

Comparative Constructions in Modern Standard Arabic (MSA): An HPSG approach



By

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Abstract

The aim of this thesis is to provide a description of comparative constructions in Modern Standard Arabic (henceforth MSA) and develop an analysis for some of the facts framed within Head-driven Phrase Structure Grammar (henceforth, HPSG). To the best of my knowledge, MSA comparative constructions have not been addressed before but present an interesting challenge for Arabic and general linguistics.

MSA has simple and complex comparatives, which look rather like their counterparts in many other languages. Simple comparatives are indeed like those of other languages, in that it involves adjectives with a distinctive form and semantics and an extra PP complement. Complex comparatives, however, are quite different. They involve an adjective with a nominal complement, which may be an adjectival *maṣḍar* (known in English as adjectival noun) or an ordinary noun, and are rather like so-called ‘adjectival constructs’. Complex comparatives in English and many other languages might be analysed as involving periphrasis, where a slot in a paradigm is filled not by a single word but by a pair of words. My analysis, however, argues that MSA complex comparative construction is not a case of periphrasis. Instead, it is an independent construction that expresses the meaning that would otherwise be expressed by certain missing forms. Simple comparatives, complex comparatives, and adjectival constructs can all be analysed with lexical rules within HPSG.

With a ‘real’ nominal comparative that quantifies a noun, the thesis shows that in MSA *kutubun ʔakṭar* ‘more books’ and *kutubun ʔaḥsan* ‘better books’ are syntactically essentially the same in which we have nouns with an attributive adjective.

The thesis also shows that MSA has both ordinary clausal comparatives and phrasal comparatives. The former is introduced only by *maa* and involves adjectival and nominal gaps and adverbial gaps in subcomparative cases and the latter is introduced by free relatives *maa*,

man and *allḍai* and have either nominal gaps or resumptives. It was also shown that *maa* comparatives with nominal gaps are ambiguous and can be either a clausal or a phrasal complement.

Dedication

This thesis is dedicated

To

My father

My husband and my children

&

My sister, Eman

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First and foremost, I have to praise my God (ALLAH) for all the bounties He bestows on me and for giving me the opportunity to study here and the strength to accomplish this thesis. A number of people have also contributed directly or indirectly to the completion of this thesis whom I should also acknowledge.

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List of Transliteration Symbols

ʔ	(أ)	voiceless glottal stop
t̪	(ث)	voiceless interdental fricative
j	(ج)	voiced palate-alveolar affricate
ħ	(ح)	voiceless pharyngeal fricative
x	(خ)	voiceless velar fricative
d	(د)	voiceless alveolar stop
d̪	(ذ)	voiced interdental fricative
r	(ر)	voiced alveolar
z	(ز)	voiced alveolar fricative
s	(س)	voiceless alveolar fricative
š	(ش)	voiceless palate-alveolar fricative
ṣ	(ص)	(emphatic) voiceless dental fricative
ḍ	(ض)	(emphatic) voiced dental fricative
ṭ	(ط)	(emphatic) voiceless dental stop
ḍ̪	(ظ)	(emphatic) voiced interdental fricative
ʕ	(ع)	voiced pharyngeal stop
ġ	(غ)	voiced pharyngeal fricative
f	(ف)	voiceless labiodental fricative
q	(ق)	voiceless uvular stop
k	(ك)	voiceless velar stop
l	(ل)	voiced alveolar lateral
m	(م)	voiced bilabial nasal

n	(ن)	voiced alveolar nasal
h	(ه)	voiceless glottal fricative
w	(و)	voiced labial glide
y	(ي)	voiced palatal glide
aa	(قال)	Long low front unrounded vowel
ii	(قيل)	Long high front unrounded vowel
uu	(بقول)	Long high back rounded vowel

List of Abbreviations

MSA	Modern Standard Arabic	AdvP	Adverbial Phrase
1	First person	PP	Prepositional Phrase
2	Second person		
3	Third person		
NOM	Nominative		
ACC	Accusative		
GEN	Genitive		
SG	Singular		
DUAL	Dual		
P	plural		
F	Feminine		
M	Masculine		
DEF	Definite		
INDF	Indefinite		
ACT	Active		
PASS	Passive		
PERF	Perfective		
PRED	Predicative Particle		
CC	Clausal Comparative		
COMP	Complementizer		
AP	Adjective Phrase		
NP	Noun Phrase		
VP	Verb Phrase		

NOTE:

Some parts of Chapters Four and Five appeared in:

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Chapter 1 Introduction

1.1 Comparative Constructions in Natural Languages: an Overview

This study investigates comparative constructions in Modern Standard Arabic (henceforth MSA). Before we go on, however, it is important to give a cross-linguistic overview of comparative constructions by looking at their definition and typology. In any human languages, there are various means of expressing comparison between entities (or properties), but only a subset of these possibilities are traditionally referred to as comparatives. For illustration, consider the following examples (Bacskai-Atkari, 2014: 2) :

- 1)
 - a. Sara was indeed furious when she saw that you had beaten her brother. But you should have seen her mother!
 - b. Sara is beautiful, but Mary is very beautiful.
 - c. Kim's salary is 5000 and Lee's salary is 10,000.
- 2)
 - a. Kim is taller than Lee.
 - b. Kim is more intelligent than Lee.

All the examples in (1) have comparative meanings but contain no overt comparative marking. Thus in (1a), the first clause expresses that Sara is furious to a certain degree while the second clause contains no explicit reference to such a degree. Although no overt comparison is made in this example, one understands that the degree of Sara's mother's fury exceeds Sara's degree. Example (1b) contains an explicit reference to the degree of the referents' beauty. The interpretation is that on a scale of beauty, the degree to which Sara is beautiful is greater than the

average and that the degree to which Mary is beautiful is considerably greater than the average. The comparison between the two degrees is again not explicit. Finally, example (1c) contains a clear reference to the amount of salary that *Kim* and *Lee* earn and to the fact that Lee's salary exceeds Kim's, but still no explicit comparison. The examples in (2), by contrast, overtly express a comparison between two degrees. Example (2a) expresses that the degree to which *Kim* is tall exceeds the degree to which *Lee* is tall, while (2b) expresses that the degree to which *Kim* is intelligent is greater than the degree to which *Lee* is intelligent. The comparison between degrees is expressed in (2a) by a particular morphology on the adjective (i.e. *taller*). This type of comparison is referred to as a simple comparative construction. The comparison in (2b) is expressed by two separate elements; the comparative word *more* (i.e. sometimes referred to as a degree word) and the adjective *intelligent*. This type of construction is referred to as a complex comparative construction.

Comparative constructions are defined as syntactic constructions that express a comparison between two entities (or properties) in quality, quantity, or degree. A comparative construction usually contains three basic elements: a predicate and two noun phrases. One is the comparee or topic of comparison: the entity under comparison or whose position on the scale is evaluated. The other corresponds to the entity to which the comparee is compared; it is the standard of comparison. For example, in a sentence like (2a), the predicative adjective *tall*, which names the scale on which the comparison takes place, is the comparative predicate. *Kim* is the comparee NP, and *Lee* is the standard NP. In this particular construction, the reference value of comparison is expressed by '*taller*' in the matrix clause. The standard comparison is expressed by the subordinate clause (*than Lee*) and is introduced by the complementizer *than*, which also serves as the standard marker. (Stassen, 1984); (Huddleston & Pullum, 2002); (Bacskai-Atkari, 2014).

In semantic or cognitive terms, comparison can be defined as ‘a mental act by which two objects are assigned a position on a predicative scale’ (Stassen, 2013). In other words, comparative constructions are used to assign two entities or properties a position on a scale or property encoded by a predicate. For example, in *Kim is taller than Lee*, *Kim* is assigned a more prominent position than *Lee* on the scale described by the predicate ‘tall’; i.e. the scale of height. The previous example is an example of a particular type of comparison referred to as inequality comparison. Inequality comparison is one in which the two positions on the scale are different. There are other types of comparison. In *Kim is as tall as Lee*, the positions on the scale are similar. This is referred to as an equality comparison. In other contexts, the comparison is not concerned with ‘relative positions on some scale or relative degrees of some gradable property’. These types of comparison are termed non-scalar or non-quantitative comparisons.

Typologically, Stassen (1984) has shown that there are some types of comparative constructions cross-linguistically, such as exceed, separative, and particle¹. These type are shown with examples in the following:

- Exceed comparatives:

In this type, comparative meaning can be expressed by using the verb “exceed, surpass”, and there is no use of comparative marker. This exceed type is observed in African languages. The example (3) is the comparative in Hausa, which is a language spoken in western Africa².

3) Ka fi ni tsawo
 you exceed me [in] height
 ‘You are taller than me’

¹ For more details on the typology of comparative constructions, see (Stassen, 1984: 155-159).

² This example has been taken from the following website:

http://aflang.linguistics.ucla.edu/Hausa/Hausa_online_grammar/BE/comparatives.html#anchor356985

- Separative comparatives:

In separative comparatives, the standard NP is invariably encoded as a constituent part of an adverbial phrase with a separative (i.e. source) interpretation. This type can be found in Semitic languages like Arabic and Hebrew (Stassen, 1984: 155). For instance, in the Arabic example (4), the source preposition *min* ‘from’ is used as a comparative marker.

- 4) ṣaliy-un ṭaṭwal-u min ṭax-i-hi
 Ali-NOM taller-NOM from brother-GEN-his
 ‘Ali is taller than his brother.’

- Particle comparatives

Finally, the particle type is observed in almost all European languages. The standard marker is expressed by the particle form, and the English comparative particle ‘than’ is an instance of this type.

In this section, it has been shown that there are different ways in which languages express comparative constructions. In the dissertation, I will show that although Arabic comparatives are broadly similar to their counterparts in English, they are quite different from English and many other languages.

1.2 Purpose and Scope of the Study

Modern Standard Arabic (MSA), as many other languages, has simple and complex comparatives as exemplified in (5) respectively.

- 5)
 a. kamal-un ṭakbar-u min ṣaliy-in
 Kamal-NOM older.SG.M-NOM from Ali-GEN
 ‘Kamal is older than Ali.’

- b. ζ aliy-un ʔaktar-u ḍakaaʔ-an min xaalid-in
 Ali-NOM more-NOM intelligence-ACC from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’

The example (5a) shows that simple comparatives in MSA are like simple comparatives in English (cf. 2a). In both cases, the comparison between two entities is expressed by a distinctive morphology on the adjective. In the sentence (5b), the degree of intelligence of two entities is compared. The reference value of comparison is expressed by two separate elements (i.e. ʔaktar-u ḍakaaʔ-an (more intelligence)). In this case, the MSA example is broadly similar to the English example (cf. 2b). I will return to this shortly in (section 1.3).

These simple and complex comparative constructions are known in the literature as phrasal comparatives because they contain only a single phrase following the comparative marker, which is the preposition *min* ‘from’ (i.e. corresponding to the English *than*).

MSA also displays clausal comparatives, in which the preposition *min* ‘from’ is followed by a clause introduced by the complementizer *maa* ‘that’. These are illustrated in the following examples.

- 6)
 a. kamaal-un ʔatwal-u mi-[maa kaana ʔab-uu-hu ____]
 Kamal-NOM taller.SG.M-NOM from-[that was father-NOM-his ____]
 ‘Kamal is taller than his father was.’
 b. ζ aliy-un ʔaktar-u ḍakaaʔ-an mi-[maa kaana ____]
 Ali-NOM more-NOM intelligence-ACC from-[that was ____]
 ‘Ali is more intelligent than he was.’

The comparative clauses in (6) are adjectival as they involve adjectival gaps. The gaps correspond to the adjectives *tawiil* ‘tall’ and *ḍakey* ‘intelligent’ respectively.

Clausal comparatives can be also nominal and adverbial as shown respectively in the following examples.

- 7)
- a. $\text{\textcircled{A}liy-un}$ $\text{\textcircled{I}štraa}$ kutub-an $\text{\textcircled{A}ktar-a}$
 Ali-NOM bought.3SG.M books-ACC more-ACC
 mi-[maa] $\text{\textcircled{I}štraa}$ xaalid-un $\text{\textcircled{A}qlaam-an}$
 from-[what bought.3SG.M Khalid-NOM pens-ACC]
 Ali bought books more than Khalid bought pens.’
2. yusaafiru $\text{\textcircled{I}laa}$ landan-a $\text{\textcircled{A}ktar-a}$ mi[maa]
 travels.3SG.M to London-GEN more-ACC from-[that
 tusaafiru $\text{\textcircled{I}laa}$ baaris-a
 travels.2SG.M to Paris-GEN
 ‘He travels to London more than you travel to Paris.’

In (7a), the comparative word $\text{\textcircled{A}ktar}$ ‘more’ quantifies the noun. In (7b), however, it is understood that $\text{\textcircled{A}ktar}$ ‘more’ is adverbial and answers the question of *how often?*, and does not modify the preceding noun.

Simple and complex clausal and phrasal comparatives are the foci of the present study. The main purpose is to provide a description of different aspects of these constructions in MSA. Then, to provide an analysis accounting for some of these within the framework of Head-driven Phrase Structure Grammar (henceforth HPSG). To the best of my knowledge, there is no comprehensive study on the syntax of MSA comparative constructions in any framework³. This is a gap, which the current study aims to remedy.

Particularly, the study addresses the following questions: What are comparative constructions in MSA? How are they formed and how can they be classified? How can predicative and attributive comparative adjectives be accounted for within HPSG? How to account for the derivation of the

³ Comparative constructions in English have been discussed widely in the generative literature (e.g. (Bresnan, 1973,1975); (Corver, 1993); (Kennedy, 1999, 2002) and (Lechner, 1999, 2004)). However, there is very little discussion on some aspects of Arabic comparative constructions. There is a brief discussion of clausal comparatives (i.e. comparatives headed by *maa* ‘that’) in MSA in (Fassi-Fehri, 1978) who assumes an early version of the transformational approach, and a study by (McNabb & Kennedy, 2011), on *maa* and *illi* comparatives in Palestinian Arabic PA within minimalist approach. These two studies will be discussed briefly in Chapter Six.

form of lexical descriptions for comparatives from that of lexical descriptions for non-comparatives to capture the generalization?

In addition, the thesis addresses the issue of the structure of what can be called nominal comparatives in MSA, such as (8a), and how they differ from other constructions which look like nominal comparatives, as in (8b)?

8)

- a. lada-ya kutub-un ʔaktar-u /ʔaqall-u min-ka
 have-1SG.MAS books-NOM more-NOM /less-NOM from-2SG.M
 ‘I have more/fewer books than you’
- b. ʔanaa ʔaktar-u/ʔaqall-u kutub-an min ʕaliy-in
 I.1SG.M more-NOM/less-NOM books-ACC from Ali-GEN
 ‘I am more/fewer books than Ali.’

With regards to complex comparatives, what is their nature and can they be seen as a case of periphrasis filling a slot in an adjectival paradigm or not?

Finally, the present study will briefly discuss the question of how can we distinguish between real clausal comparatives as those in (9), and what looks like clausal comparatives (i.e. free relatives), such as those given in (10).

- 9) ʕaliy-un ʔaṭwal-u mi-[maa kaana ʔab-u-hu ____]
 Ali-NOM taller-NOM from [what was father-NOM-his ____]
 ‘Ali is taller than his father was ____ .’

- 10) ʕaliy-un qaraʔa kutub-an ʔaktar-a
 Ali-NOM read.3SG.M books-ACC more-ACC
 mi-[maa qaraʔ-tu-**hu**/____]
 from-[COMP read -1SG.MAS-it ____]
 ‘Ali read more books than (the ones that) I read.’

I will argue that *maa* comparatives in examples like (9) are not free relatives although they look like free relatives. I will show that such structure involves a genuine clausal complement, and provide evidence for that.

1.3 The Data

This research is based on data from Modern Standard Arabic (MSA), which is also sometimes referred to as simply Standard Arabic (SA). According to (Holes, 2004: 5), MSA derives from Classical Arabic (CA), the language found in the Holy Quran, Prophet Mohamed's words (peace be upon him), poetry and old texts⁴. In fact, MSA is the modern descendant of CA, unchanged in the essentials of its syntax but very much changed and still changing in its vocabulary and phraseology. MSA is the official language of all the members of the Arab League, from North Africa to the Arabian Gulf. It is the language of written Arabic media, e.g. newspapers, books, journals. It is also the language of public speaking and news broadcasts on radio and television. This means that in the Arab world one needs to be able to comprehend both the written and the spoken forms of MSA (Ryding, 2005: 5).

At present, the Arabic-speaking world is shared by several language varieties, which include MSA, and a number of Arabic vernaculars that remain mainly as spoken dialects. Those dialects differ from one another, with mutual intelligibility decreasing as the geographical distance between them increases (Aoun, Choueiri, & Benmamoun, 2010).

⁴ Classical Arabic is considered to be the most prestigious form of Standard Arabic. Today it is used in prayers, prestigious religious celebration and sometimes in the movie industry when the movies are about Islamic stories.

The Arabic vernaculars are what children acquire at home from their families, and thus, they are the native languages of the people in the Arab world. MSA, in contrast, is the language for writing and for formal speaking and is only acquired at school. Therefore, MSA is not spoken natively in any part of the Arab world, although it is regarded as the official language. Aoun et al (2010) point out that Arab academies in the twentieth century have contributed tremendously to the evolution of MSA in an attempt to preserve standard forms from the influence of dialectal varieties. Preserving MSA from such influence is an endeavour to maintain a uniform codified variety used invariably, at least officially, by all Arabic speakers. In fact, MSA serves as a resource language for communication between literate Arabs from geographically distant parts of the Arab world. It also has a political association, since MSA is viewed as a symbol of the Arab world unity (Ryding, 2005); (Aoun et al., 2010).

However, it should be noted that the negative judgments in MSA are different from the general nature of negative examples. For other languages with native speakers, negative evidence is based on grammaticality judgment of a particular speaker of the variety, but for MSA this is different. Therefore, the data used in this thesis had to meet three criteria to be considered grammatical or not. First, it did not significantly contradict the syntax of CA. Second, it could be found in relevant sources (e.g. Arabic grammar books/references⁵ and Arabic corpus⁶). Third, it was considered acceptable by Arabic-speaking consultants whose academic specialty is in Arabic linguistics⁷.

⁵ Arabic grammar books: (Al-Nadiri, 2005) *naḥu l-luġati l-ʿarabiyyah* (Arabic syntax); (Hasan, 1976) *N-naḥu l-waafi* (The complete syntax).

⁶ Some examples found in the Arabic corpus website: <http://arabiccorpus.byu.edu/index.php>.

⁷ Thanks are due to Pro. Abu Aws Al-shamsaan from King Saud University in Riyadh, Areej bayusef, Radhiyah bahmeed, and Wafa Aljahdali from King Abdulaziz University in Jeddah, and Shareefah Alzubaidi from Umm Al-Quraa University in Makkah, for revising MSA data in this thesis.

There are several reasons for limiting the current investigation to constructions found in the MSA variety while excluding all data from colloquial varieties (except for expository and/or comparison purposes). First, as stated earlier, there is no study on the syntax of MSA comparative constructions. Second, unlike MSA, other Arabic varieties lack overt case morphology. Since the morphological feature of case is central to the syntax discussions contained in this thesis, these varieties lie outside the scope of this research.

Finally, other Arabic varieties, such as Hijazi Arabic HA (the researcher's dialect) are different from MSA in expressing complex comparatives. In HA, complex comparatives can only be expressed by a direct comparison between the degree of the two entities (or properties). Compare, for instance, the MSA examples in (11) and their HA counterparts in (12).

11)

- a. *haḍa* *l-burg-u* *ʔakṭar-u* *ʔirtifaaʕ-an* min
 this DEF-bridge-NOM more-NOM height-ACC from
l-mabnaa
 DEF-building
 'This bridge is higher than the building.'
- b. *ʕaliy-un* *ʔakṭar-u* *ḍakaaʔ-an* min *xaalid-in*
 Ali-NOM more-NOM intelligence-ACC from Khalid-GEN
 'Ali is more intelligent than Khalid.'

12)

- a. *haḍa* *l-burg* *murtafiʕ* *ʕan* *l-mabnaa*
 this DEF-bridge high on DEF-building
 'This bridge is higher than the building.'
- b. *ʕaliy* *ḍakiy* *ʔakṭar* min *xaalid*
 Ali intelligent-ACC more-NOM from Khalid
 'Ali is more intelligent than Khalid.'

In (12a), the noun *l-burg* 'the bridge', which is the target of the comparison, is followed by the adjective *murtafiʕ* 'high' and the PP headed by *ʕan* 'on', which express the standard of comparison. In (12b) the target of comparison, the adjective *ḍakiy* 'intelligent' is followed by the

comparative word *ʔakṭar* ‘more’. The MSA examples in (11) are much like their English translations. However, as the English glosses show, *ʔirtifaaʕ-an* ‘height’ and *thakaʔ-an* ‘intelligence’ are not adjectives; they are nominal forms of the adjectives, known in traditional Arabic grammar as *maṣḍar*. This might seem like a minor, unimportant difference. I will show, however, that it is an important matter, reflecting the fact that MSA complex comparatives are quite different from the complex comparatives of many other languages. The most important evidence for this comes from the fact that they can contain not just adjectival *maṣḍar* (i.e. nominal form of adjective) but also ordinary nouns. Consider the following examples:

- 13) ʔanaa ʔakṭar-u maal-an min ʕaliy-in
 I.SG more-NOM money-ACC from Ali-GEN
 ‘I have more money than Ali.’ / I am more money than Ali.’

I will also show that the MSA construction is very similar to another construction referred to as the adjectival construct construction, illustrated in (14).

- 14) l-walad-u ʕaḍiim-u l-ḥaḍḍ-i
 DEF-boy-NOM great-NOM DEF-fortune-GEN
 ‘The boy has great luck’ / The boy is very lucky’

Both constructions involve an adjective with a nominal complement and both have what can be called a possessive interpretation. These constructions in MSA are worth investigating.

1.4 Outline of the Thesis

The thesis is organised as follows. Chapter One comprises this introduction presenting an overview of comparative constructions in natural languages, the purpose and scope of the study, the data used in the following chapters and an outline of the thesis.

Chapter Two lays out the descriptive and theoretical background of the thesis. There I will first present those aspects of MSA that are relevant to the discussion in subsequent chapters, namely basic clause structures, the syntactic distribution of Arabic adjectives and their morphological properties. I will then introduce the basic assumptions and properties of the HPSG framework and outline how different word orders (VOS, SVO) as well as nominal clauses can be analysed within this model.

In chapter Three, I provide a full description of comparative constructions in MSA, focusing particularly on the formation of comparative adjectives, the different types of comparative constructions and their morphosyntactic properties.

In chapter Four, I provide an HPSG analysis of some facts of predicative and attributive uses of simple adjectival comparatives in MSA, providing appropriate lexical descriptions and lexical rules. In this chapter I also consider (real) nominal comparatives in MSA and related issues, such as the analysis of attributive comparative adjectives.

In chapter Five, I provide an HPSG analysis of complex adjectival comparatives in MSA. There, I first provide a reminder of the basic properties of complex comparatives, and then investigate the nature of Arabic complex adjectival comparatives. I also consider adjectival constructs and show that, despite some important differences, these are broadly similar to complex adjectival comparatives in structure and interpretation. Finally, I develop HPSG accounts of complex comparatives and adjectival constructs, with appropriate lexical descriptions and lexical rules.

In chapter Six, I discuss further issues that have not been discussed in previous chapters: clausal comparatives in MSA (i.e. when the *min* phrase is followed by a clause headed by *maa*) and discontinuity in complex comparative constructions (i.e. the PP complements are separated from the head selecting them).

Chapter Seven concludes and summarizes the findings of the thesis. It will also look at residual issues and makes some suggestions for further research.

Chapter 2 Background

2.1 Descriptive Background on Relevant Issues in MSA

This section will briefly present some basic structures of MSA and related issues that are relevant to the discussion in following chapters. It addresses two core topics: basic clause structures and the category of adjectives.

2.1.1 Basic Clause Structures

2.1.1.1 Verbal Clauses

MSA verbal clauses show two main orders: VSO and SVO⁸. Verb-initial clause structures can be found in both main and subordinate clauses introduced by the complementizer *ʔan* ‘that’ (the embedded clause is demarcated by brackets), as shown in the following, respectively⁹:

15)

- a. kataba l-ʔawlaad-u d-dars-a
wrote.3SG.M DEF-boys-NOM DEF-lesson-ACC
‘The boys wrote the lesson.’
- b. kataba-t l-banaat-u d-dars-a
wrote.3SG.F DEF-girls-NOM DEF-lesson-ACC
‘The girls wrote the lesson.’

⁸ In traditional Arabic grammar, a declarative sentence is classified into two categories depending on the type of the initial element. The sentences that begin with a verb are verbal sentences, whereas the ones that begin with a noun or a noun phrase are considered nominal sentences. This classification is not based on whether the sentence involves a verb but rather on the element that introduces the sentence as a criterion. However, some recent researches have assumed that verbal sentences are those that contain a verb, irrespective of its position in the sentence, whereas nominal sentences are those that do not have an explicit verb (see among others (Wright, 1995), (Benmamoun, 2000a) and (Holes, 2004)). For the sake of clarity, I follow the latter position.

⁹ The complementizer *ʔan* ‘that’ can only be followed by verb-initial clauses.

16)

- a. jayyd-un ?an [yaktuba l-?awlaad-u d-dars-a]
 good-NOM that [write.3SG.M DEF-boys-NOM DEF-lesson-ACC]
 ‘It is good that the boys write the lesson.’
- b. jayyd-un ?an [taktuba l-banaat-u d-dars-a]
 good-NOM that [write.3SG.F DEF-girls-NOM DEF-lesson-ACC]
 ‘It is good that the girls write the lesson.’

In these structures, as illustrated in the above examples, the subject follows the verb, which shows agreement in person and gender, but not in number. Full agreement between the verb and its post-verbal subject triggers ungrammaticality, as the following demonstrate¹⁰:

17)

- a. *katab-uu l-?awlaad-u d-dars-a
 *wrote-3P.M DEF-boys-NOM DEF-lesson-ACC
 ‘The boys wrote the lesson.’
- b. *katab-na l-banaat-u d-dars-a
 *wrote-3P.F DEF-girls-NOM DEF-lesson-ACC
 ‘The girls wrote the lesson.’

18)

- a. *jayyd-un ?an [yaktub-uu l-?awlaad-u d-dars-a]
 *good-NOM that [write-3P.M DEF-boys-NOM DEF-lesson-ACC]
 ‘It is good that the boys write the lesson.’
- b. *jayyd-un ?an [taktub-na l-banaat-u d-dars-a]
 *good-NOM that [write-3P.M DEF-girlss-NOM DEF-lesson-ACC]
 ‘It is good that the girls write the lesson.’

¹⁰ The Arabic verbs may agree with the subject in the following features:

- **Person:** verbs in Arabic inflect for three persons: first person, second person and third person.
- **Number:** Arabic verbs normally inflect for three categories of number: singular, dual and plural
- **Gender:** There are only two genders in Arabic: masculine and feminine. It is sometimes argued that the masculine is the basic one in that the default/basic form of the verb has the masculine gender feature without inflection.

In all four ungrammatical sentences above, the verb *katab* ‘wrote’ is suffixed with the plural masculine and plural feminine markers *-uu* and *-an* to show agreement with respectively, the plural masculine subject *l-ṭawlaad-u* ‘the boys’ and the plural feminine subject *l-banaat* ‘the girls’. So, based on the examples given above, when the plural masculine/feminine subject follows the verb, the latter must show singular agreement.

SVO order can also be found in both main and subordinate clauses introduced by *ṭanna* ‘that’¹¹. The SVO order differs from VSO order in agreement relation. While VSO orders trigger partial agreement on the verb, SVO orders trigger full agreement on the verb¹². For illustration, consider the following examples:

19)

- a. *l-ṭawlaad-u katab-uu d-dars-a*
 DEF-boys-NOM wrote-3P.M DEF-lesson-ACC
 ‘The boys wrote the lesson.’
- b. *l-banaat-u katab-na d-dars-a*
 DEF-girls-NOM wrote-3P.F DEF-lesson-ACC
 ‘The girls wrote the lesson.’
- c. *Ṣalim-tu ṭanna l-ṭawlaad-a katab-uu d-dars-a*
 knew-1SG.M/F that DEF-boys-ACC wrote-3P.M DEF-lesson-ACC
 ‘I knew that the boys wrote the lesson.’
- d. *Ṣalim-tu ṭanna l-banaat-i katab-na d-dars-a*
 knew-1SG.M/F that DEF-girls-ACC wrote-3P.F DEF-lesson-ACC
 ‘It is good that the girls wrote the lesson.’

The appearance of the suffix *-uu* in the verb *katab-uu* ‘wrote’ in (19a & c) is to reflect the agreement with the plural masculine pre-verbal subject *l-ṭawlaad* ‘the boys’. Similarly, in (19 b

¹¹ They are different in that subject-initial subordinate clauses are accusative.

¹² The accusative case of the subject initial subordinate clause and the full agreement that SVO clauses show, have been taken as evidence that preverbal subjects in Arabic are not ordinary subjects (as in English) but rather they are topics co-indexed with a *pro* that is the genuine subject (For more details see (Alotaibi, 2015). The analysis of preverbal subjects within HPSG will be discussed in section 2.3.2.

& d), the verb *katab-na* is marked by the suffix *-an* to show agreement with the plural feminine subject *l-banaat-u* ‘the girls’.

2.1.1.2 Nominal Clauses

Nominal sentences (verbless sentences) consist of a subject (normally an NP) and a non verbal predicate, which can be an adjective phrase AP, a noun phrase NP or a prepositional phrase PP.

The possibilities are illustrated in the following examples respectively:

20)

- a. $\text{\textcircled{A}li-y-un}$ $\text{\textcircled{d}akiy-un}$
 Ali-NOM intelligent.INDF- NOM
 ‘Ali is intelligent.’
- b. $\text{\textcircled{A}li-y-un}$ $\text{\textcircled{m}udarris-un}$
 Ali-NOM teacher.INDF- NOM
 ‘Ali is a teacher.’
- c. $\text{\textcircled{A}li-y-un}$ $\text{\textcircled{f}i}$ $\text{\textcircled{l-bayt-i}}$
 Ali-NOM in DEF-home- GEN
 ‘Ali is in the home.’

The verbless sentences above express the same meaning as do English copular sentences (as indicated by the English translations). Therefore, the same semantic interpretation can be assigned to both structures.

In non-present tenses — past and future — Arabic nominal clauses include a copula¹³. This is shown by the examples in (21).

¹³ We could also get a present tense form of the copula in some circumstances. One of these is with generic meaning. A generic sentence has a stage-level predicate that is usually true in the past, is true in the present and also expected to be true in the future (Benmamoun, 2000b: 47). The following example illustrates:

(i) $\text{\textcircled{y}akuunu}$ $\text{\textcircled{l-jaww-u}}$ $\text{\textcircled{h}arr-an}$ $\text{\textcircled{f}i}$ $\text{\textcircled{\text{š-šayf-i}}$
 be.3SG.M DEF-weather-NOM hot-ACC in DEF-summer-GEN
 ‘The weather is usually hot in the summer.’

However, this form of copula is not allowed in verbless sentences containing individual-level predicates that describe states of affairs that are permanent or stage-level predicates that describe situations that are true in the present moment only (Benmamoun, 2000b: 47, 48). The following illustrate respectively:

21)

- a. ʕaliy-un kaana ɗakiy-an
 Ali-NOM was intelligent- ACC
 ‘Ali was intelligent.’
- b. ʕaliy-un sayakuunu mudarris-an
 Ali-NOM will-be teacher- ACC
 ‘Ali will be a teacher.’

2.1.2 Arabic Adjectives

2.1.2.1 Morphology of Arabic Adjectives

In traditional Arabic grammar, adjectives are not considered to form an independent word class. Instead, they are considered as a sub-type of the category of nouns¹⁴. In fact, Arab grammarians include under the class of nouns a number of nominal sub-categories. The first of these subcategories is the *ism jaamid* ‘primitive noun’, including words such as *rajul-un* ‘man’, *faras-un* ‘horse’ and *nisaa?-un* ‘women’. The second sub-class is the so-called *maṣḍars*, also known in the literature as ‘verbal nouns’, such as *kittaabat-un* ‘writing’ and *nuṣrat-un* ‘to help’¹⁵. The final category is the so-called *muštaqaat* ‘derived nominals’ or ‘derived adjectives’. It includes, for instance, *ism l-faaʕil* ‘agentive nouns’ or ‘active participles’ such as *kaattib* ‘a writer’, *ism l-mafʕul* ‘patientive nouns’ or ‘passive participles’ such as *maktub* ‘written’, *ṣifah l-muṣabbaha* ‘positive adjectives’ such as *kabiir* ‘big’ and *ṣaḥmar* ‘red’, and finally, *ism t-tafḍiil* (i.e nouns denoting pre-eminence or superiority) frequently referred to as ‘the elative’. The elative is the

(ii)	*ʕaliy-un Ali-NOM	yakuunu be.3SG.M	ṭawiil-an tall-ACC	
(iii)	*l-jaww-u *DEF-weather-NOM	yakuunu be.3SG.M	ḥarr-an hot-ACC	l-yaum-a DEF-today-ACC

¹⁴ Traditionally, Arabic has three-part-of speech, namely *ʔism* ‘noun’, *fiʕl* ‘verb’ and *ḥarf* ‘particle’. This classification of Arabic words is first found in Sibawayih’s *l-kitaab* ‘the book’, which is the oldest known source of Arabic grammar (8th century). The same division is upheld by the majority of later Arab grammarians although some of them add more classes of word. For more detail on this issue see e.g. (Maash, 2009).

¹⁵ In fact, there are two types of *maṣḍars*: *verbal maṣḍars* (e.g.. *kitaabatan* ‘writing’ *qitaalan* ‘fighting’) and *adjectival maṣḍars* (e.g. *ḍakaaʔ* ‘intelligence’ *bayaad* ‘whiteness’). The latter is particularly important in the present study, and will be discussed in Chapter Three (section 3.3.2.1).

form used to express both comparative and superlative meanings in Arabic, as we will see in Chapter Three. Arab grammarians use the terms *wasf* or *ṣifah*, which may translate as ‘attribute’, ‘adjective’ or ‘modifier’, to refer to these *muštaqaat* and describe them.

Adjectives are included in the class of nouns because of the formal similarities between these two classes of words ((Owens, 1990); (Al-Shamrani, 1994)). Both adjectives and nouns, for example, share the same morphological patterns. The following is an illustrative example:

22) Morphological patterns for nouns and adjectives

Patterns	Nouns	Adjectives
CaCC	<i>ṣaqr</i> ‘hawk’	<i>ḍaxm</i> ‘large’
CuCC	<i>qufl</i> ‘lock’	<i>ḥulw</i> ‘sweet’
CaCiiC	<i>baṣiir</i> ‘camel’	<i>ṭawiil</i> ‘tall’
CaCaC	<i>jabal</i> ‘mountain’	<i>ḥasan</i> ‘good’
CuCaaC	<i>ḡuraab</i> ‘crow’	<i>ṣujaaʿ</i> ‘brave’

In addition, as (23) demonstrates, adjectives also behave like nouns in the formation of broken plurals¹⁶:

23) Broken plural formation in nouns and adjectives:

	Singular	Plural
Noun	<i>saṣiir</i> ‘ambassador’	<i>sufaraaʿ</i>
	<i>qaaʿimah</i> ‘menu’	<i>qawaaʿim</i>
Adjectives	<i>saṣiid</i> ‘happy’	<i>suṣadaaʿ</i>
	<i>naaʿim</i> ‘asleep’	<i>nyaam</i>

¹⁶ The expression ‘Broken Plural’ refers to a certain pattern of plural formation which is highly characteristic of Arabic nouns and adjectives. It involves a shift of vowel patterns within the word stem itself, and it may also involve the affixation of an extra consonant (usually *hamza*’) (Ryding, 2005: 144).

Adjectives are inflected by gender, number, definiteness, and case feature, just like nouns. For example, in most cases, the feminine marker *-ta* occurs on both nouns and adjectives (e.g. 24). The number suffixes *-aan* (in nominative case) and *-ayn* (in genitive and accusative case) also mark both nouns and adjectives in dual form (e.g. 25). The two categories can occur with the definite article prefix *l-* ‘the’ to be marked for definiteness, and both take the suffix *-n* to be marked for indefiniteness (e.g. 26). Finally, nouns and adjectives normally inflect for three cases: nominative, genitive and accusative. The case markers for both are short vowel suffixes: *-u* for nominative, *-i* for genitive and *-a* for accusative (e.g. 27).

24) Gender feature:

Noun	Adjective
ṭaaliba-ta	ḍakiyy-ta
Student-SG.F	intelligent-SG.F

25) Number feature:

Noun	Adjective
a. rajul-aan	wasiim-aan
man-DUAL(NOM)	handsome- DUAL (NOM)
b. rajul-ayn	wasiim-ayn
man-DUAL (ACC/GEN)	handsome-DUAL(ACC/GEN)

26) Definiteness feature:

a. Noun	Adjective
rajul-un	wasiim-un
a man	a handsome
b. r-rajul	l-wasiim
DEF-man	DEF-handsome

27) Case feature:

Noun	Adjective
a. bi-l-byait-i	bi-l- wasiim-i
at-DEF-home-GEN	by-DEF-handsome-GEN
b. jaaʔa r-rajul-u	jaaʔa l-wasiim-u
came DEF-man-NOM	came DEF-handsome-NOM
‘The man came’	‘The handsome one came’

- c. raʔay-tu walad-an ʔakiy-an
 saw-3SG.M/F boy-ACC intelligent-ACC
 ‘I saw an intelligent boy.’

However, there are some morphological differences between nouns and adjectives. The most obvious one is that nouns, unlike adjectives, cannot inflect into the elative pattern (i.e. comparative form)¹⁷. With regard to their syntactic properties the two categories differ slightly. Thus both adjectives and nouns can have predicative function but only adjectives can normally occur in attributive positions¹⁸. In fact, when a noun + adjective is used attributively, they agree in case and definiteness, as in (28). However, when a noun + noun or adjective + noun (i.e. *ʔiḍaafa* or a construct state)¹⁹ is used, their case and definiteness features are different, as in (29).

- 28) bayt-un waasiʕ-un
 house.INDF-NOM spacious.INDF-NOM
 ‘a spacious house.’

¹⁷ This will be discussed later in section 3.3.2.

¹⁸ It should be noted that in some idiomatic uses, nouns (i.e. verbal nouns or concrete nouns) may occur in an attributive position, as in the following:

- (i) zur-tu rajul-an ʕadl-an
 visited.3SG.M man-ACC justice-ACC
 ‘I visited a just man.’
- (ii) qaabal-tu ʔaaka l-qaʔid-a l-ʔasad-a
 met.3SG.M that DEF-commander-ACC DEF-lion-ACC
 ‘I met that brave commander.’

The literal meaning of *ʕadl* and *l-ʔasad* are ‘justice’ and ‘lion’ as their English glosses show but they get a pragmatic interpretation of ‘just’ and ‘brave’.

¹⁹ The construct state in Arabic is generally composed of a head, either a noun or an adjective, followed by a noun in the genitive. (29a) is an adjectival construct, whereas (29b) is a nominal construct. The adjectival construct, however, can be used as a complement of the copula (i) or it can have an attributive use (ii).

- (i) l-bayt-u waasiʕ-u l-ḡuraf-i
 DEF-house-nom spacious.INDF-NOM DEF-rooms-GEN
 ‘The house has spacious rooms.’
- (ii) bayt-un waasiʕ-un l-ḡuraf-i
 house.INDF-NOM spacious.INDF-NOM DEF-rooms-GEN
 ‘a house with spacious rooms’

29)

- a. waasiʕ-u l-ġuraf-i
 spacious.INDF-NOM DEF-rooms-GEN
 ‘spacious rooms’
- b. bayt-u r-rajul-i
 house.INDF-NOM DEF-man-GEN
 ‘the man’s house’

This has led some recent research to reconsider the validity of the long-held view of placing adjectives and nouns in the same category. For example, Hassan (1973) and his student Alsaqi (1977) reject the inclusion of adjectives within the class of nouns and treat adjectives as a separate word class. They motivate their reclassification on a number of semantics, inflectional, and syntactic criteria²⁰.

Although nouns differ from adjectives in that they normally do not have the sort of attributive uses, they are broadly similar in many aspects. In addition to the formal similarities discussed above and among other similarities, adjectives, like nouns, can be quantified and can form a construct state, as shown in the following²¹:

30)

- a. jaaʔa kull-u ʔ-tullab-i
 came all-NOM DEF-students-GEN
 ‘All of the students came.’
- b. jaaʔa kull-u l-ʔadkiyaaʔ-i
 came all-NOM DEF-intelligent.P.M-GEN
 ‘All of the intelligent ones came.’

31)

- a. madinat-u l-quḍs-i
 city-NOM Jerusalem-GEN
 ‘the city of Jerusalem’
- b. sariiʕ-u l-mašy-i
 fast-NOM DEF-walking.GEN
 ‘fast walking’

²⁰ For more details, see (Alsaqi, 1977) and (Maash, 2009).

²¹ Essentially Arabic adjectives can be used nouns.

(30) shows that the quantifier *kull* can modify either a noun (*t-tullab-i* ‘the student’ in 30a) or an adjective (*l-ʔadkiyaaʔ-i* ‘the intelligent’ in 30b). Example (31) shows that a noun, *madinat-u* ‘the city’ (31a) as well as an adjective (*sariiʕ-u* ‘fast’ in 31b) can occur as heads of a construct state noun phrase. (31a) is a nominal construct, whereas (31b) is an adjectival construct.

Furthermore, in Arabic, both adjectives and nouns can appear in typical noun phrase positions: subjects, objects and object of prepositions, as illustrated in the following examples. I will return to this point later in (section 2.1.2.2.1).

32) Subject position

- a. *jaaʔa* *ḏ-ḏakiy-u*
 Came.3SG.M DEF-intelligent-NOM
 ‘The intelligent one came.’
- b. *jaaʔa* *l-mudarris-u*
 Came.3SG.M DEF-teacher-NOM
 ‘The teacher came.’

33) Object position

- a. *raʔay-tu* *ḏ-ḏakiy-a*
 saw-1SG.M-F DEF-intelligent-ACC
 ‘I saw the intelligent one.’
- b. *raʔay-tu* *l-mudarris-a*
 saw-1SG.M-F DEF-teacher-ACC
 ‘I saw the teacher.’

34) Prepositional object position

- a. *taḥadaṭ-tu* *ʔilaa* *ḏ-ḏakiy-i*
 spoke-1SG.M-F to DEF-intelligent-GEN
 ‘I spoke to the intelligent one.’
- b. *taḥadaṭ-tu* *ʔilaa* *l-mudarris -i*
 spoke-1SG.M-F to DEF-teacher-GEN
 ‘I spoke to the teacher.’

It is clear then that nouns and adjectives share some morphological and syntactic properties, but there are also some differences. The similarities and differences between nouns and adjectives can be summarised in the following:

Similarities:

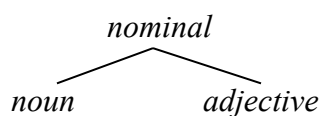
- Both nouns and adjectives share the same morphological patterns.
- Both nouns and adjectives can form Broken Plural.
- Both noun and adjectives inflect for three cases: nominative, accusative and genitive with the same case marker.
- Both nouns and adjectives can have predicative function.
- Both nouns and adjectives can be quantified.
- Both nouns and adjectives can form a construct-state.
- Both nouns and adjectives can appear in typical NP positions.

Differences:

- Only adjectives can normally occur in attributive positions.
- Nouns cannot inflect into an elative form.

Within today's generative grammar (e.g. Head-driven Phrase Structure Grammar framework (HPSG)) nouns and adjectives could be analysed as two subtypes of a single type which is a nominal type, as shown in the following hierarchy, taken from (Sag, 2003: 274):

35)



In short, it is not only the morphological similarities between adjectives and nouns that can justify treating them as two subtypes of a nominal type. There are also, as we saw, a number of syntactic similarities, and thus the proposed analysis in (35) is needed in this study. In typical NP positions (i.e. subjects, objects, and objects of prepositions), for instance, what we have is a nominal phrase, including nouns and adjectives. Also, it is not ‘nouns’ or ‘adjectives’ that can have the feature [DEF+] or [DEF-], but it is a nominal. If the noun phrases have [DEF+] then they are prefixed with the definite article (*l-*), and if the noun phrases are indefinite [DEF-], then they are suffixed with the indefinite marker (*-n*).

In the next section, I will discuss further the syntactic environment in which Arabic adjectives can occur.

2.1.2.2 Syntactic Distribution

As briefly mentioned in the previous section, adjectives may have predicative and attributive uses. In this section, I investigate these two uses in more detail. Let’s start by considering the following examples:

- 36)
- a. *l-walad-u ḍakīy-un*
DEF-boy-NOM intelligent.SG.M-NOM
‘The boy is intelligent’
 - b. *l-walad-u ḍ-ḍakīy-u*
DEF-boy-NOM DEF-intelligent.SG.M-NOM
‘the intelligent boy’

The adjective *ḍakīy-un* ‘intelligent’ in the sentences above carries a different number of agreement features. In (36 a) the adjective obligatorily agrees with the NP ‘the boy’ in number and gender but it does not have to follow the preceding NP in case, as we will see shortly. In (36b), however, it agrees with the NP it modifies in number, gender, definiteness, and case. In

addition, (36 a) is interpreted as a sentence, whereas (36b) is interpreted as a phrase. Thus, the adjective in (36 a) is considered as predicative and the adjective in (36b) is attributive.

In the following two subsections, I will discuss the agreement and word order in predicative and attributive uses.

2.1.2.2.1 Adjectives in Predicative Positions

When an adjective has a predicative use, it displays a number of syntactic properties. The first and most significant of them is its marking of agreement features. As mentioned earlier, a predicative adjective agrees with its preceding subject (or topic) only in gender and number. Agreement is obligatory, as shown by the following examples which are ungrammatical if gender and number agreement do not apply:

- 37)
- | | | |
|----|----------------------------|---------------------------|
| a. | * l-bint-u | ɖakiy-un |
| | * DEF-girl.SG.F-NOM | intelligent.INDF.SG.M-NOM |
| | ‘The girl is intelligent.’ | |
| b. | l-bint-u | ɖakiyy-at-un |
| | DEF-girl.SG.F-NOM | intelligent-SG.F-INDF.NOM |
| | ‘The girl is intelligent.’ | |
- 38)
- | | | |
|----|-----------------------------|---------------------------|
| a. | * l-ʔawlaad-u | ɖakiy-un |
| | *DEF-boy.PL.M-NOM | intelligent.INDF.SG.M-NOM |
| | ‘The boys are intelligent.’ | |
| b. | l-ʔawlaad-u | ʔadkiyaʔ-un |
| | DEF-boy.PL.M-NOM | intelligent.INDF.PL.M-NOM |
| | ‘The boys are intelligent.’ | |

It can be further noted from the well-formed sentences (37b) and (38b) above that predicative adjectives do not agree with the definiteness feature carried by subject /topic NPs. In complexes where both NP and AP are either definite or indefinite, they generally cannot have a clausal reading, as the following illustrates:

39)

- a. *wald-un* *ḍakiy-un*
 boy.SG.M-INDF.NOM intelligent.SG.M-INDF.NOM
 ‘an intelligent boy’
- b. *l-wald-u* *ḍ-ḍakiy-u*
 DEF-boy.SG.M-NOM DEF-intelligent.SG.M-NOM
 ‘the intelligent boy’

The only exceptions to this are some restricted contexts, such as verbless sentences, which may contain both an indefinite predicative adjective and an indefinite subject / topic NP and still yield a clausal interpretation. This is shown in (40) where the subject /topic NP *walad-un fi l-bayt-i* ‘a boy at home’ and the adjective *mariid-un* ‘sick’ are both marked indefinite, and the phrasal reading is excluded.

- 40) *walad-un* *fi* *l-bayt-i* *mariid-un*
 boy.SG.M-NOM in DEF-home sick.SG.M-NOM
 ‘A boy at home is sick’

Example (40) differs from those in (37b) and (38b) in that the subject/topic NP is specific (i.e. modified by a PP), but they cannot be ‘purely’ indefinite. Thus, an indefinite NP cannot be a subject /topic of a sentence with a predicative adjective phrase AP, unless it is specified by some other elements (e.g. PP, AP, NP or a VP).

There are cases in which a definite NP co-occurring with a definite AP (as in (39b), restated in (41 a) for convenience) can have a clausal interpretation. Consider the following examples:

41)

- a. *l-wald-u* *ḍ-ḍakiy-u*
 DEF-boy SG.M -NOM DEF-intelligent.SG.M -NOM
 ‘the intelligent boy’
- b. *l-wald-u* *hwa* *ḍ-ḍakiy-u*
 DEF-boy SG.M -NOM he.3SG.M DEF-intelligent.SG.M -NOM
 ‘The boy is the intelligent one’ / ‘The boy is the one who is intelligent’

(41a) is interpreted as a phrasal construction because both the NP and the AP are definite. Sentence (41b) is interpreted as a clause even though the NP and the AP are both marked as definite. The only difference between (41a) and (41b) is that the latter contains the independent personal pronoun *hwa* ‘he’, which intervenes between the two definite elements²². Example (41b) could be taken as evidence against the fact that predicative adjectives do not have definiteness. However, APs in such sentences do not function as predicates. Instead, these constructions contain two referring expressions and indicate that these refer to the same individuals. In other words definite AP’s here function as referring expressions and have nominal interpretations. Another fact demonstrating that definite adjectives are not really predicative in such contexts is shown in (42), where the subject can also be an AP²³.

- 42) *ṭ-ṭawiil-u* *hwa* *ḍ-ḍakiy-u*
 DEF-tall.SG.M -NOM he.3.SG.M DEF-intelligent.SG.M -NOM
 ‘The tall one is the intelligent one’/ ‘The tall is the one who is intelligent’

Thus definite adjectives are single constituents of an NP complement (i.e. NPs consisting of an attributive adjective). This is quite similar to the situation in free relatives. A relative clause with the complementizer *allaḍi* normally serves as a modifier of a noun, as shown in (43a). However,

²² In traditional Arabic grammar, the independent personal pronoun *hwa* ‘he’ in such sentences is optional and is called *ḍamiiru l-faṣli* ‘the intervention pronoun’. It should also be noted that this type of nominal sentence is known as ‘equative or equational sentence’ (Ryding, 2005: 62).

²³ In equative sentences, we usually have two NPs, as in the following:

- (i) *ʕaliy-un* *hwa* *ṭ-ṭabiib-u*
 Ali-NOM he.3SG.M DEF-doctor-NOM
 ‘Ali is the doctor.’
 (ii) *kaana* *ʕaliy-un* *hwa* *ṭ-ṭabiib-a*
 was Ali-NOM he.3SG.M DEF-doctor-ACC
 ‘Ali was the doctor.’

it can also appear on its own in nominal positions. In (43b), for instance, it occurs in an object position²⁴.

43)

- a. raʔay-tu l-walad-a alladi faaza fi s-sibaag-i
 saw-1SG.M/F DEF-boy-ACC COMP won.3SG.M in DEF-race-GEN
 ‘I saw the boy who won in the race.’
- b. raʔay-tu alladi faaza fi s-sibaag-i
 saw-1SG.M/F COMP won.3SG.M in DEF-race-GEN
 ‘I saw (the one) who won in the race.’

Similarly thus, definite APs functioning as referring expressions can also occur in a variety of NP positions, such as the object of the verb as in (44a) or as the subject of a copula as in (44b).

44)

- a. raʔay-tu ʔ-ʔawiil-a
 saw-1SG.M/F DEF-clever-ACC
 ‘I saw the clever one.’
- b. kaana ʔ-ʔawiil-u hwa d-dakiy-a
 was DEF-tall.SG.M -NOM he.3.SG.M DEF-intelligent.SG.M-ACC
 ‘The tall one was the intelligent one’/ ‘The tall one was the one who is intelligent.’

The personal pronoun and the definite predicative AP can be joined into a well-formed construction with a sentential interpretation without having to be separated by another element, as shown in (45) below:

- 45) ʔanaa d-dakiy-u
 I.1SG.M/F DEF-intelligent.SG.M-NOM
 ‘I am the intelligent one’

²⁴ According to Alqurashi (2012), free relatives are NPs consisting of just one daughter, which is a CP.

The example in (45) is grammatical because pronouns, unlike lexical NPs, always have the clausal interpretation when they co-occur with predicative adjectives, whether they are definite or indefinite as the following examples show:

- 46)
- a. hwa ḍakiy-un
 he.SG.M -NOM intelligent.INDF.SG.M -NOM
 ‘He is an intelligent one’
- b. hwa ḍ-ḍakiy-u
 he.SG.M -NOM DEF-intelligent.SG.M -NOM
 ‘He is the intelligent one’

The adjective is indefinite in (46a) and definite in (46 b) but both examples receive clausal interpretations.

Similarly, proper names can also occur with predicative adjectives and receive a sentential interpretation. Example (47) illustrates this.

- 47)
- a. ʕaliy-un ḍakiy-un
 Ali-NOM intelligent.chd666INDF..SG.M-NOM
 ‘Ali is an intelligent one’
- b. ʕaliy-un ḍ-ḍakiy-u
 Ali-NOM DEF-intelligent.SG.M -NOM
 ‘Ali is the intelligent one’

This suggests that when adjectives co-occur with pronouns or proper names, they are only predicative (i.e. never attributive) and trigger clausal readings only.

The previous discussion leads to the conclusion that Arabic has two strategies to form verbless clauses with a predicative adjective. The first one is to have definite NPs and indefinite APs. The second one is to have both NPs and APs in the indefinite, but specify the indefinite NP with

some other element (e.g. PP). A third construction, in which the NP and AP are both definite and separated by an independent personal pronoun, the definite AP is not a predicate but rather, an NP containing an attributive adjective.

The predicative adjective does not have to follow the preceding NP in case, and it is accusative if there is an overt form of the copula. In the following examples, the predicative adjective *ḍakiy* ‘intelligent’ reflects a different case from that of the preceding NP. In (48a), the subject NP bears nominative case, most plausibly because it functions as the subject of the past copula verb *kaana*. The predicate AP by contrast bears the accusative case, since it is the complement of the copula *kaana*. In (48b), the NP is assigned the accusative case by the case assigner *ʔinna*, which is a complementizer in Arabic, but the predicate adjective remains nominative.

48)

- a. *kaana* *l-walad-u* *ḍakiy-an*
 was DEF-boy.SG.M-NOM intelligent.INDF.SG.M-ACC
 ‘The boy was intelligent.’
- b. *ʔinna* *l-walad-a* *ḍakiy-un*
 COMP’indeed’ DEF-boy.SG.M-ACC intelligent.INDF.SG.M-NOM
 ‘The boy is intelligent.’

In fact, the non-agreement of adjectives with the subject/ topic NPs in definiteness and case is the main evidence that they are predicative here and not attributive.

The last point I would like to mention is on the ordering distribution of these predicative adjectives. In almost all the examples given so far to illustrate the syntactic relations between predicative adjectives and subject/topic NPs, predicative adjectives follow their subject/topic NPs, even where the clause is embedded into a matrix clause or introduced by particular operators or functional categories.

When the predicative adjective has a PP as a complement, this one can either precede or follow the AP. The examples in (49) illustrates this phenomenon.

49)

- a. l-wald-u xaaʔif-un min l-ʕanaakib-i
 DEF-boy-NOM afraid-NOM from DEF-spiders-GEN
 ‘The boy is afraid of spiders.’
- b. l-wald-u min l-ʕanaakib-i xaaʔif-un
 DEF-boy-NOM from DEF-spiders-GEN afraid-NOM
 ‘The boy is afraid of spiders.’

2.1.2.2.2 Adjectives in Attributive Positions

Attributive adjectives follow the head nouns they modify and show obligatory gender, number, case, and definiteness agreement with their head nouns. In (50) both the attributive adjective *ḡ-dakiyy-at-u* ‘the intelligent’ and its head noun *l-bint-u* ‘the girl’ are feminine. In (51), however, the adjective does not agree with its head noun in gender and the sentence is ungrammatical.

- 50) jaaʔ-at l-bint-u ḡ-dakiyy-at-u
 came-3SG.F DEF-girl-NOM DEF-intelligent-SG.F-NOM
 ‘The intelligent girl came.’
- 51) *jaaʔ-at l-bint-u ḡ-dakiy-u
 *came-3SG.F DEF-girl-NOM DEF-intelligent.SG.M-NOM
 ‘The intelligent girl came.’

In (52) the head noun is plural and the adjective *l-ʔaḡkiyaaʔ-u* ‘intelligent’ is plural too. In (53) the attributive adjective does not agree with the plural number of its head noun and the example is ill-formed.

- 52) jaaʔa l-ʔawlaad-u l-ʔaḡkiyaaʔ-u
 came.3SG.M DEF-boys-NOM DEF-intelligent.P.M-NOM
 ‘The intelligent boys came.’
- 53) *jaaʔa l-ʔawlaad-u ḡ-dakiy-u
 *came.3SG.M DEF-boys-NOM DEF-intelligent.SG.M-NOM
 ‘The intelligent boys came.’

Attributive adjectives obligatorily agree with their head nouns in the feature of definiteness. Hence, if the head noun is definite then the attributive adjective must be definite and if the head noun is indefinite the adjective must be indefinite. This is exactly what can be observed in the following examples.

54)

- | | | | |
|----|-----------------------|--------------|--------------|
| a. | raʔay-tu | r-rajul-a | ʔ-ʔawiil-a |
| | saw-1.SG.M/F | DEF-man-ACC | DEF-tall.ACC |
| | 'I saw the tall man.' | | |
| | | | |
| b. | raʔay-tu | rajul-an | ʔawiil-an |
| | saw-1.SG.M/F | man-INDF.ACC | tall-NDF.ACC |
| | 'I saw a tall man.' | | |

The attributive adjective in (54a) agrees with its head noun in the feature [DEF+]. Likewise, the attributive adjective in (54b) agrees with its head noun in the feature [DEF -]. Now, in (55) below the attributive adjective does not agree with its head noun in definiteness triggering ungrammaticality.

- | | | | |
|-----|-----------------------|-------------|--------------|
| 55) | *raʔay-tu | rajul-an | ʔ-ʔawiil-a |
| | *saw-1.SG.M/F | man-NDF.ACC | DEF-tall-ACC |
| | 'I saw the tall man.' | | |

There are some particular contexts in which attributive adjectives may appear to carry a definiteness feature that does not match that of the nominal head. In example (56), for instance, the attributive adjective *ʔawiil-an* 'tall' occurs in the indefinite while its head noun *r-rajul-a* 'the man' remains definite.

- | | | | |
|-----|--------------------------|-------------|--------------|
| 56) | raʔay-tu | r-rajul-a | ʔawiil-an |
| | saw-1.SG.M/F | DEF-man-ACC | tal-INDF.ACC |
| | 'I saw the man as tall.' | | |

In these contexts, a clitic can also appear instead of a nominal, as shown in (57) below.

- 57) raʔay-tu-hu ʔawiil-an
 saw-1.SG.M/F-him tall-INDF.ACC
 ‘I saw him as tall.’

Given that attributive adjectives do not normally modify clitics, I conclude that the adjectives in such constructions do not function as nominal modifiers. In fact, the AP’s in those constructions (as in (56) and (57)) are predicative and have an adverbial function with clausal interpretation. Traditionally, a predicate adjective carrying an adverbial meaning is called *haal* ‘a circumstantial adverb’. Its role is to express a condition or circumstance that is concomitant or on-going at the time the event encoded by the verb takes place. These *haal* entities are always in the accusative case and are usually indefinite (Ryding, 2005: 174).

The discussion and examples given so far show that attributive adjectives have full-agreement with the nominal heads they modify. Examples (58) and (59) below complete the set and show how the two entities must agree in case features.

58)

- a. jaaʔa r-rajul-u ʔ-ʔawiil-u /-*a/*-i
 came.3SG.M DEF-man-NOM DEF-tall-NOM /*ACC/*GEN
 ‘The tall man came.’
- b. raʔay-tu r-rajul-a ʔ-ʔawiil-a/ *-u/*-i
 saw-1.SG.M/F DEF-man-ACC DEF-tall-ACC/*NOM/*GEN
 ‘I saw the tall man.’
- c. marra-tu bi-r-rajul-i ʔ-ʔawiil-i/ *-u/*-a
 passed-1.SG.M/F by-DEF-man-GEN DEF-tall-GEN/*NOM/*ACC
 ‘I passed by the tall man.’

59)

- a. jaaʔa rajul-un ʔawiil-un /-*an/*-in
 came.3SG.M man-INDF.NOM tall-INDF.NOM /*ACC/*GEN
 ‘A tall man came.’

- b. raʔay-tu rajul-an ʔawiil-an/ *-un/*-in
 saw-1SG.M/F man-INDF.ACC tall-INDF.ACC/*NOM/*GEN
 ‘I saw a tall man.’
- c. marra-tu bi-rajul-in ʔawiil-in/ *-un/*-an
 passed-1.SG.M/F by-man-INDF.GEN tall-INDF.GEN/*NOM/*ACC
 ‘I passed by a tall man.’

The last point worth mentioning here relates to the order of attributive adjectives with respect to their PP complements. As discussed above, where a predicative adjective has a PP complement, the latter may either precede or follow the former (cf. the examples in (49)). Such flexible ordering does not apply with attributive adjectives. As illustrated in the following examples, any complement must strictly follow attributive adjectives.

60)

- a. jaaʔa r-rajul-u l-xaaʔif-u min l-ʕanaakib-i
 came.3SG.M DEF-man-NOM DEF-afraid-NOM from DEF-spiders-GEN
 ‘The man who is afraid from spiders came.’
- b. *jaaʔa r-rajul-u min l-ʕanaakib-i l-xaaʔif-u
 *came.3SG.M DEF-man-NOM from DEF-spiders-GEN DEF-afraid-NOM
 ‘The man who is afraid from spiders came.’

The grammaticality and ungrammaticality of, respectively, (60a) and (60b) show that the PP complement *min l-ʕanaakib-i* ‘of spiders’ must follow the attributive adjective *l-xaaʔif-u* ‘afraid’ and that the word order has to be: N, A, PP.

Having provided a detailed description of the basic syntax of MSA and of different types of adjectival constructions, which will fall under the scope of my later discussion of comparatives, I turn in the next section to the theoretical model in which my work will be framed.

2.2 Theoretical Framework

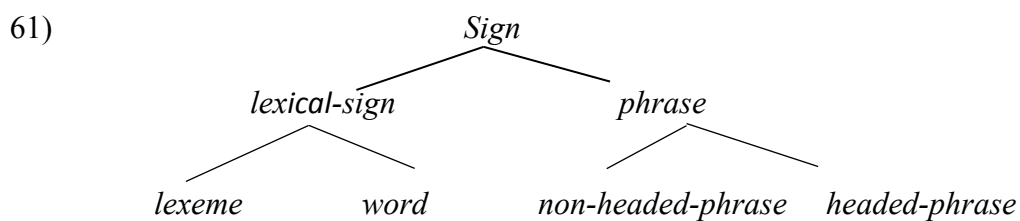
This section presents an overview of Head-driven Phrase Structure Grammar (HPSG), the theoretical model in which my research on MSA comparative constructions is framed. HPSG is a non-transformational generative theory developed by Pollard & Sag (1987, 1994) and Ginsburg and Sag (2000). It is an eclectic and synthetic theory which has been influenced by a number of linguistic approaches such as Categorical Grammar (CG, 1974 to the present), Generalized Phrase Structure Grammar (GPSG, 1979-1987) and Lexical-Functional Grammar (LFG 1979 to the present) (see (Sag, Wasow, & Bender, 2003: 525–539).

HPSG is a constraint-based (declarative) theory, in which a grammar consists of a set of words and phrase types with a number of properties, and a set of constraints, which govern these types. The constraints are implicational statements, saying that if a linguistic object has some property or properties then it must have some other property or properties. It is also a monostratal theory, in which the syntactic structure of a sentence is a single relatively simple constituent structure. This means that HPSG does not make use of movement processes as in the various forms of transformational grammar. Instead, for HPSG, a certain kind of information is available higher or lower in the structure than usual. This is implemented through two or more features with the same object of their value, which is called ‘structure sharing’. Therefore, HPSG, as we said earlier, is a non-transformational/ non-derivational framework. HPSG, as its name suggests, is furthermore a head-driven approach. This means that the lexical heads of syntactic phrases contain information about the non-head elements with which they combine.

All these properties are described in more detail in the next subsections.

2.2.1 Types and Features

As mentioned in the introduction to the current section, grammar from an HPSG perspective consists of a set of types in which linguistic objects are classified and a set of constraints which govern them. Types are organized into hierarchies; they can be very general or very specific and can have both subtypes and supertypes. Conventionally, they are written in lower case *italics*. An example of a type and subtypes is provided below:



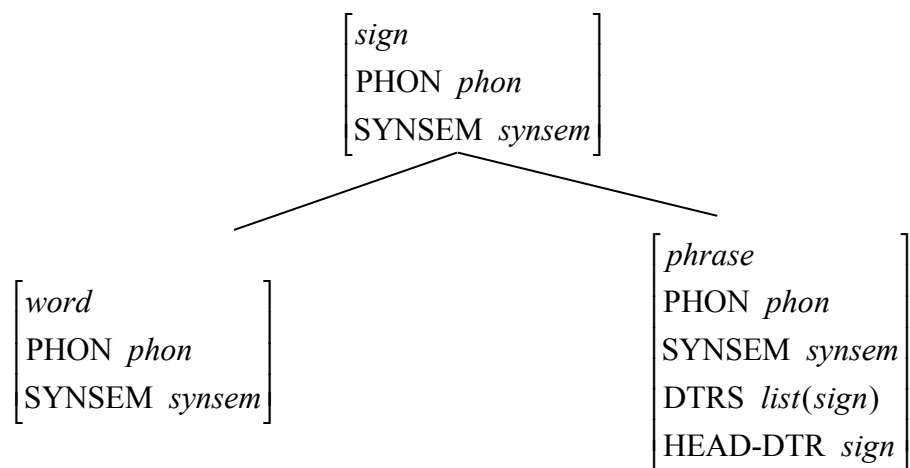
The structure in (45) identifies *lexical-sign* and *phrase* as two subtypes of *sign*, which is a fundamental type of linguistic objects. *Lexeme* and *word* are immediate subtypes of *lexical-sign* (Sag & Wasow, 1999); (Ginzburg & Sag, 2000) and (Sag et al., 2003)²⁵. A ‘*lexeme*’ can be thought of as an abstract proto-word, which gives rise to genuine words (that is, instances of the type *word*) (Sag et al. (2003:228). A ‘*word*’ is a particular form derived from a *lexeme* by some inflectional rule (Sag et al. (2003:570). Thus, *run*, for example, is a *lexeme* whereas the different forms *runs* and *ran* are *words*. As pointed out by Sag et al. (2003), the idea of *lexeme* is needed in any languages that use a system of morphological inflection. As for the type *phrase*, it is classified into two main subtypes: *non-headed phrases* and *headed phrases*. The phrasal types and constraints associated with them will be presented in section (2.2.2).

The properties of types are expressed by attributes or features, each with an appropriate value. Thus, the type *sign* including *word* and *phrase* is assumed to have at least two distinctive

²⁵ In (Pollard & Sag, 1994), the immediate subtypes of *sign* are: *word* and *phrase*.

features: PHONOLOGY (PHON) and SYNTAX-SEMANTICS (SYNSEM) attributes, and one daughter or more than one (DTRS). One of these daughters may be a head daughter (HD-DTR). Each feature has an appropriate type of value. A type with its features and values is called a typed feature structure and is usually represented by attribute-value matrices (AVMs), in which features are given on the left and their values on the right. By convention, features are written in UPPER CASE, types are written in lower case *italics*, as shown in (62) below:

62)

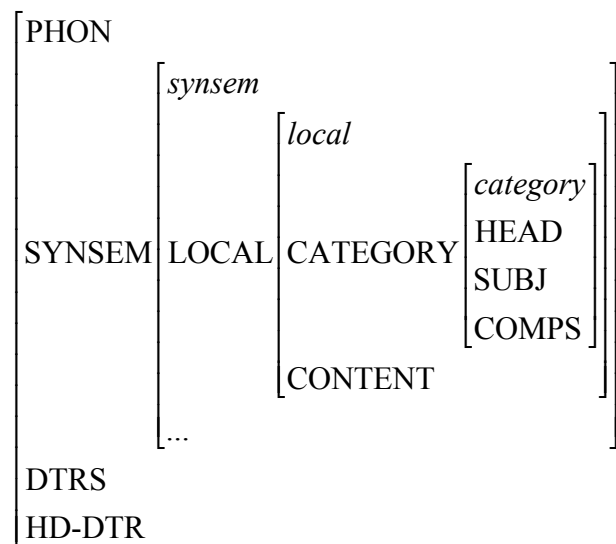


There are four types of feature values: (i) atomic values, (ii) feature structures, (iii) lists and (iv) sets. Atomic values are single types with no features. Feature structures are types with some features and their own values. List and set values may both consist of a single member, more than one member, or no member. List values, however, are ordered, set values are not. List values are represented within angled brackets <NP, VP...>, while set values are represented within curly brackets {NP, VP ...}.

As mentioned above, signs consist of at least two features: PHONOLOGY and SYNSEM. The value of SYNSEM is a feature structure that contains two features: LOCAL (LOC) and NONLOCAL (NONLOC). The feature LOCAL has a feature structure as its value which

contains two features: CATEGORY (CAT) and CONTENT (CONT)²⁶. The feature CAT encodes the main syntactic properties of the sign, whereas the feature CONT encodes its semantic properties. The feature CAT has the features HEAD, SUBJECT (SUBJ), and COMPLEMENTS (COMPS). The value of the feature HEAD is the type *head (pos)*, which specifies the basic categorical status or part of speech of the expression whether it is a verb, noun, adjective ...etc. The HEAD feature also gives information about the non-head elements with which the head combines. This information is encoded in certain ‘valence’ features, whose value is a list of *synsem* objects (i.e. combinations of SYNTACTIC and SEMANTIC information). The main ones are the COMPS feature, which generally indicates the type of complements that a head requires, and the SUBJ feature, which generally indicates the subject that a head can take²⁷((Sag & Wasow, 1999); (Sag et al., 2003); (Kim & Sells, 2008)). This is all illustrated in the following description.

63)



For HPSG, a simple transitive verb like *saw* has the category in (64), where ‘NP’ is an abbreviation for a complex *synsem* object:

²⁶ Some HPSG use different names. In their terms: CAT is SYN, CONT is SEM.

²⁷ In some HPSG work, the SPR (SPECIFIER) feature does this.

64)

$$\begin{bmatrix} \text{HEAD } verb \\ \text{SUBJ } \langle \text{NP} \rangle \\ \text{COMPS } \langle \text{NP} \rangle \end{bmatrix}$$

Words can have, in addition to the valence feature (SUBJ and COMPS), an ARGUMENT-STRUCTURE, abbreviated to ARG-ST. Phrases, on the other hand, do not have an ARG-ST feature. The value of ARG-ST is a list of *synsem* objects and it is normally the concatenation of the values of SUBJ and COMPS features. Therefore, the verb *gave*, for instance, which selects three arguments — a subject and two complements, an object NP and a PP — has the following category:

65)

$$\begin{bmatrix} \text{HEAD } verb \\ \text{SUBJ } \langle [1] \rangle \\ \text{COMPS } \langle [2], [3] \rangle \\ \text{ARG-ST } \langle [1] \text{ NP}, [2] \text{ NP}, [3] \text{ PP} \rangle \end{bmatrix}$$

However, in null subject languages such as Arabic, the null subject appears only in the ARG-ST lists but not in the subject list. Consider the feature structure in (67) for the verb *qabala* ‘met’ in (66).

66) *qabala* *walad-an*
 met.3SG.M boy-ACC
 ‘He met a boy’

67)

$$\begin{bmatrix} \text{HEAD } verb \\ \text{SUBJ } \langle \rangle \\ \text{COMPS } \langle [2] \text{ NP} \rangle \\ \text{ARG-ST } \langle \text{NP}, [2] \text{ NP} \rangle \end{bmatrix}$$

Similarly, gaps in unbounded dependency constructions²⁸, such as *wh*-questions, appear only in the value of ARG-ST features, not in COMPS or SUBJ. Thus, the verb *qabala* ‘met’ in (68) has the features in (69).

68) man qabal-ta ____ ?
 who met-2SG.M ____ ?
 ‘Who did you met ____ ?’

69)
$$\left[\begin{array}{l} \text{HEAD } verb \\ \text{SUBJ} < [1] > \\ \text{COMPS} < > \\ \text{ARG-ST} < [1]NP, [2]NP > \end{array} \right]$$

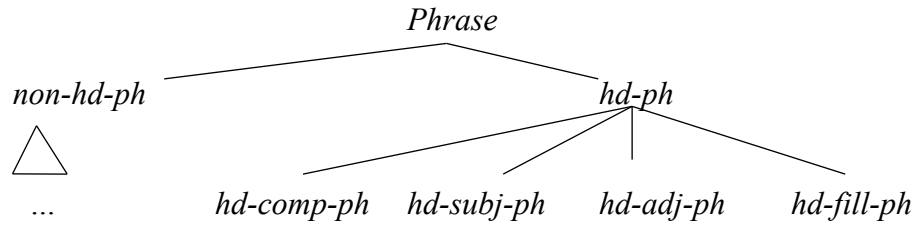
2.2.2 Phrasal Types and Constraints

As mentioned earlier, the grammar in HPSG involves phrases types and constraints which impose restrictions on these types. Constraints say that if a linguistic object has some property or properties then it has some other property or properties. As shown in (61) above, the type *sign* has two basic subtypes: *lexical-sign* and *phrase*. The phrases types are classified into two main subtypes: non-headed phrases (*non-hd-ph*) and headed phrases (*hd-ph*). The latter fall into various subtypes. For example: *head-complement phrases* (*hd-comp-ph*), *head-subject phrases* (*hd-subj-ph*), *head-filler-phrases* and *head-adjunct-phrases* (*hd-adj-ph*)²⁹. The following hierarchy of phrases types is adapted from that in Ginzburg and Sag (2000: 32).

²⁸ The term Unbounded Dependencies refers to a type of construction which involves a gap or resumptive pronoun and some distinctive higher structure, which licences the gap or the resumptive pronoun. The class of UDCs includes such phenomena as topicalization, *wh*-questions, relative clauses and cleft sentences (See e.g. Pollard and Sag chapter 4, 1994). There are a number of HPSG analyses to UDCs, see for example: (Sag, 1997); (Ginzburg and Sag, 2000); (Bouma, Malouf and Sag, 2001) and (Borsley, 2010) (Borsley, 2013))

²⁹ In Sag and Wasow (1999: 380), the type *hd-ph* has two subtypes *head-filler-phrases* and *head-nexus-phrases*. The type *hd-nexus-ph* includes as subtypes *head-modifier-phrase* (*head-adjunct-phrase*), *head-complement-phrase* and *head-specifier-phrase* but not *hd-fill-ph*. The reason for grouping the three subtypes of *hd-nexus-ph* is that they

70)



Each phrase type has specific constraints, and each type inherits from constraints on its subtypes. All phrase types are subject to the constraint in (71), which specifies that all phrases have an empty list as the value of the feature COMPS. This means that phrases do not require any complements.

$$71) \textit{phrase} \rightarrow [\textit{COMPS} \langle \rangle]$$

Given this constraint, a head-complement phrase and the word that is its head will have different values for COMPS (unless the word is COMPS $\langle \rangle$ because it does not require any complements), but otherwise they will have the same SYNSEM value. This is something ensured by the Generalized Head Feature Principle, a general default constraint given in (56) (Ginzburg and Sag (2000: 33))³⁰:

72) The Generalized Head Feature Principle (GHFP):

$$\textit{hd-ph} \rightarrow \left[\begin{array}{l} \textit{SYNSEM} / [1] \\ \textit{HD-DTR}[\textit{SYNSEM} / [1]] \end{array} \right]$$

have something in common (i.e. they are all subject to the so-called GAP Principle) (For more details see. pp: 386-387)

³⁰ There are other versions of (72): the Head Feature Principle (HFP), a non-default constraint (see Sag and Wasow, 1999: 63; Sag et al, 2003: 73), and the Valence Principle (VALP) (see Pollard and Sag, 1994: 348). However, the non-default HFP and the VALP have been replaced by GHFP in Ginzburg and Sag (2000).

Here and henceforth the symbol ‘/’ indicates that the constraint is a default. This principle ensures that the mother of any headed phrase and its head daughter have the same value for SYNSEM by default (i.e. when no constraint requires something different).

In the following, I will introduce the phrase types that are particularly relevant to the discussion in the present work. The most important one is head-complement-phrase (*hd-comp-ph*), which is subject to the following constraint (adapted from Sag and Wasow, 1999:384).

73) Head-complement-phrase Constraint:

$$hd - comp - ph \rightarrow \left[\begin{array}{l} \text{HD-DTR} \left[\begin{array}{l} \textit{word} \\ \text{COMPS } \langle [1], \dots, [n] \rangle \end{array} \right] \\ \text{DTRS } \langle [\text{SS}[1]], \dots, [\text{SS}[n]] \rangle \end{array} \right]$$

31

Here and henceforth the DTRS abbreviates the DAUGHTERS . The HD-DTR feature and DTRS feature organize information about the constituent structure of phrases. The symbol ‘SS’ is an abbreviation for SYNSEM. This constraint says that a head-complement phrase has a word as a head daughter and non-head daughters whose SS values are identical to the SS values on the COMPS list of the head, which is indicated by using the bracketed integers (i.e. This is the way in which any identical values are indicated). In other words, if the COMPS list of the head is <NP>, the non-head must be an NP; if the COMPS list is <NP, PP>, the non-heads then must be an NP and a PP, and so on (Green, 2011).

³¹ Some HPSG works employs a NON-HEAD-DAUGHTER (NON-HD-DTR) instead of DTR with all daughters excluding the head daughter.

It should be noted that this constraint overrides the GHFP in (72) in that the mother of the headed phrase and its head daughter do not have the same value for SYNSEM. The COMPS value of the mother is empty ($\langle \rangle$) while the COMPS value of its daughter is not. It is different from that of the head because it is $[\text{COMPS} \langle \rangle]$ as a result of the constraint on phrases. This contrast follows from the constraint given in (71) which requires COMPS value of the mother to be $[\text{COMPS} \langle \rangle]$ to ensure that phrases do not require complements (in contrast to phrases, words may require a complement).

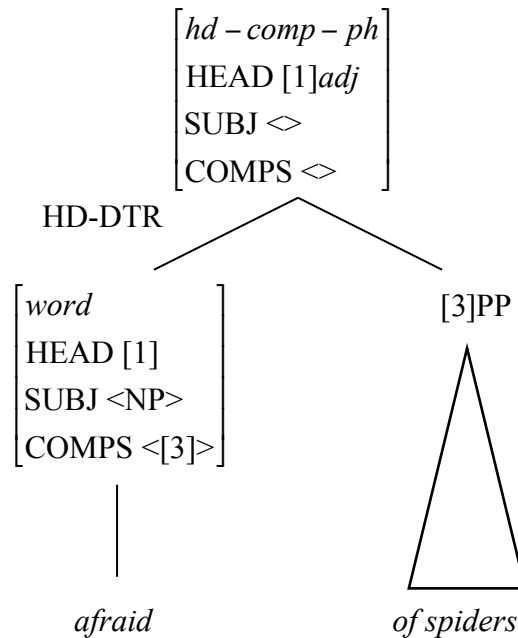
This constraint licenses a feature structure like (74), which is an example of head-complement phrase.

74)

$$\left[\begin{array}{l} \text{hd-comp-ph} \\ \text{PHON } \langle \text{afraid, of spiders} \rangle \\ \text{SS|CAT} \left[\begin{array}{l} \text{HEAD [1]adj} \\ \text{SUBJ } \langle \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \\ \text{HD-DTR} \left[\begin{array}{l} \text{word} \\ \text{PHON } \text{afraid} \\ \text{SS|CAT} \left[\begin{array}{l} \text{HEAD [1]} \\ \text{SUBJ } \langle \text{NP} \rangle \\ \text{COMPS } \langle \text{PP} \rangle \end{array} \right] \end{array} \right] \\ \text{DTRS } \left[\begin{array}{l} \text{phrase} \\ \text{PHON } \text{of spiders} \\ \text{SS } \langle \text{PP} \rangle \end{array} \right] \end{array} \right]$$

The feature structure in (74) is the formal representation of the constituent structure. However, it can be also represented by the traditional tree diagrams (i.e. non-formal notation) as in (75).

75)



Another type is the type *head-subject phrase* (*hd-subj-ph*), which is subject to the constraint given in (60) below (Sag and Wasow, 1999:384).

76)

$$hd - subj - ph \rightarrow \left[\begin{array}{l} SS|CAT [SUBJ <>]] \\ HD-DTR \left[\begin{array}{l} phrase \\ SUBJ <[1]> \end{array} \right] \\ DTRS <[SS[1]]> \end{array} \right]$$

The constraint in (76) ensures that a head-subject phrase has the empty list as the value of SUBJ feature, and, unlike *hd-comp-ph*, it has a phrase as a head daughter. It has also the non-head daughter with the *synsem* properties that is identical to the SUBJ list of the head. In addition, the

SUBJ list, unlike the COMP list, has only a single member since the heads do not select more than one subject. This constraint ensures that the predicate has the right kind of subject. Thus, the value of SUBJ and the non-head must be compatible. If the value of SUBJ is <NP [first person singular]>, the non-head must be a first person singular; if the value of SUBJ is <NP [third person plural]>, the non-head must be third person plural, and so on. The effect of this constraint is to rule out ungrammatical sentences like the English *We is clever, *They likes us.

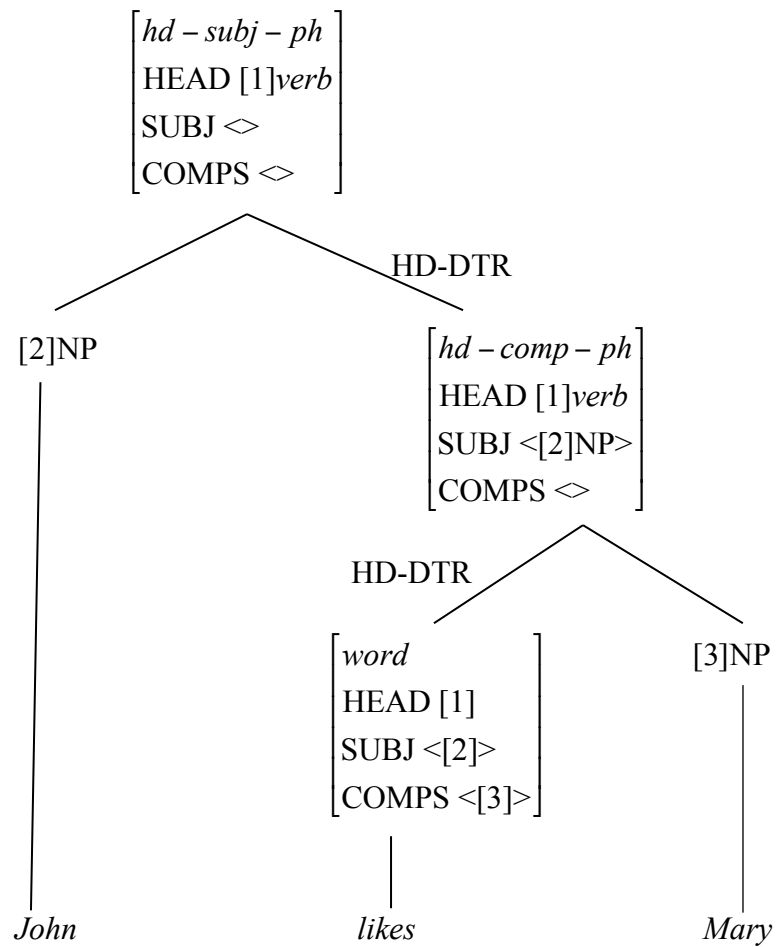
The following feature structure is an example of *head-subject phrase*.

77)

$$\left[\begin{array}{l} \textit{hd-subj-ph} \\ \text{PHON} \langle \textit{john,likes,mary} \rangle \\ \text{SS|CAT} \left[\begin{array}{l} \text{HEAD [1]verb} \\ \text{SUBJ} \langle \rangle \\ \text{COMPS} \langle \rangle \end{array} \right] \\ \text{HD-DTR} \left[\begin{array}{l} \textit{hd-comp-ph} \\ \text{PHON} \langle \textit{likes,mary} \rangle \\ \text{SS|CAT} \left[\begin{array}{l} \text{HEAD [1]} \\ \text{SUBJ} \langle [2] \rangle \\ \text{COMPS} \langle \rangle \end{array} \right] \end{array} \right] \\ \text{DTRS} \left[\begin{array}{l} \textit{phrase} \\ \text{PHON} \langle \textit{john} \rangle \\ \text{SS[2]NP} \end{array} \right] \end{array} \right]$$

The traditional tree diagram of constituent structure is as follows:

78)



Another relevant phrase type is the *head-adjunct-phrase* (*hd-adj-ph*), which is also called in (Sag et al. 2003) a *head-modifier-phrase* (*hd-mod-ph*). Head- adjunct structures involve adjuncts that combine with an expression of the same kind. Examples are adjectives and relative clauses within NPs, adverbs and adverbials PP within VPs, as shown in the following, respectively:

79)

- a. a new book about syntax
- b. The book that I bought.
- c. Kim drives carefully.
- d. Kim saw Mary on Monday.

In HPSG, the expression that the adjuncts combine with is encoded in a feature called MOD whose value is a synsem. This is different from the value of SUBJ and COMPS which is a list of synsems. The *hd-adj-ph* is subject to the following constraint:

80)

$$hd-adj-ph \rightarrow \left[\begin{array}{l} HD-DTR[SYNSEM [1]] \\ DTRS < \left[\begin{array}{l} phrase \\ SYNSEM[HEAD[MOD[1]]] \end{array} \right] \end{array} \right]$$

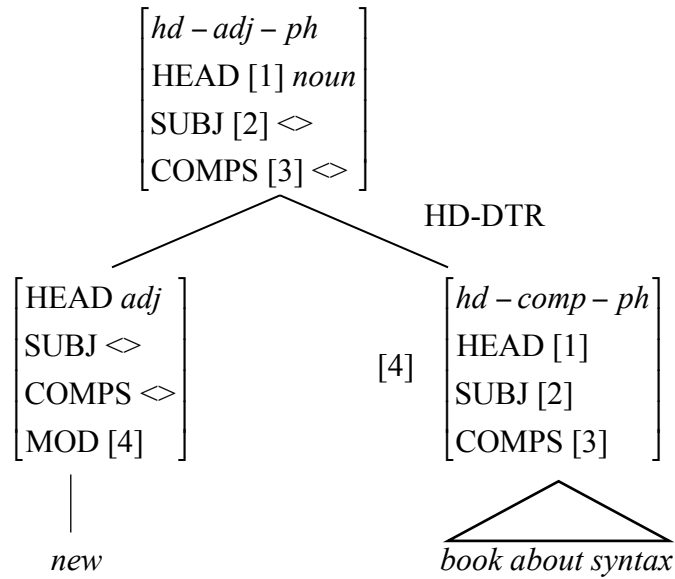
The constraint in (80) ensures that the non-head daughter's MOD value is identified with the head daughter's SYNSEM value. Thus, the example in (79a) will have the representation in (81).

81)

$$\left[\begin{array}{l} hd-adj-ph \\ PHON \ a \ new \ book \\ SS|CAT \ \left[\begin{array}{l} HEAD \ [1]N \\ SUBJ \ <[2]> \\ COMPS \ \diamond \end{array} \right] \\ HD-DTR \ \left[\begin{array}{l} word \\ PHON \ book \\ SS|CAT \ \left[\begin{array}{l} HEAD \ [1] \\ SUBJ \ <[2]> \\ COMPS \ \diamond \end{array} \right] \end{array} \right] \\ DTRS \ < \ \left[\begin{array}{l} word \\ PHON \ new \\ SS|CAT \ \left[\begin{array}{l} HEAD \ adj \\ MOD \ [1]_{[1]} \\ SUBJ \ \diamond \\ COMPS \ \diamond \end{array} \right] \end{array} \right] \end{array} \right]$$

Agreement between a modifier and a head is a matter of the modifier requiring a head with the same value for certain features. This will license a structure such as (82).

82)



The head-filler-phrase (*hd-fill-ph*) is another relevant phrase type. It involves structures like topicalization (83a), *wh*-relatives (83b) and *wh*-interrogatives (83c).

83)

- a. The man, I saw.
- b. The man who I saw.
- c. Who did you see?

The *hd-fill-ph* requires the constraint on the SLASH feature³², which encodes the fact that a constituent contains an unbounded dependency gap (Borsley 2013: 22).

84)

$$hd - fill - ph \rightarrow \left[\begin{array}{l}
 SLASH \{ \} \\
 DTRS <[LOC[1]], [2][SLASH \{[1]\}]> \\
 HD-DTR [2]
 \end{array} \right]$$

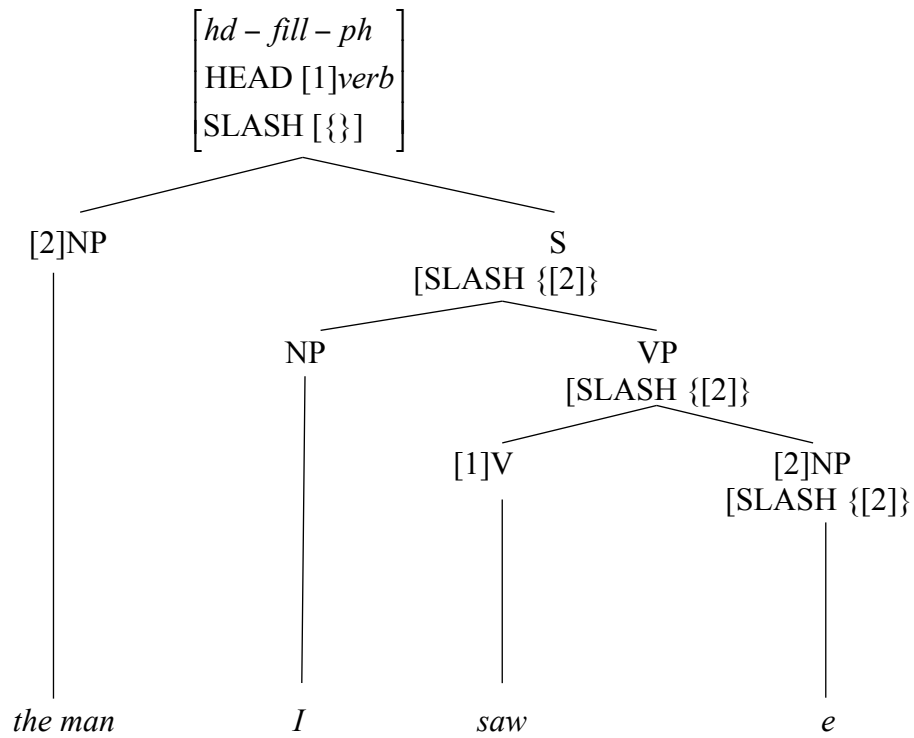
The DTRS feature refers to all the daughters including the head daughter. This constraint requires the SLASH value of the head-filler phrase to be empty $\{ \}$ and to have a head daughter and a non-head daughter whose LOCAL value is the local feature structure within the value of

³² The SLASH feature is a set-valued feature encoding elements that are missing in Unbounded dependency constructions UDCs. This feature and related issues will be explained in details in Chapter 6 (section 6.2.4).

SLASH on the head daughter. Together with the machinery introduced above, this ensures that filler and gap have the same local feature structure.

This constraint licenses the following structure for the sentence (83a):

85)



2.2.3 Lexical Rules

Lexical rules have been used by linguists to express generalizations over the lexicon (Meurers, 1995). In fact, the lexical rule is a mechanism for reducing redundancy and stipulation in the lexicon by stating systematic regularities that hold between lexemes and the words that are ‘realizations’ of those lexemes. It is a process that takes lexemes (or words) as inputs and gives distinct lexical entities as outputs (Sag et al. (2003: 250)). The distinction between ‘lexeme’ and ‘word’ has been mentioned in (section 2.2.1). Recall that ‘lexeme’ is an abstract proto-word, which gives rise to genuine words, and ‘word’ is a particular form derived from a lexeme by some inflectional rule. For example, RUN is a lexeme whereas the different forms *runs*, *ran*, *running* are words.

The thesis crucially builds on lexical rules as the central device to extract generalisations. Therefore, it is important to give an overview of what formalization of lexical rules in HPSG I adopt in my analysis. In the literature, there are two levels of lexical rules. The first one is called Meta-level Lexical Rule (MLR), which applies to lexical entries. The alternative approach is referred to as a Description-Level Lexical Rule (DLR), which applies to word objects (Meurers, 2001). The former relates to stored lexical entries and thereby capture redundancies in the lexicon, while the latter licenses new lexical items (Jackendoff, 1975) cited in (Müller & Wechsler, 2014))³³.

The MLR approach can be sketched as in (86), (Meurers, 2001) :

$$86) L_1 \mapsto L_2$$

³³ For more discussion on Meta-level Lexical Rule (MLR) vs. Description-Level Lexical Rule (DLR), see (Meurers, 1995); (Meurers, 2001) and (Müller & Wechsler, 2014).

Here L_1 and L_2 are descriptions of lexical objects. The rule states that if the language contains a lexical object satisfying L_1 then it contains another lexical object satisfying L_2 . Thus the rule is not itself a description but a ‘meta-description.’ (Müller & Wechsler, 2014: 6).

In the DLR approach, the notation in (86) is used as well, but it is seen as an abbreviation for the attribute value matrix in (87) (Müller & Wechsler, 2014: 6):

$$87) \quad \begin{bmatrix} L_2 \\ \text{DTR } L_1 \\ \text{lr-type} \end{bmatrix}$$

This type of lexical rule is a unary branching structure that has the input item as daughter. *Lr-type* in (87) stands for *lexical rule type* and is a place holder for a type that is appropriate for a specific rule such as passive (Müller & Wechsler, 2014). In my analysis, however, I will adopt the DLR approach, which is currently common in HPSG.

According to Sag et al. (2003: 476) and Sag (2012: 107), there are three types of lexical rules (*l-rule*). The first one is the inflectional lexical rule (*i-rule*), which takes a lexeme as an input and gives a word as an output. Hence it maps lexemes to words. The second type is the post-inflectional lexical rule (*pi-rule*), which takes a word as input and gives a word with more inflection information as output. It thus maps words to words. The third type is the derivational lexical rule (*d-rule*), which takes a lexeme as an input and gives us a word lexeme with a little more information, such as prefixes or suffixes, as an output. Thus, it maps lexemes to lexemes. So, when we consider the lexical rule of such a lexeme, we need to determine three things: the kind of lexical rule (whether it is derivational or inflectional), the type of input and finally the changes and information that are added to the output.

Let us consider the passivization lexical rule for Arabic transitive verbs as an illustrative example.

88)

- a. fataḥa l-walad-u l-baab-a
 opened.3SG.M DEF-boy-NOM DEF-door-ACC
 ‘The boy opened the door.’
- b. futiḥa l-baab-u (bi-waṣiṭat-i
 opened.PERF.3.SG.M.PASS DEF-door-NOM (by- means of-GEN
 l-walad-i)
 DEF-boy-GEN)
 ‘The door was opened by the boy.’

89)

- a. ʔiqtaḥama mutaḍaahir-uuna l-maqarr-a
 stormed.3SG.M protesters-P.M.NOM DEF-place-ACC
 ‘Protesters stormed the building.’
- b. ʔuqtuḥima l-maqarr -u (min qibal-i
 stormed.PERF.3.SG.M.PASS DEF-place-NOM (from side-GEN
 mutaḍaahir-iina)
 protesters-P.M.ACC)
 ‘The building was stormed by protesters.’

As can be seen in the above examples, in the passive construction, the verbs are marked for a passive³⁴ while the objects of the active verbs *l-baab-a* ‘the door’ in (88a) and *l-maqarr-a* ‘the building’ in (89a) become grammatical subjects (and have nominative case). In Arabic, it is rare that the agent of a verb is overtly realised in the passive (Ryding, 2005: 445). If it is overt, the agent is realised inside a PP, such as *bi-waṣiṭat-i* ‘by means of’ in (88b) and *min qibali* ‘from side’ in (89b)³⁵.

³⁴ The verbs in a passive construction undergo morphological changes (i.e. change the vowel pattern of the verb).

³⁵ Traditionally, the subject of the passive verbs is referred to as the *naaʔib l-faaʕil* ‘the deputy subject’.

We can have a description of the form in (90) for the simple active verb and of the form in (91) for the corresponding passive verb.

90)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{verb} \\ \text{VFORM} \textit{act} \end{array} \right] \\ \text{ARG-ST} \langle \text{NP}, \text{NP} [\text{CASE} \textit{acc}], \dots \rangle \end{array} \right]$$

91)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{verb} \\ \text{VFORM} \textit{pass} \end{array} \right] \\ \text{ARG-ST} \langle \text{NP} [\text{CASE} \textit{nom}] \rangle \oplus \dots, \left[\begin{array}{l} \text{PP} \\ \text{PFORM} \textit{min v bi} \end{array} \right] \rangle \end{array} \right]$$

(91) indicates that the passive verbs take two lists: a subject that is originally an object appears in the position of the subject with nominative case and a PP complement. The PP is optional and thus it appears as the last item in the ARG-ST list. The concatenation marker $\oplus$ combines two lists by placing one after the other.

A lexical rule for Arabic passive verbs would relate a stem to the corresponding passive form of the verb. However, the kind of lexical rule for passives must first be determined. Arabic passive verbs may have various inflected forms depending on the number and gender of its NP. This indicates that the output may feed into inflectional lexical-rules. Put differently, the output is of type lexeme and hence the kind of lexical rule which we can use to derive the passive form of the verb must be a derivational lexical rule. Second, we need to determine the type of the input. Since only transitive verbs with at least one complement can be passivized, the input must be a transitive verb. Third, we need to determine the changes in the output. Since passive constructions remove the agent and the object appears in the position of the subject with

nominative case, we then want a lexical rule which allows the subject to be omitted and the object to be a subject.

Given this, the description in (91) can be derived from the description in (90) by the lexical rule in (92).

92) Passivization lexical rule:

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{verb} \\ \text{VFORM } act \end{array} \right] \\ \text{ARG-ST} \langle \text{NP}_{[1]}, \text{NP}_{[i]} [\text{CASE } acc], \dots \rangle \end{array} \right] \mapsto$$

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{verb} \\ \text{VFORM } pass \end{array} \right] \\ \text{ARG-ST} \langle \text{NP}_{[i]} [\text{CASE } nom] \rangle \oplus \dots, \left[\begin{array}{l} \text{PP}_{[1]} \\ \text{PFORM } min \vee bi \end{array} \right] \rangle \end{array} \right]$$

The lexical rule in (92), which derives a passive verb from an active verb, essentially changes the ARG-ST values. It turns the object into a subject and adds an optional PP to express the agent of the sentence. The passive subject and the active object have the tag _[i], ensuring that the two are interpreted in the same way. Also, the active subject and the passive PP have the tag _[1] to indicate that they are understood in the same way. The empty space ‘...’ in the middle of the ARG-ST list in the input and output means that there may be other complements and they will be unchanged. The following examples illustrate this.

93)

- a. saʔala l-muʕallim-u ʔ-tullab-a ʔasʔilat-an
 asked..3SG.M DEF-teacher-NOM DEF-students-ACC questions-ACC
 kathiirat-an
 many-ACC
 ‘The teacher asked the students many questions.’

- b. suʔila ʔ-tullab -u ʔasʔilat-an kathiirat-an
 asked. PERF.3.SG.M.PASS DEF-students-NOM questions-ACC many-ACC
 ‘The students were asked many questions.’

Here, the verb *saʔala* ‘asked’ is a doubly transitive verb and takes two objects: *t-tullab-a* ‘the students’ and *ʔasʔilat-an kathiirat-an* ‘many questions’. The first object becomes the subject of the passive verb (in nominative case) and the other object remains in the accusative case.

2.3 The HPSG Analyses of Arabic Clause Structures

In this section, I discuss how verb-initial clauses (VSO), subject-initial clauses (SVO) and nominal clauses in Arabic can be analysed within the framework of HPSG.

2.3.1 Verb-initial Clauses

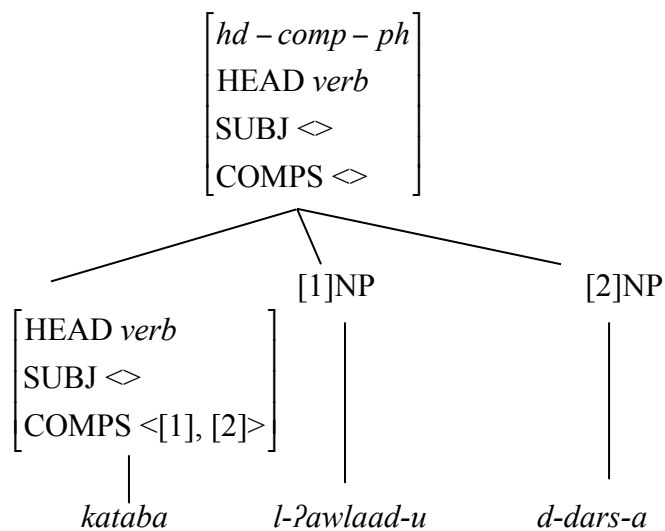
As introduced earlier, verb-initial clauses can be found in both main and subordinate clauses. In such structures, subjects follow verbs, and agreement occurs only in person and gender. Full agreement between the verb and its post-verbal subject triggers ungrammaticality (cf. section 2.1.1.1). The examples provided there are repeated in (94) below:

94)

- a. *kataba l-ʔawlaad-u d-dars-a*
wrote.3SG.M DEF-boys-NOM DEF-lesson-ACC
‘The boys wrote the lesson.’
- b. *jayyd-un ʔan [yaktuba l-ʔawlaad-u d-dars-a]*
good-NOM that [write.3SG.M DEF-boys-NOM DEF-lesson-ACC]
‘It is good that the boys write the lesson.’

There are two possible approaches for verb-initial clauses. These two approaches have been discussed in (Borsley, 2011) and (Alotaibi, 2015). The first approach treats post-verbal subjects as an extra complement. This can be done with the type *head-complement phrases* (*hd-comp-ph*), and thus no other special phrase type is required. This approach was originally proposed for Welsh verb-initial clauses by Borsley (1989), and is extended to auxiliary/verb-initial clauses in English like *is Kim happy?* and *Will Kim go home?* (See Sag et al. (2003: 409-414)). Within this approach, example (94a) would have the following structure:

95)



The second approach does not treat post-verbal subjects as complements, but rather as sisters of complements. This approach, which has been suggested for English auxiliary-initial sentences in Pollard and Sag (1994), Ginzburg and Sag (2000) and Kim and Sells (2008), requires a special phrase type of a *head-subject-complement phrase* (*hd-subj-comp-ph*), which is subject to the constraint in (96).

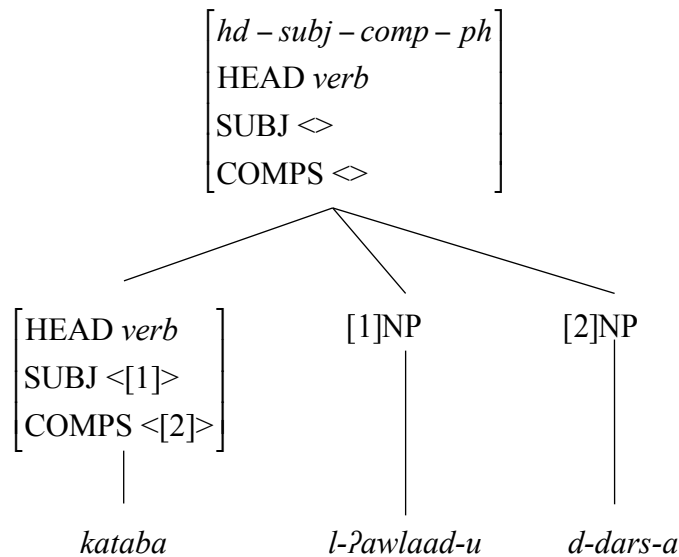
96) *hd-subj-comp-ph* →

$$\left[\begin{array}{l} \text{DTRS } \langle [1] \left[\begin{array}{l} \text{word} \\ \text{SUBJ } \langle [2] \rangle \\ \text{COMPS } \langle [3], \dots, [n] \rangle \end{array} \right] , [\text{SS}[2]], [\text{SS}[3]], \dots, [\text{SS}[n]] \rangle \\ \text{HD-DTR } [1] \end{array} \right]$$

The constraint states that a head-subject-complement phrase consists of a head daughter whose value is a word and non-head daughters whose SYNSEM values are identical to the SYNSEM values on the SUBJ list and COMPS list of the head daughter.

Within this approach (94a) has the following structure:

97)



In the latter approach, the subject is a realization of the SUBJ feature with non-empty SUBJ list. In the former approach, the subject is a realization of an extra element of the COMPS list with an empty SUBJ list. The question now is which of these two approaches should be adopted? Evidence from MSA, however, argues for the latter approach. Borsley (1995) argues that the extra complement analysis is appropriate for Welsh, but not for Arabic on the grounds that the extra complement analysis predicts post-verbal subjects to have something in common with other expressions which are the first member of a COMPS list, something not occurring in

Arabic. He shows that subjects of verb-initial clauses trigger agreement in essentially the same way as objects of subject-initial clauses in Welsh but not in Syrian Arabic³⁶. Following the lines of Borsley (1995), Alotaibi (2015) argues that in MSA, there is evidence that subjects should be realized as a SUBJ feature and not as an extra element of the COMPS feature. In MSA, verbal objects, prepositional objects, and possessors can be realized as clitics, as shown below, respectively.

98)

- | | | | |
|----|------------------------|----------------|----------|
| a. | laqad | qaabal-hum | ʕaliy-un |
| | indeed | met.3SG.M-them | Ali-NOM |
| | ‘Ali has met them.’ | | |
| b. | ḡahaba | ʔilay-him | ʕaliy-un |
| | went.3SG.M | to-them | Ali-NOM |
| | ‘Ali went to them.’ | | |
| c. | qaraʔa | kitaab-a-hum | ʕaliy-un |
| | red.3SG.M | book-ACC-them | Ali-NOM |
| | ‘Ali read their book.’ | | |

It can be noted that the object in (98a), is a clitic. Arabic clitics are affixes³⁷, as glossed here, and thus cannot occur on their own as separated word in a sentence like (98a). Hence, the subject has to follow the object in such a sentence. In (98b & c), on the other hand, the subjects can either precede or follow the PP and the possessor, as illustrated in the following.

99)

- | | | | |
|----|---------------------|----------|-----------|
| a. | ḡahaba | ʕaliy-un | ʔilay-him |
| | went.3SG.M | Ali-NOM | to-them |
| | ‘Ali went to them.’ | | |

³⁶ Borsley (1995: 103) gave the following example from Syrian Arabic to argue that if a subject is realized as an extra element on the COMPS list, then clitics will be unable to agree with their antecedent.

(i) shaaf -haa kamal (hiyye)
saw.3SG.M -3SG.F. Kamal (she)
‘Kamal saw her.’

³⁷ For discussions on clitics in MSA, see (Alotaibi, 2015:103).

- b. qaraʔa ʕaliy-un kitaab-a-hum
 red.3SG.M Ali-NOM book-ACC-them
 ‘Ali read their book.’

Based on the examples given in (98) and (99), the prepositional object and possessor should be realizations of the first member of the COMPS list, which entails that the post-verbal subject cannot be in that position. Hence, the post-verbal subject can only be a realization of the SUBJ feature. Thus, the best approach to verb-initial clauses is the analysis in which a head has both its subject and its complements as sisters.

2.3.2 Subject-initial Clauses

I showed in a previous section that SVO clauses can be found in both main and subordinate clauses. Subject initial subordinate clauses differ from subject initial main clauses in that subjects appear in the accusative form in the former. The examples discussed there are repeated in (100).

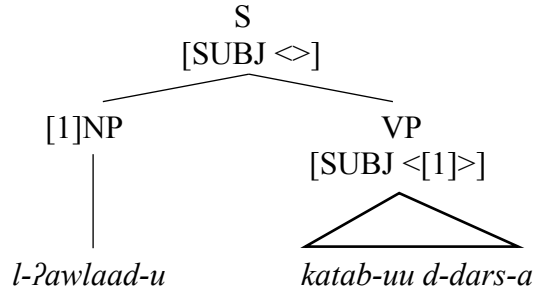
- 100)
- a. l-ʔawlaad-u katab-uu d-dars-a
 DEF-boys-NOM wrote-3P.M DEF-lesson-ACC
 ‘The boys wrote the lesson.’
- b. ʕalim-tu ʔanna l-ʔawlaad-a katab-uu d-dars-a
 knew-1SG.M/F that DEF-boys-ACC wrote-3P.M DEF-lesson-ACC
 ‘I knew that the boys wrote the lesson.’

The SVO order differs from VSO order in that the former shows full agreement; the verb agrees with its subject in person, gender, and number.

Within HPSG, there are again two possible structures for pre-verbal subjects in MSA. The first one assumes that subject-initial clauses are just subject-initial structures as they are in English,

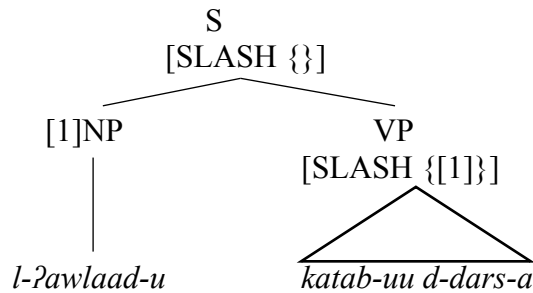
where SVO clauses are treated as instances of the *hd-subj-ph* (cf. section 1.5.2). This means that a sentence like (100a) would have the structure given in (101), where the SUBJ feature indicates what sort of subject a head requires.

101)



The second approach treats subject-initial clauses as verb-initial clauses with a subject that is fronted because of its topical nature³⁸. Here SVO clauses are considered to involve unbounded dependencies and are thus treated as instances of the *hd-fill-ph* (see section 2.2.2). Within the *hd-fill-ph* analysis, the example in (100a) would have the structure in (102), where the SLASH feature connects the NP *l-ʔawlaad-u* ‘the boy’ as filler to some position within the following clause.

102)



³⁸ In the literature, there is an argument that preverbal NP in MSA is always a topic. This position has taken by (Plunkett, 1993), (Ouhalla, 1994), (Ayed, 2003) and (Alotaibi, 2015). However, Fassi-Fehri (1993: 28–31) asserted that the status of preverbal subjects in Arabic is ambiguous between topic-reading and subject-reading. They are topic if they are definite (i), but genuine subject if they are non-definite or specific (ii).

(i) l-ʔawlaad-u qaabal-tu-hum
DEF-boys-NOM met-1SG.M/F-3P.M
‘The boys, I met them.’

(ii) baqarat-un takallam-at
cow.SG.F-NOM talked-SG.F
‘A cow has spoken.’ (Fassi-Fehri, 1993: 28)

The indefinite preverbal NP can never have the status of a topic. This may suggest that preverbal NP in Arabic is not always a topic. However, this issue is not particularly important in the present study.

The question, then, is which of these two approaches should be adopted? According to Alotaibi (2015), subject-initial clauses in MSA cannot be treated in the same way as their English counterparts. The first argument is that if preverbal NPs are ordinary ‘real’ subjects, then they should display the same patterns of subject–verb agreement as that found in VSO clauses. As seen earlier, it is not the case. Post-verbal subjects and preverbal subjects are different with respect to number agreement. The verb does not show number agreement with the former, but it does with the latter (examples are repeated in (103) for convenience).

103)

- a. kataba l-ʔawlaad-u d-dars-a
 wrote.3SG.M DEF-boys-NOM DEF-lesson-Acc
 ‘The boys wrote the lesson.’
- b. l-ʔawlaad-u katab-uu d-dars-a
 DEF-boys-NOM wrote-3P.M DEF-lesson-Acc
 ‘The boys wrote the lesson.’

If preverbal NPs are real subjects in these contexts and are related to a gap, one would also expect canonical subject-verb agreement. The second argument is that if a preverbal subject preceded by the complementizer *ʔanna* ‘that’, as in (100b), is an ordinary subject, then it should be ambiguous between the nominative case as it is the subject of the verb and the accusative case as it is preceded by the complementizer. It is not the case as it is always in the accusative.

Another reason for rejecting the head-subject analysis mentioned in Alotaibi (2015) is that if preverbal NPs are ordinary subjects, then they should be felicitous in sentences of the form *wh*-phrase – subject – verb³⁹. However, the ungrammaticality of (104) shows that MSA does not have such string⁴⁰.

³⁹ From Minimalist perspective, focused phrase such as *wh*-phrase can either precede or follow topic phrases in the left periphery of the clause. However, given preverbal subjects in Arabic can only precede *wh*-phrase, preverbal subjects then should be seen as a topic (for the discussion see Alotaibi, 2015).

⁴⁰ I will return to this example shortly.

- 104) *man r-rajul-u qaraba
 *who DEF-man-NOM beat.3SG.M
 ‘Who has the man beaten?’

The fact that *wh*-phrase cannot precede preverbal subjects in MSA suggests that preverbal NPs are not like ordinary subjects. Therefore, subject-initial clauses in Arabic cannot be treated in the same way as English subject-initial structures. The best analysis for Arabic subject-initial clauses is then the head-filler analysis. The issue whether the filler is really a topic or not needs to be investigated further. Since it is not crucial to the present study, I leave it for future research.

2.3.3 Nominal Clauses

Nominal sentences consist of a subject and a predicate and of course contain no overt verb.

Examples have been discussed in section (2.1.1.2), but they are repeated in (105) for clarity.

- 105)
- a. ʕaliy-un ɗakiy-un
 Ali-NOM intelligent- NOM
 ‘Ali is intelligent.’
 - b. ʕaliy-un mudarris-un
 Ali-NOM teacher- NOM
 ‘Ali is a teacher.’
 - c. ʕaliy-un fi l-bayt-i
 Ali-NOM in DEF-home- GEN
 ‘Ali is in the home.’

In the literature, there are two main analyses of the internal structure of verbless sentences. The first analysis assumes that verbless sentences have a structure different from that of copular sentences. More specifically, they are analysed as not containing a null copular verb. Aoun, Choueiri, & Benmamoun (2010: 35), for example, show that verbal copula in MSA assign accusative case to the nominal or to the predicates (as in (106)), but in present tense clauses, which have no overt copula, nominal predicates are marked with nominative. The two sentences

in (106) are in the present tense, although the negative particle *laysa* in (106a) and the verb *laazaala* ‘still’ in (106b) assign the accusative case to the predicates⁴¹. Based on this, Aoun et al. (2010) reject the null copula verb analysis.

106)

- | | | | |
|----|---------------------------|-----------------|--------------------|
| a. | <i>laysa</i> | <i>ʕaliy-un</i> | <i>ḍakiy-an</i> |
| | Neg | Ali-NOM | intelligent- ACC |
| | ‘Ali is not intelligent.’ | | |
| | | | |
| b. | <i>laazaala</i> | <i>ʕaliy-un</i> | <i>mudarris-an</i> |
| | still | Ali-NOM | teacher- ACC |
| | ‘Ali is still a teacher.’ | | |

The second type of analysis assumes that verbless clauses contain a phonologically empty verbal copula. The verbal copula is covert in the present tense, as in (105) above, and overt in the corresponding past and future tense, as in (107) below. This position has been taken by Bakir, (1980), Fassi-Fehri (1993), Althawab (2014), Alotaibi (2015) and (Alotaibi, 2017)

107)

- | | | | |
|----|--------------------------|------------------|--------------------|
| a. | <i>ʕaliy-un</i> | <i>kaana</i> | <i>ḍakiyy-an</i> |
| | Ali-NOM | was | intelligent- ACC |
| | ‘Ali was intelligent.’ | | |
| | | | |
| b. | <i>ʕaliy-un</i> | <i>sayakuunu</i> | <i>mudarris-an</i> |
| | Ali-NOM | will-be | teacher- ACC |
| | ‘Ali will be a teacher.’ | | |

According to Alotaibi (2015), the motivation for favouring the phonologically empty analysis comes from the nominal *wh*- questions. In MSA, the question word has to be followed by a verb either an ordinary verb as in (108a) or a copular verb as in (108b).

⁴¹ It may be worthwhile to mention that in traditional Arabic grammar *laysa* and *laazaala* are referred to as sisters of *kaana* ‘was’).

108)

- a. man ḍaraba r-rajul-u
 who beat.3SG.M DEF-man-NOM
 ‘Who has the man beaten?’

- b. man kaana ġaaʔib-an
 who was absent-ACC
 ‘Who was absent?’

When the *wh*-word followed by a subject, then the sentence will be ungrammatical as shown in (104) above, repeated here as (109).

109)

- *man r-rajul-u ḍaraba
 *who DEF-man-NOM beat.3SG.M
 ‘Who has the man beaten?’

On the other hand, the subject NP in verbless clauses can follow the *wh*- word, as exemplified in (110a) below (Fassi Fehri, 1993: 64) and (110b) (Alotaibi & Borsley, Forthcoming).

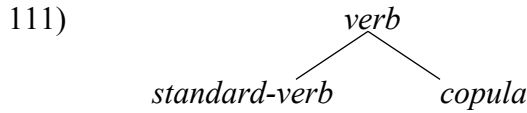
110)

- a. man ʔanta muntaqid-un
 who you criticizing- NOM
 ‘Who are you criticizing?’
- b. mimma ʔanta xaaʔif-un
 from.what you afraid- NOM
 ‘Of what are you afraid?’

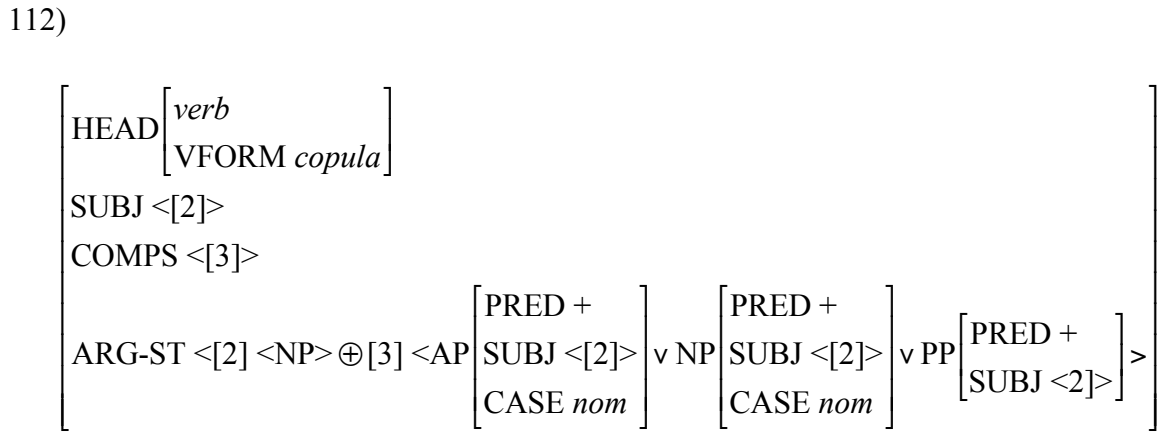
Precisely Alotaibi (2015) uses the argument that no non-verbal constituent can follow *wh*-phrases in Arabic. In (109), for example, a subject NP occurring immediately after the *wh*-phrase triggers ungrammaticality. The subjects NPs of verbless clauses can, however, occur after *wh*-phrases (110). For Alotaibi, this shows that the structure of verbless clauses involve a null copula occurring before the subject. This covert copula, which occurs between *wh*-phrase and the subject NP, makes sentences like (110) possible. Also, Alotaibi (2017) points out that the assumption of an invisible form of the copula in verbless sentences treats all *wh*-questions in the same way and clarifies that the *wh*-phrase is always followed by a verbal element (whether it is visible or invisible).

Alotaibi & Borsley (forthcoming) assume that this phonologically empty form of copular is similar but not identical to overt forms. They point out two differences between the phonologically empty form of the copula and overt forms: (i) it takes a nominative and not an accusative complement, and (ii) it doesn't allow a verbal complement⁴².

Following Alotaibi (2015), (Alotaibi, 2017) and (Alotaibi and Borsley, forthcoming), I will assume that nominal sentence involves a null copula. I will assume a type *copula*, which is a subtype of *verb*, the other subtype being *standard-verb*, as follows:



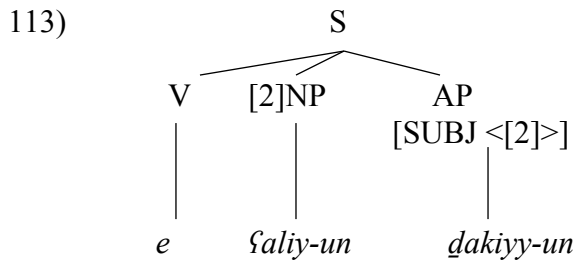
This will involve the following lexical description for the predicative null form of the copula in nominal sentence. It is adopted from Alotaibi (2017: 239).



(112) says that the verbal copula selects a subject and a complement which is [PRED +], which can be either an AP, a PP, or an NP. The complement is [SUBJ <[2]>] to capture the fact that the subject of the copula is also the subject of the complement. The NP and AP complements need to have a nominative case, unlike the constraint that normally makes the complement of a verb accusative with those of the overt copula.

⁴² For the discussion of the differences between a phonologically empty form of copula and the overt forms, the reader can refer to (Alotaibi, 2017), and (Alotaibi and Borsley, forthcoming).

Under the null copula approach, the sentence in (105a), for instance, will have the simplified structure in (113), where S is VP[SUBJ <>].



In this structure, the verbal copula identifies its arguments with the argument of the predicative complement.

2.4 Summary

In this chapter I have presented the theoretical and descriptive background of the thesis. The first part of the chapter focused on MSA basic clause structures and the morphological properties and syntactic distribution of adjectives. The second part of the chapter described the basic lay out of the HPSG framework, including types and features, phrasal types and constraints as well as the lexical rules.

Finally, the third section presented a brief HPSG account of a number of important aspects of MSA clause structure, including verb-initial clauses, subject-initial clauses and verbless-sentences. With respect to VSO clauses, the section showed that within HPSG, there are two approaches; one treats the subject as a first complement, and the other treats it as a value of SUBJ feature. It showed that post-verbal subjects should be treated as ordinary subjects realizing the SUBJ feature. The section also presented the two possible approaches for subject-initial

clauses. The first one assumes that they are treated as instances of the *hd-subj-ph* (head-subject-phrase) and the second assumes that they should be treated as instances of *hd-fill-ph* (head-filler-phrase). The section also presented arguments in favour of the latter analysis. With respect to the internal structure of nominal (verbless) sentences, it has been shown that nominal clauses involve a phonologically empty verbal copula.

Chapter 3 Description of

Comparative Constructions in MSA

3.1 Introduction

Like English and many other languages, Arabic has different strategies to mark comparison, each displaying different syntactic and morphological properties. These strategies fall into four major types depending on whether the comparison is scalar or non-scalar and equal or unequal. A further classification depends on whether the comparative is adjectival, nominal or adverbial. These three classes can be either clausal or phrasal. The main purpose of this chapter is to present a detailed description of comparative constructions in MSA. Equality, non-scalar and clausal comparatives are not the core focus of the current work and so their structures will be sketched only briefly in order to provide the reader with a complete picture of comparative constructions. Before analyzing some of the facts in comparative construction later in this thesis, more data and further detailed discussion will be presented in Chapters Four, Five and Six.

This chapter is organized into four sections. The second section provides a description of the comparative adjective formation in MSA. The third section spells out the types of comparative constructions in MSA and discusses their morphosyntactic properties. Finally, the fourth section draws conclusions.

3.2 Comparative Adjective Formation

This section gives an overview of how elative comparative adjectives are formed in MSA and highlights some cases where adjectives do not follow the elative pattern. It concludes with a brief description of superlative adjectives, which are formed following the same pattern as comparative adjectives. It shows that despite these formal similarities, the two types behave differently when it comes to their syntactic distributions.

3.2.1 Comparative Elative Forms

In Arabic, comparative adjectives are formed from what is referred to in Semitic linguistics as the ‘elative’, a specific morphological pattern used to derive comparative and superlative forms of adjectives with different syntactic and semantic properties (Versteegh, 2007). In Arabic, adjectival comparatives are built on the elative pattern ‘ʔaCCaC’ where the *C*s stand for the consonantal root⁴³. This pattern is called, in traditional Arabic grammar, ‘*ʔaffal t-tafḍil*’ (i.e. the

⁴³ In Arabic, there are two adjectives which do not have the elative pattern *ʔaffal* but they have in addition to the positive meaning, the elative meanings of comparative and superlative. These two adjectives are: ‘x-y-r’ *xayr* (‘good, better, best’) and ‘sh-r-r’ *sharr* (‘bad, worse, worst’). Whether the adjective form expresses a positive, comparative or superlative depends on the linguistic context; consider the following examples:

- (i) Positive adjective:
- a. ʔinn-i ʔaraa-ka bi-xayr-in
that-I see-you in-good-GEN
‘I see you okay.’
- b. laa tadʕu bi-šarr-i ʕala ʔabnaaʔ-i-ka
neg call.3SG.M with-bad on children-GEN-your
‘Do not call with evil on your children.’
- (ii) Comparative adjective:
- a. ʔanaa xayr-un min xaalid-in
I better-NOM from Khalid-GEN
‘I am better than Khalid.’
- b. qull hal ʔunabiʔu-kum bi-šarr-in min ḍalik (QA,5:60)
Say shall inform.1SG.M- 2PL.M of-worse-GEN from that
‘Say, shall I inform you of (what is) worse than that.’

pattern *ʔaʕʕal* ‘ʔaCCaC’ denoting prominence or superiority), which is also used to derive superlative forms of adjectives (Versteegh, 2007). For example, the elative forms of the adjectival roots ‘*t-w-l*’ in *tawiil* (‘tall’) and ‘*k-b-r*’ in *kabiir* (‘old’) are *ʔaṭwal* and *ʔakbar* respectively, where, as shown in table (1), the consonants *t, w, l* and *k, b, r* are inserted into the relevant consonantal slots of the pattern.

Root	Adjective:	Elative:
<i>t-w-l</i>	<i>tawiil</i> ‘tall’	<i>ʔaṭwal</i> ‘taller’
<i>k-b-r</i>	<i>kabiir</i> ‘old’	<i>ʔakbar</i> ‘older’

Table 1 Comparative Adjective Formation in MSA

A number of restrictions are associated with the elative. First, only adjectives with triliteral roots (i.e. tri-consonantal lexical roots) can form their comparative from the elative. Moreover, the elative pattern is diptoteit, does not allow the indefiniteness marker *-n* and reflects both the accusative and genitive case with the same case marker (i.e. *-a*) (Ryding, 2005: 245). Elative comparatives are invariable and always surface in the masculine singular form⁴⁴.

-
- (iii) Superlative adjectives:
- a. l-kitaab-u xayr-u jaiils-in fi z-zamaan-i
 DEF-book-NOM best-NOM partner-GEN in DEF-life-GEN
 ‘The book is the best partner in the life.’
- b. d-dajjal-u šarr-u ġaaib-in yuntaḍar
 DEF-antichrist-NOM worst-NOM absent-GEN waited.PSSIVE
 ‘The antichrist is the worst absent will be waited for.’

⁴⁴ The *ʔaʕʕal* form can be used with no reference to the comparative meaning, as shown in the following examples:

- (i) kiis-un ʔajwaf-u
 bag.SG.M-NOM empty.SG.M-NOM
 ‘an empty bag’
- (ii) fikrat-un ḥamqaaʔ-u
 idea.SG.F -NOM silly.SG.F-NOM
 ‘a silly idea’

Although the adjectives *ʔajwaf* (‘empty’) and *ʔaḥmaq* (‘silly’) have the elative form, they do not have comparative meaning, and convey only the meaning of the basic adjective. In this case, they inflect for number, gender and definiteness, as well as case, just like attributive adjectives (Ryding, 2005: 248).

To form a comparison statement, the elative comparative form of adjectives is followed by a Preposition Phrase (PP) headed by *min* ('from'), which expresses the standard of comparison. I will, from now on, refer to it as the '*min*-phrase'. This is illustrated in (1), which is a typical example of a simple comparative adjective in MSA. The syntactic behaviour of simple adjectival comparatives will be discussed later in section 3.3.1.

- 1) ṣaliy-un ṭaṭwal-u min xaalid-in
 Ali-NOM taller-NOM from khalid-GEN
 'Ali is taller than Khalid.'

The *min*-phrase can sometimes be left unexpressed if it is known from the context. In (2) below, for example, the comparative is used without reference to what it is compared to, so the gap could be filled out as 'than previously' or 'than others'.

- 2) ṣaar-at taṭxuḍ-u dawr-an ṭakbar-a ____ (Ryding, 2005: 247)
 Started-3SG.F take.3SG.F role-ACC greater-ACC
 'She started to take a greater role⁴⁵.'

Although many adjectives have their comparative formed from the elative pattern, others do not have a comparative elative form. The main categories are adjectives that have extra consonants or vowels in their lexical roots (i.e. those which are larger than tri-consonantal roots). These cannot shift into the elative pattern without losing some of their identity and meaning. *Mustaṣid* ('prepared'), derived from the perfective form of the verb 'ṭ-s-t-ṣ-d-d' *ṭistaṣadda* ('to be prepared'), and the adjective *ḥayii* ('shy'), derived from the verb 'ḥ-y-y', *ḥayiya* ('to be shy'), are such adjectives. The second special category concerns adjectives that are identical in form to the elative pattern, such as adjectives expressing colour and infirmities, including, for example, *ṭabyaḍ* ('white'), *ṭaxḍar* ('green'), *ṭaḥwal* ('squint-eyed') and *ṭaṣraj* ('leg crippled'). This type of adjective inherently occurs in the elative form. The last category that does not have an elative

⁴⁵ We know that the meaning is 'greater' and not 'greatest' because the superlative form of the elative has to be definite throughout the definite article *al-* ('the') or the construct state. This is discussed in section 3.2.2.

pattern is ‘nouns’. Nouns cannot be shifted into the elative pattern *ʔaffal*, and thus, they cannot have their comparative form by an inflectional process.

The question of how the comparative meaning is expressed with these adjectives and nouns will be discussed later in section 3.3.2.

3.2.2 Superlative Adjectives

The elative pattern *ʔaffal* also expresses superlatives in Arabic. Whether the form expresses a comparative or a superlative depends on the linguistic context, as illustrated in (3a) and (3b).

- 3)
- | | | | | | |
|----|--|-------------|-------------|------------------|-----------------------|
| a. | ʕaliy-un | ʔaṭwal-u | min | xaalid-in | (Comparative elative) |
| | Ali-NOM | taller-NOM | from | Khalid-GEN | |
| | ‘Ali is taller than Khalid.’ | | | | |
| | | | | | |
| b. | ʕaliy-un | ʔaṭwal-u | ṭaalib-in | fi l-faṣl-i | (Superlative elative) |
| | Ali-NOM | tallest-NOM | student-GEN | in DEF-class-GEN | |
| | ‘Ali is the tallest student in the class.’ | | | | |

In (3a), the elative *ʔaffal* is followed by the preposition *min* (‘from’) (expressing standard of comparison). In (3b) the *ʔaffal* form occurs in a genitive NP construct⁴⁶, which it heads, and has a superlative interpretation. Note that in these contexts, the elative cannot be followed by the *min*-phrase.

In MSA, the superlative elative always has a definite interpretation, which it inherits from the construct state structure, as in (3b) above, or it gets it from the definite article *l* (‘the’), as in (4).

When it takes *l*, it normally shows gender and number agreement.

⁴⁶ The construct state or *iḍāfah* is an NP consisting of two elements: a noun-noun or an adjective-noun, and the second term is always in genitive and definite (cf. 2.1.2.1).

4)

- a. l-ʔašiqqaʔ-u l-ʔafaadil-u
 DEF-brothers-NOM DEF-best.3P.M-NOM
 ‘the best brothers’
- b. š-šaqiqaat-u hunna l-fuɖlayaat-u
 DEF-sisters-NOM they.P.F DEF-best.3P.F-NOM
 ‘The sisters are the best.’

When the superlative relative occurs in the construct state, it can be followed by either an indefinite or a definite noun phrase. When the superlative relative is followed by an indefinite noun phrase, then it must remain in the masculine singular form, as shown by the grammaticality of (5a) and the ungrammaticality of (5b):

5)

- a. ʕaliy-un wa xaalid-un ʔafɖal-u ʔaalib-yaini
 Ali-NOM and khalid-NOM best-1SG.M-NOM students-DUAL.GEN
 ‘Ali and Khalid are the best students.’
- b. *ʕaliy-un wa xaalid-un ʔafɖal-aa ʔaalib-yaini
 *Ali-NOM and khalid-NOM best-DUAL.M-NOM students-DUAL.GEN
 ‘Ali and Khalid are the best students.’

On the other hand, if the superlative relative is followed by a definite noun phrase, then it can occur in a masculine singular, as in (6a), or it can agree in gender and number with the subject, as in (6b) and (6c) respectively.

6)

- a. hiya ʔafɖal-u n-nisaaʔ-i
 she best.SG.M-NOM DEF-women-GEN
 ‘She is the best of the women.’
- b. hiya fuɖl-aa n-nisaaʔ-i
 she best-SG.F⁴⁷ DEF-women-GEN
 ‘She is the best of the women.’

⁴⁷ The adjective is marked feminine by the suffix (-aa) which is traditionally called *ʔalif maqSuura* (Ryding, 2005:123). In this case, the word shows no variation in case.

c.	hum-aa	ʔafɖal-aa	r-rijaal-i
	they-DUAL.M	best-DUAL.M.NOM	DEF-men-GEN
	‘They are the best of the men.’		

Having described the formation of comparative adjectives and how they are produced in MSA, I begin my description of the strategies of comparative constructions, outlining the various types of comparatives in MSA, in the next section.

3.3 Types of Comparative Constructions in MSA

Huddleston and Pullum (2002: 1099–1101) classify English comparative constructions into four types based on two cross-cutting distinctions: scalar vs. non-scalar and equality vs. inequality. Scalar comparisons are concerned with ‘relative position on some scale or relative degrees of some gradable property’, such as that denoted by *old* in *Kim is older than Lee* and *Kim is as old as Lee*. Non-scalar comparisons, by contrast, are not concerned with grading but with issues such as identity and likeness. For instance, the non-scalar comparison in *I bought a different book from yesterday* compare the two books (the one I bought and the one I had bought yesterday for identity). The terms equality and inequality apply clearly to scalar comparison. If X and Y assign different positions on the scale, as in *Kim is more intelligent/less intelligent than his brother*, then the term inequality comparison is used. If, however, the positions are similar, then we talk about equality comparisons, as in *Kim is as intelligent as his brother*⁴⁸.

⁴⁸ The present study, as stated earlier, focuses mainly on inequality comparative constructions. The reason for limiting the current investigation to one type of these four types is that in MSA the meaning of these four types of comparison is expressed in very different ways, as we will see shortly. In English, however, equality comparisons like *as intelligent as* and inequality comparisons like *more intelligent than* have quite similar constructions. Also, *as* is the main marker of equality comparisons in both scalar and non-scalar comparisons.

Within the inequality comparison type, inequality comparatives can be divided into different subtypes. Adjectival comparatives involve comparisons between two entities on the property of scale provided by the adjective. It can be as simple as in *Kim is older than Lee* or as complex as in *Kim is more intelligent than Lee*. Nominal comparatives, on the other hand, are comparative constructions in which the comparative word quantifies a noun, such as *more books* and *more of the books*. Finally, adverbial comparatives are used with reference to the verb or a whole sentence, adding information about the frequency or the manner of the action, such as *Kim went to London more than Lee to Paris* or *Kim drives more carefully than Lee*.

With respect to the complement of the comparison marker (i.e. *than* in English), Huddleston and Pullum (2002) classify comparative constructions further into phrasal comparatives and clausal comparatives. Phrasal comparatives contain only a single phrase, as in the previous examples; whereas clausal comparatives consist of a clause, such as in *Kim is older than Lee is*.

My classification of Arabic comparative constructions adopts and builds on those presented in Huddleston and Pullum (2002). I assume that there are four types of Arabic comparative constructions: simple adjectival comparatives, complex adjectival comparatives, nominal comparatives and adverbial comparatives. All these four types can be either a phrasal (the preposition *min* followed by an NP) or clausal (the preposition *min* followed by a clause). The following sections will describe the properties of each type.

3.3.1 Simple Comparatives

Adjectival comparatives are comparative constructions whose property evaluated on the comparative scale is expressed by an adjective. So, for instance, in (7) below, the entities ‘she’ and ‘Khalid’ are compared on the property scale of ‘tall’, provided by the adjective *ʔatwal* (‘taller’).

- 7) hiya ʔaṭwal-u min xaalid-in
 she.SG.F taller.SG.M-NOM from khalid-GEN
 ‘She is taller than Khalid.’

The comparative adjective in the previous example occurs in a verbless sentence (a nominal sentence) and appears in a predicative position; that is, the adjective is the predicate of the clause and the described entities are its arguments. In the past tense, a copula is overtly realized and the comparative adjective has accusative case, as shown in (8):

- 8) hiya kaant ʔaṭwal-a min xaalid-in
 she-SG.F was taller.SG.M-ACC from Khalid-GEN
 ‘She was taller than Khalid.’

Simple comparative adjectives, like non-comparative adjectives, can also occur with attributive functions when the adjectival comparative is a part of the noun phrase that they modify. This is illustrated in the following examples:

- 9)
 a. huwa rajul-un ʔaṭwal-u min ʕaliy-in
 he.SG.M man.INDF-NOM taller.INDF-NOM from Ali-GEN
 ‘He is a taller man than Ali.’
 b. tuḥibbu l-mraʔat-u r-rajul-a l-ʔaṭwal-a min-haa
 love-1SG.M DEF-woman-NOM DEF-man-ACC DEF-taller-ACC from-her
 ‘The woman loves the man who is taller than her.’

The translation in (9b) contains predicative adjectives within relative clauses, but the MSA examples contain attributive adjectives. This is shown by the fact that they show agreement in case and definiteness with the modified noun. In the examples given in (9), the attributive comparative follows immediately after the noun it modifies, agreeing with it only in case marking and definiteness. The comparative adjective *ʔaṭwal* (‘taller’) in (9a) agrees with the preceding noun *rajul-un* (‘a man’) in the features of INDF and NOM, and agrees with the noun *r-rajul-a* (‘the man’) in (9b) in the features of DEF and ACC.

Comparative adjectives differ in various ways from the basic form of adjectives. First, they show distinct behaviour when it comes to agreement. Recall from section 2.1.2.2 that attributive adjectives in MSA agree with the nouns they modify in gender, number, case and definiteness, while predicative adjectives agree only in gender and number (see (10a) and (10b)). Comparative adjectives do not show that kind of agreement. Indeed, they must occur in the masculine singular form, regardless of the gender and number of the NP they modify. This is illustrated in the following:

10) Attributive Positions

- a. *n-nisaaʔ-u* *l-kabiira-aat-u*
 DEFwomen.P.F-NOM DEF-old-P.F-NOM
 ‘the old women.’
- b. *n-nisaaʔ-u* *l-ʔakbar-u* *min* *r-rijaal-i*
 DEF-women.P.F-NOM DEF-older.SG.M-NOM from DEF-men-GEN
 ‘the older women than men.’

11) Predicative Positions

- a. *l-ʔawlaad-u* *kibaar-un*
 DEF-boys.P.M-NOM old.P.M-INDF-NOM
 ‘The boys are old.’
- b. *l-ʔawlaad-u* *ʔakbar-u* *min* *l-banaat-i*
 DEF-boys.P.M-NOM older.INDF.SG.M-NOM from DEF-girls-GEN
 ‘The boys are older than the girls.’

It can be noted from the example in (10b) that the NP *n-nisaaʔ-u* (‘the women’) is marked as a feminine plural, but the comparative adjective *l-ʔakbar-u* (‘older’) is in masculine and singular form and does not agree with the gender and number features. In (11b), the NP *l-ʔawlaad-u* (‘the boys’) is marked as masculine plural, but again the comparative adjective is in masculine and singular form and does not agree in the gender and number features. When the predicative

comparative adjective agrees with the subject in gender and number, then the sentence is ungrammatical, as the following demonstrate:

12)

- a. *n-nisaaʔ-u kubrayat-u min r-rijaal-i
 *DEF-women.F.P-NOM older-P.F-NOM from DEF-men-GEN
 ‘The women are older than the men.’
- b. *l-ʔawlaad-u ʔakaabir-u min l-banaat-i
 *DEF-boys.P.M-NOM older.P.M-NOM from DEF-girls-GEN
 ‘The boys are older than the girls.’

The data given so far leads to the conclusion that comparative adjectives have a single form for both genders and all three numbers but vary in case and definiteness where used attributively.

The second main way in which comparative adjectives differ from ordinary adjectives is with respect to their co-occurrence with certain NPs and their definiteness features. Thus, when a predicative comparative adjective co-occurs with a personal pronoun or a proper name, it cannot take the definite article *l-* (‘the’), as shown by the ungrammaticality of the sentence in (13). The only case where definiteness agreement is possible is with an attributive comparative, as in (14).

13)

- a. *ʔanaa l-ʔaṭwal-u min xaalid-in
 *I.1SG.M/F DEF-taller-NOM from Khalid-GEN
 ‘I am the taller one than Khalid.’
- b. *ʕaliy-un l-ʔaṭwal-u min xaalid-in
 *Ali-NOM DEF-taller-NOM from Khalid-GEN
 ‘Ali is the taller one than Khalid.’

14)

- ʔuḥibbu r-rajul-a l-ʔaṭwal-u min xaalid-in
 love.1SG.M DEF-man-ACC DEF-taller-NOM from Khalid-GEN
 ‘I love the man who is taller than Khalid.’

As introduced in section 2.1.2.2.1, ordinary adjectives do not display such restrictions. Definite ordinary adjectives can thus occur with personal pronouns and proper names, as shown in (15):

15)

- a. ʔanaa l-ṭawiil-u
I.1SG.M/F DEF-tall-NOM
'I am the tall one.'
- b. ʕaliy-un l-ṭawiil-u
Ali-NOM DEF-tall-NOM
'Ali is the tall one.'

The last distinctive feature of comparative adjectives is that they cannot head a construct state structure (i.e. an NP which consists of two elements: a noun-noun or an adjective-noun and the second term is always in genitive and definite (cf. 2.1.2.1)). Consider the ungrammatical example in (16), where the comparative elative heads a construct state⁴⁹.

- 16) * ʕaliy-un ʔaṭwal-u ṭ-ṭullaab-i min xaalid-in
*Ali-NOM taller-NOM DEF-students from Khalid-GEN
'*Ali is the taller of students than Khalid.'

Again, this is not the case with the basic form of adjectives, which, as shown by (17)⁵⁰, can occur in the head of construct state.

- 17) rajul-un ṭawiil-u l-yad-i
man-NOM tall-NOM DEF-hand-GEN
'a man with a tall hand'

The examples we have given so far show that the preposition *min* takes as its complement an NP, and thus they are called phrasal comparatives. The *min*-phrase is a complement of the comparative adjective, and there are three elements that can intervene between the comparative

⁴⁹ Sentence (16) would be grammatical without the *min*-phrase, and then it expresses the superlative meaning, as we have seen in section 3.2.2.

⁵⁰ The adjectival constructs will be discussed in Chapter Five.

adjective and the *min*-phrase. The first one is the ordinary complement of the comparative adjective, as illustrated in the following:

18)

- a. ʕaliy-un ʔaḥraṣ-u ʕala l-waajib-i min ʔax-i-hi
 Ali-NOM keener-NOM on DEF-duty-GEN from brother-GEN-his
 ‘Ali is keener on his duty more than his brother.’
- b. ʕaliy-un ʔaḥraS-u min ʔaxi-hi ʕala l-waajib-i
 Ali-NOM keener-NOM from brother.GEN-his on DEF-duty-GEN
 ‘Ali is keener than his brother on his duty more.’

The examples in (18) show that the comparative adjective *ʔaḥraṣ-u* (‘keener’) in (18a) is separated from the *min*-phrase *min ʔaxi-hi* (‘from his brother’) by its ordinary complement *ʕala l-waajib-i* (‘on his duty’). The *min*-phrase can either precede or follow the ordinary PP complement.

The second element that can intervene between the comparative adjective and the *min*-phrase is the so-called *tamyiiz* (‘the accusative specification’)⁵¹. Consider (19) as an example:

19)

- a. ʔana ʔaktar-u ḍakaʔ-an min-ka
 I.1SG.M/F more-NOM intelligences-ACC from-you
 ‘I am more intelligent than you.’
- b. ʔana ʔaktar-u min-ka ḍakaʔ-an
 I.1SG.M/F more-NOM from-you intelligence-ACC
 ‘I am more intelligent than you.’

Here, the nominal form of the adjective, which is known as *maṣdar*, *ḍakaʔ-an* (‘intelligence’) can either precede or follow the *min*-phrase.

⁵¹ The traditional analysis for the NP in complex comparatives is an adverbial of specification (‘*tamyiiz*’). *Tamyiiz* is a construct using the indefinite and accusative form of a nominal to add specification to the sentence by narrowing its terms (Sawaie, 2014: 405). In Chapter Five, we argue that the NP in complex comparatives is a complement and not an adverb.

Some adverbial clauses, such as *Law* ('if') clause and *hiina* ('when') clause can also intervene between the comparative adjective and the *min*-phrase, as shown in the following examples:

20)

- a. huwa ʔaḥsan-u law yajtahidu min ʕaliy-in
 he better-NOM if study.3SG.M from Ali-GEN
 'He is better than Ali, if he studies.'
- b. huwa ʔaḥsan-u min ʕaliy-in law yajtahidu
 he better-NOM from Ali-GEN if study.3SG.M
 'He is better than Ali, if he studies.'

21)

- a. huwa ʔaḥsan-u hiina yajtahidu min ʕaliy-in
 he better-NOM when study.3SG.M from Ali-GEN
 'He is better than Ali, when he studies.'
- b. huwa ʔaḥsan-u min ʕaliy-in hiina yajtahidu
 he better-NOM from Ali-GEN when study.3SG.M
 'He is better than Ali, when he studies.'

3.3.2 Complex Comparatives

As has been introduced earlier in section 3.2.1, in MSA there are two categories of adjectives that do not have a comparative elative form for morphological or phonological reasons:

- Adjectives that have more or less than the tri-consonantal in their lexical roots.
- Adjectives that are identical in form to the elative pattern 'ʔaCCaC'.

These adjectives cannot have the comparative meaning built on the elative pattern. Hence, the comparative meaning can only be expressed by a complex construction consisting of two words, superficially like English complex comparatives (e.g. *more intelligent*). In the present section, I

describe how the comparative meaning is expressed with these adjectives, and highlight their syntactic properties.

For the adjectives that are larger or less than the tri-consonantal lexical root, like *mustaʕid* ('prepared') and *ḥayii* ('shy'), the comparative meaning can only be expressed by a complex construction consisting of two words: an external comparative word and the nominal form of the adjective, known in traditional Arabic grammar as *maṣḍar*⁵². The *maṣḍar* has to be in indefinite and accusative form. For illustration, consider the following examples:

22)

- a. ʕaliy-un ʔakṭar-u ʔistiʕdaad-an min xaalid-in
 Ali-NOM more-NOM preparation-ACC from Khalid-GEN
 li l-ixtibaar-i
 for DEF-exam-GEN
 'Ali is more prepared than Khalid for the exam.'
- b. r-rasul-u ʔaṣadd-u ḥayaʔa-an min l-ʕadraaʔ-i
 DEF-Prophet-NOM stronger-NOM shyness-ACC from DEF-virgin-GEN
 'The Prophet is shyer than the virgin.'

The external comparative word used to express the complex comparatives is one of a number of general comparative adjectives, which can be either quantity or quality:

- Quantity adjectives (i.e. *ʔakṭar* ('more') and *ʔaqall* ('less')).
- Quality adjectives (i.e. *ʔaṣadd* ('stronger') and *ʔaḥsan* ('better')).

⁵² The *maṣḍar* in complex comparative constructions, according to Versteegh, 2007, corresponds semantically to the adjective, and thus I will call it from now on an 'adjectival *maṣḍar*' (AM) to distinguish them from verbal *maṣḍars*. The adjectival *maṣḍar* in comparative constructions will be discussed in section 3.3.2.1.

These external comparative markers are the elative forms of the adjectives, respectively ‘k-t-r’ *kaṭiir* (‘many’ or ‘much’), ‘q-l-l’ *qaliil* (‘little’)⁵³, ‘š-d-d’ *šadiid* (‘strong’) and ‘ḥ-s-n’ *ḥasan* (‘good’). The following table is for illustration:

Root	Adjective	Elative
k-t-r	<i>kaṭiir</i> ‘a lot’, ‘many’ or ‘much’	<i>ʔakṭar</i> ‘more’
q-l-l	<i>qaliil</i> ‘little’	<i>ʔaqall</i> ‘less’
š-d-d	<i>šadiid</i> ‘strong’	<i>ʔašadd</i> ‘stronger’
ḥ-s-n	<i>ḥasan</i> ‘good’	<i>ʔaḥsan</i> ‘better’

Table 2 The Formation of Comparative Adjectives Used in MSA Complex Comparatives

Here, it should be mentioned that the quantity comparative adjectives *ʔakṭar* (‘more’) and *ʔaqall* (‘less’) and the quality comparative adjectives *ʔašadd* (‘stronger’) and *ʔaḥsan* (‘better’) can appear in simple comparatives and only take a *min*-phrase as complements (see (23)).

23)

- a. l-mašaakil-u ʔakṭar-u min l-furaṣ-i
DEF-problems-NOM more-NOM from DEF-opportunities-GEN
‘The problems are more than the opportunities.’
- b. l-mašaakil-u ʔaqall-u min l-furaṣ-i
DEF-problems-NOM less-NOM from DEF-opportunities-GEN
‘The problems are less than the opportunities.’
- c. l-ʔawlaad-u ʔašadd-u min l-bannt-i
DEF-boys-NOM stronger-NOM from DEF-girls-GEN
‘The boys are stronger than the girls.’
- d. l-bannt-u ʔaḥsan-u min ʔl-ʔawlaad-i
DEF-girls-NOM better-NOM from DEF-boys-GEN
‘The girls are better than the boys.’

⁵³ The quantifying comparative adjectives *ʔakṭar* (‘more’) and *ʔaqall* (‘less’) are inherently in masculine and singular features. The related non-comparative forms, however, are inflected for gender and number.

As for the adjectives that are identical in form to the elative pattern (recall that they are adjectives which express colour and infirmities, such as *ʔabyaḍ* ('white') and *ʔaḥwal* ('squint-eyed')), they also have their comparatives marked by the external comparative adjective and the AM. The adjective *ʔabyaḍ* ('white'), for instance, according to this rule, has the structure *ʔašaddu bayaad-an* ('stronger whiteness'). The examples in (25) are the comparative versions of the adjectives in (24).

24)

- a. *l-ḥiṣaan-u* *abyaḍ-u*
 DEF-horse-NOM white.INDF-NOM
 'The horse is white'
- b. *l-walad-u* *ʔaḥwal-u*
 DEF-horse-NOM squinted-eye.INDF-NOM
 'The boy is squint-eyed.'

25)

- a. *haḍa* *l-ḥiṣaan-u* **ʔaktar-u** **bayaad-an** *min*
 this DEF-horse-NOM more-NOM whiteness-ACC From
ḍalika *l-ḥiṣaan-i*
 that DEF-horse-GEN
 'This horse is whiter than that horse.'
- b. *hwa* **ʔašadd-u** **ḥawal-an** *min* *ṣax-i-hi*
 he stronger-NOM squint-ACC from brother-GEN-his
 'He is more squint-eyed than his brother.'

Comparison with nouns is slightly different. Two separate words are also used: the external comparative marker as in the two previous cases, and the noun itself in the indefinite accusative form. Example (26) illustrates this pattern:

- 26) *ʔana* *ʔaktar-u* *maala-an* *min* *ʕaliy-in*
 I more-NOM money-ACC from Ali-GEN
 'I am more money than Ali.'

Unlike AMs, which are not all compatible with regular comparative adjectives, all sorts of nouns can be used with regular comparative adjectives. For example, the sequence **ʔakbar-u ɗakaʔ-an* (*‘bigger intelligence’) is ill-formed, but the sequence *ʔakbar-u bayt-an* (‘bigger house’) is acceptable, so it is a matter of semantics⁵⁴.

From the data given above, the syntactic structure of the complex adjectival comparatives in MSA can be represented in (27) below:

- 27) *ʔakṭar* etc. + AM [*acc*, DEF-] + *min* NP

Now, we will look at the syntactic environment in which complex adjectival comparatives appear. Complex adjectival comparatives, like ordinary adjectives, can appear in the predicative position:

⁵⁴ It may be worth mentioning that in all three cases mentioned above, the comparative meaning can be expressed in a simple way; that is, when the target of comparison is followed by either the quantity comparative marker (*ʔakṭar* (‘more’) and *ʔaqall* (‘less’)), or the quality comparative adjectives (*ʔaḥsan* (‘better’) and *ʔašadd* (‘stronger’)). See the following examples:

- | | | | | | |
|---|--|----------------------------------|--|--------------------------|---------------------------------|
| (i) | ʔistiʕdaad-u
preparation-NOM
xaalid-in
Khalid-GEN | ʕaliy-in
Ali-GEN
li
for | ʔakṭar-u
more-NOM
l-ixtibaar-i
DEF-exam-GEN | min
from | ʔistiʕdaad-i
preparation-GEN |
| ‘Ali’s preparation for the exam is more than Khalid’s preparation.’ | | | | | |
| (ii) | bayaad-u
whiteness-NOM
bayaad-i
whiteness-GEN | haɗa
this
ɗalika
that | l-ḥiṣaan-i
DEF-horse-GEN
l-ḥiṣaan-i
DEF-horse-GEN | ʔašadd-u
stronger-NOM | min
From |
| ‘This horse’s whiteness is more than that horse’s whiteness.’ | | | | | |

This is quite similar to the comparative structure that we have in spoken Arabic when the comparative pattern is not used. In spoken Arabic, such as Palestinian Arabic (PA) (MacNab and Kennedy, 2011) and Hijazi Arabic (HA), when the comparative simple pattern is not used, the target of comparison is followed by the comparative marker *ʔakṭhar* (‘more’), which is itself in the comparative elative form and derived from *kathiir* (‘a lot’) or (‘many’).

- | | | |
|------|---------------------------------|----------------|
| (i) | mašguul
busy
‘more busy’ | ʔakṭar
more |
| (ii) | ʔabyaɗ
withe
‘more white’ | ʔakṭar
more |

28)

- a. ʕaliy-un ʔaktar-u dakaʔ-an min xaalid-in
 Ali-NOM more-NOM intelligence-ACC from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’
- b. ʕaliy-un kaana ʔaktar-a dakaʔ-an min xaalid-in
 Ali-NOM was more-ACC intelligence-ACC from Khalid-GEN
 ‘Ali was more intelligent than Khalid.’

The quantifying comparative adjective *ʔaktar-u* (‘more’) has the case appropriate for the position in which the construction appears. The case is determined by the position of the whole phrase in which it appears; they have nominative case in the predicate position of nominal sentences (28a) and accusative case in the complement position of the copula (28b).

They can also appear in attributive positions and agree with the noun they modify in case, as illustrated in (29):

29)

- a. ʕaliy-un rajul-un ʔaktar-u dakaʔ-an min xaalid-in
 Ali-NOM man-NOM more-NOM intelligence-ACC from Khalid-GEN
 ‘Ali is a more intelligent person than Khalid.’
- b. qaabal-tu rajul-an ʔaktar-a dakaʔ-an min xaalid-in
 met-1SG.M man –ACC more-ACC intelligence-ACC from Khalid-GEN
 ‘I met a man (who is) more intelligent than Khalid.’
- c. taḥadaṭ-tu maʕa rajul-in ʔaktar-a dakaʔ-an
 spoke-1SG.M to man –GEN more-GEN intelligence-ACC
 min xalid-in
 from Khalid-GEN
 ‘I spoke to a man (who is) more intelligent than Khalid.’

As shown by the examples above (28–29), the AM is always in the accusative case. The case of the comparative word, by contrast, reflects the position of the construction. When used predicatively in a nominal sentence it is nominative, and when used attributively it has the same case as the modified noun. This suggests that the comparative word is a head, and since the construction appears in AP positions, it must be a type of AP.

As has been mentioned earlier, there are similar examples with *ʔaqall* ('less') (see (30)).

30) ʕaliy-un	ʔaqall-u	dakaʔ-an	min	xaalid-in
Ali-NOM	less-ACC	intelligence-ACC	from	Khalid-GEN
'Ali is less intelligent than Khalid.'				

However, unlike *ʔaktar* ('more'), in MSA there is not a single word that expresses the meaning of 'less X'. This is observed in English as well. In fact, the difference between the two comparative words *more* and *less* in English has been noted by Huddleston and Pullum (2002: 1123). They assume that the former can have either inflectional form (i.e. by morphological modification) or analytical form (i.e. by means of a separate word), while *less* allows only the analytic form, and there is never a single word with the meaning 'less X'. Consider the following:

Adjective	Synthetic form	Analytic form
<i>Short</i>	<i>Shorter</i>	<i>more short</i>
	<i>*lesser</i>	<i>less short</i>

Table 3 The Paradigm of Comparative for English Adjective *short*

The form 'more short' is used in metalinguistic comparison (e.g. *Kim is more short than fat* – **Kim is shorter than fat*); otherwise, the lexeme SHORT inflects and excludes *more*. Metalinguistic comparison like *Kim is more old than middle-aged* is concerned not with a segment on the age scale but with the relative applicability of the linguistic expressions *old* and *middle-aged*. Syntactically, metalinguistic comparison differs from ordinary comparison in that it allows only analytic comparative forms, even for adjectives that otherwise require *er* comparatives (e.g. *old*) (Huddleston and Pullum, 2002: 1121 and 1122).

In the case of MSA, the complex form *ʔaqall* ('less') + AMs must be used to express comparison with all adjectives, including those that otherwise can have a simple comparative form. Example (31b), for instance, is ill-formed, because there is no quality that has been compared.

31)

- a. *hada l-wald-u ʔaqall-u dakaʔ-an min dalika l-wald-i*
 this DEF-boy-NOM less-NOM intelligence-ACCfrom that DEF-boy-GEN
 'This boy is less clever than that boy.'
- b. **hada l-wald-u ʔaqall-u min dalika l-wald-i*
 *this DEF-boy-NOM less-NOM from that DEF-boy-GEN
 'This boy is less than that boy.'

The context sometimes allows the use of *ʔaqall* ('less') on its own without a following nominal complement. This is possible mainly when the quality that is compared is understood from the context, as in the following examples:

32)

- a. *dakaʔ-u-hu ʔaqall-u min tarwat-i-hii*
 Intelligence-NOM-his less-NOM from wealth-GEN-his
 'His intelligence is less than his wealth.'
- b. *laday-hi dakaʔ-un ʔaqall-u min tarwat-i-hi*
 has-he Intelligence-NOM less-NOM from wealth-GEN-his
 'He has less intelligence than his wealth.'

The comparative word *ʔakthar* ('more') can occur on its own in the same sort of contexts, as shown below:

33)

- a. *dakaʔ-u-hu ʔakthar-u min tarwat-i-hii*
 Intelligence-NOM-his more-NOM from wealth-GEN-his
 'His intelligence is more than his wealth.'
- b. *laday-hi dakaʔ-un ʔakthar-u min tarwat-i-hi*
 has-he Intelligence-NOM more-NOM from wealth-GEN-his
 'He has more intelligence than his wealth.'

It can be noted from (32b) and (33b) that quantifying comparative adjectives (without a following nominal complement) appear in attributive positions, in which they quantify a noun. In fact, these are what might be called nominal comparatives. I will discuss this in section 3.3.3.

To sum up, *ʔaqall* ('less') is different from *ʔakthar* ('more') in that in MSA there is no adjective that has a simple form meaning 'less X'. They are similar in only appearing on their own in the right sort of contexts and in allowing an AM as a complement.

Before going any further, I should give a brief description of the AM as it is an important part of complex comparative constructions in MSA.

3.3.2.1 Adjectival *Maṣḍars* (AMs)

In Arabic grammar books, the term '*maṣḍar*' refers to the word class formed by the derived nominal⁵⁵. In the literature, *maṣḍars* are known as verbal or adverbial nouns (Kremers, 2003: 121; Versteegh, 2007: 166). This reflects the dual nature of the verbal *maṣḍars* (VMs) (i.e. related to verbs). Indeed, VMs show both nominal and verbal properties. They can express two arguments of the corresponding verbs⁵⁶. In (34), for example, the verbal *maṣḍar takriim* ('honouring') has two arguments: the argument NP which immediately follows is the subject and carries genitive case, the second is the object, which bears accusative case. So, the form of the subject is a nominal property because nouns normally have genitive complements, and the form of the object is a verbal property because verbs normally assign accusative case to their objects⁵⁷.

⁵⁵ In Traditional Arabic Grammar, there has been a debate by grammarians: some of them identify *maṣḍars* as the base forms from which verbal and adjectival words (including participles) are derived. The fact that almost all Arabic adjectives have verbal counterparts led traditional grammarians to assume that both (verbs and adjectives) were derived from the same root (i.e. *maṣḍars*) (Fassi-Fehri, 1993: 177). The others, however, argue that both *maṣḍars* and adjectival words are derived from the verb, but not vice versa (see, e.g., Hasan, 1976; Ibn Abi Al-Wafa, (n.d.)).

⁵⁶ I will be concerned with verbal *maṣḍars* (VM) when I discuss clausal comparatives in Chapter Six (section 6.2.3).

⁵⁷ This is similar to English gerunds (-ing forms), such as *reading* (the nominal case: *his careful reading of the book*, and the verbal case: *his reading the book carefully*).

- 34) takriim-u l-muṣalim-i aṭ-ṭaalib-a ṭaṣjaban-ii
 Honouring-NOM DEF-teacher-GEN DEF-student-ACC impressed.me
 ‘The teacher’s honouring of the student impressed me.’

Verbal *maṣḍars* seem to have received most of the attention in the literature (e.g. Fassi-Fehri (1993); Grenat (1996); Kremers (2003), among others). However, based on the facts that have been introduced above, it is obvious that there are also *maṣḍars* that semantically correspond to adjectives. For example, in the complex adjectival comparatives discussed in (22) and (25) above, the *maṣḍars* appearing after the comparative word, *ṭistiṣdaad-an* (‘preparation’), *ḥayaʔ* (‘shyness’) and *bayaad* (‘whiteness’), are the nominal counterparts of adjectives, respectively, *mustafid* (‘prepared’), *ḥayii* (‘shy’) and *ṭabyaḍ* (‘white’).

It is worth mentioning that, as far as I know, almost all adjectives in MSA have a related *maṣḍar* and hence every adjective allows a complex adjectival comparative with AMs. Consider the following examples:

35)

- a. ṣaliy-un ṭaqwa min xaalid-in
 Ali-NOM stronger.elative from Khalid-GEN
 ‘Ali is stronger than Khalid.’
- b. ṣaliy-un ṭaktar-u qwwat-an min xaalid-in
 Ali-NOM more-NOM strength-ACC from Khalid-GEN
 ‘Ali is stronger than Khalid.’
- c. ṣaliy-un ṭatka min xaalid-in
 Ali-NOM .more intelligent.elative from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’
- d. ṣaliy-un ṭaktar-u ḍakaʔ-an min xaalid-in
 Ali-NOM more-NOM intelligence-ACC from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’

Another type of construction where AMs can be used is with questions. MacNabb and Kennedy (2011: 159) observe that there is no Arabic equivalent of the English type of question ‘how ADJECTIVE?’ such as ‘how tall?’. Instead, in Arabic quality degree questions, AMs are used⁵⁸.

See the following examples:

36)

- a. *kam ṭawiil-un ʕaliy-un?
 *How.much tall-NOM Ali-NOM
 ‘How tall is Ali?’
- b. kam ṭuul-u ʕaliy-in?
 How much height-NOM Ali-GEN
 ‘How tall is Ali?’

Morphologically, AMs are nominals. They are like ordinary nouns in that they inflect for agreement and bear case and (in)definiteness markers. Consider the following:

37)

- a. ʔistiʕdaad-un l-ʔistiʕdaad-u
 preparation-NOM DEF-preparation-NOM
 ‘A preparation’ ‘The preparation’
- b. ḍakaaʔ-un ḍ-dakaaʔ-u
 intelligence-NOM DEF-intelligence-NOM
 ‘An intelligence’ ‘The intelligence’

⁵⁸ McNabb and Kennedy (2011) give the following examples from Palestinian Arabic (PA):

- (i) kam / ʔadeš ṭuul musa?
 How.much height Musa
 ‘How tall is Musa?’
- (ii) *kam / ʔadeš ṭawil musa?
 *How.much tall.MS Musa
 ‘How tall is Musa?’

They indicated that the construction *how ADJECTIVE* does exist in some Arabic dialects like PA, but it is not used to form questions but rather to form exclamatives (i.e. expressions of surprise or admiration), as the following demonstrates:

- (i) ʔadeš / qadeš kbiir dar-ak
 how big house-your
 ‘How big is your house!’

Also, like ordinary nouns, AMs can be pluralized, as seen in the following⁵⁹:

38)

- a. ʔistiʕdaad-aat-un
Preparation.F.PL-NOM
'Preparations'
- b. ɖakaaʔ-aat-un
Intelligence-F.PL-NOM
'Intelligences'

In addition, as one might expect, the AMs can occur in various nominal positions as ordinary nouns, as illustrated in the following:

39)

- a. l-ɥyaaʔ-u ʕuʕbat-un min l-ʔimaan-i
DEF-shyness-NOM branch-NOM from DEF-faith-GEN
'The shyness is a branch of the faith.'
- b. ʔuɥibbu ɥyaaʔ-a l-fataat-i
like.1SG.M/F shyness-ACC DEF- girl-GEN
'I like the shyness of the girl.'
- c. ʔaghmaɖa ʕayn-ai-hi min l-ɥyaaʔ-i
closed. 3SG.M eyes- ACC-his from DEF-shyness-GEN
'He closed his eyes because of the shyness.'

It is clear from the examples in (39) that the AM can occur in various nominal positions in the sentences; the subject 'topic' position (39a), the object of a typical verb (39b) and the

⁵⁹ Verbal *maʕdars* cannot be pluralized, as can be seen from the ungrammaticality of the following example:

- (i) *tamm-at ʕtiraaf-aat-u-hu bi-ɖ-ɖhanb-i
*happened-F. confessing-F.P-NOM-him with-DEF-crime-GEN
'His confessions of the crime have taken place' (Fassi-Fehri, 1993: 236)

When functioning as a verb, the *maʕdar ʕtiraaf-aat* cannot be pluralized. Notice, however, that the same *maʕdar* can form a plural form provided that it functions as a nominal:

- (ii) ʕtiraaf-aat-u-hu ɖayr-u muqniʕat-in
confessions-F.P-NOM-him not-NOM convincing-GEN
'His confessions are not convincing' (Fassi-Fehri, 1993: 236)

prepositional object position (39c). The example in (39b) also shows that the AM *hyaaʔ* ('shyness'), like ordinary nouns, is heading a construct state *hyaaʔ-a l-fataat-I* ('shyness of the girl').

Also, as ordinary nominals, AMs can be modified by adjectives but not adverbs. Thus in (40a), the AM *dakaaʔ* ('intelligence') is modified by the adjective *faaʔiq-un* ('supreme'). In (40b) the adjectival *maşdar hyaaʔ* ('shyness') is modified by the adverbial element *bi-şiddat-in* ('with strong'), which is normally used with a verb, rendering the sentence ungrammatical.

40)

- a. ʔaʕjaba-nii dakaaʔ-u ʔ-ʔifl-i l-faaʔiq-u
 impressed-1SG.M intelligence-NOM DEF-child-GEN DEF-supreme-NOM
 'The intelligence of the child impressed me.'
- b. *ʔaqlaqa-nii hyaaʔ-u-hu bi-şiddat-in
 *annoyed-1SG.M shyness-NOM-his with-strong-GEN
 'His shyness (*with strong) annoyed me.'

In summary, it has been shown that AMs are morphologically nominal, and just like ordinary nouns they can occur in various nominal positions and be modified by adjectives rather than adverbs. It has also been shown that AMs can be used in other constructions, for instance, degree questions.

3.3.3 Nominal Comparatives

A nominal comparative, as briefly mentioned, is a comparative construction in which the comparative word quantifies over a noun. In MSA, however, it includes structures like (41a) but not structures such as (41b), which involve ordinary comparative adjectives⁶⁰.

- 41)
- | | | | | |
|----|-----------------------------------|-----------|--------------------|------------|
| a. | lada-yya | kutub-un | ʔaktar-u /ʔaqall-u | min-ka |
| | have-1SG.M /F | books-NOM | more-NOM /less-NOM | from-2SG.M |
| | ‘I have more/less books than you’ | | | |
-
- | | | | | |
|----|--------------------------------|-----------|------------|------------|
| b. | lada-yya | kutub-un | ʔahsan-u | min-ka |
| | have-1SG.M/F | books-NOM | better-NOM | from-2SG.M |
| | ‘I have better books than you’ | | | |

In MSA, quantifying comparative adjectives combining with nominals can appear in two positions, either before or after the noun. These pre-nominal and post-nominal comparatives are described in the following two subsections.

3.3.3.1 Post-nominal Comparatives

When we have noun + comparative adjective structures, they are just nouns with an attributive adjective. Consider the following examples:

- 42)
- | | | | | |
|----|-----------------------------------|----------------|------------------------------|------------|
| a. | lada-yya | kutub-un | ʔaktar-u /ʔaqall-u | min-ka |
| | have-1SG.M/F | books.INDF-NOM | more.INDF-NOM /less.INDF-NOM | from-2SG.M |
| | ‘I have more/less books than you’ | | | |
-
- | | | | | |
|----|-------------------------------------|----------------|------------------------------|------------|
| b. | ʔištara-y-tu | kutub-an | ʔaktar-a /ʔaqall-a | min-ka |
| | bought-1SG.M/F | books.INDF-ACC | more.INDF-ACC /less.INDF-ACC | from-2SG.M |
| | ‘I bought more/less books than you’ | | | |

⁶⁰ In Chapter Four, we will see that they are syntactically essentially the same in MSA. However, I use the term nominal comparatives as an informal label pending the discussion of their analysis in section 4.4.

The quantity comparative adjectives *ʔaktar* ('more') and *ʔaqall* ('less/ fewer') in (42) modify the nominal heads of the NP, as evident from the fact that they agree in case and definiteness with these heads. I refer to this structure as 'real nominal comparatives'⁶¹. As has been showed, comparative adjectives, including quantity comparative adjectives, form a special category of adjectives. While ordinary adjectives agree with their nominal heads in gender, number, case and definiteness, attributive comparative adjectives agree only in case and definiteness.

3.3.3.2 Pre-nominal Comparatives

Quantifying comparative adjectives can also appear in pre-nominal positions, as exemplified in (43) below:

- 43) *ʔanaa* *ʔaktar-u/ʔaqall-u* *maal-an* *min* *ʕaliy-in*
 I.1SG.M/F more-NOM/less-NOM money-ACC from Ali-GEN
 'I am more/less money than Ali.'/'I have more/less money than Ali.'

The comparative adjective + noun structures cannot occur in typical nominal positions, such as subject and direct object positions. The examples given in (44) below are ungrammatical precisely because *ʔaktar-u maal-an* ('more money') occurs in positions that are generally occupied by subject and object NPs.

- 44)
- a. * *ʔaktar-u* *maal-an* *hwa* *maa* *nureedu*
 * more-NOM money-ACC be what want.1P.M
 'More money is what we need.'
- b. * *ʔaḥtaaju* *ʔaktar-a* *maal-an*
 * need.1SG.M more-ACC money-ACC
 'I need more money.'

This suggests that the comparative adjective + noun structures are underlyingly different to nominal comparatives, even though they look similar on the surface. In order to distinguish

⁶¹ 'Real nominal comparatives' will be discussed in section 4.4.

between these pre-nominal structures and post-nominal comparatives, I will use the term ‘apparent nominal comparatives’ to refer to them. ‘Apparent nominal comparatives’ will be discussed in Chapter Five section 5.2.2.

3.3.4 Adverbial Comparatives

As stated earlier, adverbial comparatives modify the meaning of a verb or a whole clause. They add specific information about the frequency or the manner of the action or event encoded by these entities, as exemplified in (45) below:

45)

- a. ʕaliy-un yaʕrabu qahwat-an ʔaktar-a min xaalid-in
 Ali-NOM drink.3SG.M coffee-ACC more-ACC from Khalid-GEN
 ‘Ali drinks coffee more than Khalid does.’
- b. ʕaliy-in yusaafiru ʔilaa landan-a ʔaktar-a min baaris-a
 Ali-NOM travel.3SG.M to London-GEN more-ACC from Paris-GEN
 ‘Ali travels to London more than to Paris.’
- c. ʕaliy-un yaquudu s-syyarat-a ʔasraʕ-a min xaalid-in
 Ali-NOM drive.3SG.M DEF-car-ACC faster-ACC from Khalid-GEN
 ‘Ali drives the car faster than Khalid does.’

In the previous examples, it is understood that the comparative adjectives do not modify their preceding nominals. They are adverbial, and in fact they can constitute the answers to questions such as *how often does X happen?*. In (45a) and (45b), the quantifying comparative adjective *ʔaktar* (‘more’) describes how often Ali drinks coffee and how often he travels to London, and expresses the comparison meaning in which Ali drinks coffee more often than Khalid does, and travels to London more often than to Paris. Similarly, in (45c), the comparative construction ‘faster than Khalid’ answers the question of *how Ali drives the car*.

Adverbial comparatives can also appear with clausal complements, as we will see in the next section.

3.3.5 Clausal Comparatives

In addition to NP complements, the preposition *min* may also take clausal complements. The MSA clausal comparatives (henceforth CCs) are identified by the fact that the preposition *min*, ('from') is followed by a clause introduced by the complementizer *maa*⁶². Clauses can appear with adjectival, nominal and adverbial comparatives, as the following illustrate respectively:

46)

- a. ʕaliy-un ʔaṭwal-u mi-[maa⁶³ kaana ʔab-u-hu ____]
 Ali-NOM taller-ACC from-what was father-NOM-his ____]
 'Ali is taller than his father was.'
- b. ʕaliy-un ʔiṣṭraa kutub-an ʔakṭar-a
 Ali-NOM bought.3SG.M books-ACC more-ACC
 mi-[maa ʔiṣṭraa xaalid-un ʔaqlaam-an]
 from-[what bought.3SG.M. Khalid-NOM pens-ACC]
 'Ali bought more books than Khalid bought pens.'
- c. ʕaliy-un yusaafiru ʔilaa landan-a ʔakṭar-a
 Ali-NOM travelled.3SG.M to London-GEN more-ACC
 mi[maa tusaafiru ʔilaa baaris-a]
 from-[what travelled.2SG.M to Paris-GEN]
 'Ali travels to London more than you travel to Paris.'

The data given in (46) raises a number of questions, such as what is the distribution of gaps in CCs?; what type of reduction may they contain?; does MSA allow subcomparatives (i.e. the compared element in the second clause being overt) the way that English does? These questions

⁶² AlQurashi (2012, 2013) presents convincing arguments for the claim that *maa*, *man*, *alladi* and *illi* in Arabic dialects (e.g. MSA and Hijazi Arabic (HA)) are complementizers. AlQurashi only discusses these elements as complementizers in free and ordinary relative clauses, but not in comparative constructions. I will treat these markers as complementizers as well and thus I gloss them as COMP.

⁶³ The preposition *min* and the complementizer *maa* usually take the form *mi-maa* for phonological reasons. This also happens when *min* is followed by the complementizer *man* ('that') (i), the interrogatives *man* ('who') (ii), *maa* ('what') and *maḍaa* ('what') (iii).

- (i) ʕaliy-un ʔaṭwal-u mi-man faaza
 Ali-NOM taller-NOM from-who won.3SG.M
 'Ali is taller than who won.'
- (ii) mi-man ʕaliy-un ʔaṭwal-u?
 from-who Ali-NOM taller?
 'From whom Ali is taller?
- (iii) mi-maa/maḍaa taṣku?
 From-what complain.2SG.M?
 'From what you complain?'

will be discussed briefly here. Some previous studies (i.e. Fassi-Fehri, 1987, and MacNabb and Kennedy, 2011) and some more data and discussion will be presented in Chapter Six, and a full analysis of CCs and subcomparatives will be left for future research.

In the next section, I give a brief description of some structures that superficially look like subcomparatives in MSA.

3.3.5.1 Subcomparatives

A subcomparative is a comparison of the relative degree or quantity of two different objects or properties where the element that is being compared in the second clause is overt. The sentences in (47) illustrate English subcomparatives with adjectival, nominal and adverbial, respectively.

- 47)
- a. Kim is more intelligent than he is ___ handsome.
 - b. Kim has more books than Lee has ___ magazines.
 - c. Kim's brother drives more carefully than Lee drives ___ carelessly.

English subcomparatives involve a gap on the left of a phrase associated with a comparative word, which is also on the left of a phrase. Bresnan (1975) proposes that there is an 'understood' quantifier (i.e. much, many) in the positions of pre-nominal, pre-adjectival or pre-adverbial. This position must remain syntactically empty, and this rule of reduction is called comparative subdeletion (CSD) (Huddleston and Pullum, 2000: 1108; Kennedy, 2002: 554). Thus, the examples in (48) with an overt quantifying element are ungrammatical.

- 48)
- a. Kim is more intelligent than he is (*much) handsome.
 - b. Kim has more books than Lee has (*many) magazines.
 - c. Kim's brother drives more carefully than Lee drives (*much) carelessly.

Subcomparison in MSA is expressed as in the following examples:

49)

- a. ʕaliy-un ʔakala mawz-an ʔaktar-a
 Ali-NOM ate.3SG.M banans-ACC more-ACC
 mi-[maa ʔakala xaalid-un tuffah-an]
 from-[what ate.3SG.M. Khalid-NOM apples-ACC]
 ‘Ali ate more bananas than Khalid ate apples.’

- b. ʕaliy-un ḍakiyy-un ʔaktar-a mi-[maa
 Ali-NOM intelligent-NOM more-ACC from-[what
 kaana wasiim-an]
 was handsome-ACC]
 ‘Ali is intelligent more than he was handsome.’

- c. ʕaliy-un laday-hi ʔaṣḍiqaaʔ-un ʔaktar-a
 Ali-NOM has-3SG.M friends-NOM more-ACC
 mi-[maa laday xaalid-in ʔaṣḍaaʔ-un]
 from[what have Khalid-GEN enemies-NOM]
 ‘Ali has friends more than Khalid has enemies.’

- d. ʔaxi-i yaqudu bi-ʕinayat-in ʔaktar-a
 brother-my drives.3SG.M with-carefulness-GEN more.ACC
 mi-[maa ʔaqudu bi-laamubalat-in]
 from-[what drive.1SG.M with-carelessness-GEN]
 ‘My brother drives carefully more than I drive carelessly.’

The example in (49a) appears to be broadly similar to the English ones as it looks like it involves a nominal comparative with an attributive comparative word following the noun. However, (49b), (49c) and (49d) cannot be like their English counterparts because the comparative adjective differs in case from the preceding noun. The comparative in (49b) cannot be an attributive modifier, not only because what precedes has a different case, but also because it is an adjective. This suggests thus that the comparatives in (49b), (49c) and (49d) are adverbial. If these must be adverbial comparatives, what about (49a) though? It could also be an adverbial comparative like the following English example, which is a better translation:

50) Ali ate bananas more than Khalid ate apples.

In addition, subcomparatives are incompatible with complex comparatives, as shown by the ungrammaticality of (51):

- 51) *ʕaliy-un ʔaktar-u ɖakaaʔ-an mi-[maa
 *Ali-NOM more-NOM intelligence-ACC from-[what
 kaana wasiim-an]
 was handsome-ACC]
 ‘Ali is more intelligent than he was handsome.’

The MSA structures discussed in this section are superficially like subcomparatives but are in fact adverbial. However, I will use the term ‘*subcomparatives*’ in the discussion of CCs in Chapter Six to refer only to the comparisons where the compared element in the second clause is overt.

Some elements in CCs may get deleted under some reduction rules. The different types of reduction rule in CCs in MSA will be discussed briefly in the next subsection.

3.3.5.2 Reduction of Clausal Comparatives

MSA CCs can be structurally reduced, in which case they appear smaller than full main clauses. Reduction can be done by the so-called comparative deletion (henceforth CD), an operation that deletes adjectival, nominal or adverbial constituents from clausal complements (Bresnan, 1973, 1975; Napoli, 1983: 675). For illustration, consider the following examples:

52)

- a. ʕaliy-un ʔaṭwal-u mi-[maa kaana ʔab-u-hu ___/ *ṭwiil-an]
 Ali-NOM taller-ACC from-what was father-NOM-his ___/ *tall-ACC]
 ‘Ali is taller than his father was ___.’
- b. ʕaliy-un ʔakaal mawz-an ʔaktar-a
 Ali-NOM ate.3SG.MAS bananas-ACC more-ACC
 mi-[maa ʔakala xaalid-un ___/ * mawz-an]
 from-[what ate.3SG.M. Khalid-NOM ___/* bananas-ACC]
 Ali ate more bananas than Khalid ate ___.’

- c. ʔaxi-i yaqudu bi-ʕinayat-in ʔaktar-a
 brother-my drives.3SG.M with-careful-GEN more.ACC
 mi-[maa ʔaqudu ___/
 from-[what drives.1SG.M/F___/
 ‘My brother drives more carefully than I drive ___.’

The examples in (52) show that the deletion of the adjective *ʔwiil-an* (‘tall’), the noun *mawz-an* (‘bananas’) and the adverb *bi-ʕinayat-in* (‘carefully’) from the subordinate clause is obligatory.

Comparative ellipsis (henceforth CE), on the other hand, is an optional deletion rule that removes elements from a comparative clause that lie outside the compared (adjectival, nominal or adverbial) constituent (Napoli, 1983: 675). In many languages, such as English, it is not simple to decide whether you really have a clausal complement or not. This is because sometimes comparative clauses can be reduced in various ways, in which case the elliptical clause looks like a phrase, as illustrated in the following example of adjectival comparatives (Bresnan, 1973, Huddleston and Pullum, 2002, Ch.13):

- 53)
 a. Kim is taller than [Lee].
 b. Kim is taller than [Lee is].

In some languages, the case marking of a noun phrase following a comparative marker varies depending on the interpretation of the sentence. In the Polish examples in (54) and (55), for instance, the complement of the *than* word has different cases reflecting its interpretation, which suggests that it clearly involves a reduced clause.

- 54) Ewa lubi Marię bardziej niż Anna
 Ewa.NOM likes Maria.ACC more than Anna.NOM
 ‘Ewa likes Maria more than Anna does.’ (Borsley, p.c.)

- 55) Ewa lubi Marię bardziej niż Annę
 Ewa.NOM likes Maria.ACC more than Anna.ACC
 ‘Ewa likes Maria more than he likes Anna.’ (Borsley, p.c.)

However, in MSA comparatives, the NP following the comparative marker *min* (‘from’) is always in the genitive case, no matter which way it is interpreted. This suggests that we do not have elliptical clauses as in some languages.

In addition, all sorts of CE are possible in English, and only a single element remains, as the following examples demonstrate:

- 56)
 c. We spend more time in France than [__ in Germany.] [PP]
 d. He seems to play better drunk than [__ sober.] [AdjP]
 e. He has more enemies than [__ friends.] [NP]
 (Huddelston and Pullum, 2002: 1112)

In the examples above, it would be possible to add elements in the position of the gap. In (56a), for example, we could have [we spend __ in Germany], and so on.

In Arabic CCs, however, we don’t have this range of possibilities. Only a PP in elliptical comparative clauses introduced by *maa* is possible, as shown in the following examples⁶⁴:

- 57)
 a. qaḍai-naa waqt-an fi faransa ʔaktar-a mi-[maa
 spent.3P.M/F time-ACC in France more-ACC from-[what
 __ fi ʔalmaania]
 __ in Germany]
 ‘We spent more time in France than [__ in Germany.]’
 b. nurakkizu ʕala ḥajm-i l-mabiiʕaat-i ʔaktar-a
 focus. 3P.M/F on amount-GEN DEF- sales-GEN more-ACC
 mi-[maa __ ʕala l-ʔarbaah-i]
 from-[COM __ on DEF- profits-GEN]
 ‘We focus more on the amount of sales than [__ on profits.]’

⁶⁴ These two examples are taken from the website <http://arabiccorpus.byu.edu/index.php>.

An NP or AP cannot remain in the elliptical comparative clause. This is shown by the ungrammaticality of (58b) and (59b) respectively:

58)

- a. raʔay-tu ʔawlaad-an ʔaktar-a mi-[maa
saw-1SG.M/F boys-ACC more-ACC from-[what
raʔay-tu banaat-in]
saw-1SG.M girls-ACC]
'I saw more boys than I saw girls.'
- b. *raʔay-tu ʔawlaad-an ʔaktar-a mi-[maa
*saw-1SG.M/F boys-ACC more-ACC from-[what
— banaat-in]
— girls-ACC]
'I saw more boys than girls.'

59)

- a. al-mawḍuʕ-u ʔiʕlaami-un ʔaktar-a mi-[maa
DEF-issue-NOM median-NOM more-ACC from-[what
huwa waaqiʕi-un]
it realistic -NOM]
'The issue is more median than it is realistic.'
- b. *al-mawḍuʕ-u ʔiʕlaami-un ʔaktar-a mi-[maa
*DEF-issue-NOM median-NOM more-ACC from-[what
— waaqiʕi-un]
— realistic -NOM]
'The issue is more median than realistic.'

A common type of CE in Arabic CCs is when the whole clause can be omitted, as shown in the following examples:

60)

- a. ʕaliy-un ʔaṭwal-u mi-[maa ḍanan-tu ____]
Ali-NOM taller-NOM from-[COMP thought-1SG.M/F ____]
'Ali is taller than I thought ____.'
- b. ʕaliy-un ʔakala mauz-an ʔaktar-a mi-[maa
Ali-NOM ate.3SG.M bananas-ACC more-ACC from-[COMP
qaal-uu ____]
said-3P.M ____]
'Ali ate more bananas than they said ____.'

Here the gap in the CCs is understood. We could make the meaning of (58a) and (58b) explicit by replacing the gap by *mi-maa ḡanan-tu ḡanna-hu yakunu* ('than I thought he is') and *mi-maa qaal-uu ḡanna-hu faʕal* ('than they said he did').

3.3.6 More Types of Comparative Constructions in MSA

As stated earlier, the comparison of equality and non-scalar comparisons are not the focus of this study. The reason for not considering equality and non-scalar types is that in MSA the meaning of these two types of comparison is expressed in very different ways from inequality comparisons, as we will see shortly. In this section, however, I describe them briefly in order to provide the reader with a complete picture of comparative constructions in MSA.

3.3.6.1 Comparison of Equality

To express the comparison of equality in MSA, either the word *metl* ('like') or the preposition *ka* ('like') can be used. The examples in (61) illustrate these possibilities:

61)

- | | | | | |
|----|----------------------------|-----------|----------|------------|
| a. | ṡaliy-un | ṡawiil-un | metl-u | xaalid-in |
| | Ali-NOM | tall-NOM | like-NOM | Khalid-GEN |
| | 'Ali is tall like Khalid.' | | | |
| | | | | |
| b. | ṡaliy-un | ṡawiil-un | ka | xaalid-in |
| | Ali-NOM | tall-NOM | as | Khalid-GEN |
| | 'Ali is tall like Khalid.' | | | |

(61a) shows that the word *metl* ('like') appears as a head of a construct state and normally behaves with its genitival complement as an adjective. Both the word *metl* and the preposition *ka* in (61b) express the meaning of 'similarity/likeness', equivalent to the English 'like'. Thus, the examples in (61) mean that Ali and Khalid are a similar height, not that they are the same height. Here, it is worth mentioning that in English, *like* and *as* differ in the notion of equality they

convey. For example, *Kim is tall like Lee* has a weaker meaning than *Kim is as tall as Lee*⁶⁵. The former means that both are tall but does not entail that they are tall to the same extent (Huddleston and Pullum, 2002). However, in Arabic, *metl* ('like') and *ka* ('as') are equivalent and they both mean ('like'). Thus, the Arabic examples resemble *Kim is tall like Lee* and the meaning they express is in both cases weaker than the one expressed by the reflexive noun *nafs* ('self/same'), which expresses a meaning of exact equality.

Another strategy for expressing comparison of equality is to use the reflexive noun *nafs* ('self/same') mentioned at the end of the previous paragraph. *Nafs* conveys the idea that two entities share a particular property to the same degree. It requires definiteness, which it acquires through being the head of a construct-state structure. In addition, it always occurs with a clitic pronoun attached to it or with the preposition *li* ('with') or ('have')⁶⁶ plus a clitic, a structure normally used in Arabic to express a kind of possession. Consider the following example:

- 62) ʕaliy-un la-hu nafs-u ʔuul-i xaalid-in
 Ali-NOM has-he same-NOM height-GEN Khalid-GEN
 'Ali has the same height of Khalid.'

As can be seen in (62), the *nafs* ('same') structure contains a clitic attached to the preposition (*la-hu*), which refers back to the comparee NP in the sentence, and agrees with it in gender and number. This clitic is obligatory and cannot be omitted. Thus, the example in (63) is ill-formed due to the absence of the clitic:

- 63) *ʕaliy-un nafs-u ʔuul-i xaalid-in
 *Ali-NOM same-NOM height-GEN Khalid-GEN
 'Ali is the same height as Khalid.'

⁶⁵ It should be noted that sentences like *Kim is as tall as Lee* are special constructions similar to *Kim is more intelligent than Lee*. The example *Kim is tall like Lee*, however, is not a special construction, and it is just an adjective with a modifying NP.

⁶⁶ The preposition *li* is used to convey the meaning of possession, and is called, in traditional Arabic grammar books, *laam l-milkiyyah* ('the preposition of possession') (Ryding, 2005: 371).

Here, there are two genitive constructions in *nafs-u tuul-i xaalid-in* ('same height as Khalid'), one headed by *nafs-u* and one headed by *tuul-i*. The word *nafs*, which is the head of the genitive construction, must be followed by a *maṣḍar* or, as I called it before, an adjectival *maṣḍar* AM *tuul* ('height'), which is the head of the construct state *tuul-i xaalid-in* ('height of Khalid')⁶⁷. The example in (64) is ungrammatical since the word *nafs* is followed by an adjective:

- 64) *ʕaliy-un la-hu nafs-u ʔwiil-i xaalid-in
 *Ali-NOM has-he same-NOM tall-GEN Khalid-GEN
 'Ali is as tall as Khalid.'

Moreover, it is also possible for the word *nafs* to occupy another position in the same structure. Indeed, it can occur after the adjectival *maṣḍar*, as illustrated in (65):

- 65) ʕaliy-un la-hu ʔuul-u xaalid-in nafs-u-hu
 Ali-NOM has-he height-NOM Khalid-GEN same-NOM- it.
 'Ali has the same height as Khalid.'

In this case, the meaning of the construction is that the height of Ali in (65) is exactly equal to Khalid's height; in other words, perfect equality is being referred to. This is because *nafs*, here, is considered one of the *tawkiid* (emphasis/confirmation) nouns in Arabic. It is worth mentioning that, a confirmation noun in Arabic agrees with the preceding noun only in case and must be accompanied by a clitic which refers back to a preceding noun, agreeing with it in gender and number. See the following example:

- 66) ʕaliy-un la-hu ʔuul-u wa ʔakaaʔ-u xaalid-in
 Ali-NOM has-he height-NOM and intelligence-NOM Khalid-GEN
 nafs-aa-humaa
 same-NOM-they.DUAL.M
 'Ali has the same height and intelligence as Khalid.'

⁶⁷ This seems like English examples: *Kim is as tall as Lee* and *Kim has the same height as Lee*.

As seen in (66), *nafs* is followed by a pronominal clitic: *nafs-aa-humaa*, which agrees with the number and gender of the preceding AMs, and both the AMs and *nafs* have a nominative case⁶⁸.

Moreover, the *nafs* structure can be used in nominal comparisons, as exemplified in (65):

- 67)
- | | | | | | |
|----|------------------------|--------------------|---------------------|---------------------------------|----------------------|
| a. | laday-ya
have-1SG.M | nafs-u
same-NOM | ʕadad-i
many-GEN | l-ʔatʔaal-i
DEF-children-GEN | laday-ka
have-you |
|----|------------------------|--------------------|---------------------|---------------------------------|----------------------|
- ‘I have as many children as you have.’
-
- | | | | | |
|----|------------------------|---------------------|---------------------------------|--------------------------|
| b. | laday-ya
have-1SG.M | ʕadad-u
many-NOM | l-ʔatʔaal-i
DEF-children-GEN | nafs-u-hu
same-NOM-he |
|----|------------------------|---------------------|---------------------------------|--------------------------|
- alladi
that laday-ka
 have-you
- ‘I have as many children as you have.’

The main markers of equality comparison, namely *metl*, *nafs* and *ka*, can be also used to express non-scalar comparison, as we will see in the following section.

3.3.6.2 Non-quantitative Comparison

Non-quantitative comparison is another type of comparison where the concern is not on degree but on identity and similarity instead. Huddleston and Pullum (2002: 1099) refer to this type of comparison as ‘non-scalar’, which means that it is not concerned with ‘relative position on some scale or relative degrees of some gradable property’. The same construction is found in Arabic, where it can be expressed in different ways, by *nafs* (‘same’), *metl-maa* and *ka-maa* (‘as’) and *muṣabih* (‘similar’) in equality comparisons, and *muxtalif* (‘different’) and *gair* (‘other than’) in inequality comparisons. I will look first at the non-scalar comparisons of equality and then to the inequality non-scalar comparisons.

⁶⁸ This is rather like the situation with quantifiers, such as *kul* (‘all’).

(i) jaaʔa l-ʔawlaad-u kul-u-hum
 came DEF-boys-NOM all-NOM-they.3.P.M
 ‘All the boys came.’

3.3.6.2.1 Non-scalar Comparisons of Equality

The main marker of equality scalar comparisons can also be used to express equality of non-scalar comparisons. The first marker is the word *nafs* ('same'). As said before, it requires definiteness through the construct state; that is, the word *nafs* occurs as the head of a genitive construction and, as is expected, occurs without the definiteness marker *al* ('the'), as shown in (68) below:

- 68)
- | | | | | |
|----|------------------------------------|-----------------------------------|-----------------------------|----------------------------|
| a. | <i>nafs-u</i>
same-NOM | <i>l-kalaam-i</i>
DEF-talk-GEN | <i>qaalah-hu</i>
said-it | <i>ʕaliy-un</i>
Ali-NOM |
| | 'The same talk Ali said it.' | | | |
| b. | * <i>n-nafs-u</i>
*DEF-same-NOM | <i>l-kalaam-i</i>
DEF-talk-GEN | <i>qaalah-hu</i>
said-it | <i>ʕaliy-un</i>
Ali-NOM |
| | 'The same talk Ali said it.' | | | |

In non-scalar comparisons, *nafs* can either precede or follow the comparee NP or the topic of comparison. When *nafs* precedes the comparee NP, as exemplified by (69), it can have different case markers depending on its grammatical function within the sentence. In (69a), for example, it is in subject position, while in (69b) and (69c) it appears respectively in object position and as a prepositional complement.

- 69)
- | | | | | | |
|----|--|-------------------------------------|---------------------------------------|----------------------------|--|
| a. | <i>jaaʔa</i>
came.3SG.M | <i>nafs-u</i>
same.NOM | <i>r-rajul-i</i>
DEF-man-GEN | <i>alladi</i>
that.SG.M | <i>qaabal-ta-hu</i>
met-you.2SG.M-him |
| | 'The same man (who) you met came.' | | | | |
| b. | <i>iʕtarai-tu</i>
bought-1SG.M/F | <i>nafs-a</i>
same-ACC | <i>l-haqiib-at-i</i>
DEF-bag.F-GEN | <i>allati</i>
that.SG.F | |
| | <i>iʕtar-at-haa</i>
bought-3SG.F-it | <i>asmaaʔ-<i>u</i></i>
Asmaa-NOM | | | |
| | 'I bought the same bag that Asmaa bought.' | | | | |

- c. *ḡahab-naa* *ʔilaa* *nafs-i* *l-funduq-i* *alladi* *ḡahab-naa*
 went-1P.M/F to same-GEN DEF-hotel-GEN that went-1P.M/F
 ʔilai-hi *l-ḡaam-a* *l-maḡi-a*
 to-it DEF-year-ACC DEF- last-ACC
 ‘We went to the same hotel that we went to last year.’

When *nafs* follows the comparee NP, it always has the function of *tawkiid* (‘confirmation’). It agrees with the comparee NP in case but not in definiteness. This is because *nafs* heads a construct state, and as mentioned before, construct state heads cannot be overtly marked for definiteness. Moreover, *nafs* has a clitic attached to it when it follows the noun. Consider the following examples⁶⁹:

70)

- a. *jaaʔa* *r-rajul-u* *nafs-u-hu* *alladi* *qaabal-ta-hu*
 came.3SG.M DEF-man-NOM same.NOM-he that.SG.M met- you.2SG.M-him
 ‘The same man (who) you met came.’
- b. *iṣṭarai-tu* *l-haḡiib-at-a* *nafs-a-haa* *allati*
 bought-1SG.M/F DEF-bag.F-ACC same-ACC-it that.SG.F
 iṣṭar-at-haa *asmaaʔ-^hu*
 bought-3SG.F.-it Asmaa-NOM
 ‘I bought the same bag that Asmaa bought.’
- c. *ḡahab-naa* *ʔilaa* *l-funduq-i* *nafs-i-hi* *alladi* *ḡahab-naa*
 went-1P.M/F. to DEF-hotel-GEN same-GEN-it that went-1P.M/F
 ʔilai-hi *l-ḡaam-a* *l-maḡi-a*
 to-it DEF-year-ACC DEF- last-ACC
 ‘We went to the same hotel that we went to last year.’

As can be seen in the above examples, the word *nafs* is in both construction types followed by a relative clause, which introduces the second term of comparison. The whole structure is summarised in (71):

- 71) *nafs* [clitic*] + comparee NP + relative clause
 Comparee NP + *nafs* [clitic] + relative clause

⁶⁹ As said before, this is similar to quantifiers.

However, *nafs* can also occur without a modifying relative clause, specifically in contexts where the second term of comparison is left implicit. The following two examples present these contexts:

72)

- a. *dahab-naa* *ʔilaa* *nafs-i* *l-fundiq-i*
 went-1P.M/F to same-GEN DEF-hotel-GEN
 ‘We went to the same hotel.’
- b. *dahab-naa* *ʔilaa* *l-fundiq-i* *nafs-i-hi*
 went-1P.M/F to DEF-hotel-GEN same-GEN-it
 ‘We went to the same hotel.’

A second marker used to express non-scalar comparisons of equality is *metl-maa* (‘as’). As mentioned earlier, *metl* is a word that must head a genitive construction; it is normally followed by a noun phrase and cannot be followed immediately by a verbal clause, as the following examples show:

73)

- a. *ʔištara-y-tu* *kitaab-an* *metl-a* *kitaab-i-ka*
 bought-1SG.M/F book-ACC like-ACC book-GEN-you
 ‘I bought a book like your book.’
- b. **ʔištara-y-tu* *kitaab-an* *metl-a* *ʔištara-y-ta*
 *bought-1SG.M/F book-ACC like-ACC bought-2SG.M
 ‘I bought a book like you bought.’

However, it sometimes occurs with *maa*⁷⁰, in which case it can appear with verbal sentences, where it has the interpretation of ‘in the same manner as’, see the following examples:

74)

- a. *n-nisaaʔ-u* *yusaahim-na* *metla-maa* *yusaahimu*
 DEF-women-NOM take part-3P.F as take part-3SG.M
r-rijaalu *fi* *tarbiyat-i* *al-ʔbnaaʔ-i*
 DEF-men-NOM in raising-GEN DEF-children-GEN
 ‘The women take part in raising children as men do.’

⁷⁰ This *maa* is traditionally called *maa al-maṣdariya*, and it will be discussed in Chapter Six (section 6.2.3).

- b. ʔinna-ka laa taʕrifu n-naas-a metl-maa
 COMP-2SG.M neg know.3SG.M DEF-humankind-ACC as
 ʔaʕrifu-hum
 know.1SG.M/F-them
 ‘You do not know humankind as well as I do.’

The examples in (74) show that *metl-maa* always introduces the secondary term in comparison structures, and the secondary term involves the same verb occurring in the main clause.

A third way of expressing a non-scalar comparison of equality is by the preposition *ka* (‘like’). *Ka*, if occurring without the complementizer *maa*, is normally followed by a noun phrase and cannot be followed by a verbal clause. Thus, the example in (75b) is ill-formed:

- 75)
- a. iʕtaray-tu kitaab-an ka kitaab-i-ka
 bought-1SG.M/F book-ACC as book-GEN-2SG.M
 ‘I bought a book like your book.’
- b. * iʕtaray-tu kitaab-an ka iʕtaray-ta
 *bought-1SG.M/F book-ACC as bought-2SG.M
 ‘I bought a book as you did.’

By adding the complementizer *maa*, the preposition *ka* can then be followed directly by a verbal clause, as the following examples demonstrate:

- 76) iʕtaray-tu kitaab-an ka-maa iʕtaray-ta
 bought-1SG.M/F book-ACC as-maa bought-2SG.M
 ‘I bought a book as you did.’

Another way to express a non-scalar comparison of equality is by using the word *mušabih* (‘similar’). *Mušabih* is a special form of noun derived from the verb ‘ʔ-š-b-h’ *yušbihu* (‘to be similar’). This form is called, in traditional Arabic grammar, *ʔism al-faʕil* ‘agentive noun or active participle’, and is a participle adjective⁷¹.

⁷¹ Arabic participles have a dual nature. Formally, they resemble nominal (and adjectival) elements since they inflect for case, agreement and definiteness, and can form a construct state construction with a following noun. However, they also behave like verbs they are derived from. Indeed, they show passivity and (in)transitivity and they are able to assign accusative case to their objects (Assiri, 2012).

The participle adjective *mušabih* usually takes the preposition *li* ('to') in both predicative and attributive functions, as shown in (77):

77)

- a. sayyarat-u ʕaliy-in mušaabihat-un li sayyarat-i-ka
 car-NOM Ali-GEN similar-ACC to car-GEN- you.2SG.M
 'Ali's car is similar to your car.'
- b. ʕaliy-un yamliku sayyarat-an mušaabihat-an
 Ali-NOM own.1SG.M car-ACC similar-ACC
 li sayyarat-i-ka
 to car-GEN- you.2SG.M
 'Ali owns a car similar to yours.'

In addition to this, the corresponding adjective *mutašaabih* can also be found in MSA and other varieties of spoken Arabic, and it takes the preposition *maʕ* ('with'), as the following example shows:

- 78) l-waḍʕ-u s-syaasy-i fi miṣr
 DEF-situation-NOM DEF-political-GEN in Egypt
 mutašaabih-un maʕ tunis
 similar-NOM with Tunisie
 'The political situation in Egypt is similar to Tunisia.'

We can also use the corresponding verb of *mušabih*, and this structure is mostly common in some spoken Arabic varieties such as HA, and then the verb appears without *li*; in this use, it looks like *resemble*, as shown in (79):

- 79) ʕaliy ʕindu istiraaha tišbih ḥaaqa-t-ak (HA)
 Ali has rest house.F similar.1SG.F belongs-F.-you.2SG.M
 'Ali has a rest house resembles to yours.'

3.3.6.2.2 Non-scalar Comparisons of Inequality

There are many ways of expressing non-scalar comparisons of inequality. In this section, however, I will outline only two ways. The first strategy is to use the participle adjective *muxtalif* ('different'). Like *mušabih*, it is an *ʔism al-faʕil* ('agentive noun' or 'active participle'). In MSA, *muxtalif* usually takes the preposition *ʕan* ('on'), as shown in (80):

- 80) ʕaahad-tu rusumaat-in muxtalifa-t-an ʕan rusumaat-i ʕaliy-in
 saw-1SG.M/F paintings.F-ACC different-F-ACC on paintings-GEN Ali-GEN
 'I saw different paintings from Ali's paintings.'

The corresponding verb *yaxtalifu* ('differ') is normally used in this structure and is found with the same preposition *ʕan* ('on'). In addition, *muxtalif* (like *mušaabih*) is a gradable adjective and may occur with the usual variety of modifiers, such as *kaṭiiran* ('very') and *qaliilan* ('slightly'). It also allows scalar comparison, as in (81):

- 81) raʔ-u-ka muxtalif-un ʕan raʔ-ii ʔakthar-a
 view-NOM-you. Different-NOM on view-my more.ACC
 mi-maa tawaqaʕ-tu
 than-that expect-1SG.M.
 'Your view is different from mine more than I expected.'

The second strategy to express inequality of non-scalar comparison is with the word *ġair* ('other'). Similar to what happens with *metl*, *ġair* ('other') is considered one of the most vague (ambiguous) words in Arabic. Thus, it always occurs as the head of a genitive construction and cannot be preceded by *al* ('the') (Hassan, 1975):

- 82) marar-tu bi rajul-in [*I] ġir-i ʕaliy-in
 passed-1SG.M/F on man-GEN [*DEF] other-GEN Ali-GEN
 'I passed by a man other than Ali.'

As can be noted in the example above, *ġair* ('other') does not take a *min*-phrase in the way that others take a *than*-phrase.

In addition, *ġair* behaves like *meṭl-maa* and *ka-maa* in that it can occur only in term comparisons and always introduces the secondary term in a comparison structure. As an adjective, it can occur in both attributive and predicative positions, as the following examples demonstrate:

83)

- a. rabb-a-naa ʔxrij-naa naʕmal ʕaaliḥ-an ġair-a
 Lord-ACC-1P.M/F take out-1PL.M/F do.1PL.M/F righteousness-ACC other-ACC
 alladi kun-naa naʕmal (QA)
 that were-1P.M/F do.1P.M/F
 ‘Our lord, take out us, we will do righteousness other than that we were doing.’

- b. haḍa l-kitaab-u ġair-u alladi iʕtaray-tu-hu
 this DEF-book-NOM other-NOM that bought-1SG.M/F-it
 ‘This book is other than I bought.’

3.4 Summary

In this chapter, I have presented a description of comparative constructions in MSA. In the first section I have provided a brief descriptive background of comparative adjective formation in the language. I showed that, although most adjectives in MSA have their comparative formed on the relative pattern, some have complex constructions consisting of two elements: an external comparative adjective and indefinite accusative AM. In the second main section, I spelled out the types of comparative constructions. The section was divided into six subsections. The first subsection looked at simple adjectival comparatives and showed, among other things, that comparative adjectives have a single form for both genders and all three numbers but vary in case and definiteness in attributive uses. The second subsection discussed complex adjectival comparatives and showed that all adjectives in MSA have a related *maʕdar* and, hence, allow a complex adjectival comparative with AM. The third subsection focussed on nominal comparatives in which the comparative word quantifies a noun. I showed there that quantifying comparative adjectives combining with a nominal can appear in two positions, either before or after the noun and in each position, they display different properties. The fourth subsection

looked at adverbial comparatives in which a comparative adjective describes the meaning of a verb or a whole clause and adds specific information about the frequency or the manner of the action. The fifth subsection was devoted to clausal comparative CCs. It showed that CCs in MSA are identified by the preposition *min* ('from') being followed by a clause introduced by *maa*. The subsection also gave a brief description of what might be called subcomparatives. It was shown that these in MSA, despite superficially being similar to their subcomparative comparatives in many languages, are in fact adverbial. It was also shown there that CCs in MSA can be reduced under the rule of comparative deletion CD and comparative ellipsis CE. The former is obligatory and the latter is optional. The last subsection has outlined how the comparison of equality and the non-scalar comparisons can be expressed in MSA.

Chapter 4 Simple Comparatives in

MSA: Analysis

4.1 Introduction

The aim of this chapter is to further discuss simple adjectival comparatives in MSA and develop an HPSG analysis to accommodate both predicative and attributive comparative adjectives. It will provide lexical descriptions for the two main uses of comparative adjectives. These obviously need appropriate syntactic and semantic properties. However, I will just consider the syntactic properties. The form of lexical descriptions for comparatives is predictable from that of lexical descriptions for non-comparatives. Therefore, they should not just be listed in the lexicon but should be derived through a lexical rule. Thus, the analysis will require a Description-level Lexical Rule (DLR) (Meurers, 2001) deriving comparative adjectives from non-comparative adjectives. The chapter also discusses what I have called ‘real nominal comparatives’ (cf. section 3.3.3.1). The reason why I discuss this type of comparatives here is because they are just a special case of attributive adjectival comparatives. The adjective in real nominal comparatives quantifies the noun, as shown in (1a), whereas in simple adjectival comparatives, the comparisons between two entities on a property of scale are provided by the adjective comparative, as in (1b), and the difference between them is only semantic, not syntactic.

1)

- | | | | | |
|----|--|-----------|---------------------------|------------|
| a. | lada-yya | kutub-un | ʔaktar-u/ ʔaqall-u | min-ka |
| | have-I.F/M | books-NOM | more-NOM/less (fewer)-NOM | from-2SG.M |
| | ‘I have more/less (fewer) books than you.’ | | | |

- b. laday-ka bayt-un ʔakbar-u min bayt-ii
 have-you.M house-NOM bigger-NOM from house-my.F/M
 ‘You have a bigger house than mine.’

The chapter is organized as follows. In section 2, I give a reminder to the reader of the basic properties of MSA simple adjectival comparatives. Then in section 3, I develop an HPSG analysis of predicative and attributive uses, providing appropriate lexical descriptions and lexical rules. There, I also outline the possible approach to address the partial agreement in attributive comparative adjectives. In section 4, I look at real nominal comparatives and related issues like the analysis of attributive comparative adjectives within HPSG. In section 5, I conclude the main points of the chapter⁷².

4.2 The Data

As has been stated in Chapter Three (section 3.3.1), MSA simple comparatives involve a comparative form of an adjective followed by a PP headed by *min* (‘from’). This *min* phrase expresses the standard of comparison, as illustrated in (2) below:

- 2) Kamaal-un ʔakbar-u min ʕaliy-in
 Kamal-NOM older.SG.M-NOM from Ali-GEN
 ‘Kamal is older than Ali.’

Simple comparatives in MSA are like those found in other languages, such as English, Welsh and Polish. Consider, for example, the simple form of comparatives from Welsh in (3a) and Polish in (3b) (Borsley (pc)):

- 3)
 a. Mae hi ’n dalach na Gwyn.
 be.PRES.3.SG she PRED taller than Gwyn
 ‘She is taller than Gwyn.’

⁷² The discussion in this chapter is based on the paper by Alsulami, Arnold and Borsley, 2017.

- b. Ona jest wyższy niż Jerzy.
 she be.PRES.3.SG taller than Jerzy
 ‘She is taller than Jerzy.’

In fact, the comparative adjective in (2) is the predicate of a nominal sentence. It is the counterpart of sentences in various languages with a present tense form of the copula. Past tense counterparts of this sentence have a past tense form of the copula. Thus, (4) is a past tense counterpart of (2).

- 4) kamaal-un kaana ʔakbar-a min ʕaliy-in
 kamal-NOM was older-ACC from Ali-GEN
 ‘Kamal was older than Ali.’

As we have seen in section 3.3.1, simple comparatives can also be used attributively, as in the following:

- 5) kamaal-un rajul-un ʔakbar-u min ʕaliy-in
 Kamal-NOM man-NOM older-NOM from Ali-GEN
 ‘Kamal is an older man than Ali.’

As can be seen in (5), the attributive comparative follows the noun like any attributive adjective. See, for example, the simple attributive adjective in (6) below:

- 6) kamaal-un rajul-un kabiir-un
 Kamal-NOM man-NOM old-NOM
 ‘Kamal is an old man.’

A further important point about Arabic comparative adjectives, as we have seen in section 3.3.1, is that they are masculine singular, whatever the gender and number of their subject or the modified noun. The following illustrate this with predicative comparative adjectives:

7)

- a. l-ʔawlaad-u ʔakbar-u min l-banaat-i
 DEF-boys-NOM older.SG.M-NOM from DEF-girls-GEN
 ‘The boys are older than the girls.’
- b. n-nisaaʔ-u ʔakbar-u min r-rijaal-i
 DEF-women-NOM older.SG.M-NOM from DEF-men-GEN
 ‘The women are older than the men.’

Simple adjectives, by contrast, can be feminine and plural, as the following examples show:

8)

- a. l-ʔawlaad-u kibaar-un
 DEF-boys-NOM old.P.M-NOM
 ‘The boys are old.’
- b. n-nisaaʔ-u kabiiraat-un
 DEF-women-NOM old.P.F-NOM
 ‘The women are old.’

The following are examples with attributive comparatives:

9)

- a. hum rijaal-un ʔakbar-u min ʔixwaan-i-him
 they.P.M men-NOM older.SG.M-NOM from brothers-GEN-their.P.M
 ‘They are older men than their brothers.’
- b. hunna nisaaʔ-un ʔakbar-u min ʔaxwaat-i-hinna
 they.P.F women -NOM older.SG.M-NOM from sisters-GEN-their.P.F
 ‘They are older women than their sisters.’

Although comparatives do not show number and gender agreement, they show agreement for case and definiteness, as shown in the following example:

- 10) tuḥibbu l-marʔat-u r-rajul-a l-ʔatwal-a min-haa
 like.3SG.F DEF-woman-NOM DEF-man-ACC DEF-taller-ACC from-her
 ‘The woman likes the man who is taller than her.’

Here the comparative adjective is definite and accusative in agreement with the modified noun.

Predicative adjectives do not show definiteness or case agreement.

Another important fact is that the quantifying comparative adjectives *ʔakṭar* ('more') and *ʔaqall* ('less/fewer') (normally called degree words) appear in simple comparatives with two arguments (i.e. the subject or the modified noun and *min*-phrase). The simple case of *ʔakṭar* with just a *min*-phrase complement is shown in the following example:

- 11) l-mašaakil-u ʔakṭar-u/ ʔaqall-u min l-furaṣ-i
 DEF-problems-NOM more-NOM/less-NOM from DEF-opportunities-GEN
 'The problems are more/less than the opportunities.'

The related non-comparatives of quantifying comparative adjectives are *kaṭiir* ('many/much/a lot of') and *qaliil* ('little/few'), and they only have a single argument, as the following examples show:

- 12) l-mašaakil-u kaṭiir-at-un/ qaliil-at-un
 DEF-problems.P.F-NOM many-SG.F-NOM/few-SG.F.NOM⁷³
 'The problems are many/few.'

This suggests that the quantifying comparative words *ʔakṭar* ('more') and *ʔaqall* ('less/fewer') are like ordinary adjectives, as they have the same sort of behaviour.

Of course, the quantifying comparative adjective *ʔakṭar* normally appears with an NP complement and a *min*-phrase. In other words, it normally appears in a complex comparative, which will be discussed in Chapter Five.

Another important fact worth mentioning is that comparative and superlative adjectives in Arabic are formed on the same elative pattern, but they have different syntactic properties. One

⁷³ If a noun refers to a plural non-human entity *l*, like *l-mashaakil* ('problems') and *l-madaaris* ('schools'), then the adjective that modifies it must take a feminine singular form. Where a noun refers to a human plural, on the other hand, like *n-naas* ('people'), the adjective must agree with it in number and gender as well.

- (i) n-naas-u kaṭiir-uun
 DEF-people-NOM many-P.M.NOM
 'The people are many.'

of the differences is that the superlative forms of adjectives are used with genitive nominal complements. The other difference is that they do not have a *min*-phrase, as shown in the following examples:

13)

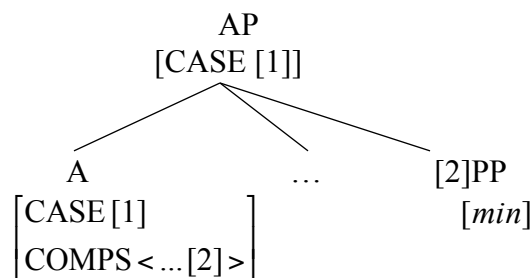
- a. kamaal-un ʔakbar-u l-ʔixwaan-i
 kamal-NOM oldest.SG.M-NOM DEF-brothers-GEN
 ‘Kamal is the oldest of the brothers.’
- b. kamaal-un ʔafḍal-u ṭaalib-in fi l-faṣl-i
 kamal-NOM best.SG.M-NOM student-GEN in DEF-class
 ‘Kamal is the best student in the class.’

In the next section, I will develop an HPSG analysis of simple adjectival comparatives in predicative and attributive positions.

4.3 HPSG Analysis

Simple adjectival comparatives pose no obvious analytic problems since they are just adjectival forms with a distinct morphology and an extra complement, as follows⁷⁴:

14)



All we really need are lexical descriptions for the simple comparative adjectives in predicative and attributive uses. These obviously need appropriate syntactic and semantic properties.

⁷⁴ The PP[*min*] will often but not always be the only complement. In Chapter Five, I will discuss the complex comparative adjectives with complements.

However, we will just consider the syntactic properties. The analysis will also make crucial use of lexical rules, in which the lexical descriptions will be derived by lexical rules from lexical descriptions for basic adjectives. The idea is that the form of lexical descriptions for comparatives is predictable from that of lexical descriptions for non-comparatives. Therefore, they should not just be listed in the lexicon, but should be derived through a lexical rule.

Before any analysis is provided, the fact that comparative and superlative adjectives have the same elative morphology while displaying different syntactic properties needs to be considered. Thus, what is needed, obviously, is some way to identify comparative adjectives. For this purpose, I will assume a fairly conventional feature AFORM with the values *pos(itive)*, *comp(arative)* and *super(lative)*.

In the next subsection, I discuss briefly the partial agreement in MSA comparative adjectives and try to spell out the possible HPSG approach to account for this fact.

4.3.1 Partial Agreement in Adjectival Comparatives

It was noted earlier that a comparative adjective is masculine singular, whatever the gender and number of its subject or the modified noun. In fact, attributive adjectival comparatives have partial agreement; they have agreement for case and definiteness but not number and gender. Here, it is worth mentioning that there are two sorts of features involved in the phenomenon of agreement. Subject-verb agreement is one case of index agreement where a verb is sensitive to features that constitute the value of the subject's INDEX feature. These are the features PERSON, NUMBER and GENDER. In contrast, agreement between an attributive adjective and the noun it modifies, which we are concerned with here, involves the features that constitute the value of the subject's CONCORD feature. These are NUMBER and GENDER, and in many languages (like Arabic), CASE and DEF (Wechsler and Zlatić, 2003).

The possible approach to a situation where a lexical class shows full agreement and others show partial agreement is to assume that agreement features are as normal as in the syntax, but they are not realized in the normal way by the morphological rules (see the discussion of verbal agreement in Archi in Borsley, 2016)⁷⁵. In the case of MSA, I assume that the sort of special behaviour of comparative adjectives in agreement is a morphological matter. In fact, the relative ‘*ʔaʃʃal*’ pattern has an irregular form (i.e. masculine and singular) and thus does not show gender and number agreement. To address the irregular comparative agreement cases, we can adopt the AGR feature, in which case the value of AGR in comparative adjectives looks like (15) below:

$$15) \quad \text{AGR} \rightarrow \begin{bmatrix} \text{NUM } \textit{sing} \\ \text{GEND } \textit{mas} \\ \text{CASE } \textit{case} \\ \text{DEF } \textit{def} \end{bmatrix}$$

With adjective-noun agreement, there is an MOD feature and the noun carries CONCORD features containing certain values of NUM, GEND, CASE and DEF. Then, it is possible to assume that both the AGR feature in the adjective and the CONCORD feature in the noun it modifies have the same value. This can be represented in the following constraint:

$$16) \quad \begin{bmatrix} \text{HEAD } \textit{adj} \\ \text{MOD NP} \end{bmatrix} \rightarrow \begin{bmatrix} \text{AGR [1]} \\ \text{MOD [CONCORD [1]} \end{bmatrix}$$

⁷⁵ In his analysis of verbal agreement in Archi, Borsley (2016) discusses three possible approaches to situations where some members of a lexical class show agreement and others do not. The first one is that the AGR feature is present with a normal value but it is not realized. The second approach is that the AGR feature is present but has the special value *none*. The third one is that the AGR feature is absent. With the first approach, non-inflecting items have the same feature make-up as inflecting items, but they must be distinguished in some way for the morphological rules to apply correctly and to allow an account of any syntactic differences. With the second approach, agreement applies when an item is [AGR index]. With the third approach, agreement applies when an item has [AGR none]. The situation in MSA comparative adjectives, however, is different from the Archi agreement patterns in two cases. First, MSA comparative adjectives have partial agreement, whereas the Archi cases do not show any agreement. Second, the Archi agreement discussed in Borsley, 2016, is in the verbal cases, which involves different agreement features from that that we have in MSA adjective agreement. However, the similarity is that in both cases we can say either (a) that we have different agreement features from normal, or (b) that we have normal agreement features but that they are not spelled out in the normal way by the morphological rules. So, we can either complicate the syntax or complicate the morphology.

With this approach, the NUMBER and GENDER features of comparatives have the same values as these features in the subject or the modified noun, but they have the same masculine singular forms, whatever the values of these features. This approach keeps the syntax simple but complicates the morphology⁷⁶. In fact, some linguists like Bobaljik (2008) argue that agreement should be seen as a morphological matter and not a part of narrow syntax. Also, Bonami (pc to Bob Borsley) has favoured dealing with the absence of inflection in morphology. However, the morphology scope is not the focus of the present study, and thus I will leave it for further research.

Let us turn now to the main focus of this section. The simple comparative adjectives under discussion here have both predicative and attributive uses. Most HPSG proposals regarding predicative and attributive adjectives involve a lexical alternation between an adjective form selecting a SUBJ and one that does not, and an adjective selecting an MOD and another which does not. In the next subsections, I look at simple comparative adjectives in predicative positions and attributive simple comparative adjectives, providing lexical descriptions and syntactic structures for each.

⁷⁶ An alternative approach is to assume that the agreement features have different values. Then, the NUMBER and GENDER features of comparatives have the values *sing* and *masc*, respectively, whatever the number of these features in the subject or modified noun. This would mean that they are an exception to whatever constraint ensures agreement with ordinary adjectives. Then, the constraint in (16) can be replaced by a default constraint indicated by the notation ‘/’.

(i)

$$\left[\begin{array}{l} \text{HEAD } adj \\ \text{MOD NP} \end{array} \right] \rightarrow / \left[\begin{array}{l} \text{AGR [1]} \\ \text{MOD [CONCORD [1]]} \end{array} \right]$$

This constraint states that in the normal situation, the AGR feature of the adjective and the CONCORD feature of the subject or the modified noun have the same value, but with a comparative, the AGR feature involves only a CASE and DEF. This approach keeps the morphology simple but complicates the syntax, and thus it will need further research.

4.3.2 Predicative Simple Comparatives

For HPSG, predicative adjectives have a non-empty SUBJ value reflecting the first member of the ARG-ST list and are [MOD *none*]. The predicative comparative adjective in (2) and (4), repeated in (17) for convenience, will have the categories of the form in (18).

17)

- a. Kamaal-un ʔakbar-u min ʕaliy-in
 Kamal-NOM older.M.SG-NOM from Ali-GEN
 ‘Kamal is older than Ali.’
- b. kamaal-un kana ʔakbar-a min ʕaliy-in
 kamal-NOM was older.M.SG-ACC from Ali-GEN
 ‘Kamal was older than Ali.’

18)

HEAD	$\left[\begin{array}{l} \text{adj} \\ \text{AFORM comp} \end{array} \right]$
SUBJ	<[1]NP>
COMPS	<[2]>
MOD	<i>none</i>
ARG-ST	<[1]NP, [2]PP [<i>min</i>]>

The description in (18) shows the lexical properties of comparative adjectives in predicative uses. It says that it is an adjective [AFORM *comp*], it selects a subject NP and contains the MOD value *none* to prevent predicative adjectives from functioning as modifiers. The value of CASE will be either nominative or accusative depending on whether the predicative adjective appears in a nominal sentence without a copula (i.e. present tense) or nominal sentences with an overt form of the copula (i.e. past and future tenses).

I will now consider the syntactic structure of predicative comparative adjectives. The comparative adjective in (17a) above appears in nominal (verbless) sentences. As discussed earlier in section 2.3.3, Alotaibi, 2015, Alotaibi, 2017 and Alotaibi and Borsley, forthcoming,

argue that MSA verbless sentences involve a phonologically empty form of the copula. Alotaibi and Borsley, forthcoming, assume that this phonologically empty form of the copular is similar but not identical to overt forms. The motivation for favouring this analysis comes from the MSA nominal *wh*-questions, which is basically argued for by Alotaibi (2015: chapter 3). In MSA, the question word is normally followed by a verb, and if the verb does not follow the *wh*-word, the sentence will be ungrammatical, as in (19) below:

- 19) *man r-rajul-u qaraba
 *who DEF-man-NOM beat.3SG.M
 ‘Who has the man beaten?’ (Alotaibi, 2015)

The NP subject in verbless sentences, on the other hand, can follow the *wh*- word, as shown in (20a) (Fassi Fehri, 1993: 64) and (20b) (Alotaibi and Borsley, forthcoming):

- 20)
- a. man ?anta muntaqid-un
 who you criticizing- NOM
 ‘Who are you criticizing?’
 - b. mimma ?anta xaa?if-un
 from.what you afraid- NOM
 ‘Of what are you afraid?’

Here, the sequence *wh*-phrase–subject is perfectly acceptable. As discussed in section 2.3.3, this suggests that the element that follows the *wh*-word in (20) is a post-verbal subject, and hence, a phonologically empty copula needs to be assumed. This empty copula follows the *wh*-word as elsewhere. Thus, sentences like those in (17a) which have an NP subject and a predicative AP complement are headed by a copula verb, although it is invisible. The following is the lexical description for the predicative null copula, which is adopted from Alotaibi (2017) (simplified):

21)

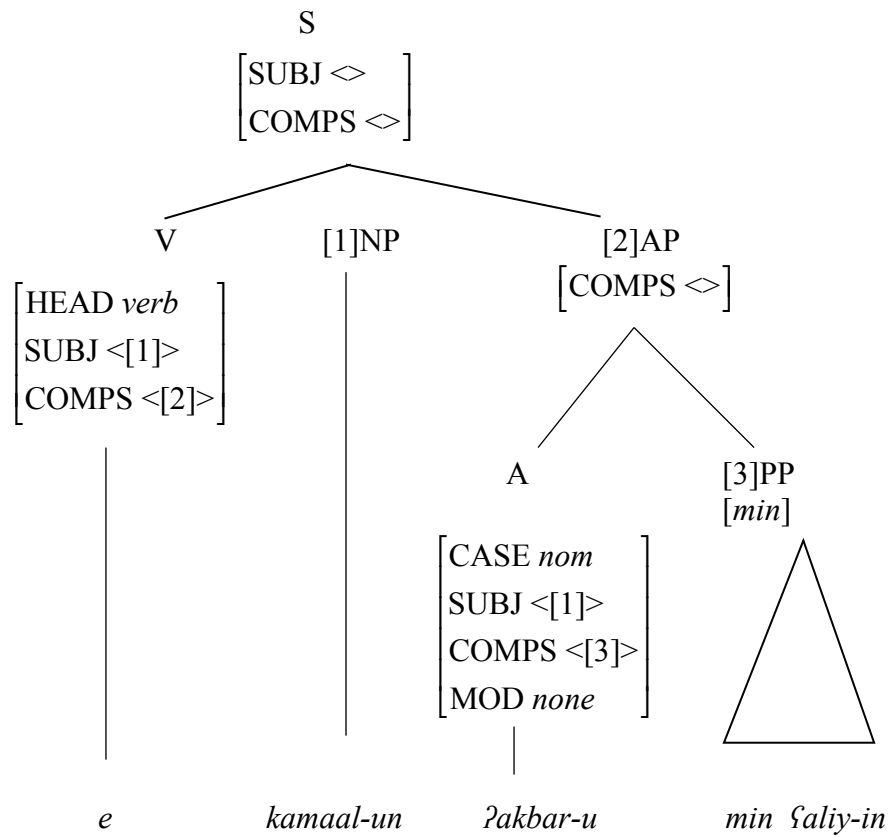
$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{verb} \\ \text{VFORM } \textit{copula} \end{array} \right] \\ \text{SUBJ } \langle [2] \rangle \\ \text{COMPS } \langle [3] \rangle \\ \text{ARG-ST } \langle [2] \langle \text{NP} \rangle \oplus [3] \langle \text{AP} \left[\begin{array}{l} \text{PRED } + \\ \text{SUBJ } \langle [2] \rangle \\ \text{CASE } \textit{nom} \end{array} \right] \rangle \rangle \end{array} \right]$$

The lexical description in (21) shows that the verbal copula selects a subject and a complement, which is the AP. The complement is ‘AP [SUBJ $\langle [1] \rangle$]', in which it requires a SUBJ whose value is identical to the copula’s SUBJ value to capture the fact that the subject of the copula is also the subject of the complement. In this way, the copula is treated as raising verbs that raise the element in the SUBJ list of the predicate and make it their own argument. According to Alotaibi (2017), this approach is called ‘the raising approach’ because the copula’s semantic vacuity entails the raising analysis, and thus, the copula raises the arguments of its predicative complement and makes them its arguments.

Under the empty copula analysis, verbless sentences are assumed to be verbal sentences with invisible verbal copulas. Assuming that verbs take all their arguments as sisters, and assuming the lexical description for the comparative AP in (21), (17a) will have the simplified structure in (22) (where S is VP[SUBJ $\langle \rangle$]) in this analysis⁷⁷.

⁷⁷ Here, it should be noted that SUBJ and COMPS are part of the CAT feature, whereas MOD and CASE are normally HEAD features. However, in this representation and in the other trees in the dissertation, I am using informal simplification to some extent. So, what we have here is an ‘A’, which is an abbreviation for the HEAD value, and then I give the main features of the adjective immediately below, ignoring certain details, including what sort of features they are.

22)



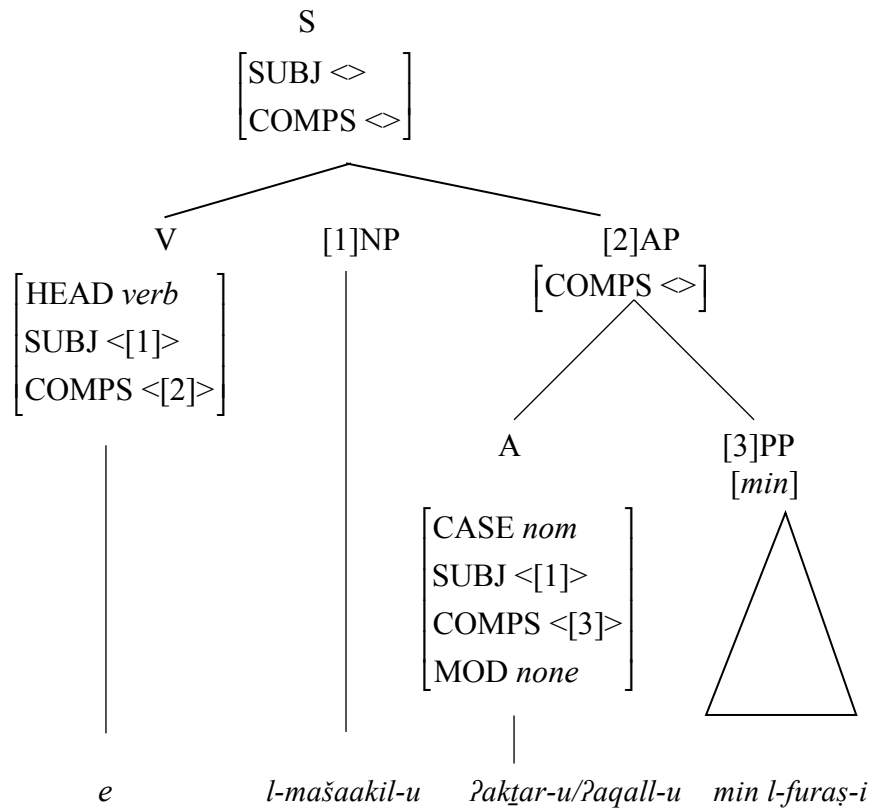
In (22), the copula identifies its arguments with the argument of the predicative complement.

The same structure can be assumed for the quantifying comparative adjective in a simple case in

(11), repeated here as (23):

- 23) l-maʕaakil-u ʔakṭar-u/ ʔaqall-u min l-furaṣ-i
 DEF-problems-NOM more-NOM / less-NOM from DEF-opportunities-GEN
 ‘The problems are more/less than the opportunities.’

24)

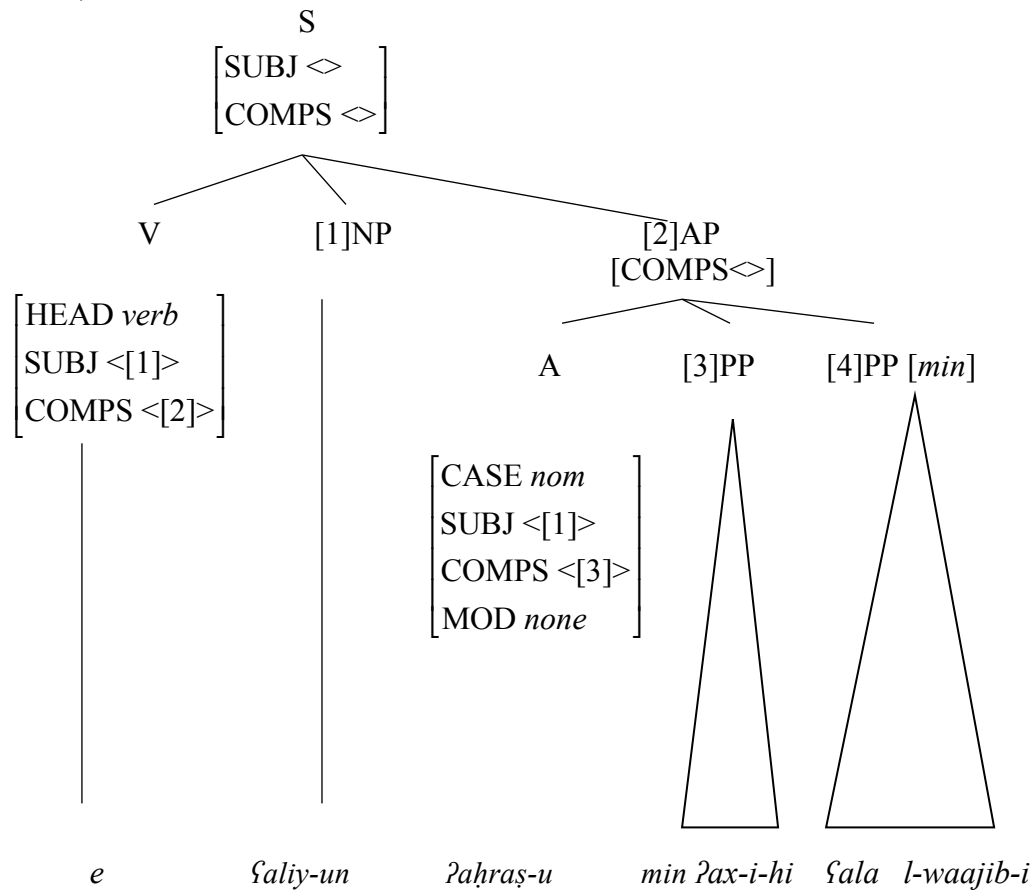


A simple adjectival comparative with an ordinary complement, where the *min*-phrase could either precede or follow the ordinary PP complement (25), would have the following structure:

25)

- a. ʕaliy-un ʔaḥraṣ-u min ʔaxi-hi ʕala l-waajib-i
 Ali-NOM keener-NOM from brother.GEN-his on DEF-duty-GEN
 ‘Ali is keener than his brother on his duty more.’
- b. ʕaliy-un ʔaḥraṣ-u ʕala l-waajib-i min ʔaxi-hi
 Ali-NOM keener-NOM on DEF-duty-GEN from brother.GEN-his
 ‘Ali is keener on his duty more than his brother.’

26)



The structure in (26) shows that the comparative adjective has two PP complements as its sisters, and thus they can appear in either order.

4.3.3 Attributive Simple Comparatives

I will assume that attributive comparative adjectives have an appropriate MOD value reflecting the first element of the modifier's ARG-ST list. Given this assumption, the attributive comparative adjective in examples like (5), repeated here as (27), will have the following description:

- 27) kamaal-un rajul-un ʔakbar-u min ʕaliy-in
 Kamal-NOM man-NOM older-NOM from Ali-GEN
 ‘Kamal is an older man than Ali.’

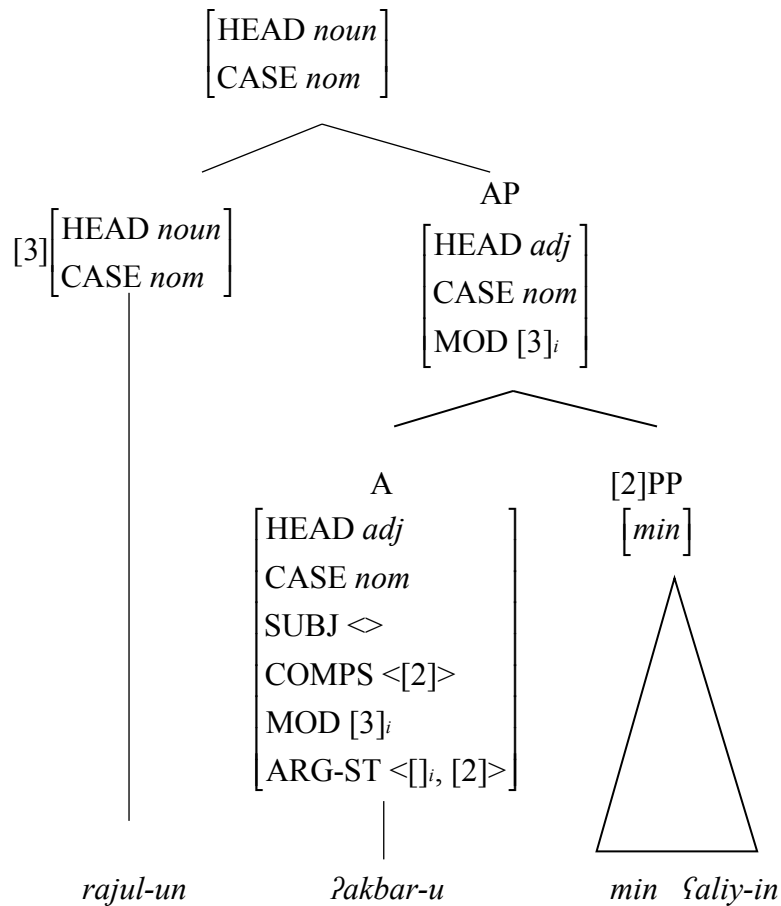
28)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{adj} \\ \text{AFORM } \textit{comp} \end{array} \right] \\ \text{SUBJ } \langle \rangle \\ \text{COMPS } \langle [2] \rangle \\ \text{MOD } N_i \\ \text{ARG-ST } \langle []_i, [2] \text{PP } [\textit{min}] \rangle \end{array} \right]$$

The lexical description in (28) states that the attributive comparative adjective selects no subject [SUBJ $\langle \rangle$] but modifies a noun, and the value of the MOD feature is coindexed with the first member of the ARG-ST list. The second member of the ARG-ST list is a *min*-phrase, which also appears in the COMPS list.

Given the lexical description of the form in (28), the attributive simple comparative in (29) will have the following structure:

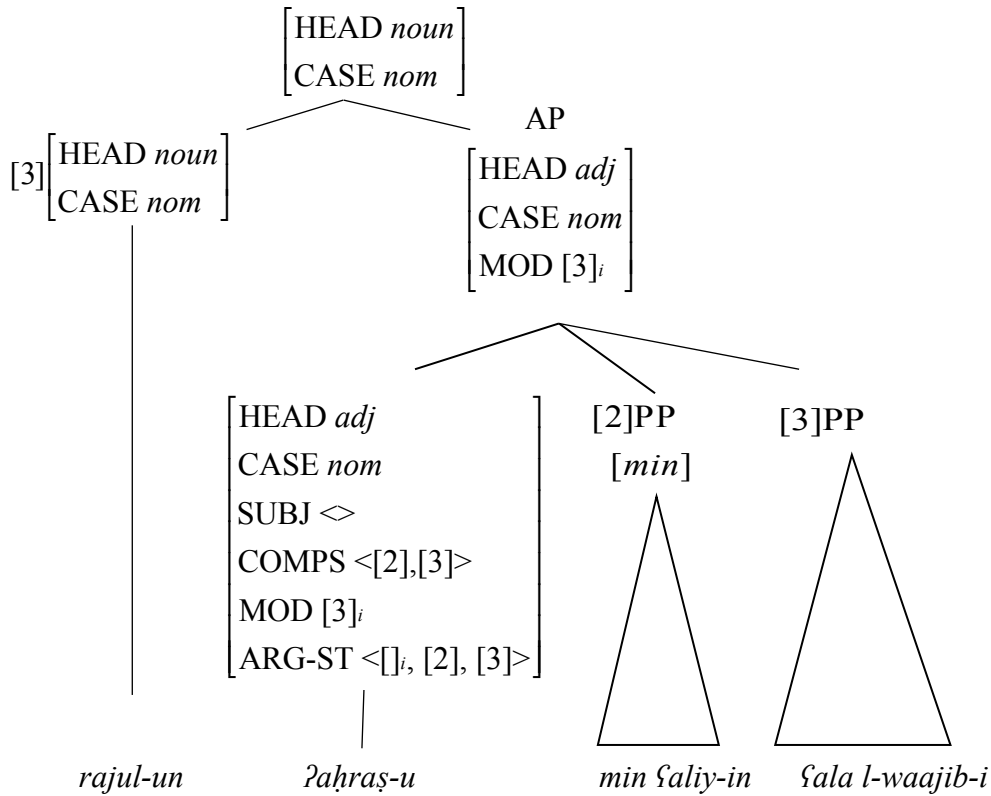
29)



A simple attributive comparative with an ordinary complement (30) would have the structure given in (31).

- 30) kamaal-un rajul-un ʔaḥraṣ-u min ʕaliy-in ʕala l-waajib-i
 Kamal-NOM man-NOM keener-NOM from Ali-GEN on DEF-duty-GEN
 ‘Kamal is a keener man on the duty than Ali.’

31)



The attributive comparative adjective can appear as a part of a subject, object or an object of a preposition, as illustrated in (32a), (32b) and (32c) respectively.

32)

- a. jaaʔa l-ʔawlaad-u l-ʔakbar-u min l-banaat-i
 came.3M.SG DEF-boys-NOM DEF-older.M.SG-NOM from DEF-girls-GEN
 ‘The boys who are older than the girls came.’
- b. raʔaa ʕaliy-un l-ʔawlaad-a l-ʔakbar-a
 saw.3SG Ali-NOMD EF-boys-ACC DEF-older.M.SG-ACC
 min l-banaat-i
 from DEF-girls-GEN
 ‘Ali saw the boys who are older than the girls.’
- c. marra ʕaliy-un bi-l-ʔawlaad-i l-ʔakbar-i
 passed.3SG.M ali-NOM on-DEF-boys-GEN DEF-older.M.SG-GEN
 min l-banaat-i
 from DEF-girls-GEN
 ‘I passed on the boys who are older than the girls.’

The translations here contain predicative adjectives within relative clauses, but the MSA examples contain attributive adjectives. This is shown by the fact that they show agreement in case and definiteness with the modified noun.

The last point I want to mention here is the relation between predicative and attributive adjectives. Predicative and attributive adjectives have the same phonology, but they differ in the HEAD values:

- The attributive adjectives contain a MOD value (coindexed with the first member of the ARG-ST list) but select no SUBJ.
- The predicative adjectives contain a SUBJ [$\langle \text{NP} \rangle$], but have the MOD value *none*.

The possible approach to distinguish between attributive and predicative adjectives is to treat them as alternative realizations of a basic adjective type. According to Alsulami, Arnold and Borsley, 2017, the following constraint ensures that these are the two possibilities for adjectives⁷⁸.

33)

$$\left[\begin{array}{l} \text{word} \\ \text{HEAD } \textit{adj} \end{array} \right] \rightarrow \left[\begin{array}{l} \text{HEAD } [\text{MOD } \textit{none}] \\ \text{SUBJ } \langle [1] \rangle \\ \text{AGR-ST } \langle [1] \rangle \oplus [2] \rangle \end{array} \right] \vee \left[\begin{array}{l} \text{HEAD } [\text{MOD } N_{[i]}] \\ \text{SUBJ } \langle \rangle \\ \text{ARG-ST } \langle [i] \rangle \oplus [2] \rangle \end{array} \right]$$

The constraint in (33) is an adjective-specific version of the Argument Realization Principle, which has been proposed in modern versions of HPSG work (e.g. Ginzburg & Sag, 2000, and Sag et al., 2003)⁷⁹. It will apply both to basic adjectives and to adjectives which are the products

⁷⁸ There is a discussion in The LinGO English Resource Grammar (Copestake and Flickinger, 2000) on raising SUBJ directly from the MOD. Based on this view, an alternative approach to distinguish between attributive and predicative adjectives is to derive one type from the other by a lexical rule. However, one problem with this approach is that it is not obvious which type should be taken as input and which as output (i.e. whether attributive adjectives can be derived from their predicative counterparts or the other way around).

⁷⁹ The ARG-ST feature specifies the syntactic and semantic properties of the arguments, which a word selects, and there are the valence features SUBJ and COMPS. The relation between them is defined by the Argument Realization Principle (ARP) (adopted from Ginzburg and Sag, 2000: 171).

of a lexical rule. For many adjectives, [2] will be the empty list, but for some it will be non-empty⁸⁰.

4.3.4 Lexical Rules

As discussed in section 2.2.3, the formalization of lexical rules in HPSG that I adopt in my analysis is a Description-Level Lexical Rule (DLR) suggested by Meurers, 2001. This level applies to word objects and licenses new lexical items (Müller and Wechsler, 2014: 6).

34)

$$\begin{bmatrix} L_2 \\ \text{DTR } L_1 \\ lr - type \end{bmatrix}$$

This type of lexical rule is a unary branching structure that has the input item as the daughter. In addition, as discussed in section 2.2.3, Sag et al. (2003: 476) and Sag (2012: 107) distinguish three types of *lexical rule type* (*l-rule*):

$$word \rightarrow \begin{bmatrix} \text{SS|CAT} \begin{bmatrix} \text{SUBJ [A]} \\ \text{COMPS [B]} \end{bmatrix} \\ \text{ARG-ST } \langle [A] \oplus [B] \rangle \end{bmatrix}$$

The final version of ARP says, ‘by default’, the value of ARG-ST is the value of SUBJ and COMPS. It is ‘by default’ because in some cases the arguments must not be included in the SUBJ list or COMPS list. For example, null subjects are commonly analyzed as elements which appear in ARG-ST lists but not in SUBJ lists, and gaps in unbounded dependency constructions, such as *wh*-questions, appear only in the value of ARG-ST features, not in COMPS or SUBJ (Ginzburg and Sag, 2000).

⁸⁰ In other languages, like English (but not Arabic), there are adjectives which only have a predicative or an attributive use, and which can then be specified as [MOD none] and [SUBJ<>], respectively. The following are English examples of adjectives that have one type, either predicative or attributive: (Borsley, *Phrase Structure Chapter* (forthcoming)).

- (i) a. An utter fool
- b. *The fool is utter.
- (ii) a. Lee is asleep.
- b. *an asleep man

- Inflectional lexical rule (*i-rule*): takes a lexeme as an input and gives a word as an output.
- Post-inflectional lexical rule (*pi-rule*): takes a word as input and gives a word with more inflection information as output.
- Derivational lexical rule (*d-rule*): takes a lexeme as an input and gives us a word lexeme with more information as an output.

The derivational lexical rule (*d-rule*) is the one that I used in my analysis for deriving comparative from positive adjectives. It basically relates lexemes to lexemes, and changes the form, meaning and argument selection properties.

As I have noted earlier, comparative adjectives need to be identified from the positive and superlative ones. Thus, I have assumed a conventional feature AFORM with the values *pos(itive)*, *comp(arative)* and *super(lative)*. Given this assumption, I will have descriptions of the form in (35) for the adjective *tawiil* ('tall') and of the form in (36) for the comparative adjective *ʔaṭwal* ('taller'):

35)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{adj} \\ \text{AFORM } \textit{pos} \end{array} \right] \\ \text{ARG-ST } \langle \text{NP} \rangle \end{array} \right]$$

36)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{adj} \\ \text{AFORM } \textit{comp} \end{array} \right] \\ \text{ARG-ST } \langle \text{NP}, \text{PP } [\textit{min}] \rangle \end{array} \right]$$

In the lexical descriptions above, I ignore the MOD, SUBJ and COMPS features. As we have seen, the value of the first two will depend on whether the adjective is predicative or attributive, while the value of the latter will be identical to that of the ARG-ST list, minus its first element.

This will often be the empty list since many adjectives have just a single argument, but some have two and for those, the value of COMPS will be non-empty.

The analysis requires a lexical rule deriving comparative adjectives from non-comparative adjectives. The idea is that the form of lexical descriptions for comparatives is predictable from that of lexical descriptions for non-comparatives. Therefore, they should not just be listed in the lexicon but should be derived through a lexical rule to capture the generalization. This will need to change the form and the meaning of the adjective and will also need to change its argument selection properties by adding PP [*min*]. So, descriptions like (36) can be derived from descriptions like (35) with the following lexical rule:

37) Simple Comparative Lexical Rule

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM } pos \end{array} \right] \\ \text{ARG-ST } [1] \end{array} \right] \mapsto \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM } comp \end{array} \right] \\ \text{ARG-ST } [1] \oplus \langle \text{PP}[\text{min}] \rangle \end{array} \right]$$

The lexical rule in (37) changes the value of AFORM and adds PP[*min*] to the end of the ARG-ST list. For many adjectives, [1] will be a single member list, but for some it will have two members.

The examples of the latter are shown in (38b) below.

38)

- a. ζ aliy-un $\text{\textit{ħrriṣ-un}}$ ζ ala l-waajib-i
 Ali-NOM keen-NOM on DEF-duty-
 ‘Ali is keen on his duty.’
- b. ζ aliy-un $\text{\textit{ʔaħraṣ-u}}$ ζ ala l-waajib-I min $\text{\textit{ʔax-i-hi}}$
 Ali-NOM keener-NOM on DEF-duty-GEN from brother-GEN-his
 ‘Ali is keener on his duty more than his brother.’

The rule in (38) will derive all comparative forms from their positive counterparts. Amongst other things, it will derive a lexical description for the quantifying comparative adjective *ʔakṭar* in simple comparatives (i.e. taking a *min*-phrase complement) like (40) from the related non-comparative *kaṭiir* ('many'), 'much' in examples like (39).

- 39) l-mašaakil-u kaṭiira-t-un
 DEF-problems.F.NOM many-F-NOM
 'The problems are many.'
- 40) l-mašaakil-u ʔakṭar-u min l-furaṣ-i
 DEF-problems-NOM more-NOM from DEF-opportunities-GEN
 'The problems are more than the opportunities.'

Kaṭiir in (39) has a single argument, while *ʔakṭar* in (40) has two arguments, and thus the latter can be derived from the former by the simple comparative lexical rule.

In the next section, I discuss what I have called real nominal comparatives (i.e. the adjective quantifies the noun), which are just a special case of adjectival comparatives.

4.4 Real Nominal Comparatives

Recall from section 3.3.3.1 that the quantifying comparative adjectives *ʔakṭar* ('more') and *ʔaqall* ('less/fewer') can appear after the noun and behave like typical adjectives, as illustrated in (41) below.

- 41)
- a. lada-yya kutub-un ʔakṭar-u / ʔaqall-u
 have-1SG.M/F books.INDF-NOM more.INDF-NOM/less.INDF-NOM
 min-ka
 from-you.2SG.M
 'I have more/less books than you.'

- b. kutub-u-hu kaant ʔaktar-a/ʔaqall-a mi-maa
 books-NOM-his were more-ACC /less-ACC from-what
 tawaqqaʕ-tu
 expected-1SG.M/F
 ‘His books were more/less than I expected.’

The examples given in (41) show that the comparative forms of quantifying adjectives in real nominal comparatives have predicative and attributive uses. In (41a), the comparative adjectives *ʔaktar* (‘more’) and *ʔaqall* (‘less/fewer’) modify the nominal head of the NP, as evident from the fact that they agree in case and definiteness with it. In the predicative use example, (41b), the comparative adjective functions as the predicate of the clause, and the NP *kutub* (‘books’) functions as its subject.

I have referred to this type of structure as ‘real nominal comparatives’ to distinguish them from the quantifying comparative adjectives that appear in pre-nominal positions, as in (42) below, which will be discussed in Chapter Five (section 5.3.3). There, I will show that even though they look nominal on the surface, they are in reality different and should be analyzed as a type of adjectival phrase. This is why I have referred to these structures as ‘apparent nominal comparatives’.

- 42) ʔanaa ʔaktar-u maal-an min ʕaliy-in
 I.1SG.M more-NOM money-ACC from Ali-GEN
 ‘I have more money than Ali.’

Real nominal comparatives and ordinary comparative adjectives, as in (43) below, are syntactically essentially the same in MSA in both attributive and predicative uses.

- 43)
 a. lada-yya kutub-un ʔahsan-u min
 have-1SG.M/F books.INDF-NOM better.INDF-NOM from
 kutub-i-ka
 books-GEN-your.SG.M
 ‘I have better books than yours.’

- b. kutub-u-hu kaant ʔaḥsan-a mi-maa
 books-NOM-his were better-ACC from-what
 tawaqqaʕ-tu
 expected-1SG.M/F
 ‘His books were better than I expected.’

Similar to ordinary comparative adjectives, when the head noun in real nominal comparatives takes a PP complement, attributive comparatives can either precede or follow the PP. The order can therefore be either NP PP AP or NP AP PP, as shown in the following examples:

44)

- a. lada-yya kutub-un fi n-naḥw-i ʔaktar-u
 have-1SG.M books-NOM at DEF-syntax-GEN more-NOM
 min ʕali-in
 from Ali-GEN
 ‘I have more books about syntax than Ali.’
- b. lada-yya kutub-un ʔaktar-u min ʕaliy-in
 have-1SG.M books-NOM more-NOM from Ali-GEN
 fi
 at DEF-syntax-GEN
 ‘I have more books than Ali about syntax.’

Here are the ordinary comparative adjectives:

45)

- a. lada-yya kutub-un fi n-naḥw-i ʔaḥsan-u
 have-1SG.M books-NOM at DEF-syntax-GEN better-NOM
 min ʕaliy-in
 from Ali-GEN
 ‘I have better books about syntax than Ali.’
- b. lada-yya kutub-un ʔaḥsan-u min ʕaliy-in
 have-1SG.M books-NOM better-NOM from Ali-GEN
 fi
 at DEF-syntax-GEN
 ‘I have better books than Ali about syntax.’

Ordinary attributive adjectives must precede nominal complements. Thus, in (46a) below, the adjective occurs between the NP (the head noun and the possessor) *kitaab-u l-muʔalif-i* (‘the author’s book’) and the ordinary PP complement *fi n-naḥw-i* (‘about syntax’). The

ungrammaticality of (46b), where the attributive adjective *l-jadiid-u* ('the new') appears after the PP complement, shows that the alternative order NP PP AP is not permitted.

46)

- a. *kitaab-u l-muʔalif-i l-jadiid-u fi n-naḥw-i*
 book-NOM DEF-author-GEN DEF-new-NOM at DEF-syntax-GEN
 'the author's new book about syntax' (AlQurashi, 2015).
- b. **kitaab-u l-muʔalif-i fi n-naḥw-i l-jadiid-u*
 *book-NOM DEF-author-GEN at DEF-syntax-GEN DEF-new-NOM
 'the author's new book about syntax'

However, one could argue that the comparative adjectives in (44–45) can precede or follow the PP complement because of the complexity. So, we need a similar example involving an ordinary attributive adjective with a complement. This is provided in (47) below.

47)

- a. *l-kitaab-u š-šaaʔiʕ-u fi lmağrib-i*
 DEF-book-NOM DEF-popular-NOM in Morocco-GEN
fi n-naḥw-i
 at the-syntax-GEN
 'the popular book in Morocco about syntax'
- b. *l-kitaab-u fi n-naḥw-i š-šaaʔiʕ-u*
 DEF-book-NOM at DEF-syntax-GEN DEF-popular-NOM
fi lmağrib-i
 at Morocco-GEN
 'the popular book about syntax in Morocco'

In (47), the attributive adjective *š-šaaʔiʕ-u* ('the popular') can precede or follow the PP complement *fi n-naḥw-i* ('about syntax'). So, it is indeed the complexity of the AP that matters, not whether it is comparative or not.

It is clear then that these quantifying comparative adjectives are just a special case of attributive adjectival comparatives. The only thing that is different is the fact that they are quantifying the noun and thus, have different semantic relations to the noun. Because I am not dealing with the semantics in the present work, this will be left for further research.

The analysis of attributive comparative adjectives, framed within the HSPG model, is developed in the next section.

4.4.1 Analysis of Attributive Comparative Adjectives in Arabic

In HPSG, attributive adjectives are traditionally analyzed as modifiers/adjuncts combining with the nominal constituent (i.e. either N or N + Possessor⁸¹) to form a larger nominal structure. Thus, they form a head-adjunct/modifier phrase with a nominal head. According to AlQurashi's study (2013: 240–241), this approach can easily apply to some languages. He mentions, for instance, the two Indo-European languages Welsh (Celtic) and Persian (Indo-Iranian), in which attributive adjectives precede both possessors and ordinary complements⁸². So, they can combine with the noun to form what might be called a complex noun and this can then combine with whatever complements it requires. Consider, for example, the following sentence from Welsh (Borsley (p c)):

- 48) llyfr newydd Megan am gystrawen
 Book New Megan about Syntax
 ‘Megan’s new book about syntax’

However, the analysis does not straightforwardly apply in Arabic, where, as described in detail above, attributive adjectives are positioned between the head noun and its ordinary complements. They also follow possessors, which there are good reasons to analyze as complements within HPSG⁸³. Hence, they appear after one type of complement and before another kind. One possible approach is to treat them as extra optional complements. This analysis is rather like the approach

⁸¹ In English they can modify N + complement, such as structures like [Some [new [books about syntax]]].

⁸² See Samvelian, 2007, for more details in Persian.

⁸³ Possessors in HPSG are treated as an extra complement of the head noun. This position is taken by Borsley, 1989, 1995, for Welsh and Arabic and Wintner, 2000, for Hebrew. Borsley based his arguments on the fact that possessors always follow the associated noun and can be realized as clitics like objects of verbs and prepositions.

taken for verbal adjuncts in Bouma, Malouf and Sag, 2001, in which English postverbal adverbs are treated as extra complements. However, this analysis has been rejected by AlQurashi (2013, 2015) because it treats adjectives differently from relative clauses, assuming the latter are adjuncts, and thus misses the similarities, one of which is that both adjectives and relative clauses reflect the (in)definiteness of the associated nominal. Recall from Chapter Two (section 2.1.2.2) that adjectives reflect the definiteness of the modified noun, as shown in the following examples:

49)

- | | | |
|----|---|--|
| a. | bint-un
girl.SG.F-NOM.INDF
'an intelligent girl' | ḍakiyy-at-un
intelligent-SG.F-NOM.INDEF |
| b. | l-bint-u
DEF-girl.SG.F-NOM
'the intelligent girl' | ḍ-ḍakiyy-at-u
DEF-intelligent-SG.F-NOM |

The definiteness agreement of relative clauses with the nominal is shown on the head of the relative clause (i.e. the complementizer). Relative clauses modifying a definite NP are introduced by a complementizer, whereas relative clauses modifying an indefinite NP lack a complementizer, as the following examples demonstrate:

50)

- | | | | | |
|----|--|----------------------------|----------------------|---------------------------------------|
| a. | ʔuḥibbu
Like.1SG.M/F
'I like the book that I read it.' | l-kitaab-a
DEF-book-ACC | *(allḍai)
*(that) | qaraʔ-tu-hu
read.PAST-I.1SG.M/F-it |
| b. | ʔuḥibbu
Like.1SG.M/F
'I like a book that I read it.' | kitaab-an
book-ACC | (*allḍi)
(*that) | qaraʔ-tu-hu
read.PAST-I.1SG.M/F-it |

An alternative analysis assumes that nouns in Arabic appear in a phrase-type head-adjunct-complement structure in which a head has both the complement it takes and adjuncts which modify it as sisters⁸⁴. This requires the following constraints:

$$51) \quad \text{head} - \text{adjunct} - \text{complement} - \text{phrase} \rightarrow$$

$$\left[\begin{array}{l} \text{DTRS } <[1]> \oplus \text{list}([\text{SS}[\text{MOD}[2]]) \oplus <[\text{SS}[3]], \dots [\text{SS}[n]]> \\ \text{HD-DTR } [1] \left[\begin{array}{l} \text{word} \\ \text{SS}[2][\text{COMPS } <[3], \dots [n]>] \end{array} \right] \end{array} \right]$$

The constraint in (51) states that a head-adjunct-complement-phrase has a head daughter and two lists of non-head daughters. The first list represents optional adjunct daughters whose MOD value is identical to the value of SYNSEM in the head-daughter. The second list represents complement daughters whose SYNSEM values are identical to those in the COMPS value of the head-daughter.

This type of structure has been proposed when you have a head + complement + adjunct and they are all sisters (Kasper, 1994; Borsley, 1996). This permits a simple account of examples in which a head and a complement are separated by an adjunct, as follows:

- 52)
- a. Kim [told Lee yesterday that he was ill.]
 - b. Kim [put the book carefully on the shelf.]

In (52), the verbs heading the bracketed VPs are separated from their complements by adjuncts/modifiers, the adverbs *yesterday* and *carefully*.

As can be observed in (53) below, similar examples can be found in Arabic:

⁸⁴ AlQurashi (2013, 2015) discusses the position of attributive adjectives only within the construct-state NPs in MSA but not in comparative constructions. He outlines a number of possible analyses for the attributive adjectives and concludes that the head-adjunct complement analysis is the best approach for Arabic NPs.

53)

- a. takalam-tu biwoḍuḥ-in ʕani l-muškilat-i
 travelled-1SG.M clearly-GEN about DEF-problem-GEN
 ‘I talked clearly about the problem.’ (AlQurashi, 2013: 271)
- b. saafar-tu bi-l-ʔams-i ʔilaa makkat-a
 travelled-1SG. in-DEF-yesterday-GEN to Makkah-GEN
 ‘I travelled yesterday to Makkah.’

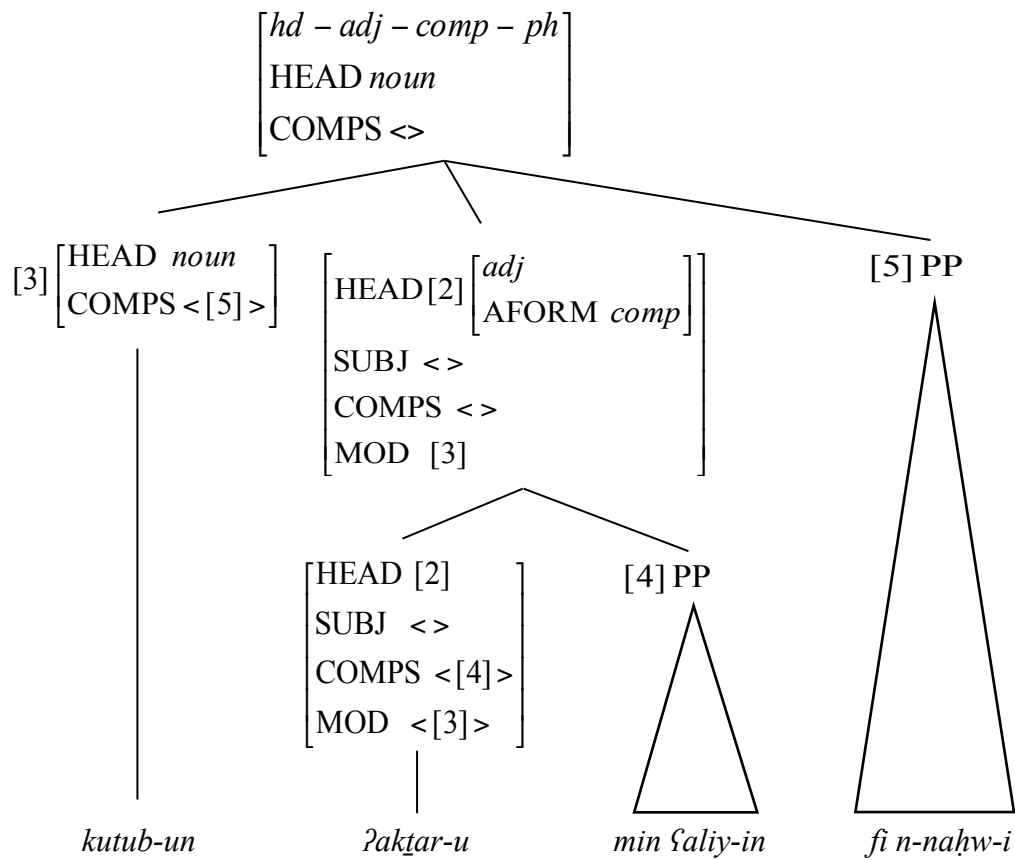
In the case of attributive comparative adjectives, we assume that the combination of noun + comparative adjective + *min* phrase + PP complement is licensed by the head-adjunct-complement structures in which the head has both adjuncts and complements as sisters. They can appear in either order.

This analysis will allow structures like (55), formalizing examples such as (44) (repeated in (54) for convenience).

54)

- a. lada-yya kutub-un fi n-naḥw-i ʔaktar-u
 have-1SG.M books-NOM at DEF-syntax-GEN more-NOM
 min aliy-in
 from Ali-GEN
 ‘I have more books about syntax than Ali.’
- b. lada-yya kutub-un ʔaktar-u min ʕaliy-in
 have-1SG.M books-NOM more-NOM from Ali-GEN
 fi n-naḥw-i
 at DEF-syntax-GEN
 ‘I have more books than Ali about syntax.’

55)

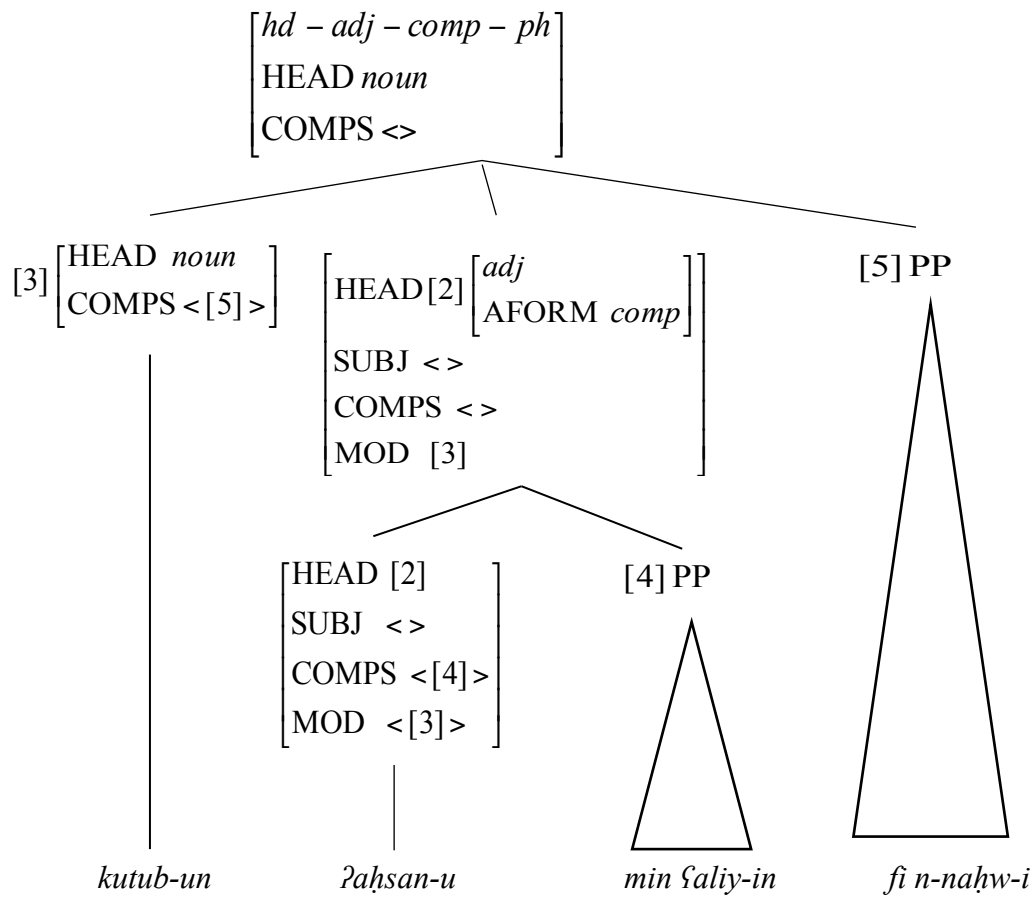


We have similar structures with ordinary comparatives. The example in (56) below will have the structure in (57):

56)

- a. lada-yya kutub-un fi n-naḥw-i ʔaḥsan-u
have-1SG.M books-NOM at DEF-syntax-GEN better-NOM
min
from ʕaliy-in
Ali-GEN
‘I have better books about syntax than Ali.’
- b. lada-yya kutub-un ʔaḥsan-u min ʕaliy-in
have-1SG.M books-NOM better-NOM from Ali-GEN
fi
at n-naḥw-i
DEF-syntax-GEN
‘I have better books than Ali about syntax.’

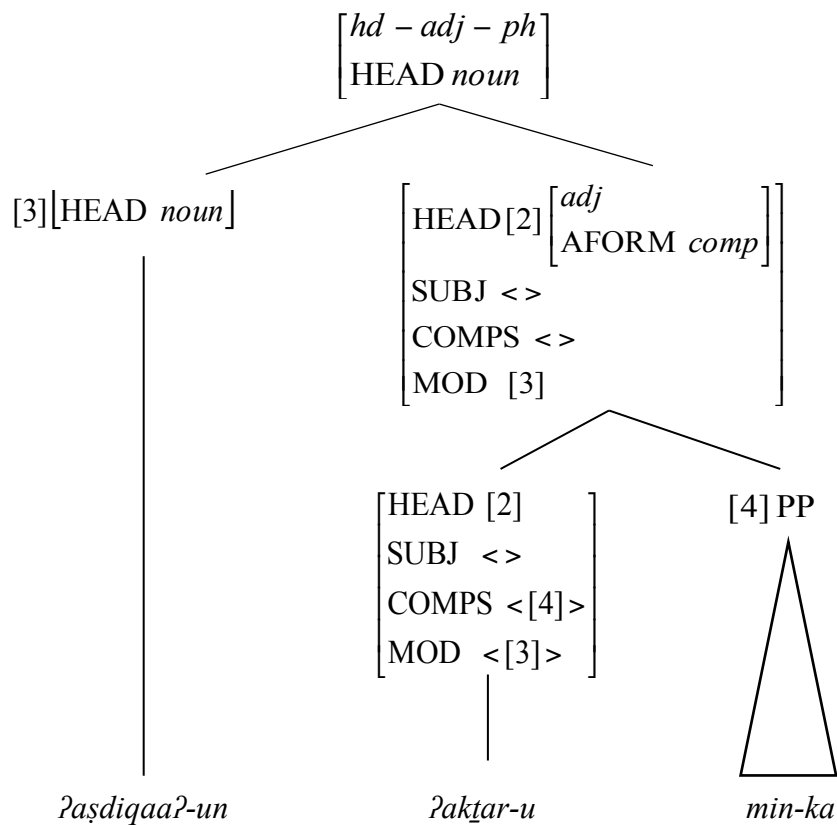
57)



In cases where an NP in real nominal comparatives has no complement, such as example (58), the NP is formalized by the tree in (59).

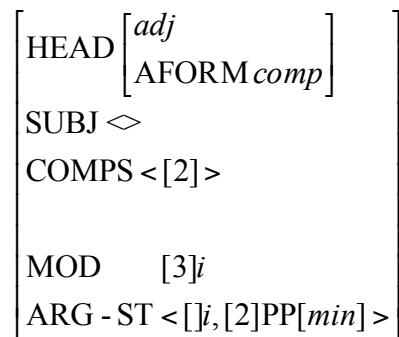
- 58) lada-yya ʔaṣḍiqaaʔ-un ʔaktar-u min-ka
 have-1SG.M/F friends-NOM more-NOM from-you
 ‘I have more friends than yours.’

59)



In terms of their lexical descriptions, attributive real nominal comparatives are similar to simple adjectival comparatives, whose lexical description was presented earlier in (28) (cf. 4.3.3).

60)



The lexical description in (60) specifies that the attributive real nominal comparatives, just like attributive adjectival comparatives, take no subject but modify an NP. The value of MOD is coindexed with the first member of the ARG-ST list, and the second member is a *min* phrase, which also appears in the COMPS list.

Predicative real nominal comparatives have the lexical description of the following form, which is the same lexical description in (18) (cf. 4.3.2).

61)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{adj} \\ \textit{AFORM comp} \end{array} \right] \\ \text{SUBJ} < [1] \text{NP} > \\ \text{COMPS} < [2] > \\ \text{MOD} \textit{none} \\ \text{ARG - ST} < [1] \text{NP}, [2] \text{PP}[\textit{min}] > \end{array} \right]$$

This lexical description says that predicative real nominal comparatives, just like predicative adjectival comparatives, select a subject NP and have a *none* MOD value. As has been mentioned earlier, the value of CASE is either *nom* or *acc* depending on whether the clause is nominal or copulative (i.e. has an overt copula).

4.5 Summary

In this chapter, I have developed an HPSG analysis for simple adjectival comparatives in MSA. This has been divided into three main sections. The first one gives a reminder to the reader of the main facts. The second main section provides an analysis for the predicative and attributive comparative adjectives. It develops lexical descriptions ensuring that predicative adjectives have a non-empty SUBJ value reflecting the first member of the ARG-ST list and are [MOD *none*], and that attributive adjectives have a value for the MOD feature coindexed with the first member of the ARG-ST list and are [SUBJ $\diamond$]. The section also provides a lexical rule to derive comparative adjectives from non-comparative adjectives by changing the form of the adjective and altering its argument selection properties by adding PP [*min*]. In addition, in this section, I have outlined the possible morphological approach to address partial agreement in attributive comparative adjectives, but because morphology is not in the scope of my study, I left it for further research. The final main section considered the quantifying comparative adjectives *ʔakthar* ('more') and *ʔaqall* ('less/fewer') in real nominal comparatives, which overall have the same distributions as typical adjectives. It showed that these quantifying comparative adjectives are just a special case of attributive adjectival comparative, and the only thing that is different is the fact that they are quantifying the noun. Finally, the section discussed the analysis of attributive comparative adjectives. I assumed that the combination of noun + comparative adjective + *min* phrase + PP complement is licensed by the head-adjunct-complement structures in which the head has both adjuncts and complements as sisters.

Chapter 5 Complex Comparatives

in MSA: Analysis

5.1 Introduction

It was shown in Chapter Three (section 3.3) that MSA has simple comparatives with a comparative form of adjective and complex comparatives with two separate elements. Simple comparatives are possible with all adjectives, except a small set of cases that cannot be inflected into the elative pattern for some phonological and morphological reasons. For these adjectives, the comparative meaning must be expressed by a complex construction involving two elements, an external comparative word and an indefinite accusative adjectival *maṣḍar*.

- | | | | | | |
|----|--|----------|------------------|------|------------|
| 1) | ṣaliy-un | ʔaktar-u | ḍakaaʔ-an | min | xaalid-in |
| | Ali-NOM | more-NOM | intelligence-ACC | from | Khalid-GEN |
| | ‘Ali is more intelligent than Khalid.’ | | | | |

I will show that complex adjectival comparatives in MSA are quite different constructions from the complex comparatives of many other languages. The most important evidence for this comes from the fact that they can contain not just adjectival *maṣḍars* but also ordinary nouns:

- | | | | | | |
|----|-----------------------------|----------|-----------|------|----------|
| 2) | ʔanaa | ʔaktar-u | maal-an | min | ṣaliy-in |
| | I.1SG.M/F | more-NOM | money-ACC | from | Ali-GEN |
| | ‘I am more money than Ali.’ | | | | |

I will also show that the MSA construction is rather like another, called the adjectival construct⁸⁵ (i.e. a construction involving a head adjective followed by a genitive definite noun), as illustrated in (3):

⁸⁵ In traditional Arabic grammar the Adjectival Construct is described as *iDafah ghair Haqiqyyah* (‘false construct’) (Ryding, 2005).

- 3) ʔanta ʕaḍīim-u l-ḥaḍḍ-i
 you.2SG.M great-NOM DEF-fortune-GEN
 ‘You have great luck.’/‘You are very lucky.’

Both constructions involve an adjective with nominal complements and both have what can be called a possessive interpretation. The aim of this chapter is to investigate MSA complex comparatives and the related adjectival constructs. We will set out the facts and then develop analyses within the HPSG framework.

This chapter is organized as follows. In section 2, we set out the basic properties of complex comparatives. In section 3, we consider the nature of Arabic complex adjectival comparatives. We will show, amongst other things, that they are head-complement structures and answer the question of whether they should be seen as filling a slot in an adjectival paradigm. In section 4, we consider adjectival constructs and show that, although there are some important differences, they are broadly similar to complex adjectival comparatives in both structure and interpretation. In section 5, we will proceed to develop HPSG analyses for complex comparatives and adjectival constructs, proposing appropriate lexical descriptions and lexical rules. Finally, in section 6, we will summarize the main points of the chapter⁸⁶.

⁸⁶ The discussion in this chapter is based on the paper by Alsulami, Arnold and Borsley, 2017.

5.2 The Data

Recall from Chapter Three (section 3.3.2) that some MSA adjectives do not have elative forms for morphological or phonological reasons and that, in such cases, complex adjectival comparative constructions are the only option. The meaning that these non-existent forms would express has to be expressed by a complex comparative construction, involving one of a small number of general comparative words and an indefinite accusative adjectival *maṣḍar*, as exemplified in (4):

- 4)
- a. ṣaliy-un ʔaktar-u ʔistiṣdaad-an min xaalid-in
 Ali-NOM more-NOM preparation-ACC from Khalid-GEN
 li l-ixtibaar-i
 for DEF-exam-GEN
 ‘Ali is more prepared than Khalid for the exam.’
- b. ʔanaa ʔaktar-u ḍakaaʔ-an min ṣaliy-in
 I.SG.M/F more-NOM intelligence-ACC from Ali-GEN
 ‘I am more intelligent than Ali.’

The complex comparative has accusative case when it appears as the complement of the copula, as in (5).

- 5) ṣaliy-un kaana ʔaktar-a ḍakaaʔ-an min xaalid-in
 Ali-NOM was more-ACC intelligence-ACC from Khalid-GEN
 ‘Ali was more intelligent than Khalid.’

As we have seen in section 3.3.2, these constructions also have attributive uses, as illustrated in (6) below:

6)

- a. qaabal-tu rajul-an ʔaktar-a ɖakaaʔ-an
 met-1SG.M/F man –ACC more-ACC intelligence-ACC
 min xaalid-in
 from Khalid-GEN
 ‘I met a man more intelligent than Khalid.’

- b. taḥadaṭ-tu maʕa rajul-in ʔaktar-a ɖakaaʔ-an
 spoke-1SG.M to man –GEN more-GEN intelligence-ACC
 min xaalid-in
 from Khalid-GEN
 ‘I spoke to a man more intelligent than Khalid.’

The examples in (6) show that complex comparatives agree in the same way as simple comparatives. In attributive uses, the comparative adjective *ʔaktar ɖakaaʔ* (‘more intelligent’) agrees with the head noun *rajul* (‘man’) in case and definiteness, which is the expected behaviour for adjectives in MSA. In (6b), we have case agreement, although the genitive and accusative forms of *ʔaktar* are identical. We also have definiteness agreement, as the following shows:

- 7) tuḥibbu l-marʔat-u r-rajul-a l-ʔaktar-a ɖakaaʔ-an min-haa
 like.3SG.F DEF-woman-NOM DEF-man-ACC DEF-taller-ACC intelligence-ACC from-her
 ‘The woman likes the man who is more intelligent than her.’

Superficially, these examples are much like their English translations and like complex comparatives in other languages, e.g. Welsh in (8) or Polish in (9):

- 8) Dw i mwy deallus na Gwyn.
 be.PRES.1.SG I more intelligent than Gwyn
 ‘I am more intelligent than Gwyn.’ (Borsley, p.c.)
- 9) Jestem bardziej inteligentny niż Jerzy.
 be.PRES.1.SG more intelligent than Jerzy
 ‘I am more intelligent than Jerzy.’ (Borsley, p.c.)

Welsh in (8) has *mwy deallus* ('more intelligent'), and Polish in (9) has *bardziej inteligentny* ('more intelligent'). In both cases the second element is an ordinary adjective. However, there is an important difference between the MSA complex comparatives and those in these other languages. As clear from the translation of (4b), *ḍakaaʔ-an* is not an adjective like *intelligent*, *deallus* and *inteligentny*, but an adjectival *maṣḍar* (known in English grammar as an *adjectival noun*). An adjective is not possible, as (10) shows:

10)

- a. *ʕaliy-un ʔaktar-u mustaʕidda-an min xaalid-in
 Ali-NOM more-NOM prepared-ACC from Khalid-GEN
 li l-ixtibaar-i
 for DEF-exam-GEN
 'Ali is more prepared than Khalid for the exam.'
- b. *ʕaliy-un ʔaktar-u ḍakiyy-an min xaalid-in
 Ali-NOM more-NOM intelligent-ACC from Khalid-GEN
 'Ali is more intelligent than Khalid.'

This might seem like a minor, unimportant difference. In fact, however, it is an important matter, reflecting the fact that MSA complex comparatives are quite different from the complex comparatives of many other languages. The most important evidence showing that we are dealing with a very different construction here is the fact that it can contain not just adjectival *maṣḍars* but also ordinary nouns, as the following illustrates:

- 11) ʔanaa ʔaktar-u maal-an min ʕaliy-in
 I.1SG.M/F more-NOM money-ACC from Ali-GEN
 'I have more money than Ali.'

In addition, almost all adjectives in MSA have a related *maṣḍar*⁸⁷, and hence every adjective allows a complex adjectival comparative, as exemplified in (12).

⁸⁷ See, for example, Al-ashmooni, 1998.

12)

- a. ʕaliy-un ʔaqwa min xaalid-in
 Ali-NOM stronger.elative from Khalid-GEN
 ‘Ali is stronger than Khalid.’
- b. ʕaliy-un ʔaktar-u qwwat-an min xaalid-in
 Ali-NOM more-NOM strength-ACC from Khalid-GEN
 ‘Ali is stronger than Khalid.’
- c. ʕaliy-un ʔadka min xaalid-in
 Ali-NOM more intelligent. elative from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’
- d. ʕaliy-un ʔaktar-u ɖakaaʔ-an min xaalid-in
 Ali-NOM more-NOM intelligence-ACC from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’

These facts are very important and will be used for the empirical argumentation later in section 5.3.2.2.

5.3 The Nature of Complex Adjectival

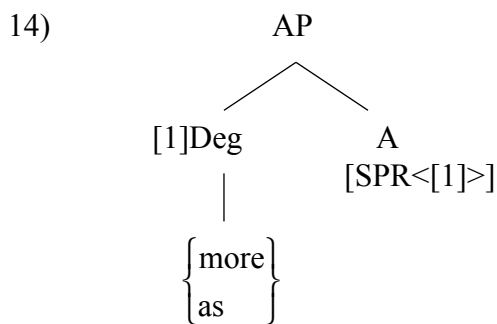
Comparatives in MSA

The basic structure of complex adjectival comparatives is a straightforward matter, but questions arise as to whether they should be analyzed as filling a slot in an adjectival paradigm and why they contain an adjectival *maṣḍar*. These two questions are related.

5.3.1 The Basic Structure

In standard HPSG, comparative words in English (often called degree words like *more* and *as*) are analyzed as specifiers of a head A(djective)⁸⁸ (Pollard and Sag, 1994). According to this assumption, the adjective phrase in (13) would have the structure in (14).

- 13)
- a. Kim is more intelligent than Lee.
 - b. Kim is as intelligent as Lee.



Bonami (2015) proposes that complex adjectival comparatives in English are head-adjunct structures in which the comparative word is an adjunct and the adjective a head. Essentially, the same analysis is proposed in Kay and Sag, 2012. They use the term functor to refer to the adjunct element, and thus the structure is called a head-functor construction. In these two analyses, the comparative word is not a head. This may well be the right analysis for English and other languages, but it is not appropriate for complex comparatives in MSA. There is evidence that the comparative word in complex adjectival comparatives heads the constituent that appears in adjectival positions. The main evidence for this comes from the case which appears on the comparative words themselves. The case is determined by the position in which the whole phrases appear; they have nominative case in the predicate of nominal sentence position and

⁸⁸ In English, *more* sometimes looks like a head, e.g. in *more of the students*.

accusative case after the past tense of the copula, as exemplified in (4b) and (5), repeated here as (16a) and (16b) respectively.

15)

- a. ʔanaa ʔaktar-u ɖakaaʔ-an min ʕaliy-in
 I.SG.M/F more-NOM intelligence-ACC from Ali-GEN
 ‘I am more intelligent than Ali.’
- b. ʕaliy-un kaana ʔaktar-a ɖakaaʔ-an min xaalid-in
 Ali-NOM was more-ACC intelligence-ACC from Khalid-GEN
 ‘Ali was more intelligent than Khalid.’

In attributive uses, they agree with the noun that they modify, as illustrated in (6a) and (6b), (repeated here as (17a) and (17b) for convenience) and thus they would have all three cases.

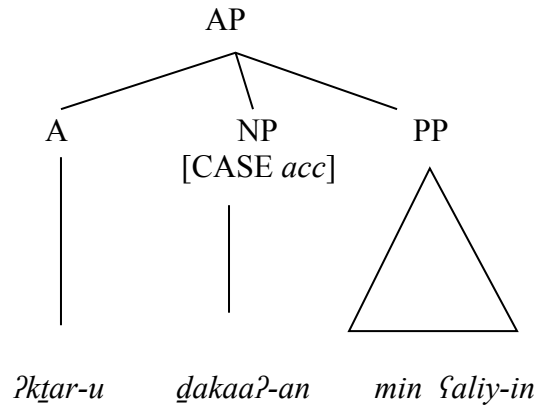
16)

- a. qaabal-tu rajul-an ʔaktar-a ɖakaaʔ-an
 met-1SG.M/F man -ACC more-ACC intelligence-ACC
 min xaalid-in
 from Khalid-GEN
 ‘I met a man more intelligent than Khalid.’
- b. taḥadaṭ-tu maʕa rajul-in ʔaktar-a ɖakaaʔ-an
 spoke-1SG.M/F to man-GEN more-GEN intelligence-ACC
 min xaalid-in
 from Khalid-GEN
 ‘I spoke to a man more intelligent than Khalid.’

The above examples show that the case of comparative adjectives varies depending on the position in which the whole phrases appear. This suggests that the comparative adjective is a head. Another important piece of evidence comes from the case of the following *maṣḍar*. As we saw in section 3.3.2.1, *maṣḍars* are like ordinary nouns in that they inflect for case. However, the adjectival *maṣḍar* in the above examples has the same accusative case, wherever the construction appears. In fact, it does not vary in case because it is a non-head, and it is accusative because that is what the head (i.e. the comparative word) selects. This suggests very strongly that the comparative adjective is a head. Since the construction appears in AP positions, it must be a type

of AP, and under fairly standard assumptions, the comparative word that heads it must be a type of adjective. Thus, we will have schematic analyses like the following for the construction in (16a):

17)



The traditional analysis of NPs in complex comparatives is an adverbial of specification ‘*tamyiiz*’ (see e.g. Ryding, 2005: 295⁸⁹). However, here and in the next sections, we argue that the NP in complex comparatives is a complement of the comparative adjective. The comparative adjective in an MSA complex comparative has two complements. One is the indefinite accusative adjectival *maṣḍar* and the other is the *min*-phrase. First, the quantifying comparative adjective requires the accusative adjectival *maṣḍar* and, as shown in (19b), the sentence meaning without this element will be incomplete, and it is acceptable only if *ʔakṭar* (‘more’) is taken to have an elliptical complement in the right sort of context.

18)

- a. ʕaliy-un ʔakṭar-u ḍakaaʔ-an min xaalid-in
 Ali-NOM more-NOM intelligence-ACC from Khalid-GEN
 ‘Ali is more intelligent than Khalid.’

⁸⁹ In traditional Arabic grammar books, the indefinite accusative NP ‘*tamyiiz*’ is used as an adverb. It specifies the nature of what has been mentioned in the sentence:

(iv) haḍa l-balad-u ṭ-ṭayyib-u naas-an
 this DEF-land-NOM DEF-good-NOM people-ACC
 ‘This is good country in terms of people.’ (Ryding, 2005: 295).

- b. *ʕaliy-un ʔaktar-u min xaalid-in
 * Ali-NOM more-NOM from Khalid-GEN
 ‘Ali is more than Khalid.’

Second, the *min*-phrase is a complement of the comparative adjective. Indeed, it is clear that this prepositional phrase is only possible where a comparative adjective is present. Furthermore, only where a comparative word occurs can the *min*-phrase be used. Hence, the sentence *ʕaliy-un kabiir-un min xaalid-in (‘*Ali is big than Khalid’) is impossible.

So far, we have shown that the accusative adjectival *maṣḍar* and the *min*-phrase behave like complements and, hence, that comparative adjectives in complex adjectival comparatives are heads with two complements. I will develop this analysis in detail later in section 5.5.

5.3.2 Are Complex Adjectival Comparatives in MSA

Types of Periphrasis?

The question that arises here is whether complex adjectival comparatives in MSA are types of periphrasis, and thus should be seen as filling a slot in an adjectival paradigm. Before answering this question, a brief definition of periphrasis is given with some well-known examples of this phenomenon.

5.3.2.1 An Overview of Periphrastic Constructions

The term periphrasis is used to denote a type of ‘syntactic constructions that fill a cell in an inflectional paradigm, which is otherwise realized by morphology’ (Brown et al., 2012, p. 244). In other words, a periphrastic construction is where a combination of words in an expression play the grammatical function normally played by a single word.

The most discussed case of inflectional periphrasis in the literature is found in the Latin perfective passive examples (see e.g. Spencer, 2006; Brown, Chumakina, Corbett, Popova and Spencer, 2012; and Bonami, 2015). Latin verbs have simple forms (i.e. inflected forms), both for the active and the passive voice in the present, imperfective and simple future tenses. In the perfect tense (and, also, in the pluperfect and the future perfect), however, only the active has inflected forms. When passive forms are needed, the language uses a syntactic construction. This is shown in Table 4 for the perfect tense. While ordinary active verbs have inflected forms expressing the perfect, for passive verbs this role is played by the combination of two words: a passive past participle and the present form of the verb *esse* ('be') (Brown et al., 2012: 238).

	Active		Passive	
	Singular	Plural	Singular	Plural
1	amāuī	amāuimus	amātus/a/um sum	amātī/ae/a sumus
2	amāuistī	amāuistis	amātus/a/um es	amātī/ae/a estis
3	amāuit	amāuerunt	amātus/a/um est	amātī/ae/a sunt

Table 4 Active and Passive Forms of the Latin Verb *amāre* ('love') in the Perfect Tense

Another example that might be a case of periphrasis is English comparatives. Bonami (2015) assumes, as have others, that complex adjectival comparatives in English are a case of periphrasis. Many adjectives in English have an inflected comparative formed by adding the suffix *-er* to the base form like *tall*, *tall-er*, but other adjectives do not have a synthetic form, and the meaning of comparison is expressed by a multi-word expression containing the degree word *more*, like: *intelligent – more intelligent*. In some intuitive sense, the multi-word expression fulfils the same grammatical function as the inflected/synthetic form with other adjectives, so that it becomes possible to say that the periphrastic expression *more intelligent* is the comparative form of *intelligent*, just as *taller* is the comparative form of *tall*⁹⁰.

⁹⁰ In the Transformational Grammar literature, e.g. Bresnan, 1973, 1975, it has been assumed that a simple comparative like *taller* involves two separate elements, *more/much* + *tall*, that are somehow combined. Then in some cases it has been assumed that something prevents *more/much* + *beautiful* from being realized as **beautifuler*

However, in the next section I will provide convincing evidence for rejecting a periphrasis analysis for complex comparatives in MSA. Instead, I will assume that they are a case of an independent construction expressing the meaning that would be expressed by some missing forms.

5.3.2.2 Argument Against a Periphrasis Analysis

The comparative adjectives in MSA can be divided into two groups in terms of the distribution of analytic and synthetic. The first group, which constitutes a small set of examples, includes adjectives that can only have the analytic form of comparatives. As we have seen in section 3.3.2, these types of lexemes have some morphological and phonological properties which prevent them from fitting into the elative pattern ‘ʔaCCaC’. For example, it is impossible to have the inflectional form of comparative from adjectives like *haiyy* (‘shy’) and *mustafid* (‘prepared’). The second group of comparative adjectives includes those that allow the elative form and can also have their comparative formed on a complex construction. This class is the most common in MSA. The lexeme *dakiy* (‘intelligent’), for instance, can inflect synthetically and analytically, and both strategies are grammatical as shown in (20) below⁹¹.

19)

- | | | | | |
|----|--|---------------------------|------------------|--------------------|
| a. | ʕaliy-un | ʔadka | min | xaalid-in |
| | Ali-NOM | more intelligent. elative | from | Khalid-GEN |
| | ‘Ali is more intelligent than Khalid.’ | | | |
| b. | ʕaliy-un | ʔaktar-u | dakaaʔ-an | min xaalid-in |
| | Ali-NOM | more-NOM | intelligence-ACC | from Khalid-GEN |
| | ‘Ali is more intelligent than Khalid.’ | | | |

triggering a periphrasis, such as *more beautiful*. Within HPSG, the situation is different because the framework assumes a realizational approach to morphology. Thus, there are two elements in periphrastic constructions: the word that looks like the lexeme is called ‘the main element’ and the other word participating in a periphrasis is ‘the ancillary element’, and one or other of these elements must be treated as the real realization of the lexeme. (For more details on different analyses for the realizational approach, see: Bonami and Webelhuth (2013); Bonami and Samvelian (2015); Bonami (2015); and Bonami, Borsley and Tallerman (2016).)

⁹¹ The two options, synthetic and analytic forms, in (19) have the same truth conditional meaning, but they may differ in pragmatics. However, semantics/pragmatics of comparatives is out of the current study’s scope.

The table in (5) below summarizes the paradigm of comparative for some adjectives in MSA.

Positive Adjective	Synthetic Form	Analytic Form
<i>haiyy</i> ‘shy’	GAP	<i>ʔaktar-u hyaaʔ-an</i>
<i>dakiyy</i> ‘intelligent’	<i>ʔadka</i>	<i>ʔaktaru dakaʔan</i>
<i>Jamiil</i> ‘beautiful’	<i>ʔajmal</i>	<i>ʔaktaru jamaalan</i>
<i>sariif</i> ‘fast’	<i>ʔasraʕ</i>	<i>ʔaktaru surʕatan</i>
<i>kariim</i> ‘generous’	<i>ʔakram</i>	<i>ʔaktaru ʔikraaman</i>
<i>mustaʕid</i> ‘prepared’	GAP	<i>ʔaktaru ʔistiʕdaadan</i>
<i>waadih</i> ‘obvious’	<i>ʔawdah</i>	<i>ʔaktaru wuḍuuhan</i>
<i>ṭawiil</i> ‘tall’	<i>ʔaṭwal</i>	<i>ʔaktaru ṭuulan</i>
<i>šujaaʕ</i> ‘brave’	<i>ʔašjaʕ</i>	<i>ʔaktaru šajaaʕatan</i>
<i>qawiyy</i> ‘strong’	<i>ʔaqwa</i>	<i>ʔaktaru qwwatan</i>
<i>laṭiif</i> ‘kind’	<i>ʔalṭaf</i>	<i>ʔaktaru luṭfan</i>

Table 5 The Paradigm of Comparative for Some Adjectives in MSA

So, the majority of comparative adjectives are compatible with the synthetic and analytic forms. Only a small set of adjectives do not have a synthetic form. However, all adjectives can have an analytic form.

One might say that it is possible to treat the examples that only have a complex form as a case of periphrasis because it might be a situation where an expression is used in place of a single word in an inflectional paradigm. This means that *ʔaktaru hyaaʔan* (‘more shyness’) could be the comparative form of *haiyy* (‘shy’), just as *taller* is the comparative form of *tall*. However, there are at least three reasons to argue that the MSA construction is not a case of periphrasis. First, complex comparative constructions in MSA contain a number of different comparative words, as

we saw in section 3.3.2. The earlier examples contain *ʔaktar* ('more'). It is also possible to have an ordinary comparative adjective, such as *ʔahsan* ('better') and *ʔašadd* ('stronger'), as in the following:

20)

- a. haḍa l-ḥiṣaan-u ʔašadd-u bayaaḍ-an min
 this DEF-horse-NOM stronger-NOM whiteness-ACC from
 ḍalika l-ḥiṣaan-i
 that DEF-horse-GEN
 'This horse is whiter than that horse.'
- b. ʔanaa ʔahsan-u ʔistiʕdaadan min ʕaliy-in
 I.SG. better-NOM preparation-ACC from Ali-GEN
 'I am better prepared than Ali.'

Second, a complex comparative is available for all adjectives in MSA. As we have mentioned earlier, almost all adjectives have adjectival *mašdar* counterparts and thus every adjective allows a complex form. Thus, the examples in (22a) and (22b) are possible as alternatives to (21a) and (21b).

21)

- a. haḍa l-mabnaa ʔaṭwal-u min ġair-i-hi
 this DEF-building taller-NOM from others-GEN-it
 'This building is taller than others.'
- b. hey ʔakbar-u min kull-i d-dual-i n-naamiyat-i
 it.SG.F bigger-NOM from all-GEN DEF-countries-GEN DEF-developing-GEN
 'It is bigger than all developing countries.'

22)

- a. haḍa l-mabnaa ʔaktar-u ṭuul-an min ġair-i-hi
 this DEF-building more-NOM tallness-ACC from others-GEN-it
 'This building is taller than others.'
- b. hey ʔaktar-u kubr-an min kull-i d-dual-i
 it.SG.F more-NOM bigness-ACC from all-GEN DEF-countries-GEN
 n-naamiyat-i
 DEF-developing-GEN
 'It is bigger than all developing countries.'⁹²

⁹² This example is taken from the Arabic corpus website <http://arabiccorpus.byu.edu/index.php>. (ʔahraam, 99).

Further important evidence against a periphrasis analysis comes from the fact that MSA complex comparatives can contain not just adjectival *maṣḍars* but also ordinary nouns, as we saw in section 5.2, the predicative examples repeated here as (23):

23)

- a. ʔanaa ʔaktar-u maal-an min-ka
 I.1SG.M/F more-NOM money-ACC from-you.SG.M
 ‘I have more money than you.’

- b. ʔanta ʔahsan-u xuluq-an min-ii
 you.SG.M. better-NOM morals-ACC from-me
 ‘You have better morals than me.’

Complex comparatives with an ordinary noun can be used attributively, as the following illustrate:

24)

- a. qabal-tu rajul-an ʔaktar-a maal-an min-ka
 met-1SG.M/F man-ACC more-ACC money-ACC from-you
 ‘I met a man with more money than you.’

- b. taḥadaṭ-tu maʕa rajul-in ʔaktar-a maal-an min-ka
 spoke-1SG.M/F with man-GEN more-GEN money-ACC from-you
 ‘I spoke to a man with more money than you.’

The examples in (23) and (24) involve the same construction as the examples with an adjectival *maṣḍar* (cf. 4). In both examples, the comparative word selects an accusative complement and a *min*-phrase is licensed. They also appear in attributive positions and then agree with the noun they modify in case and definiteness. To reflect this, we could translate (4b), repeated here as (25), as ‘I have more intelligence than Ali’.

- 25) ʔanaa ʔakthar-u ḍakaʔ-an min ʕali-in
 I.SG.M/F more-NOM intelligence-ACC from Ali-GEN
 ‘I have more intelligence than Ali.’

As we might expect, an adjectival *maṣḍar* and a noun in a complex comparative can be conjoined, as exemplified in (26) below.

26)

a. ʔanaa ʔakṭar-u ɖakaaʔ-an wa maal-an min-ka
 I.1SG.M-F more-NOM intelligence-ACC and money-ACC from-you.SG.M
 ‘I have more intelligence and money than you.’

b. qabal-tu rajul-an ʔakṭar-a ɖakaaʔ-an wa maal-an
 met-1SG.M/F man-ACC more-ACC intelligence-ACC and money-ACC
 min-ka
 from-you.SG.M
 ‘I met a man with more intelligence and money than you.’

Also, the noun can be modified, as shown in the following:

27) ʔanaa ʔakṭar-u kutub-an ʔinglizyyat-an min-ka
 I.1SG.M/F more-NOM books-ACC English-ACC from-you.SG.M
 ‘I have more English books than you.’

It is clear then that we are dealing with a very different construction. I have presented three arguments for this:

- Elements other than *ʔakṭar* (‘more’) can occur in MSA complex adjectival comparatives.
- All adjectives allow a complex adjectival construction.
- Examples with a noun instead of an adjectival *maṣḍar* are the same constructions; examples with the same predicative and attributive uses, and examples where a noun and adjectival *maṣḍar*, can be conjoined.

This suggests that what we have is not a periphrasis but a situation where an independent construction can express the meaning that would be expressed by certain missing forms. So, when the adjective has a gap in its inflectional paradigm, the meaning of comparative can be expressed by independently syntactic constructions. This situation happens in languages; if for some reason no synthetic form exists in the paradigm, then the language usually has a way of

expressing the meaning that would be expressed by the missing forms. The relevant examples for that are English modal auxiliaries, such as *must*⁹³. Consider the following:

- 28)
- a. Kim must go home.
 - b. *Kim musted go home.
- 29)
- a. It was necessary for Kim to go home.
 - b. It is necessary for Kim to go home.
 - c. It will be necessary for Kim to go home.

(28b) shows that the modal *must* does not have a past tense (**musted*). The meaning that (28b) would express if it were grammatical can be expressed by (29a). However, this is clearly not a periphrastic past tense form of *must* but a separate construction because, as (29) shows, it can have a present tense, and future tense, and the same construction can express the meaning that is expressed by (29a). The MSA complex adjectival comparative has a similar status to the construction in (29).

5.3.3 Ordinary Nouns

The MSA complex adjectival comparative appears to be a head-complement structure with a surprising complement: an adjectival *maşdar* instead of an adjective. However, there is evidence that this is not at all surprising. This comes from examples with an ordinary noun instead of the adjectival *maşdar*. When I discussed nominal comparatives in Chapter Three (cf. section 3.3.3.2), we saw that comparative words can also often occur in pre-nominal position and I called this ‘apparent nominal comparatives’. Even though they look like nominal comparatives

⁹³ Spencer and Papova (2009: 204) make the same point with the English model *can*, which is defective and has only a present tense form (and, perhaps, a preterite form *could*). However, it is possible to express infinitive and perfect aspect modalities by means of a construction with the adjective *able*: *to be able*, *has/had been able*. As Börjars, Vincent and Chapman (1997), cited in Spencer and Papova (2009), point out, however, this is not periphrasis. The main argument is that the construction (be) *able* has a full paradigm of its own. Since its meaning covers some of the meaning of *can*, it turns out that some forms of *be able* accidentally correspond to the missing forms of *can*. In other words, ‘a periphrasis is a bona fide element in the paradigm of a lexeme, and is not merely a syntactic expression which just happens to express the meaning of the missing synthetic form’.

on the surface, they are different and should be analyzed as adjectival phrases, rather than nominal phrases. In the previous section, we saw that examples with ordinary nouns involve the same construction as the examples with an adjectival *maşdar*. They appear in predicative and attributive positions (cf. (23) and (24)). In addition, as we saw, an adjectival *maşdar* and a noun in a complex comparative can be conjoined (cf. (26)). Thus, what we have called complex adjectival comparatives are just a special case of a construction in which a comparative adjective takes an accusative nominal complement. The complement may be an adjectival *maşdar* or it may be an ordinary noun. This makes it very clear that we have an independent construction and not a case of periphrasis.

I have translated the examples with an ordinary noun with ‘have’ when used predicatively (cf. 23) and with ‘with’ when used attributively (cf. 24). Examples with an adjectival *maşdar* could be translated in the same way. That is, we could have ‘He has more intelligence’ and ‘a man with more intelligence’ rather than ‘he is more intelligent’ and ‘a more intelligent man’. The same kind of meaning can be expressed with a verb meaning ‘have’ and a preposition meaning ‘with’, as the following show:

30)

- a. ʔanaa ʔamliku maal-an ʔaktar-a min-ka
 I.1SG.M/F have-NOM money-ACC more-ACC from-you.SG.M
 ‘I have more money than you.’

- b. ʔanaa ʔamliku ɖakaaʔ-an ʔaktar-a min-ka
 I.1SG.M/F have-NOM intelligence-ACC more-ACC from-you.SG.M
 ‘I have more intelligence than you.’

31)

- a. rajul-un ʕinda-hu maal-un ʔaktar-u min ʕaliy-in
 man-NOM with-him money-NOM more-NOM from Ali-GEN
 ‘a man with more money than Ali’

- b. rajul-un ʕinda-hu ɖakaaʔ-un ʔaktar-u min ʕaliy-in
 man-NOM with-him intelligence-NOM more-NOM from Ali-GEN
 ‘a man with more intelligence than Ali’

However, the examples in (30) and (31) involve not a complex comparative but an ordinary NP with a noun or adjectival *maṣḍar* modified by an attributive comparative adjective. Thus, they are syntactically quite different from the examples of complex adjectival comparatives that we are concerned with here.

One further point to note here is that essentially any comparative can combine with a noun in a complex comparative. Here are a few relevant examples:

32)

- | | | | | | |
|----|-----------------------------------|-----------------|------------|------|----------|
| a. | ʔanaa | ʔaṭwal-u | qaamat-an | min | ʕaliy-in |
| | I.1SG.M/F | taller-NOM | height-ACC | from | Ali-GEN |
| | ‘I am taller in height than Ali.’ | | | | |
| | | | | | |
| b. | ʔanaa | ʔakbar-u | sinn-an | min | ʕaliy-in |
| | I.1SG.M/F | older-NOM | age-ACC | from | Ali-GEN |
| | ‘I am older in age than Ali.’ | | | | |
| | | | | | |
| c. | ʔanaa | ʔafṣaḥ-u | lisaan-an | min | ʕaliy-in |
| | I.1SG.M/F | more fluent-NOM | tongue-ACC | from | Ali-GEN |
| | ‘I am fluent tongue than Ali.’ | | | | |

Only a small number of comparatives can combine with an adjectival *maṣḍar*, but I assume this is just a matter of semantics; that is, of what makes sense.

It is clear, then, that complex adjectival comparatives in MSA are just a special case of construction in which a comparative adjective takes an accusative nominal complement. It is unsurprising, therefore, that they contain an adjectival *maṣḍar* and not an adjective.

The last point worth mentioning here regards the examples given in (32) above. There, the indefinite accusative NPs *qaamat-an* (‘height’), *sinn-an* (‘age’) and *lisaan-an* (‘tongue’) are

optional and hence they can be omitted⁹⁴. In these cases, however, a simple comparative is used, as shown in (33) below:

33)

- a. ʔanaa ʔaṭwal-u min ʕaliy-in
 I.1SG.M/F taller-NOM from Ali-GEN
 ‘I am taller than Ali.’
- b. ʔanaa ʔakbar-u min ʕaliy-in
 I.1SG.M/F older-NOM from Ali-GEN
 ‘I am older than Ali.’
- c. ʔanaa ʔafṣaḥ-u min ʕaliy-in
 I.1SG. more fluent-NOM from Ali-GEN
 ‘I am more fluent than Ali.’

With simple comparatives, the possessive meaning (i.e. the ‘have’ interpretation) does not arise. So, in a simple comparative, as in (33), the meaning is X is better than Y, whereas in a complex comparative, the meaning is X has better/more of something than Y. Complex comparatives involve two elements, and there is an accusative NP and a possessive meaning. We can have both but we can also have the possessive meaning without the accusative NP, as the following demonstrate:

34)

- a. ṭuul-ii ʔakṭar-u min ṭuul-i ʕaliy-in
 height-my.GEN more-NOM from height-GEN Ali-GEN
 ‘My height is more than Ali’s height.’
- b. sinn-ii ʔakbar-u min sinn-i ʕaliy-in
 age-my.GEN older-NOM from age-GEN Ali-GEN
 ‘My age is older than Ali’s age.’
- c. lisaan-ii ʔafṣaḥ-u min lisaan-i ʕaliy-in
 tongue-my.GEN more fluent-NOM from tongue-GEN Ali-GEN
 ‘My tongue is more fluent than Ali’s tongue.’

⁹⁴ This is normally with related nouns like ‘tall and height’ and ‘old and age’.

As can be seen, we have a comparative adjective and a *min*-phrase but no accusative NP, and this is a simple comparative with an ‘is’ interpretation.

In the next section, I will look at another construction that is broadly similar to complex constructions as it also involves an adjective with nominal complement and a possessive interpretation.

5.4 Adjectival Constructs

MSA complex comparatives are only one type of construction in which an adjective takes a nominal complement. Adjectives with nominal complements also occur in what are known as adjectival constructs (Ryding, 2005:253–4, Al-Sharifi and Sadler, 2009). Adjectival constructs are similar to complex comparatives in that they are APs and are used in the same way as are APs. In fact, they can be predicative, and thus they can appear in copular constructions (i.e. verbal/phonologically empty), and also, they can be used attributively. On the other hand, adjectival constructs and their comparatives differ mainly in the definiteness and case of the nominal complement. This is illustrated in the following:

35)

- | | | | |
|----|---------------------------------|-----------------------------------|-----------------------------|
| a. | l-walad-u
DEF-boy-NOM | ʕaḍiim-u
great.SG.M-NOM | l-ḥaḍḍ-i
DEF-fortune-GEN |
| | ‘The boy is very lucky.’ | | |
| | | | |
| b. | ʔimra-ʔat-un
Woman-F-NOM | jamiil-at-u
beautiful-SG.F-NOM | l-wajh-i
DEF-face-GEN |
| | ‘a woman with a beautiful face’ | | |

The examples in (35) have non-comparative adjectives *ʕaḍiim-u* (‘great’) in (35a) and *Jamiil-at* (‘beautiful’) in (35b), and the nominal complements *l-ḥaḍḍ* (‘the fortune’) in (35a) and *l-wajh* (‘the face’) in (35b) are genitive and definite. However, they seem to have the same basic

structure and essentially the same kind of meaning: ‘have’ when used predicatively; ‘with’ when used attributively. Indeed, similar paraphrases with ‘have’ and ‘with’ are possible:

36)

- a. yamliku l-walad-u ḥaḍḍ-an ʕaḍiim-an
 have.3SG.M DEF-boy-NOM fortune-ACC great-ACC
 ‘The boy has great fortune/is very lucky.’
- b. ʔimraʔ-at-un la-haa wajh-un jamiil-un
 Woman-F-NOM with-her face-NOM beautiful-NOM
 ‘a woman with a beautiful face’

The examples contain an ordinary NP with a noun modified by an attributive adjective.

In addition to the differences in case and definiteness, there are two other differences between complex comparatives and adjectival constructs. Firstly, unlike a complex comparative, the adjective in an adjectival construct shows agreement with the subject in number and gender when predicative, and with the modified noun in number, gender, case and definiteness when attributive. Thus, while the adjective in (35a) is masculine singular, in the following it is feminine plural:

- 37) l-banaat-u ʕaḍiim-aat-u l-ḥaḍḍ-i
 DEF-girls-NOM great-P.F-NOM DEF-fortune-GEN
 ‘The girls are very lucky.’

Similarly, while the adjective in (35b) is feminine, singular and indefinite, in the following it is masculine, plural and definite:

- 38) r-rijaal-u ʔ-ʔawiil-uu l-aqdaam-i
 DEF-men-NOM DEF-long-3P.M.NOM DEF-legs-GEN
 ‘the men with long legs’

Secondly, there is a difference between complex comparatives and adjectival constructs in word order. In complex comparatives, the nominal complement need not be adjacent to the

comparative word. They can be separated by the *min*-phrase. Thus, (39) is an alternative version of (4b):

- 39) ʔanaa ʔaktar-u min ʕaliy-in ɖakaaʔ-an
 I.SG.M/F more-NOM from Ali-GEN intelligence-ACC
 ‘I am more intelligent than Ali.’

In contrast, adjectival constructs require the nominal complement to be adjacent to the adjective and do not allow another complement to intervene between the two.

- 40)
 a. hwa saliim-u ʕ-ʕadr-i min l-ḥasad-i
 he clean-NOM DEF-heart-GEN from DEF-envy-GEN
 ‘He has a heart free from envy.’
 b. *hwa saliim-u min l-ḥasad-i ʕ-ʕadr-i
 he clean-NOM from DEF-envy-GEN DEF-heart-GEN
 ‘He has a heart free from envy.’

The example in (40b) is ungrammatical because the non-comparative adjective *saliim-u* (‘clean’) and its genitive complement, the noun *ʕ-ʕadr-i* (‘the heart’), have been separated by the PP complement *min l-ḥasad-i* (‘from envy’). This is like the situation in nominal constructs, in which a noun has a genitive nominal complement expressing possession and related meanings. As the following examples show, the nominal complement cannot be separated from the noun by some other complement⁹⁵:

- 41)
 a. kitaab-u ʕaliy-in fi n-naḥw-i
 book.NOM Ali-GEN in DEF-syntax-GEN
 ‘Ali’s book about syntax’

⁹⁵ Adjectival constructs are unlike nominal constructs in allowing adjectives to be marked as definite (something seen in (38)). The noun in a nominal construct cannot be marked definite. We have (i) and not (ii).

(i) raʔiis-u l-qism-i
 head-NOM DEF-department-GEN
 ‘the head of the department’
 (ii) *r-raʔiis-u l-qism-i
 DEF-head-NOM DEF-department-GEN

- b. *kitaab-u fi n-naḥw-i ʕaliy-in
 book.NOM in DEF-syntax-GEN Ali-GEN
 ‘Ali’s book about syntax’

Thus, there are some important differences between adjectival constructs and complex comparatives, but they involve broadly similar structures with similar interpretations.

Siloni (2002) notes that adjectival constructs in Hebrew are limited to inalienably possessed nouns (i.e. body part nouns such as eyes, hands, head, etc.). According to her, the example in (42a) with body part nouns is grammatical but (42b) with alienable possessed nouns is not. Consider the following examples from Hebrew⁹⁶:

- 42)
- a. yalda yefat 'eynayim/se'ar
 girl beautiful eyes/hair
 'a girl with beautiful eyes/hair'
- b. * yalda yefat 'ofana'im/mexonit/bayit
 girl beautiful bicycle/car/house
 'a girl with a beautiful bicycle/car/house'
- (Siloni, 2002: 5)

If MSA adjectival constructs were limited in this way, it would be a further difference between complex comparatives and adjectival constructs. This is clearly not true of MSA complex comparatives. Indeed, the following examples suggest that there is no such restriction.

- 43)
- a. ʔana kaṭiir-u l-maal-i
 I-1SG.M/F much-NOM DEF-money-GEN
 ‘I have a lot of money.’

⁹⁶ However, Kremers (2005:10) argues that it is not the case that alienably possessed nouns do not appear in adjectival constructs. Inalienable possession is usually restricted to body part nouns, and as shown in the following examples, non-body part nouns *Oxlusin* (‘population’) and *xulca* (‘shirt’) can easily occur in Hebrew adjectival constructs:

- (i) 'erec [merubat Oxlusin]
 country plentiful population
 ‘A country whose population is big’ (Hazout, 2000: 29)
- (ii) ha- yeled meSubac ha- xulca
 the boy plaid the shirt
 ‘the plaid shirted boy’ (Hazout, 2000: 35, fn 3)

- b. qaabal-tu rajul-an kaṭiir-a l-maal-i
 met-1SG.M man-ACC much-ACC DEF-money-GEN
 ‘I met a man with a lot of money.’

It seems, then, that we do not have a further difference between complex comparatives and adjectival constructs here.

In the next section, I will develop HPSG analyses for complex comparatives and related adjectival constructs, providing lexical descriptions and lexical rules.

5.5 HPSG Analysis

I will now develop analyses for the full range of examples discussed above. All that are really needed are lexical descriptions for the various kinds of adjectives. These obviously need appropriate syntactic and semantic properties. However, I will just consider their syntactic properties. The analysis will make crucial use of a number of lexical rules. All the lexical descriptions will be derived by lexical rules from lexical descriptions for basic adjectives.

Before I provide any analysis, two facts from Chapter Four should be recalled. The first is that the various kinds of adjectives have both predicative and attributive uses. I have assumed that predicative adjectives have a non-empty SUBJ value reflecting the first member of the ARG-ST list and are [MOD *none*], and that attributive adjectives have a value for the MOD feature coindexed with the first member of the ARG-ST list and are [SUBJ $\langle \rangle$]. The following constraint has been proposed to account for the two possibilities for adjectives (cf. 4.3.3).

44)

$$\begin{bmatrix} \text{word} \\ \text{HEAD } \textit{adj} \end{bmatrix} \rightarrow \begin{bmatrix} \text{HEAD } [\text{MOD } \textit{none}] \\ \text{SUBJ } \langle [1] \rangle \\ \text{ARG-ST } \langle [1] \rangle \oplus [2] \end{bmatrix} \vee \begin{bmatrix} \text{HEAD } [\text{MODN}'_{[i]}] \\ \text{SUBJ } \langle \rangle \\ \text{ARG-ST } \langle [i] \rangle \oplus [2] \end{bmatrix}$$

The second fact to recall is that the comparative word *ʔakṭar* ('more') is a type of ordinary adjective since it has the same sort of behaviour as the category and thus can be analyzed as undergoing the same description and lexical rules. The relevant examples are repeated below:

45)

- a. *l-mašaakil-u* *kaṭiir-at-un*
 DEF-problems.F-NOM many-F-NOM
 'The problems are many.'
- b. *l-mašaakil-u* *ʔakṭar-u* *min* *l-furaṣ-i*
 DEF-problems-NOM more-NOM from DEF-opportunities-GEN
 'The problems are more than the opportunities.'

Kaṭiir ('many/much/a lot') in (45a) has just a single argument. *ʔakṭar*, when it appears in a simple comparative as in (45b), has two arguments, while when it appears in a complex comparative, it has three arguments.

5.5.1 Complex Comparatives

I have argued that complex comparatives involve an adjective with a nominal complement, which may be an adjectival *maṣḍar* or an ordinary noun and must be accusative and indefinite. The complement has essentially the same role as the first argument of a basic comparative. I assume, therefore, that adjectives in a complex comparative have an extra argument as the first member of their ARG-ST list, which is the subject if it is predicative or is coindexed with the modified NP if it is attributive. Given these assumptions, *ʔakṭar* ('more') in examples like (4b) and (6a), repeated here for convenience, will have descriptions of the forms in (47).

46)

- a. ʔanaa ʔaktar-u dakaʔ-an min ʕaliy-in
 I.SG.M/F more-NOM intelligence-ACC from Ali-GEN
 ‘I am more intelligent than Ali.’
- b. qaabal-tu rajul-an ʔaktar-a dakaʔ-an min xaalid-in
 met-1SG.M/F man –ACC more-ACC intelligence-ACC from Khalid-GEN
 ‘I met a man more intelligent than Khalid.’

47)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM comp} \end{array} \right] \\ \text{ARG-ST} < \text{NP}, [\text{DEF} -, \text{CASE acc}], \text{PP} [\text{min}] > \end{array} \right]$$

The lexical description in (47) is for the comparative word ʔaktar (‘more’) and also for all comparative adjectives in complex comparatives (e.g. ʔašadd (‘stronger’) and ʔahsan (‘better’)). The description above, again, ignores the MOD, SUBJ and COMPS features as we have seen (cf. section 4.3); the value of the first two will depend on whether the adjective is a predicative or an attributive, while the value of the latter will be identical to the ARG-ST list minus its first element. It specifies that ʔaktar (‘more’) is an adjectival form *comp(arative)*, and it takes two complements: an accusative and indefinite nominal complement and a PP [*min*].

Recall from Chapter Four (cf. section 4.3) that the simple adjective comparative involves the adjectival form *comp(arative)* with a distinctive morphology and a PP[*min*] complement, as follows:

48)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM comp} \end{array} \right] \\ \text{ARG-ST} < \text{NP}, \text{PP} [\text{PFORM min}] > \end{array} \right]$$

If the basic adjective has a specific form of description, and if the complex comparative has a certain form of description, then what we need is a lexical rule to derive one from the other. As

stated earlier, the form of certain descriptions is predictable from the form of other descriptions, and they should not just be listed in the lexicon but should be derived through a lexical rule. The lexical rule I propose here is designed to capture the data presented, and hence, to capture the generalizations.

Therefore, descriptions like (47) can be derived from descriptions like (48) with the following lexical rule (Alsulami, Arnold and Borsley, 2017):

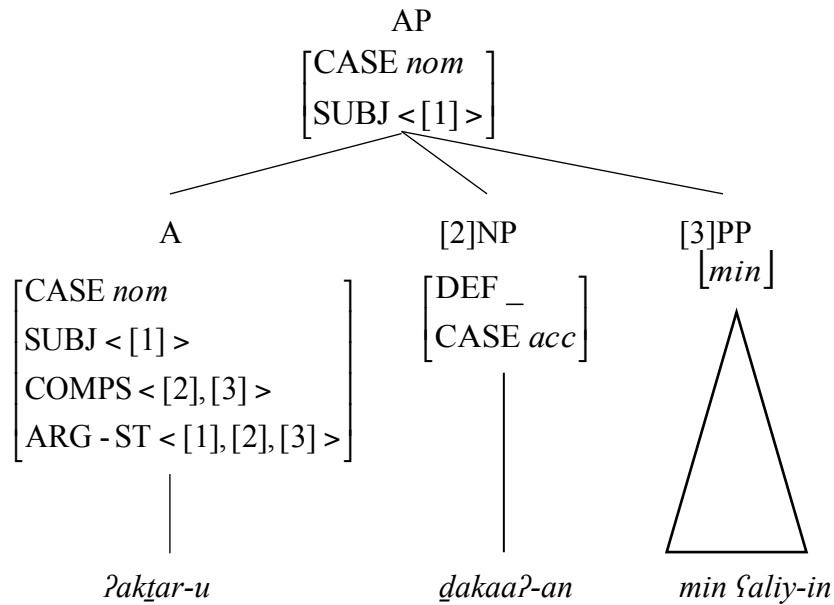
49) Complex Comparatives Lexical Rule

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM } \textit{comp} \end{array} \right] \\ \text{ARG-ST} <[\text{ }_{[i]}] > \oplus [2] \end{array} \right] \mapsto \left[\text{ARG-ST} <\text{NP}> \oplus <[\text{DEF-}, \text{CASE } \textit{acc}]_{[i]} > \oplus [2] \right]$$

As far as the syntax is concerned, this adds an extra argument to the beginning of the ARG-ST list and marks the original initial argument, which is now the second argument, as [DEF –] and [CASE *acc*]. [2] will often contain just PP[*min*] but, where the basic non-comparative adjective has a complement, there will be another member. In a full analysis, the rule will also need to provide an appropriate semantic analysis for the derived adjective. I make the standard assumption that the output is the same as the input, except where specified. This entails that the output in this case is [AFORM *comp*]. Amongst other things, this lexical rule will derive a lexical description for *ʔakṭar* in complex comparatives from the lexical description that it has in simple comparatives like (46b), where it just takes a *min*-phrase complement.

Given a lexical description of the form in (47), the predicative complex comparative in (46a) will have an analysis, which can be represented as follows:

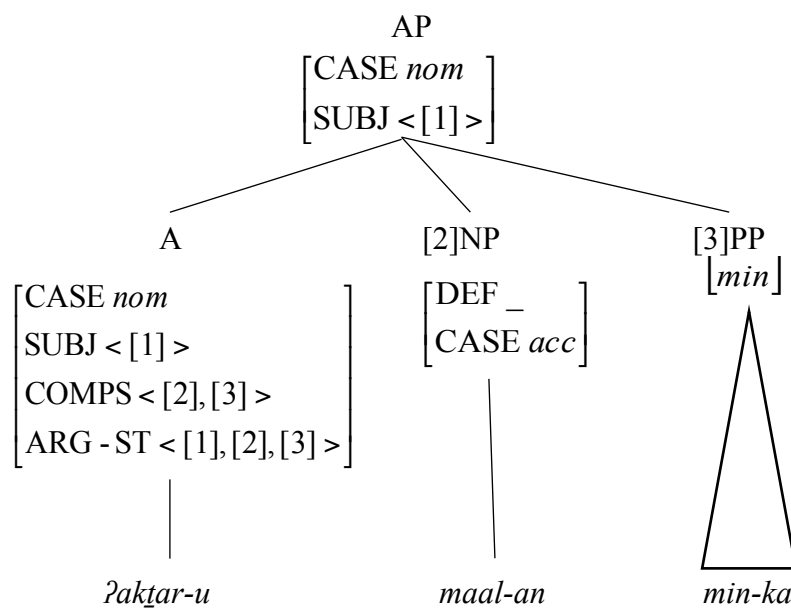
50)



All the predicative complex comparatives will have essentially the same analysis, including those with an ordinary noun. The following analysis is for the predicative example with an ordinary noun in (23a), repeated here as (51):

- 51) ʔanaa ʔaktar-u maal-an min-ka
I.1SG.M/F more-NOM money-ACC from-you.SG.M
'I have more money than you.'

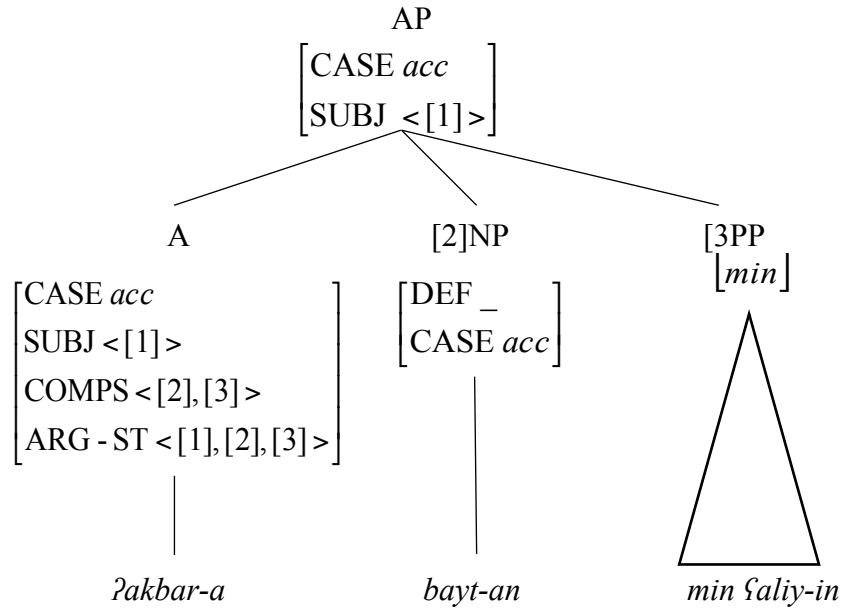
52)



Also, similar examples with other comparative adjectives that are used predicatively, as in (53), can be analyzed with the same structure.

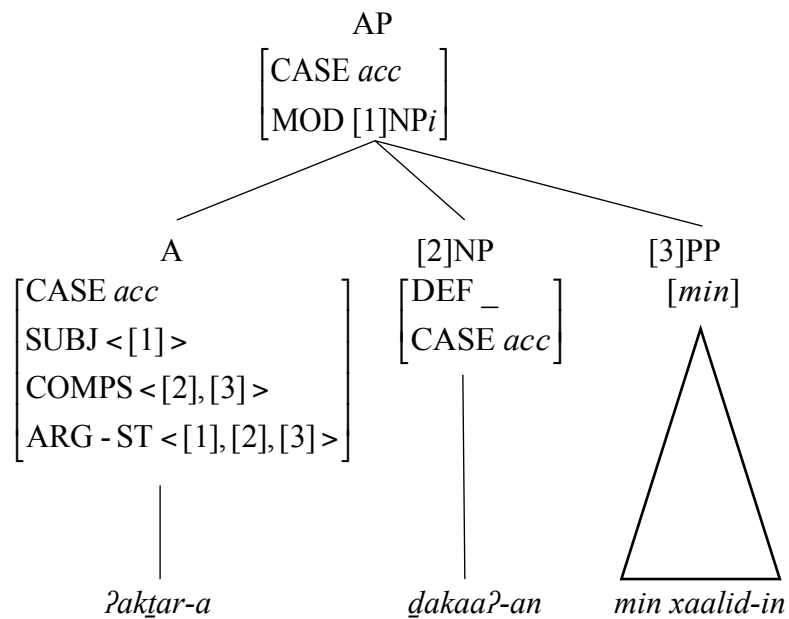
- 53) kun-tu ʔakbar-a bayt-an min ʕaliy-in
 I.was.1SG.M/F bigger-ACC house-ACC from Ali-GEN
 ‘I had a bigger house than Ali.’

54)



The attributive AP in (46b) can be analyzed as follows:

55)



Again, all the earlier examples will have the same analysis, including those with an ordinary noun and with other comparative adjectives⁹⁷. The following analysis is for the attributive example with an ordinary noun in (56a) and with ordinary comparative adjectives in (56b):

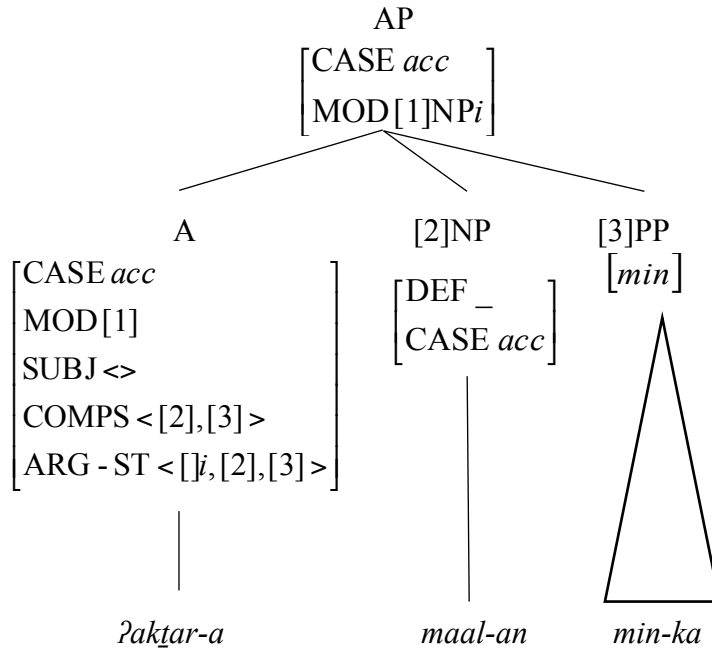
56)

- a. qabal-tu rajul-an ʔaktar-a maal-an min-ka
 met-1SG.M/F man-ACC more-ACC money-ACC from-you
 ‘I met a man with more money than you.’

- b. qabal-tu rajul-an ʔakbar-a bayt-an min ʕaliy-in
 met-1SG.M/F man-ACC bigger-ACC house-ACC from Ali-GEN
 ‘I met a man with bigger house than you.’

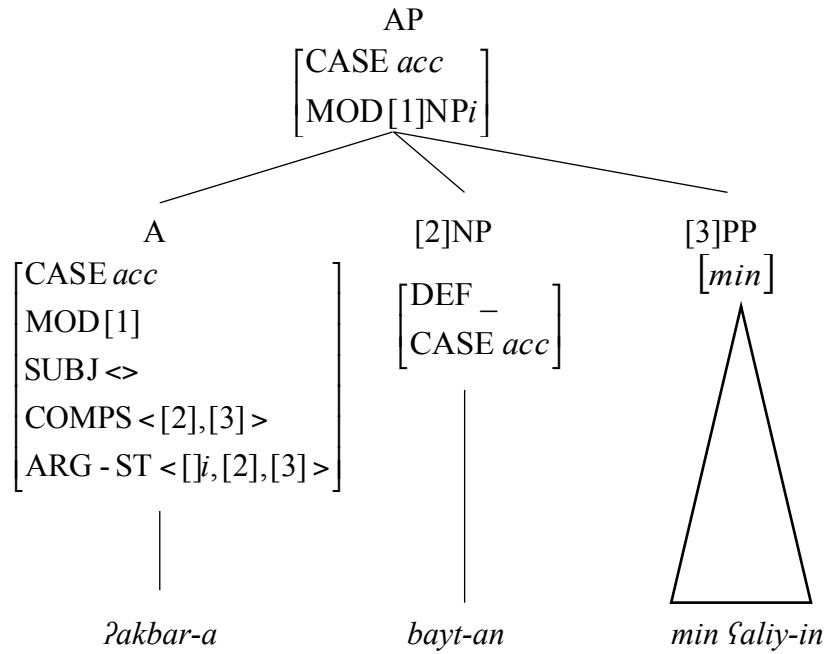
57)

a.



⁹⁷ We assume that adjectival *maşdars* are derived from adjectives by another lexical rule, but we will not consider what form this should take.

b.



5.5.2 Adjectival Constructs

As we have seen, adjective constructs involve an adjective with a nominal complement, which must be genitive and definite. As in complex comparatives, the complement has essentially the same role as the first argument of a basic adjective, and the adjective has an extra argument as the first member of its ARG-ST list. For *ʕaḍīim* in (35a) and *jamiil* in (35b), repeated here as (58), this means lexical descriptions like the following:

58)

- | | | |
|----|---|-----------------------------|
| a. | l-walad-u ʕaḍīim-u
DEF-boy-NOM great-NOM | l-ḥaḍḍ-i
DEF-fortune-GEN |
| | ‘The boy is very lucky.’ | |
| b. | ʔimra-ʔat-un jamiil-at-u
Woman-F-NOM beautiful-NOM | l-wajh-i
DEF-face-GEN |
| | ‘a woman with a beautiful face’ | |

59)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM pos} \end{array} \right] \\ \text{ARG-ST} < \text{NP}, [\text{DEF} +, \text{CASE gen}] > \end{array} \right]$$

Recall from Chapter Three that ordinary adjectives (e.g. *tawiil* ('tall')) have the following description⁹⁸:

60)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM pos} \end{array} \right] \\ \text{ARG-ST} < \text{NP} > \end{array} \right]$$

Descriptions like (59) can be derived from descriptions like (60) by the following lexical rule:

61) Construct Adjective Lexical Rule:

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM pos} \end{array} \right] \\ \text{ARG-ST} < []_{[i]} > \oplus [2] \end{array} \right] \mapsto \left[\text{ARG-ST} < \text{NP} > \oplus < [\text{DEF} +, \text{CASE gen}]_{[i]} > \oplus [2] \right]$$

The lexical rule in (61), which derives construct adjectives from ordinary adjectives, changes the meaning but not the form, adds an extra argument to the beginning of the ARG-ST list and marks the original initial member as [DEF +] and [CASE gen]. [2] will often be the empty list since many adjectives have just a single argument. For those, which have two, the value of COMPS will be non-empty. Obviously, a full analysis also needs to provide the appropriate semantics. Amongst other things, this lexical rule derives a lexical description for *kaṭiir* in (62a),

⁹⁸ Some adjectives have two arguments.

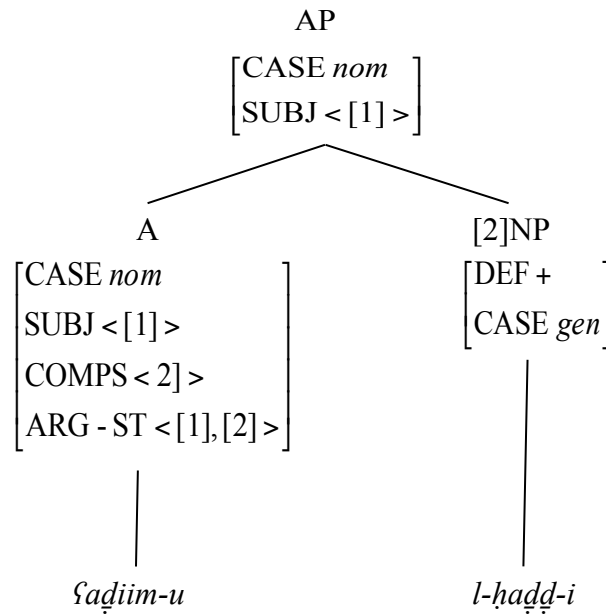
where it heads an adjectival construct, from the lexical description that it has in examples like (62b), where it has no complement.

62)

- a. qaabal-tu rajul-an kaṭiir-a l-maal-i
 met-1SG.M man-ACC much-ACC DEF-money-GEN
 ‘I met a man with a lot of money.’
- b. l-mašaakil-u kaṭiir-at-un
 DEF-problems.F-NOM many-F-NOM
 ‘The problems are many.’

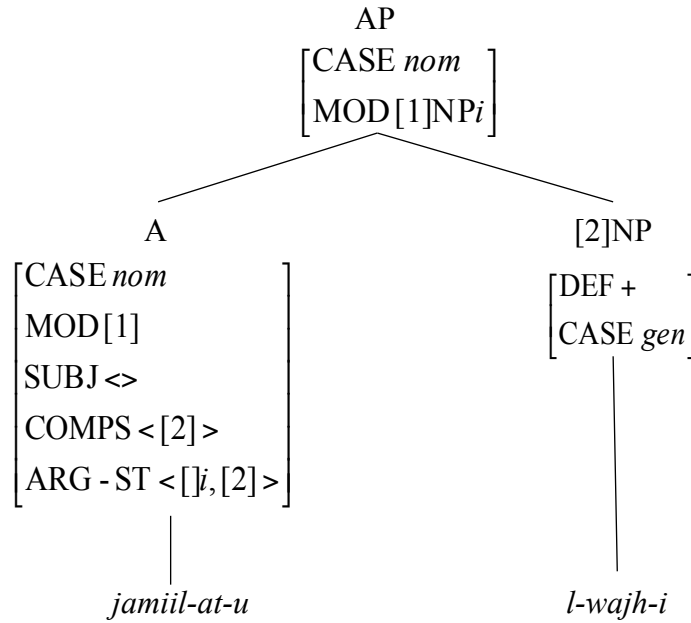
Given a lexical description of the form in (59), the predicative adjectival construct in (58a) will have the following analysis:

63)



For the attributive adjectival construct in (58b), the analysis is as in (64) below:

64)



To ensure that the genitive NP in an adjectival construct is not separated from the preceding adjective (whereas this is possible with the accusative NP in a complex comparative), I suggest that this is a consequence of a linear precedence constraint requiring a genitive NP to precede a phrasal sister⁹⁹. We can state this as follows:

65) NP [CASE *gen*] < XP

This also ensures that genitive NPs in nominal constructs are not separated from the preceding noun.

⁹⁹ The Linear Precedence constraint in (65) rules out any co-occurrence of two genitive NPs within the same constituent. In Arabic, however, we have a construct state in which the possessor is another construct state, as in (i), but they are not sisters.

(i) *ṣadiiq-u* *ṣamm-i* *xaalid-in*
 friend-NOM uncle-GEN Khalid-GEN
 ‘Khalid’s uncle’s friend’

The main place where we can have a couple of phrases as sisters is a complement of a verb, and they are both in accusative case, as shown in (ii).

(ii) *ʔaṣṭai-tu* *xaalid-an* *kitaab-an*
 gave-3SG.M-F Khalid-ACC book-ACC
 ‘I gave Khalid a book.’

The construct adjective lexical rule and the complex comparative lexical rule are obviously quite similar. Both add an extra argument to the beginning of an ARG-ST list and turn the original initial member into the second member so that it is realized as a complement. They differ in whether they apply to [AFORM *pos*] or [AFORM *comp*] adjectives and in whether they require the original initial member of the ARG-ST list to be indefinite and accusative or definite and genitive. It is natural to ask whether the two lexical rules could be combined. In fact, it is not too difficult. They can be combined as follows (Alsulami, Arnold and Borsley, 2017):

66)

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \text{adj} \\ \text{AFORM } [1] \end{array} \right] \\ \text{ARG-ST } <[]_{[2]} > \oplus [3] \end{array} \right] \mapsto \left[\text{ARG-ST } <\text{NP}> \oplus <[\text{DEF}[4]\text{CASE}[5]]_{[2]} > \oplus [3] \right]$$

$$([1] = \text{comp} \ \& \ [4] = _ \ \& \ [5] = \text{acc}) \vee ([1] = \text{pos} \ \& \ [4] = + \ \& \ [5] = \text{gen})$$

Here, we have a rule with an attached disjunctive statement of the possible values of the features AFORM, DEF and CASE. The first disjunct specifies the values for complex comparatives and the second gives the value for construct adjectives. This is quite complex, but it does capture the similarity between the two sets of words.

5.6 Summary

In this chapter, I have developed an HPSG analysis for complex adjectival comparatives in MSA. I showed that MSA complex comparatives are very different from their counterparts in other languages. They involve adjectives with a nominal complement and what can be called a possessive interpretation. The nominal complement may involve an adjectival noun but may also involve an ordinary noun. I argued that complex adjectival comparatives in MSA are not a case

of periphrasis. Instead, they are an independent construction that expresses the meaning that cannot be expressed with a simple comparative in the case of a few adjectives. The evidence for this comes from the fact that elements other than *ʔaktar* can occur in complex comparatives, and all adjectives allow a complex adjectival construction. In addition, examples with a noun instead of an adjectival *maṣḍar* seem to be the same construction. This is shown by examples with the same predicative and attributive uses and examples where a noun and an adjectival *maṣḍar* can be conjoined.

It also showed that MSA complex comparatives are rather like adjectival constructs, which also involve an adjective with a nominal complement and the same kind of possessive interpretation. I have developed HPSG analyses for the two constructions involving lexical rules. I showed, in particular, that a single lexical rule can be formulated to provide for both complex comparatives and adjectival constructs.

Chapter 6 Further Issues

6.1 Introduction

The aim of this chapter is to discuss further issues about MSA comparative constructions that have not been discussed in the previous two chapters. It mainly considers two issues: clausal complements (i.e. the *min*-phrase followed by a clause headed by *maa*) and discontinuity in complex comparative constructions (i.e. contexts in which the PP complements are separated from the head selecting them).

The chapter is structured into three sections. Section 2 is devoted to clausal complements. Section 3 concerns discontinuous NPs in complex comparative constructions. Section 4 summarizes the whole chapter.

6.2 Clausal Comparative CCs

The central issue to be dealt with in this section is the question of whether MSA has a real clausal comparative or just a phrasal comparative with a free relative. I refer to the latter as ‘apparent clausal comparatives’. I will show that MSA has both and will highlight the differences between real clausal comparatives and apparent clausal comparatives. The section is divided into four subsections. In the first subsection, I look briefly at the two previous studies that discuss some aspects of comparative clauses in Arabic, a study by McNabb and Kennedy (2011) about comparative clauses in Palestinian Arabic (henceforth PA) and a brief discussion of comparative construction in MSA provided by Fassi-Fehri (1978). I show that, although these

two studies discuss clausal comparatives, they fail to distinguish between real clausal comparatives and the structure which looks like clausal comparatives. In the second subsection, I discuss the differences between clausal comparatives and apparent clausal comparatives. I also show that there are some sequences that can be either clausal complements or free relatives. Subsection three shows that *maṣḍar* clauses can be used in comparative complement positions as an alternative to ordinary clauses. In the final subsection, I sketch possible analyses of the phenomena and propose some basic structures for each type, but I am not providing a detailed analysis for them.

6.2.1 Previous Studies in Arabic

To my knowledge, the syntax of clausal comparatives in Arabic has been the focus of only two studies. These are developed within the Minimalist framework and related approaches and look at, respectively, the issue of comparatives with *ma* and *illi* in PA (McNabb and Kennedy, 2011) and some examples of comparative constructions including clausal complements headed by *maa* in the context of MSA (Fassi-Fehri, 1978)¹⁰⁰. The aim of this section is to describe some aspects of these two studies that I consider to be relevant to the present work. Given that my work is framed in another theory, I will not enter into the details of the analyses developed in those studies.

In his work on the internal structure of free relatives in MSA, Fassi-Fehri (1978) provides a brief discussion of some aspects of comparative constructions in MSA, drawing on Bresnan's work on English comparatives (Bresnan, 1973 and 1975)¹⁰¹. However, he does not distinguish between

¹⁰⁰ Fassi-Fehri (1978) assumes an early version of the approach, and McNabb and Kennedy (2011) assume more recent versions of the theory (i.e. Minimalism).

¹⁰¹ Bresnan (1973, 1975) proposes the comparative deletion in her analysis of the comparative construction in English. This proposal means that something is deleted from the surface form (e.g. *John ate more donuts than Mary [ate Q donuts]*). In her works the compared element is regarded as an NP, the deep structure of which takes an AP as

real clausal comparatives and what looks like them (i.e. free relatives). In fact, he assumes that comparative constructions involve free relatives and gives the following as examples¹⁰²:

- 1)
- a. *yašrabu* *qahwat-an* *ʔaktar-a* *mi-maa*
 drink. 3SG.M coffee-ACC more-ACC from-what
 tašrabu *maaʔ-an*
 drink.2SG water-ACC
 ‘He drinks coffee more than you drink water.’
- b. *ʔakal-tu* *min* *d-dajaa-j-i* *ʔaktar-a* *mi-maa*
 ate-1SG.M/F from DEF-chicken-GEN more-ACC from-what
 ʔakala *ʔahmad-u* (min l-lahmi-i)
 ate.3SG.M Ahmad-NOM (from DEF-lamb-GEN)
 ‘I ate chicken more than Ahmad ate lamb.’ (Fassi-Fehri, 1978: 66)

He argues that the examples in (1) involve *wh*-movement and are derived in the same way as free relatives and *wh*-questions. Thus, he assumes that *maa* is moved from its canonical position to a Comp position (i.e. Spec CP in present-day terminology). This means that they involve an unbounded dependency. Constructions that involve *wh*-movement/A-movement, for Minimalism and its predecessors, are analyzed in HPSG with the SLASH mechanism, as we will see later.

McNabb and Kennedy (2011) discuss the complements of *min* that are headed by the complementizers *ma* and *illi* (‘that’) in PA, but do not raise the question of whether they are clausal complements or free relatives. The most relevant aspect of their study is the observation that *ma* comparatives and *illi* comparatives display syntactic differences in PA. First, the two constructions involve a different kind of unbounded dependencies. In *ma* comparatives, the

its Specifier, and this Spec further takes a QP in its Spec position. A series of transformations result in the surface NP. The NP then undergoes deletion in the comparative clause under ‘identity’ with the element in the matrix clause. For example, *a taller man* has such a form: [QP *-er much*] [AP tall] [NP a man]. The AP undergoes ‘AP-shift’ to generate the surface form *a taller man*. The comparative deletion then operates on the identical NP in the comparative clause: Kim is [[*-er much tall*] a man] than his father [[~~Q-much tall~~] ~~a man~~].

¹⁰² Later in section 6.2.2, I will argue that *maa* comparatives in such examples are not free relatives, although they look like them. I will show that such structure involves a genuine clausal complement, and provide evidence for that.

relativized position is associated with a gap (2a), while it requires a resumptive pronoun in the *illi* comparative (2b)¹⁰³. The authors are only concerned with object position here¹⁰⁴.

2)

- | | | | | | |
|----|--|---------|---------|--------|-------------------|
| a. | saʕed | ʔakal | baskut | ʔaktar | mi- ma |
| | Saed | ate.3SM | cookies | more | from- that |
| | ʔakl-at (*=o) | | muna | | |
| | Ate-3SG.F (=it.3SG.M) | | Muna | | |
| | ‘Saed ate more cookies than Muna ate.’ | | | | |
| | | | | | |
| b. | saʕed | ʔakal | baskut | ʔaktar | min illi |
| | Saed | ate.3SM | cookies | more | from that |
| | ʔakl-at *(=o) | | muna | | |
| | ate-3SG.F (=it.3SG.M) | | Muna | | |
| | ‘Saed ate more cookies than Muna ate.’ | | | | |
- (McNabb and Kennedy, 2011: 151).

The fact that *illi* comparatives involve resumptive pronominalisation in PA make them similar to indefinite relative clauses. Indeed, indefinite relative clauses — that is, relatives containing an indefinite antecedent and no overt relative complementizer — require a resumptive pronoun in direct object positions in both MSA and other spoken dialects like Hijazi Arabic (HA) (AlQurashi, 2013: 48). The following examples demonstrate this pattern.

¹⁰³ According to McNabb and Kennedy (2011), the sentence in (2a) can be paraphrased as in (i), in which what is compared is the number of cookies eaten. The sentence in (2b) can be paraphrased as in (ii), in which what is compared is whatever was eaten.

(i) Saed ate more cookies than Muna ate.

(ii) Saed ate more cookies than what Muna ate.

¹⁰⁴ Arabic does not allow a gap in the prepositional object positions. So both *maa* and *alladi* would have a resumptive in prepositional object position but two different meanings, as the following demonstrate:

- | | | | | | | |
|------|---|-----------|------|----------------|----------|------------|
| (i) | aliy-un | ʔakala | min | t-tuffaḥi | ʔaktar-a | mi-[maa |
| | Ali-NOM | ate.3SG.M | from | DEF-apples-GEN | more-ACC | from-[what |
| | ʔakl-tu | min-hu | | | | |
| | ate.1SG.M/F | from-it | | | | |
| | ‘Ali ate from the apples more than I ate.’ | | | | | |
| | | | | | | |
| (ii) | aliy-un | ʔakala | min | t-tuffaḥ-i | ʔaktar-a | mi-[allḍi |
| | Ali-NOM | ate.3SG.M | from | DEF-apples-GEN | more-ACC | from-[COMP |
| | ʔakl-tu | min-hu | | | | |
| | ate.1SG.M/F | from-it | | | | |
| | ‘Ali ate from the apples more than (the thing) that I ate.’ | | | | | |

However, the quantifying comparative adjective *ʔaktar* (‘more’) in (i) and (ii) is an adverbial comparative, and thus it has different case from the preceding noun.

- 3)
- a.

wajadtu	kitaab-an	ʔuhib- hu (*__).	(MSA)
found.1.SG	book-ACC	like.1.SG-it (*__)	
'I found a book that I like.'			
- b.

ḥaṣṣalt	kitaab	ʔabgaa- h (*__).	(HA)
found.1.SG	book	want.1.SG-it (*__)	
'I found a book that I like.'			

Another difference between *ma* and *illi* comparatives in PA observed by McNabb and Kennedy (2011) relates to subcomparison (i.e. comparisons of a degree or quantity of two different objects or properties (cf. section 3.3.5.1). *Ma* comparatives in PA allow subcomparisons, as shown in (4).

- 4)

saʕed	ʔakal	baskut	ʔaktar	mi- ma
Saed	ate.3SM	cookies	more	from- that
ʔaklat	muna	moz		
ate.3SF	muna	bananas		
'Saed ate more cookies than Muna ate bananas.'				

(McNabb and Kennedy, 2011: 151)

The example in (4) shows that the number of cookies eaten by *Saʕed* is compared to the number of bananas eaten by *Muna*.

Illi comparatives, by contrast, do not allow subcomparatives. This is shown by the ungrammaticality of (5)¹⁰⁵.

- 5)

*saʕed	ʔakal	baskut	ʔaktar	min illi
Saed ate.3SG.M	cookies	more	from that	
ʔakl-at	muna	moz		
ate-3SG.F	Muna	bananas		
'Saed ate more cookies than Muna ate bananas.'				

¹⁰⁵ This is because free relatives *allaḍi* and *illi* do not allow an adverbial gap. This will be discussed in the apparent clausal comparative's section 6.2.2.1.

Ma comparatives, which do not allow resumptive pronouns (cf. 2a) and involve subcomparatives (cf. 4), are different from free relatives. These differences between Palestinian *illi* comparatives and *ma* comparatives suggest that the examples with *maa* are real clausal complements and the examples with *illi* are free relatives. However, McNabb and Kennedy (2011) do not discuss this issue.

In summary, although McNabb and Kennedy (2011) and Fassi-Fehri (1978) discuss some aspects of clausal comparatives in Arabic, they do not distinguish between real clausal comparatives and what look like clausal complements. Fassi-Fehri (1978) even analyzes them as free relatives. The differences between *ma* and *illi* comparatives in PA, which McNabb and Kennedy (2011) highlight strongly, suggest that *ma* comparatives are clausal comparatives, but not *illi* comparatives.

In what follows, I provide evidence that MSA has both real clausal comparatives and phrasal comparatives with free relatives and highlight the differences between real and apparent clausal complements.

6.2.2 Real Clausal Comparatives

In comparative constructions, *maa* appears in a clause that functions as a complement of the preposition *min*, as exemplified in (6) below:

- 6)
- a. ʕaliy-un ʔaṭwal-u mi-[maa kaana ʔab-u-hu ____]
 Ali-NOM taller-NOM from [what was father-NOM-his ____]
 ‘Ali is taller than his father was ____.’
- b. ʕaliy-un ʔajmal-u mi-[maa kaana ____ saabiq-an]
 Ali-NOM more handsome-NOM from[what was ____ before]
 ‘Ali is more handsome than he was before.’

The complement clause of *min* in (6) is introduced by *maa* and the clause consists of the past tense of the copula verb *kaana* (‘was’), followed by a nominative subject, which is an overt subject *ʔab-u-hu* (‘his father’) in (6a) and a null resumptive pronoun in (6b). *Maa* clausal comparatives always have verb-subject order¹⁰⁶. This is shown by the ungrammaticality of (7) where the subordinate clause has subject-verb order.

- 7) *ʕaliy-un ʔaṭwal-u mi-[maa ʔab-u-hu kaana ____]
 *Ali-NOM taller-NOM from [what father-NOM-his was ____]
 ‘Ali is taller than his father was ____.’

However, when the subject and the verb are embedded under the complementizer *ʔanna* (‘that’), the clause can have subject-verb order. In such cases, as shown in (8), the subject (topic) bears the accusative rather than the nominative case.

¹⁰⁶ *Maa* clausal comparatives are similar to *ʔan* (‘that’) clauses, which are always a verb-initial clause.

8)

- a. ʕali-un ʔaṭwal-u mi-[maa qaal-uu ʔanna
 Ali-NOM taller-NOM from [what said-3P.M that
 ʔab-aa-hu kaana ____]
 father-ACC-his was ____]
 ‘Ali is taller than they said his father was ____.’
- b. ʕali-un ʔawsam-u mi-[maa qaal-uu ʔanna-**hu**
 Ali-NOM more handsome-NOM from [what said-3P.M that-**he**
 kaana____ saabiq-an]
 was ____ before-ACC]
 ‘Ali is more handsome than they said he was ____.’

The complement clause here is an adjectival comparative as it involves an adjectival gap. The gaps in (6) and (8) correspond to the adjectives *ṭawiil* (‘tall’) and *wasiim* (‘handsome’) respectively. Given that resumption appears only in nominal positions¹⁰⁷, the resumption is not possible here in adjectival gaps.

The *maa* comparatives can have an adverbial function, as shown in examples given in (1) (Fassi-Fehri, 1978: 66), repeated here as (9). It is understood that the quantifying comparative adjective following the noun is adverbial and answers the questions of *how often?* and *how much?*, and does not modify the preceding noun.

9)

- a. yaṣrabu qahwat-an ʔaktar-a mi-[maa
 drink.3SG.M coffee-ACC more-ACC from-[what
 taṣrabu maaʔ-an]
 drink.2SG.M water-ACC]
 ‘He drinks coffee more than you drink water.’
- b. ʔakal-tu min d-dajaaj-i ʔaktar-a mi-[maa
 ate-1SG.M/F from DEF-chickens-GEN more-ACC from-[what
 ʔakala ʔahmad-u min l-laḥmi-i]
 ate.3SG.M Ahmad-NOM from DEF-lamb-GEN]
 ‘I ate chicken more than Ahmad ate lamb.’

¹⁰⁷ See, for example, AlQurashi, 2013.

Although the quantifying comparative adjective in (9a) has the accusative case as the preceding noun, it cannot be considered an attributive modifier. In fact, the comparative is understood as adverbial in that it describes how often someone drinks coffee and expresses the comparison meaning in which someone drinks coffee more often than some other individual drinks water. In (9b), it is clear the comparative adjective is not an attributive modifier as it differs in case from the preceding noun. It is adverbial as it answers the question of how often someone eats chicken.

There are at least four reasons to argue that *maa* comparatives in (6) and (9) form types of clausal complements rather than phrasal complements with free relatives, as has been argued in previous studies (cf. Fassi-Fehri, 1978). First, a free relative can be turned into a clausal complement in the same way as any NP complement. The NP in (10a), for example, can be expanded into a clause. Thus, for instance, *mi-maa kaana* NP[NOM] in (10b) can be substituted for *min* NP[GEN].

10)

- | | | | | |
|----|--|-------------|-------------|-----------------|
| a. | qiṣṣat-u | ʕaliy-in | ʔaktar-u | ʔiṭaarat-an |
| | story.F-NOM | Ali-GEN | more-NOM | interesting-ACC |
| | min | qiṣṣat-i | xaalid-in | |
| | from | story.F-GEN | Khalid-GEN | |
| | ‘Ali’s story is more interesting than Khalid’s story.’ | | | |
| | | | | |
| b. | qiṣṣat-u | ʕaliy-in | ʔaktar-u | ʔiṭaarat-an |
| | story.F-NOM | Ali-GEN | more-NOM | interesting-ACC |
| | mi-[maa | kaan-at | qiṣṣat-u | xaalid-in] |
| | from-[what | was-SG.F | story.F-NOM | Khalid-GEN] |
| | ‘Ali’s story is more interesting than Khalid’s story was.’ | | | |

However, *maa* comparatives in (6) and (9) cannot be turned into clauses because they are not complex NPs and therefore cannot appear as subjects in the same way that complex NPs can.

11)

- a. *ʕaliy-un ʔaṭwal-u mi-[maa kaana
 *Ali-NOM taller-NOM from- [what was
 maa kaan ʔab-u-hu]
 what was father-NOM-his]
 ‘Ali is taller than his father was.’
- b. *ya-šrabu qahwat-an ʔaktar-a mi-[maa kaan maa
 *3SG.M-drink (he) coffee-ACC more-ACC from-[what was what
 tašrabu maaʔ-an]
 drink.2SG.M water-ACC]
 ‘He drinks coffee more than you drink water.’

Second, unlike free relatives, an *maa* clausal comparative cannot be replaced by an *allaḍi* type of free relative. This suggests that it is not a free relative and hence it is not a type of NP.

12)

- a. *ʕaliy-un ʔaṭwal-u mi-[allaḍi kaana ʔab-u-hu]
 *Ali-NOM taller-NOM from [COMP was father-NOM-his]
 ‘Ali is taller than his father was.’
- b. *yašrabu qahwat-an ʔaktar-a mi-[allaḍi
 *drink.3SG.M coffee-ACC more-ACC from-[COMP
 tašrabu maaʔ-an]
 drink.2SG.M water-ACC]
 ‘He drinks coffee more than you drink water.’
- c. *ʔakal-tu min d-dajaa-j-i ʔaktar-a mi-[allaḍi
 *ate-1SG.M/F from DEF-chicken-GEN more-ACC from-[COMP
 ʔakala ʔaḥmad-u min l-laḥmi-i]
 ate.3SG.M Ahmad-NOM from DEF-lamb-GEN]
 ‘I ate chicken more than Ahmad ate lamb.’

Third, free relatives do not allow subcomparatives (i.e. which are really adverbial comparatives (cf. 3.3.5.1), because an ordinary free relative would involve either a nominal gap or a resumptive pronoun and nothing else. Thus, the example given in (13) with a free relative *allaḍi* (‘that’) is unacceptable.

- 13) *ʕaliy-un ʔakala mawz-an ʔaktar-a
 Ali-NOM ate.3SG.M banans-ACC more-ACC
 min[alladi ʔakala xaalid-un tuffah-an]
 from-[COMP ate.3SG.M. Khalid-NOM apples-ACC]
 ‘Ali ate bananas more than Khalid ate apples.’

To express a subcomparison meaning with relative clauses, a direct comparison with ordinary relatives, such as (14), must be used.

- 14) ʕaliy-un ʔakala mawz-an ʔaktar-a
 Ali-NOM ate.3SG.M bananas-ACC more-ACC
 min t-tuffah-i alladi ʔakala/hu xaalid-un]
 from DEF-apples-GEN that ate.3SG.M/it Khalid-NOM
 ‘Ali ate bananas more than the (number of) apples that Khalid ate.’

However, *maa* clausal comparatives in MSA allow adverbial comparatives, as illustrated in (15) below:

- 15) ʕaliy-un ʔakala mawz-an ʔaktar-a
 Ali-NOM ate.3SG.M bananas-ACC more-ACC
 min[maa ʔakala xaalid-un tuffah-an ____]
 from-[what ate.3SG.M. Khalid-NOM apples-ACC ____]
 ‘Ali ate bananas more than Khalid ate apples.’

We have seen that MSA does not allow subcomparatives in the same way as English does. In fact, they are just superficially like subcomparatives but are really adverbial comparatives (cf. Section 3.3.5.1). Here, it is worth mentioning that *maa* comparatives in MSA are similar to *ma* comparatives in PA. According to McNabb and Kennedy (2011: 151), *ma* comparatives in PA allow subcomparatives, as shown in (4), repeated here as (16):

- 16) saʕed ʔakal baskut ʔaktar mi-ma
 Saed ate.3SM cookies more from-that
 ʔakl-at (*=o) muna moz
 ate-3SG.F (=it.3SG.M) muna bananas
 ‘Saed ate more cookies than Muna ate bananas.’

This suggests that McNabb and Kennedy's example in (16) above is not a real subcomparative but, it is an adverbial comparative following the noun *baskut* ('cookies'), rather like the following English example (which might be a better translation):

17) 'Saed ate cookies more than Muna ate bananas.'

This, again, shows that they are clausal complements and not free relatives. Indeed, free relatives with an overt nominal in a subordinate clause are unacceptable, as the following demonstrate:

18)

- a. raʔay-tu [maa/alladi ʔakal-at- **hu**/__muna]
 saw-1SG.M/F [COMP ate-3SG.F-**it**/__ Muna]
 '*I saw what Muna ate it __.
- b. *raʔay-tu [maa/alladi ʔakal-at muna *tuffah-an*]
 *saw-1SG.M/F [COMP ate-.3SG.F Muna *apples-ACC*]
 '*I saw what Muna ate apples.'

Further evidence supporting the argument that *maa* comparatives in the examples (6), (9) and (15) are ordinary clausal complements comes from coordinated structures. Free relatives can be conjoined with a simple NP:

- 19) iʃtaray-tu qalam-an wa maa/alladi ʔarad-ta-**hu** / __.
 bought.1SG.M/F pen-ACC and COMP wanted-3SG.M-**it**/__.
 'I bought a pen and what you wanted it.'

As can be seen from the ungrammaticality of example (20), an NP complement cannot be conjoined to a clausal complement.

- 20) *ʕaliy-un ʔaʔwal-u min xaalid-in wa [maa
 *Ali-NOM taller-NOM from Khalid-GEN and [what
 kaana ʔab-u-hu __
 was father-NOM-his __]
 '*Ali is taller than Khalid and his father was __.'

The grammatical version of (20) has to involve conjoined PPs. This is shown in example (21).

21) ʕaliy-un	ʔaṭwal-u	min	xaalid-in	wa	mi-[maa
Ali-NOM	taller-NOM	from	Khalid-GEN	and	from-[what
kaana	ʔab-u-hu ____				
was	father-NOM-his ____]				

It is clear then that *mi-maa* structures in examples (6), (9) and (15) are real clausal complements rather than free relatives. I have presented four arguments for this:

- Examples with an adjectival gap cannot be free relatives since free relatives cannot contain an adjectival gap.
- Examples with subcomparatives or adverbial comparatives cannot be free relatives because free relatives allow only nominal gaps and resumption and nothing else.
- Free relatives but not clausal complements can be turned into clausal complements.
- Free relatives but not clausal complements can be conjoined with a simple NP.

In the next subsection, I will look at structures which look like clausal complements but are in fact best analyzed as phrasal complements with free relatives.

6.2.2.1 Apparent Clausal Comparatives

In the previous section, I have shown that there are some cases where it is clear that *maa* comparatives are ordinary clausal complements. Here, I focus on cases where comparative complements introduced by the complementizers *maa*, *man* and *alladi* are really free relatives and thus form a type of phrasal comparative. I will also show that there are some sequences (only with *maa* comparatives) which display ambiguity and can be analyzed either as clausal complements or free relatives. These structures are presented in the following examples:

22)

- a. ʕaliy-un ʔaṭwal-u mi-[man raʔay-tu- **hu**/ __
 Ali-NOM taller-NOM from-[COMP saw-1SG.M/F- **him**/ __
 lbaariḥat-a]
 yesterday-ACC]
 ‘Ali is taller than (the man/who) I saw yesterday.’
- b. ʕaliy-un ʔaṭwal-u min[alladi raʔay-tu- **hu**/ __
 Ali-NOM taller-NOM from-[COMP saw-1SG.M/F- **him**/ __
 lbaariḥat-a]
 yesterday-ACC]
 ‘Ali is taller than (the man/who) I saw yesterday.’
- c. ʕaliy-un qaraʔa kutub-an ʔaktar-a
 Ali-NOM read.3SG.M books-ACC more-ACC
 min [allati qaraʔ-tu-**haa**/ __]
 from-[COMP read -1SG.M/F-**it** __]
 ‘Ali read more books than (the books that) I read.’
- d. ʕaliy-un qaraʔa kutub-an ʔaktar-a
 Ali-NOM read.3SG.M books-ACC more-ACC
 mi-[maa qaraʔ-tu-**hu**/ __]
 from-[COMP read -1SG.M/F-**it** __]
 ‘Ali read more books than (the books that) I read.’

There are at least four reasons to believe that *min*-comparatives involving the elements *maa*, *man* and *alladi* in (22) should be analyzed as containing a free relative. First, the elements *maa*, *man* and *alladi* are the main types of Arabic free relatives. Typical free relatives are noun phrases and thus they can appear in any NP position. So, they can appear after *min* in comparatives as well as in subjects of the comparative.

23)

- a. maa qul-ta-**hu**/ __ kaan ʔaktar-a ʔiṭaarat-an
 COMP said-2SG.M-**it**/ __ was more-ACC interesting-ACC
 mi-[maa qul-tu-**hu**/ __.]
 from-[COMP said-1SG.M/F-**it**/ __.]
 ‘What you said is more interesting than what I said.’

- b. *alladi* *qul-ta-hu/___* *kaan* *ʔaktar-a* *ʔitaarat-an*
 COMP said-2SG.M-**it**/___ was more-ACC interesting-ACC
 min[*alladi* *qul-tu-hu/___*]
 from-[COMP said-1SG.M/F-**it**/___.]
 ‘What you said is more interesting than what I said.’
- c. *man* *faaza___* *fi s-sibaaq-i* *kaan*
 COMP won.3SG.M___ in DEF-race-GEN was
 ʔasraʕ-a min[*man* *xasira ___*]
 faster-ACC from-[COMP lose.3SG.M___.]
 ‘Who won in the race was faster than (the one) who lose.’
- d. *alladi* *faaza___* *fi s-sibaaq-i* *kaan*
 COMP won.3SG.M___ in DEF-race-GEN was
 ʔasraʕ-a min[*alladi* *xasira. ___*]
 Faster-ACC from-[COMP lose.3SG.M___.]
 ‘Who won in the race was faster than (the one) who lose.’

Free relatives involve either a gap or a resumptive clitic. The comparative complements in the data given in (22) and (23) also contain either a gap or a resumptive clitic. In fact, comparative complements introduced by *maa*, *man* and *alladi* have the same distribution of gap and resumptive clitics that is found in free relative clauses. Consider the following examples:

24) Subject Position:

- a. *ʕaliy-un* *ʔasraʕ-u* mi-[*man* *faaza ___* *fi s-sibaaq-i*]
 Ali-NOM faster-NOM from-[COMP won.3SG.M___ in DEF-race-GEN]
 ‘Ali is faster than (the one) who won in the race.’
- b. *ʕaliy-un* *ʔasraʕ-u* min[*alladi* *faaza ___* *fi s-sibaaq-i*]
 Ali-NOM faster-NOM from [COMP won.3SG.M___ in DEF-race-GEN]
 ‘Ali is faster than (the one) who won in the race.’

25) Direct Object Position:

- a. *ʕaliy-un* *ʔatwal-u* mi-[*man* *raʔay-tu-hu/___* *lbaarihat-a*]
 Ali-NOM taller-NOM from-[COMP saw-1SG.M/F-**him**/___ yesterday-ACC]
 ‘Ali is taller than (the one) who I saw yesterday.’

- b. ʕaliy-un ʔaʔwal-u min[alladi raʔay-tu- **hu**/ __ lbaariḥat-a]
 Ali-NOM taller-NOM from [COMP saw-1SG.M/F-**him**/ __ yesterday-ACC]
 ‘Ali is taller than (the one) who I saw yesterday.’

- c. ʕali-un ishtara kutub-an ʔakthar-a min [allati
 Ali-NOM bought.3SG.M books-ACC more-ACC from-COMP
 ishtaray-tu- **haa**/ __]
 bought -1SG.M/F-**it** __]
 ‘Ali bought more books than what I bought.’

26) Prepositional Object Position:

- a. ʕaliy-un ʔafḍal-u min [man sallam-ta ʕalayi- **hi** lbaariḥat-a]
 Ali-NOM better-NOM from-COMP greeted-2SG.M on- **him** yesterday-ACC
 ‘Ali is better than (the man/who) greeted him yesterday.’
- b. ʕaliy-un ʔafḍal-u mi-[allatdi sallam-ta ʕalayi- **hi** lbaariḥat-a]
 Ali-NOM better-NOM from-COMP greeted-2SG.M on- **him** yesterday-ACC
 ‘Ali is better than (the one) who greeted him yesterday.’

27) Possessor Position

- a. ʕaliy-un ʔafḍal-u min [alladi faaza ʔab-u-hu
 Ali-NOM better-NOM from-COMP won.3SG.M father-NOM-his
 ‘Ali is better than (the one/who) his father won.’
- b. ʕaliy-un ʔafḍal-u mi-[man faaza ʔab-u-hu
 Ali-NOM better-NOM from-COMP won.3SG.M father-NOM-his
 ‘Ali is better than (the one/who) his father won.’

In subject positions (cf. 24), there is a phonologically empty resumptive pronoun. In direct object positions (25), resumptive pronouns are optional. Finally, in prepositional object positions (26) and possessor positions (27), resumptive pronouns are obligatory.

The examples with free relatives given above will have related examples with ordinary relatives (i.e. with an antecedent). For illustration, see the following:

28)

- a. ζ aliy-un $\text{?asra}\zeta$ -u min l-wald-i alladi faaza ____
 Ali-NOM faster-NOM from DEF-boy-GEN COMP won.3SG.M ____
 fi s-sibaaq-i]
 in DEF-race-GEN]
 ‘Ali is faster than the boy who won in the race.’
- b. ζ aliy-un ištara kutub-an $\text{?ak}\zeta$ tar-a min l-kutub-i
 Ali-NOM bought.3SG.M books-ACC more-ACC from DEF-books
 allati ištara-tu -haa/ ____]
 COMP bought -1SG.M/F-it ____]
 ‘Ali bought more books than the books that I bought.’

In comparative complement positions, *maa man* and *alladi* free relatives can be turned into a clausal complement in the same way as any NP complement.

29)

- a. ζ aliy-un $\text{?a}\zeta$ wal-u mi-[maa kaana man
 Ali-NOM taller-NOM from-[COMP was COMP
 ra ?ay -tu- **hu** lbaariḥat-a ____]
 saw-1SG.M/F- **him** yesterday-ACC ____]
 ‘Ali is taller than (the one/who) I saw yesterday was.’
- b. ζ aliy-un $\text{?a}\zeta$ wal-u mi-[maa kaana alladi
 Ali-NOM taller-NOM from-[COMP was COMP
 ra ?ay -tu- **hu** lbaariḥat-a ____]
 saw-1SG.M/F- **him** yesterday-ACC ____]
 ‘Ali is taller than (the one/who) I saw yesterday was.’

A related example with an ordinary relative is shown in (30) below:

- 30) ζ aliy-un $\text{?a}\zeta$ wal-u mi-[maa kaana l-walad-u alladi
 Ali-NOM taller-NOM from-[COMP was DEF-boy-NOM COMP
 ra ?ay -tu- **hu** lbaariḥat-a ____]
 saw-1SG.M/F- **him** yesterday-ACC ____]
 ‘Ali is taller than the boy I saw yesterday was.’

Another piece of evidence, as mentioned earlier, is that free relatives can be conjoined with simple NPs:

31)

- a. ζ aliy-un $\text{ʔasra}\zeta$ -u min xaalid-in wa [man/alladi
 Ali-NOM faster-NOM from khalid-GEN and [COMP
 faaz fi s-sibaaq-i]
 won.3SG.M in DEF-race-GEN]
 ‘Ali is faster than Khalid and (the one) who won in the race.’
- b. ζ aliy-un $\text{ʔa}\text{t}\text{wal}$ -u min xaalid-in wa [man/alladi ra ʔay -tu- **hu**/]
 Ali-NOM taller-NOM from khalid-GEN and [COMP saw-1SG.M/F- **him**/]
 ‘Ali is taller than Khalid and (the one) who I saw.’

It is clear then that if the comparative complements are introduced by *man* and *allathi*, the structure is a noun phrase, which is a free relative.

However, the examples with *maa* comparatives, which have nominal gaps, as in (22), repeated here as (32), can be either clausal complements or phrasal complements.

- 32) ζ ali-un qara ʔa kutub-an ʔaktar -a
 Ali-NOM read.3SG.M books-ACC more-ACC
 mi-[maa qara ʔ -tu]
 from-[COMP read -1SG.M/F]
 ‘Ali read more books than I read.’

The *Maa* comparative in (32) can be either a real clause in that it allows subcomparatives (i.e. adverbial comparatives) (cf. (33a)), or it can be a noun phrase in which it allows resumption (cf. (33b)).

33)

- a. ζ aliy-un qara ʔa kutub-an ʔaktar -a
 Ali-NOM read.3SG.M books-ACC more-ACC
 mi-[maa qara ʔ -tu majalla-aat-in]
 from-[COMPread -1SG.M.F magazines-P.F-ACC¹⁰⁸]
 ‘Ali read books more than I read magazines.’

¹⁰⁸ The ACC case of indefinite plural feminine is ‘-in’, which is identical to the GEN case.

- b. ʕaliy-un qaraʔa kutub-an ʔakṭar-a
 Ali-NOM read.3SG.M books-ACC more-ACC
 mi-[maa qaraʔ-tu-**hu**]
 from-[COMPread -1SG.M/F-it]
 ‘Ali read more books than (the books that) I read.’

The previous discussion leads to the conclusion that MSA has both ordinary clausal comparatives and phrasal comparatives with free relatives. In addition, it has been shown that *maa* comparatives with nominal gaps can be either clausal or phrasal complements.

In the next section, I show that MSA comparatives do not only have ordinary clauses, but they also have *maṣḍar* clauses.

6.2.3 *Maṣḍar* Clauses

Maṣḍar clauses can be used in comparative complement positions as an alternative to ordinary clausal complements. In fact, *maa* in clausal comparatives is known in traditional Arabic grammar as *maa maṣḍariya*, which is a complementizer introducing a finite clause. It is called ‘*maṣḍariya*’ because both *maa* and the verb can be replaced by a verbal *maṣḍar* (VM) (i.e. verbal noun), carrying the same meaning of the original verb, but devoid of a time frame. As has been mentioned in section 3.3.2.1, VMs are nominal but they show both verbal and nominal properties. Indeed, they take two arguments: a subject in a genitive case and an accusative object. The former is a nominal property and the latter is a verbal property¹⁰⁹. Thus, the *maṣḍar* clauses in (35) can replace the ordinary clausal complements in (6), repeated as (34).

¹⁰⁹ There are some cases of VMs which are more like nouns. For example, the VM *takriim* (‘honouring’) in (i) is an ordinary nominal. It has a nominal complement in a genitive case and it is modified by an adjective.

(i) qiraaʔa-t-u l-kitaab-i mumtiʕa-t-un
 reading-F-.NOM DEF-book-GEN fun-F-.NOM
 ‘Reading of the book is fun.’

In verbal cases, it retains at least one important verbal property. It assigns accusative case to its object, as the following demonstrate (cf. 3.3.2.1):

34)

- a. ʕaliy-un ʔaṭwal-u mi-[*maa kaana* ʔab-u-hu ____]
 Ali-NOM taller-NOM from [what was father-NOM-his ____]
 ‘Ali is taller than his father was ____.’
- b. ʕaliy-un ʔawsam-u mi-[*maa kaana* ____ saabiq-an]
 Ali-NOM more handsome-NOM from [what was ____ before]
 ‘Ali is more handsome than he was before.’

35)

- a. ʕaliy-un ʔaṭwal-u min [(*Kawn-i*) ʔab-i-hi *ṭawiil-an]
 Ali-NOM taller-NOM from [being-GEN] father-GEN-his *tall-ACC]
 ‘Ali is taller than his father was ____.’
- b. ʕaliy-un ʔawsam-u min [(*Kawn-i*)-hi *wasiim-an saabiq-an]
 Ali-NOM taller-NOM from [being-GEN-him *handsome-ACC before]
 ‘Ali is more handsome than he was ____ before.’

In (35), the copular *maṣḍar* has the GEN case, as it heads the object of the preposition *min*. In (35a), *ʔab-i-hi* (‘his father’) bears genitive case but functions as a subject and the clitic *-hi* (‘he’) realizes the subject of the copular *maṣḍar* in (35b). We have seen that in ordinary clausal complements, the deletion of the adjective in the second clause is obligatory (cf. 3.3.5.2). In (35), the appearance of the adjective, which is the object of the copular *maṣḍar*, *ṭawiil-an* (‘tall’) and *wasiim-an* (‘handsome’), is not permitted, thus the phrase involves a gap and hence it shows a similarity with ordinary clauses.

The *maṣḍar* of the copular in this position is optional as indicated by the brackets, and thus it can be omitted. Then, the comparative will be a phrasal rather than a clausal, as shown in (36).

-
- (ii) qiraaʔat-u-ka l-kittab-a ʔaʕjab-at-nii
 reading.F-NOM-2SG.M DEF-book-ACC impressed-F-me
 ‘Your reading of the book impressed me.’

This is similar to English gerunds (–ing forms). There are nominal cases, e.g. *his careful reading of the book*, and verbal cases, e.g. *he is reading the book carefully*.

36)

- a. ʕaliy-un ʔaṭwal-u min ʔab-i-hi
 Ali-NOM taller-NOM from father-GEN-his
 ‘Ali is taller than his father.’
- b. ʕaliy-un ʔawsam-u min-hu saabiq-an]
 Ali-NOM more handsome-NOM from-he before-ACC]
 ‘Ali is more handsome than he was before.’

An optional copular *mašdar* can also be found in subcomparatives (or adverbial comparatives), as shown in the following example:

- 37) ʕaliy-un ɖakiyy-un ʔaktar-a min [(Kawn-i)
 Ali-NOM clever-NOM more-ACC from [being-GEN]
 ʔab-i-hi wasiim-an]
 father-GEN-his handsome-ACC]
 ‘Ali is clever more than his father is handsome.’

In adverbial comparatives, other VMs can occur, as shown in (38) below:

38)

- a. yašrabu qahwat-an ʔaktar-a min
 drink. 3SG.M coffee-ACC more-ACC from-
 šurb-i-ka ____.
 drinking-GEN-2SG.M ____.
 ‘He drinks coffee more than you do ____.’
- b. qaraʔ-tu kutub-an ʔaktar-a min
 read-1SG.M/F books-ACC more-AC from
 qiraaʔat-i xaalid-in ____.
 reading-GEN Khalid-GEN ____.
 ‘I read more books than Khalid does ____.’

The subcomparative examples are as follows:

39)

- a. yašrabu qahwat-an ʔaktar-a min
 drink. 3SG.M coffee-ACC more-ACC from-
 šurb-i-ka maaʔ-an
 drinking-GEN-your water-ACC
 ‘He drinks coffee more than your drinking water.’

- b. qraʔ-tu kutub-an ʔaktar-a min
 read-1SG.M/F books-ACC more-AC from
 qiraaʔat-i xaalid-in šuḥuf-an
 reading-GEN Khalid-GEN newspapers-ACC
 ‘I read books more than Khalid’s reading newspapers.’

In (38a), the VM *shrub* (‘drinking’) has a clitic *ka* (‘your’), which is interpreted as the subject of the *mašdar*, and the object (**qahwat-an*) (‘coffee’) is omitted, which is obligatory in ordinary clausal comparatives¹¹⁰. In (38b), *xaalid-in* (‘Khalid’) is the subject of the VM *qiraaʔat-i* (‘reading’) and the object *kutub-an* (‘books’) is deleted as well. In (39), however, the verbal feature of the *mašdar* is more obvious: the subcompared object is overt, so the VM has an accusative object, which is *maaʔ-an* (‘water’) in (39a) and *šuḥuf-an* (‘newspapers’) in (39b).

It is worth mentioning that *mašdar* clauses are common in MSA and occur as alternatives to ordinary clauses in different contexts other than comparative complement positions. For example, some modal verbs like *ʔaštāʔiiʕu* (‘can’) and lexical verbs like *ḥawal* (‘try’) allow both an ordinary clause and a *mašdar* clause (Althawab, 2014). Consider the following:

- 40)
- a. taštāʔiiʕu ʔan taḍhaba
 can.2SG.M that go.2SG.M
 ‘You can go.’
- b. taštāʔiiʕu ḍ-ḍahaab-a
 can.2SG.M DEF-going-ACC
 ‘You can go.’
- 41)
- a. ḥawal-tu ʔan ʔatasallaqa š-šajar-t-a
 tried-1SG.M/F. that climb.1SG.M/F DEF-tree-F-ACC
 ‘I tried to climb the tree.’

¹¹⁰ In Chapter Three (section 3.3.5.2) we have discussed the obligatory reduction rules in comparative clauses. However, here I am not concerned with the reduction of comparative clauses, and thus I will not be discussing this issue further.

- b. ḥawal-tu tasalluq-a š-šajar-t-i
 tried-1SG.M/F climbing- ACC DEF-tree-F-GEN
 ‘I tried climbing of the tree.’

In (40) and (41), the ordinary clauses which are introduced by the complementizer *ʔan* (‘that’)¹¹¹ are turned into *mašdar* clauses. This shows that ordinary clauses and *mašdar* clauses are indeed mostly interchangeable and that any one of them can normally replace the other.

From the data given so far, it is quite clear that *mašdar* clauses in comparative complements are similar in important respects to ordinary clauses. There is more evidence showing the similarities. First, both structures require a subject and an accusative object. Thus, in (42) below, the verb *tašrabu* (‘drink’) in the second clause has two arguments: the subject, which is a null resumptive pronoun, and the accusative object *maaʔ-an* (‘water’). Similarly, in (43), the VM *šurb* (‘drinking’) has, as previously noted, a clitic *ka* (‘your’), which is interpreted as the subject of the *mašdar* and the accusative object *maaʔ-an* (‘water’).

42) Ordinary clauses:

yašrabu	qahwat-an	ʔaktar-a	mi-[maa
drink.3SG.M	coffee-ACC	more-ACC	from-[what
tašrabu	maaʔ-an]		
drink.2SG.M	water-ACC]		
‘He drinks coffee more than you drink water.’			

43) *Mašdar* clauses

yašrabu	qahwat-an	ʔaktar-a	min
drink. 3SG.M	coffee-ACC	more-ACC	from-
šurb-i-ka	maaʔ-an		
drinking-GEN-2SG.M	water-ACC		
‘He drinks coffee more than your drinking water.’			

¹¹¹ The complementizer *ʔan* is known in the literature as *ʔan mašdariya* and it differs from the complementizer *maa mašdariyah* in that the former introduces the non-finite clause whereas the latter introduces the finite clause.

Second, in some cases both constructions involve a gap corresponding to the compared NP in the main clause. Consider the following examples:

44) Ordinary clauses:

yaqraʔu	kutub-an	ʔaktar-a	mi[maa	taqraʔu ____]
read.3SG.M	books-ACC	more-ACC	from-[what	read.2SG.M ____]

‘He reads books more than you do.’

45) *Maṣḍar* clauses

yaqraʔu	kutub-an	ʔaktar-a	min	qiraaʔat-i-ka ____]
read.3SG.M	books-ACC	more-ACC	from	reading-GEN-2SG.M ____]

‘He reads books more than your reading __.’

In both (44) and (45) above, involving respectively an ordinary clausal complement and a *maṣḍar* clausal complement, the object of the clausal complement is absent.

There are a couple of ways in which *maṣḍar* clauses differ from ordinary clauses. Thus, *maṣḍar* clauses are not introduced by *maa* and they have a genitive subject rather than a nominative subject.

46) Ordinary clauses:

ʕaliy-un	yaṣrabu	qahwat-an	ʔaktar-a	mi-[maa
Ali-NOM	drink. 3SG.M	coffee-ACC	more-ACC	from-[what
yaṣrabu	xaalid-un	maaʔ-an]		
drink	Khalid-NOM	water-ACC]		

‘Ali drinks coffee more than Khalid drinks water.’

47) *Maṣḍar* clauses

ʕaliy-un	yaṣrabu	qahwat-an	ʔaktar-a	min
Ali-NOM	drink. 3SG.M	coffee-ACC	more-ACC	from
ṣrub-i	xaalid-in	maaʔ-an]		
drinking-GEN	Khalid-GEN	water-ACC]		

‘Ali drinks coffee more than Khalid’s drinking water.’

Similar to other contexts where the two structural patterns (i.e. *ʔanna* clause and *maʃdar* clause) are possible, *maʃdar* clauses do not involve complementizers (cf. the examples (40) and (41)).

In the next section, I will sketch possible analyses for ordinary clausal comparatives and *maʃdar* clauses by proposing some basic structures for each type.

6.2.4 Some Structures

In this section, I will present some structures for clausal comparatives. Before I do so, however, I need to say something about the SLASH feature. MSA clausal comparatives, as have been seen in previous sections, involve a gap (i.e. either adjectival, nominal or adverbial), and thus they are considered as a type of unbounded dependency construction (UDC). The HPSG approach to UDCs involves the feature SLASH, which is a set-valued feature encoding elements that are missing in UDCs¹¹². Some early HPSG assumed that gaps and resumptives involve different mechanisms. However, Alotaibi and Borsley (2013) provide evidence from coordination in MSA, suggesting that resumptive pronouns involve the same SLASH mechanism as gaps¹¹³.

An unbounded dependency can be divided into three distinct parts: a bottom, a middle and a top. The bottom of the dependency is where the dependency (i.e. the gap or the resumptive pronoun) is introduced, the middle of the dependency is where it is passed from daughter to mother up the tree and the top of the dependency is where the dependency is discharged or bound off (i.e. the SLASH feature appears on the daughter but not its mother) (Pollard and Sag, 1994: 160). In the middle of the unbounded dependency, the feature SLASH makes certain information about gaps

¹¹² For more details on HPSG's SLASH feature approach see Borsley, 2012.

¹¹³ It is widely assumed that differences between gaps and resumptives in respect to island constraints suggest that they involve different mechanisms. However, it has been argued that such differences are the result of processing difficulties and not of grammatical restrictions. Thus, they assume that both resumptives and gaps are the realization of SLASH, rather than assuming a separate feature (for more details, see Borsley's 2010 and 2013 analyses of Welsh UD's and Alotaibi and Borsley's 2013 analysis of Arabic UD's).

available higher and lower in the structure in accordance with the SLASH Amalgamation Constraint, which we can formulate as follows (after Ginzburg and Sag, 2000: 169):

48) SLASH Amalgamation Principle:

$$word \rightarrow / \left[\begin{array}{l} \text{SLASH } \{[1] \cup \dots \cup [n]\} \\ \text{ARG-ST } <[\text{SLASH } \{[1]\}], \dots, [\text{SLASH } \{[n]\}] > \end{array} \right]$$

The principle in (48) states that a SLASH value of a word is identified by default with the combined SLASH values of its arguments. Therefore, if an argument has a non-empty SLASH value, then the head which selects it also has a non-empty SLASH value. By contrast, if an argument has an empty SLASH value, then the head itself must have an empty SLASH value. The SLASH Amalgamation Principle is a default constraint to accommodate examples like relative clauses, as in (49):

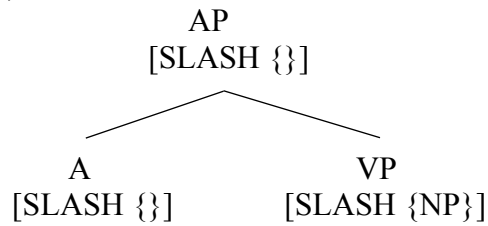
- 49) jaaʔa allḍi faaza ____ fi l-musaabaqat-i
 came.3SG.M COMP won.3SG.M ____ in DEF-competition-GEN
 ‘The one that won in the competition came.’ (AlQurashi, 2012: 8)

According to AlQurashi (2012), the free relative *allḍi* in (49) has an empty SLASH value. This prevents the SLASH value of the internal clause from passing any further up the tree. This is also similar to the English adjective *easy*, as in the following example:

- 50) Kim is [_{AP} easy [_{VP} to impress ____].]

The adjective *easy* in (50) takes the infinitival complement *to impress* with a non-empty SLASH feature but should not have a non-empty SLASH feature itself since the complement is the top of the dependency. The AP here has the following structure:

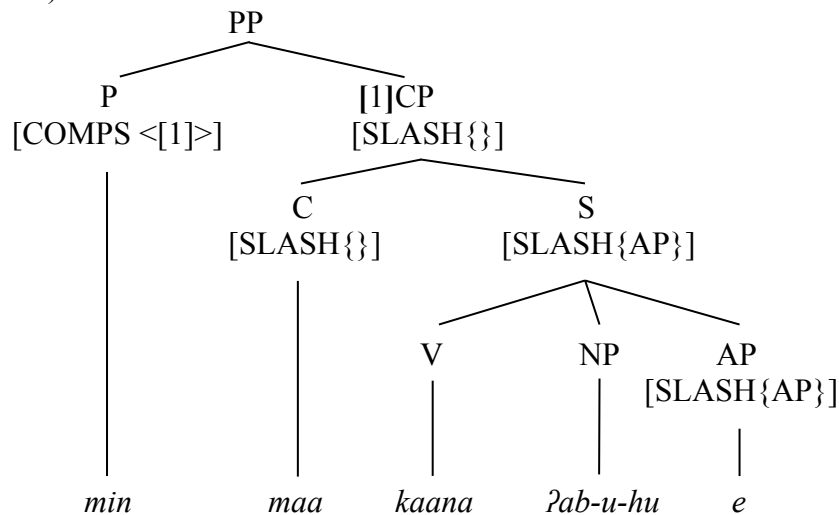
51)



The treatment of *maa* in clausal comparatives is similar to that of free relatives and the English adjective *easy*. The *maa* comparative selects a clausal complement missing either an AP or an NP (i.e. it is either [SLASH {AP}] or [SLASH {NP}]) and in some cases AdvP (i.e. [SLASH {AdvP}]). The *maa* clausal complement in (52) will have something like the following structures:

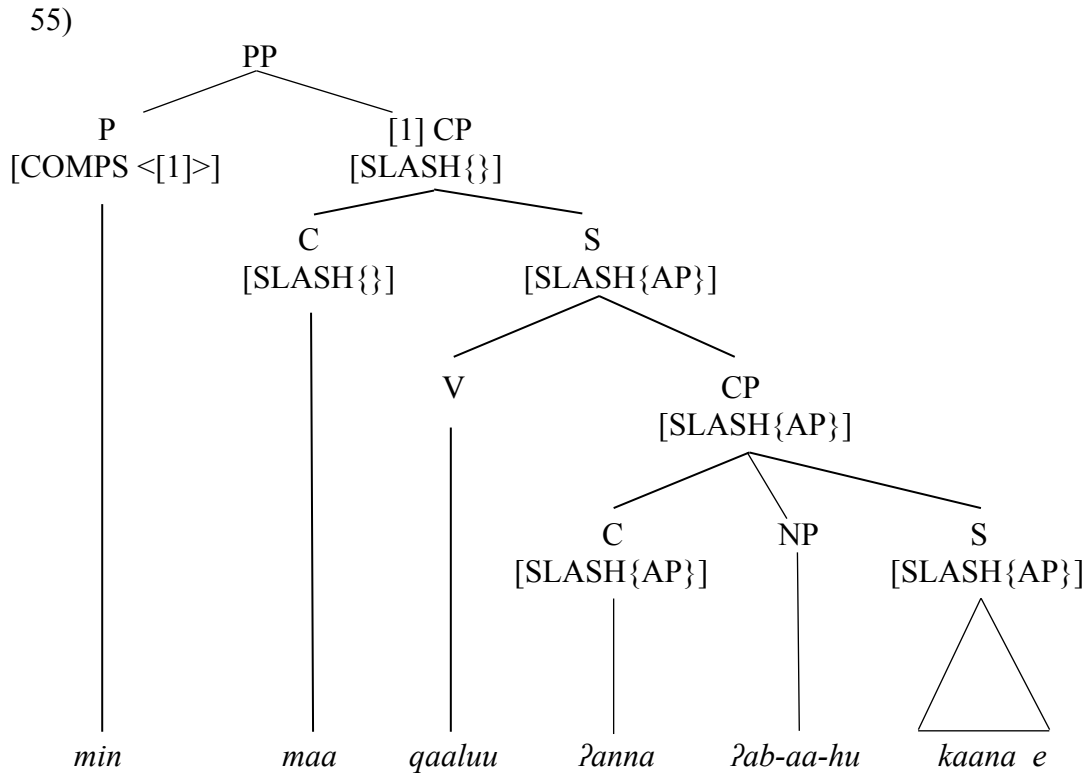
- 52) ʕaliy-un ʔaʔwal-u mi-[maa kaana ʔab-u-hu ____]
 Ali-NOM taller-NOM from [what was father-NOM-his ____]
 ‘Ali is taller than his father was ____.’

53)



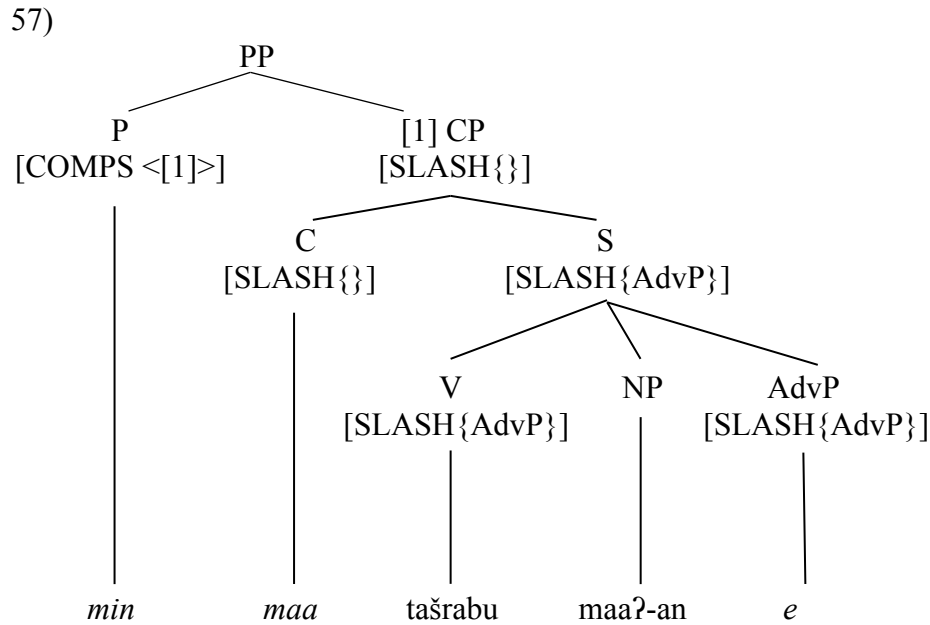
An adjectival gap within an embedded clause under *ʔanna* (54) would have the structure in (55).

- 54) ʕaliy-un ʔaṭwal-u mi-[maa qaal-uu ʔanna
 Ali-NOM taller-NOM from [what said-3P.M that
 ʔab-aa-hu kaana ____]
 father-ACC-his was ____]
 ‘Ali is taller than they said his father was ____.’



An adverbial gap in subcomparative cases like the one in (56) will have the structure given in (57).

- 56) yaṣrabu qahwat-an ʔaktar-a mi-[maa
 drink.3SG.M coffee-ACC more-ACC from-[what
 taṣrabu maaʔ-an ____]
 drink.2SG.M water-ACC ____]
 ‘He drinks coffee more than you drink water ____.’

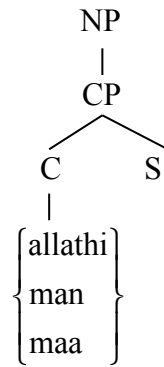


However, it is not clear what ensures that the value of SLASH contains AP in (53) to (55) and not NP or something else. Also, it is not clear what determines that the SLASH value in (57) is AdvP and nothing else. This is an issue that we would consider if we were developing a detailed analysis, and thus, it will be left for further research¹¹⁴.

Free relative comparatives, however, involve rather different structures. Following AlQurashi's analysis (2012), free relatives are NPs that consist just of one daughter, which is a CP, as shown in (58) below:

¹¹⁴ Although I give some reasonable structures, providing a satisfactory analysis is difficult. The main challenge is to get the right sort of gap and hence the value of SLASH. In fact, the element that determines the value of SLASH is not in the immediate context. Given that HPSG deals with mothers, daughters and sisters, a real analysis will be a problem, and to solve this problem we need a combined analysis with semantics.

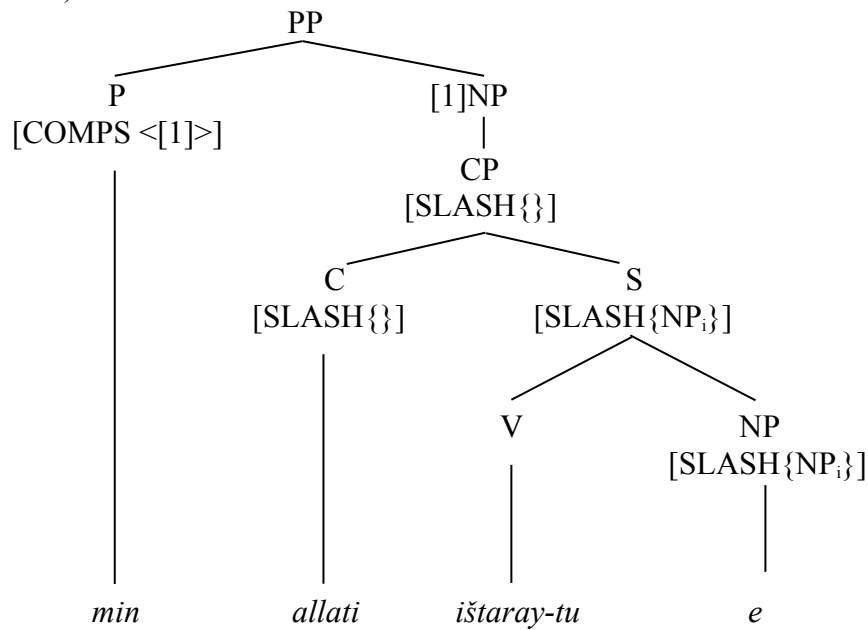
58)



Then, the free relative comparatives in (59) have the following structure:

- 59) ʕaliy-un ištara kutub-an ʔaktar-a min [allati
 Ali-NOM bought.3SG.M books-ACC more-ACC from-COMP
 ištara-y-tu-**haa**/ __.]
 bought -1SG.M/F-it / __.]
 ‘Ali bought more books than (the books that) I bought.’

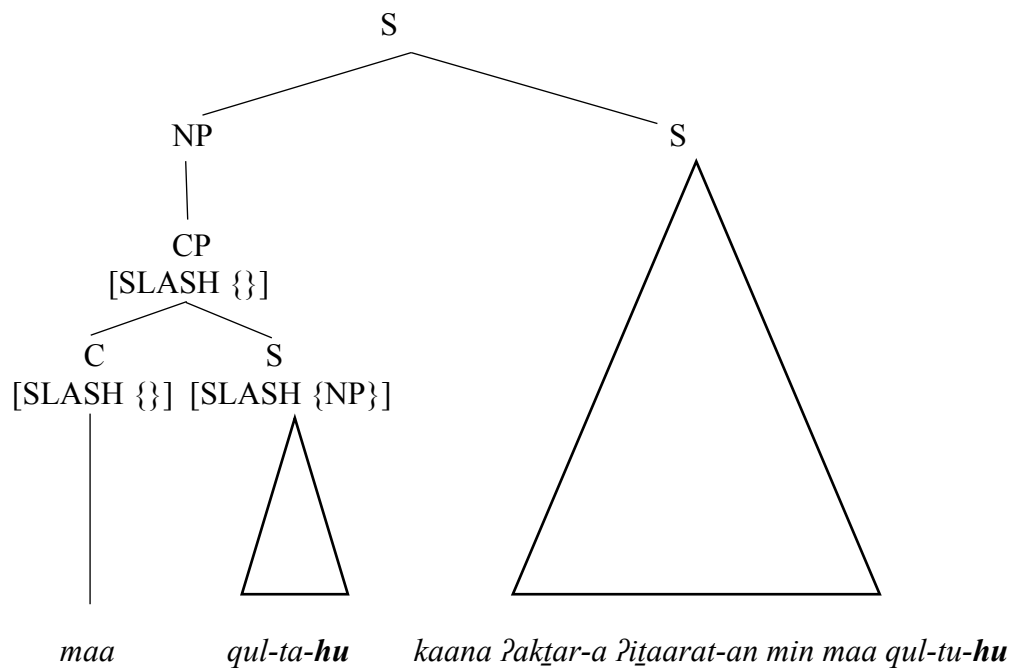
60)



A free relative as a subject of a comparative (61) will have the structure in (62)¹¹⁵.

- 61) maa qul-ta-**hu**/___ kaan ʔaktar-a ʔiṭaarat-an
 COMP said-2SG.M-**it**/___ was more-ACC interesting-ACC
 mi-[maa qul-tu-**hu**/___.]
 from-[COMP said-1SG.M/F-**it**/___.]
 ‘What you said is more interesting than what I said.’

62)

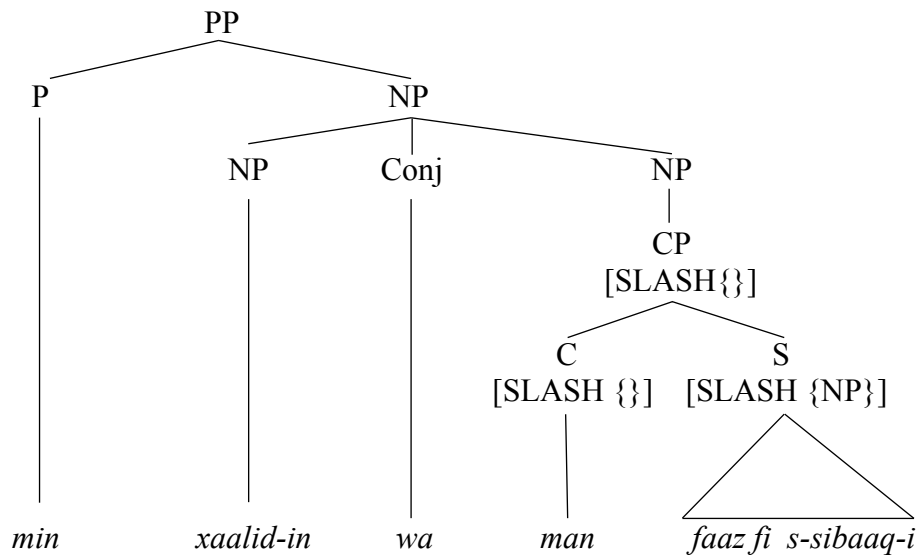


A free relative comparative conjoined with an ordinary NP, will have the structure presented in (64).

- 63) ʕaliy-un ʔasraʕ-u min xaalid-in wa [man
 Ali-NOM faster-NOM from khalid-GEN and [COMP
 faaz ___ fi s-sibaaq-i]
 won.3SG.M ___ in DEF-race-GEN]
 ‘Ali is faster than Khalid and (the one) who won in the race.’

¹¹⁵ In (62), I ignore the internal structure of the material following the subject and also the fact that the subject should probably be analyzed as a filler.

64)

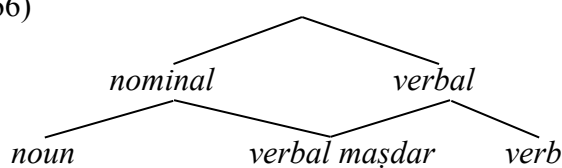


As for VMs, the obvious approach is that sketched by Malouf (2000). In his analysis of English verbal gerunds, as exemplified in (65), Malouf (2000) observes that verbal gerunds are nominal in terms of their distribution (i.e. they appear in nominal positions) but are partly nominal and partly verbal in their selectional properties (i.e. the object takes a verbal form but the subject takes a nominal form). Thus, he assumes that a verbal gerund is a subtype of both nouns and verbs.

65) I remembered Kim's reading the book.

As has been showed earlier, VMs can have both nominal and verbal features in MSA: like nouns they take genitive subjects and like verbs they take accusative objects. Adopting Malouf's approach, I assume that VM is a subtype of both nouns and verbs. This is represented in the hierarchical structure in (66) below.

66)



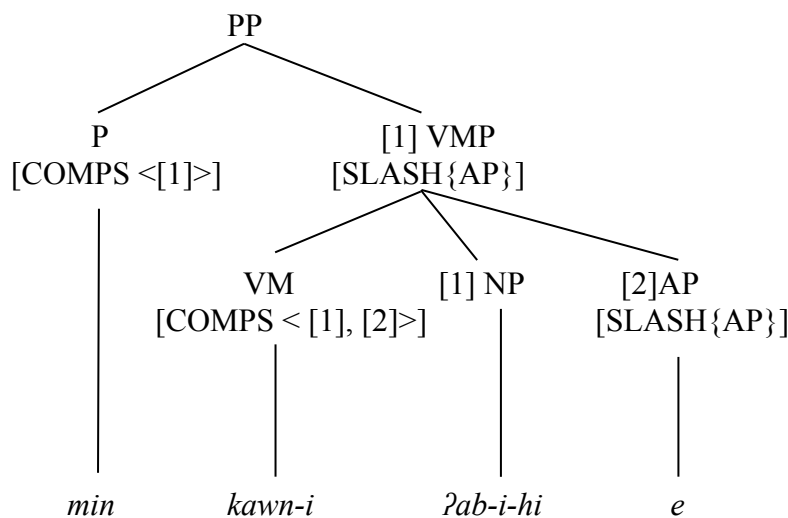
According to (66), phrases headed by a nominal element appear in NP positions and have a genitive first argument. Verbal elements have an accusative second argument. *Noun* elements will not have an accusative second argument, and *verb* elements will not have a genitive first argument.

Assuming this approach, the *maṣḍar* clauses in (67) have schematic analyses like the following structures, where I assume that the subject is an extra complement like any genitive in an NP:

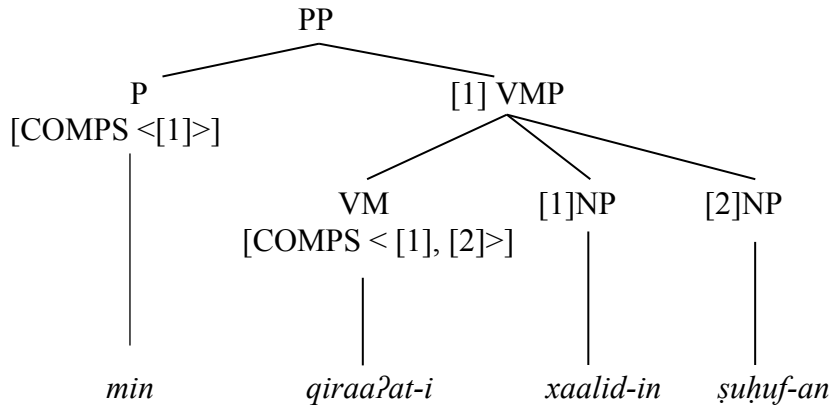
67)

- a. ṣaliy-un ṭaṭwal-u min [(*Kawn-i*) ṭab-i-hi__]
 Ali-NOM taller-NOM from [being-GEN] father-GEN-his__]
 ‘Ali is taller than his father (being) __.’
- b. qaraṭ-tu kutub-an ṭaktar-a min [qiraaṭat-i
 read-1SG.M/F books-ACC more-AC from [reading-GEN
 xaalid-in ṣuḥuf-an]
 Khalid-GEN newspapers-ACC]
 ‘I read more books than Khalid’s reading newspapers.’

68)



69)



6.3 Discontinuity in Complex Comparatives¹¹⁶

A further issue that needs to be considered here arises from examples like the following:

70)

- a. ʔanaa ʔaktar-u ɖakaaʔ-an fi n-naħw-i
 I.1SG.M/F more-NOM intelligence-ACC at DEF-syntax-GEN
 min ʃaliy-in
 from Ali-GEN
 ‘I am more intelligent in syntax than Ali.’
- b. ʔanaa ʔaktar-u ɖakaaʔ-an min ʃaliy-in
 I.1SG.M/F more-NOM intelligence-ACC from Ali-GEN
 fi n-naħw-i
 at DEF-syntax-GEN
 ‘I am more intelligent than Ali in syntax.’

In (70), the PP complements are separated from the head selecting them. In (70a), *fi n-naħw-i* (‘about syntax’) is a complement of *ɖakaaʔ* (‘intelligence’) but it is separated from it by the *min*-phrase, which is a complement of *ʔaktar-u* (‘more’). The same discontinuity appears with an ordinary noun, as shown in the following:

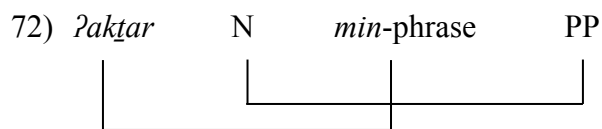
¹¹⁶ The discussion in this section is based on the paper by Alsulami, Arnold and Borsley (2017).

71)

- a. ʔanaa ʔakt̪ar-u kutub-an fi n-naḥw-i
 I.1SG.M/F more-NOM books-ACC at DEF-syntax-GEN
 min
 from Ali-GEN
 ‘I have more books about syntax than Ali.’
- b. ʔanaa ʔakt̪ar-u kutub-an min ʔaliy-in
 I.1SG.M/F more-NOM books-ACC from Ali-GEN
 fi n-naḥw-i
 at DEF-syntax-GEN
 ‘I have more books than Ali about syntax.’

In (71a), the ordinary PP complement *fi n-naḥw-i* (‘at the syntax’) is separated from the head noun *kutub-an* (‘books’) by the *min*-phrase, and it seems that we have a discontinuous noun phrase.

The data given above shows that in complex comparatives, whatever the complement of a nominal, adjectival *masdar* or ordinary noun requires can either precede or follow the *min*-phrase. So, the case of discontinuity in complex comparatives is that we have two different heads both taking a PP complement, and the PP complements are separated from the heads selecting them. This can be represented in (72) below:

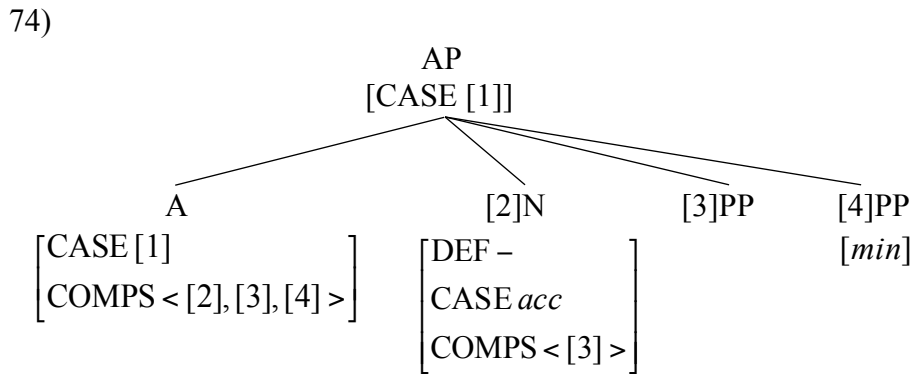


The examples given in (70b) and (71b) appear to suggest that the analysis outlined in Chapter Five for complex comparatives may need to be rethought. They might be seen as evidence that complex adjectival comparatives involve what is known as argument composition. This is where

a word takes as its complements another word and whatever complements that word requires. Argument composition has been assumed in a variety of HPSG work and various places, most notably in analyses of verb clusters in German (Hinrichs and Nakazawa, 1989) and French auxiliaries developed in Abeillé and Godard (2002) and Borsley (2016). The idea is that a lexical head takes as its complement a word of some kind and whatever complement that word requires. In the present case, it would mean that the comparative adjective takes as its complements not an NP and a *min*-phrase but an N and a *min*-phrase and whatever complements this noun requires. This would require the following COMPS list for words like *aktar*:

$$73) \left[\text{COMPS} \left[\begin{array}{l} \text{HEAD} [noun \vee am] \\ \text{COMPS L} \end{array} \right] \oplus L \oplus < \text{PP} [\text{PFORM } min] > \right]$$

From (73), the following structure can be derived:



This approach makes the lexical descriptions for complex comparatives different from the lexical descriptions for simple comparatives and thus requires a more complex lexical rule. Thus, it is not the appropriate analysis for the comparative case.

Another option is to adopt an alternative approach involving order domains. The word order domains approach was introduced by Reape (1994, 1996) and has been assumed in various works within linearization-based HPSG (e.g. Kathol, 1995; Kathol, Przepiorkowski and Tseng, 2000; and Kathol, 2004, among others). For linearization-based HPSG, phrasal constituents have both a list of daughters and a list of domain elements. The daughters and domain elements are encoded as the value of the features DTRS and DOM respectively. The following is an order domain analysis of *A man came in who looked like Chomsky*:

75)

$$\left[\begin{array}{l} \text{DTRS} < [a \text{ man who looked like Chomsky}], [came in] > \\ \text{DOM} < [a \text{ man}], [came in], [who looked like Chomsky] > \end{array} \right]$$

The domain elements of a constituent may be ‘compacted’ to form a single element in the mother’s order domain or they may just become part of the mother’s order domain, in which case the mother has more domain elements than daughters, and some members of the order domain are not sisters (Borsley, Tallerman and Willis, 2007: 215).

If we assume the order domain approach, then we can have the following analysis:

76)

$$\left[\begin{array}{l} \text{DTRS} < [aktar], [dakaan \text{ fi nnahwi}], [min aliin] > \\ \text{DOM} < [aktar], [min aliin], [dakaan], [fi nnahwi] > \end{array} \right]$$

As we see in (76), the AP has three daughters but four domain members.

This analysis appears to be problematic, as it would allow everything to be extraposed, including the elements that cannot be extraposed, like adjectives of the nominals in complex comparative cases and possessors in verbal cases. Consider the ungrammatical sentences below:

77)

- a. *ʔanaa ʔaktar-u kitaab-an min ʕaliy-in
 *I.1SG.M/F more-NOM book-ACC from Ali-GEN
 ʔinglizyyat-an
 English-ACC
 ‘I have more English books than Ali.’
- b. *ʔaʕṭaa kamal-un kitaab-a ʔila ʕaliy-in hind-in
 *gave.3SG.M Kamal-NOM book-ACC to Ali-GEN Hind-GEN
 ‘Kamal gave Hind’s book to Ali.’

This shows that word order domains do not seem the best analysis here because they would allow ungrammatical cases of discontinuity. Thus, an alternative analysis is required.

In addition, there is evidence that there is a more general phenomenon not specifically connected with complex comparatives, which allows certain PP complements to be separated from the head selecting them. Indeed, the same sort of discontinuity is found within the verb phrase VP.

Consider the following examples:

78)

- a. ʔaʕṭaa kamal-un kitaab-an fi n-naḥw-i
 gave.3SG.M Kamal-NOM book-ACC in DEF-syntax-GEN
 ʔila ʕaliy-in
 to Ali-GEN
 ‘Kamal gave a book about syntax to Ali.’
- b. ʔaʕṭaa kamal-un kitaab-an ʔila ʕaliy-in
 gave.3SG.M Kamal-NOM book-ACC to Ali-GEN
 fi n-naḥw-i
 in DEF-syntax-GEN
 ‘Kamal gave a book to Ali about syntax.’

In (78), *fi n-naḥw-i* (‘about syntax’) is the complement of *kitaab-an* (‘book’) and *ʔila ʕaliy-in* (‘to Ali’) is the complement of *ʔa-ʕṭaa* (‘gave’). However, both can appear in either order. It seems that Arabic, like English, allows a PP complement of a noun to be separated from it by a sister of the NP that the noun heads. In other words, it seems that they allow certain PPs to be extraposed. A plausible approach to PP extraposition is the EXTRA mechanism. The EXTRA

feature is used in the literature to analyze various extraposition phenomena in English and German. See, for example, Keller, 1995; Bouma, 1996; Kiss, 2005; Crysmann, 2005, 2013; and Kay and Sag, 2012¹¹⁷, plus much earlier work. But whatever analysis is proposed for extraposition in examples like (78b) will also account for examples like (70b) and (71b). Hence, there is no need to revise our analysis of complex comparatives.

In this section, it has been shown that certain discontinuities that may arise with complex comparatives are a reflection of a more general phenomenon and are not specifically connected with complex comparatives. Therefore, it does not require any revision of the analysis of complex comparatives. Thus, the complex set of facts that we have investigated here are unproblematic for HPSG.

6.4 Summary

In this chapter, I have discussed further issues about MSA comparative constructions. In section 2, I discussed the question of whether MSA has real clausal complements or just phrasal comparatives with a free relative. I showed that MSA has both ordinary clausal comparatives introduced by *maa* (i.e. they involve adjectival and nominal gaps and adverbial gaps in subcomparatives cases) and phrasal comparatives with free relatives *maa*, *man* and *allađi* (i.e. they have nominal gaps and resumptives). I also showed that *maa* comparatives with nominal gaps can be either clausal or phrasal complements. MSA does not only have ordinary clausal comparatives but it also has *maşdar* clauses, which is common in MSA and occurs as an

¹¹⁷ Kay and Sag (2012) propose that discontinuous dependency constructions (DDs) (i.e. constructions where a clause related to the degree word or adjective appears separated from it by other elements, as in (i) & (ii)) involve extraposition.

- (i) More boys left than girls.
- (ii) He is so willing to help out that they called early.

According to Kay & Sag, most types of extraposition involve an EXTRA feature, which is a non-local list-valued feature, similar to the SLASH feature used to handle filler-gap relations found in long distance dependencies, and EXTRA can also be used to derive discontinuous dependencies (DDs). Just as SLASH allows a constituent to appear earlier than one might expect, EXTRA allows a constituent to appear later than one might expect.

alternative to ordinary clauses in different contexts. In section 3, I discussed the fact that in complex comparatives, whatever complement of a nominal the adjectival *masdar* or ordinary noun requires can either precede or follow the *min* phrase in complex comparatives. It was shown that certain discontinuities that arise with complex comparatives are a reflection of a more general phenomenon and do not require any revisions to the proposed analysis. Thus, the complex set of facts that were investigated here are unproblematic for HPSG.

Chapter 7 Conclusions

In this study I have provided a description of the facts of comparative constructions in Modern Standard Arabic (MSA) and have developed analyses for some of the facts within the Head-driven Phrase Structure Grammar framework (HPSG). In this conclusion, I summarise the main issues that have been discussed and my main findings, as well as directions for further research.

7.1 Summary of findings

In Chapter Two, I outlined the theoretical and descriptive background of the thesis. I introduced some important issues, highly relevant to the discussion in the following chapters, such as the basic clause structures in MSA, the morphological properties and syntactic distribution of adjectives in MSA, and an introduction to the HPSG framework.

In Chapter Three I presented a description of comparative constructions in MSA. This is the novel contribution of this thesis, as comparatives in MSA have not been addressed before. Chapter Three comprised three main sections. The first provided a brief descriptive background of the formation of comparative adjectives. It focussed particularly on the issue of how elative comparative adjectives are formed in MSA and highlighted cases of adjectives that do not have the elative pattern. I also showed that superlative adjectives are formed from the same pattern as comparative adjectives. I showed that despite formal similarities, the two forms behave differently when it comes to their syntactic distributions. In the second main section of the chapter, I spelled out the types of comparatives constructions in MSA. The section comprised five subsections. In the first, I discussed simple adjectival comparatives and showed, amongst other things, that comparative adjectives differ in the following ways from basic adjectives: (i) comparative adjectives have a single form for both genders and all three numbers but vary in

case and definiteness in the case of attributive uses, (ii) comparative adjectives cannot occur as the head of a construct state. In the second subsection I focussed on complex adjectival comparatives and showed that, although most adjectives in MSA have their comparative formed on the elative pattern, some adjectives can only appear in complex constructions consisting of two elements: an external comparative adjectives and indefinite accusative AM. There, I showed that all adjectives in MSA have a related *maṣḍar* and hence, that every adjective allows a complex *adjectival* comparative with AM. I also showed that the quantifying comparative adjective *ʔaqall* 'less' is rather different from *ʔakṭar* 'more' in that there is no adjective that has a simple form meaning 'less X'. They are similar in only appearing on their own in the right sort of examples and in allowing an AM as a complement. This means that they can appear in simple comparatives as well as complex comparatives. In the third subsection I turned to nominal comparatives in which the comparative word quantifies a noun. I showed that the quantifying comparative adjectives combining with a nominal appear in two positions, either before or after the noun and in each position, it displays different properties. I refer to the noun + *ʔakṭar* 'more' or *ʔaqall* 'less/ fewer' structure as 'real nominal comparatives' and to the *ʔakṭar* 'more' or *ʔaqall* 'less/ fewer' + noun structure as 'apparent nominal comparatives'. In the fourth subsection I presented adverbial comparatives in which the comparative modifies the meaning of the verb or the whole clause and adds specific information about the frequency or the manner of the action. In the fifth subsection I observed the clausal comparatives CCs and showed that in MSA they are identified by the fact that the preposition *min*, 'from', is followed by a clause, introduced by *maa*. In this subsection I also gave a brief description of what might be called subcomparatives. I showed these are only superficially like subcomparatives in English and are in fact better analysed as adverbial. I also showed that CCs in MSA can be reduced under the rule of comparative deletion CD and comparative ellipsis CE. The former is obligatory and the latter is optional. In the last subsection, I briefly outlined how comparison of equality and non-scalar

comparisons can be expressed in MSA. I showed that the meaning of equality and non-scalar comparisons in MSA is expressed in very different ways from inequality and scalar comparisons.

The other novel contribution and principal focus of my work is found in the discussion and analysis of MSA simple and complex comparatives provided in Chapter Four and Chapter Five. Chapter Four discussed simple adjectival comparatives in MSA further and developed an HPSG analysis to accommodate both predicative and attributive comparative adjectives. There, I showed that MSA simple comparatives are much like those in other languages in that they involve adjectives with a distinctive form and semantics and an extra PP complement. The HPSG analysis I proposed involves a lexical rule to derive comparative adjectives from non-comparative adjectives by changing the form of the adjective and changing its argument selection properties by adding PP[*min*]. In this chapter, I also showed that the quantifying comparative adjectives *ʔaktar* ‘more’ and *ʔaqall* ‘less/fewer’ in ‘real’ nominal comparatives and attributive adjectival comparatives are syntactically essentially the same and the only thing that is different is the fact that they are quantifying the noun. Finally, the section discussed the analysis of attributive comparative adjectives. I proposed that the combination of noun+ comparative adjective + min phrase + PP complement are Head-adjunct-complement structures in which the head has both adjuncts and complements as sisters.

In Chapter Five I investigated MSA complex comparatives and developed an HPSG analysis for them. I showed that MSA complex comparatives are very different from their counterparts in other languages. They involve adjectives with a nominal complement and what can be called a possessive interpretation. The nominal complement may involve an AM but may also involve an ordinary noun. I referred to the comparative adjective + noun structures as apparent nominal comparatives and showed that, even though they look like nominal comparatives on the surface,

they should be analysed as adjectival phrases. I further argued that MSA complex comparative constructions do not involve periphrasis. Instead, they are independent constructions that express the meaning that would be expressed by certain missing forms. The evidence for that comes from the fact that (i) they contain not only *ʔakṭar* ‘more’ but also a number of comparative words like *ʔašadd* ‘stronger’ and *ʔahsan* ‘better’ and (ii) all adjectives allow a complex adjectival construction, and (iii) they can contain not just adjectival *maṣḍars* but also ordinary nouns. Examples with an ordinary noun appearing instead of an adjectival *maṣḍar* (i.e. apparent nominal comparatives) are instances of the same construction as the examples with adjectival *maṣḍars*. This is shown by examples with the same predicative and attributive uses and where nouns and an adjectival *maṣḍars* can be conjoined. I also showed that MSA complex comparatives are rather like adjectival constructs, which also involve an adjective with a nominal complement and the same kind of possessive interpretation. I have developed HPSG analyses for both complex comparatives and adjectival construct constructions, involving lexical rules. I showed in particular that a single lexical rule can be formulated to provide for both complex comparatives and adjectival constructs.

Another contribution of this thesis is the discussion of whether MSA has a real clausal complements or just a phrasal comparative with a free relative. I am not aware of any previous study in which this question has been investigated. Clausal comparatives CCs in Arabic have been discussed briefly in the literature (i.e. Fassi-Fehri (1978) and McNabb and Kennedy (2011)) but sources failed to distinguish between ‘real’ clausal comparatives and ‘apparent’ clausal comparatives. In Chapter Six, I showed that MSA has both ordinary clausal comparatives introduced by *maa* and phrasal comparatives with free relatives *maa*, *man* and *allaḍi*. The former involve adjectival and nominal gaps and adverbial gaps in subcomparative cases and the latter have either nominal gaps or resumptives. The cases of *maa* comparatives with nominal gaps are ambiguous between clausal complement and phrasal complement analyses. I have also shown

that MSA not only has ordinary clausal comparatives but it also has *maşdar* clauses, which are common in MSA and occur as an alternative to ordinary clauses in different contexts. Also, in Chapter Six, I showed that certain discontinuities that arise with complex comparatives are a reflection of a more general phenomenon and do not require any revisions to the analysis. Thus, the complex set of facts that we have investigated here are unproblematic for HPSG.

This study has paved the way for further research on this topic, which involves a variety of complexities and challenges. In the next section, I outline aspects of this study that can be expanded on and issues that have been mentioned here but not discussed in depth.

7.2 Directions for further research

Comparative constructions constitute a vast topic and this thesis has not been able to cover all of its aspects. There are still remaining issues in MSA comparative constructions that need to be investigated in further research. Also, the thesis hasn't developed analyses of all the phenomena that have been discussed in the description chapter. The analysis developed here has focused on the phrasal type of inequality comparisons (recall that, as noted, MSA equality comparisons are expressed in very different ways from inequality comparisons). Further research is also needed to analyze clausal comparatives. I have discussed some facts related to the real and apparent clausal comparatives in Chapter Six and proposed some basic structures. However, I haven't developed a detailed analysis for them. Further research is needed to scrutinize the structure of these constructions and, especially, to examine the distribution of clausal and phrasal complements in more detail.

Another remaining issue in this thesis that needs to be investigated in further research is related to subcomparatives. I outlined some facts related to subcomparatives in MSA, but I

haven't provided an HPSG analysis for them. We have seen in Chapter Three that in some examples like those in (1) the comparative adjective differs in case from the preceding noun, which suggests that the comparative in such examples cannot be an attributive modifier but rather must be an adverbial comparative.

- 1)
- a. ʕaliy-un ɖakey-un ʔaktar-a mi-[maa
 Ali-NOM intelligent-NOM more-ACC from-[what
 kaana wasiim-an]
 was handsome-ACC]
 'Ali is intelligent more than he was handsome.'
- b. ʕaliy-un laday-hi ʔaʕdiqaaʔ-un ʔaktar-a
 Ali-NOM has-3SG.M friends-NOM more-ACC
 mi-[maa laday xaalid-in ʔaʕdaaʔ-un]
 from[what have-3SG.M Khalid-GEN enemies-NOM]
 'Ali has friends more than Khalid has enemies.'

We have also seen that we cannot have subcomparatives with a complex comparative, and thus (2) is not possible.

- 2) *ʕaliy-un ʔaktar-u ɖakaaʔ-an mi-[maa
 *Ali-NOM more-NOM intelligence-ACC from-[what
 kaana wasiim-an]
 was handsome-ACC]
 'Ali is more intelligent than he was handsome.'

Therefore, we assumed that what we have in MSA are adverbial comparatives. It would be interesting to investigate this type of constructions further. Adverbial in MSA, have, in general, received less attention from linguistic research than the major form of classes (nouns and verbs), despite the fact that they are very common in both spoken and written discourse (Ryding, 2005: 276).

Another issue that needs to be investigated is related to the morphology of agreement in comparative adjectives. We have noted in Chapter Three that a comparative adjective has partial

agreement in which it is masculine singular, whatever the gender and number of its subject or the modified noun. As discussed in Chapter Four, the possible morphosyntactic approach to this fact is that we have the expected values to agreement features but that they are not spelled out in the normal way by the morphological rules (Borsley, 2016). So, this approach keeps the syntax simple but complicates the morphology. It would be interesting to develop a morphological analysis for comparative adjectives agreement in MSA.

As for the discontinuities that may arise with complex comparatives (cf. (3)), we have suggested that a plausible approach to PP extraposition is the EXTRA mechanism, but we haven't discussed this in any detail.

3)

- a. ʔanaa ʔaktar-u ḡakaaʔ-an fi n-naḥw-i
 I.1SG.M/F more-NOM intelligence-ACC at DEF-syntax-GEN
 min ʕaliy-in
 from Ali-GEN
 'I am more intelligent in syntax than Ali.'
- b. ʔanaa ʔaktar-u ḡakaaʔ-an min ʕaliy-in
 I.1SG.M/F more-NOM intelligence-ACC from Ali-GEN
 fi n-naḥw-i
 at DEF-syntax-GEN
 'I am more intelligent than Ali in syntax.'

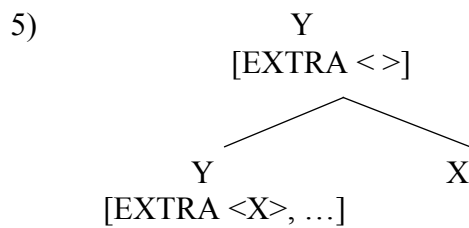
As stated earlier in (section 6.3), the EXTRA mechanism is applied to analyse various extraposition phenomena in English and German (e.g. Keller (1995), Bouma (1996), Kiss (2005), Crysmann (2005, 2013) and Kay and Sag (2012)). EXTRA feature is a nonlocal list-valued feature, and is similar to the SLASH feature used to handle filler-gap relations found in long distance dependencies. Just as SLASH allows a constituent to appear earlier than one might expect, EXTRA allows a constituent to appear later than one might expect. In fact, it is used to encode information about elements that are extraposed in a construction. Kay & Sag (2012,

p.242) propose the Head-Extraposition phrase (a *head-extra-phrase*) as a special type of phrase, which is subject to the following constraint.

$$4) \quad \text{head-extra-phrase} \rightarrow \left[\begin{array}{l} \text{EXTRA L} \\ \text{DTRS} < [1][\text{EXTRA} < [2] > \oplus L], [\text{LOCAL}[2]] > \\ \text{HD - DTR} [1] \end{array} \right]$$

This constraint says that a head extra phrase consists of two daughters: a head daughter [1], and a non-head daughter [2]. The head daughter's EXTRA list consists of [2], plus a possibly empty list of other extraposed elements [L]¹¹⁸.

The main idea in this constraint is that the initial element of the EXTRA list of the head (first) daughter is realized as the second daughter. This can be clear in (5) below.



However, this needs further research to answer the question of where the EXTRA constituent should be attached, and how the possible structure should be look like.

Another topic that we have not tackled in the study is the semantic analysis of comparative constructions within HPSG framework, which is a very important topic and thus requires another study in the future.

Further research should also investigate comparative constructions in other Arabic dialects. For example, Hijazi Arabic HA (the researcher's dialect), like MSA, involves simple comparatives and adjectival constructs, as shown in (6) and (7) respectively.

¹¹⁸ This allows the possibility of more than one element in the EXTRA list, which seems necessary in English.

6)

- a. ʕaliy ʔasraʕ min ʔaxuu-h
 Ali faster from brother-his
 ‘Ali is faster than his brother.’
- b. ʕaliy rijaal ʔasraʕ min ʔaxuu-h
 Ali man faster from brother-his
 ‘Ali is a faster man than his brother.’

7)

- a. ʕali sariiʕ l-maši
 Ali fast DEF-walking
 ‘Ali is fast walking.’
- b. šif-t rijaal sariiʕ l-maši
 saw-1SG.M/F man fast DEF-walking
 ‘I saw a fast walking man.’

Unlike MSA, HA does not involve complex adjectival comparatives and when the comparative pattern is not used, there are two ways of expressing a comparative meaning. First, the target of comparison is followed by the quantifying comparative adjective *ʔakṭar* ‘more’ (8a), or an ordinary comparative adjective (8b).

8)

- a. ʕaliy *ḍakiy* *ʔakṭar* min xaalid
 Ali intelligent more from Khalid
 ‘Ali is more intelligent than Khalid.’
- b. ʕaliy *mistiʕd* *ʔahsan* min xaalid
 Ali prepared better from Khalid
 ‘Ali is better prepared than Khalid.’

Here are examples with an attributive comparative:

9)

- a. ʕaliy rijaal *ḍakiy* *ʔakṭar* min xaalid
 Ali man intelligent more from Khalid
 ‘Ali is a more intelligent man than Khalid.’

- b. ξ aliy rijaal *misti\xi d* η a η san min xaalid
 Ali man *prepared* *better* from Khalid
 ‘Ali is a better prepared man than Khalid.’

Second, the comparison can be expressed without a comparative marker (i.e. η aktar), but by using a preposition that has the ‘exceed’ meaning (i.e. ξ an).

- 10) ha η a l-burg *murtafi\xi* ξ an l-mabnaa
 this DEF-bridge *high* on DEF-building
 ‘This bridge is higher than the building.’

The differences and similarities between comparative constructions in MSA and their colloquial counterparts would be an interesting topic for further research.

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