㄱ	k	**k**, **g** (between vowels and after **m**, **n**, **ng**, **l**), **ng** (before **m**, **n**, **l**)	k
ㅑ	ya	ㄴ	n	**n**, **l** (when preceded or followed by **l**)	n
ㅓ	ŏ	ㄷ	d	**t**, **d** (between vowels and after **m**, **n**, **ng**)	t
ㅕ	yŏ	ㄹ	n	**r** (between vowels), **l** (before all other consonants and after **n**, **l**), **n** (after other consonants)	l
ㅗ	o	ㅁ	m	**m**	m
ㅛ	yo	ㅂ	p	**b** (between vowels and after **m**, **n**, **ng**, **l**), **m** (before **m**, **n**, **l**), **p** (before and after all other consonants)	p
ㅜ	u	ㅅ	**s**, **sh** (before **i**)	**s**, **sh** (before **i**), **n** (before **m**, **n**, **l**)	t
ㅠ	yu	ㅇ	Not romanized	Not romanized, **ng** (as syllabic final)	ng
ㅡ	ŭ	ㅈ	ch	**j** (between vowels, and after **m**, **n**, **ng**); **ch** (after all other consnants)	t
ㅣ	i	ㅊ	ch'	ch'	
ㅐ	ae	ㅋ	k'	k'	
ㅒ	yae	ㅌ	t'	t'	

(2) McCune-Reischauer Romanization System for Korean Language

http://www.library.illinois.edu/asx/koreancollection/KoreanRomanizationTable.html

ㅔ	e	ㅍ	p'	p'	
ㅖ	ye	ㅎ	h	h	
ㅚ	oe	ㄲ	kk	kk	kk
ㅟ	wi	ㄸ	tt	tt	
ㅢ	ŭi	ㅃ	pp	pp	
ㅘ	wa	ㅆ	ss	ss	
ㅙ	wae	ㅉ	tch	tch	
ㅝ	wŏ				
ㅞ	we				

Appendix C

List of Abbreviations

+def: Definite

-def: Indefinite

1p: First person

2p: Second person

3p: Third person

Acc: Accusative case

Adj: Adjective

Adv: Adverb

C: Complement

D: Determiner

D-structure: Deep structure

Dem: Demonstrative

Dl: Dual

EPP: Extended Projection Principle

Fem: Feminine

GB: Government and Binding

Gen: Genitive case

GG: Generative Grammar

I: Inflection

K: Case

M: Masculine

N: Noun

Nom: Nominative case

P: Phrase

Past: Past tense

Pl: Plural

P&P: Principles and Parameters

Pres:　Present tense

R-expression: Reference expression

S-structure: Surface Structure

Sg:　　Singular

SOV:　Subject-Object-Verb

Spec:　Specifier

SVO:　Subject-Verb-Object

t:　　　Trace

V:　　　Verb

VOS:　Verb-Object-Subject

VSO:　Verb-Subject-Object