

Maṣdar Constructions in Southern Saudi Arabic: a Concise Reference

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Abstract

This thesis provides for the first time a detailed description and analysis of *maṣḍar* constructions within the framework of LFG (Lexical Functional Grammar) in an unstudied vernacular dialect of Arabic, Saudi Southern Arabic (SA) as spoken in Bisha. The current thesis discusses the *maṣḍar* nominalisations in usual normal constructions, and in complex constructions, represented in (1a) and (1b).

- (1) a. kitāb-at l-walad **l-ḥurūf** bi-ītqān
write.MSD-SGF DEF-boy.SGM DEF-letter.PLF with-perfection
the boy's perfectly writing the letters
- b. kitāb-at l-walad as-sarīf-a **l-il-ḥurūf**
write.MSD-SGF DEF-boy.SGM DEF-fast-SGF to-DEF-letter.PLF
bal-ingliz-iyya
with-DEF-English-SGF
the boy's fast writing of the letters in English

Building on previous syntactic accounts of mixed category constructions and *maṣḍar* constructions in LFG, I argue that the first of those *maṣḍar* constructions (MC A) includes nominal elements and verbal elements at the same time. Additionally, there is a mismatch between the external syntax (nominal) and the internal syntax (mixed) of the *maṣḍar* nominalisation in this construction. Therefore, following Lowe (2016), I argue that MC A is a truly mixed construction. On the other hand, I argue that the second *maṣḍar* construction (MC B) is fully nominal in SA as it shows purely nominal characteristics. The *maṣḍar* nominalisation in this construction shows a uniform external and internal

syntax. Therefore, I treat the maṣdar in this construction as a non-mixed category, and argue that the maṣdar in MC B does not entail a mixed *heading sharing* analysis. In this study, similar to Börjars et al. (2015), I propose a uniform analysis for both bare object maṣdar construction (MC A) and PP-object maṣdar construction (MC B). Such an analysis avoids us the long list of problems of the head-sharing approach, and allows us to analyse the controversial maṣdar constructions smoothly within the normal usual rules of LFG. SA facts appear to be similar to MSA data, especially MC A. However, MC B was found to be different from its counterpart in MSA.

This thesis is a contribution to the long-standing debate in the literature on mixed category constructions, and how to analyse them in LFG, as well as to the syntax of neglected vernacular Arabic dialects.

Dedication



To my loving parents, whose love and support made all of this worthwhile

To all, those who believed in me

&

To the memory of all the victims of CODVID-19 around the world

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List of Abbreviations

Table 1: Abbreviations

1	First person
2	Second person
3	Third person
A	Adjective
ACC	Accusative
ACT.PTCP	Active Participle
ADJ	Adjunct
AP	Adjective Phrase
AdvP	Adverb Phrase
AN	Action Nominal
CA	Classical Arabic
CENs	Complex Event Nominals
COMP	Complementiser
COP	Copula
CP	Complementiser Phrase
CSC	Construct State Construction
C-structure	Constituent Structure
DEF	Definite

DP	Determiner Phrase
DOM	Dominance attribute
DU	Dual
E-AF	Event Affix
F	Feminine
FSC	Free State Construction
F-structure	Functional Structure
FUT	Future
GF	Grammatical Function
GEN	Genitive
GEN	Gender
HPSG	Head-driven Phrase Structure Grammar
INDEF	Indefinite
INF	Infinitive
IP	Inflection Phrase
IMPFV	Imperfective
KSA	Saudi Arabia
LEX	Lexical
LFG	Lexical Functional Grammar
LMT	Lexical Mapping Theory
M	Masculine
MSD	Maṣḍar
MC A	Maṣḍar construction A
MC B	Maṣḍar construction B
MSA	Modern Standard Arabic
NEG	Negative
N	Noun
NOM	Nominal
NP	Noun Phrase

NUM	Number
OBJ	Object
OBJ θ	Object Theta
OBL	Oblique
P	Preposition
PASS.PTCP	Passive Participle
PFV	Perfective
PERS	Person
PRED	Predicate
PP	Prepositional Phrase
PL	Plural
PRO	Pronominal
POSS	Possessive
RNs	Referential Nominals
SG	Singular
SA	Southern Arabic
SUBJ	Subject
SVO	Subject Verb Object
SPEC	Specifier
TG	Transformational Grammar
V	Verb
VN	Verbal Noun
VP	Verb Phrase
VS	Verb Subject
SV	Subject Verb
VOS	Verb Object Subject
VSO	Verb Subject Object

List of Phonetic Transcription

Symbols used for SA

SA		IPA equivalent
ʔ	glottal stop plosive	ʔ
b	voiced bilabial stop	b
t	voiceless dental stop	t
<u>t</u>	voiceless inter-dental fricative	θ
ǰ	voiced palatalised affricate	ɟʃ
ħ	voiceless pharyngeal fricative	ħ
χ	voiceless uvular fricative	χ
d	voiced dental stop	d
<u>d</u>	voiced inter-dental fricative	ð
r	dental trill	r
z	voiced dental fricative	z
s	voiceless dental fricative	s
š	voiceless palatal fricative	ʃ
ʂ	voiceless pharyngealised dental fricative	s ^ʕ
<u>d</u>	voiced pharyngealised dental stop	d ^ʕ
<u>t</u>	voiceless pharyngealised dental stop	t ^ʕ
z	voiced pharyngealized inter-dental fricative	z ^ʕ
ʕ	voiced pharyngeal fricative	ʕ
ǰ	voiced uvular fricative	ʁ
f	voiced labio-dental fricative	f
g	voiced velar plosive	g
q	voiceless uvular stop	q
k	voiceless velar stop	k
l	lateral dental	l
m	bilabial nasal	m
n	dental nasal	n
h	voiceless glottal fricative	h
w	voiced bilabial glide	w
y	voiced palatal glide	j

Table 2: Consonants in SA

SA		IPA equivalent
a	short low central unrounded vowel	a
i	short high front unrounded vowel	i
u	short high back rounded vowel	u
e	short mid front unrounded vowel	e
o	short mid back rounded vowel	o
ā	long low central unrounded vowel	a:
ī	long high front unrounded vowel	i:
ū	long high back rounded vowel	u:
ē	long mid front unrounded vowel	e:
ō	long mid back rounded vowel	o:
ey	mid front to high front unrounded diphthong	ei
aw	low unrounded to high back rounded diphthong	au
ai	low unrounded to high front unrounded diphthong	ai

Table 3: Vowels and Diphthongs in SA

Chapter 1

Introduction

1.1 Significance of the Study

In the past few decades, mixed categories have come to occupy a key place in syntactic research, especially the Arabic mixed category, known as *maṣḍar*. Indeed they have recently emerged as a core topic within Lexical Functional Grammar (LFG) and other syntactic theories such as Head-driven Phrase Structure Grammar (HPSG), as evidenced by (Bresnan (1997); Grenat (1996); Bresnan (2001); Bresnan et al. (2016); Bresnan and Mugane (2006); Seiss (2008); Nikitina (2008); Islam et al. (2010); Falk (2001a); Al-Sharif (2014); Spencer (2015); Börjars et al. (2015); Nikitina and Haug (2016); Lowe (2016) Lowe (2019); Nikolaeva and Spencer (2019)). Mixed categories are evidenced in Arabic by, amongst other things, *maṣāḍar*, which have however received relatively little attention.

Natural languages possess many different ways in which they can manipulate language in order to convey a certain meaning or message, and to express similar concepts. Employing a variety of different ways to express similar concepts reflects the richness of natural language. For example, what can be expressed by a verb, can be also expressed by its corresponding deverbal noun. Like English and many other languages of the world, what can be expressed by means of a verb in South Arabic, a variety spoken in the south region of Saudi Arabia, henceforth SA, can be expressed by its deverbal noun, well-known as

maṣḍar. For example, the process or action that can be expressed by the verb *katab* ‘he wrote’, can be expressed by its *maṣḍar* *kitābah* ‘writing’.

There are many different reasons that serve as a motivation for choosing the topic of the *maṣḍar* to be the core focus of the current study. First of all, it has counterparts in all languages of the world such as gerunds in English reported by (Abney (1987); Grimm and McNally (2013); Grimm and McNally (2016); Lowe (2019), among others), action nominals in Hebrew studied by (Hazout (1995); Falk (2001b)), event nominals in French reported by Tayalati and van de Velde (2014), the infinitive noun in Italian by Zucchi (1993), and the agentive nominalisations in Gīkūyū Bresnan and Mugane (2006). The action/event *maṣḍar* constitutes a mixed category and shows intra-language variation in the degree of its ‘nouniness’ or ‘verbness’. In addition, its controversial properties and the ambiguities associated with its mixed nature constitute fascinating territory for research. Although superficially it seems to be a normal noun, in detail it displays an astonishing combination of nominal and verbal properties at one place, forming a special type of noun phrase constructions. Furthermore, the study of *maṣḍar* gives us the opportunity to shed light on other grammatical elements and constructions in the language such as adjectives, adverbs, objects, the construct state construction (CSC), and the free state construction (FSC). In addition, every verb in the Arabic language has at least two *maṣḍar* forms. Also, the Holy Quran verses make use of all the different classes of the *maṣḍar* form. This explains the extensive use of the *maṣḍar* in the daily language of Saudi Southern Arabic speakers, and Arabic speakers in general. Moreover, the topic of the *maṣḍar* has recently sparked a heated debate in the LFG research. Hence, the study of *maṣḍar* is undoubtedly essential.

Despite mixed categories in other languages of the world having received a considerable amount of work, the Arabic mixed category, *maṣḍar*, has not received an equal amount of research. This serves as a motivation to widen the scope of research concerning the Arabic mixed category, *maṣḍar*. Research on various linguistic phenomena within the theory of LFG has revealed that it is crucial to examine these phenomena across the

different languages and, if possible, dialects of the world. Adopting such a method of research would result in full and more accurate understanding of the phenomenon under investigation. Therefore, the current study aims to contribute to this domain of research by looking in detail at maṣdar in one of the most neglected dialects of the Kingdom of Saudi Arabia (KSA), i.e. Saudi southern Arabic (SA). In this study, action/event/maṣdar in SA will be described in detail, and the theory of Lexical Functional Grammar (LFG) will be adopted to account for the basic clause structure and the different forms of noun phrases in this dialect, and to account for the core topic of the present study which is action maṣdar constructions.

The variety of Arabic which the current research is based on is a spoken dialect of the southern region of Saudi Arabia, around Bisha. Bisha is a city in the southern west of the KSA. It is part of a wider dialect area of the KSA, which is usually referred to more generally as southern. Therefore, I referred to this variety in the current study as southern (Saudi) Arabic (SA). However, there are some scholars who have referred to it using labels based on names of cities or towns names such as Abha dialect (Al-Azraqi, 1998), ḡabal fayfā dialect (Alfaifi and Behnstedt, 2010), or Taif dialect (Alotaibi, 2014). It differs in many respects from the other dialects spoken in Saudi Arabia. The dialects of the south west and south region of Saudi Arabia are generally well-known to be incomprehensible to other Saudi speakers, especially the dialects spoken on the top of the mountains in the highlands and in the plains of the lowlands. I am a native speaker of this dialect, and therefore I am the main informant for the data provided in this study. In addition, I have consulted some other native speakers of the dialect when necessary. Moreover, various examples from different languages and dialects were provided, such as MSA, French, German, Italian, Gīkūyū and etc....

SA, spoken in Bisha, is a neglected dialect in Saudi Arabia. There is no previous documented work on this dialect in the domain of syntax. Al-Azraqi (1998)'s study describes the dialect spoken in Abha city, which is different from the dialect spoken in Bisha, the one under investigation in this study. She has just provided a general description of some

B (MC B). The latter construction is the more common construction in Southern Arabic (SA).

This type of construction has come to be called a deverbal noun construction or nominalisation or ‘a mixed construction’ in the linguistic literature, and the head of such a construction is nominal and has a special name in some languages such as Arabic, where it is called *maṣḍar*. This construction has been a centre of interest for many authors cross-linguistically. Attempts have been made to define it, identify its controversial characteristics, arguments and modifiers, solve the ambiguities associated with its mixed nature and provide accounts for it within different theoretical frameworks. In Arabic, however, the topic of *maṣḍar* (mixed category) constructions remains among the understudied linguistic phenomena, despite the extensive use of the construction in both MSA and the dialects. Most of the Arabic studies have provided a very brief description of *maṣḍar* such as Bardeas (2010), Assiri (2011), Al-Quarashi (2013), Alsulami (2018), Alotaibi (2018). However, the present study will discuss and provide a full description of the action *maṣḍar* in both normal usual constructions and complex ones, referred to as MC A and MC B, in an understudied dialect which is southern Arabic (SA).

This thesis will be concerned with recording SA facts by first providing a comprehensive description of the core aspects of SA grammar. It will be also concerned with providing a descriptive account of *maṣḍar* constructions in SA, and an analysis of such constructions within the framework of LFG. The description involves a discussion of the syntax of *maṣḍar* constructions and their arguments, modifiers, distribution and properties.

I will also consider the possibility of developing analyses for both MC A and MC B in LFG. The description will constitute the background for the LFG analyses which I propose for SA *maṣḍar* constructions data. To the best of my knowledge, there is no comprehensive study on the syntax of the SA *maṣḍar* constructions in any framework.¹ Given this paucity in the current linguistic literature on *maṣḍar* constructions in Arabic dialects, the current study comes to fill this gap.

¹Work on MSA has, however, been considered, as we will see in Chapter 2 and 4.

The significance of the present study is at three levels. First, it will provide a rich description of *maṣḍar* in general and the basic two *maṣḍar* constructions in particular. Second, it will provide syntactic analysis of the basic *maṣḍar* constructions in SA within the theory of LFG. Although there have been some analyses of *maṣḍar* constructions in modern standard Arabic (MSA) within LFG (e.g. Al-Sharif (2014); Börjars et al. (2015); Lowe (2019)), and one study within HPSG which is Islam et al. (2010), there is no existing LFG account of *maṣḍar* constructions in any Arabic dialect. Moreover, the existing analyses do not agree in the precise kind of syntactic analysis they use within the means offered by LFG. Therefore, this study discusses the different analyses within LFG which has not been previously done for any mixed category in any vernacular Arabic dialect. Third, there is no existing description of the core grammar of the SA dialect spoken in Bisha, so my study also provides basic reference information for this neglected dialect.

This study therefore is of big importance since it provides a reference of the grammar of the basic syntax of the neglected dialect spoken in Bisha (SA). It also employs the theory of LFG as the basis of the analyses provided in this work. Adopting a combined kind of linguistic description would result in an adequate characterisation of the phenomena under investigation. The domain of syntax offers many different assumptions and theories used in analysing various types of linguistic phenomena. Some of these theories make use of the notion of movement, such as transformational grammar theories, whereas others are based on the lexical information, and have different ways of representing grammatical facts, such as LFG, which is our chosen theory in the present study.

I chose LFG for many different plausible reasons. First, it employs two levels of representing grammatical facts, c-structure and f-structure, where the syntactic items are represented in one independent level, and their functions is represented in another independent level. It also allows a smooth connection between the elements in both c-structure and f-structure using the correspondence function. Secondly, it is a flexible theory that permits the use of special constraints in order to deal with complex phenom-

ena in the language, e.g. the use of Lowe (2019) of the *metacategory* definition to deal with maşdar nominalisations, and allows categories to show up in the tree structure without a head under special conditions, as will see later in this work. Third, it has a very established and limited record of use in analysing maşdar constructions (e.g. Al-Sharif (2014); Börjars et al. (2015); Lowe (2019)), which could be built on. Moreover, different other types of other mixed categories in different languages of the world have been analysed within the theory of LFG (e.g. Bresnan (1997); Bresnan (2001); Bresnan et al. (2016); Falk (2001b); Bresnan and Mugane (2006); Seiss (2008); Nikitina (2008); Spencer (2015); Nikitina and Haug (2016)), which could be also built on. Furthermore, the analysis of maşdar constructions is one of the central issues that is of current interest for researchers in the field of LFG.

In sum, I conduct the present work to fulfil the following aims:

1. To provide an adequate descriptive characterisation of some core aspects of SA grammar.
2. To provide a detailed description of basic action maşdar constructions in SA.
3. To provide an LFG analysis for the basic types of noun phrases in SA including the special maşdar constructions.

1.2 A preliminary introduction to maşdar in SA

Arabic verbal morphology includes a form that Arabic traditional grammar has termed as the *maşdar*. The term ‘infinitive’ is often used to refer to this form by some scholars. However, this form is different from infinitives in Western languages, which are usually verbal forms. The Arabic maşdar, in contrast, is clearly a nominal form based on its distribution, inflections and agreement characteristics. Hence, it is closer to a gerund or deverbal derived noun. Due to the terminological confusion that may be caused by using any of these terms, I will instead use the term *maşdar*, and will be using the abbreviation MSD to gloss the maşdar form. The maşdar data set cited in the current chapter will be

restricted to basic maṣḍar forms that closely resemble the function and distribution of gerunds in English and other languages.

According to traditional and modern Arabic grammar, maṣāḍar² are made up of one main class and five other lesserclasses. Although this system was developed to describe classical Arabic and MSA, it applies equally to the spoken dialects such as SA. In the literature, these classes are referred to as follows: 1- l-maṣḍar; 2- l-maṣḍar l-mīmi or the mīm maṣḍar; 3- ism l-maṣḍar (the noun of the maṣḍar); 4- ism maṣḍar l-marrat (the noun or the maṣḍar of the one-time), 5- ism or maṣḍar l-hayʿat (the noun or maṣḍar of the manner) and 6- l-maṣḍar aṣ-ṣināfi (the made up maṣḍar). Following the literature, including Madkhali (2017), the categories in (1), (3) and (4) are designated as the **Basic Maṣḍar**; the **Non-stem Derived Maṣḍar** and the **T-suffixed Maṣḍar** respectively. These six classes turn out to be defined on a mixture of morphological, syntactic and semantic criteria, which modern linguistics would normally replace by classifying each example on at least three different dimensions. However, since pursuing that is outside the scope of this project I will simply describe each of these six traditional types in more detail, showing which will yield examples that would fall within the scope of our study which focuses on action/event maṣāḍar (i.e. a semantic criterion), exhibiting structures A and B (a syntactic criterion) regardless of their morphological form.

1.2.1 The Basic Maṣḍar

In the grammatical literature, the Basic Maṣḍar is defined as a verb-like noun which expresses or denotes the same event expressed by the corresponding verb stem without any reference to time. Some instances of the Basic Maṣḍar can also denote the result of the

²In Arabic traditional grammar, there is a long-standing debate as to whether the maṣḍar is itself the source out of which all other verbal and nominal words are derived. The Baṣra school defines the maṣḍar as the source form from which all other Arabic morphological forms are derived. This view of the morphological source of maṣḍar is, however, distinct from that of the Kūfah school, which argues that the verb is the main source from which all verbal and nominal forms are derived. The philosophy of the Kūfah school is in accordance with that of recent studies, such as those of Fassi Fehri (1993); Al-Azraqi (1998); Ryding (2005); Madkhali (2017), claiming that the Arabic maṣḍar is derived from the verb. In recent studies of Arabic grammar, the maṣḍar is compared to derived nominals and gerundive forms in English, see, e.g. Ryding (2005). The researcher adopts the latter view.

event reading in some certain contexts, as described in for example, Fassi Fehri (1993); Holes (2004) or Ryding (2005)). The current study will be less concerned with Basic Maşdar instances that express the the result reading. The event reading and the result reading are compared to the English gerund in the following examples: ‘*writing* is fun’ and ‘I do not like his *writing*’ (Holes, 2004, p.146). According to the literature, including Madkhali (2017), this type of maşdar is the most productive class of all maşdar classes. In other words, every verb in the language has at least one Basic Maşdar. Although the literature refers primarily to MSA, that is true of SA as much as MSA.

In their morphological form, instances of the Basic Maşdar are related to the consonants and long vowels that are unique to the corresponding verb. For example, in SA, the Basic Maşadar *ʿilm* and *qitāl* are derived from the verbs *ʿalim* (to know) and *qātāl* (to fight), using the *3rd-person masculine singular perfective form* as the canonical form for verbs. It can be seen that these Basic Maşādar include all the unique sounds of the related verbs, in this case, the patterns (C, C, C) and (C, V, C, C) respectively. However, in some examples of the Basic Maşdar such as *taslīm* which is related to the verb *sallam* (greet), one consonant is substituted by a different consonant: the second dropped *l* in *sallam* (greet) is substituted by the the initial *t* in the Basic Maşdar *taslīm*.

According to the grammatical literature on maşdar, the Basic Maşdar is derived according to specific patterns based on the pattern of unique sounds of the verb form. Instances of the Basic Maşdar in SA derived from verbs with three unique consonants, i.e. triliteral roots, which are of predictable patterns, are given in Table (1.1). However, in the case of the Basic Maşdar derived from verbs of the simple CaCaC pattern, there is no one uniform pattern for the related Basic Maşdar as shown in Table (1.2). Rather, there are about forty four maşdar patterns identified in the literature which are related less or more to the semantics of the respective verbs (see, for example Wright (1974); Ryding (2005)). In the two following tables, examples of the Basic Maşdar of predictable patterns and some of non-predictable patterns in SA are given respectively. Thus maşdar formation in

this respect resembles less the English gerund, which universally has the form of the suffix *-ing*, and more the lexical derivation patterns of English action nominalisations, which vary and are only partially productive and predictable, as seen in nouns like *criticism*, *construction*, *involvement* and *purchase*.

Verb Examples	Basic Maṣdar	Maṣdar Pattern
labs (dress)	libs (dressing)	CCC
ṭalab (request)	ṭalab (request)	CaCaC
ṭalaḥ (leave)	ṭulūḥ (leaving)	CuCūC
saʔal (ask)	suʔāl (question)	CuCāC

Table 1.1: Examples of the Basic Maṣdar with the simple trilateral pattern (CaCVC) in SA

Verb Pattern Examples	Pattern	Basic Maşdar	Maşdar Pattern
nassag (arrange)	Form II CaCCaC	tansīg (arranging)	taCCīC
şārak (participate)	Form III CāCaC	muşāraka (participating)	muCāCaCa
ʔaḫfāʔ (hide)	Form IV ʔaCCāʔ	ʔaḫfāʔ (hiding)	ʔaCCāʔ
taʔallam (learn)	Form V taCaCCaC	taʔallum (learning)	taCaCCuC
tagātal (fight)	Form VI taCāCaC	tagātul (fighting)	taCāCuC
inkasar (break)	Form VII inCaCaC	inkisār (breaking)	inCiCār
iḥtram (respect)	Form VIII iCtaCaC	iḥtirām (respecting)	iCtiCāC
iḫzare (become green)	Form IX iCCaCCa	iḫzirār (becoming green)	iCCiCāC
istaʔmal (use)	Form X istaCCaC	istiʔmāl (using)	istiCCāC

Table 1.2: Examples of the Basic Maşdar of verbs with more complicated patterns of vowels and consonants

1.2.2 The Mīm Maşdar

In the literature, the **Mīm Maşdar** is defined again as a noun that expresses the same event as its corresponding verb, just like the Basic Maşdar. Hence, when used in that meaning it will fall within the scope of our detailed account later. However, the derivation process of the Mīm Maşdar is different from that of the Basic Maşdar because it involves the prefixation of a mīm consonant to the verb stem, usually as *ma-*, in addition to other

changes. Like Basic Maṣādar, Mīm Maṣdar are derived according to specific patterns depending on the unique pattern of the consonants and vowels of the verb such as the instances given in Table (1.3). This class of maṣdar is not as productive as the Basic Maṣdar because not all the potential derived forms of this class are frequently used in the language. The Mīm Maṣdar can be distinguished from the Basic Maṣdar in that the Mīm Maṣdar can denote a state rather than an event, but some instances of this class of maṣdar can express a result meaning as well or instead. For example, the Basic Maṣdar *qatl* which is derived from the verb *qatal* (kill) implies the process of killing, i.e. a happening process. However, the Mīm Maṣdar which is derived from the same verb means the state of one's having been killed, which is a completed process/result.

Some instances of the Mīm Maṣdar that are frequently used in the language and their corresponding verbs are given in the table below:

Verb	Mīm Maṣdar	Pattern	Basic Maṣdar
māt (die)	mamāt (death)	maCāC	mawt (dying)
gatal (kill)	magtal (kill)	maCCaC	gatl (killing)
raġaʿ (return)	marġaʿ (return)	maCCiC	ruġūʿ (return)
bāt (stay overnight)	mabīt (staying overnight)	maCīC	bayāt (staying overnight)
ḥabb (love)	maḥabbah (love)	maCCaCat	ḥubb (loving)
ʿaraf (know)	maʿrifah (knowledge)	maCCiCat	ʿirfān (knowing)

Table 1.3: Examples of the Mīm Maṣdar Based on the Pattern of the Corresponding Verb in SA

1.2.3 The Non-Stem-Derived Maşdar

Generally speaking, there is no agreed specific or distinguishable definition of this class of maşādar in the literature. Like the Basic Maşdar and the Mīm Maşdar, it is defined as a noun form that expresses the same action or event expressed by its corresponding verb. In that case it falls in our scope. However, in other traditional works, it is defined as a noun that represents the result or outcome of the event which makes this type of maşdar different from the Basic Maşdar, which represent the action of event which leads to a result, which would place it outside our scope. In fact, both the result reading and the event reading are possible with the instances of this class of maşdar. However, Madkhali (2017) considers the result reading as the main denotation of this class of maşdar saying that ‘perhaps it is this result reading, which is deemed as the primary denotation, that is perhaps the reason for labelling it *ism l-maşdar* (the noun of the maşdar)’ (p. 77).

Madkhali adds that such a designation can be correlated with another semantic distinction as mentioned in the literature. This is a grammatico-semantic distinction that is made between this class of maşdar and the Basic Maşdar. In parallelism with verbs, the latter can be seen to have participants, i.e. an actor subject and /or undergoer object is implied, as in our examples above, while in the former no such participants are usually implied. As a response to this variation in the reading of the noun of the maşdar, Madkhali suggests a definition based on a rather different criterion, the way in which it is related to its corresponding verb. She refers to it as the **Non-Stem-Derived Maşdar** because in terms of the morphological form, it does not include all the unique distinctive sounds of the verb pattern, or a standard substitute, contrary to the instances of the Basic Maşdar illustrated in (1.2.1).

An example from MSA is the verb *ʔaʕtā* (give) which has the morphological pattern *ʔaCCaC*, but the Non-Stem-Derived Maşdar for this verb is *ʕatāʔ* which has the morphological pattern *CaCāC*. By contrast, the Basic Maşdar is *ʔiʕtāʔ* which has the morphological pattern *ʔiCCāC*, and retains all the distinctive C of the verb. It can be seen that the

initial sound ʔ is not maintained in the Non-Stem-Derived Maṣdar. As mentioned previously, Madkhali suggests labelling this class of maṣdar as the Non-Stem-Derived Maṣdar because it does not include all the unique sounds of its corresponding verb, i.e. the verb base. Moreover, she states that there is a limited number of verbs which have a Non-Stem-Derived Maṣdar, and this type of maṣdar is a closed type. Additionally, the formation of this class does not follow any specific pattern. Examples of the Non-Stem-Derived Maṣdar in SA and their corresponding verbs and their Basic Maṣdar counterparts are given in Table (1.4):

Verb Examples	Verb Pattern	Basic Maṣdar	Pattern	NSDM
ʔaʔtā (give)	Form IV ʔaCCaC	ʔiʔtāʔ (giving)	ʔiCCaC	ʔaʔāʔ (offering)
ʔaʔāb (reward)	Form IV ʔaCaCCa	ʔiʔābah (rewarding)	ʔiCaCaC	ʔawāb (reward)
garrar (decide)	Form II CaCCaC	taqrīr (deciding)	taCCīC	qarār (decision)
zakkā (dole)	Form II CaCCaSC	tazkiyah (recommendation)	taCCiCa	zakāh (charity)
kaddab (lie)	Form II CaCCaC	takdīb (denying)	taCCīC	kadāb (lying)

Table 1.4: Examples of the Non-Stem-Derived Maṣdar in SA

1.2.4 The T-Suffixed Maṣdar

In traditional grammar and current Arabic grammar books, this class of maṣdar is well-known as maṣdar l-marra (the maṣdar of one time), and this designation is based on its meaning as the noun which expresses a one-time occurrence of an event (see, for example, Wright (1974); Ryding (2005)). This places it outside our scope later since we are concerned with timeless actions. Madkhali (2017) again suggests a designation for the

maşdar of one time based on its morphological formation rather than its meaning. She refers to this class of maşdar as the *T-Suffixed Maşdar*, and I have adopted her designation and referred to this class as the T-Suffixed Maşdar.

As the designation indicates, the derivational process includes the attachment of a *t*-suffix to the corresponding Basic Maşdar. For example, *aklah* (an eat) and *ğalsah* (a sit) are derived from the Basic Maşdar *akl* (eating) and *ğulūs* (sitting) of the verb *akal* (eat) and *ğalas* (sit) respectively. Not all the Basic Maşdar have corresponding T-Suffixed Maşdar and consequently not all verbs have a derived T-Suffixed maşdar, and the class of T-Suffixed Maşdar is a closed type. Examples of the T-Suffixed Maşdar in SA and their corresponding verbs and their Basic Maşdar counterparts are given in Table (1.5):

Verb	T-Suffixed Maşdar	Basic Maşdar
gām (stand)	gumah (a stand)	giām (standing)
rabaṭ (tie)	rabṭah (a tie)	rabṭ (linking)
zarab (hit)	zarbah (a hit)	zarb (hitting)
anşud (sing)	unşudah (a song)	nşād (singing)
nām (sleep)	numah (a sleep)	num (sleeping)

Table 1.5: Examples of the T-Suffixed Maşdar in SA

1.2.5 The Manner Maşdar

In traditional grammar, the **Manner Maşdar** or *ism l-hayʔah* (noun of the manner) is defined as a noun that expresses the manner of the event of its corresponding verb. Hence again they fall outside our scope later, which is limited to the action maşdar class only. Manner Maşādar are derived from the base form of trilateral verbs which have the pattern CaCaC, however, not all verbs of the same pattern, i.e. CaCaC, have a derived manner maşādar. The derivational process involves the attachment of a *t*-suffix, like the T-Suffixed Maşdar. In SA, the Manner Maşdar is different from the T-Suffixed Maşdar

in having the first short vowel as *i*, in addition to *a* in some cases. Manner maṣāḍars share the same derivational device with *-t* suffixed maṣāḍars, in other words, they will be suffixed with *-t*, but they will take the short vowel *i* instead of *a*. Accordingly, the resulting derivational pattern for manner maṣāḍars is CiCCat. For example, for the verb *mašā* (walk), the Manner Maṣḍar is *mišyat* and the T-Suffixed Maṣḍar is *mašyat*.

The literal meaning of the Manner Maṣḍar is a ‘manner or way of’. For example, the Manner Maṣḍar is *qitlat* is derived from *qatal* (kill). The meaning of this maṣḍar is a manner of killing, i.e. way of how someone dies. The meaning of this class differs from the meaning of both the corresponding Basic Maṣḍar, which is *qatl* (killing), and the T-Suffixed Maṣḍar, which is *qatlat* (one kill), which both denote an event. The difference between these three types of maṣḍar can be observed through the type of dependents that accompany them which can be used to clarify the meaning of the morphological class of the Arabic Manner Maṣḍar. For example, the Manner Maṣḍar *mītah* can be modified by manner adjectives such as *ḥasanah* ‘good’ or *sayyiʿah* ‘bad’ as in (4). However, the other two types, i.e. the Basic Maṣḍar and the T-Suffixed Maṣḍar, cannot be modified by the same type of adjectives because these two classes of maṣāḍar are event-denoting ones. Examples of the Manner Maṣḍar are given in Table (1.6). The following example is taken from MSA which is widely quoted by SA speakers:

- (4) *māt-at* *mītat-an* *ḥasant-an*
 kill.PFV-3SGF kill.MSD-ACC.SGF good-ACC.SGF

She died in a good manner of dying

(MSA)

Verb	Manner Maşdar	Basic Maşdar
māt (die)	mītat (manner of death)	mawt (dying)
ḡāš (live)	ḡīšat (manner of living)	ḡayš (living)
gatal (kill)	gitlat (manner of killing)	gatl (killing)
mašā (walk)	mašyat (manner of walking)	maši (walking)
akal (eat)	aklat (manner of eating)	akal (eating)

Table 1.6: Examples of the Manner Maşdar in SA

1.2.6 The Made-Up Maşdar

In Arabic traditional grammar and current Arabic books, this class of maşdar is well known as *the Made-Up Maşdar*, which is the literal translation of the traditional term: *l-Maşdar aṣ-ṣināfi*. According to traditional grammar, the Made-Up Maşdar is made up by the addition of two affixes a geminate *-y* and a *-t*. Accordingly, the resulting noun ends with the suffix *-iyyat*. In contrast to the other types of maşdar, the Made-Up Maşdar is only derived from nouns. The Made-Up Maşdar can be derived from either a primitive noun as in *ḡinsāniyyat* (humanism) or a derived noun as in *ṣināfiyyat* (industrialism).

Building on different definitions available in the literature, Madkhali (2017) states that the Made-Up Maşdar can be defined as the noun which expresses ‘an eventive concept with inherited (or individual-level) properties; it means something like *being + the noun stem*’ (p. 84). Thus, it can be paraphrased into as a non-finite clause. For example, *l-ḡinsāniyyat* (the humanism) can be paraphrased as *kawnu-ka ḡinsān* (being-your a human) (Madkhali, 2017, p. 84). An example from SA is provided in (5). This in fact represents the concept as a state rather than an event, so is not within our scope. Whatever is the case, this type of maşdar does not concern us further anyway since it is based on nouns not verbs and does not exhibit structures A and B that are of interest to us.

type of maşdar which is the *Basic Maşdar*. This type of maşdar expresses an action/event reading which suggests that this type has both verbal and nominal properties, which is of current interest to the researchers fond of mixed categories, including this researcher as well. Although that is also true of some of the other maşdar types, additionally, this type of maşdar is the most productive class of all maşdar classes as mentioned earlier. In fact, every verb in the language has at least one Basic Maşdar. Furthermore, basic maşdar all freely occur in the two constructions A and B that are of special interest to us. Throughout this study the label MSD will be used to refer to the Basic Maşdar form, which is the only maşdar type included in the data set. This would help narrow the horizon of research which would result in an accurate description of the topic under investigation.

Having provided a preliminary introduction to maşdar in SA, I will now provide a brief introduction to the theory of LFG, for readers who may not be familiar with it.

1.4 An Overview of LFG

Later chapters in this thesis are divided between descriptive accounts and theory based analyses. For the latter I chose to rely on LFG as described by (Kaplan and Bresnan (1982), Kaplan and Bresnan (1995), Bresnan and Zaenen (1990), Bresnan (2001), Falk (2001a), Bresnan et al. (2015), and most recently Börjars et al. (2019)), the theoretical model in which my research on SA maşdar constructions is framed. LFG is a non-transformational generative theory that was developed by Kaplan and Bresnan (1982). It is termed a *lexicalist* theory since a great deal of the analysis provided by this framework relies heavily upon what is specified in the lexicon. It is also called a functional theory of language because grammatical functions, subject, object, adjective, adverb, obj θ and POSS, are central to the formalism. Together, those two components connect with constituent structure, which resembles that found in transformational accounts (making use for example of X-bar theory) but differs in that c-structure in LFG is purely of the surface level. There are no derivations assumed to take place at the syntactic level changing the c-structure as in transformational theories.

LFG in fact proposes a number of levels of representation of which two parallel levels of syntactic representation are relevant to this study: the functional structure (*f-structure*) and the constituent structure (*c-structure*), which are the main focus of the current study³. The *f-structure* is the structure where grammatical functions are represented, while *c-structure* is the tree structure where superficial elements, phrase structure rules and the generalisations of grammar are reflected or represented. This is under the normal or usual rules of LFG. However, as we will see later in this work, there are some assumptions (constraints) that licence the absence of some elements, which are assumed in the phrase structure rules, from the *c-structure* tree under what we can call the unusual rules of LFG. Both structures, *c-structure* and *f-structure* are independent of one another, and are related by a mapping correspondence function. These two distinct levels of syntactic representation are subject to some specific conditions that constrain their wellformedness. The two structures will be described in more detail in the next subsections.

1.4.1 C-structure

LFG assumes that words in sentences are organised into a set of constituents, and that these constituents are the leaves of the tree structure. Such constituents are licensed to appear by phrase structure rules which specify what trees are possible. Within the usual rules of LFG, the *c-structure* tree must reflect what is specified in the phrase structure rules, unless other special assumptions are made. LFG employs a specific principle of the ‘x-bar theory’. According to Dalrymple (2001), ‘lexical items appear as heads of phrases and may be associated with specifier or complement positions within the same phrase’ (p. 56). The x-bar theory contains lexical or functional categorial elements, and allows these elements to be associated with different sorts of phrasal projections, maximal or non-maximal projection.

The theory of LFG has a list of lexical and functional categories. The main lexical cat-

³There are many other structures that have been proposed within the theory of LFG such as the argument structure.

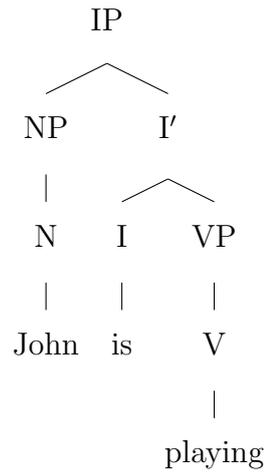
egories include N(noun), V(erb), P(repostion), A(djective) and A(dverb). Each of these lexical categories heads its own corresponding categorial phrase, see Bresnan (2001), Dalrymple (2001) and Falk (2001a). Exemplification of each phrase is given in (6) below:

- (6) a. *l-bint* ‘the girl’ (**NP**)
- b. *ʕalā r-raf* ‘on the shelf’ (**PP**)
- c. *gābal l-bint* ‘meet the girl’ (**VP**)
- d. *faḫūr bi-baladi* ‘proud of my country’ (**AP**)
- e. *ʔamas* ‘yesterday’ (**AdvP**)

The functional categories mainly include **I**(nflection) and **C**(omplementiser). The functional category **I** is assumed to be the head of a finite clause *IP*. The functional category **I** is regarded by Falk (1984) and Bresnan (1997) as the position specified for auxiliaries in English. Cross-linguistically, this position can be filled by other lexical categories. For example, in an English sentence such as the one in (7a), the tensed auxiliary occupies the *I* position, while in a Russian sentence such as the one in (8a), this position is occupied by finite verbs (see Dalrymple (2001), Falk (2001a) and Bresnan (1997)). The tree structures (7b-8b), quoted from (King, 1995, p. 172), illustrate the difference between the two languages regarding this issue.

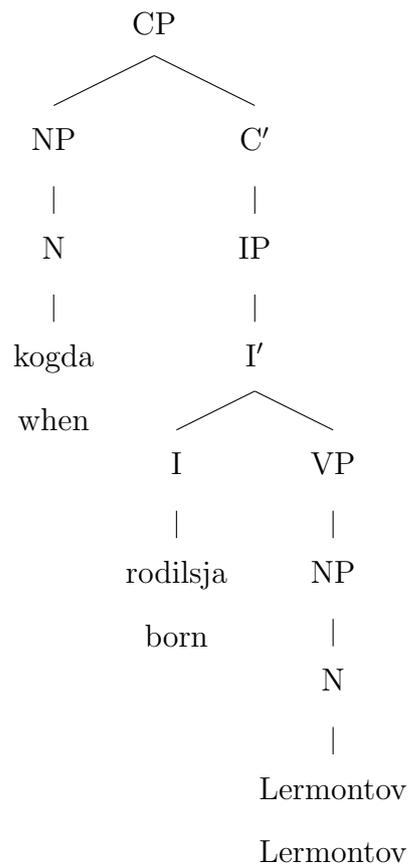
- (7) a. John is playing.

b.



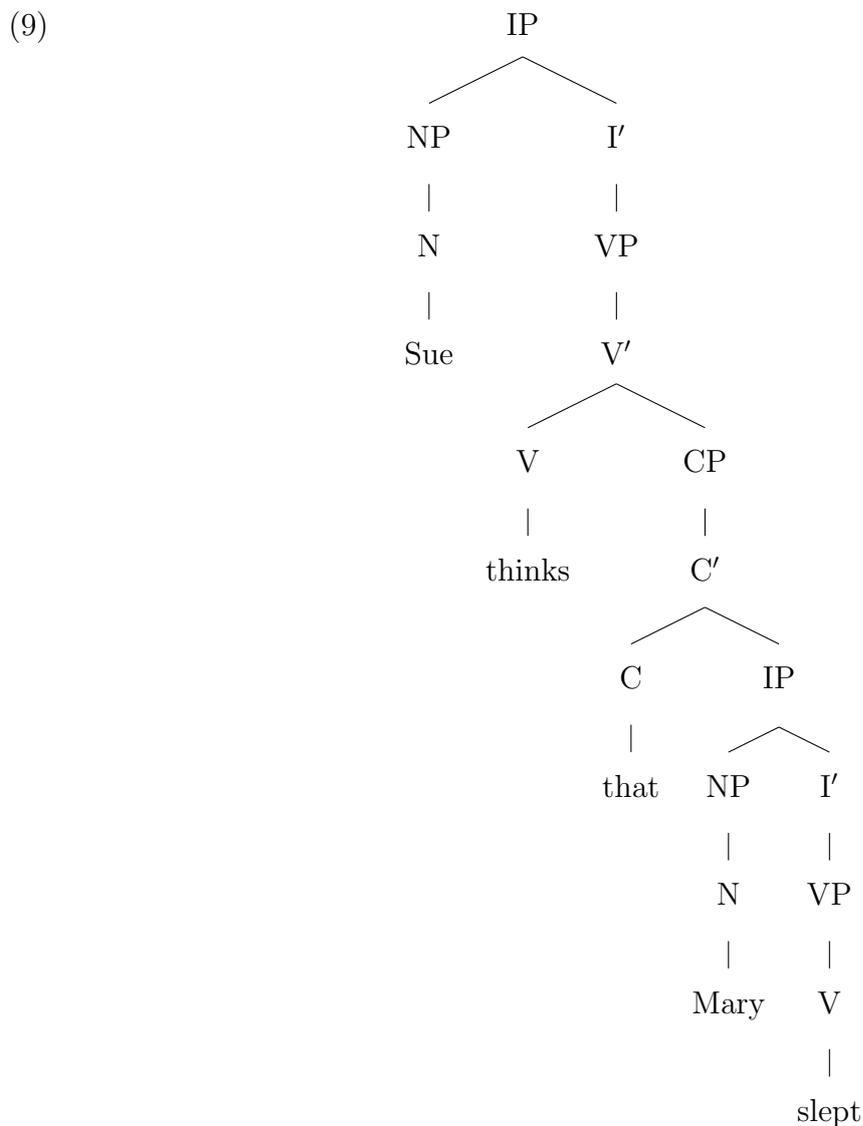
- (8) a. kogda rodilsja Lermontov
 when born Lermontov
 when was Lermontov born?

b.



The functional category **C**(omplementiser) heads CPs, and in some circumstances it can contain an IP (as in Russian above) or a **C**(omplementiser), *that*, as in English below (see

Bresnan (2001) and Dalrymple (2001)), as illustrated in (9):



An additional functional category was suggested by some researchers in the field of linguistics: **D**(eterminer). Abney (1987), under his DP *Hypothesis*, assumes that **D**(eterminers) are heads of DPs instead of NPs, which is against the previous traditional analyses in the literature at that time. A fourth special functional category was invented for some certain languages such as Hebrew, Hindi and Arabic: **K** heads KPs, and functions as a case marking word. Under some analyses, K would simply be treated as a prepositional head of a PP⁴.

⁴See Abney (1987), Dalrymple (2001) and Börjars et al. (2019), for more discussion of functional categories.

Within LFG, c-structure is subject to three principles as listed below.

- (10) a. **Economy of Expression principle:** ‘All syntactic phrase structure nodes are optional and are not used unless required to license elements required to create a well-formed f-structure or to add semantic content’. Falk (2001, p. 34)
- b. **Lexical Integrity principle:** ‘Morphologically complete words are leaves of the c-structure tree and each leaf corresponds to one and only one c-structure node’. Bresnan (1997, p. 10)
- Accordingly, branching stops at the word and does not extend within it as in some other approaches, e.g. to the two parts of the word *singing*.⁵
- c. **Extended head principle:** ‘different categories share the same head in f-structure, not c-structure’. Bresnan (1997, p. 6)

Furthermore, LFG permits two sorts of phrasal categories: *endocentric* category versus *exocentric* category. The endocentric category involves a head which gives the whole phrase its external distribution. As mentioned above, all the different phrases have their own heads which have the same category. Thus, an NP is headed by a noun, an AP is headed by an adjective, etc. English is an example of languages that are totally *endocentric*. However, other languages have some *exocentric* phrases, such as Malayalam. The *exocentric* category includes no lexical head that can give the external distribution of the entire phrase, and hence it is represented differently as *S* in the tree structure. In exocentric languages, *S* accommodates the predicate and its arguments (see, for example, Dalrymple (2001)). Falk (2001, p. 50) provides the example in (11) from Malayalam as an illustration of the *exocentric* category:

- (11) a. Aanaye Kutti kantu.
elephant.ACC child.NOM saw

⁵As we will see in Chapter 3, which provides a review of some transformational approaches.

The child saw the elephant.



The basic x-bar theory does not apply to this type of c-structures which does not contain a head, as illustrated in (11b). Clauses, such as the one in (11a), which have no head are called *exocentric*. In addition, the words of the clause in (11a) can appear in any order in non-configurational languages. However, Bresnan (2001) states that this is not always the case since the exocentric category can be configurational in other times.

Moreover, some languages can use the two types of phrases, both *endocentric* and *exocentric* phrases, in the same sentence structure, as in Warlpiri (Dalrymple, 2001).

Regarding the language under investigation in this study, which is Arabic, we find that Arabic is *endocentric* in general, and it is a predominantly head-initial language.

1.4.1.1 Phrase Structure Rules

In contrast to transformational theories, LFG employs a set of defining phrase structure rules that determine the possible c-structure representations. It was observed that many languages permit different c-structures. Therefore, each of these languages require to have its own defining phrase structure rules that determine the wellformedness of c-structure trees in that language (Falk, 2001a). The rule given in (12) is an example:

$$(12) \text{ VP} \rightarrow \text{ V } \quad \text{NP}$$

According to this rule, the VP node, in the left-hand side, dominates the V and NP nodes which are in the right-hand side. Thus, phrase structure rules are descriptions that deter-

mine the possible c-structure trees. In other words, these rules constrain the c-structure trees that we can have in a language. The theory of LFG employs phrase structure rules that are more expressive than other rules in different syntactic theories. The right-hand side of phrase structure rules in LFG is assumed as a *regular expression*, which allows optionality, recursion, etc.. Dalrymple (2001, p. 6). The rule in (13), for example, the parentheses around the NP suggest that it is optional:

$$(13) \text{ IP} \rightarrow \quad (\text{NP}) \quad \text{I}'$$

The rule in (13) is an abbreviation of the two rules in (14) and (15):

$$(14) \text{ IP} \rightarrow \quad \text{I}'$$

$$(15) \text{ IP} \rightarrow \quad \text{NP} \quad \text{I}'$$

Instead of using the parentheses around optional nodes, some linguists prefer to make use of the *Economy of Expression principle* which states that ‘all c-structure nodes are optional’ (Falk, 2001, p. 47).

In (16), the rule shows that the IP node in the SPEC position can be filled with either an AP or NP

$$(16) \text{ IP} \rightarrow \quad \text{AP} \text{ — } \text{NP} \quad \text{I}'$$

The rule in (16) is an abbreviation of the two rules in (17) and (18):

$$(17) \text{ IP} \rightarrow \quad \text{AP} \quad \text{I}'$$

$$(18) \text{ IP} \rightarrow \quad \text{NP} \quad \text{I}'$$

In addition, the rule in (19) contains a kleene star (*) on the PP node suggests that the number of PPs allowed in the right-hand side is unlimited.

(19) VP → V PP*

In the following subsection, the f-structure in LFG will be discussed.

1.4.2 F-structure

In other theories, grammatical functions, such as SUBJ, OBJ, or OBJ θ , are stated as abstract functions. However, in LFG, such function information is represented in the functional structure (f-structure). In addition, to these grammatical functions, features such as CASE and NUMBER are also represented in the f-structure. The f-structure contains a set of functions from grammatical attributes to values. For example, the f-structure of the object will consist of the value of the OBJ feature (as described in Dalrymple (2001), Kaplan and Bresnan (1982), Kaplan and Bresnan (1995) and Bresnan (2001)). Dalrymple (2001, p. 30) shows how attributes and values are presented in LFG in the following f-structure:

(20) $\left[\begin{array}{ll} \text{ATTRIBUTE1} & \text{VALUE1} \\ \text{ATTRIBUTE2} & \text{VALUE2} \end{array} \right]$

In the f-structure, the attributes can be the governable grammatical functions such as the arguments: SUBJ, OBJ, XCOMP, OBJ θ and OBL. Also, the attributes can be the modifiers such as adjective ADJ or XADJ, where ADJ means adjunct, not necessarily adjective. Additionally, morphosyntactic features such as PERS (person) or TENSE are also attributes. Moreover, discourse functions such as TOPIC or FOCUS are considered as attributes. These attributes take specific values, e.g. SG (plural) is the value for the attribute NUM. Additionally, the value can be a unique semantic form that appears inside single quotes such as 'Mary'. (see Dalrymple (2001), Falk (2001a) or Bresnan (2001)). An example is 'Mary' is a value of the predicate attribute PRED for the proper noun *Mary* as represented in the following f-structure:

$$(21) \left[\begin{array}{ll} \text{PRED} & \text{'MARY'} \\ \text{NUM} & \text{SG} \end{array} \right]$$

The f-structure for the English sentence *Jack met Kate* is given below:

$$(22) \left[\begin{array}{ll} \text{PRED} & \text{'MEET < SUBJ, OBJ >'} \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & \left[\begin{array}{ll} \text{PRED} & \text{'JACK'} \\ \text{NUM} & \text{SG} \end{array} \right] \\ \text{OBJ} & \left[\begin{array}{ll} \text{PRED} & \text{'KATE'} \\ \text{NUM} & \text{SG} \end{array} \right] \end{array} \right]$$

In (22), we have four attributes in the f-structure: PRED, TENSE, SUBJ and OBJ. The predicate PRED has a unique *semantic* value that is surrounded by single quotes. Such a semantic form has the *argument list*. In the above example, the predicate *meet* requires two arguments: subject (John) and object (Kate). Also, TENSE is an attribute that takes the value PAST. Moreover, we find that SUBJ and OBJ are both attributes, and their values are themselves embedded f-structures. It can also be noted that the main f-structure contains embedded f-structures which are values of the attribute SUBJ and OBJ.

In addition, there are three general conditions that f-structures must meet to ensure that sentences in a language are well-formed. These conditions are *Completeness, Coherence and Consistency* (Falk, 2001, pp. 63-64). The *completeness* and *coherence* requirements suggest that all the arguments of the predicate must be represented in the f-structure, with no extra arguments included. The *consistency* requirement suggests that each attribute must have a value.

Dalrymple (2001) defines *completeness* as follows:

- (23) **‘Completeness:** An f-structure is locally complete if and only if it contains all the governable grammatical functions that its predicate governs. An f-structure is complete if and only if it and all its subsidiary f-structures are locally complete’ (p. 37).

The sentence in (24) is ungrammatical and the f-structure in (25), based on Dalrymple's definition, is not complete because the verb *saw* requires two arguments, a subject and an object, but the object argument is missing from the sentence in (24), and therefore it is missing from the f-structure representation, resulting in incompleteness.

(24) *Kate saw.

(25)
$$\left[\begin{array}{ll} \text{PRED} & \text{'SEE < SUBJ, OBJ >'} \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & \left[\begin{array}{ll} \text{PRED} & \text{'KATE'} \\ \text{NUM} & \text{SG} \end{array} \right] \end{array} \right]$$

Dalrymple (2001) defines *coherence* as follows:

(26) '**Coherence** : 'An f-structure is locally coherent if and only if all the governable grammatical functions that it contains are governed by a local predicate. An f-structure is coherent if and only if it and all its subsidiary f-structures are locally coherent' (p. 39).

The sentence in (27) and the f-structure in (28) are not coherent because the verb *saw* requires two arguments, a subject and an object. However, the f-structure representation shows three arguments, a subject and two objects, *Kate*, *Jack* *John*. Therefore, the sentence and the f-structure are incoherent.

(27) *Kate saw Jack John.

$$(28) \left[\begin{array}{l} \text{PRED} \quad \text{'SEE < SUBJ, OBJ >'} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'KATE'} \\ \text{NUM} \quad \text{SG} \end{array} \right] \\ \text{OBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'JACK'} \\ \text{NUM} \quad \text{SG} \end{array} \right] \\ \text{OBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'JOHN'} \\ \text{NUM} \quad \text{SG} \end{array} \right] \end{array} \right]$$

Finally, Dalrymple (2001) defines *consistency* as:

(29) **‘Consistency:**

‘In a given f-structure a particular attribute may have at most one value’ (p. 39).

The subject, *baby*, in the sentence in (30) is singular and the verb, *cry*, is plural. This disagreement between the subject and the verb results in ungrammaticality. Accordingly, the f-structure will be ill-formed since the attribute NUM must have only one value, not two values as in (31).

(30) *The baby cry.

$$(31) \left[\begin{array}{l} \text{PRED} \quad \text{'CRY < SUBJ, OBJ >'} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'BABY'} \\ \text{NUM} \quad \text{SG/PL} \end{array} \right] \end{array} \right]$$

1.4.3 Correspondence function

The term *function* within LFG is also employed to refer to the principles used to map the nodes of a c-structure tree to specific parts in the f-structure. Such a correspondence relation between the c-structure and f-structure is represented in LFG using the function

\emptyset . Employing the function \emptyset results in a unique relatedness between a specific node of the c-structure and a specific part in the f-structure. However, the flexible architecture of LFG allows the f-structure to be connected to more than one node. The phrase and its head require to be connected to the same part in the f-structure (Dalrymple, 2001). These assumptions are illustrated in Figure 1.1, which is taken from Alotaibi (2014, p. 237), where the head V and its projections V' and VP relate to the same piece in the f-structure:

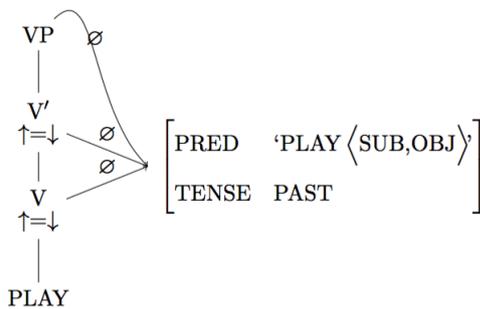


Figure 1.1: One part of LFG f-structure mapped to more than one node in c-structure

As we shall see in examples later in this work, c-structures are often displayed in LFG accounts with some of the relevant categories of f-structure added to some of the nodes that they correspond to (e.g. SUBJ, OBJ, TENSE etc.). The up and down arrows then indicate that what is entered for a given node also applies to the node above. Any information added from the lexical entries concerning the words at the bottom of the c-structure only has up arrows.

Another mapping principle is that in the English language, for example, the specifier of the c-structure functional category such as IP is always associated with the f-structure of the SUBJ function or the TOPIC function, while the specifier of the c-structure functional category such as CP is associated with the f-structure discourse function FOCUS. Additionally, complements of c-structure functional categories such as IP and CP are f-structure co-heads. Both the functional heads and their complements are associated with the same f-structure. On the other hand, complements of lexical categories and their modifiers are related to their individual functions in the f-structure (Dalrymple, 2001).

1.4.4 Basic word order structures in LFG

1.4.4.1 Verbal sentences

Arabic verbal constructions which contain only lexical verbs, with no auxiliaries, can be accounted for within LFG by assuming that the lexical verb occupies the head I rather than V. The head S is a sister to I, and dominates any VP complements. Such an analysis accounts for both the verb initial word order (VSO) and the subject initial word order (SVO). In VSO, the head S appears as the sister to I and the subject NP appears as a sister to the VP phrase, including the object, dominated by S. In SVO, the subject occurs in the specifier position of I. Examples of Arabic verbal sentences are given in (32).

- (32) a. katab Tārg d-daris
 write.PFV.3SGM Tārg DEF-lesson.SG.M
 Tārg wrote the lesson.
- b. Tārg katab d-daris
 Tārg write.PFV.3SGM DEF-lesson.SGM
 Tārg wrote the lesson.

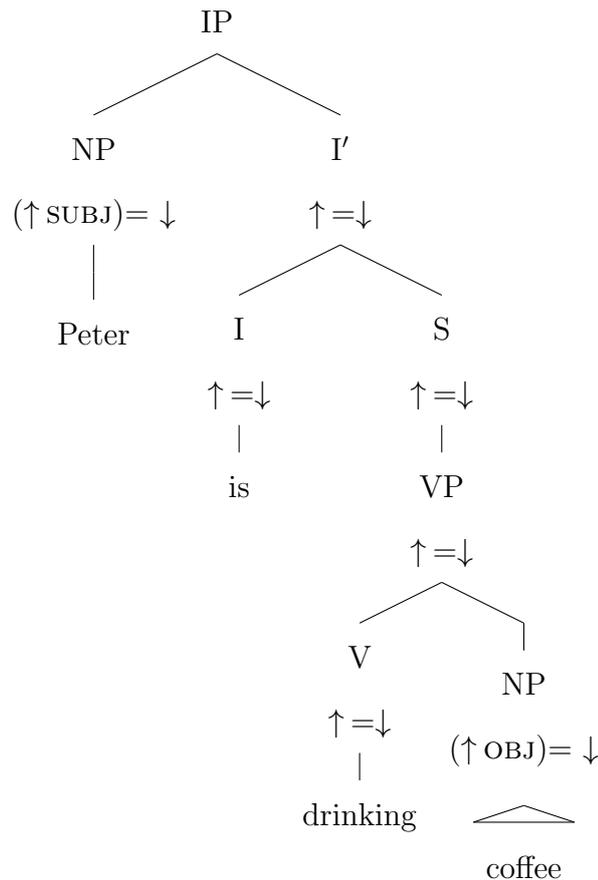
The following phrase structure rules will account for both word orders, VSO and SVO.

- (33) a. IP → (NP) I'
- (↑SUBJ)= ↓ ↑= ↓
- b. I' → I S | VP
- ↑= ↓ ↑= ↓ ↑= ↓
- c. S → (NP) VP
- (↑SUBJ)= ↓ ↑= ↓

In English sentences with auxiliaries as well as the main verbs, the auxiliaries always occupy the I position, and the main verb will appear in the V position as part of the VP, as in example (34), which is taken from Butt et al. (1999).

- (34) a. Peter is drinking coffee.

b.



c.
$$\left[\begin{array}{l} \text{PRED} \quad \text{'DRINK<SUBJ, OBJ>'} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'PETER'} \right] \\ \text{OBJ} \quad \left[\text{PRED} \quad \text{'COFFEE'} \right] \end{array} \right]$$

In Arabic sentences with auxiliaries as well as the main verbs, the auxiliaries always occupy the I position, and the main verb will appear in the V position as part of the VP, as will be shown later in Chapter 2.

1.4.4.2 Verbless sentences

Verbless sentences are treated in LFG in the view of the 'subject -predicate' S rule. According to this rule, the subject NP has an XP sister of a range of categories such as NP, PP, AP or VP as illustrated in the phrase structure rule in (35). This 'subject -predicate' S rule was assumed for languages that have structures that lack VP by (Bresnan, 2001, p. 112).

(35)
$$\begin{array}{ccc} \text{S} & \rightarrow & \text{NP} \quad \text{XP} \\ & & (\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow \end{array}$$

As many languages, Arabic display verbless subject predicate constructions, such as the examples in (36), where both NP and XP are hierarchical categories in a ‘subject-predicate’ relation under S.

- (36) a. Nūrah ḡamīl-a
 Nora beautiful-SGF
 Nora is beautiful.
- b. Nūrah fī l-mustašfā
 Nora in DEF-hospital.SGM
 Nora is the hospital.

1.4.4.3 Copula Constructions in LFG

In LFG, there are different analyses that have been proposed for copula constructions cross-linguistically (Rosén (1996); Dalrymple et al. (2004); Falk (2004); Nordlinger and Sadler (2007); Attia (2008), among others). Some of these studies, such as Dalrymple et al. (2004); Falk (2004); Nordlinger and Sadler (2007), claim that the different f-structural formalisations suggested for copula constructions within LFG can be generalised to the different languages of the world since the copula constructions have different syntactic and/or morphological properties cross-linguistically. Therefore, there is no motivation for a uniform approach even within the same language. According to Nordlinger and Sadler (2007), the *single-tier* analysis is the default analysis. However, other studies, such as Butt et al. (1999); Attia (2008), among others, call for a uniform approach for copula constructions cross-linguistically. According to Attia (2008), the uniform analysis should be the default analysis. The main analyses for copula constructions within LFG are the single-tier analysis and the double-tier analysis. The main difference between the two analyses is as follows:

- **single-tier** analysis assumes that the predicative P/N/A contributes the f-structure’s PRED (Nordlinger and Sadler, 2007).

- **double-tier** analysis assumes that the copula is the element which takes the PRED value of the predicative structure (Dalrymple et al., 2004).

Nordlinger and Sadler (2007) assume also the possibility of a double-tier analysis with an open-GF complement in the case we assume that the copular element, which may be null, contributes the main predicate of the clausal/f-structure, and takes the non-verbal predicate as its argument. Accordingly, the f-structure for the non-verbal predicate is embedded within a higher clausal f-structure resulting in a hierarchical f-structure.

Instead of the open-GF complement, Dalrymple et al. (2004) propose two alternative grammatical functions for the post-copular element: an open XCOMP complement as in (37b), or a closed PREDLINK complement as in (37c).

(37) a. The books are flimsy.

b. PRED ‘BE < XCOMP > SUBJ’.

c. PRED ‘BE < SUBJ, PREDLINK >’. (Dalrymple et al., 2004, p. 189)

Nordlinger and Sadler (2007) indicate that a single-tier analysis is preferred with languages that permit predicative adjectives or nouns to inflect for the tense of the main clause, and with languages, such as Turkish and Arabic, where predicative adjectives and nouns show agreement with the subject, just as verbs do. Dalrymple et al. (2004) suggests an alternative analysis for representing subject-predicative adjective or nouns agreement in copula sentences in these languages through the sharing of the SUBJ via the open XCOMP complement. However, this is not the case with languages where no morphosyntactic relationship is found between the subject and the other elements in the sentence. This is the case in English where there is no morphosyntactic relationship between the subject and the other elements as in *I am a teacher.* or *I am fond of linguistics.* In other cases, the second element of the sentence is a clause which contains its own subject, such as *The problem is that they appear..* For such languages, the only possible option is a two tier analysis with a closed complement PREDLINK as suggested by Dalrymple et al. (2004, p.

194).

With respect to Arabic, where predictive adjectives and nouns show agreement with the subject in GENDER and NUMBER, two possible analyses can be adopted: a single-tier analysis or a double-tier analysis with an open complement XCOMP Dalrymple et al. (2004) or an open-GF complement Nordlinger and Sadler (2007).

In (38), I demonstrate a single tier f-structure analysis vs. a double tier f-structure analysis for a Russian sentence containing a zero copula. The type of the complement adopted in the two versions of the tier-analysis (XCOMP or PREDLINK) is left open and just represented in the f-structure as GF, following Nordlinger and Sadler (2007). Therefore, the sentence in (38a) can have two possible different f-structures: a single tier f-structure (38b), where the zero copula is not the main PRED, or a double tier f-structure (38c), where the zero copula is the main PRED of the f-structure.

- (38) a. Ona student.
 3SGF.NOM student.SG.NOM
 She is a student

b. single-tier analysis

$$\left[\begin{array}{l} \text{PRED} \quad \text{'STUDENT<SUBJ>'} \\ \text{CASE} \quad \text{NOM} \\ \text{NUM} \quad \text{SG} \\ \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'PRO'} \\ \text{NUM} \quad \text{SG} \\ \text{GEND} \quad \text{F} \\ \text{PERS} \quad \text{3} \\ \text{CASE} \quad \text{NOM} \end{array} \right] \end{array} \right]$$

c. double-tier analysis

$$\left[\begin{array}{l} \text{PRED} \quad \text{'NULL-BE <SUBJ, GF>'} \\ \\ \text{SUBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'PRO'} \\ \text{NUM} \quad \text{SG} \\ \text{GEND} \quad \text{F} \\ \text{PERS} \quad \text{3} \\ \text{CASE} \quad \text{NOM} \end{array} \right] \\ \\ \text{GF} \quad \left[\text{PRED} \quad \text{'STUDENT'} \right] \end{array} \right]$$

This shows the flexibility of LFG in providing a variety of analyses across languages, and even within the same language as in the case of Arabic.⁶

1.4.5 LFG treatment of ‘mismatched’ categories

The English gerund is undoubtedly the most commonly discussed mixed category in the linguistic literature. The gerundive noun can appear in three possible constructions, and its function changes accordingly. It can appear in : 1) an entirely nominal construction (39a), 2) an entirely verbal construction (39b), and 3) a mixed construction (39c) (Lowe, 2019), as shown in the examples below:

- (39) a. His stupid **missing** of the penalty lost us the game.
 b. Him stupidly **missing** the penalty lost us the game.
 c. His stupidly **missing** the penalty lost us the game.

Lowe (2019, p. 1)

According to Lowe (2016), it is crucial to distinguish mixed phrases from non-mixed (pure) phrases. In English, the gerund in (39c) is truly mixed: the phrase includes both nominal elements, including the possessor *his*, and verbal elements, including a direct object the *penalty* and an adverb *stupidly*. In some other syntactic theories, researchers assume that mixed phrases are verbal based on their internal syntax. However, different analyses within the theory of LFG reveal that there are three key criteria that can determine the category of a word. These criteria are explained below.

1. **The External syntax:** the external distribution of the phrase, e.g. in Arabic, verbs (Vs) have specific functions in the clause such as heading finite clauses, while nouns (Ns) occupy certain grammatical positions such as subject, object, or a prepositional object.

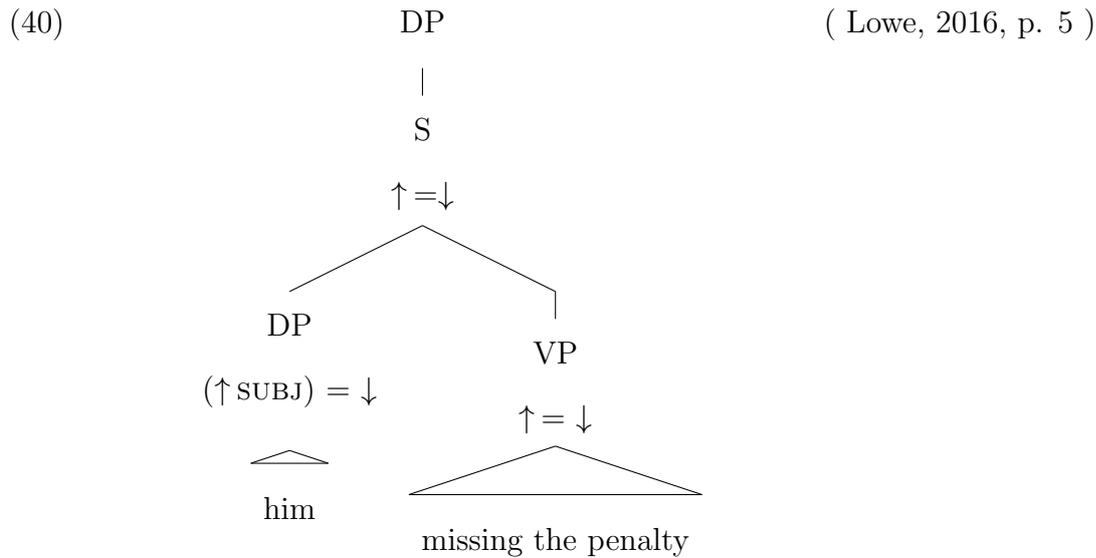
⁶An LFG analysis of copula constructions in SA will be provided in Chapter 2.

2. **The Internal syntax:** the internal structure of the phrase, e.g. in Arabic, verbs (Vs) which are heads of VPs select OBJ/OBL/COMP complements, and allow modification by adverbs, whereas nouns (Ns) are heads of NPs which allow possessive phrases and modification by adjectives, and they usually do not permit object complements and adverbial modifiers.

3. **Morphosyntax or agreement:** the morphosyntactic properties of the head of the phrase e.g. verbs manifest ‘*verbal*’ agreement features such as PERSON and NUMBER. However, nouns and adjectives display ‘*nominal*’ agreement features such as CASE and GENDER.

The internal syntax of the gerund in (39c) shows that the phrase headed by the gerund *missing* is truly mixed since it combines both verbal and nominal elements at the same time. The verbal elements include the possessive modifier *his*, whereas The nominal elements include the accusative object *penalty* and the adverbial modifier *stupidly*. In addition, the distribution of the gerundive phrase is nominal because the gerund can appear in the usual grammatical positions of subjects or objects, just as regular nouns. Furthermore, the gerundive phrase in (39c) has the same sort of TENSE and ASPECT values of finite verbs. So, they are morphologically verbal in some sense (Lowe, 2016).

Within LFG, under some analyses, the mixed internal syntax is not taken as a key criterion for categorising a certain phrase as mixed. Therefore, Bresnan et al. (2016, p. 318) propose a *head-sharing* analysis for the gerundive construction in (39b), which is similar to the *head-sharing* analysis proposed for the gerund construction in (39c), the only difference is that the analysis of the gerund construction in (39b) includes a (*co-*)*head* phrase, as illustrated in (40) below.



In (40), the gerund and the object complement are included in the head of a VP. The VP, which contains the gerund and the accusative object, and the lower DP, which contains the subject phrase *him*, form the clausal phrase S which (co-)heads the higher DP. Therefore, the gerundive phrase is a DP headed by a V within an embedded VP dominated by S. It can be noted that the internal syntax of the gerundive phrase in (39b) is entirely verbal. The DP node is only assumed to provide the external (nominal) distribution of the phrase. The distribution is adopted as a sufficient indication for mixed category status (Lowe, 2016).

Lowe (2016) concluded that mixed category constructions which show a mismatch between the internal syntax and external syntax are truly mixed constructions. Thus, such constructions require a mixed (*head-sharing*) analysis. However, mixed category constructions which have a uniform categorial internal and external syntax are non-mixed category constructions, and hence they do not entail a mixed (*head-sharing*) analysis.

1.4.6 LFG treatment of the Arabic Maṣḍar

The Arabic maṣḍar is the most commonly discussed mixed category in recent LFG research (Al-Sharif (2014), Börjars et al. (2015), Lowe (2019)). The Arabic maṣḍar appears mainly in two possible constructions, as illustrated in (41-42).

(41) **Type A:**

kitāb-at-u l-bint-i **l-wāğib-a**
 write.MSD-F.SG.NOM DEF-girl.F.SG.GEN DEF-assignment.M.SG.ACC
 bi-ītqān-in
 with-perfection.ACC

the girl's perfect writing of the assignment

(42) **Type B:**

kitāb-at-u l-walad-i l-sarīfat-u
 write.MSD-F.SG.NOM DEF-boy.M.SG.GEN DEF-fast-F.SG.GEN
li-l-wāğib-i
 to-DEF-assignment.M.SG.GEN

the boy's fast writing of the assignment (MSA)

In (41), the *maṣḍar* heads the phrase which forms a CSC with its subject *l-bint* 'the girl', and takes a direct object (NP) and is modified by an adverb. The external syntax of the phrase headed by the *maṣḍar* *kitābatu* 'writing' in Type A is nominal, while the internal syntax of the phrase is verbal. This means that the *maṣḍar* in Type A displaying behaviours of a mixed category, and therefore the Type A construction is unambiguously a mixed construction. In (42), the *maṣḍar* heads the phrase which forms a CSC with its subject *l-walad* 'the boy', and takes a PP and an adjectival modifier. In addition, it allows an optional adverbial modifier. The external syntax of the phrase headed by the *maṣḍar* *kitābatu* 'writing' in Type B is nominal, and the internal syntax of the phrase is almost nominal. The only verbal property displayed by Type B construction is the optional adverbial modifier. Based on this mixture, it is also mixed according to the LFG literature.

As mentioned in 1.5.8, work on mixed categories in LFG reveals three major criteria utilised in the categorisation of words: the external distribution, internal syntax and morphosyntax. The Arabic *maṣḍar* displays a mismatch between two properties: the

external syntax and morphosyntax at one hand, and the internal syntax on the other hand. These two properties are independently sufficient to justify a syntactic categorisation. This means that the Arabic *maṣḍar* phrase has dual categoriality. Börjars et al. (2015) takes the external syntax and morphosyntax as a sufficient criterion for categorising the Arabic *maṣḍar* phrase as mixed. Börjars et al. (2015) analyse type A and B as an entirely nominal structure. However, Lowe (2019) downplays the evidence of external syntax and morphosyntax for a category identification. Rather, he takes the evidence of internal syntax as sufficient for categorisation, and criticises Börjars et al. (2015)'s proposal based on the distributional and morphological criteria for the Arabic *maṣḍar*. He proposes that both type A *maṣḍar* and type B *maṣḍar* are unambiguously mixed constructions because the internal syntax of the *maṣḍar* phrase is mixed.

1.5 Argument Structure and Lexical Mapping Theory

Before 1980, the term ‘valence’ was used widely by researchers in the field of linguistics to refer to the number of participants that a certain predicate involves, and how these participants are expressed in syntax. In the early 1980s, the term ‘argument structure’ has appeared to replace the term ‘valence’⁷. Alsina (1996) defines argument structure as ‘the minimal information of predicates necessary for deriving their syntactic frame, or subcategorisation, and for deriving their alternative syntactic frames when an alternation exists’ (p. 6). Generally speaking, a predicate defines the relationship between participants, and these participants are called the predicate’s *arguments*. The predicate itself specifies the allowed number of the arguments it takes as shown in (43-45):

(43) a. Ali slept

b. *Ali slept the pen.

⁷The a-structure is the level responsible for encoding the relevant syntactic information about the arguments of predicates in LFG.

(44) a. Ali hit the boy.

b. *Ali hit

(45) a. Ali put the pen on the desk.

b. *Ali put

c. *Ali put the pen.

The verb ‘sleep’ requires one argument, ‘hit’ requires two arguments, and ‘put’ requires three arguments. Therefore, the examples (43b), (44b) and (45c) are not grammatical because the number of participants is different from what the predicate has specified in its argument structure. LFG involves a correspondence function that makes a connection between the arguments of a certain predicate and specific grammatical functions such as the subject (SUBJ, the direct object OBJ, the indirect dative object OBJ θ , which is a core argument, and obliques OBL θ , which is not a core argument etc...).

The correspondence between arguments and grammatical functions exhibits lexical regularities. So, we find that arguments that share same semantic properties take similar *thematic roles*, i.e. grouped into specific classes. Also, we find that the argument position among other arguments in the structure is more important than its thematic role properties (Alsina, 1996). This leads to the proposal of a *Hierarchy of Thematic Roles* which assumes that a predicate has a set of θ -roles or argument-roles that must appear in a specific order, and these arguments are classified based on the the position they occupy within the thematic hierarchy (see Bresnan and Kanerva (1989), Bresnan and Zaenen (1990), Dalrymple (2001)). According to Bresnan and Kanerva (1989), the arguments have specific positions inside the thematic hierarchy as shown in (46)

(46) *agent* < *beneficiary* < *experiencer/recipient* < *instrument* < *theme/patient* < *locative* (p. 23)

The above *Thematic Hierarchy* is crucial to *Lexical Mapping Theory* (LMT). LMT explores the correlation between the semantics-roles of the arguments of a certain predicate

and their grammatical functions, i.e. mapping the a-structure to the f-structure. Early versions of the rules of LMT propose to relate specific θ -roles to specific grammatical functions: e.g. the θ -roles of AGENT is always realised as SUBJ. A more general set of rules were proposed in more recent work. These rules relate θ -roles to classes of grammatical functions, instead of specific functions. Several versions of LMT have been proposed in the linguistic literature (see Bresnan and Kanerva (1989), Bresnan and Zaenen (1990), Bresnan (2001), Dalrymple (2001), Falk (2001a), Bresnan et al. (2015), and most recently Börjars et al. (2019)). The version that will be adopted in this work is the version of the LMT as formulated by Bresnan et al. (2015) and Börjars et al. (2019).

According to Börjars et al. (2019), grammatical functions can be classified according to their association with θ -roles into natural classes. Therefore, certain grammatical functions are as *unrestricted*, while others are classified as *restricted* on the basis of the θ -roles they entertain. We find that the feature $[\pm r]$ makes a distinction between *restricted* grammatical functions, represented as $[+r]$, and *non-restricted* grammatical functions, represented as $[-r]$. According to Table (1.7), the functions SUBJ and OBJ are classified as $[-r]$, which means that these unrestricted functions allows arguments with any θ -role. For example, the unrestricted function SUBJ and OBJ can be filled by expletive arguments, such as the pronoun *it* in (47a) and *there* in (47b), which have no θ -role at all.

(47) a. **It** is raining in Colchester now.

b. **There** is a bird in the room.

However, the functions OBJ and OBJ θ are classified as $[+r]$, which means that these restricted functions require arguments with specific θ -roles, for instance, the restricted function OBJ θ requires to be filled with an argument bearing a the θ -role THEME. Table (1.7) also shows that the feature $[\pm o]$ makes a distinction between *objective* grammatical functions, represented as $[+o]$, and *nonobjective* grammatical functions, represented as $[-o]$. We find that the unrestricted function SUBJ and the restricted function OBL θ are nonobjective. However, we find that the unrestricted function OBJ and the restricted function OBJ θ

are objective. The mapping between features and grammatical functions in the domain of LMT is illustrated in Table (1.7), taken from Börjars et al. (2019, p. 176).

	[-o]	[+o]
[-r]	SUBJ	OBJ
[+r]	OBL θ	OBJ θ

Table 1.7: Feature combinations resulted from r(estricted) and o(bjective)

According to Table (1.7), the features cross-classify grammatical functions: *minus* (-) features are unmarked, whereas positive (+) features are *marked*. Such cross-classification results in *markedness hierarchy grammatical functions*. Based on this hierarchy, the SUBJ function is the least marked with two *minus* features, [-o] and [-r]. However, the OBJ θ function is the most marked with two *positive* features, [+o] and [+r]. These assumptions are supported by a cross linguistically phenomenon: some languages have subjects (least marked), while other languages have special constructions which include OBJ θ (most marked). The Markedness Hierarchy is given below.

- Markedness Hierarchy of Grammatical Functions:

$$\text{SUBJ} > \text{OBJ} > \text{OBL}\theta > \text{OBJ}\theta$$

Börjars et al. (2019, p. 176)

On the basis of the Markedness Hierarchy, grammatical functions are given specific thematic roles: SUBJ and OBJ are both [-r], whereas SUBJ and OBL θ are both [-o]. These features are determined by three basic principles:

- Patientlike roles: $\theta \rightarrow [-r]$

- Secondary patientlike roles: $\theta \rightarrow [+o]$
- Other semantic roles: $\theta \rightarrow [-o]$

Börjars et al. (2019, p. 177)

Accordingly, roles like *Theme*, *Patient* and *Stimulus* can be grouped together as ‘patient-like’, and they are intrinsically classified with $[-r]$. Hence these roles are *unrestricted*, and they can appear as both SUBJ and OBJ (Börjars et al., 2019). In some languages, such as Arabic, we have to account for two patientlike roles in ditransitive constructions. Therefore, the secondary patientlike role is mapped to $[+o]$. However, Agents and all other semantic roles (e.g. experiencer, instrument, etc) are intrinsically linked to $[-o]$. In this way, we can ensure that agents are realised as non-objective functions. Thus, they can be realised as SUBJ or OBJ θ , and they do occur as an OBJ or an OBJ θ .

Moreover, according to Börjars et al. (2019), the mapping between the θ -roles and the different classes of grammatical functions is also subject to the following two specific conditions:

The Bi-uniqueness Condition ‘Each a-structure role corresponds to a unique f-structure function and each f-structure function corresponds to a unique a-structure role’ (p. 178).

The SUBJ Condition ‘Every verb must have a SUBJ’ (p. 178).

So, based on the above assumptions, the mapping and the intrinsic classification for a verb like *see* will be as follows:

	<i>see</i>	<Agent, Patient >	
(48)	Intrinsic classification	[-o]	[-r]
	Mapping	SUBJ	OBJ

1.6 Arguments of Nominals

It was observed that verbs and derived deverbal nouns share basic argument-taking properties. The following examples in (49-51) shows how verbs and nouns act similarly in different syntactic environments, which are taken from Grimshaw (1990):

- (49) a. with verbs: The physicist **claimed** that the earth is round.
 b. with nouns: the physicist's **claim** that the earth is round
- (50) a. with verbs: They **attempted** to leave.
 b. with nouns: their **attempt** to leave.
- (51) a. with verbs: The train **arrived** at the station.
 b. with nouns: the train's **arrival** at the station (Grimshaw, 1990, p. 47)

Notwithstanding the shared properties mentioned above, derived nouns unlike verbs, require to take prepositional DPs as object complements. Accordingly, (52b) is not grammatical, while (52c) is grammatical.

- (52) a. with verbs: They **completed** the project.
 b. with nouns: *their **completion** the project
 c. their **completion** of the project

(Grimshaw, 1990, p. 47)

While similarities exist in the distribution of verbs, and derived nominals, differences such as the ones in (52) above have led Grimshaw (1990) to question the idea that verbs and nouns share the same principles of argument realisation, especially they differ from each other in terms of case assignment. To strengthen her argument, she demonstrates how while for example in finite clauses in English, the subject of a verb is obligatory, in the same clauses, the subject of a noun is optional. Consider the contrastive examples in (53):

- (53) a. with verbs: ***completed** the task
- b. with nouns: the **completion** of the task

The differences between verbs and nouns illustrated in the previous pairs of data (52-53) have sparked a heated debate between linguists in the field of syntax. One group of scholars, such as Higginbotham (1983) and Anderson (1984) proposed that nouns and verbs should be kept distinct from one another, as they are totally different, and that nouns are unable to take arguments, and therefore lack an argument structure, and for this reason they display distinct properties from verbs. On the other hand, another group of scholars, such as Grimshaw (1990) and Alexiadou and Grimshaw (2008), has argued that some nouns behave, and function systematically like verbs because they are able to take arguments, and consequently they can take argument structure. As further argued for in Alexiadou and Stavrou (2008), other nouns are not like verbs, i.e. they are unable to take arguments, and consequently they lack argument structure.

Grimshaw (1990) argue that some nominals do take arguments, while others do not. Grimshaw has claimed that complex event nominals (CENs) are required to project their arguments, and therefore they have an argument structure. However, result nominals (RNs) are not required to project arguments, and therefore they lack argument structure. She has proposed a semantic-syntactic criteria to differentiate between the different types of derived nominals in English as we will see in detail in Chapter 3.

1.7 Outline of the thesis

Chapter one introduced the topic of the thesis and described the significance of the current study and its research objectives. It has also provided a general background introduction to maṣāḍars and their various types, and provided an introduction to some relevant aspects of the LFG theory.

Chapter two provides a description of some core aspects of SA grammar. The NPs

description, in particular, serves as a basis for the account of maṣḍār constructions in SA, provided in Chapter 5. It also provides an LFG analysis of the basic clause structure, and basic NPs in SA.

Chapter three gives an elaborate general description of the key literature about the so-called mixed categories. Based on the literature, it can be noted that the maṣḍar constructions in Arabic are problematic and therefore different analyses were proposed within the transformational grammar (TG).

Chapter four provides an account of key literature about the so-called mixed categories set in the theory of LFG. It introduces the different LFG approaches used to analyse mixed categories in general and maṣḍārs in particular. It is the basis of the analyses provided in Chapter 5.

Chapter five is the core of the thesis. It provides an elaborate description of the chosen basic action maṣḍar constructions, both MC A and MC B, starting with their general nominal and verbal properties. In addition, I proposes an LFG analysis of the maṣḍar constructions in SA. The chapter argues that the maṣḍar construction A (MC A) is uncontroversially mixed, while the maṣḍar construction B (MC B) is entirely nominal in SA.

Chapter six summarises the main contributions of the thesis both to the description of the SA dialect, the maṣḍar constructions and mixed category constructions in general, and to LFG literature, and states limitations of this study and suggests some areas for further future research.

Chapter 2

Some aspects of the grammar of Southern Saudi Arabic

2.1 Introduction

This chapter introduces some important general aspects of the grammar of spoken Arabian of the South western part of Saudi Arabia (hereafter SA), which will later serve as a good basis for what will be discussed in this study, i.e. maṣdar constructions. It provides a description of basic SA facts, including noun phrases, and provides LFG analysis of core issues in SA grammar.

I start by discussing the language itself. Then, I move to describe some key features of verbal sentences in SA, including word order, subject-verb agreement, the morphological forms of verbs, the types of lexical verbs, simple tense formations, compound verb-forms, pseudo-verbs and aspects of modality in section (1.5). Following that, I discuss the structure of verbless sentences in SA. In section (1.6), I describe the negation system in SA. Next, I discuss the possible types of noun phrases in SA, including simple noun phrases, the construct state construction and the free state construction. Finally, I provide an LFG analysis of the basic clause structure and the different types of noun phrases in SA. The last section provides a summary of the chapter.

2.2 The Language

Arabic is a member in the Semitic languages group that includes other languages such as Hebrew and Amharic. It belongs to the Afroasiatic language family. There are three main dialects ¹ of Arabic: Classical Arabic (CA), Modern Standard Arabic (MSA) and the so-called dialects (vernaculars), mostly spoken, which differ markedly from each other in different parts of the Arabic speaking world. Its formal written variety, usually called Modern Standard Arabic (MSA), which is the official sole or joint language of all the Arabic countries located in the South West of Asia, including Saudi Arabia, and North Africa. MSA is the variety of Arabic used in written contemporary Arabic media, public speaking, news broadcasts on radio and television and education (Holes (2004); Ryding (2005)).

The classical variety (CA) is the language of the Muslims' holy book; Quran, the *hadīth*, i.e. the prophet Mohammad's sayings, and other classical literature. It is the liturgical language of 1.8 billion Muslims around the world.

Dialects are used in everyday interactions in spoken conversation. In Saudi Arabia, there are five main dialect areas commonly distinguished: Hijazi in the Western Province, Najdi in the Central Province, Gulf in the Eastern Province, and Southern, and Northern, in the Southern and Northern Provinces, respectively (See Figure 2.1)². The dialects differ considerably between, and even within, national boundaries.

¹From a linguistic perspective, even MSA is considered a dialect.

²Source: <http://journal.wrocak.ac.uk>.

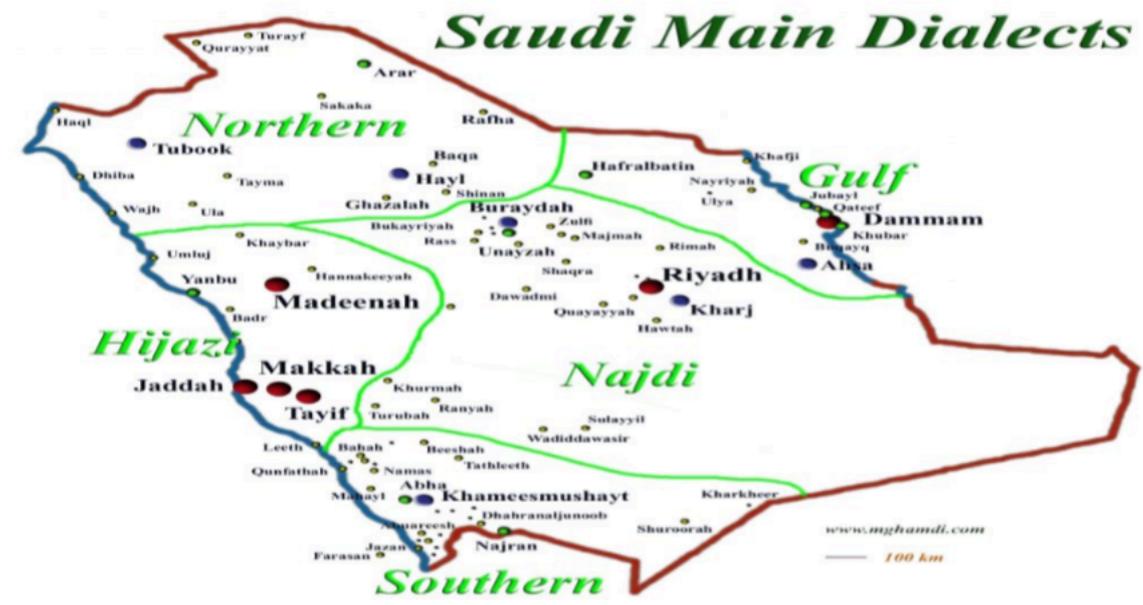


Figure 2.1: The main dialects of Saudi Arabia

The science of dialect description in the Kingdom of Saudi Arabia is still in its infancy. The nomenclature for referring to certain spoken dialects or sub-dialects has no specific rules. Some researchers refer to them on the basis of the cities where they are spoken, e.g. Abha, Taif, Turaif or Makkah dialects. Others distinguish them by tribes or ethnic groups, e.g. Bedouin, Tahāmi, farmer, Al-harthy, Al-ṣamri or Al-ghaṭāni dialects. In contrast, others use broader regional labels, e.g. Central (Najdi), Northern, or Southern, which is what I choose to do in this study. I will adopt the latter label, Southern, for my area of interest which is in fact centred on the city of Bisha in the Asir district, even though within this area the linguistic situation in Asir region is very complex, and rich in sub-dialectal variation within one city and even within one family. This is due to the great number of Arabic tribes that pertain to this region, and indeed which are considered as having been the origin of the Arabic race. Moreover, the label southern is widely used in the Kingdom to describe someone from the south western or the southern region of Saudi Arabia in general. Furthermore, with respect to the maṣdar construction that is the focus of this study, I am not aware of variation within the Southern area. It is worth-mentioning

that the assumptions advocated in the present study could be easily extended to other urban parts of the Southern region.

While many Arab countries have been colonised, Saudi Arabia was not colonised by other nations. However, parts of what is today Saudi Arabia, such as the Asir district in the south western region of the Kingdom were subject to rule by the Turkish speaking Ottoman Empire for some period of time. The Ottoman rule was however encountered with a strong resistance in the Asir district in the south western region of Saudi Arabia. Education was not one of the essential objectives of the Ottoman Empire, but the last Ottoman governor in Aseer, Muhi ad-Din Baasha, opened a primary school in Abha, around 1913. This school was known as *ar-rashdiyyah* school, and was meant for both Turkish and local Arabic children. However, the locals of the Asir region refused to send their children to this school, since the official language of instruction was Turkish, which led to concerns about their children's local identity (Al-Ni?mi, 1999, p. 26). Despite mixed marriages between Turks and Arabs in the Asir region, no influence of Turkish or other languages has been observed within the dialect, or the language of the region. What remains from the period of the Ottoman rule are some castles on the mountains of the highland, built of local stone, by the army of the ancient native population in their attempt to resist the Turkish army. Due to many factors, such as the spread of education, the teaching of English, widespread communication, and the media, and the migration from different villages to the big cities, a new modern version of southern Arabic has emerged. In this new version, what foreign influences can be observed come from English, and are due in part to its teaching as an obligatory subject in school (Al-Azraqi, 1998).

Southern Arabian Arabic (SA) is therefore defined in this study as a variety of Arabic that is spoken Bisha in the Asir region. The dialects in this region, which also covers some parts of Yemen, are not known to most scholars. Thus, there is a need for research on the dialect spoken in this region is further motivated. This is additionally so due to the fact that the dialect(s) spoken in this area have veiled unknown treasures of linguistic phenomena that have not been researched in the current linguistic literature. Alfaifi and

Behnstedt (2010) describe the linguistic situation in this area saying ‘it is, together with some parts of Yemen, the most archaic Arabic dialect region, a kind of museum of the Arabic language, and linguistically full of surprises’ (p. 64). Although SA is considered to be one of the main dialects spoken in Saudi Arabia, it remains one of the most neglected dialects in Saudi Arabia, when compared to other dialects such as Najdi Arabic and Hijazi Arabic. This dialect is further divided into four sub-dialects: urban southern Arabic, bedouin southern Arabic, rural southern Arabic and Tahami southern Arabic. Urban SA is spoken in the cities of Abha, Khamis Mushait, Bisha, l-Baaha, Najraan and Jaazaan, whereas Bedouin SA is spoken in the villages of the lowland. Rural SA is spoken in the countryside villages of the highland, whereas Tahami SA is spoken in the plains of Tahama. At times, SA can be unintelligible to other Saudi speakers, especially the rural southern Arabic and Tahami southern Arabic sub-dialects. The SA data described in this thesis mainly comes from the Urban SA variety currently spoken in and around Bisha, which is a city located in the South Western of Saudi Arabia. In respect of the constructions of interest associated with *maṣḍar*, my intuition as a speaker from this area tells me that these cities do not differ markedly.

Sociolinguistic and syntactic studies of varieties that are spoken close to our chosen dialect have been conducted, and the labels used to refer to them have been Tahami Qaḥṭani (Alqaḥṭani, 2015), or via reference to the cities or towns where the dialect is spoken, such as Abha (Al-Azraqi, 1998), or *ḡabal fayfā* (Alfaifi and Behnstedt, 2010).³

The dialect of the Asir region is characterised by being distinct from the dialect spoken in Yemen, since it is not spoken very close to the border. However, the closer one moves to the borders with Yemen in the extreme south, the more the dialects starts to have some similar features to the dialects spoken in the North of Yemen.

³The dialect of *ḡabal fayfā* is one of the most difficult and least known dialect of the southern region. It is spoken in the villages on the top of the *fayfā* mountains. For more details, see Alfaifi and Behnstedt (2010).

The choice of the Bisha dialect is based on the fact that the researcher is a native speaker of this dialect, which serves as a factor of convenience. The researcher is the primary informant for all the data sets cited in this thesis. Advice and judgement of other native speakers were sought in case of doubt, especially the investigated dialect has not been documented, there is no available written source for the data.

Bisha is located in the south west of Saudi Arabia, on Bisha valley, with around 3,000,000 palm trees. It has a population of around 300000 people, and is home to the University of Bisha and its branches. People in the city are employed predominately in the sectors of agriculture, education and the army service.

The Banu al-Harith, i.e. the Al-harthy tribe is one of the biggest Arabian tribes that govern the cities of Najran, Taif, and Biša. The Banu al-Harith descend from the Qahtāni people, considered to be one of the most prominent Arab tribes. The al-Harthy tribe lives in Tarj, near Biša centre. In the current study, I will be only concerned with the dialect of the Al-harthy tribe that lives in Biša.⁴

2.3 A preliminary introduction to the grammar of South Arabic

With that introduction to the specifics of the variety to be considered in this study, in the following section, I discuss some important aspects of the SA grammar covering its verb morphosyntax, clause structure and the types of noun phrases. This will provide a necessary general background to the dialect and the to the descriptive investigation of the maṣḍar constructions which will be provided in Chapter 5, especially the discussion of the noun phrase types in SA. The discussion includes word order, subject-verb agreement, verbal morphology, verbal sentences, compound verb forms, verbless sentences, copula constructions, modality, negation system, and the types of noun phrases, includ-

⁴Al-Harthy is the surname of the author of the present study. The Al-Harthy dialect spoken in Taif, in the Hijāz region is excluded from the current study.

ing pronominal forms, and the types of modifiers they select.

2.4 The verbal sentence structure

2.4.1 Word Order

Arabic dialects have lost the case marking system on nominals, which is what enables MSA to have a relative freedom of word order possibilities at its disposal. According to Aoun et al. (2009), Arabic dialects, in general, employ three different word orders: SVO, VSO and VOS. Aoun et al. (2009) cite illustrative examples of the three orders from different Arabic dialects such as Palestinian and Lebanese. SA permits only two orders: SVO and VSO. SA does not permit the VOS order which is acceptable in some Arabic dialects. Aoun et al. (2010, p. 47) illustrate the VOS order in Palestinian and Lebanese Arabic through the examples in (54):

- (54) a. qābal mona ?aħmad
 meet.PFV.3SGM Mona.SGF Ahmad.SGM
 ?aħmad met Mona. **Palestinian Arabic**
- b. bess-it xalil maya
 kiss-PFV.3SGF Khalil.SGM Maya.SGF
 Maya kissed Khalil. **Lebanese Arabic**

In the above examples, the order is VOS. In (54a), the object *Mona*, which is feminine, appears after the verb *qābal* and comes before the subject *?aħmad*, which is masculine. The hearer can identify that the subject is *?aħmad* as *qābal* is a masculine verb, and accordingly it requires a masculine subject. However, if the two nouns in subject and object are both masculine, this order will be not acceptable. Example (54b), displays the same pattern except that the subject is *Maya*, which is feminine. The hearer can identify that the subject is *Maya* as the gender of the verb is feminine, and accordingly it requires a feminine subject. Once again, if both nouns share the same gender, this order will be impossible.

In SA, a VOS order is not acceptable, as shown through the ungrammaticality of the data in (55).

- (55) a. *gābal Sāra Ali
 meet.PFV.3SGM Sāra.SGF Ali.SGM
 Ali met Sara.
- b. *kallam-t χālīd Nora
 talk.PFV-3SGF χālīd.SGM Nora.SGF
 Nora spoke to χālīd.

The two possible word orders in verbal sentences in SA are: SVO and VSO. These different orders are presented in (56a) and (56b), respectively.

- (56) a. Tārg šāf Hind
 Tārg see.PFV.3SGM Hind
 Tārg saw Hind. SVO
- b. šāf Tārg Hind
 see.PFV.3SGM Tārg Hind
 Tārg saw Hind. VSO

The SVO word order is however only possible if the subject is either **definite**, or indefinite but modified. It may be definite either semantically, as in the case of proper nouns, or syntactically, via the marking of a noun with the definite marker *l-*. Indefiniteness is shown simply by the absence of *l-*, (57) is thus not grammatical, because the subject is **indefinite** and not modified. However, it is still possible for an indefinite NP to appear preverbally as seen in (58). In (58a), the indefinite subject noun is modified, while in (58b), the quantifier *kull* functions as a modifier of the indefinite nominal, which then allows the whole NP to appear in a pre-verbal position.

- (57) *walad šāf Hind
 boy.SGM see.PFV.3SGM Hind
 A boy saw Hind.

- (58) a. raǧāl ṭawīl kallam Nora
 man.SGM tall.SGM speak.PFV.3SGM Nora
 A tall man spoke to Nora.
- b. kull ṭālib aḡad galam
 every student.SGM take.PFV.3SGM pen
 Every student took a pen.

SA, in general, also resembles other dialects in that it exhibits the phenomenon known as pro-drop, where the subject does not have to be overt or present as a separate word. In such contexts, a subject NP is not available, and the subject is solely indicated by the inflection on the verb, as in (59). Thus, we have sentence structures that merely involve a verb-form, as in (59a). If we have an object NP, along with just the verb, a VO structure will be observed, as in (59b).

- (59) a. rāḥ
 go.PFV.3SGM
 He went.
- b. šāf Hind
 see.PFV.3SGM Hind
 He saw Hind.

2.4.2 Subject-verb Agreement

In SA, the verb exhibits full agreement in PERSON, NUMBER and GENDER with the subject in both SVO and VSO orders, as illustrated in (60a) and (60b). Partial agreement with the subject, which would involve a pattern that only shows agreement in PERSON, and GENDER, but not in NUMBER, is not grammatical in SA, as illustrated in (60c).

- (60) a. l-awlād šāf-u Hind
 DEF-boy.PLM see.PFV.3-PL Hind
 The boys saw Hind. SVO
- b. šāf-u l-awlād Hind
 see.PFV.3-PL DEF-boy.PLM Hind
 Intended: The boys saw Hind. VSO

- c. *šāf l-awlād Hind
 see.PFV.3SGM DEF-boy.PLM Hind

Intended: The boys saw Hind.

VSO

This behaviour is in contrast with MSA. MSA shows an asymmetry of agreement in the distinct SVO and VSO orders. In an SV order, the verb exhibits full agreement with the subject, as in (61a). Partial agreement with the subject is hence ruled out, as in (61b). In a VS order, on the other hand, it displays partial agreement, where the verb agrees in PERSON, and GENDER, but not in NUMBER, as illustrated in (61c), where a singular masculine inflected form appears, despite the subject being plural. If the verb exhibits full agreement, the sentence would be ungrammatical, as shown in (61d).

- (61) a. l-muʔallim-ūn akal-ū
 DEF-teacher-PLM.NOM eat.PFV.3-PLM

The teachers ate.

MSA: Aoun et al. (2009)

- b. *l-muʔallim-ūn akal
 DEF-teacher-PLM.NOM eat.PFV.3SGM

The teachers ate.

MSA: Aoun et al. (2009)

- c. akal l-muʔallim-ūn
 eat.PFV.3SGM DEF-teacher-PLM.NOM

The teachers ate.

MSA: Aoun et al. (2009)

- d. *akal-ū l-muʔallim-ūn
 eat.PFV.3-PLM DEF-teacher-PLM.NOM

Intended: The teachers ate.

MSA: Aoun et al. (2009)

2.4.3 Verbal Inflection and simple tense forms in SA

Arabic is well-known for its rich morphology. In SA, nouns inflect for NUMBER and GENDER, see examples (62a-b). In such examples, we can observe agreement in NUMBER and GENDER on the adjective. In (62c), we get DEFINITENESS marking, showing agreement in DEFINITENESS.

- (62) a. awlād ħilw-īn
 boy.PL beautiful-PL

beautiful kids

- b. bint ħilw-a
 girl.SG beautiful-SG

beautiful girl

- c. l-bint l-ħilw-a
 DEF-girl.SG DEF-beautiful-SG

the beautiful girl

In SA, verbs inflect for two types of morphological moods: indicative mood and imperative mood. The indicative mood includes two morphological aspectual forms: perfective and imperfective, glossed as PFV and IMPFV, respectively. The perfective and imperfective paradigmatic verb-forms, represented through the paradigm of the verb *akal* ‘eat’, are provided in Table (2.1). In addition, in Table (2.2), I provide the imperative verb-form counterparts associated with the same verb. The inflectional forms on the verb here express the gender, number and person of the subject, so all also convey the category NOM.

Morphosyntactic features	PFV Form	IMPV Form
1.SG	akal- t	a -kul
1.PL	akal- na	na -kul
2.SGM	kal- t	ta -kul
2.SGF	kal- ti	ta -kul- īn
2.PL	kal- tu	ta -kul- ūn
3.SGM	akal	ya -kul
3.SGF	kal- at	ta -kul
3.PL	kal- u	ya -kul- ūn

Table 2.1: The SA perfective and imperfective paradigm of *akal* ‘eat’ and the NOM inflections for gender, number and person

Morphosyntactic Form	Imperative Form
2.SGM	kul
2.SGF	kul- i
2.PL	kul- u

Table 2.2: The SA imperative paradigm of *akal* ‘eat’

Based on the inflectional system represented in Tables (2.1)-(2.2), we observe that SA shows no GENDER distinction for plural forms. Accordingly, the verb *rāḥ* ‘leave’, for example, takes the same plural form, regardless of whether the subject is masculine or feminine.

- (63) a. l-awlād rāḥ-u
 DEF-boy.PLM leave.PFV.3-PL
 The boys have left.

- b. l-banāt rāḥ-u
 DEF-girl.PLF leave.PFV.3-PL
 The girls have left.

Non-human plural nouns, referred to as *ǧamʿ taksīr* in Arabic are in the SA system considered to be feminine, and while triggering feminine agreement on verbs and adjectives, they take a default singular NUMBER agreement. An example of such is (64).

- (64) l-madāris l-gidīm-ah sakar-at
 DEF-school.PLF DEF-new.SGF close.PFV-3SGF
 The old schools have been closed

SA expresses simple tenses by using simple verb tense forms. The perfective form of a verb is used to express simple past tense, the imperfective form of a verb is used to express simple present tense, and the combination of the prefix *ba-* or *bi-* + the imperfective form of a verb is used to express simple future tense. The data set in (65) illustrates the simple verb tense forms in SA.

- (65) a. l-walad ḥub l-bint
 DEF-boy.SGM love.PFV.3SGM DEF-girl.SGF
 The boy loved the girl. **Simple past**
- b. l-walad ya-ḥub l-bint
 DEF-boy.SGM 3SGM-love.IMPV DEF-girl.SGF
 The boy loves the girl. **Simple present**
- c. l-walad b-ya-ḥub l-bint maʿā l-wagat
 DEF-boy.SGM will-3SGM-love.IMPV DEF-girl.SGF with DEF-time
 The boy will love the girl with time. **Simple future**

2.4.4 Forms of compound tenses in SA

The data given in this subsection includes the two auxiliaries *kān* and *rāḥ* used in combination with lexical verbs, in addition to the particle *ba-*. Such a combination results in the

When I got back to the office at 5pm, Tārg had already eaten all his lunch. (PAST PERFECTIVE)

- d. yam raġġi-t l-maktab s-sāfa χamsa Tārg
 when back.PFV.1SG DEF-office.SGM DEF-hour.SGF χamsa.SGF Tārg
 kān gad akal l-ġadā kul-a
 be.PFV.3SGM already eat.PFV.3SGM DEF-lunch.SGM all-SGM.ACC

When I got back to the office at 5pm, Tārg had already eaten all his lunch. (PAST PERFECTIVE)

The restriction which SA displays, where *kān* is not able to combine with a perfective form unless in the presence of *gad* ‘already’, as in (66d), is not present in some other Arabic dialects. For example, in Egyptian, *kān* can combine with a perfective lexical verb as in (67).

- (67) kān ʕamal ʔabl-aha film
 be.PFV.3SGM do.PFV.3SGM before-3SGF.ACC movie

He had done a movie before it. **Colloquial Egyptian** (ElSadek, 2016, p. 58)

In SA, there is a possible combination of *kān* + a special form of the imperfective verb-form, inflected with the prefix *ba-*, which is used to mark continuity and indicate the progressive aspect. The combination of *kān* + *ba-* + *imperfective* expresses a PAST PROGRESSIVE reading without the need for an adjunct to support this reading, as shown in (68a). If the helping verb *kān* is deleted, we will have a PRESENT PROGRESSIVE reading as shown in (68b).

- (68) a. l-banāt kān-u ba-ya-lʕab-ūn fī l-ħadīga
 DEF-girl-PLF be.PFV-3PL BA-3-play.IMPV-PL in DEF-garden

The girls were playing in the garden. (PAST PROGRESSIVE)

- b. l-banāt ba-ya-lʕab-ūn fī l-ħadīga
 DEF-girl-PLF BA-3-play.IMPV-PL in DEF-garden

The girls are playing in the garden. (PRESENT PROGRESSIVE)

2.4.4.2 *rāḥ* as a future and aspect marker

In SA, the future particle *rāḥ* as an auxiliary verb is used to realise what we can describe as: FUTURE TENSE or PROSPECTIVE ASPECT. If it precedes a lexical imperfective verb, it will express a future tense, as in (69a-b). If it follows *kān* and precedes a lexical imperfective verb, it can be understood as conveying an aspectual value, with a meaning of past intention, as in (69d). In both uses, the future particle *rāḥ* must be followed by the imperfective form of the verb, nothing can come in between, otherwise, ungrammaticality results as in (69c). However, the particle *rāḥ* as an auxiliary verb does **not** inflect for NUMBER, GENDER or PERSON. In its original use, *rāḥ* is also a lexical verb in SA, which means ‘go’. In that use, like other lexical verbs, it inflects for NUMBER, GENDER and PERSON, showing agreement with its subject as in (70).

- (69) a. Nora *rāḥ* t-aḡi bukra
 Nora FUT 3SGF-come.IMPV tomorrow
 Nora will come tomorrow. (SIMPLE FUTURE)
- b. *rāḥ* t-aḡi Nora bukra
 FUT 3SGF-come.IMPV Nora tomorrow
 Nora will come tomorrow.
- c. **rāḥ* Nora t-aḡi bukra
 FUT Nora 3SGF-come.IMPV tomorrow
- d. Ali *kān* *rāḥ* ya-kul bas ragad
 Ali be.PFV.3SGM FUT -3SGM-eat.IMPV but sleep.PFV.3SGM
 Ali was going to eat, but he slept. (PROSPECTIVE ASPECT)
- (70) Nora *rāḥ*-at lil-maktab
 Nora go.PFV-3SGF to-DEF-office.SGM
 Nora went to the office. (LEXICAL VERB)

Moreover, the combination of *rāḥ* and an imperfective verb can express either a FUTURE HABITUAL reading as illustrated, in (71a), or a FUTURE PROGRESSIVE reading, as in (71b).

2.4.4.3 The active participle forms *gāʿid* and *ǧālas*

In SA, there are two active participles that can be used as auxiliaries: *gāʿid* and *ǧālas*, whose roots both literally mean ‘sit/stay/remain’. Like other participles, they inflect for NUMBER and GENDER, and they can also be used in their lexical meaning of ‘sitting’. Additionally, they can be used as a grammatical marker, i.e. an auxiliary, which expresses PROGRESSIVE ASPECT when it is followed by an imperfective form of the verb. The examples in (73) shows both *gāʿid* and *ǧālas* can function as auxiliaries (grammatical markers) in SA. In example (73), following Camilleri and Sadler (2017), I use the terminology lexical vs. grammatical to refer to the real lexical meaning and to the grammatical use of the active participle auxiliaries, respectively.

- (73) a. l-walad gāʿid ya-kallam bal-ǧawāl
 DEF-boy.SGM sit.ACT.PTCP.SGM 3SGM-speak.IMPV with-DEF-phone.SGM

Lexical: The boy is sitting and speaking on the phone.

Grammatical: The boy is speaking on the phone.

- b. l-walad ǧālas ya-kallam bal-ǧawāl
 DEF-boy.SGM sit.ACT.PTCP.SGM 3SGM-speak.IMPV with-DEF-phone.SGM

Lexical: The boy is sitting and speaking on the phone.

Grammatical: The boy is speaking on the phone.

Moreover, in SA, the verb *ʿād* ‘return/come back’ is used as a verb that has grammaticalised as an ‘about to’ auxiliary expressing prospective aspect.

- (74) ʿada-nā bu-n-ūṣal l-ḥīn
 return.PFV-1PL FUT-1PL-arrive.IMPV DEF-now

We are about to arrive now.

We conclude that there are five main forms of compound tenses in SA:

- kān + imperfective form

- *kān* + *ba-* prefix + imperfective form
- *ba-* prefix + imperfective form
- *rāh* + *ʔa-kūn/yi-kūn/tu-kūn* + perfective verb-form
- *ʕād* + imperfective form
- *gāʕid/ǧālas* + imperfective form

2.4.5 Pseudo-verb forms

In Arabic and Maltese, there are items that function like verbs in some respects (refer to Brustad (2000) and Camilleri (2016)). Pseudo-verbs are derived from non-verbal stems, usually nouns and prepositions. In SA, pseudo-verbs can be derived from nouns e.g. *ham* ‘worry’, *nafs* ‘soul’, *ʔumniyah* ‘wish’, and *wudd* ‘desire’ or ‘wish’, and can also be derived from prepositions e.g. *ʕind* ‘at’, *maʕ* ‘with’, *fi* ‘in’ or *li* ‘for’. Brustad (2000) and Camilleri (2016) indicate that such sorts of verbs have new meanings that are different from those of their base form. For example, in SA, the locative prepositions *ʕind* ‘at’ and *maʕ* ‘with’ function as pseudo-verbs which mean ‘have’, and *fi* ‘in’ functions as a pseudo-verb as well, but it means ‘there is/are’. The pseudo-verbal function of *ʕind* ‘at’, *maʕ* ‘with’, and *fi* ‘in’ is shown in (75a-b), while (76a-b) represents the locative prepositional function of these items.

2.4.5.1 Possessive and existential use of pseudo-verbs in verbal sentences

- (75) a. Amal ʕind-aha/maʕ-aha ǧawāl
 Amal have-3SGF.GEN phone.SGM
 Amal has a mobile phone. (Possessive construction)
- b. fi akal bil-bāt
 there food.SGM with-DEF-home.SGM
 There is food at home. (Existential construction)

2.4.5.2 Prepositional use of pseudo-verbs in nominal sentences

- (76) a. l-ğawāl ħind/maħ Amal
 DEF-phone.SGM at/with Amal
 The mobile phone is at Amal's place /The mobile phone is with Amal.
- b. l-akal fī l-bāt
 DEF-food.SGM in DEF-home.SGM
 The food is at home (Locative construction)

Pseudo-verbs inflect for subject agreement like normal verbs, however, the morphological means is different as illustrated in (77), where instead of the usual verbal inflection, we get the inflection associated with the original preposition use and function of this form.

- (77) Amal ħind-aha ġawāl
 Amal have-3SGF.GEN phone.SGM
 Amal has a mobile phone

An additional pseudo-verb in SA is the preposition *li* 'to'. This preposition essentially functions as a dative marker with ditransitive verbs (and maṣādars, as we will see in Chapter 5) as in (78). As a pseudo-verb, it means 'have/own', as shown in (79a-b).

- (78) Tārg ʔaṭa l-ğawāl li-Hind
 Tārg give.PFV.3SGM DEF-phone.SGM to-Hind
 Tārg gave the mobile phone to Hind. (Preposition dative pronoun)
- (79) a. Tārg l-a maktab fī-l-ħamāra
 Tārg have-3SGM.GEN office.SGM in-DEF-building
 Tārg has an office in the building.
- b. ṭ-ṭulāb li-him bāṣ χāṣ
 DEF-student.PLM have-3PLM.GEN bus.SGM private.SGM
 The students have a private bus. (Possessive construction)

Additionally, this pseudo-verb has a further function in SA, as also identified for other dialects in Camilleri and Sadler (2018b). It can function as an aspect marker both in verbal

and verbless sentences, as we will see below. Here it expresses a universal perfect progressive aspectual reading. In other words, the state or activity denoted by the sentence has not been completed, i.e. it is still ongoing in the time of the sentence articulation (McCoard, 1978). It also requires to be followed by a time-durational adverbial modifier. The pattern consists of: *li* ‘to’ + GEN suffix + duration temporal adverb + active participle/imperfective form of the verb as noted in Camilleri (2016) Hallman (2016), Camilleri and Sadler (2018b) for different Arabic dialects including Syrian and Maltese. The data in (80) below illustrate some different present time aspectual variants that can be associated with *li* in SA: the verb *ṣār* ‘become’ precedes *li* optionally, and the temporal adverbial following that. The addition of the verb *ṣār* ‘become’ does not alter the meaning that is conveyed. The same structure applies to verbless sentences, as shown in (80d).

- (80) a. (ṣār) l-i sāʿ-a ṣāḥi
 become.PFV.3SGM have-1SG.GEN hour-SGF awake.ACT.PTCP.SGM
 I have been awake for one hour.
- b. (ṣār) l-i yūm-ān a-ktub fī l-maktab
 become.PFV.3SGM have-1SG.GEN day-DUAL 1SG-write.IMPV in DEF-office.SGM
 I have been writing in the office for two days.
- c. (ṣār) li-him sant-ān ya-skūn-ūn fī landan
 become.PFV.3SGM have-3PLM.GEN year-DUAL 3-live.IMPV-PL in London
 They have been living in London for two years.
- d. l-i sāʿt-ān fī l-maktab
 have-1SG.GEN hour-DUAL in DEF-office.SGM
 I have been in the office for two hours.

Another pseudo-verb used in SA is *šakl-i* which means ‘seem/appear’, discussed for Egyptian in ElSadek and Sadler (2015) and for other dialects in Camilleri and Sadler (2018b). This pseudo-verb *šakl-i* in (81) is followed by *ba-* + imperfective form of the verb, and the verbal complement is not introduced with the complementiser *inn* so this cannot be

analysed as a two clause sentence. It is used to indicate that an action/event might take place or happen in the future. Additionally, *ʔumniyat-i/raġbah* + imperfective form of the verb are used similarly.

- (81) a. *šakl-i ba-a-sāfar amrikā*
 seem-1SG.GEN will-1SGM-travel.IMPV America

It seems that I will travel to America.

- b. *ʔumniyat-i asāfar faransā*
 wish-1SG.GEN travel.IMPV.1SG France

My wish is to travel to France

- c. *ham-ha t-rūh maʕ-kum*
 worry-3SGF.GEN 3SGF-go.IMPV with-you

Her concern is to go with you.

- d. *raġbat-ha t-rūh maʕ-kum*
 desire-3SGF.GEN 3SGF-go.IMPV with-you

Her desire is to go with you.

Table (2.3) summarises the different pseudo-verbs in SA, along with their grammatical meanings, the nature of their syntactic category, and the lexical meaning associated with the original function of these forms.

Pseudo-verb	Meaning	Basic Category	Basic Meaning
<i>ʕind</i>	‘have’	preposition	‘at’
<i>maʕ</i>	‘have’	preposition	‘with’
<i>fi</i>	‘there’	preposition	‘in’
<i>li</i>	‘have/own’	dative pronoun	‘to’
<i>nafs/wadd</i>	‘wish’	noun	‘soul, desire’/‘wish, desire’
<i>ʕakl</i>	‘shape’	noun	‘form/shape’
<i>ʔumniyah</i>	‘wish’	noun	‘desire’/‘wish, desire, hope’
<i>ham</i>	‘worry’	noun	‘burden, concern, worry’
<i>raǧbah</i>	‘desire’	noun	‘desire’

Table 2.3: The common pseudo-verbs in SA

2.5 Modal forms

Modality in SA can be expressed by a number of forms which can express different modal semantic meanings: ability, obligation, possibility, opinion/advice, and prohibition. SA does not have a specific set of modal verbs which can be syntactically and morphologically distinguished from other verbs, as, for example, the case with modal verbs in English. SA, instead, uses a variety of forms to express modality. Some of these forms are ordinary lexical verbs that inflect in the usual way, whereas others are invariant forms.

2.5.1 Inflectionally variable modals

The inflected verbal forms which express modality in SA exhibit the usual inflection of verbs, and precede an inflected main verb in a complement clause. Like other verbs and pseudo-verbs, they also show variable subject agreement in NUMBER, GENDER and PERSON. Participle forms, including both active and passive participles, used to express modality manifest agreement in NUMBER and GENDER, just like adjectives. The fully inflected verbs in SA include *yagdar* ‘be able/permitted’, and *yabaja* ‘want’. The inflecting

participle form in SA is *nāwi* ‘intended’. Additionally, SA uses modal expressions involving inflecting pseudo-verbs such as *nafs-i* ‘wish’ ‘*wudd-i* ‘wish’ and *nayti* ‘intention’. As we said, one of the strategies that SA uses to express modality is lexical verbs with modal meaning. Such verbs take verbal complement clauses which are introduced by the optional complementiser *inn* ‘that’. As illustrated in (82), *inn* takes an ACC inflection which agrees with the SUBJ of the dependent clause. The verb here has the same ambiguity shown by the English auxiliaries of ability/permission, e.g. *can/be able to*, where we have two possible readings: modal permission reading and physical ability reading.

- (82) a. ta-gdar (inn-ak) ta-ḥazar l-muḥāzar-a
 2-able.IMPV.SGM COMP-2SGM.ACC 2-attend.IMPV.SGM DEF-lecture-SGF
 You can/are allowed to attend the lecture.
- b. gdar-t a-ḥazar l-muḥāzar-a
 able.PFV-SGM 1-attend.IMPV.SG DEF-lecture-SGF
 I was able/allowed to attend the lecture.

The verb *yabaḡa* ‘want’ which expresses a volitional meaning occurs in a similar construction (83).

- (83) a. Tārg ya-baḡa (inn-a) ya-mši bukra
 Tārg 3SGM-want.IMPV COMP-3SGM.ACC 3SGM-walk.IMPV tomorrow
 Tārg wants to go tomorrow.
- b. Tārg baḡa ya-mši bukra
 Tārg 3SGM-want.IMPV 3SGM-walk.IMPV tomorrow
 Tārg aimed/wanted to go tomorrow.

Also, the modal expression *ba- + yagdar* ‘can be able to’ is used to express certain ability in SA as illustrated in (84).

- (84) Marām ba-ta-gdar ta-takallam almāni
 Marām can-3-able.IMPV.SGF 3-speak.IMPV.SGF German
 Marām can speak German.

Pseudo-verbs expressing modal meanings are illustrated in (85).

- (85) nafs-i /wudd-i (inn-ī) a-sāfar amrika
 wish.1SG.GEN wish.1SG.GEN COMP-1SG.ACC 1SGM-travel.IMPV America
 I want/wish to travel to America.

The modal predicate expressed by an inflecting participle form is exemplified in (86).

- (86) a. nāwi-a (inn-ī) ʔa-bd-a riāz-a min
 intend.ACT.PTCP-SGF COMP-1SG.ACC 1SGM-start.IMPV sport-SGF from
 bukra
 tomorrow
 I intend to start exercising from tomorrow.
- b. muṣamam-a (inn-ī) arūh n-nādi min
 design.PAS.PTCP-SGF COMP-1SG.ACC 1SGM-go.IMPV DEF-gym.SGM from
 bukra
 tomorrow
 I am resolved to go to the gym from tomorrow.

2.5.2 Invariant modal forms

SA has a list of invariant modals which have fixed unchangeable forms. However, these forms can sometimes display inflectional elements on them. Examples of such modals are the verbs *yaṣlah/yanfaʿ* ‘can/be possible’ and *yimkin* ‘may’. They both have unchangeable forms displaying a 3SGM inflection. Other invariant modal forms in SA are the passive verbal participle *l-mafrūz* ‘the supposed’, which always takes the form of a definite noun, the indefinite noun *momkin* ‘possibility’, the adjective *zarūri* ‘necessary’, the active participles *iḥtimāl* ‘possible’, *lāzim* ‘must’, *muğbar* ‘have to’, and *wāğib* ‘must’ and *z-zāhar* ‘appear/seem’. *iḥtimāl* ‘possible’, *lāzim* ‘must’ appear only as indefinite nouns, while *wāğib* ‘must’ can be used as a definite or indefinite noun. *z-zāhar* ‘appear/seem’ requires to be followed by a future verb form, i.e. *ba-* + *imperfective verb*, *taḥadi* ‘challenge’, which is a *maṣdar*, expresses the meaning of ‘dare’, and *kūn* from *kān* is used to express the meaning of ‘should’, i.e. opinion/advice. All these forms are followed by complement clauses which include a lexical verb in its imperfective form, with the addition of

the optional complementiser *inn*. Consider the the data below.

Example (87) provides a representation of invariant uninflected modals in SA.

- (87) a. *lāzim* (inn-ak) *ta-ḥaẓar* *l-yūm*
 must COMP-2SGM.ACC 2-attend.IMPV.SGM DEF-today
 You must attend today/It is obligatory that you attend today.
- b. *l-wāḡib* (inn-ak) *ta-ḥaẓar* *l-yūm*
 DEF-must COMP-2SGM.ACC 2-attend.IMPV.SGM DEF-today
 You must attend today/It is obligatory that you attend today.
- c. *iḥtimāl* (inn-ak) *t-sāfar* *bukra*
 possible COMP-2SGM.ACC 2SGM-travel.IMPV tomorrow
 It is possible that you travel tomorrow/You might travel tomorrow.
- d. *l-mafrūz* (inn-ak) *t-sāfar* *l-yūm*
 DEF-suppose COMP-2SGM.ACC 2SGM-travel.IMPV DEF-today
 You are supposed to travel today.
- e. *mamnūʿ* (inn-ak) *t-sāfar* *bi-sabab*
 PASS.PTCP-forbid.SGM COMP-2SGM.ACC 2SGM-travel.IMPV with-reason
kufid-19
 COVID-19
 You are forbidden to travel due to COVID-19.
- f. *ẓ-ẓāhar* (inn-ī) *ba-a-sāfar* *bukra*
 DEF-seem COMP-1SG.ACC 1SG-travel.IMPV tomorrow
 It seems that I will travel tomorrow.
- g. *taḥadi* (inn-ak) *t-sāfar* *l-yūm*
 challenge.MSD.SGM COMP-2SGM.ACC 1SG-travel.IMPV DEF-today
 I dare that you will travel today.

Example (88) provides examples involving the invariant verb-form modal verbs that exhibit a 3SGM inflected form.

- (88) a. *ya-ṣlaḥ* (inn-ak) *ta-ḥaẓar* *l-yūm*
 3SGM-fix.IMPV COMP-2SGM.ACC 2SGM-attend.IMPV DEF-today
 You can attend today.

b. yanfaʕ (inn-ak) ta-ħazar l-yūm?
 3SGM-benefit.IMPV COMP-2SGM.ACC 2SGM-attend.IMPV DEF-today
 Can you attend today?

c. yi-mkin (inn-ak) ta-mši bukra
 3SGM-may.IMPV COMP-2SGM.ACC 2SGM-walk.IMPV tomorrow
 Maybe you will travel tomorrow/It is possible that you will travel tomorrow.

Interestingly, the verb *ʕād* ‘return’ is used with *lā* as an invariant auxiliary to express the negative imperative, which can be regarded as a modal form with a ‘permission’ or ‘obligation’ kind of meaning’. In this case, might be seen as a counterpart of the verb *do* in English when it is used as a helping verb. In addition, the verbs *tagʕud* ‘sit’ and *tugūm* ‘stand up’ are used as auxiliaries in SA to express the negative imperative with *lā*, as shown in (89-90)

(89) a. lā ʕād taṭlaʕ bal-lāl
 NEG return.PFV.2SGM 2SGM-rise.IMPV in-DEF-night
 Do not go out in the night.

b. mā ʕād ya-ṣtaġil hina
 NEG return.PFV.2SGM 3SGM-rise.IMPV here
 He does not work here anymore.

(90) a. lā tagʕud tū-nuġ
 NEG sit.PFV.2SGM 2SGM-nag.IMPV
 Do not nag!

b. lā tugūm ta-ṣāħ ʕalaynā
 NEG stand.PFV.2SGM 2SGM-shout.IMPV on-us
 Do not shout at us.

In addition, SA employs the verb *kūn* ‘was’ as a modal that gives the meaning of ‘should’ in the PAST TENSE as in (91).

(91) kūn gafal-t l-bāb
 was close.PFV.2SGM DEF-door.SGM
 You should have closed the door

The following table provides the main modals available in SA and their daily uses.

Modal	Use
<i>yagdar</i> ‘be able’	Ability/request
<i>yimkin</i> ‘may’	Possibility
<i>l-mafrūz/lāzim</i> ‘must’	Obligation
<i>mamnuʿ</i> ‘forbidden’	Prohibition
<i>kūn</i> ‘should’	Opinion/advice

Table 2.4: Main Modal expressions in SA and their uses

2.6 The verbless sentence structure

Arabic allows for sentences which do not require a verb or pseudo-verb in the present tense. Such sentences involve non-verbal predicates, and are referred to in the literature as nominal, copular or verbless sentences (Fassi Fehri (1993); Aoun et al. (2009) Alotaibi (2018)). Such sentences involve only a subject and a non-verbal predicate in the present tense, as in (92).

- (92) l-bint ḥilw-a
 DEF-girl.SGF beautiful-SGF
 The girl is beautiful.

All affirmative verbless sentences must have an overt subject expressed. This is in contrast with what the situation is in verbal sentences, where overt NP expressing the subject is optional, and the NOM inflection on the verb functions as the subject (93a). However, in verbless sentences, there is no verb present to carry such an inflection. So, the presence of a subject pronoun such as *hū* ‘he’ is obligatory as illustrated in (93b).

- (93) a. (hū) šāf Hind
 he see.PFV.3SGM Hind
 He saw Hind (verbal)

- b. hū bara l-faṣal
 he outside DEF-class.SG.M
 He is outside the class. (verbless)

There are two main types of verbless sentences: predicational vs. equational. Predicational sentences include a definite subject followed by an indefinite predicate which can be an indefinite NP (94a), an indefinite AP (94b), or a PP (94c). This type of verbless sentences does not allow overt copulas in PRESENT TENSE contexts.

- (94) a. Tārg ṭifil
 Tārg child.SGM
 Tārg is a child.
- b. Tārg ṭawīl
 Tārg tall.SGM
 Tārg is tall.
- c. Tārg bara l-faṣal
 Tārg outside DEF-class.SG.M
 Tārg is outside the class.

In PAST TENSE CONTEXTS, the copula *kān* must be inserted as illustrated in the example (95).

- (95) Tārg kān giṣīr
 Tārg be.PFV.3SGM short.SGM
 Tārg was short.

Active or passive participles can be the indefinite predicate of such verbless sentences which appear to be different from their verbal form counterparts due to their morphosyntactic behaviours, which make them similar to adjectives. These non-verbal forms agree with the subject, and inflect for NUMBER and GENDER, as illustrated in (97-98). What distinguishes them from verbs is that they do not show agreement with the subject in person.

2.7 The Negation system in SA

There are two main methods employed to express negation in SA: sentential negation and constituent negation. Sentential negation is expressed through different strategies depending on whether the sentence is verbal or verbless. In verbal sentences, two particles *mā* and *lā* occur. The particle *mā* is used in the context of finite verbal predicates that are either perfective or imperfective. The particle *mā* must precede the verb-form it negates, as illustrated in (99a-b).

- (99) a. Tārg mā ḥal l-wāğib
 Tārg NEG do.PFV.3SGM DEF-homework.SGM
 Tārg did not do the homework.
- b. Tārg mā y-ḥal l-wāğib
 Tārg NEG 3SGM-do.IMPV.SGM DEF-homework.SGM
 Tārg does not do the homework.

On the other hand, the particle *lā* expresses a **prohibitive** or negative imperative reading. As we already saw earlier, morphologically, the verbal form used is the imperfective, not the imperative, as shown in (100):

- (100) lā tu-rūḥ maʕa Tārg
 NEG 2SGM-go.IMPV with Tārg
 Do not go with Tārg.

To negate non-verbal sentences, *mū* is used. Example (101) provides data with different non-verbal predicates being negated, which can be nouns (101a), adjectives (101b), or a PP predicate (101c).

- (101) a. Tārg mū imdarris
 Tārg NEG teacher.SGM
 Tārg is not a teacher (Nominal phrase)

- b. l-bāt mū kibīr
 DEF-house.SGM NEG big.SGM
 The house is not big

(Adjective phrase)

- c. Tārg mū fī l-maktab
 Tārg NEG in DEF-office.SGM
 Tārg is not in the office.

(Prepositional phrase)

Aside from the default invariable form *mū*, verbless sentences such as (101) can be negated by a range of forms that inflect for PERSON, NUMBER and GENDER. These forms involve the negative particle *mā* that combines with subject personal pronoun forms. The list of these forms is provided in Table (2.5).

NEG.1SG	<i>māni</i>	I am not
NEG.1PL	<i>maħn/maħnā</i>	we are not
NEG.2SGM	<i>mant</i>	you are not
NEG.2SGF	<i>mantī</i>	you are not
NEG.2PLM	<i>mantum</i>	you are not
NEG.2PLF	<i>mantum</i>	you are not
NEG.3SGM	<i>māhū/mū</i>	he is not
NEG.3SGF	<i>māhi/mī</i>	she is not
NEG.3PLM	<i>mahum</i>	they are not
NEG.3PLF	<i>mahum</i>	they are not

Table 2.5: The SA negative inflected forms

It can be noted that the stem of these inflected forms resembles *mā* rather *mū*. However, these forms are treated as inflected counterparts of *mū* since they appear in the same non-verbal contexts as *mū*, and not in those of *mā*. This is illustrated in (102):

- (102) a. Tārg *mahū* mdarris
 Tārg NEG.3SGM teacher.SGM
 Tārg is not a teacher (Nominal phrase)
- b. Nora *māhi/mī* kibīr-a
 Nora NEG.3SGF big-SGM
 Nora is not old. (Adjective phrase)
- c. Tārg *mahū* fī l-maktab
 Tārg NEG.3SGM in DEF-office.SG.M
 Tārg is not in the office. (Prepositional phrase)

The second major type of negation is constituent negation. This type involves the same negative marker *mū*. The particle *mū* in constituent negation however takes scope over one specific constituent within a clause, rather than over the entire of the clause as we have seen in sentential negation. Just as *mū* alternates with other inflecting forms in sentential negation contexts, here we have the .3SGM *mahū* functioning as an alternative form that can also be used in the context of constituent negation in SA, as in (103-104).

- (103) *mū/mahū* ams kallam-t Nora
 NEG yesterday talk.PFV-1SG Nora
 It is not yesterday that I talked to Nora.

- (104) *mū/mahū* ams l-ḥafl
 NEG yesterday DEF-event.SGM
 It is not yesterday the event.

2.8 Noun Phrases in SA

2.8.1 Simple NPs

Like MSA and the other Arabic vernaculars, we find that simple NPs can appear with adjectival modifiers, and they can be indefinite or definite (105a-b). They also can take an optional PP or a clausal complement (106a-b).

- (105) a. *mustašfā* *ʕām* *bal-madin-a*
 hospital.SGM general.SGM in-the-city.SGF
 a general hospital in the city
- b. *l-mustašfā* *l-ʕām* *bal-madin-a*
 DEF-hospital.SGM DEF-general.SGM in-the-city.SGF
 the general hospital in the city
- (106) a. *katab-t* *kitāb* *ʕan* *ṣ-ṣadāga*
 write.PFV-1SG book.SGM about DEF-friendship.FSG
 I wrote a book about friendship.
- b. *fiḥ* *mkāniyyah in-nā* *n-sāfar* *l-yūm*
 there possibility comp-1PL.ACC 1PL-travel.IMPV DEF-today
 There is a possibility that we travel today.

Similarly, definite nouns can take either a relative clause complement as in (107a), or a clausal complement as in (107b).

- (107) a. *ḥabb-āt* *l-kitāb* *illi* *ʕan* *l-um*
 like.PFV-1SG DEF-book.SGM that about DEF-mother
 I like the book about the mother.
- b. *ḥabb-āt* *l-fikra* *in-nā* *n-sāfar*
 like.PFV-1SG DEF-idea.SGF comp-1PL.ACC 1PL-travel.IMPV
 I like the idea that we travel.

2.8.2 Construct State Construction

The construct state construction (CSC) expresses a relation between a possessor and a possessed item, and this construction has been widely investigated in both Arabic and Hebrew (Ritter (1991); Fassi Fehri (1993); Siloni (2001); Falk (2001b); Shlonsky (2004); Bardeas (2010); Al-Sharif (2014), among many others). The CSC is a form of NPs known as ‘Genitive Construct, ‘Annexation Phrase’, and more widely as the Construct State Construction (CSC)⁵. Ryding (2005) describes the CSC saying that ‘two nouns may be linked together in a relationship where the second noun determines the first

⁵The term Construct State Construction is adopted throughout the current study.

by identifying, or defining it, and thus the two nouns function as one phrase.’ (p. 205). Accordingly, this construction consists of two elements combined in a fixed and inseparable unit. This adjacency between the annexed members does not permit any other component to intervene between them. Therefore, any other materials, such as the adjective that describes the head, must appear after the whole construct as in (108).

- (108) a. kitāb l-bint
 book.SGM DEF-girl.SGF
 the girl’s book
- b. ḥadīg-at l-bāt l-ḫalaf-iyya
 garden-SGF DEF-house.SGM DEF-back-SGF
 the house’s back yard
- c. ḥadīg-at bāt ḫalaf-iyya
 garden-SGF house.SGM back-SGF
 a house’s back yard

The first noun inside the CSC is referred to as the *construct head*, which requires to combine with the immediately following noun, and together they form a full NP. The two elements in the CSC are usually nouns. However, other elements can be involved in the annexation: for example, noun + pronoun: *ḥadīgat-ah* ‘his garden’. Also, the noun can be annexed with a sentence, as in the following example from SA (109).

- (109) šart ʔinn ʔakūn fi makān-i
 condition that be.1SG in place-MY
 On the condition that I shall be in my place.

The head noun of the CSC can be an ordinary noun (110a), a quantifier (110b), an active participle (110c-d), a passive participle (110e), a superlative adjective (110f), or a maṣḍar (110g). However, there are some elements that cannot be the head a CSC, such as pronouns, relative pronouns, or demonstratives.

- (110) a. **mustašfā** l-madina
 hospital.SGM DEF-city.SGF
 the city's hospital
- b. **kull** l-awlād
 all DEF-boy.PLM
 all the boys
- c. **kātib** l-giṣa
 writer.ACT.PTCP-SGM DEF-story.SGF
 the writer of the story/ the story's writer
- d. **ḥāfi** l-gadam
 bare.ACT.PTCP-SGM DEF-foot.SGF
 barefoot
- e. **marfūʿ** r-rās
 hold-up.PAS.PTCP-SGM DEF-head.SGM
 holding his head (up) high
- f. **ʔakbar** l-banāt
 bigger DEF-girl-PLF
 the oldest girl
- g. **kitāb-at** l-ḥurūf
 write.MSD-SGF DEF-letter.PLF
 writing of the letters

SA

The construct head is ‘a morphologically bare noun’ due to the fact that it lacks a definiteness marking (Ouhalla (1991); Fassi Fehri (1993); Shlonsky (2004); among others), although it may still show gender and number marking. A simple example with a masculine singular head is illustrated in (115a). In contexts other than CSC, common nouns without the definiteness marker *l-* in SA and many dialects are of course taken to be indefinite. In a CSC however the bare head noun is neutral as to definiteness and the phrase as a whole has the definiteness indicated by the second element. The possessor/defining word can be either definite, marked with the definite article *l-* ‘the’, or indefinite, in which case no marking appears, as in (111a). The construct head cannot be definite and therefore (111b) is not grammatical.

- (111) a. kitāb bint
 book.SGM girl.SGF
 a girl's book
- b. *l-kitāb l-bint
 DEF-book.SGM DEF-girl.SGF
 the girl's book

Construct heads which are singular feminine nouns with morphological marking of gender are however required to undergo a morphophonological change. Their *ah* ending is required to change into *at* whether the following possessor element is definite or not. In Arabic, this morphophonological change is referred to as the substitution of the feminine form *ah* with *tāʔ marbūṭah*. In (112), the *ah* ending of *ḫaṭībah* 'fiancee' changes into *at*, when it is part of the construct form *ḫaṭībat*.

- (112) ḫaṭīb-at l-walad
 fiancee-SGF DEF-boy.SGM
 the boy's fiancee

Either of the two constituents of the CSC can be modified by an adjectival modifier which must follow them both, as in (113a-c). If anything comes in between the two elements of the construct state structure, ungrammaticality results. In addition, if the adjective modifies the construct head, it must agree with it (113a), while if it modifies the possessor, it must agree with it in a respective manner, as in (113b).

- (113) a. fastān l-bint l-aḥmar
 dress.SGM DEF-girl.SGF DEF-red.SGM
 the girl's red dress
- b. fastān l-bint l-qaṣīrah
 dress.SGM DEF-girl.SGF DEF-short.SGF
 the short girl's dress
- c. *fastān l-aḥmar l-bint
 dress.SGM DEF-red.SGM DEF-girl.SGF
 the girl's red dress

2.8.3 Free State Construction

Besides the CSC, there is another construction that can express a possessive/defining relationship in Arabic, as well as Hebrew, and that is the free state construction (FSC). The Arabic FSC consists of an ordinary head noun, a genitive exponent, and a post-genitive noun. The two nouns each show definiteness in the usual way for nouns on their own (*l-* for definite, bare for indefinite). In the different Arabic dialects, the genitive exponent varies in form and agreement as illustrated in the following table, which is adopted from Brustad (2000, p. 70).

	Masculine	Feminine	Plural
Moroccan	dyāl/d
Egyptian	bitāf	bitāfit	bitūf
Syrian	tabaf	(tabafūl)
Kuwaiti	māl	(mālat)	(mālūt)

Table 2.6: Genitive Exponent in some Arabic Dialects

According to Brustad (2000), the genitive exponent has no agreement at all in Moroccan Arabic. However, in Egyptian Arabic, the genitive exponent requires GENDER and NUMBER agreement with the FSC head. In Syrian Arabic, the genitive exponent does not distinguish for GENDER in the singular. The available plural form is only optional. In Kuwaiti Arabic, the feminine form and the plural form of the genitive exponent are both optional.

In SA, the FSC consists of a noun followed by a prepositional phrase, with the genitive exponent *ħagg* or *tabaf*⁶ ‘for’ followed by a post-genitive noun, as illustrated in (114). The FSC can express possession (114a), identification (114b), or action-agent relations (114c).

- (114) a. *l-bāṣ* *ħagg/tabaf* *l-mudras-a*
 DEF-bus.SGM belong DEF-school-SGF

⁶Bardeas (2009) assumes that the FSC exponents *ħagg* and *tabaf* are prepositions.

the school's bus

- b. d-dūktūr ḥagg/tabaf l-ʔaʕṣāb
 DEF-doctor.SGM for DEF-nerve.PLF
 the doctor of the nerves

- c. l-kitāb ḥagg/tabaf l-walad
 DEF-book.SGM of DEF-boy.SGM
 the book of the boy

ḥagg shows agreement in NUMBER and GENDER with its head noun. Hence it has four forms: *ḥagg* for SGM, *ḥaggat*, for SGF, *ḥaggāt* for non-HUMAN plural forms, and *ḥagg-īn* for HUMAN plural forms. *tabaʔ* 'of' is invariable in SA as in (115).

- (115) a. d-dūktūr ḥagg l-ʔaʕṣāb
 DEF-doctor.SGM for DEF-nerve.PL.F
 the doctor of the nerves
- b. d-dūktūr-a ḥagg-at l-ʔaʕṣāb
 DEF-doctor-SGF for-SGF DEF-nerve.PL.F
 the doctor of the nerves
- c. d-dakātir-a ḥagg-īn l-ʔaʕṣāb
 DEF-doctor.PL for-PL DEF-nerve.PL.F
 the doctors of the nerves
- d. l-bāṣ-āt ḥagg-āt l-mudras-a
 DEF-bus-PLF of-PLF DEF-school-SGF
 the school's buses

Table (2.7) illustrates the difference between *ḥagg* and *tabaʔ* in terms of forms and agreement.

Masculine	Feminine	Plural Human	Plural non-Human
ḥagg	ḥagg-at	ḥagg-īn	ḥagg-āt
tabaʔ	tabaʔ	tabaʔ	tabaʔ

Table 2.7: Genitive Exponents in SA FSCs

Like the CSC, both the FSC head and the genitive noun can be modified by an adjective. However, in FSC, the adjective modifying the head noun can immediately follow it, separating it from the PP headed by *tabaʔ* ‘for’, as illustrated in (116).

- (116) a. l-bāṣ l-ġadīd tabaʔ l-mudrasa l-ġadīd-a
 DEF-bus.SGM DEF-new.SGM belong DEF-school.SGF DEF-new-FSG
 the new bus of the new school
- b. l-kitāb l-ʔaḥmar ḥagg l-bint ʔ-ʔawīl-a
 DEF-book.SGM DEF-red.SGM of.SGM DEF-girl.SGF DEF-tall-SGF
 the red book of the tall girl

In contrast to the CSC, the FSC head does not undergo morphological changes if it is a singular feminine noun, and therefore the feminine ending *-ah* does not change into *-at*. Moreover, the head noun **must** be definite if the PP is definite as in (117a). If the head is indefinite, the NP complement of the PP must be indefinite as in (117b). Accordingly, (117c) is not grammatical.

- (117) a. š-šaṇṭah ḥagg-at/ṭabaʔ l-bint
 DEF-bag.SGF of DEF-girl.SGF
 a bag of the girl
- b. šaṇṭah ḥagg-at/ṭabaʔ bint
 bag.SGF of girl.SGF
 a girl’s bag
- c. *šaṇṭah ḥagg-at/ṭabaʔ l-bint
 bag.SGF of DEF-girl.SGF
 a bag of the girl

From the data set provided above, we can observe the following behaviours:

- The adjective which modifies a noun in the FSC follows it immediately.

- The PP headed by *tabaʔ* or *ħagg* ‘for’, and its complement noun cannot be separated.
- If the head noun of the FSC is a SINGULAR and FEMININE noun, the feminine ending *ah* does not change into *at*.
- If the head noun of the FSC is a SINGULAR and FEMININE noun, it must be definite if the complement of the PP is itself definite. In a similar manner, it will be indefinite if the PP complement is indefinite.
- *ħagg* shows agreement in NUMBER and GENDER with its head noun, and comes in four forms: *ħagg* for masculine singular, *ħaggat*, for feminine singular, *ħaggāt* for plural non-human, and *ħagg-īn* for plural human.
- *tabaʔ* in SA has only one invariable form.

2.8.4 Pronominal Forms

There are two main classes of pronouns in Arabic: independent/strong pronouns and dependent/weak pronouns. Independent/strong pronouns can function as subjects, while dependent/weak pronouns are suffixes that can be attached to verbs to indicate direct and indirect objects. Additionally, they can be attached to nouns to indicate the possessor argument, as we have seen in non-construct nouns. Moreover, they can appear on prepositions, as we have seen in pseudo-verbs, or they can be indicative of prepositional objects.

Like other Arabic dialects, SA nouns do not inflect for case any more. The only remnant case system maintained in the Arabic dialects is the pronominal system. I provide the list of SA personal pronouns in Table (2.8) and Table (2.9). Table (2.8) shows independent NOM pronouns, which function as subjects, whereas Table (2.9) displays the ACC and GEN bound pronominal forms which attach to verbs, nouns and pronouns respectively. It must

be indicated that the independent/strong pronouns mentioned above keep the same form whether they are attached as suffixes to verbs or nouns as in the following examples:

- (118) a. **bāb-uh** / **šif-t-uh**
 door-3SGM.GEN / see.PFV-1SG-3SGM.ACC

his door/ I saw him

- b. **bāb-ak** / **šif-t-ak**
 door-2SGM.GEN / see.PFV-1SG-2SGM.ACC

your door/ I saw you

However, there is a clear morphological difference between the dependent pronouns that are suffixed to verbs and those that are suffixed to nouns in the case we have FIRST PERSON SINGULAR (1SG). We can observe that dependent pronouns suffixed to nouns appear as **-i**, whereas dependent pronouns suffixed to verbs appear as **-ni**, as in (119). This distinction appears in the 1SG cell of the paradigm in Table (2.9), where the form *-ni* expresses the 1SG.ACC, whereas *-i* expresses the 1SG.GEN. Pronouns that are attached to Ns and Ps are considered to be GEN forms, while those attached to verbs, expressing the OBJ, are considered as ACC.

- (119) a. **bāb-i** / **šāf-ni**
 door-1SG.GEN / see.PFV-3SG-1SGM.ACC

my door/ he saw me

	Independent Pronouns
1.SG 'I'	anā
1.PL 'we'	hin/hnā
2.SGM 'you'	ant
2.SGF 'you'	anti
2.PL 'you'	antu
3.SG 'he'	huw
3.SG 'she'	hiyya
3.PL 'they'	him

Table 2.8: The SA paradigm of independent subject pronouns

	ACC forms	GEN forms
1.SG	-ni 'me'	-i 'my'
1.PL	-na 'us'	-na 'our'
2.SGM	-ak 'you'	-ak 'your'
2.SGF	-ik 'you'	-ik 'your'
2.PL	-kum 'you'	-kum 'your'
3.SGM	-uh 'him'	-uh 'him'
3.SGF	-ha 'her'	-ha 'her'
3.PL	-him 'them'	-him 'them'

Table 2.9: The SA paradigm of ACC and GEN bound pronouns

2.9 NP modification

In this section, I discuss the different types of modifiers available in nominal phrases in SA other than those associated with CSC and FSC. Such modifiers include demonstratives,

adjectives, numerals relative clauses. They can precede (pre-nominal modifiers) the noun or follow it (post-nominal modifiers) or both. (Bardeas, 2010).

2.9.1 Demonstratives

In traditional Arabic grammar, demonstratives belong to the category of nouns, and is called *asmāʔ l-ʔiṣ̣arah* ‘reference nouns’. SA uses two types of demonstratives: proximal and distal, which refer to temporal or locative distance, and they can occur as demonstrative adjectives either pre-nominally, or post-nominally, e.g. *That was interesting.*, as noted for other Arabic dialects in Brustad (2000). They show agreement in NUMBER and GENDER with the noun they accompany. The pre-modified or post-modified noun must be DEFINITE, as illustrated in (120). The common demonstrative forms used in SA are summarised in Table (2.10).

(120) a. hādā l-kitāb
 this.SGM DEF-book.SGM

this book

b. l-kitāb hādā
 DEF-book.SGM this.SGM

this book

c. hādi š-šantah
 this.SGF DEF-bag.SGF

this bag

d. š-šantah hādi
 DEF-bag.SGF this.SGF

this bag

Morphosyntactic Features	Proximal	Distal
SGM	hāḍā/ḍā/ḍih	ḍāk/hāḍāk
SGF	hāḍi/tih	ḍik/hāḍik/tāk
PL	haḍūlā/ḍūlā	ḍūlāk/haḍūlāk

Table 2.10: Demonstratives in SA

2.9.2 Adjectives

In SA, attributive adjectives usually occur after the noun they modify, and show agreement in NUMBER, GENDER and DEFINITENESS with the modified noun as illustrated below.

- (121) a. bint ḡabīyy-a
 girl.SGF stupid-SGF
 a stupid girl
- b. l-walad l-ḡabī
 DEF-boy.SGM DEF-stupid-SGM
 the stupid boy
- c. l-awlād l-ʔaḡbiyā
 DEF-boy.PLM DEF-stupid-PLM
 the stupid boys

If the noun is INANIMATE and PLURAL, a different agreement pattern will result. Such a type of nouns triggers feminine singular agreement on adjectives as shown below.

- (122) l-madāris l-ḡidīd-a
 DEF-school.PLF DEF-new-SGF
 the new schools

As illustrated above in section (2.7.2), in a CSC, attributive adjectives can modify either the head noun, or the complement, as in the following examples.

- (123) a. kitāb l-bint l-ġidīd
 book.SGM DEF-girl.SGF DEF-new.SGM
 the new book of the girl
- b. kitāb l-bint l-ġidīd-a
 book.SGM DEF-girl.SGF DEF-new-SGF
 the book of the new girl

In section (2.7.3), it was shown how in FSCs, attributive adjectives can also modify either the head noun or the complement, as in the following example.

- (124) l-kitāb l-ʔaḥmar ḥagg l-bint ʔ-ṭawīl-a
 DEF-book.SGM DEF-red.SGM of.SGM DEF-girl.SGF DEF-tall-SGF
 the red book of the tall girl

In addition, SA shows that nouns can be modified by PPs as illustrated below in (125).

- (125) a. šarā-t ġawāl ba-kamir-ā
 buy.PFV-1SG mobile.SGM with-camera
 I bought a mobile with a camera.
- b. šarā-t lābtob ba-kamir-ā
 buy.PFV-1SG laptop.SGM with-camera
 I bought a laptop with a camera
- c. aḥad-t fstān ba-gubaḥa
 take.PFV-1SG dress.SGM with-hat.SGF
 I bought a dress with a hat
- d. aḥtar-at ḥadyān ba-rabṭa
 choose.PFV-1SG shoe.SGM with-hat.SGF
 I chose shoes with laces

A striking property of adjectives in SA, and Arabic in general, is their ability to form the adjectival construct construction that consists of an adjective and an immediately following definite noun. Consider the following examples.

- (126) a. bint **galilat** **ʔadab**
 girl.SGF few.SGF mannert.SGM
 an ill-mannered girl

šaχš **ṭayyib** **l-galb**
 person kind.SGM DEFheart.SGM
 a warm-hearted person

The boldface words in (126) are instances of adjective construct in SA. They modify the preceding head noun, and the entire construction, and according to Ryding (2005), this construction is ‘equivalent to hyphenated expressions in English such as fair-haired’ (p. 254).

Strikingly, in SA, the nominal forms **um** ‘mother’ and **ʔabū/bū** ‘father’ are used as prepositions which are part of PPs which are used to modify NPs in SA, and express an adjective counterpart meaning, as shown in (127).

- (127) a. l-bint **um** šaʕar aḥmar ġā-t
 DEF-girl.SGF mother hair.SGM red.SGM come.PFV-3SGF
 The girl with red hair came.

b. l-walad **ʔabū/bū** ʔuyūn zurag ġā
 DEF-boy.SGM father eye.PLF blue.PLF come.PFV.3SGM
 The boy with blue eyes came.

2.9.3 Numerals

In SA, there are two types of numerals: ordinals and cardinals. Both ordinals and cardinals can stand alone like nouns or combine with nominals like adjectives, but they behave in different ways. Both types, however, can appear either pre-nominally or post-nominally.

2.9.3.1 Ordinals

Ordinals appear in the masculine form, and form a CSC with the following noun when they precede nouns, and this takes place regardless of the features of the following noun.

- (128) a. *awwal* *ṭālib*
 first.SGM student.SGM
 the first student
- b. *awwal* *ṭālib-āt*
 first.SGM student.PLF
 the first students

Post-nominal ordinals, on the other hand, appear to be similar to adjectives. They agree in NUMBER, GENDER, and DEFINITENESS with the preceding noun.

- (129) a. *l-walad* *l-awwal*
 DEF-boy.SGM DEF-first.SGM
 the first boy
- b. *l-bint* *l-ʔulā*
 DEF-girl.SGM DEF-first.SGF
 the first girl

Ordinals can stand on their own. When this is the case, they are prefixed with the definite article, and act in a way similar to nominals, as illustrated in (130).

- (130) a. *l-awwal* *ʔaxad* *hadiyya*
 DEF-first.SGM take.PFV.3SGM present.SGF
 The first (male) received a present.
- b. *l-ʔulā* *ʔaxad-t* *hadiyya*
 DEF-first.SGF take.PFV-3SGF present.SGF
 The first (female) received a present.

2.9.3.2 Cardinals

In SA, there are two types of cardinals: simple and compound numerals. Our discussion is restricted only to numerals from ‘three’ to ‘ten’. SA cardinals can appear pre-nominally when the noun is indefinite, and have reverse agreement with the nouns they quantify,

known as polarity in Ryding (2005) description. According to the gender polarity⁷ rule, a masculine counted noun agrees with a cardinal in feminine GENDER, and vice versa. Example (131a) illustrates this rule in SA. The cardinal *five* is feminine and shows contrastive GENDER agreement with count nouns. However, in (131b), the same cardinal is masculine and shows reverse GENDER agreement with the feminine count noun.

- (131) a. χ ams-at \mathfrak{t} ullāb
 five-SGF student.PLM
 five students (M)
- b. χ ams \mathfrak{t} ālib-āt
 five-SGM student.PLF
 five students (F)

Cardinals act in a way similar to nominal modifiers if they appear post-nominally, and show agreement only in DEFINITENESS with the preceding noun.

- (132) \mathfrak{t} - \mathfrak{t} ullāb l- χ ams-a
 DEF-student.PLM DEF-five-SGF
 the five students

Furthermore, cardinals in SA can stand by themselves, and be marked with the definite article. Like their ordinal numeral counterparts, they can substitute nominals, and participate in the same sort of polarity agreement with the verb.

- (133) l- χ ams-a rāḥ-u
 DEF-five-SGF go.PFV.3-PL
 The five have gone.

⁷In grammar usually the term ‘polarity’ refers only to positive vs negative sentences, yes/no questions etc. Thereforefer, I refer to it here as gender polarity.

2.9.4 Relative clauses

There are two main types of relative clauses in SA, both of which follow the head noun: relative clauses headed by definite antecedents and relative clauses with indefinite antecedents as discussed in Alqurashi and Borsley (2012) and Alqurashi (2013) for MSA and Hijāzi Arabic, and Camilleri and Sadler (2018a) for free relative clauses in Maltese. Relative clauses with a definite antecedent are introduced by the complementiser *illi* followed by the rest of the clause, as in (134a). In contrast, relative clauses with an indefinite antecedent are not introduced by the complementiser *illi*, i.e. it is absent, resulting in a ‘bare’ clause, as illustrated in (134b).

- (134) a. r-raġāl illi rāh
 DEF-man COMP go.PFV.3SGM
 the man that left
- b. raġāl rāh
 man go.PFV.3SGM
 a man that left

The complementiser *illi* can also introduce free relative clauses in SA. Free relatives have a nominal function, and can substitute NPs. Free relatives are not introduced by an antecedent, and hence are known as *headless* relative clauses. An example of free relative clauses in SA is provided in (135).

- (135) a. šif-t illi rāh
 see.PFV-1SG COMP go.PFV.3SGM
 I saw the one who left.
- b. šif-t illi šār
 see.PFV-1SG COMP happen.PFV.3SGM
 I saw what has happened.

2.9.5 Conclusion on NPs in SA

Providing a description of the different types of noun phrases and their modifiers in SA is particularly important for the current study. It serves as an introduction to the main

topic of our present study: *maṣḍar* constructions. The *maṣḍar* phrase is a special type of NPs since it is headed by a special noun which is a potential mixed category that displays verbal and nominal properties at the same time. Detailed description of *maṣḍar* constructions will be provided in Chapter 4.

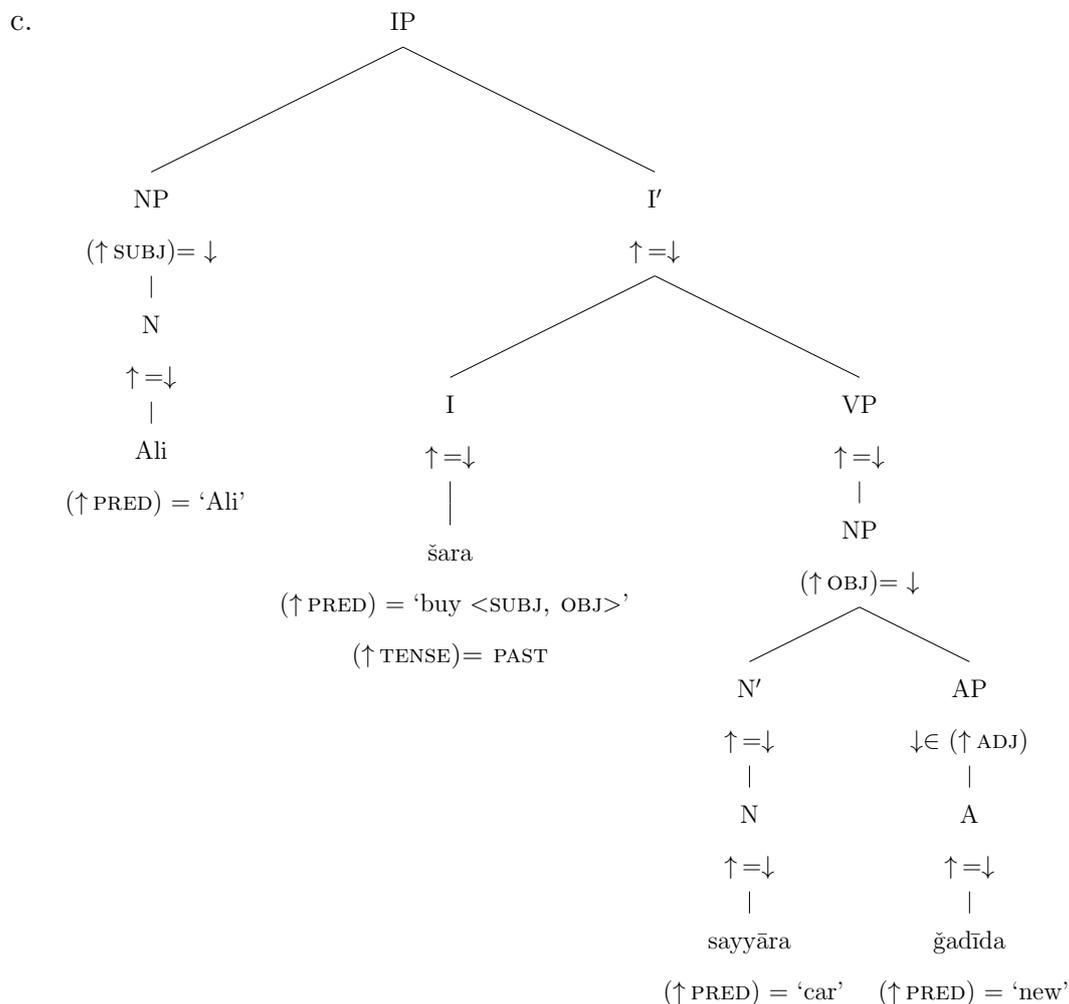
2.10 An LFG analysis of some key aspects of SA that have been a source of dispute

In this section, two important issues will be considered since they do not have a straightforward solution and have generated discussion by LFG experts. They arise not only for SA but also other languages. The first issue concerns the location of the SA main verb in the c-structure, will it appear in the I or V head? The second issue is how we account for SVO and VSO word orders in SA. As mentioned in Chapter 1, LFG assumes that the functional category I in some languages such as English can only be occupied by auxiliaries. Additionally, LFG assumes that the VSO word order involves the category S in some other languages. The functional category I is assumed to function as the (categorical) head of the projection of the IP phrase, which corresponds to the sentence (S) in a number of languages.

With respect to the Arabic language including dialects, following Bresnan (1997), I assume that the auxiliary always occupies the **I** position, just like its counterparts in English, while the main verb can appear in two positions: **I** or **V**. If there is an auxiliary involved, it will appear under **V**, but if there is no auxiliary involved, it will appear under **I**. The tree in (136c) shows *I* position in the Arabic language, specifically in SA. The LFG analysis comprises a lexical entry, c-structure, f-structure as in (136).

- (136) a. Ali šara sayyāra ġadīd-a
 Ali buy.PFV.3SGM car.SGF new.SGF
 Ali bought a new car.

- b. šara **I** (↑ PRED) = ‘buy <SUBJ, OBJ>’
 (↑ TENSE) = PAST



- d. f-structure
- $$\left[\begin{array}{l} \text{PRED} \text{ 'BUY <SUBJ, OBJ>'} \\ \text{TENSE} \text{ PAST} \\ \text{SUBJ} \left[\begin{array}{l} \text{PRED} \text{ 'ALI'} \\ \text{PERS} \text{ 3} \\ \text{NUM} \text{ SG} \\ \text{GEND} \text{ M} \end{array} \right] \\ \text{OBJ} \left[\begin{array}{l} \text{PRED} \text{ 'CAR'} \\ \text{PERS} \text{ 3} \\ \text{NUM} \text{ SG} \\ \text{GEND} \text{ F} \\ \text{ADJ} \left\{ \left[\begin{array}{l} \text{PRED} \text{ 'NEW'} \\ \text{NUM} \text{ SG} \\ \text{GEND} \text{ F} \end{array} \right] \right\} \end{array} \right] \end{array} \right]$$

The example in (136) has only one verb, which is the main predicate, therefore it appears in the I position. Having in principle specified the verb position in SA, I will provide, in

the following subsections, a detailed LFG analysis for verbal sentences, in both VSO and SVO, and verbless sentences as well.

2.10.1 Verbal sentences

As shown in section (1.4.4), SVO is the basic neutral word order used in verbal sentences in SA. The VSO word order is also possible, but is less common. The phrase structure rule in (137) is used to account for SVO word order. The phrase structure rule in (138) is used to account for VSO word order. In an SVO order, the subject (SUBJ) occurs as a specifier of the IP, whereas in a VSO order, it appears as an argument category within S, which contains the SUBJ and a VP or XP. The XP equals NP, AP, or PP, i.e. any category functioning as ‘predicate final’.

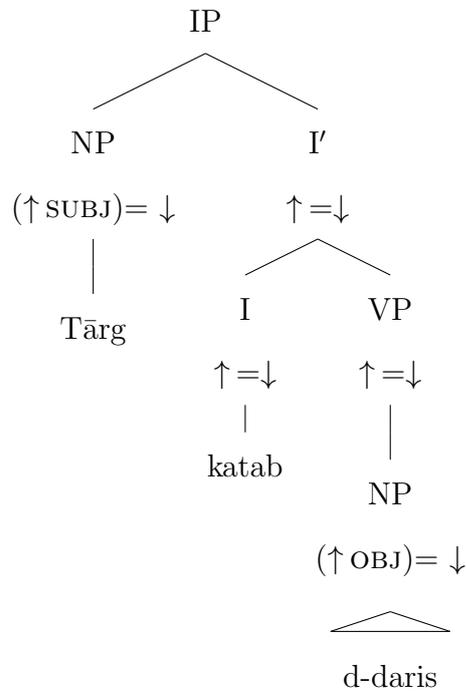
- (137) a.
$$\begin{array}{l} \text{IP} \rightarrow \quad (\text{NP}) \quad \text{I}' \\ \quad \quad \quad (\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow \end{array}$$
- b.
$$\begin{array}{l} \text{I}' \rightarrow \quad \text{I} \quad \text{VP} \mid \text{XP} \\ \quad \quad \quad \uparrow = \downarrow \quad \quad \uparrow = \downarrow \end{array}$$
- (138) a.
$$\begin{array}{l} \text{IP} \rightarrow \quad \text{I}' \\ \quad \quad \quad \uparrow = \downarrow \end{array}$$
- b.
$$\begin{array}{l} \text{I}' \rightarrow \quad \text{I} \quad \text{S} \\ \quad \quad \quad \uparrow = \downarrow \quad \quad \uparrow = \downarrow \end{array}$$
- c.
$$\begin{array}{l} \text{S} \rightarrow \quad (\text{NP}) \quad \text{VP} \mid \text{XP} \\ \quad \quad \quad (\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow \end{array}$$

In an SVO clause pattern in SA, the initial SUBJ appears in the specifier position of the IP, and the finite verb appears under the functional category I. This position is usually occupied by a finite TENSE-bearing verb which is the functional head of the IP. The sentence in (139) will receive the analysis in (139b-c).

- (139) a. Tārg katab d-daris
 Tārg write.PFV.3SGM DEF-lesson.SGM

Tārg wrote the lesson.

b.



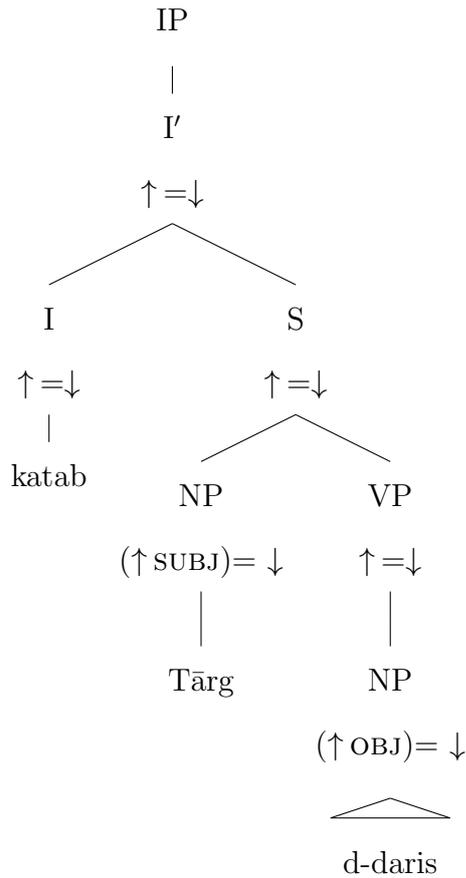
- c.
$$\left[\begin{array}{l} \text{PRED} \quad \text{'WRITE<SUBJ, OBJ>'} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'TĀRG'} \right] \\ \text{OBJ} \quad \left[\text{PRED} \quad \text{'LESSON'} \right] \end{array} \right]$$

In VSO clause pattern in SA, the SUBJ appears under the S category in the c-structure, and the verb appears under I. The sentence in (140) has the same f-structure as the one with a SVO pattern.

- (140) a. katab Tārg d-daris
 write.PFV.3SGM Tārg DEF-lesson.SG.M

Tārg wrote the lesson.

b.



c.
$$\left[\begin{array}{l} \text{PRED} \quad \text{'WRITE<SUBJ, OBJ>'} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'TĀRG'} \right] \\ \text{OBJ} \quad \left[\text{PRED} \quad \text{'LESSON'} \right] \end{array} \right]$$

2.10.1.1 Auxiliary structure

In sentences where both the auxiliary and the main verb are available, the auxiliary will always occupy the I position. If there is no lexical verb available in the sentence, the subject and the predicate will appear as NP and XP under S.

(141) a.
$$\begin{array}{ccc} \text{IP} & \rightarrow & \text{I} \quad \text{S} \\ & & \uparrow = \downarrow \quad \uparrow = \downarrow \end{array}$$

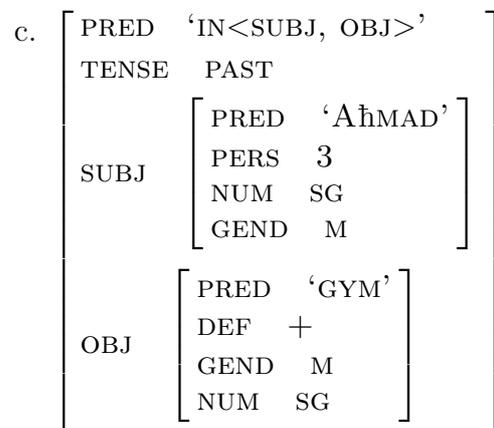
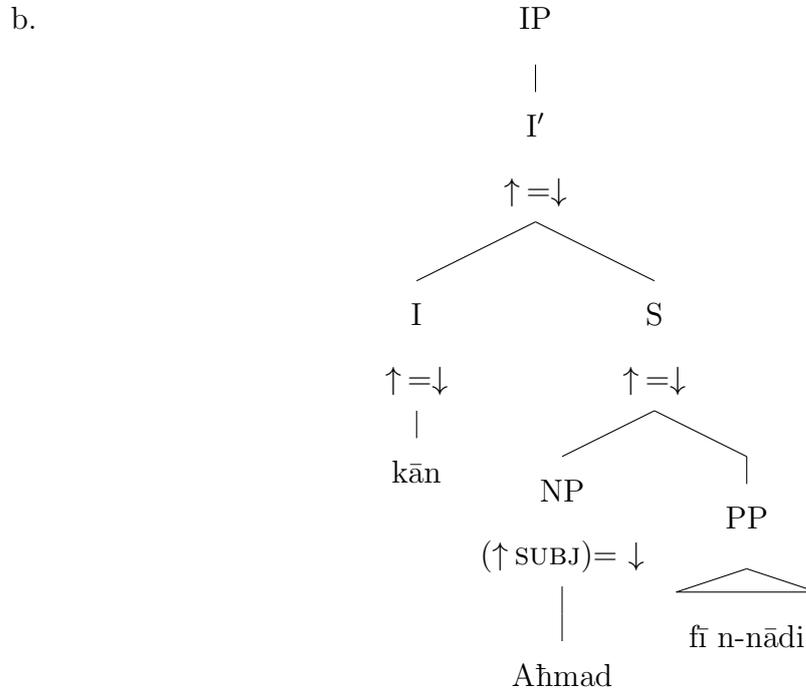
$$\text{S} \rightarrow \quad (\text{NP}) \quad \text{XP}$$

b.

$$(\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow$$

- (142) a. *kān* *Aḥmad fī n-nādi*
 be.PFV.3SGM *Aḥmad* in DEF-gym.SGM

Aḥmad was in the gym.

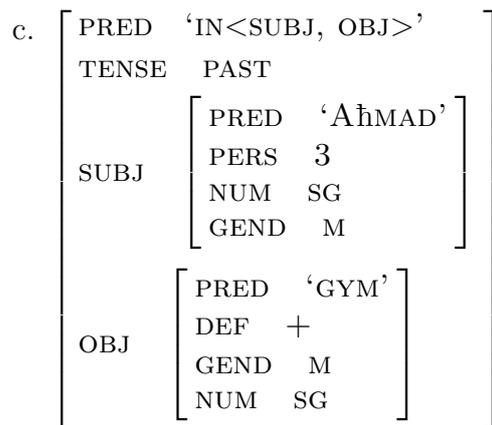
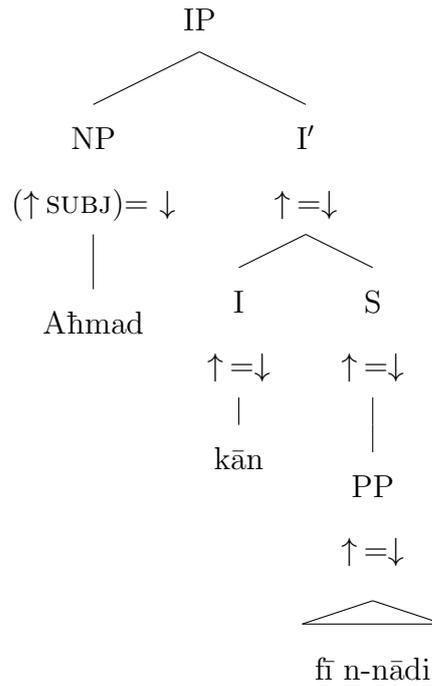


If the subject occupies the initial position of the sentence, it will be accommodated in the specifier position of I as shown in (143).

- (143) a. *Aḥmad kān* *fī n-nādi*
Aḥmad be.PFV.3SGM in DEF-gym.SGM

Aḥmad was in the gym.

b.



When a lexical verb is present, it will appear in the V position, whereas the auxiliary will appear in the I position. In VSO, the subject NP appears as a sister to the VP phrase, which includes the lexical verb under the V node, and the object NP as illustrated in (144).

- (144) a. *kān* *Aḥmad ya-lʿab* *l-kura*
 be.PFV.3SGM *Aḥmad* .3.M-play.IMPV.SG DEF-ball.SGF

Aḥmad was playing football.

in (146) license the *c*-structure of verbless sentences, whether they include a copula or not. LFG uses the ε symbol to represent instances where we have an empty string in the *c*-structure.

$$\begin{array}{l}
 (146) \text{ a. } \quad \text{IP} \rightarrow \quad \quad \text{NP} \quad \quad \text{I}' \\
 \quad \quad \quad \quad \quad \quad (\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow \\
 \\
 \text{b. } \quad \quad \text{I}' \rightarrow \quad \quad \varepsilon \quad \quad | \quad \quad \text{I} \quad \quad \text{S} \\
 \quad \quad \quad \quad \quad \quad (\uparrow \text{TENSE}) = \text{PRESENT} \quad \uparrow = \downarrow \quad \uparrow = \downarrow \\
 \\
 \text{c. } \quad \quad \text{S} \rightarrow \quad \quad \text{NP} \quad \quad \text{XP} \\
 \quad \quad \quad \quad \quad \quad (\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow
 \end{array}$$

2.10.2.1 Copula structure

Copula constructions have received a number of different analyses in LFG (Rosén (1996); Dalrymple et al. (2004); Falk (2004); Nordlinger and Sadler (2007); Attia (2008); Camilleri (2016); Camilleri and Sadler (2018b)). In fact, there are two main analyses that have been proposed for copula: the single-tier analysis (Nordlinger and Sadler, 2007) and the double-tier analysis (Dalrymple et al., 2004). The main difference between the two analyses is as follows:

- **single-tier** analysis assumes that the predicative P/N/A contributes the *f*-structure's PRED (Nordlinger and Sadler, 2007).
- **double-tier** analysis assumes that the copula is the element which takes the PRED value of the predicative structure (Dalrymple et al., 2004).

Following Nordlinger and Sadler (2007), varied analyses can be adopted for copula constructions even in the same language. So, a single-tier analysis will be adopted for predicational sentences, while a double-tier analysis is proposed for equational ones.

Predicational sentences can contain non-verbal predicates: an adjective or a participle, which function as the main predicates and subcategorise for a SUBJ, and agree with their SUBJ in NUMBER and GENDER. Based on the rules in (146), the empty string is represented as a TENSE PRESENT feature-value in the f-structure, as illustrated in (147c).

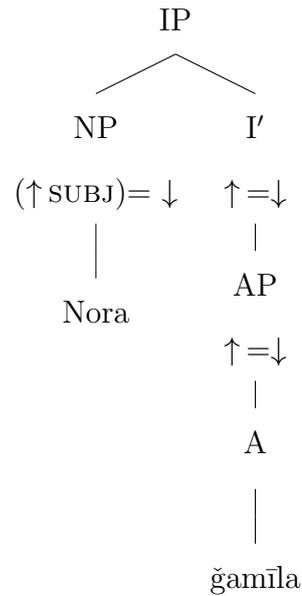
Based on the fact that the copula is optional in predicational sentences which contain adjectives as a non-verbal predicate in SA, it is preferred to adopt the *single-tier* analysis proposed by Dalrymple et al. (2004) for Japanese adjectives in a predicate position. We find that Japanese adjectives in predicative constructions are similar to Arabic adjectives in predicative constructions since the copula is optional. If the copula is present, it will be the head. If the copula is not available, the adjective will be the head. The difference between Arabic copula constructions and Japanese copula constructions is TENSE. In this regard, Arabic copula constructions seem more similar to Hebrew and Russian.

Given the above similarity between Arabic and Japanese adjectives in a predicate position, I suggest the following analysis for predicational sentences in SA. Accordingly, we have the same analysis for both (147) where the copula is not present, and (148) where the copula is present.

- (147) a. Nora ġamīl-a
 Nora beautiful-SGF

Nora is beautiful.

b.



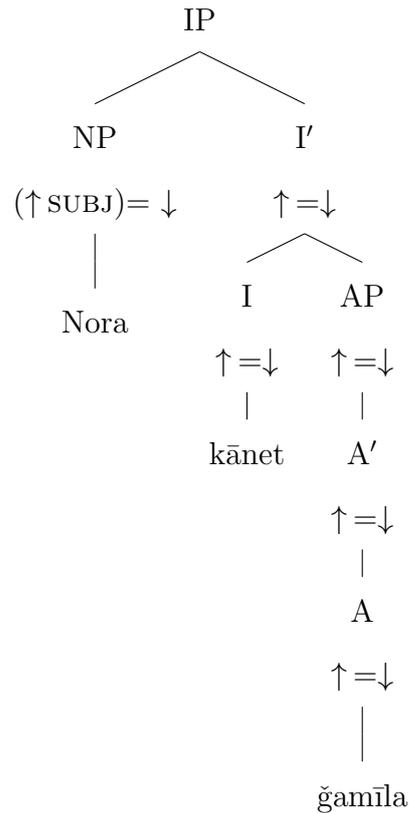
c. $\left[\begin{array}{l} \text{PRED} \quad \text{'BEAUTIFUL<SUBJ>'} \\ \text{TENSE} \quad \text{PRESENT} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'NORA'} \right] \end{array} \right]$

If the copula *kān* is present in predicational sentences to express the PAST TENSE, it appears in I, just as what was observed with lexical predicates in verbal sentences. In the f-structure, *kān* will be treated as a feature carrier which expresses the past tense as illustrated in (148c).

(148) a. Nora *kān-et* *ḡamīl-a*
 Nora be.PFV-3SGF beautiful-SGF

Nora was beautiful.

b.



c.
$$\left[\begin{array}{l} \text{PRED} \quad \text{'BEAUTIFUL<SUBJ>'} \\ \text{TENSE} \quad \text{PAST} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'NORA'} \right] \end{array} \right]$$

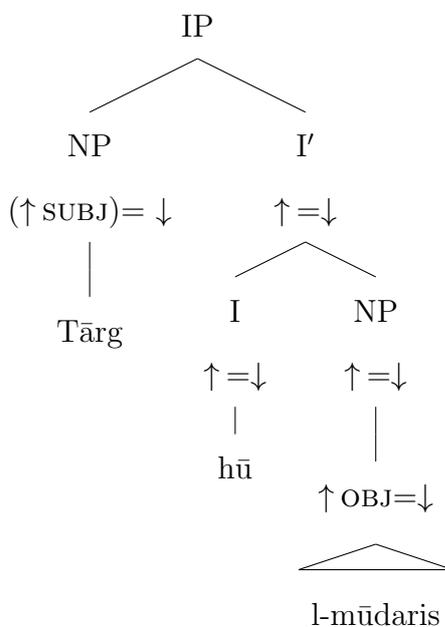
Equational sentences that consist of a subject and a definite noun separated by a pronominal copula as a linking predicate have received different analyses in LFG. Arabic pronominal copula in equational sentences display both verbal and nominal properties. On the one hand, the pronominal copula occurs in the verb position, and functions as the present tense indicator/carrier (**verbal** properties). On the other hand, it is a categorially nominal form (**nominal** properties). Accordingly, the present tense pronominal copular constructions in SA and Arabic generally have mixed characteristics since they are **functionally** verbal, but **categorially** nominal.

The equational sentence in (149) which contains a subject and definite noun linked by a pronominal copula will receive the analysis in (149b-c). The pronominal copula is placed under the I node, expressing the PRESENT TENSE. In the f-structure, it has two functions: a main PRED and a TENSE FEATURE carrier. So, I consider the copula here

as the main predicate of the sentence which takes a subject and object. Following the analysis proposed by Camilleri and Sadler (2018b), I assume an analysis which involves a SUBJ and OBJ as shown in the lexical entry in (149d). However, an XCOMP or a PREDLINK complement were not assumed. This then associates with a double-tier f-structure analysis, as shown in (149c).

- (149) a. Tārg hū l-mūdaris
 Tārg COP.3SGM DEF-teacher.SGM
 Tārg is the teacher.

b.



- c. **f-structure** $\left[\begin{array}{l} \text{PRED} \quad \text{'HŪ<SUBJ, OBJ>'} \\ \text{TENSE} \quad \text{PRESENT} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'TĀRG'} \right] \\ \text{OBJ} \quad \left[\text{PRED} \quad \text{'TEACHER'} \right] \\ \quad \quad \left[\text{DEF} \quad + \right] \end{array} \right]$

d. **lexical entry:**

(↑PRED) = 'HŪ<SUBJ, OBJ>'

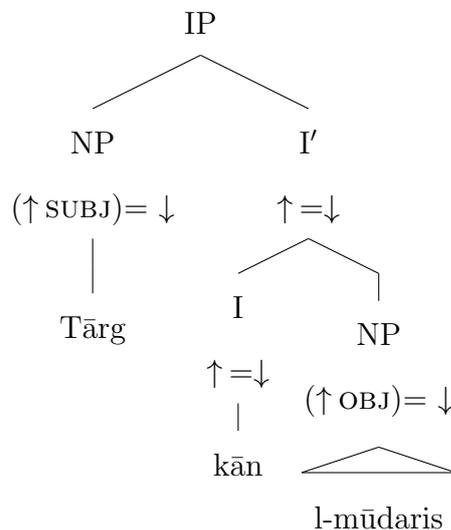
TENSE PRESENT

(↑ OBJ DEF) = +

If we have the past tense *kān* ‘was’ instead of the present copula *kān* in an equational sentence, the structure will be similar except for the value for TENSE in the f-structure. The result, therefore, is a copula that takes a PRED value in the f-structure, and is also a TENSE feature carrier expressing PAST TENSE this time. In our analysis, we assume that the present copula *kān* in an equational sentence is merely a transitive predicate that requires a subject and an object. This analysis differs from that of Camilleri and Sadler (2018b), where an open XCOMP or closed PREDLINK analysis is assumed for PRESENT TENSE copular sentences in Arabic. However, under the current analysis, *kān* takes a subject and object without adopting an open XCOMP or closed PREDLINK assumptions.

- (150) a. Tārg kān l-mūdaris
 Tārg COP.3SGM DEF-teacher.SGM
 Tārg is the teacher.

b.



- c. **f-structure** $\left[\begin{array}{l} \text{PRED} \quad \text{'KĀN<SUBJ, OBJ>'} \\ \text{TENSE} \quad \text{PRESENT} \\ \text{SUBJ} \quad \left[\text{PRED} \quad \text{'TĀRG'} \right] \\ \text{OBJ} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'TEACHER'} \\ \text{DEF} \quad + \end{array} \right] \end{array} \right]$

d. **lexical entry:**

$$(\uparrow \text{PRED}) = \text{'KĀN} \langle \text{SUBJ, OBJ} \rangle$$

TENSE PAST

$$(\uparrow \text{OBJ DEF}) = +$$

Regarding predicational sentences which contain a participle as the main predicate, there are different possible analysis in LFG. The first analysis assumes that participles are verbs depending on their position of the sentence. The second analysis, however, assumes that participles are adjectives depending on the morphosyntax criterion. Participles in Arabic manifest mixed properties since they are **functionally** verbal, but **categorially** adjectival.

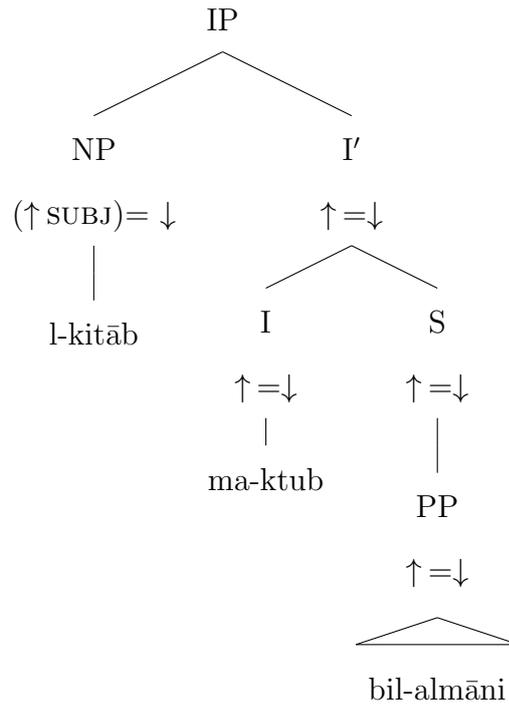
In the current study, I assume two possible analyses of SA predicational sentences which contain a participle as the main predicate. In the first analysis, the participle which is the main predicate of the predicational sentence in (151) is a verb, and therefore is placed under the functional category I. However, under the second analysis, the participle predicate is treated as an adjective on the basis of its agreement properties. It can be noted that participles can be prefixed with the definite article *l-* 'the' in equational sentences and attribute contexts, just like adjectives. In the c-structure, the participle, which functions as the non-verbal predicate, is the main predicate, appears under the I node or the AP node as illustrated in (151b-c) and (152b-c). In the f-structure, I assume that the participle is the main PRED which has a subject and object. This resembles the analysis proposed by Camilleri and Sadler (2018b) for PRESENT TENSE copular sentences in Arabic. However, under the current analysis, no open XCOMP or closed PREDLINK complement is assumed.

(151) a. *l-kitāb* *ma-ktūb* *bil-almāni*
 DEF-book.SGM PASS.PTCP-write.SGM with.DEF-German

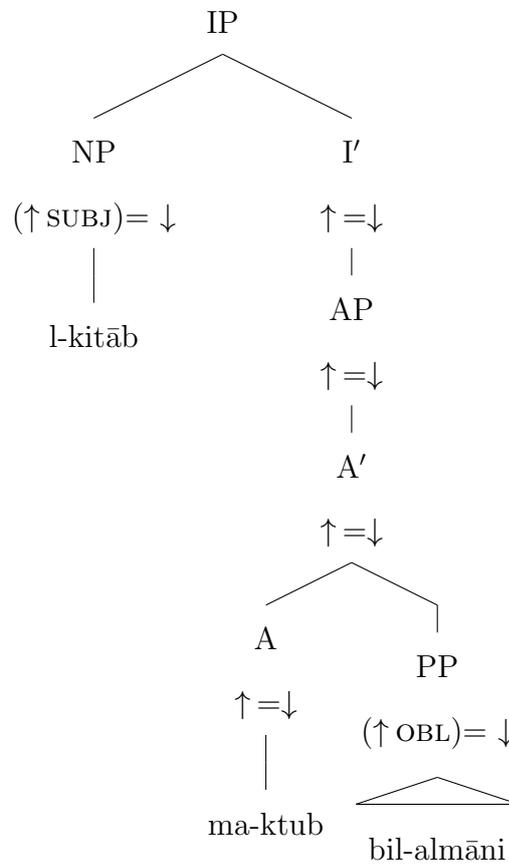
The book is written in German.

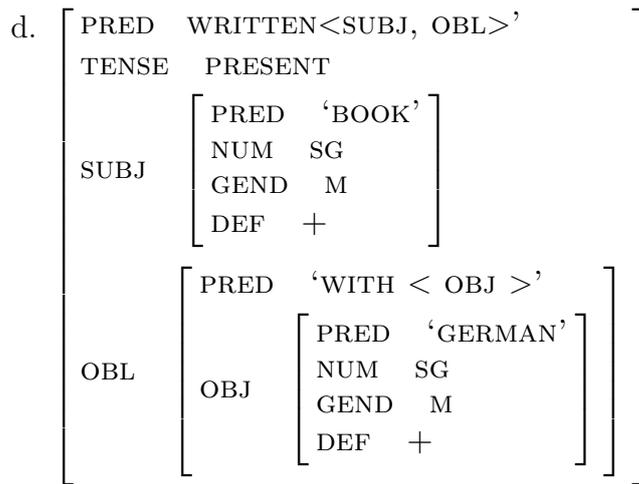
2.10. AN LFG ANALYSIS OF SOME KEY ASPECTS OF SA THAT HAVE BEEN A SOURCE OF DIS

b.



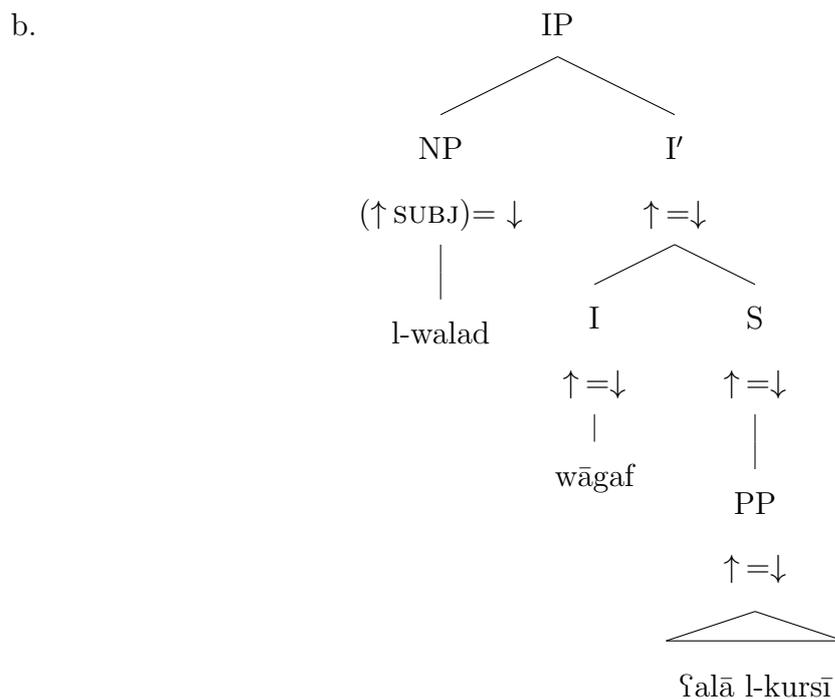
c.





(152) a. l-walad wāgaf ʕalā l-kursī
 DEF-boy.SGM stand.ACT.PTCP.SGM on DEF-chair.SGM

The boy is standing on the chair.



the c-structures of NPs in SA.

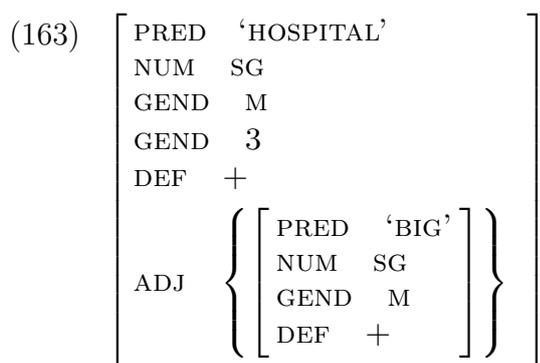
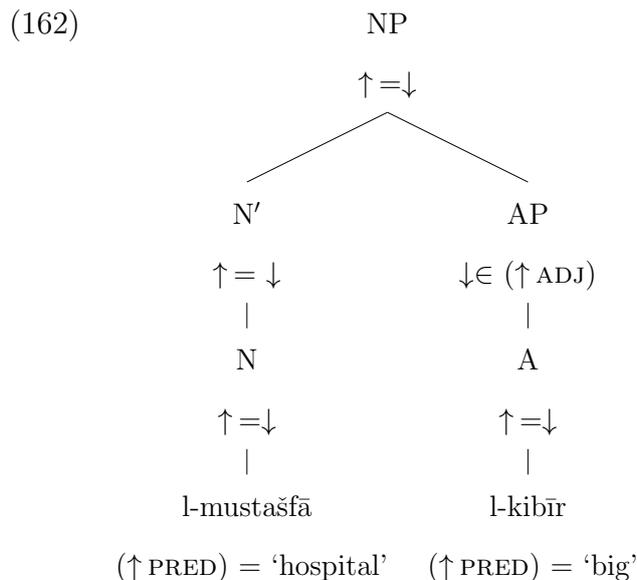
$$(153) \text{ a. } \begin{array}{l} \text{NP} \quad \rightarrow \quad \text{N}' \quad \text{AP}^* \\ \uparrow = \downarrow \quad \quad \uparrow = \downarrow \quad \downarrow \in (\uparrow \text{ADJ}) \end{array}$$

Examples (154-159) are instances of the indefinite and definite NPs with adjectival modifiers in SA. The analysis of these NPs comprises lexical entries for both the head noun and the modifying adjective, c-structures and f-structures.

$$(154) \begin{array}{l} \text{mustašfā} \quad \text{kibīr} \\ \text{hospital.SGM} \quad \text{big.SGM} \\ \\ \text{a big hospital} \end{array}$$

$$(155) \begin{array}{l} \text{mustašfā} \quad \text{N} \quad (\uparrow \text{PRED}) = \text{'hospital'} \\ (\uparrow \text{NUM}) = \text{SG} \\ (\uparrow \text{GEND}) = \text{M} \\ (\uparrow \text{DEF}) = - \end{array}$$

$$(156) \begin{array}{l} \text{kibīr} \quad \text{A} \quad (\uparrow \text{PRED}) = \text{'big'} \\ (\uparrow \text{NUM}) = \text{SG} \\ (\uparrow \text{GEND}) = \text{M} \\ (\uparrow \text{DEF}) = - \end{array}$$



In what follows, I will provide an LFG account of the CSC in SA. To deal with this complex variant of NPs, I will follow the proposals in Falk (2001b) and Al-Sharif (2014). Recall from our discussion of SA CSCs in section (2.8.2), there is a correlation between the morphological change of SA constructed nouns and the presence of the definiteness feature. In this dialect, constructed head nouns display morphophonological variation: singular feminine nouns ending in *-a* change into *-at* in a CSC. Otherwise the head noun is bare of *l-* whether it is definite or not. The head noun inherits the DEF feature from the following possessor/defining NP, which does show definiteness.

Following Falk (2001b) and Al-Sharif (2014), I will assume that every head noun in a CSC must be dominated/governed by a following (adjunct) possessor/defining noun specified for a definiteness feature, which must be copied by the head noun. In my analysis,

following Falk (2001b), I propose a dominance attribute (DOM) for construct head nouns in SA, and argue that constructed head nouns are marked to require the DOM attribute as encoded in their lexicon, while non-constructed nouns which are not marked to require the DOM attribute in their lexicon entry, forbid it, as illustrated below.

- (164) Construct nouns: (DOM)= +
 Non-construct nouns: (DOM)= - ⁸

I will then employ the Definiteness Dependency rule in (166), proposed by Falk (2001b) and used by Al-Sharif (2014), to ensure that CSC head nouns which require a DOM attribute inherit definiteness through it.

(166) **Definiteness Dependency**

$$(\uparrow \text{DOM}) \Rightarrow (\uparrow \text{DEF}) = (\uparrow \text{DOM DEF}) \quad (\text{Falk, 2001, p.9})$$

Examples (167-169) show the analysis of the definite and indefinite construct nouns in SA.

- (167) a. ḥadīg-at l-bāt l-ḡalaf-iyya
 garden-SGF DEF-house.SGM DEF-back-SGF
 the house's back yard

$$\text{ḥadīg-at} \quad \text{N} \quad (\uparrow \text{PRED}) = \text{'yard} < (\uparrow \text{POSS}) > \text{'}$$

$$(\uparrow \text{NUM}) = \text{SG}$$

$$(\uparrow \text{GEND}) = \text{F}$$

$$(\uparrow \text{DEF}) = +$$

$$(\uparrow \text{DOM})$$

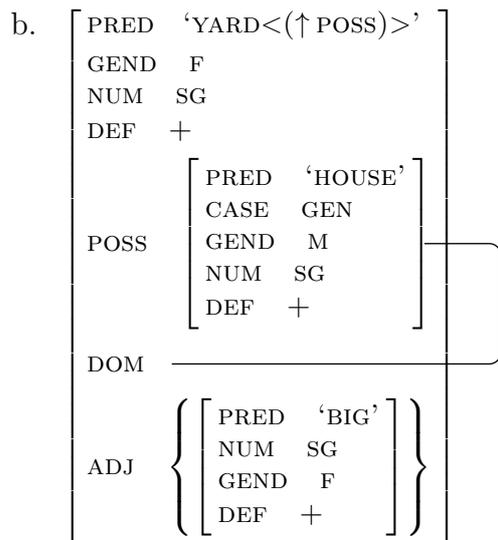
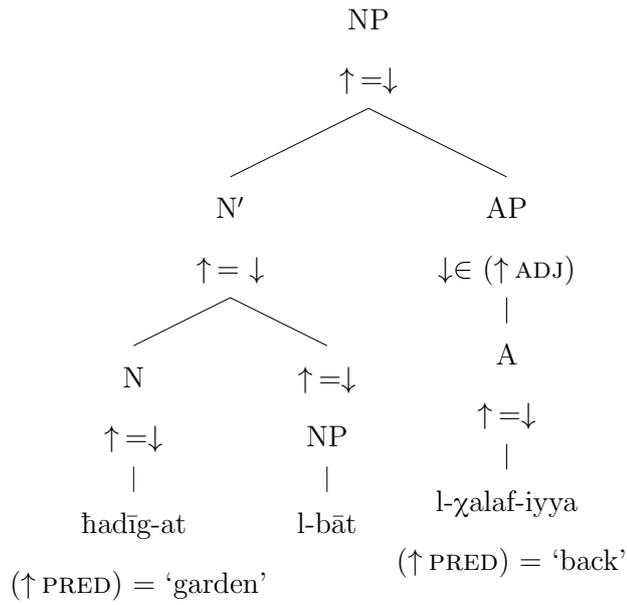
$$(\uparrow \text{DEF}) = ((\uparrow \text{DOM DEF}))$$

b. **Lexical entry**

⁸Note that the original rule is actually:

- (165) Construct nouns: (DOM)
 Non-construct nouns: $\neg(\uparrow \text{DOM})$ (Falk, 2001, p.9). I am just simplifying it here.

(168) a.



(169) a. ḥadīg-at bāt χalaf-iyya
 garden-SGF house.SGM back-SGF

a house's back yard

ħadīg-at N (↑ PRED) = 'yard<(↑ POSS)>'

(↑ NUM) = SG

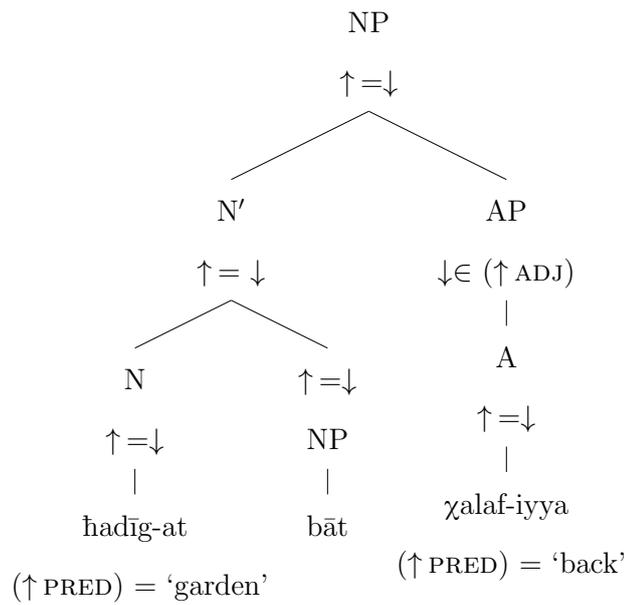
(↑ GEND) = F

(↑ DEF) = -

(↑ DOM)

(↑ DEF) = ((↑ DOM DEF))

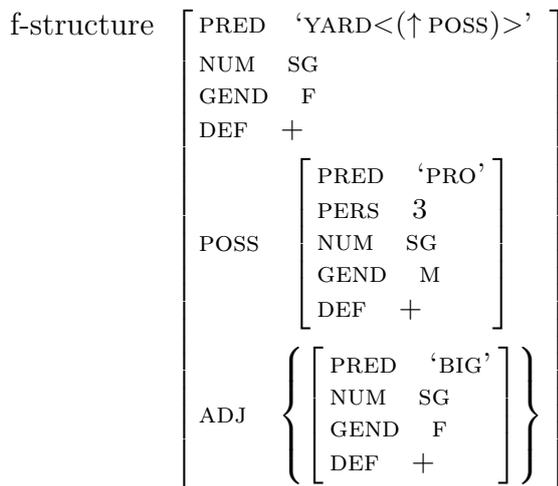
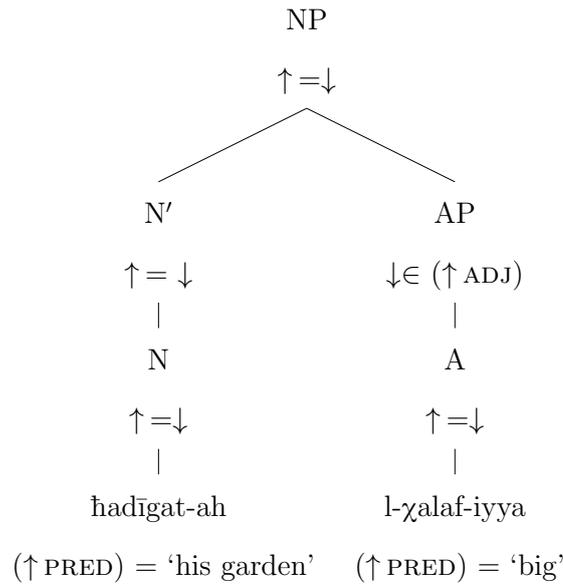
b. Lexical entry



PRED	'YARD<(↑ POSS)>'										
GEND	F										
NUM	SG										
DEF	-										
POSS	<table border="1" style="border-collapse: collapse; width: 80%; margin: 0 auto;"> <tr> <td style="padding: 2px;">PRED</td> <td style="padding: 2px;">'HOUSE'</td> </tr> <tr> <td style="padding: 2px;">CASE</td> <td style="padding: 2px;">GEN</td> </tr> <tr> <td style="padding: 2px;">GEND</td> <td style="padding: 2px;">M</td> </tr> <tr> <td style="padding: 2px;">NUM</td> <td style="padding: 2px;">SG</td> </tr> <tr> <td style="padding: 2px;">DEF</td> <td style="padding: 2px;">-</td> </tr> </table>	PRED	'HOUSE'	CASE	GEN	GEND	M	NUM	SG	DEF	-
PRED	'HOUSE'										
CASE	GEN										
GEND	M										
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DEF	-										
DOM	<table border="1" style="border-collapse: collapse; width: 80%; margin: 0 auto;"> <tr> <td style="padding: 2px;">PRED</td> <td style="padding: 2px;">'BIG'</td> </tr> <tr> <td style="padding: 2px;">NUM</td> <td style="padding: 2px;">SG</td> </tr> <tr> <td style="padding: 2px;">GEND</td> <td style="padding: 2px;">F</td> </tr> <tr> <td style="padding: 2px;">DEF</td> <td style="padding: 2px;">-</td> </tr> </table>	PRED	'BIG'	NUM	SG	GEND	F	DEF	-		
PRED	'BIG'										
NUM	SG										
GEND	F										
DEF	-										
ADJ	<table border="1" style="border-collapse: collapse; width: 80%; margin: 0 auto;"> <tr> <td style="padding: 2px;">PRED</td> <td style="padding: 2px;">'BIG'</td> </tr> <tr> <td style="padding: 2px;">NUM</td> <td style="padding: 2px;">SG</td> </tr> <tr> <td style="padding: 2px;">GEND</td> <td style="padding: 2px;">F</td> </tr> <tr> <td style="padding: 2px;">DEF</td> <td style="padding: 2px;">-</td> </tr> </table>	PRED	'BIG'	NUM	SG	GEND	F	DEF	-		
PRED	'BIG'										
NUM	SG										
GEND	F										
DEF	-										

I will turn now to the non-construct nouns which are nevertheless possessed/defined by a genitive pronoun affix rather than a separate word. Although they are called non-

c. c-structure



2.11 Conclusion

This chapter covered some key aspects of the grammar of SA, both descriptively and in their LFG representation. I began by presenting the basics associated with the clause structure, covering both verbal and verbless sentences. The discussion of verbal sentences revealed that there are two main word orders in SA: SVO and VSO. It was also mentioned that the verb shows obligatory full agreement with its subject in the two word orders.

I then moved to discuss verbal morphology in SA. I provided a discussion of the auxiliaries that form different compound tenses and verbs with modality meaning (including *kān*, *rāḥ*, *gāʿid*, *ḡālas*, *l-mafrūz*, *momkin*, *zarūri*, *iḥtimāl*, *lāzim*, *muḡbar*, *wāḡib*, *z-zāhar*, *nafs-*

i and *wuddi*). In addition, I have discussed the different forms of pseudo-verbs in SA. I have also made reference to the verbless sentences in SA, where I have shown that there are two distinct kinds of verbless sentences: predicational and equational sentences. Predicational sentences contain a non-verbal predicate, an adjective or a participle, which must be indefinite. Active and passive participles are given two analyses. They were treated as verbs or adjectives. In equational sentences, the subject and the predicate are shown to be both definite NPs. In the c-structure, the pronominal copula occupied the I position. In the f-structure, it is the main PRED, and has a SUBJ and OBJ.

I then moved to the different noun phrase forms in SA: simple NPs, CSCs, FSCs. It was shown that simple NPs, whether definite or indefinite, can take PP or clausal complements as part of their argument-structure. Moreover, it was shown that CSCs consist of a possessed and possessor, and that these two elements must not be separated, i.e. nothing can intervene between them. In addition, it was shown that FSCs are an alternative way of expressing possession in Arabic, and that this construction includes a simple head noun, a genitive exponent, treated as a preposition and a post-genitive noun. It was shown that *tabaʔ* and *ħagg* function as the SA genitive exponents, with the former being an invariable item, while the latter, *ħagg*, inflects and displays agreement with the head of the FSCs.

I concluded this chapter by going over selected parts of the descriptive account of SA providing an LFG analysis. This included simple verbal and verbless sentences, and simple NPs and CSCs. In the account, the LFG analysis was exemplified by lexical entries, c-structures, f-structures, and c-structure rules.

In the following chapters, 3-4, I will outline the previous analyses of mixed categories, and the Arabic *maṣdar*, in particular.

Chapter 3

Previous Analyses of Mixed Categories

3.1 Introduction

Linguists have devoted a great deal of attention in an attempt to better understand mixed categories, resulting in a long-standing debate on these complex and controversial phenomena in syntax. Mixed categories exist in many languages, such as English, French and Arabic, the language in question here, in which mixed category nominals are referred to as *l-maşdar* ‘the source noun’. For some period of time, mixed categories, often under other names such as verbal nouns (VNs), action nominals (ANs) or event nominals, have attracted many linguists to both examine and make sense of the properties of such categories. These problematic categories appear to still be central to a number of previous and recent studies in different languages of the world, following the influential work of Chomsky (1970), Abney (1987), Grimshaw (1990) and Borer (2003). The volume of work found in the literature on the topic includes van Hout (1990), Picallo (1991), Mugane (1996), Brito and Oliveira (1997), Snyder (1998), Bresnan and Mugane (2006), Roy and Soare (2013), Grimm and McNally (2013), Tayalati and van de Velde (2014), Börjars et al. (2015) and Grimm and McNally (2016).

This chapter aims to provide a general overview of the key literature that has discussed the so-called mixed categories. The chapter is organised as follows. In the second section, I introduce the notion of nominalisation, and what has been said about the different types of the nominal structures found in the literature. The third section is concerned with reviewing some influential works that have discussed the different types of nominals, including mixed category nominals, in English. The fourth section is concerned with providing a detailed review of previous analyses of nominals/mixed category nominals in Semitic languages, in particular, Hebrew and Arabic. The sixth section concludes and summarises the main ideas of the chapter.

3.2 Nominalisation

Nominals are usually a result of a derivational or conversion/recategorisation process, which is known as the *Nominalisation* process. San Martin (2009) defines the term nominalisation as a ‘process by which certain (usually) verbal categories are turned into a nominal group’ (p. 832). The result of this process is a mixed category that has lost some of its typical verbal features as it adopts nominal ones. Nominalisation as a morphological process in itself does not result in the formation of a uniform class of mixed categories. One could argue that this is because of a varied typology of nominalised structures, which end up being less noun-like or more noun-like. Regarding the interpretation of such structures, one could argue that at least if the nominal is more verbal-like, it will have a more event/process-like interpretation, given that the genuine function of verbs is to report events, states or psych feelings. In contrast, a nominal function is one that refers to terms or entities (San Martin, 2009).

The examples in (171) are typical examples discussed widely in the literature. In terms of morphology, the verbal gerund in (171a) is signaled by the *-ing* suffix, and therefore it is the most verbal among the three structures. In (171b), the nominal is of a mixed type since it includes both the ‘*-ing*’ verbal feature and the preposition *of*. This construction is known as the *Ing-of* construction. The preposition *of* is taken to be an indicator of

the accusative case marking on its object. Since in (171c), one observes that the ‘-ing’ verbal morphology is missing, but the preposition *of* is available, (171c) is understood as involving or constituting the most nominal function (San Martin, 2009).

The data set in (171) is illustrative of a scale of nominalisation where example (171a) is the most verbal, the construction in (171c) is the most nominal and (171b) constitutes the mixed category construction as noted in San Martin (2009).

- (171) a. Yara’s **correcting** the thesis.
- b. Yara’s **correcting of** the thesis.
- c. Yara’s **correction of** the thesis..

Having these different types of nominals results in having different names of nominalisations in the linguistic literature such as gerundive nominals, derived nominals, action or event nominals, verbal or deverbal nominals, mixed categories and others. However, the current study is concerned with mixed category nominalisations, it is essential to discuss nominalisations in general and the different types of nominals mentioned in the literature in order to identify the mixed nominalisations, and have full understanding of mixed category nominalisations generally and *maṣḍar*, which is the focus of our study, in particular.

3.3 Nominals in the literature

Nominalisation and nominals have long been a fundamental source of curiosity and theoretical dispute in the linguistic research since Lees (1960), and they still one of the controversial issues in the current linguistic literature.

3.3.1 Chomsky (1970)

Until late nineties, the prevalent predominating analysis for nominalisations was the analysis proposed in Lees (1960). Lees (1960) adopted the *Transformational Hypothesis*, and proposed that all nominals are deverbal nouns that are derived transformationally from their corresponding verbal bases. Therefore, these deverbal nouns inherit the same complements of the corresponding verbs. According to this hypothesis, deverbal nouns with arguments are derived from sentences. These assumptions began to change after the appearance of the influential work ‘*Remarks on Nominalisation*’. In this work, Chomsky (1970) proposed his *Lexicalist Hypothesis*, adding a new approach to the description of natural language, which still very popular and acceptable until today. Chomsky argued that gerundive nominals are built in the syntax and can be derived transformationally by applying a series of transformational rules into the associated sentence. By contrast, derived nominals and mixed nominals are built in the lexical component, namely, they are base-generated, where they are listed as nouns, and not derived transformationally from the associated sentence.

Based on these assumptions, gerundive nominals can be accounted for within the transformational hypothesis. However, derived and mixed nominals cannot be accounted for within the transformational hypothesis. Chomsky (1970) has identified some essential differences between gerundive nominals and derived nominals. According to him, gerundive nominals exhibit all the hallmarks of full sentences with the expected verbal properties: selecting bare objects, allowing aspect, allowing adverbial modification, permitting negation, and finally no tolerance for determiners, as illustrated in the data set in (172) below.

- (172) a. The university’s approving **the request**
b. The university’s **having approved** the request
c. The university’s approving the request **immediately**
d. The university’s **not** approving **the request**

- e. The university's (***the**) approving the request

In contrast, derived nominals display nominal characteristics since they have the internal structure of an NP. Example (173) illustrates that a derived nominal can be introduced by a determiner, and have an adjectival modifier, while it does not allow for negation.

- (173) a. **the immediate** approval of the request

- b. the (***not**) approval of the request

Accordingly, Chomsky has argued that derived and mixed nominals are derived lexically, unlike gerunds. Chomsky (1970) has explained *lexical derivation* saying 'we can enter refuse in the lexicon as an item with certain fixed selectional and subcategorisation features, which is free with respect to the categorial features [noun] and [verb]' (p. 190). Therefore, the difference between the verb and the corresponding nominal lies in the phonological information. For example, the lexical entry specifies *prove* as the pronunciation and spelling for the verb, and it specifies *proof*, clearly with different pronunciation and spelling, for the item when it functions as a noun. Additionally, derived nominals and their corresponding verbs assign theta roles in the same way.

Chomsky mentioned different points that motivated him to adopt the lexical hypothesis. The first argument concerns the productivity of the process. Gerundive nominals in English are highly productive. In other words, gerunds can be formed from any verb by adding the suffix *-ing*. However, this productivity is irregular in regards with derived nominals since not every derived nominal has a corresponding verb such as *doctor* **doct*, *dentist*, **dent nation* **nate*, *reference* **referen*, *absence* **absen*, *patience*, **patient*....etc.

The second argument concerns the regular productivity between the gerundive nominals and their corresponding verbs which can be extended to their semantic relation, which means that the semantics of gerundive nominals is always derived compositionally from the semantics of their corresponding verbs. By contrast, the relation of meaning between derived nominals and their corresponding verbs is irregular and idiosyncratic. See the

example in (174).

- (174) a. *perform/performing* means ‘carry into action’, whereas *performance* means ‘staging or acting’.
- b. *appear/appearing* means ‘become visible’, whereas *appearance* means ‘the way how someone or something looks, shape’.

In addition, it has been indicated that the internal structure of gerundive nominals maintains its verbality, i.e verbal properties such as selecting a bare object, aspect, adverbial modification, negation, refer to example (172) above. However, the internal structure of derived and mixed nominals resembles that of a simple noun; i.e nominal properties such as taking determiners, allowing adjectival modification, disallowing negation and aspect, and preventing adverbial modification, as shown in the following example:

- (175) a. **the immediate** approval of the request
- b. the (***not**) approval of the request
- c. the (***have**) approval of the request
- d. the approval (***immediately**) of the request

Chomsky (1970, p. 215) concluded by providing a classification of nominals in English. He distinguished three classes of nominals: the gerundive nominals as in (176a), the derived nominals such as (176b), and the mixed nominals as in (176c).

- (176) a. The university’s approving the request
- b. The university’s approval of the request
- c. The university’s approving of the request

3.3.2 Abney (1987)

Abney’s doctoral dissertation (1987) was one of the most influential work on nominalisation, in particular gerundive nominals. In this work, he assumed the famous DP hypothesis

which assumes that DPs are the maxim projection of their noun lexical heads. Therefore, determiners of NPs are treated as heads of full phrases. According to this assumption, DPs and IPs are structurally parallel.

Abney's work is also of great importance as it includes an analysis of the internal structure of nominals on a par with the structure of verbs. Abney assumed that the nominaliser *-ing* of English gerundive nominals is a functional element. This functional element takes a verbal projection and changes it into a nominal category. Additionally, he suggested that the differences between the various structures of the different types of gerundive nominals in English can be reduced to differences in the scope of the nominaliser *-ing*. Accordingly, there are three classes of gerundive constructions in English, the following examples are taken from Abney (1987, p. 223):

(177) a. John's **singing** of the Marseillaise (cf. our 171b, i.e. the type we call 'mixed')

b. John's **singing** the Marseillaise (cf. our 171a)

c. John **singing** the Marseillaise

In all these three constructions, the gerundive noun *singing* appears to be an event nominalisation because it describes an event, indeed it resembles Grimshaw's complex event nominalisation as we will see later. It has an argument structure just as its underlying verb *to sing*, and the subject argument and object argument of the event nominalisation are maintained. Abney notices that (177a) is the most nominal structure of the three because the subject and object are expressed by nominal grammatical forms, i.e. the Saxon genitive *'s* and the preposition *of*. For this reason, this structure is known as the *Ing-of* construction. Example (177b) is more verbal as the object is expressed without the preposition *of*. However, the subject is still marked with the Saxon genitive *'s*. This structure is known as the *Poss-ing* construction. Example (177c) is the most verbal, because the object is marked accusative directly by the gerund, i.e. just as a verb would,

and without any mediation via the preposition *of*. The most verbal-like construction is known as *Acc-ing*. Abney states that there could be a fourth possibility where the subject is not marked as a possessor, but where the object is marked as accusative through its marking by the preposition *of*. Such a structure is not possible or acceptable in English, as illustrated through the ungrammaticality of the following example:

(178) *John singing of the Marseillaise

Abney (1987), adopting the transformational framework, assumes that a gerund starts out as a verb, and then changes into a noun somewhere in the derivation, along the way. When this change takes place, arguments are licensed through case, until only nominal licensing mechanisms become available, and not verbal ones.

Abney (1987)'s analysis is supported by the observation that (179b-c), which are the least nominal, do not allow adjectives, but allow adverbs instead. (179a), on the other hand, which involves the most nominal gerund, allows for the presence of adjectives, and not adverbs. Thus it is *of* with the object, not *'s* with the subject, that marks *singing* at a fully nominal state. Out of these it is (179b) that we are terming mixed.

(179) a. John's **constant**/***constantly** singing of the Marseillaise

b. John's ***constant**/**constantly** singing the Marseillaise

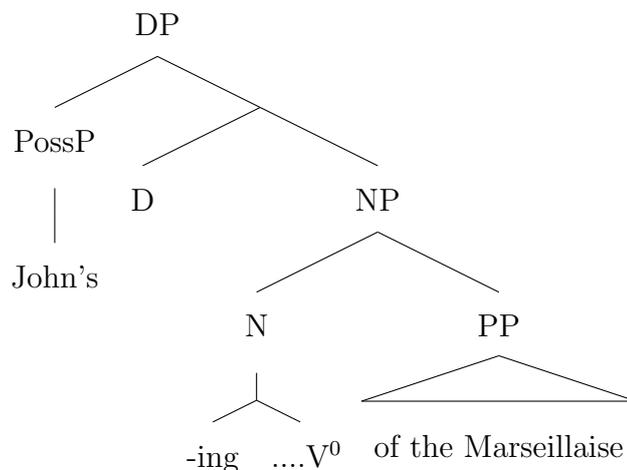
c. John ***constant**/**constantly** singing the Marseillaise (Kremers, 2007, p. 2)

In his analysis, Abney (1987) assumes that there is an *-ing* affix. This affix combines with verbal categories only, and convert them to corresponding nominal categories. This affix can attach at three different levels in the syntactic structure:

1. at V, forming N;
2. at the VP, forming an NP;

- *ing- of*

(182)



Abney (1987)'s analysis thus involves a treatment of the internal arguments of gerundive nominals in English, on a par with the internal arguments of verbs. In addition, under his analysis, termed the DP analysis, non-lexical elements, such as determiners of noun phrases are treated as heads of NPs. As mentioned above, determiners are treated as functional categories, not as articles which were treated as non-functional categories in previous analyses. This novel approach in treating determiners as functional categories that can head full NPs has many advantages. For example, Bernstein (2001) states that the employment of the *DP hypothesis* makes it possible to resolve the inconsistency in treating NPs and IPs (pp. 537-538).

In addition, within the DP-analysis, the structural differences between the different types of gerunds in English are reduced to differences in the scope of the nominalising suffix, giving more weight to Abney's analysis (Procházková, 2006). Furthermore, Abney's approach to the English gerund constructions has had significant impact on most proposals for similar constructions across languages, including the analysis of the Arabic mixed category constructions, known as *maṣḍar* constructions, which are the focus of this study, such as the one proposed in Fassi Fehri (1993) for *maṣḍars* in Arabic.

Although Abney's proposal has had great influence, problems still persist in his three

gerundive construction system. The problem is that the formation of the gerund *singing* is not clear (Kremers, 2007a).

Grimm and McNally (2016) further discuss another *-ing* construction called *the+VPing*, as in *The singing the Marseillaise*, which is not included in the data set provided by Abney (1987) above. This appears to be subjectless and have only an object, i.e. it has only one argument. This construction has been considered by many linguists, such as Abney (1987), Pullum (1991) and others, as either ungrammatical or marginal in English, while the equivalent construction with *of* is entirely acceptable. However, Grimm and McNally (2016) argue that *the+VPing* construction is alive and acceptable in English. They claim that sentences such as the one in (183) are acceptable. They argue that even though Pullum (1991) considers the use by Dickens of the construction as an archaism, he himself provides an analysis of POSS-*ing* constructions, such as the one in (184). Under his analysis, the *-ing* form is treated as a head of the VP, and the possessive pronoun is assumed as a determiner. He assumes that only determiners with a [+POSS] feature can combine with *VPing*. Similarly, they argue that although even Abney (1987) considers the sentences in (183-184) as marginal in English, his analysis of the POSS-*ing* construction, such as the one in (184), however, licenses such constructions since Abney treats possessives as determiners (DPs) that select nominalised VP complements. Accordingly, nothing can prevent other DPs from selecting VPs, such as definite determiners.

(183) **the knowing** the answer

(184) **Al's raking** the leaves

(Grimm and McNally, 2016, pp. 167-169)

(185) **the being born in a workhouse** is in itself the most fortunate and enviable circumstance....

(as cited in Charles Dickens in Grimm and McNally, 2016, p. 167)

(186) a. *The leaving the city is difficult.

b. *Some leaving the city is difficult. (Grimm and McNally, 2016, p. 168)

Following Abney (1987), then, Grimm and McNally (2016) propose to analyse *the+VPing* form as a mixed category, which shows the internal syntax of a VP, and the external syntax of an NP. Grimm and McNally base their analysis on the assumption that the verb in *the+VPing* is capable of functioning as a verb in the syntax. Their aim is to map specific aspects of *the+VPing* syntax to its interpretation. Regarding the *-ing* form in *the+VPing* construction, they assume that it includes the full argument structure, i.e. not only an internal argument but an external one as well. They also assume that some *-ing* forms lack a tense projection. If we follow this assumption and apply it to Abney's trees, we will find that the IP tree allows tense (187), the VP tree possibly allows tense (187), and the NP tree does not allow tense (187).

(187) a. I read about John having sung the Marseillaise.

b. ? I read about John's having sung the Marseillaise.

c. *I read about John's having sung of the Marseillaise.

Therefore, they propose that the internal syntax of *the+VPing* construction can be represented as follows:

(188) [vP [PRO] ... [VP VP]] (Grimm and McNally, 2016, p. 171)

They assume a *vP/VoiceP* that contains a *little v* which represents non thematic verbs, i.e. subjectless verbs, or auxiliary verbs. The *vP/VoiceP* is the projection which introduces the external argument to the verb and the *Voice*.

Moreover, they follow Abney (1987) in treating the determiner as the head of DP which can itself take any type of predicates that are semantically appropriate, including a vP that

is not restricted to taking nominal complements. The following representation demonstrates this additional level of structure:

(189) [**DP** [**D** **the** [_{vP} [_{PRO}] . . . [_{VP} _{VP}]]]] (Grimm and McNally, 2016, p. 171)

Based on this simple analysis, Grimm and McNally (2016) argue that *the+VP ing* has ‘the internal syntax of a VP and the external syntax of a nominal, specifically, a DP’ (p. 171). Under the DP hypothesis, the D can select categories other than NP as its complement, such as APs as follows:

(190) the laity and **the married** are underrepresented in the lists of canonised saints.

(Grimm and McNally, 2016, p. 171).

They also show that the use of *the+VP ing* with an overt subject when the PRO is present will be ungrammatical as in (6). However, based on the data present in their corpus, examples with overt subjects and PRO can be rarely found. Consider the following examples.

(191) *The **him raking** the leaves

(Grimm and McNally, 2016, p. 171)

(192) It’s **the him wanting someone else** that’s the problem.

(Grimm and McNally, 2016, p. 172)

Having discussed the gerundive nominals, including mixed ones, I will now move to another type of nominals which is derived nominals from the perspective of Grimshaw (1990).

3.3.3 Grimshaw (1990)

Grimshaw (1990) adopted the *Lexicalist Hypothesis* to deal with derived nominals in English. In fact, Grimshaw (1990) introduced a new path for research on nominalisation by arguing that derived nominals do not belong to a homogenous class, and that there is a correlation between the event structure inside such nominals and the obligatory realisation of argument structure. On the basis of this correlation, Grimshaw (1990) classifies deverbal derived or converted nominals into three major classes:

1. Complex event nominal
2. Result nominal
3. Simple event nominal

The first class, complex event nominals, involves nominals that denote a process, an event or action, with participants and for this reason they are in the literature also referred to as action nominals (ANs). Grimshaw claims that this class includes the only type of nominals that have some verb-like properties, among which is their ability to take arguments and consequently an argument structure. The second class, result nominals, refers to the output of an action or process, or to an element that is related to that action or process. The third class, simple event nominals, is a class that something in between the two other classes, where nominals involved display properties from both. While they lack the ability to take arguments, they still denote an event (Grimshaw, 1990).

It should be noted from the start that many English derived (deverbal) nouns have multiple meanings which include two or more of these uses, for example, the word *calculation*:

- (193) a. John's calculation of the speed of light took a week. Complex event or process
 mentioning participants
- b. We performed three calculations quite easily. Simple event

- c. He tore up his calculations and started again. Result

Indeed it is hard to find words that are limited to only one of those meanings. In the following sections we use examples that are very familiar in only one of those meanings even though others may be also possible. Furthermore, we will first present Grimshaw's claims without comment although in fact many of them even on casual reflection are questionable and will emerge in the subsection 3.3.3.4 to be unsupported.

In the following sub-sections, I explore the details of each of these three classes according to Grimshaw's criteria.

3.3.3.1 Complex Event Nominals

The distinct properties of the class of nominals that are complex event nominals, as claimed by Grimshaw, are illustrated through the data in (194a-g) below. They take arguments obligatorily (194a); They are always definite and cannot be preceded by an indefinite determiner or *one* (194b); They allow event-related PPs, such as for *an hour* or *in an hour* (194c); Singular complex event nominals can only be preceded by aspectual adjective modifiers, e.g. *frequent*, as they themselves cannot be pluralised (194d); They can take agent-oriented modifiers such as *intentional* as in (194e); and pre-nominal genitives associated with them are interpreted as agents; They cannot be predicates (194f); and finally, implicit argument control in purpose clauses is possible with complex event nominals (194g).

(194) a. the barbarian's destroying ***(the city)**

b. ***an examination** of the cat was interrupted by the fireworks.

c. the examination of the cat **in three hours**

d. the **frequent examination** of the cat

e. the **vet's intentional** examination of the cat

- f. ***this is an examination** of the cat.
- g. the **assignment** of easy problems **in order to** pass all the students

(Alexiadou et al., 2007, p. 498-501)

Below is a summary of the properties displayed by complex event nominals according to Grimshaw's (1990) classification:

- Ability to take arguments
- Ability to take the definite article *the*
- Impossibility to use indefinite determiners, and *one*
- Impossibility of pluralisation
- Impossibility to occur in predicative positions
- Possibility of event-related PPs, such as for *an hour* or *in an hour*
- Possibility of aspectual adjective modifiers
- Possibility of agent-oriented modifiers
- Possibility of an agentive reading of a pre-nominal possessive phrase
- Possibility of an implicit argument that controls the subject of an infinitival purpose clause

3.3.3.2 Result Nominals

The class of result nominals display opposite behaviours as illustrated through the data set in (195a-h) below. Result nominals never take internal arguments (195a); They do not license event-related PPs, such as for *an hour* or *in an hour* (195b); They can be preceded by an indefinite determiner or *one* (195c). Plural result nominals are a possibility, and

can be preceded by aspectual adjective modifiers, e.g. *frequent* (195d); They cannot take agent-oriented modifiers (195e); Pre-nominal genitives associated with result nominals result in a possessive reading (195f); They can act as predicates (195g); and finally, no argument control in purpose clauses is allowed when result nominals are involved (195h).

- (195) a. *the exam of **the patient took** a long time
- b. *the exam **in three hours**
- c. **One exam** was rejected because it was written in red ink.
- d. the **frequent exams**
- e. *The **intentional exam** is desirable.
- f. The **vet's examination** was long.
- g. **This is** a new exam.
- h. *the **exam** in order to pass all the students

(Alexiadou et al., pp. 498-501)

A summary of the properties of the result nominals according to Grimshaw's (1990) criteria is provided below.

- Inability of taking arguments
- Ability of taking the definite article *the*
- Possibility of using indefinite determiners, and *one*
- Possibility of pluralisation
- Possibility of occurrence in predicative position

- Impossibility of event-related PPs, such as for *an hour* or *in an hour*
- Possibility to be modified by aspectual adjective modifiers
- Impossibility to be modified by agent-oriented adjuncts
- Possibility of a possessive reading of a pre-nominal possessive phrase
- Impossibility of the implicit argument to control the subject of the infinitive purpose clause

3.3.3.3 Simple Event Nominals

The third class of nominals, simple event nominals (SENs), share some features with both complex event nominals (CENs) and result nominals. On the one hand, both SENs and CENs denote an event. For example, nouns like *exam*, *event*, *journey*, *trip* or *race* are considered as simple event nominals. Such nouns can be modified by expressions such as *a long time* or predicates such as *occur* and *last* because these nouns can take place over time (196a). On the other hand, SENs resemble RNs in every other way as shown in (196b-f) below with examples taken from Grimshaw (1990, p. 59) and Markova (2007, p. 47). Simple event nominals are unable to take arguments and consequently lack an argument structure. For this reason they are unable to license adverbial PPs of any kind (196b). Plural simple event nominals can be preceded by aspectual adjective modifiers, e.g. *frequent* (196c); They cannot take agent-oriented modifiers, and when there are pre-nominal genitives associated with simple event nominals, they have a possessive reading. Both these characteristics are illustrated through the ungrammaticality of (196d). They can function as predicates (196e); and lastly, argument control in purpose clauses is not allowed (196f).

(196) a. The event took **a long time/took place** at 6:00 p.m.

b. *Jack's trip **in five hours**

c. The **frequent trips or events** were a nuisance. (Grimshaw, 2007, p. 59)

- d. ***Mary's intentional** trip to Asia
- e. **This is** the last trip.
- f. *that **trip** in order to?... (Markova, 2007, p. 47)

A summary of the properties exhibited by simple event nominals according to Grimshaw's (1990) criteria are as follows:

- Inability to take arguments
- Ability to take the definite article *the*
- Possibility of using indefinite determiners and *one*
- Possibility of pluralisation
- Possibility of an occurrence in predicative position
- Impossibility to license event-related PPs, such as for *an hour* or *in an hour*
- Possibility of aspectual adjective modifiers
- Impossibility of agent-oriented modifiers
- Possibility of possessive reading of a pre-nominal possessive phrase
- Impossibility of the implicit argument to control the subject of infinitival purpose clauses

Table (3.1) provides a representation of the distinct possibilities/ impossibilities available to the distinct nominals, according to their respective classification in one class of nominals, or another.

Property	Complex event nominal	Simple event nominal	Result nominal
Taking arguments	Obligatory	Impossible	Impossible
Definiteness	Possible	Possible	Possible
Indefinite determiners	Impossible	Possible	Possible
The use of <i>one</i>	Impossible	Possible	Possible
Event reading	Possible	Possible	Impossible
Pluralisation	Impossible	Possible	Possible
Acting as predicates	Impossible	Possible	Possible
The licensing of event-related PPs	Possible	Impossible	Impossible
Aspectual modifiers	Possible	Impossible	Impossible
Subjects	Arguments	Possessives	Possessives
Implicit argument control in infinitival purpose clauses	Possible	Impossible	Impossible

Table 3.1: Summary of the properties of the different classes of English derived nominals according to Grimshaw's (1990) classification

3.3.3.4 Polysemy of Some Nominalisations in English

Following the three-way distinction in Grimshaw (1990), the question to be asked now is whether the classification just provided, based on the semantic-syntactic criteria is always straightforward, at least for the English derived nominals data. The answer is no, because as we noted at the start some nouns can be ‘three-way-ambiguous’. An example of such an ambiguity is the *examination*, this nominal can take arguments, and have complex event interpretation as in (197a); it can be interpreted as a result of an event, as illustrated in (197b); and it can have a simple event interpretation with no event structure, and consequently no argument structure, as shown in (197c).

(197) a. The **examination** of the patients took a long time.

b. The **examination** was on the table.

c. The **examination** took a long time.

(Alexiadou and Grimshaw, 2008, p. 2)

However, even taking into account polysemy, there are doubts about many of Grimshaw’s claims about the differences between the three types of nominalisation considered here. What I consider next therefore is a thorough review of Grimm and McNally (2013), who carried out a corpus-based study which aims to examine the validity of Grimshaw’s claim regarding the three types of nominalisations. I use this review as a way to demonstrate how Grimshaw’s (1990) classification is not without its flaws, and counterarguments have been provided in the literature. Grimm and McNally choose five properties from the cluster of properties proposed by Grimshaw, as reviewed above. The properties are:

1. number
2. taking adjectival modifiers such as *frequent* or *constant*

3. taking aspectual modifiers such as *in/for an hour*
4. taking agent-oriented modifiers such as *deliberate or intentional*
5. obligatoriness of arguments

According to their data set, the majority of the nominalisations considered in the research occurred in the singular, regardless of the presence or absence of the *of*-phrase. This finding contradicts Grimshaw's claim that all complex event nominals only occur in the singular. Generally, they found that number does not distinguish between nominals with and without an *of*-phrase, i.e. between CENs at one hand, and RNs and SENs on the other hand. Additionally, their data showed that the modifiers of frequency such as *constant* and *frequent* appeared with singular forms of nominals which did not allow for an *of*-phrase. This again contradicts Grimshaw who claims that the modifiers of frequency *constant* and *frequent* can be used only with singular forms of nominals with an *of*-phrase, i.e. CENs, but in their corpus analysis, Grimm and McNally (2013) show that the same modifiers could still appear with the plural form of nominals without an *of*-phrase, i.e. result or simple event nominals. Similarly, the data showed that *deliberate* and *intentional* occurred with nominals which had an *of*-phrase, complex event nominals, and with nominals which did not have an *of*-phrase, therefore, making no distinction between different types of nominals. Accordingly, they conclude that nominalisations behave in the same way, whether the *of*-phrase is present or not.

In addition, Grimm and McNally found that the occurrence of aspectual modifiers or event-related modifiers, especially of the type of *for-* or *in-*phrases, such as *for an hour* or *in an hour*, was extremely rare. They also found that such modifiers occurred with result or simple event nominals, while Grimshaw claims that it is only complex event nominals that license aspectual modifiers or event-related modifiers such as *in an hour*, whereas result or simple event nominals do not license such modifiers. Grimm and McNally (2013) further found that the *of*-phrase does not require to be followed by a *by*-phrase, although one can occur, as the following data extract:

‘40 years of **destruction by an unchallenged tyrant** (p. 4)’

What Hornstein (1977) added to this discussion of English nominalisations that the presence of the *of*-phrase will be obligatory if a *by*-phrase is present. However, examples above have already shown this not to be the case. In Rappaport et al. (1983), one also finds that some specific nominals such as *sending* require to be followed by *of*-phrases, e.g. the sending ***(of the paper)**, otherwise they will be banned. Once again the data in Grimm and McNally’s corpus reveals that specific nominals such as *sending* or *handing* are allowed even without an *of*-phrase as the following extract shows :

‘the **sending** occurred instantaneously.....’ (Grimm and McNally , 2013, p. 4)

In their corpus study they also found that it is not only deverbal nouns that show such behaviour, but even deadjectival nominals (e.g. *wisdom*), and nominals derived from nouns, e.g. *friendship* can appear without an *of*-phrase, and has the possessive reading of a pre-nominal possessive phrase, which is a nominal property, as shown in (198).

(198) Sue has known Bob for years. Bob’s **friendship** means the world to her.

(Grimm and McNally, 2013, p. 4)

Grimm and McNally (2013) conclude that the proposed properties of Grimshaw and others contradict the data obtained from their corpus. On this basis, they argue that the optionality of PPs with a nominal is not due to an inherent ambiguity between CENs and RNs or SENs, but it is rather due to the overall discourse context. Such a finding is not in accordance with the previous assumptions in the literature.

Moreover, the distinction between complex event nominals (CENs) and Referential (R)-nominals (RN) proposed by Grimshaw (1990) has received criticism among researchers on nominalisation in other languages. For example, Roodenburg (2006), as cited in San Martin (2009, p. 835), found that RNs can also pluralise and select an internal argument in

French, as in (199).

(199) Les désamorçages de bombes lourdes par les recrues.

‘The dismantlements of heavy bombs by the young soldiers. (Roodenburg, as cited in San Martin 2009, p. 835)’ **(French)**

van Hout (1990) also found that that process nominals can pluralise in Dutch as in (200).

(200) Tijdens de martelingen van de politieke gevangenen door de zwarte brigades moesten alle journalisten het gebouw uit.

‘During the tortures of the political prisoners by the black brigades all the reporters had to leave the building’. (p. 75). **(Dutch)**

In addition, Brito and Oliveira (1997) found that process nominals can pluralise in Portuguese as well as in (201):

(201) Os jornalistas estavam a assistir a várias destruições de pontes, quando chegaram as tropas.

‘The journalists were watching several destructions of bridges, when the troops arrived.’ (p. 61) **(Portuguese)**

I also found that simple event nominals in Arabic can also select an internal argument as in example (202):

(202) **tawgēf** l-ṣagad aḥd wagat qiṣēr
 DEF-sign.MSD.SGM DEF-contract.SGM take.PFV3.SGM time.SGM short.SGM
 The signing (process) of the contract took a short time. **(Southern Arabic)**

Additionally, RNs in Arabic can also pluralise and select an internal argument as in (203a-b):

(203) a. rusūmāt l-awlād ḡāhiz-a
 drawings DEF-boy.SGM ready-SGF
 Paintings of the boys are ready **(Southern Arabic)**

- b. ʔiʔtirāf-āt-uh bal-ğarīma ʔamas
 confess.MSD-PLF-him with-DEF-crime.SGF yesterday

His confessions of the crime yesterday

Although Grimshaw (1990)'s distinction between CENs and RNs has received a certain amount of criticism from researchers in different languages, it has a strong place in the literature and demonstrates substantial consensus on the assumption that the word formation of nominalisations and the event structure are encoded in the lexicon. This serves as a motivation for extending the research loop on nominalisation and allows for other approaches to emerge.

3.3.4 Borer (2003)

While Chomsky (1970) and Grimshaw (1990) have adopted the lexical approach to nominalisations, Borer (2003) has taken an opposite view, and argued that the word formation of nominalisations and the event structure are encoded in the syntax, rather than in the lexicon. Borer (2003) refers to complex event nominals (CENs), which have an event structure and obligatorily license their internal arguments, as Argument Supporting (AS)-nominals. By contrast, Borer (2003) refers to both simple event nominals (SENs), which denote an event, and result nominals (RNs), that denote an entity, lack an event structure and thus there is no argument realisation, as Referential (R)-nominals. Borer argues that CENs are eventive and their eventivity is structurally encoded in the syntax. Borer has suggested two different flavours of AspP as functional heads that are responsible for introducing the event argument and argument structure: AspEV and AspQ. AspEV is suggested to stand for Aspect of Event, and is specified as the 'measurer of the event' that introduces the external argument and the event variable *ev*, while AspQ is suggested to stand for Aspect for Quantity and introduce the internal argument that is severed from the root in the case of CENs, as in Figure (3.1). However, RNs do not have any verbal or aspectual structure, and hence they are derived directly from the bare root as in Figure (3.2). The tree structures below are taken from Roy and Soare (2013, p. 129).

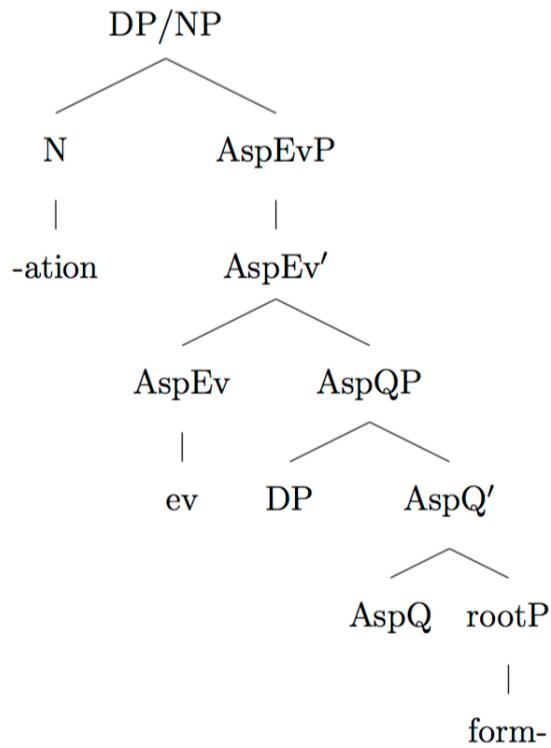


Figure 3.1: CENs severed from the root

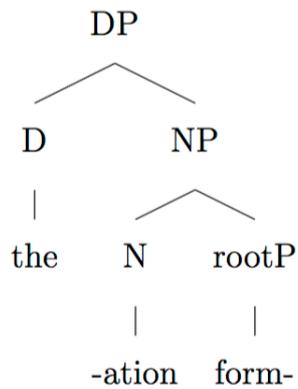


Figure 3.2: RNs derived directly from the bare root

Having presented different proposals of English nominals covering both derived nominals and gerundive nominals that can display mixed properties, I move on to introduce the different approaches that have been considered to deal with nominals in Semitic Languages in particular.

3.4 Previous Approaches to Mixed Categories in Semitic Languages

Generally speaking, generative studies on mixed categories in Arabic focus on some certain controversial issues. The first issue is concerned with the verbal properties of these mixed categories, especially the ACC case on the object argument in transitive *maṣādar* constructions and the possibility of having PP adverbial modifiers. The second issue is related to the PP- *maṣādar* construction which shows the possibility of having adjectival modifiers. A third issue regards subjectless (one-argument) *maṣādar* constructions, where the internal argument appears in the subject position, and is marked with GEN case, instead of ACC case. Furthermore, some studies have attempted to additionally provide an explanation of the use of PP adverbials as modifiers of nominalisations (mixed categories) in certain cases, and not adverbs. In this section, I will present the different opposing views available in the literature regarding these issues, and what solutions have been suggested.

There are three different approaches to analysing nominalisations in Semitic languages. The first approach is called the lexical or the lexicalist approach. Siloni (1997) is one of the main supporters of the lexicalist approach in Semitic languages. This approach claims, as described earlier for Chomsky's lexicalist account of English, that nominalisations are formed in the lexicon. Under such an approach, no V projection is assumed in the structure at all. The verbal origin of a nominalisation is represented only within the lexicon, in its lexical entry or by morphological rules. As a word it is treated in the syntax only as a noun. The other approaches allow derivations where the nominalisation is allowed to function in some way as a V within the syntactic account. The second approach is called the syntactic approach, and Hazout (1995) is one of its main proponents. This approach claims that the derivation of nominalisations takes place in the syntax, where the nominalisation relates to a VP category. The third approach argues that the formation of nominalisations takes place at different phases in the derivation. Fassi Fehri (1993)

and Kremers (2003) are among the main supporters of this approach. In the following sections, the different approaches to nominalisations in Semitic languages will be reviewed.

Later of course we will present our LFG analysis which represents a fourth approach not widely seen before.

3.4.1 Siloni (1997)

Siloni (1997) favours a lexicalist approach to nominalisations in Semitic languages such as Hebrew and Arabic over the derivational one. In her view, nominalisations are basically nouns, like any regular noun. She ignores the fact that some refer to processes or actions or results. For her, being a process normalisation or a result normalisation is just a part of the lexical information of that normalisation. She assumes that there is no verbal element in the syntactic part of the derivation of these nominals. She argues that the PP adverbial modifiers that are used to modify nominalisations which appear to take an argument list are actually not adverbial, as they are essentially modifiers of nouns, rather than verbs. In support of her argument that nominalisations are just nouns, she highlights the fact that single-word adverbs cannot be used with these nominals. Moreover, she argues that the ACC case on the object complement, i.e. internal argument, of these nominals should not be understood as an instance of structural case assigned by these nominalisations. Rather, it is the inherent case that these internal arguments take directly from the base verb out of which these nominalisations are derived. To strengthen her argument, she argues that there are differences between Hebrew nominalisations and verbs in terms of assigning ACC case to the internal argument. The examples in (204-205) show that the restriction on the ACC case of the object complement of verbs is different from that in the case of nominalisations.

- (204) a. ha-cava haras *('et) ha-'ir
 DEF-army destroyed ACC the-city
 The army destroyed the city.

- b. ha-cava haras (*'et) 'ir 'axat
 DEF-army destroyed ACC city one
 The army destroyed one city.

Hebrew: (Siloni, 1997, p. 79)

- (205) a. harisat ha-cava 'et ha-'ir
 destruction DEF-army ACC DEF-city
 the army's destruction of the city

- b. *harisat ha-cava ('et) 'ir 'axat
 destruction DEF-army ACC city one
 the army's destruction of one city

Hebrew: (Siloni, 1997, p. 79)

The data set in (204) and (205) illustrate the main difference between the ACC case of verbs and nominalisations (VNs) in Hebrew. The data illustrates that the difference lies in the use of the particle *'et* which appears only with definite objects. Therefore, when the verb *haras* 'destroy' takes a definite accusative object complement, the particle *'et* is required to appear before the object complement as in (204a). However, when the same verb *haras* 'destroy' takes an indefinite accusative object complement, the particle *'et* must disappear as in (204b). On the other hand, nominals in Hebrew appear to be able to assign the ACC case only if the particle *'et* is available as in (205a). However, if the the particle *'et* is not available, the nominal will not be able to assign the ACC case as illustrated in the ungrammatical example in (205b).

Siloni (1997) concludes that nominals or VNs are just ordinary nouns which do not involve verbal structure at all based on the fact that these nominals display nominal characteristics, especially their ability to form a CSC with the subject argument, just like regular nouns.

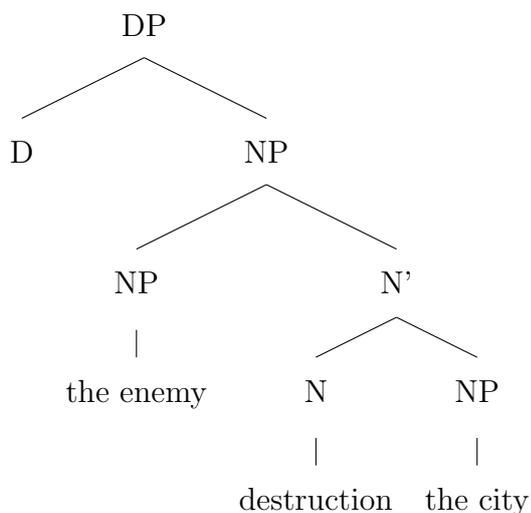
3.4.1.1 Criticism of the Lexical Approach

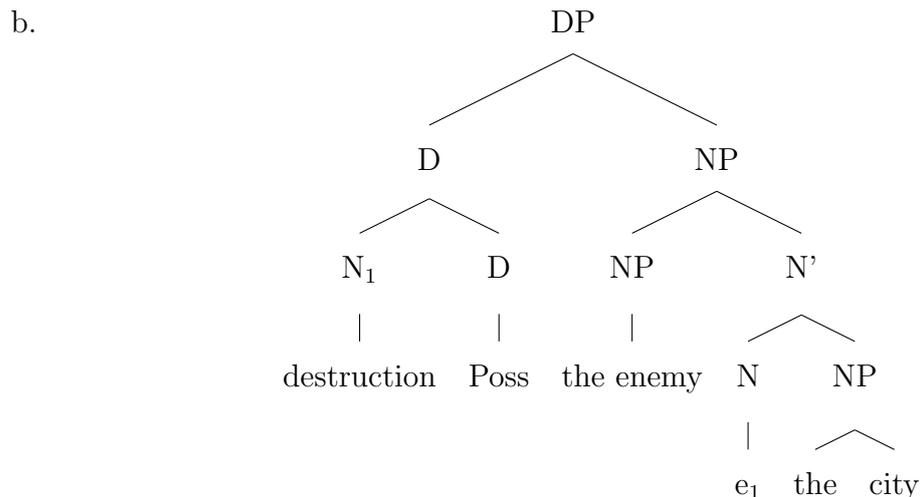
Bardeas (2010) criticises Siloni (1997) analysis of action nominals in Hebrew. According to her, Siloni (1997) proposed analysis has some shortcomings. One issue is that even

though Siloni (1997) claims that nominalisations in Hebrew are just nouns, and they can be modified by PP adverbials only, she does not account for why, then, adjectival modifiers are not allowed, since these would most likely modify the VN, if it were in fact, nominal. Another issue regarding Siloni's analysis has to do with the particle *et* and accusative case assignment. While she focuses on the restriction on accusative case assignment by verbs and nominals in a CSC, nominalised structure, she does not take into account the relationship between definiteness and nominals in a CSC. Bardeas (2010) argues that (205b) is not grammatical because the object *'ir* 'city' is an indefinite noun, and it could be that nominalised structures do not accept indefinite objects. Therefore, to state that the pairs in (204) and (205) are meant to contrast between how verbs vs. VNs assign Acc case, seems unsound. In any case, Siloni (1997) argument cannot be carried over to Arabic because the proposed restriction on accusative case assignment in Hebrew is not seen in Arabic (p. 270).

Hazout (1991) rejects the lexical approach to nominals in Semitic languages such as the one in (206) (Hazout, 1991, pp. 180 -181):

(206) a.





In (206), the action nominal along with its arguments is turned into a normal nominal CSC. Unlike in English, however, to obtain the right word order in Semitic languages the VN is (in a transformational approach) moved and adjoined to D to be the possessed element, leaving its object in situ. Hazout (1991) rejects such a syntactic analysis, where the VN is from start to finish a noun, providing several arguments against it. One argument he makes, similar to Bardeas (2010) argument, includes the assumption that adjectival modifiers are not permitted in these structures, while PP adverbial modifiers are allowed. The second argument is that such an analysis does not account for why the sole internal argument of subjectless nominals is marked with the genitive case instead of the accusative case as illustrated in the following MSA example, adapted from Hazout (1991, p. 189).

(207) **akl-u** at-tufaaḥ-i bi-surfa-tin
 eating-NOM.SG.M the-apple-GEN.SG.F with-speed-GEN.SG.F

The eating of the apple quickly (MSA)

In the absence of the external argument, the subject, the object of the subjectless nominal is assigned genitive case. Hazout (1991) claims that if we assume that the analysis illustrated in (206a-206b) is accurate, then this means that the object complement is generated in the specifier position of the NP, where elements included under this position are

assigned genitive case. However, Hazout (1991) casts doubt on such an assumption since there is data that suggests that the genitive object complement in subjectless structures cannot be generated in the [spec, NP] position based on the assumption that this position is required to be filled with PRO under this analysis. Consider the following example from MSA (Hazout, 1991, p. 190).

- (208) yurīdu zaydun naqla al-kitābi ilā bayrūt.
 want.3.M. Zayd.NOM transportation.M.S.ACC the-book.M.S.GEN to bayrūt
 Zaid wants to transport the book to Beirut. (MSA)

Example (208) shows that we have only one possible interpretation: *Zaid* is the one who wants to do the transporting. So, Hazout (1991) argues that this is an instance of control into the nominalisation within a CSC in MSA, and hence the [spec, NP] position is required to be filled with PRO in order to have the intended meaning.

Following Bardeas (2010), I argue that the lexical approach, adopted by Siloni (1997), cannot be adopted to deal with all the different classes of Arabic nominalisations, particularly, action nominalisations in a CSC. If we assume that all nominalisations are inserted into the structure as Ns, adopting Siloni (1997)'s claim, we will not be able to explain why some types of nominalisations do not accept modification by adjectives, even Chomsky (1970), the father of the *Lexicalist Hypothesis* argued that some, but not all, nominals are built in the lexicon. Furthermore, if we treat nominalisations as Ns, we will not be able to accommodate more complex data, such as the control structure, mentioned above, despite the fact that some classes of Arabic nominalisations act in a way similar to regular nouns. Therefore, the lexical approach cannot be adopted to deal with more complex nominalised constructions that display verbal properties.

In the next section, I will introduce another perspective to Semitic nominalisations. In contrast to the lexical approach, the derivational or syntactic approach adopts the view that all Semitic nominalisations are built in the syntactic component of a transformational account, as we will see below.

3.4.2 Hazout (1991, 1995)

One of the main proponents of derivational (syntactic) approaches to nominalisations in Semitic languages is Hazout (1991, 1995). He particularly uses the term ‘action nominalisation’ (AN) to refer to the syntactic process which results in the formation of nominalisations. He proposes that the AN is basically a verb which selects its arguments and then goes through a number of movement processes taking the shape of phases in order to change its word category from a verb into a noun. According to his approach, the derivation of ANs depends on two things:

1. There must be a V projection in the AN structure, which is then able to have an external or internal argument, or both.
2. There must be an abstract bound morpheme NOM, a nominaliser.

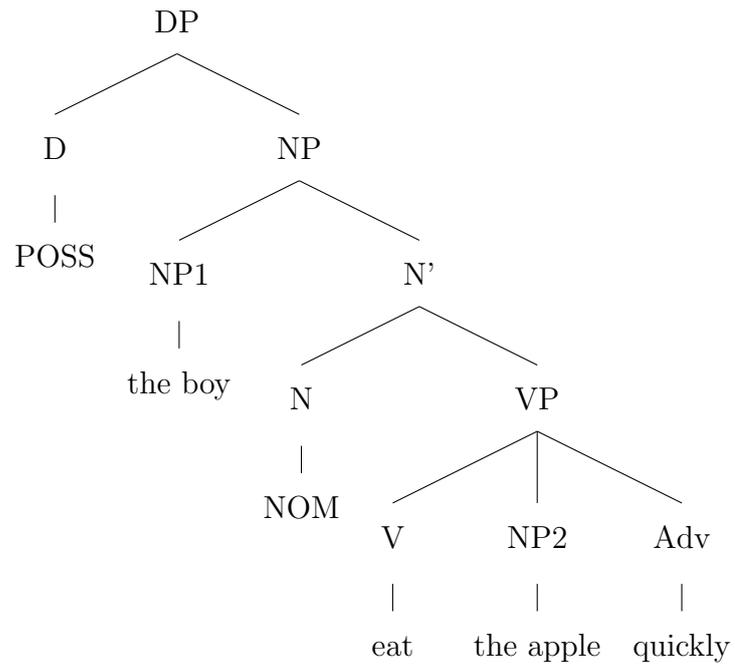
Under his analysis, Hazout (1995) provides an account for the different types of AN structures. The first structure which Hazout (1995) considers is the AN which has two arguments, GEN external argument and ACC internal argument. According to him, the derivation of the accusative action nominal structure in Hebrew requires two *Head* movements. For example, the derivation of the Hebrew example in (209) would consist of the derivational phases illustrated in (210-212). The first Head movement takes place when the verb is moved and adjoined to N, which includes NOM. The second Head movement takes place when the N consecutively is moved and adjoined to D, which is dominated by the DP, the tree structures are taken from Hazout (1995, pp. 366-368).

(209) axilat ha-yeled et ha-tapuax bi-mehirut
 eating the-boy ACC the-apple quickly

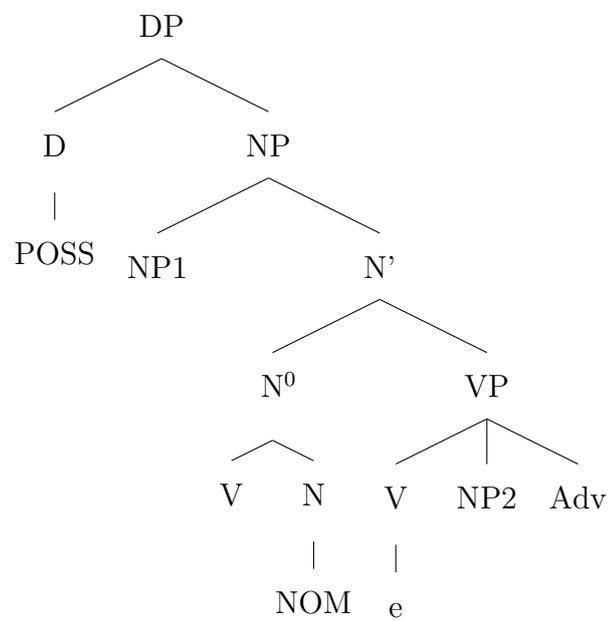
The boy’s eating the apple quickly

Hebrew: (Hazout, 1995, p. 365)

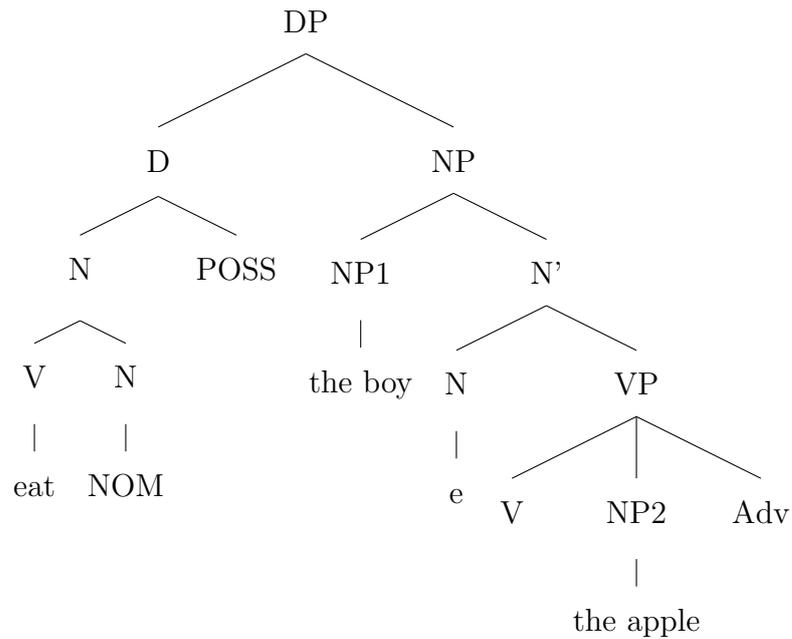
(210)



(211)



(212)



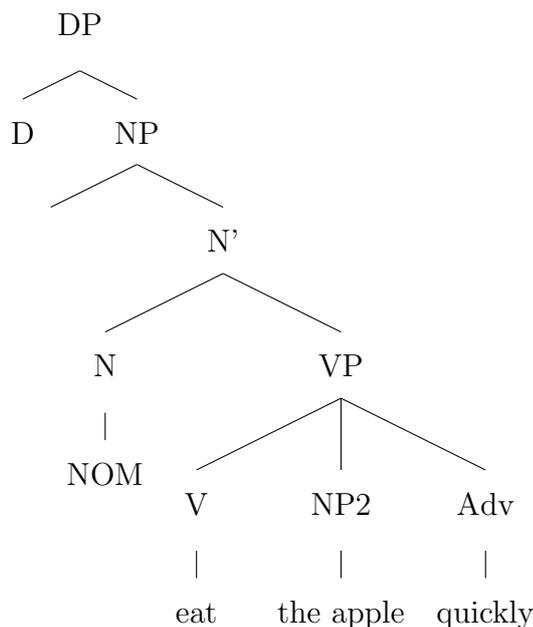
This ends up similar to the final tree for the lexicalist analysis above (206b), and the Poss-ing analysis proposed above for English, with the nominalisation treated as being of a VP not IP or V. NOM is regarded as a nominalising bound morpheme, and is the most important element in Hazout's analysis, as it is what allows for the recategorisation of a VP as NP. Under Hazout (1995) analysis, NOM is considered as an abstract element.

This explains the fact that action nominalisations in both Hebrew and Arabic have a variety of forms, and that such forms are formed by applying multiple morphological derivational techniques (different patterns), not only one. In this, they resemble derived deverbal nouns in English rather than gerundive nominals which all take *-ing* suffix. Under his account, nominalisations are formed by moving V to NOM (Head Movement), as illustrated in (211). As a result of this movement, the N is formed, and this is then moved to D (212). Under this analysis, the internal argument is assigned ACC case by the verb, and the external argument is assigned genitive case by POSS which is in D. The PP adverbial is then analysed as being a modifier in the VP, and is represented initially as a sister of the verb and its object complement, i.e. *the apple*.

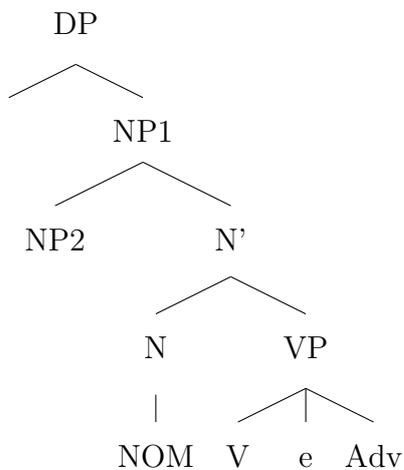
The second structure considered by Hazout (1995) is that of subjectless construction, which involve the presence of an internal genitive argument. In this structure, Hazout

(1995) tries to identify how the internal argument acquire the GEN case, instead of the ACC case, despite a verbal element (V) is still projected in the subjectless construction. So, he proposes that the subjectless structure involves another additional movement of the internal argument, where it is moved to spec NP as shown in (213-214). The characteristics of the argument structure of the abstract element NOM prevent the internal argument from having the ACC case as will be explained below.

(213)

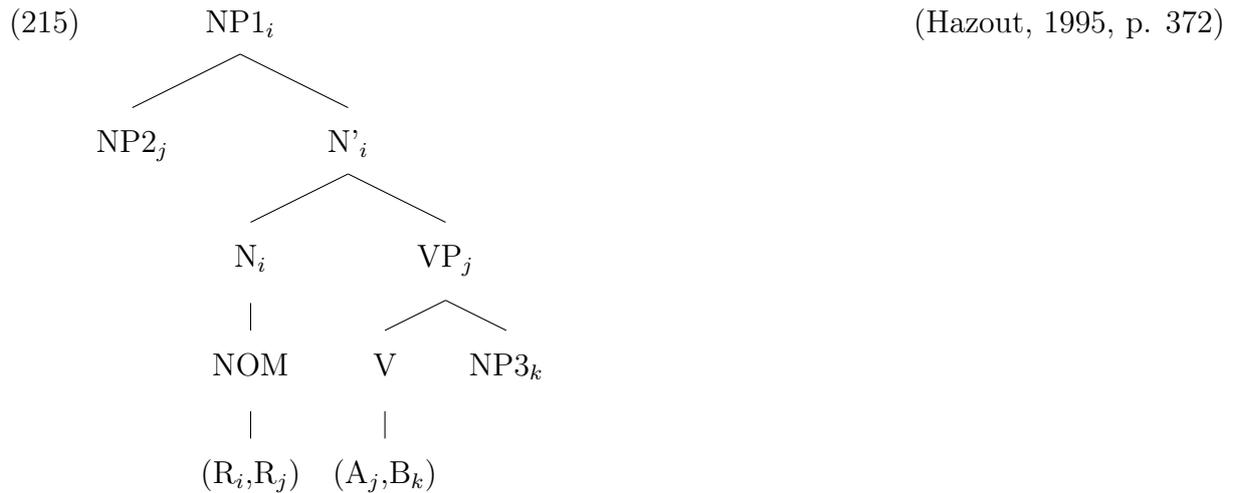


(214)



Adopting a specific version of the *theta theory* proposed by Williams (1989), Hazout (1995)

assumes that NOM is an abstract nominaliser that has an argument structure. According to this assumption, NOM has an external theta role (R_i) and an internal theta role (R_j), and subcategorises for a VP. The former is referential and assigned upwards. As a result, it is the external θ -role of the entire NP. However, the internal θ -roles is associated with an argument. Based on these assumptions, the partial structure of the ANs in Hebrew will be represented as in (215):

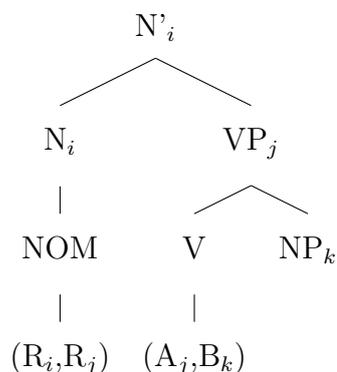


In the syntactic tree in (217), NOM and the verb have two θ -roles: external and internal. The internal θ -role of V is associated with the ACC NP3, whereas the its external θ -roles is linked to R_j , which is the internal θ -role of NOM. In its turn, the internal theta role of NOM is linked to the genitive NP2 under NP1. In this case, NP2 is the external argument (external θ -role) of V, which is eventually assigned to DP which is GEN. Under this process, R_j serves as a mediator between V and the genitive DP, the R_i is assigned vertically to the action nominalisation and its subject, i.e. including the whole CSC.

In the case of ‘subjectless’ action nominalisation constructions, the process of theta role assignment is different from that in the two argument constructions. This is due to the fact that there is no external argument in the subject position, and hence no need for GEN case since there is no nominal in specifier position. Accordingly, A_j is assigned to R_j , the internal argument of NOM, as we have seen in the two argument constructions. However, in subjectless action nominalisation constructions, R_j cannot be linked to an

NP since NP1 is not projected, as shown below in (216). In this case, NOM itself stands as the external argument of V.

(216)



Justifying the absence of the ACC case in the subjectless nominalisation construction, Hazout (1995) argues that some specific environments with abstract functional elements such as *INFL* or *NOM* can license the presence of the ACC case. So, he assumes that if *NOM* has the θ -roles of a VP, *NOM* will function as an argument that can replace an overt SUBJ, and accordingly *NOM* will qualify [+ Nominal] elements which do not permit the ACC case. However, in action normalisation construction with two arguments, *NOM* qualifies [- Nominal] elements, and therefore the verb can assign the ACC case.

Although Hazout (1995) provides a syntactic account of action nominals in Semitic languages, in this way, problems still remain. First, most of the examples used by Hazout (1995) do not reflect the state of affairs in MSA, especially the CASE system. Hazout (1995) states in the introduction of his article that his data are taken from MSA, while most of the examples provided are clearly taken from Palestinian Arabic, which is a dialect that is different from the standard language, MSA. Additionally, all his examples are not glossed in a way that shows that the data are really from MSA. The two following examples are illustrative samples of the situation. In the following examples, I have adapted the transcription to the system I am using in the current study, but the same examples in Hazout's original article are glossed in a different way that does not reflect the state of affairs in MSA.

at different levels in the tree structure. Similarly, he assumes an abstract nominalising *maşdar*, which Hazout (1995) seems to adopt for ANs in Hebrew as we have just seen earlier. The assumed affix merges with a verbal root to form the *maşdar* noun. Fassi Fehri (1993) labels this affix as the event affix (E-af). He distinguished two classes of *maşdar*: *maşdar* with arguments (process nominals) and *maşdar* with no arguments (result nominals). According to him, the difference between the two types is based on two factors: (i) thematic preservation and case properties of the nominalising affix, (ii) the place of the affixation in the syntactic tree. He argues that process *maşdar* are formed in the syntax, whereas result *maşdar* are formed in the lexicon. Based on this assumption, Fassi Fehri proposes a lexical entry for the *maşdar* affix. He assumes that this lexical entry consists of two parts. Process *maşdar* are assumed to have (219a) and (219b) in their lexical entry, whereas result *maşdar* are assumed to have only (219b) in their lexical entry. The assumed lexical entry is given in (219) below.

(219) a. E-af: < af. <E > >

b. (V, N)

(Fassi Fehri, 1993, p. 235)

The first part of the lexical entry specifies the thematic structure of the *maşdar* affix. However, the second part specifies the categorial conversion property of the *maşdar*.

Fassi Fehri (1993) further divided *maşdar* that take arguments into two types: *maşdar* with accusative object and *maşdar* with a genitive object, preceded by the preposition *li* ‘to’, i.e. a prepositional object. Additionally, he discussed a third type of *maşdar* which is the subjectless *maşdar*. He suggests a distinct analysis for each of them. As mentioned above, his proposed analyses rely on two dimensions:

1. The number of arguments that *maşdar* is able to take (thematic preservation).
2. How the internal argument of the *maşdar* is introduced (case).

He provides the following example as an illustration of maṣḍar with an accusative object:

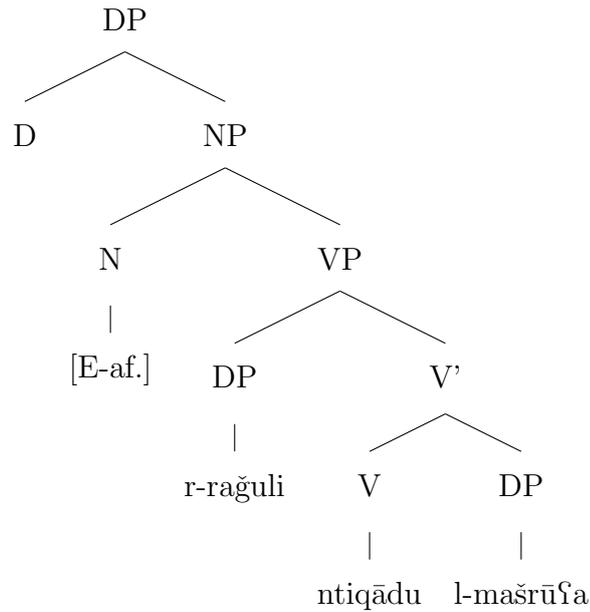
- (220) ʔaqlaqa-ni ntiqād-u r-rağul-i l-mašrūf-a
 annoyed-me criticising-NOM the-man-GEN the-project-ACC

The man's criticising the project annoyed me.

MSA: (Fassi Fehri, 1993, p. 239)

In (220), we observe that the maṣḍar *ntiqādu* 'criticising' takes two arguments: *r-rağuli* 'the man', which is a genitive external argument and *l-mašrūfa* 'project', which is ACC-marked, as expected of an internal argument. The thematic and case properties of the nominalising affix of the process maṣḍar enables it to maintain its internal argument inherited from the corresponding verb, and to assign ACC case as well. Accordingly, Fassi Fehri (1993) argued that the process maṣḍar construction is a mixed category construction displaying mixed properties, verbal and nominal characteristics at the same time. The nominal properties include the fact that the head itself is nominal, having nominal distribution, and the ability to head a CSC. However, verbal properties include having a verbal case marked maṣḍar, selecting an accusative-marked object and accepting an adverbial modifier. Fassi Fehri (1993) employed the word formation approach which is based on head movement. In the first phase of the derivation process, the process maṣḍar starts as a verb heading a VP. In the second phase, the V moves up to N to host the event affix, and it is only here the structure is nominalised. In the third phase, N moves up to D. The GEN case of the external argument: *r-rağuli* 'the man' is assigned by D. The verbal case marked maṣḍar assigns the accusative case to the object. The structure in (221) illustrates the derivation process that takes place via different phases at different places in the tree in order to bring about the utterance in (220), adapted from Fassi Fehri (1993, p. 240), where irrelevant details have been omitted. The affixation/category conversion takes place at a high level in the syntactic tree as shown below.

(221)



It can be noted that the whole structure is nominal (NP/DP), but it contains an embedded VP which makes the maṣḍar able to combine with its verbal constituents. The maṣḍar in this construction is the counterpart of the CEN according to Grimshaw (1990) classification. According to Fassi Fehri (1993), the process maṣḍar with an accusative object is the most verbal of all the maṣḍar constructions in Arabic. He bases his claim on the maṣḍar capability of maintaining the argument structure of its corresponding verb, assigning ACC case to its object, and allowing adverbial modification as in the following example:

- (222) ṣaqlaqa-ni ntiqād-u r-rağul-i bi-stimrār-in hādā
 annoyed-me criticising-NOM the-man-GEN with-persistence-GEN this
l-mašrūf-a
 the-project-ACC

The man's criticising of the project with persistence annoyed me.

MSA: (Fassi Fehri, 1993, p. 240)

Fassi Fehri (1993) added that the previous process maṣḍar construction can be less verbal and more nominal if the maṣḍar head is not capable of marking Case since its nominalising affix lacks case properties. In this case, the object is assigned Genitive case through the preposition *li-*. Fassi Fehri (1993) provides the example in (223) as an illustration of the

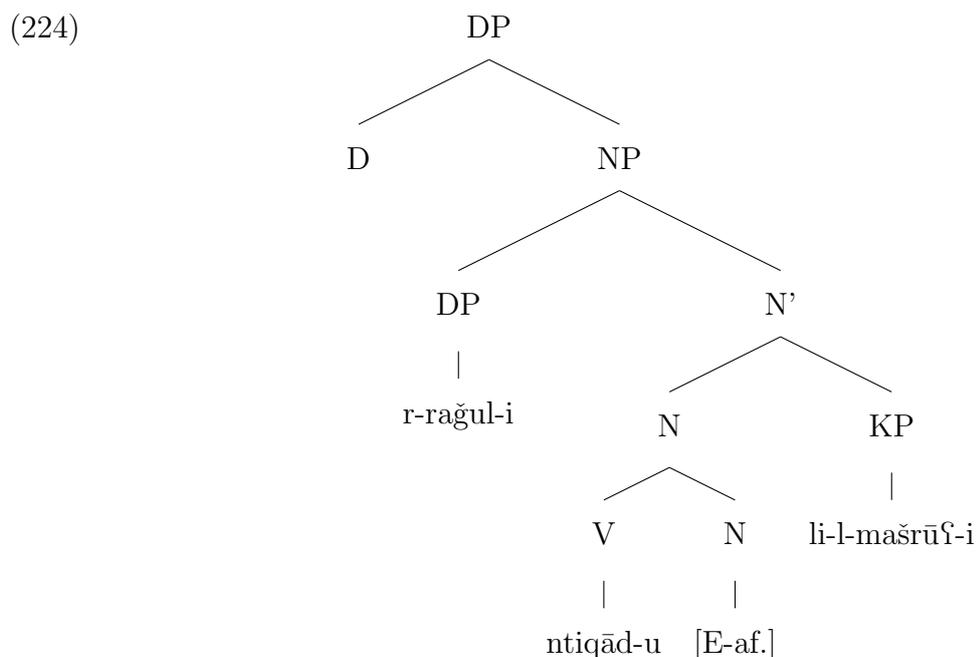
more nominal version of the process *maṣḍar* construction, where the *maṣḍar* selects a prepositional object.

- (223) *ʔaqlaqa-ni ntiqād-u r-rağul-i li-l-mašrūf-i*
 annoyed-me criticising-NOM the-man-GEN to-the-project-GEN

The man's criticising of the project annoyed me.

MSA: (Fassi Fehri, 1993, p. 239)

In (223), the *maṣḍar* *ntiqādu* 'criticising' takes two arguments as well. The first is *r-rağuli* 'the man' which is the *maṣḍar*'s external argument, and is GEN- marked. The second argument is *li-l-mašrūfi* 'the project', which appears under a KP, (i.e. a case phrase rather than a prepositional phrase).¹ This is due to the fact that *l-mašrūfi* 'project' is preceded by the preposition *li* 'to'. In contrast to the previous process *maṣḍar* construction, the *maṣḍar* head which is in a V, does not project a VP structure, and the affixation/category conversion takes place at a lower level in the syntactic tree as shown below, adapted from Fassi Fehri (1993, p. 235).



¹According to Fukui and Speas (as cited in Fassi-Fehri, 1993, p. 235), KP is a constituent which contains an internal Case marker that licenses the NP in that position.

Fassi Fehri (1993) argues that the ability of the process *maṣḍar*, *ntiqādu* ‘criticising’, to select a genitive prepositional object, and to have adjectival modification only is strong evidence for its nominality, especially it does not allow for adverbial modification. He provides the following example which supports his argument.

- (225) ʔaqlaqa-ni ntiqād-u r-rağul-i **l-mustamirr-u** li-l-mašrūʔ-i
 annoyed-me criticising-NOM the-man-GEN the-persistent-NOM to-the-project-GEN

The man’s persistent criticizing of the project annoyed me.

MSA: (Fassi Fehri, 1993, p. 240)

In addition, Fassi Fehri (1993) proposed some tests to distinguish process *maṣḍar* from result *maṣḍar*. Following Grimshaw (1990), result *maṣḍar* are able to pluralise (226a), while process *maṣḍar* are incapable of that (226b).

- (226) a. ʔiʔtirāf-āt-u-hu ġayr-u muqniʔat-in
 confessing-F.PL-NOM-him not-NOM convincing-GEN
 His confessions are not convincing.

- b. *tamm-at ʔiʔtirāf-āt-u-hu bi-d-danb-i
 happened-F confessing-F.PL-NOM-him with-DEF-crime-GEN
 His confessions of the crime have taken place. MSA: (Fassi Fehri, 1993, p. 236)

Process *maṣḍar* nominalisations can be complements in a structural of control, while result *maṣḍar* nominalisations cannot. See example (227a-b) below.

- (227) a. hāwal-a r-rağul-u t-taʔbīr-a ʔan raʔy-i-hi
 tried DEF-man-NOM DEF-expressing-ACC on view-GEN-his
 The man tried to express his view.

- b. *hāwal-a r-rağul-u t-taʔbīr-a
 tried DEF-man-NOM DEF-expressing-ACC
 *The man tried the expressions. MSA: (Fassi Fehri, 1993, p. 236)

Moreover, result *maṣḍar* permit the use of demonstratives (228a), whereas process *maṣḍar* do not allow them (228b).

- (228) a. *hādā* *l-iʔtirāf-u* *ġarīb-un*
 this DEF-confession-NOM strange-NOM

This confession is strange.

- b. *hāwal-a* (**hādā*) *l-iʔtirāf-a*
 tried this DEF-confession-ACC

He tried (**this*) to confess.

MSA: (Fassi Fehri, 1993, p. 237)

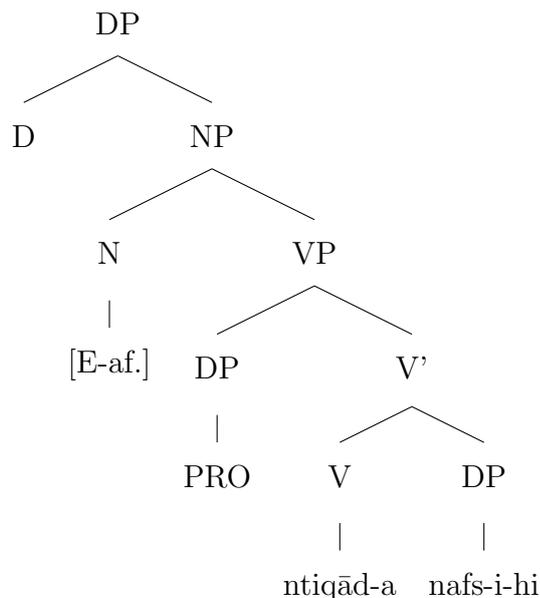
Finally, Fassi Fehri (1993) provides an analysis of subjectless *maṣḍar* which take only one argument: a genitive internal argument, which functions as the object. This argument appears in the in the subject position since, in this case, the *maṣḍar* has no external argument, i.e. no subject argument. Although there is no preposition introducing the object argument, the internal argument is still marked with GEN case, which, as we will see below, is argued by Fassi Fehri (1993) to be the result of the very absence of a subject, such that the internal argument takes that position and consequently forms a CSC with the *maṣḍar*, where it is then assigned GEN case. Example (229) illustrates this type of *maṣḍar* structure, and its analytic representation is provided in (230).

- (229) *y-urīdu* *ntiqād-a* *nafs-i-hi*
 he-wants criticising-NOM self-GEN-his

He wants to criticise himself.

MSA: (Fassi Fehri, 1993, p. 242)

(230)



The tree structure in (230) shows that the subjectless maṣḍar starts as a verb that projects a VP structure. The external argument is a PRO in the VP's SPEC position, and the second argument, the internal argument, is the object *nafsihi* 'himself'. The verb is nominalised by head movement to N. Fassi Fehri (1993) argues that the reason for this is that the verb is incapable of discharging ACC case to the object complement because the subject of the verb is a caseless PRO. Therefore, he proposes the following condition in (231).

(231) Object Case is discharged only if subject Case is discharged.

(Fassi Fehri, 1993, p. 243)

He claims that after projecting a VP structure, the verb moves up to N to be nominalised and then it moves up to D. Moreover, the internal argument, i.e. the object, has to move to [Spec, NP] to discharge the case assigned by D, and is hence that which marks the NP as GEN.

Fassi Fehri (1993) concluded that although there are different maṣḍar constructions, the maṣḍar displays the external syntax of regular NPs based on the fact that it can occupy

all the syntactic positions of a normal NP, such as subjects, objects, and prepositional objects. The internal syntax of result *maṣḍar* is nominal, but the internal syntax of process *maṣḍar* can be nominal in the case of a prepositional object. However, the internal syntax of process *maṣḍars* is mixed, and this is in the case of having a mixed category construction, where an accusative object is assigned. The affixation/category conversion takes place at a high level in the syntactic tree in this *maṣḍar* construction.

The contribution that Fassi Fehri (1993) has made to the literature by investigating different *maṣḍar* constructions in Arabic is huge. However, there are some problems with his analysis. For example, the syntactic status of the derivation process of the *maṣḍar* which selects a PP as its object complement is not very clear. This makes the assumption that this process is basically lexical seem reasonable, especially there is no V projection at all in this structure. In addition, there are some covert and unjustified movements such as the movement of the internal argument from the DP to Spec NP to be checked for case which appears under KP. Additionally, the assumption that there is a *Pro* argument in the subjectless *maṣḍar* construction is questionable since some arguments in the literature claim that Arabic does not have a *Pro* argument.

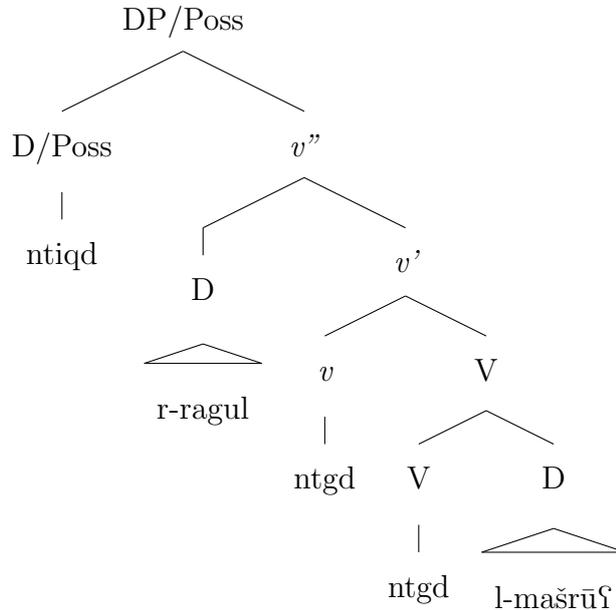
3.4.4 Kremers (2003)

Kremers (2003) has proposed a modified version of Fassi Fehri (1993)'s analysis of different classes of the Arabic *maṣḍar*. According to Kremers (2003), the status of Fassi Fehri's affix *af*, as it attaches to different levels of the structure, is not clear in the present syntactic theory. Therefore, he modifies Fassi Fehri's affix *af*, yet maintains the main idea that the derivation of the different types of *maṣḍar* takes place at different phases in the tree structure. Kremers argues that under such an analysis, *maṣḍar* appear to be very similar to gerundive nominalisations in English. Kremers (2003) claims that a *maṣḍar* which takes two arguments and selects an accusative object as its internal argument involves a mixture of a DP structure, and a sentence structure. He argues that the projection of V and *v* takes place at the beginning of the derivation process of this type of *maṣḍar*. He

analyses (220), repeated below as (232), in (233).²

- (232) *ʔaqlaqa-ni ntiqād-u r-rağul-i l-mašrūf-a*
 annoyed-me criticising-NOM the-man-GEN the-project-ACC
 The man's criticising the project annoyed me.

- (233) (Kremers, 2003, p. 137)



Kremers (2003) argues that ACC case assignment can be explained within his account. Kremers (2003) assumes that the *v* head is the element responsible for assigning accusative case in sentences, and therefore it assigns case to the object complement. Under his analysis, *V* appears at three levels in the tree structure: moving from *V* to *v* and then to *D*.

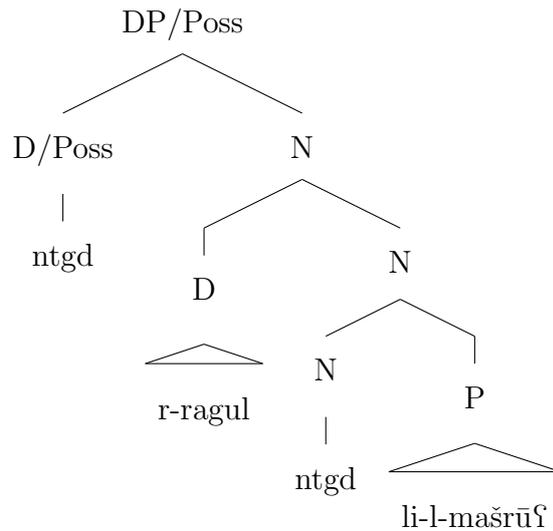
In the case of a *mašdar* which takes two arguments and selects a *PP* as its internal argument, there is no verbal element projected, and hence no ACC case is assigned. Therefore, the changing process from verb to noun in the *PP-mašdar* construction takes place in the lexicon, not the syntax. Consider the other *mašdar* type in (234) repeated from (223), and analysed in (235).

- (234) *ʔaqlaqa-ni ntiqād-u r-rağul-i li-l-mašrūf-i*
 annoyed-me criticising-NOM the-man-GEN to-the-project-GEN
 The man's criticising of the project annoyed me.

²The little *v* has semantic, syntactic, and morphological functions: a) it is a case-assigning head which divorces subjects from the *VP* b) it assigns accusative case to objects.

(235)

(Kremers, 2003, p. 138)



Under Kremers analysis, the *mašdar* which selects an accusative object as its complement can accommodate PP adverbials as adjuncts to VPs. Additionally, Kremers (2003) argues that the accusative *mašdar* construction is a mixed category construction since it displays both nominal and verbal properties. However, a *mašdar* which selects a PP as its complement can also be modified by PP adverbials, yet there is no VP projection involved in Kremers's analysis of this construction, and therefore it is a nominal construction since the category conversion process takes place in the lexicon. He claims that despite the fact that the structure in (235) does not have any verbal projection, it still allows PP adverbial modifiers. Kremers (2003) claim that the presence of such modifiers is permitted via the eventive reading and argument structure of the *mašdar*. In his view, PP adverbial modifiers used with *mašādar* in Arabic do not require syntactic licensing, but they only require semantic licensing. Accordingly, he considers PP adverbials to be different from adverbs, which do require syntactic licensing. Consequently, they are not available in the *mašdar* domain.

Kremers has provided a developed version of Fassi Fehri (1993)'s analysis. In fact, Kremers has proposed a more plausible analysis which suggests that there are two types of *mašdar*: a mixed *mašdar* and a nominal *mašdar*. Under Kremers' analysis, the *mašdar* with two arguments that selects an accusative object as its internal argument is a mixture

of both a DP structure and a sentence structure, and therefore the tree structure of such a maşdar must include a verbal projection because the conversion process from a verbal element into a nominal one has taken place in the syntax. However, the maşdar with two arguments that selects a PP as its internal argument is purely nominal, and therefore the tree structure of such a maşdar does not include a verbal projection at all since the conversion process from a verbal element into a nominal one has taken place in the lexicon. Accordingly, Kremers's assumptions are more reasonable than those suggested by Fassi Fehri (1993) especially for the PP-maşdar type. Thus, we find that Kremers' analysis has provided improvements of Fassi Fehri (1993)'s analysis for the basic types of maşdar in Arabic. However, as the other analyses, it has some defects such as unjustified or unexplained movements. This indicates that we are in need of an approach that can avoid such defects. In other words, an approach that does not depend upon movements at all.

3.5 Summary

Three transformational grammar (TG) or Minimalist proposals have been reviewed in this section, which are linked to one another in not being lexical analyses of nominalisations in Hebrew and Arabic. The common feature across Hazout's (1991, 1995) analysis and that of Fassi Fehri (1993) and of Kremers (2003) is that they all involve a V and (*v*) projection at least for some types of nominalisations in order to explain how ACC case is assigned by the nominalisations when it takes two arguments. However, these analyses treat the other types of nominalisations in different ways and provide different explanations for the behaviour of other features including modification by PP adverbials.

Furthermore, none of these proposals can be deemed successful as they all have substantial criticisms. Hence there is justification for our exploration of an account based in a completely different syntactic theory (LFG).

3.6 Conclusion

This chapter has provided a rich background on nominalisations in general within TG. It has first introduced the notion of *nominalisation*, and what has said about nominals including mixed ones in the linguistic literature. It has also provided an essential review of seminal proposals for nominalisations in English, covering Chomsky (1970), Abney (1987), Grimshaw (1990) and Borer (2003). In addition, this chapter has provided a broad review of the opposing approaches to nominalisations in Semitic languages in the TG literature, the lexicalist approach versus the derivational approach. I showed that the lexical approach considers deverbal nominalisations syntactically as pure Ns, which implies that there is no V projection in the syntactic structure. However, under the derivational approaches, a V is projected in the syntax because such an approach considers *maṣḍar* or deverbal nominalisations as having both verbal and nominal properties. I have shown that even though the derivational approaches to nominals in Hebrew and Arabic share the assumption that the formation of the *maṣḍar* takes place in the syntactic component, they differ in the way they go about deriving the structure and the facts. Hazout (1995) claims that the derivation of the *maṣḍar* takes place in a similar way at one point. However, Fassi Fehri (1993) and Kremers (2003) argue that the derivation of the *maṣḍar* takes place at different points in the syntactic component of the derivation process.

Therefore, based on all the criticisms of the derivational approaches of nominalisations provided in this chapter, we reach a conclusion that a non-derivational approach would be a good choice to analyse the Arabic *maṣḍar*, i.e. LFG.

The next chapter moves closer to the core of this thesis. It provides an account of previous LFG analyses of data relevant to our focus of attention, which is the *maṣḍar*.

Chapter 4

Previous LFG Approaches to Mixed Categories

4.1 Introduction

As we have seen in the previous chapter, the syntax of mixed category constructions has been the focus of much interest and the subject of controversial debate amongst TG and today Minimalist linguists for some period of time. It is also a main topic of ongoing research by researchers working within the LFG approach. In detail, more than one view has been proposed for the syntactic analysis of these constructions within the LFG framework. The standard LFG approach to mixed categories involves a ‘head-sharing’ structure in which a verbal projection is embedded within a nominal projection. Furthermore, the LFG literature on mixed categories reveals reference to three criteria that have been invoked in the analysis of mixed category phrases: the external syntactic distribution of the phrase (Bresnan (1997), Börjars et al. (2015); Spencer (2015); and Nikitina and Haug (2016); among others), the internal syntax of the phrase (Falk (2001b); Bresnan and Mugane (2006); Al-Sharif (2014); and Lowe (2019); among others), and the morphological properties of the phrase, specifically behaviours that have to do with agreement (Spencer (2015); Börjars et al. (2015)).

A review of previous LFG analyses of mixed category constructions in different languages

constitutes the first of the two main sections that comprise this chapter. The second section of this chapter addresses the different views on the syntax of mixed *maṣḍar* constructions in Arabic and its related language, Hebrew, within the theory of LFG.

4.2 Mixed Categories in LFG

The constructions headed by a mixed form are special complex constructions since they are headed by a single word which displays usually a combination of nominal and verbal properties (properties of two distinct categories) at the same time which indicates that we are dealing with some sort of **mixed** constructions. Bresnan and Mugane (2006) state that such constructions violate two essential principles of LFG: *endocentricity* and *integrity*. According to Bresnan and Mugane (2006), the former means that ‘every phrasal projection has a unique lexical head’, while the latter means that ‘every lexical head is a morphologically complete word’ (p. 1).

In addition, the concept of intermediate categories does not exist in LFG, but according to Lowe (2019), this does not mean that the theory of LFG is not viable. Within LFG, there are different theories and approaches that can deal with mixed categories with relative ease such as the theory of Head Sharing or mixed projections, as we will see later in this chapter, or by proposing an intermediate category somewhat similar to the intermediate category in HPSG as suggested by Spencer (2015).

4.3 Previous LFG analysis of Mixed categories in English

The standard analysis of mixed categories within LFG was first suggested in Bresnan (1997) and Bresnan (2001). Such an analysis involves a ‘head-sharing’ structure in which a verbal projection is embedded within a nominal projection. The TG approaches that we considered in the previous chapter were essentially also of this sort, but differed radically

from any LFG approach in requiring movement to occur in order for the surface word order and constituent structure tree to be generated. Simplifying somewhat, where TG moves a mixed category word like a gerund from a V node to an N node, LFG attaches that word to both a V and N node at the same time (sharing).

4.3.1 Lowe (2016)

In LFG, the English gerund is undoubtedly the most commonly discussed mixed category in the literature. The *-ing* gerund form can appear in three possible constructions, and its function changes accordingly. It can appear in : 1) an entirely nominal construction (236a), 2) an entirely verbal construction (236b), and 3) a mixed construction (236c) (Lowe, 2016). Consider the following examples.

(236) a. **His stupid missing of the penalty** lost us the game.

b. **Him stupidly missing the penalty** lost us the game.

c. **His stupidly missing the penalty** lost us the game. Lowe (2016, p. 1)

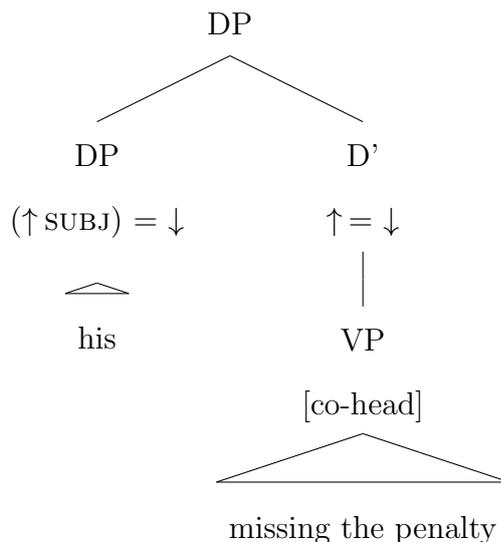
Lowe (2016) refers to these constructions as A, B and C respectively. In the three examples in (236), the gerund is the head of the phrase, which functions as the subject of the sentence in each example. The syntax of the phrase headed by the gerund *missing* in type A is fully nominal. So, we find the head of the phrase the gerund *missing* to be pre-modified by an adjective and a possessor phrase, which is *him*. Additionally, the gerund *missing* takes a prepositional object complement *of the penalty*. This means that *missing* in (236a) is not functioning or displaying behaviours of a mixed category, but is functioning unambiguously as a noun of category N. However, in type B, the internal syntax of the phrase headed by the gerund *missing* is fully verbal. In such a construction, we find that the gerund *missing* takes an (accusative) object complement, which is the ‘bare’ form of an object of a finite verb. The subject appears in the ‘bare’ form with NOM case. Additionally, the gerund in type B, in its verbal use, is pre-modified by an adverb.

Type C is unambiguously a mixed construction. The accusative object and the adverbial modifier constitute behaviours attributed to the verbal function of the gerund, as in Type B, while the logical subject appears as a possessive phrase, thus illustrating a behaviour that makes it appear to function as a nominal, as in Type A.

Lowe (2019) downplays the evidence of external syntax and morphosyntax for a category identification. Rather, he takes the evidence from internal syntax as being sufficient for categorisation, and in turn criticises proposals based only on the distributional and morphological criteria for the English gerund. He proposes that the type C gerund is unambiguously a mixed construction based on the fact that the internal syntax of the gerundive phrase headed by *missing* is mixed, including both nominal and verbal elements.

The gerundive phrase type C contains a possessive modifier, which is one of the elements that function as specifiers to DPs in English, and it contains an object and adverbial modifier, themselves elements specific to VPs in English. These behaviours are displayed concurrently. In addition, the external syntax (distribution) of the gerundive phrase is nominal, because it can appear in the usual positions occupied by ordinary noun phrases, including in the function of subject and object. Lowe's analysis of type C gerunds is then modelled in LFG by means of a head-sharing structure, as proposed in Bresnan (1997), and which is illustrated through the c-structure in (237).

(237)



Having discussed the gerund, the English mixed category, I turn now to present the different analyses of mixed categories that has been motivated for different languages of the world within the theory of LFG.

4.4 Previous LFG analysis of Mixed Categories in Other Languages

Within LFG, considerable interest has been directed towards investigating the so-called mixed categories present in different languages. Mixed categories have been the central concern of a considerable number of both earlier and more recent works, in particular in Bresnan (1997), Bresnan (2001), Bresnan et al. (2016), Falk (2001b), Bresnan and Mugane (2006), Seiss (2008), Nikitina (2008), Al-Sharif (2014), Spencer (2015), Börjars et al. (2015), Nikitina and Haug (2016), and most recently in Lowe (2019). In the following subsections, I will be reviewing some previous analyses of mixed categories in different languages.

4.4.1 Bresnan (1997)

To understand the behaviour of mixed categories, Bresnan (1997, pp. 2-3) provides several examples of such constructions from different languages, including Italian, German,

Dagaare, Gikūyū, and Japanese. For example, in (238a), Bresnan (1997) shows that the Italian mixed category *mormare* ‘whispering’, which is the infinitive noun, is preceded by the determiner *il* ‘the’, the possessive pronoun *suo* ‘his/her’ and the qualifying adjective *continuo* ‘continual’, which are all elements presented in **nominal constituents**. This infinitive noun is however then followed by the direct object *parole* ‘words’, as expected within a **verbal constituent**. This then is similar to type C gerund examples in English, except that in English the adverb continuously not the adjective would be required. In (238b), Bresnan (1997) shows that the Italian mixed category *scribere* ‘write’, which is the infinitive noun, is similarly preceded by the determiner *il* ‘the’, and possessive *suo* ‘his/her’ (**nominal constituents**), and is followed by the direct object *lettera* ‘letter’, as well as this time the adverb *improvvisamente* ‘suddenly’, which further contributes to the **verbal constituent**.

- (238) a. [il suo continuo **mormorare**] [parole dolci]
 the his/her continual whisper.INF words sweet
 his continual whispering of soft words

(**NP-over-VP**)

- b. [il suo **scribere**] quella lettera improvvisamente
 the his/her write.INF that letter suddenly
 his suddenly writing that letter

(**NP-over-VP**)

(Zucchi, 1993, p. 54)

Through the examples in (238), Bresnan shows that the mixed category construction in Italian, broadly like the C type gerundial in English, consists of a sequence of NP/DP constituents, the infinitive noun, and the VP constituents, and the NP/DP constituents **must** appear before the infinitive noun, while the VP constituents **must** appear after it. This means that the mixed categories *mormorare* ‘whispering’ and *scribere* ‘write’ form a part of an NP which then dominates a VP. According to the analytic proposal provided by Al-Sharif (2014), the Italian example has an argument structure which includes mixed properties that are both verbal and nominal and since each category must be dominated

by a corresponding head, verbal arguments must appear under a VP, and nominal ones must appear under NP. By virtue of the head-sharing analysis, we can accommodate the purely verbal and purely nominal arguments into two separate phrases headed by a VP and NP, in the c-structure, respectively. The infinitival noun is then represented twice, as head of both the NP and the VP. By employing one of the Extended head theory principles which states that every lexical category has a(n extended) head, we can have the infinitival noun as an extended head of both the VP and the NP. In Figure (4.1) the verbal constituents are shown to be embedded under the NP as a coherent part headed by VP, and the infinitive head is shown to be shared by the head of both phrases: the NP and the VP (Bresnan, 1997, p.4).

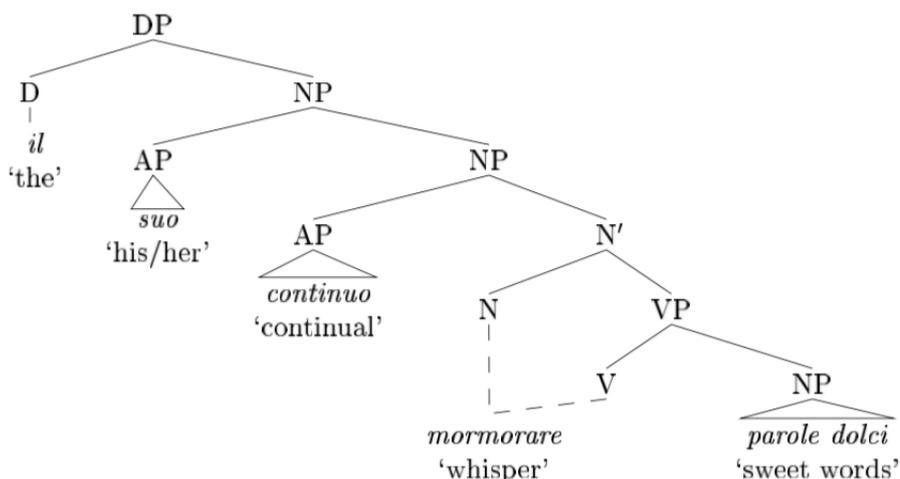


Figure 4.1: LFG c-structure of the mixed category in Italian

Example (239) is an example from Gīkūyū, which Bresnan provides. The same kind of analysis is provided although this relates to a type of nominalisation outside our scope. She shows that the Gīkūyū has a mixed category agent noun construction consisting of three elements: the agentive nominalisation, VP constituents, and NP/DP constituents, which also reflects their strict order. The agentive nominalisation **must** be immediately followed by VP constituents which in turn can be followed by NP/DP constituents. According to Mugane (1996), Gīkūyū nouns in normal constructions do not take NP complements

appear in a pre-nominal position as a modifier of the NP *Mann* ‘man’, and take adjectival agreement morphology.

- (240) ein mehrere Sprachen sprechender Mann
 a several languages speaking.NOM.MSG man
 a man speaking several languages (**AP-over-VP**) (Drijkoningen, 1992, p. 55)

The German adjectival participle is an adjective which takes verbal complements and modifiers. As in (240), the adjectival participle takes a subject and an object which are complements of the corresponding verb. Yet it also shows agreement with the noun *Mann*, which is typical of an adjective. Thus the mixed category, which in this case is *sprechender* ‘speaking’, forms part of an AP which then dominates a VP.

For this sort of mixed category, Bresnan (1997, p. 5) provides the c-structure in Figure 4.3, in which the verbal elements of the construction are shown to be embedded under a VP within an AP. The head is then represented as a shared element between the AP and the VP.

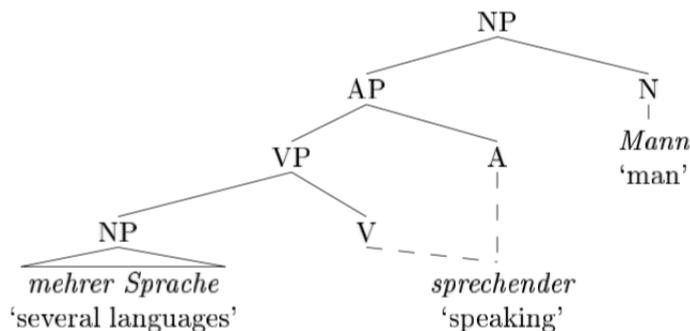


Figure 4.3: An LFG analysis of the mixed adjectival participle category in German

Example (241) is the an example which Bresnan provides from Japanese. The Japanese mixed construction here is the kind of action nominalisation that falls within our focus as it consists of a deverbalised nominalisation which can have either nominal or verbal complements and modifiers.

Mugane (2006) state that despite the fact that these nominalisations are dubbed as agents based on their prototypical referents as agents, as in *mũ-in-ĩr-i* ‘singer’, they also show other additional semantics-roles such as expressing instruments as in *gĩthĩĩnj-i* ‘slaughter’, ‘something to slaughter with’. So, the term *agentive* or *agents* is the typical reference to such nominalisations, not the only one. These agentive nominalisations can head both purely NP constructions and mixed constructions.

I will start with the purely NP constructions. The agentive nominalisations heading pure NPs accept to be modified by possessive, demonstratives, adjectives, and relative clauses as illustrated in example (242a-e) respectively.

- (242) a. [mũ-in-i] w-a it, ã, ãra
 1-singer-NOM 1-ASSOC 5-SETTLEMENT
 ‘singer of the settlement’
- b. [mũ-in-i] w-it, ã
 1-singer-NOM 1-OUR
 ‘our singer’
- c. [mũ-in-i] ãyũ , ãyũ mũ-in-ĩ
 1-singer-NOM 1-DEM , 1-DEM 1-singerNOM
 ‘this singer’
- d. [a-in-i] a-nene
 2-singer-NOM 2-big
 ‘big singers’
- e. [a-in-i] a-riã ãĩ
 2-singer-NOM 2-REL 2.SG.SUBJ-know
 ‘the singers whom you know’

(Bresnan and Mugane, 2006, pp. 7-8)

The external syntax of agentive nominalisations in Gĩkũyũ is typical of NPs. They can function as subjects, objects of verbs, prepositional objects. In addition, they can have other common properties of NPs such as accepting adjectives and relative clauses as modifiers.

These agentive nominalisations can also appear in mixed category constructions as the examples in (243) illustrate.

- (243) a. [mũthĩinj-i]_N [mbũri]_{NP} [wega]_{ADV} w-a Nairobi
 1-slaughter-NOM 10.goat 1.well 1-assoc N.

Lit.: (a) slaughterer goats well from Nairobi

a good goat slaughterer from Nairobi

- b. [mũ-in-ĩr-i]_N [a-ndũ]_{NP} [nyĩmbo]_{NP} ũyũ
 1-sing-applic-NOM 2-person 10.song 1.dem

Lit.: this singer people songs

this singer of songs for people

- c. [mũ-in-i]_N [wega]_{ADV} ũ-riã mũ-nene
 1-sing-NOM well 1-REL 1-big

Lit.: (the) singer well who is big

the one who sings well who is big

(Bresnan and Mugane, 2006, p. 10)

In (243a-c), the Gikũyũ constructions consist of three elements: the agentive nominalisation, which is the head, verbal dependents and nominal dependents. In (243a), the agentive nominalisation *mũthĩinj-i* ‘slaughter’ is immediately followed by a series of verbal elements: the direct object and the adverb, *mbũri* ‘goat’ and *wega* ‘well’, followed in turn by a nominal dependent, which is the ‘of’ phrase modifier, *wa Nairobi* ‘from Nairobi’. In (243b), the agentive nominalisation *mũin-ĩr-i* ‘singer’ is immediately followed by verbal elements which include the two NP objects *andũ* ‘person’ and *nyĩmbo* ‘song’, followed by a nominal element, which is the demonstrative *ũyũ* ‘this’. In (243c), the agentive nominalisation *mũ-in-i* ‘singer’ is immediately followed by a verbal dependent, which is the adverb *wega* ‘well’, followed in turn by a nominal dependent, which is the relative clause *ũriã mũnene* ‘who is big’. Such mixed constructions show both *lexical coherence* and *phrasal coherence* where we find that the VP-type elements must precede the NP-type elements, showing a fixed order.

The **VP-like portion** of the hybrid agentive phrase in Gikũyũ allows all and only the post-head immediate constituents that would otherwise be present in usual VP structures.

1- The adverbial modifier must follow NP objects in mixed agentive nominalisation constructions in Gĩkũyũ as in (244).

(244) [mũthĩĩnj-i]_N [mbũri]_{NP} [wega]_{ADV} w-a Nairobi
 1-slaughter-NOM 10.goat 1.well 1-assoc N.

Lit.: (a) slaughterer goats well from Nairobi

a good goat slaughterer from Nairobi (Bresnan and Mugane, 2006, p. 10)

2- The beneficiary object complement must follow the agent argument and precede the theme object complement in mixed agentive nominalisation constructions in Gĩkũyũ as in (245).

(245) [mũ-in-ĩr-i]_N [a-ndũ]_{NP} [nyĩmbo]_{NP} ũyũ
 1-sing-applic-NOM 2-person 10.song 1.dem

Lit.: this singer people songs

this singer of songs for people (Bresnan and Mugane, 2006, p. 10)

In Gĩkũyũ, the constituents of the mixed agentive nominalisation phrase show the same order of their corresponding VP-headed sentences.

Turning to the **NP-like portion** of the mixed agentive phrase in Gĩkũyũ, one notes that the presence of nominal modifiers is allowed in the presence of verbal constituents, and these nominal elements can occur in both normal unmarked orders, and marked ones:

(246) a. a-thĩĩnj-i mbũri bf othe
 2-slaughter-NOM 10.goat 2.all
 ‘all goat slaughterers’

b. a-thĩĩnj-i mbũri **othe** a-nene
 2-slaughter-NOM 10.goat 2.all 2-big
 ‘all big goat slaughterers’ (unmarked)

c. a-thĩĩnj-i mbũri a-nene **othe**
 2-slaughter-NOM 10.goat 2-big 2.all
 ‘all big goat slaughterers’ (marked)

Bresnan and Mugane (2006, p. 13)

Moreover, all complements selected by the head of the mixed agentive nominalisation phrase must be of a uniform type: either entirely verbal or entirely nominal, as illustrated through the ungrammatical phrases in (247a-b), in contrast to the uniform verbal complement in (247c):

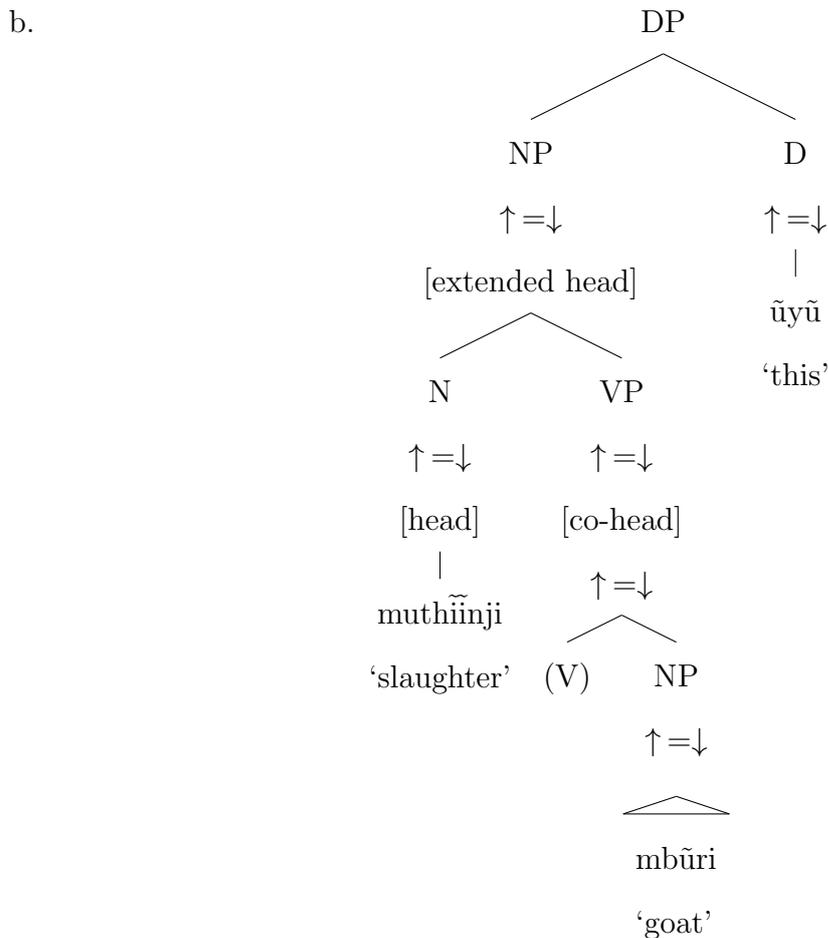
- (247) a. **mũ-thiinj-ĩr-i* a-ndũ w-a mbũri
 1-slaughter-APPLIC-NOM 2-person 1-assoc 10.goat
 ‘one who slaughters goats for people’
- b. **mũ-thiinj-ĩr-i* w-a a-ndũ w-a mbũri
 1-slaughter-APPLIC-NOM 1-assoc 2-person 1-assoc 10.goat
 ‘one who slaughters goats for people’
- c. *mũ-thiinj-ĩr-i* a-ndũ mbũri
 1-slaughter-APPLIC-NOM 2-person 10.goat
 ‘one who slaughters goats for people’ Bresnan and Mugane (2006, p. 14)

(247a) is unacceptable because the head *mũthiinjĩri* ‘slaughter’ selects complements of different types: verbal and nominal; the beneficiary argument (applied object NP) is a verbal complement type, whereas the patient argument (associative phrase) is a nominal complement type. (247b) is also ungrammatical as applied NPs cannot be expressed by associative phrases. In contrast, (247c) shows that ditransitive nominalisation is only possible with verbal-type complements which include the recipient NP preceding the direct NP.

This homogeneity in selecting complement types is an indication that is taken by Bresnan and Mugane (2006) to argue that mixed category constructions in Gĩkũyũ show both lexical coherence and phrasal coherence. This is due to the fact that the verbal constituents must precede all the nominal constituents, and to prevent nominal constituents from interrupting them. According to Mugane (1996), the internal syntax of the agentive nominalisations in Gĩkũyũ is of mixed nature, including verbal and nominal constituents, and they have the external syntax of regular NPs. Accordingly, Bresnan and Mugane

(2006) have argued that this construction is truly a mixed category construction based on its verbal and nominal (mixed) characteristics. Therefore, they have proposed a head-sharing analysis for this construction as in (248), where the c-structure involves a VP that takes an NP as its extended head.

- (248) a. *muthĩĩnji* *mbũri* *ũyũ*
 CL1-slaughterer-NOM CL10..GOAT CL1.DEM
 this goat slaughterer



The mixed category head of the phrase, which is *muthĩĩnji* ‘slaughterer’ is categorially a noun, but also functions as the head of the VP at the same time, as illustrated through the $\uparrow = \downarrow$ arrows in the c-structure. The VP then hosts the object NP which is *mbũri* ‘goat’, which then functions as the OBJ of the agent nominalisation.

It is worth stressing that there is no V node in the actual analysis, which is not normal in the usual rules of LFG. However, the flexible theory of LFG permits categories to show

up in the structure without a head if we have an ‘extended head’ category which projects to the same f-structure.

4.5 Previous analyses of the Arabic Maṣḍar within LFG

4.5.1 Falk (2001b)

While this section is meant to discuss LFG analyses that have particularly addressed relevant Arabic data, I however, start with an earlier analysis of Hebrew data in Falk (2001b). I do so due to the close genetic relatedness between Arabic and Hebrew.

Falk (2001b) proposes an LFG analysis of Hebrew NPs. He provides a detailed description of NPs in Hebrew. Falk discusses the order of nouns and adjectives within these NPs, and the special morphology of the CSC in Hebrew. Additionally, he discusses how the CSC head inherits DEFINITENESS feature from the possessive NP. Falk (2001, pp. 2-5) provides the examples in (251a-b) as instances of different forms of NPs in Hebrew, and represents them in the f-structures in (249-251).

- (249) a. ha-gina ha-metupax-at šel ha-more
 the-garden the-cared.for-FSG of the-teacher(M)
- b. ginat ha-more ha-metupax-at
 garden(F).CONSTR the-teacher(M) the-cared.for-FSG
- the teacher’s tended garden

$$(250) \left[\begin{array}{l} \text{PRED} \quad \text{'GARDEN} < (\uparrow \text{POSS}) > \text{' } \\ \text{GEND} \quad \text{F} \\ \text{NUM} \quad \text{SG} \\ \text{DEF} \quad + \\ \\ \text{POSS} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'TEACHER'} \\ \text{CASE} \quad \text{POSS} \\ \text{GEND} \quad \text{M} \\ \text{NUM} \quad \text{SG} \\ \text{DEF} \quad + \end{array} \right] \\ \\ \text{ADJ} \quad \{ \left[\text{PRED} \quad \text{'CARED-FOR'} \right] \} \end{array} \right]$$

$$(251) \left[\begin{array}{l} \text{PRED} \quad \text{'GARDEN} < (\uparrow \text{POSS}) > \text{' } \\ \text{GEND} \quad \text{F} \\ \text{NUM} \quad \text{SG} \\ \text{DEF} \quad + \\ \\ \text{POSS} \quad \left[\begin{array}{l} \text{PRED} \quad \text{'TEACHER'} \\ \text{GEND} \quad \text{M} \\ \text{NUM} \quad \text{SG} \\ \text{DEF} \quad + \end{array} \right] \\ \\ \text{ADJ} \quad \{ \left[\text{PRED} \quad \text{'CARED-FOR'} \right] \} \end{array} \right]$$

Falk (2001b) assumes that the immediately post-nominal NP position is reserved for the function POSS, which he modifies later, and PPs are adjoined to NP (its complement). These PPs have grammatical functions which are defined by the preposition case properties. Prepositions (P) in Hebrew function as case markers. Based on these assumptions, Falk proposes the following lexical entries for the *šel* 'of' phrase:

$$(252) \quad \begin{array}{l} \text{hamore} \quad \text{N} \quad (\uparrow \text{PRED}) = \text{'teacher'} \\ (\uparrow \text{GEND}) = \text{M} \\ (\uparrow \text{NUM}) = \text{SG} \\ (\uparrow \text{DEF}) = + \end{array}$$

$$(253) \quad \text{šel} \quad \text{P} \quad (\uparrow \text{CASE}) = \text{POSS}$$

- hametupaxat A (\uparrow PRED) = ‘cared-for’
 ((ADJ \uparrow) GEND) = F
 ((ADJ \uparrow) NUM) = SG
 ((ADJ \uparrow) DEF) = +
- (254) (p. 6)

Falk (2001, pp. 6-7) suggests different analyses of the different realisations of the head noun within the Hebrew NP. Following Bresnan (2001), Falk assumes that non-action nouns take a POSS argument optionally, which can vary according to the type of the possession relationship, e.g. alienable, inalienable or agent, which is determined by the semantics of the noun. Therefore, the word *gina* ‘garden’ has two possible lexical entries as shown in (255).

- gina N (\uparrow PRED) = ‘garden’
 (\uparrow NUM) = SG
 (\uparrow GEND) = F
- (255) a.
- gina N (\uparrow PRED) = ‘garden < (\uparrow POSS) >’
 (\uparrow NUM) = SG
 (\uparrow GEND) = F
- b.

The definite counterparts of (257) are prefixed with the definite article *ha-* ‘the’, which in turn adds a DEF feature in the respective lexical entries, as in (256).

- hagina N (\uparrow PRED) = ‘garden’
 (\uparrow NUM) = SG
 (\uparrow GEND) = F
 (\uparrow DEF) = +
- (256) a.

- hagina N (↑ PRED) = ‘garden < (↑ POSS) > ’
 b. (↑ NUM) = SG
 (↑ GEND) = F
 (↑ DEF) = +

Falk notes that there is a relation between the morphological change of Hebrew constructed nouns and the acquisition of the definiteness feature. In this language, constructed nouns display morphophonological variation that involves the following: 1- the singular feminine nouns ending in *-a* changes into *-at* as in (257a). and this change is accompanied by either a reduction of the internal vowel, as in (257b), or a simplification of the diphthong, as in (257c). 2- nouns ending with the plural suffix *-im* have that suffix changed into *-ey*, as in (257d).

(257) a. *gina* ⇒ *.(ginat hamore)_{CS}*
 garden ⇒ *.(teacher’s garden)*

b. *safa* ⇒ *.sfat*
 language

c. *zayit* ⇒ *.zeyt*
 olive

d. *sfarim* ⇒ *.(sifrey Harry Potter)_{CS}*
 books ⇒ *.(Harry Potter books)*

Falk (2001, p. 7)

The relationship between these morphological forms and their syntactic use has not been explained by derivational approaches to the CSC in Hebrew. This leads Falk to suggest that this relation lies in the fact that these forms must always appear within an annexation structure. Falk argues that there is a morphologically dominant/dependent relation within the CSC in Hebrew. To deal with this, he follows an HPSG proposal by Wintner (2000). The heart of Wintner’s proposal is to hypothesise a ‘dependency’ attribute (DEP) for CSCs

in Hebrew, which links the value of the constructed head to the immediately POSS NP. Falk takes this basic property of CSCs to be their bound-like property. Accordingly, he assumes an attribute which is similar to Wintner's attribute (DEF). Falk, however, rejects the name of the assumed attribute suggested by Wintner. He argues that this attribute should be named as a dominance attribute DOM, as he assumes that the attribute value signals the need for a nearby dominant element, and not a dependent one. Falk proposes that the construct form inherits the definiteness feature from the immediate genitive NP, and that this sort of inheritance is a consequence of the construct head requirement of a DOM, i.e. its requirement to be dominated by an immediately following POSS or GEN NP. Falk states that the syntactic use of the construct form confirms the assumed bound-like property of the genitive NP, which is the second member in the construct. This can function either as a POSS (257a), or as an adjunct, which is similar to pre-nominal NP/DP adjuncts in English (257d). Based on the DOM attribute assumption, Falk argues that nouns in CSCs are lexically marked to urgently have the DOM. However, non-constructed nouns that are not marked to have the DOM, forbid it, as shown below:

- (258) Construct nouns: (DOM)= +
 Non-construct nouns: (DOM)= -

Falk hypothesises a lexical rule to ensure that nominals which require the DOM inherit definiteness from it.

(259) **Definiteness Dependency**

$$(\uparrow \text{DOM}) \Rightarrow (\uparrow \text{DEF}) = (\uparrow \text{DOM DEF}) \quad (\text{Falk, 2001, p.9})$$

This analysis assumes that all the elements that enter the CSC are unspecified for a DEF feature, and are lexically marked to require the DOM attribute. Accordingly, nominals which possess the DOM attribute inherit definiteness from it. Falk (2001b) proposes the

following phrase structure rules in (260). Accordingly, we have an updated lexical entry for the word *ginat* ‘garden’ in a possessive construction as illustrated in (261):

$$(260) \quad \text{NP} \rightarrow \text{N} \quad \text{NP} \quad \text{AP}^* \quad \left(\begin{array}{l} (\uparrow \text{DOM}) = \downarrow \\ (\uparrow \text{POSS}) = \downarrow \\ \downarrow \in (\uparrow \text{ADJ}) \end{array} \right) \quad \downarrow \in (\uparrow \text{ADJ}) \quad (\text{p. 9})$$

$$(261) \quad \begin{array}{l} \text{ginat} \quad \text{N} \quad (\uparrow \text{PRED}) = \text{‘garden} < (\uparrow \text{POSS}) > \text{’} \\ \quad \quad \quad (\uparrow \text{NUM}) = \text{SG} \\ \quad \quad \quad (\uparrow \text{GEND}) = \text{F} \\ \quad \quad \quad (\uparrow \text{DOM}) \\ \quad \quad \quad (\uparrow \text{DEF}) = (\uparrow \text{DOM DEF}) \end{array} \quad (\text{p. 10})$$

Falk shows that the construct form cannot be prefixed with the definite *ha-* ‘the’ since it has an equation specifying the DEF value. The f-structure associated with (249a) is provided in (262).

$$(262) \quad \left[\begin{array}{l} \text{PRED} \quad \text{‘GARDEN} < (\uparrow \text{POSS}) > \text{’} \\ \text{GEND} \quad \text{F} \\ \text{NUM} \quad \text{SG} \\ \text{DEF} \quad + \\ \text{POSS} \quad \left[\begin{array}{l} \text{PRED} \quad \text{‘TEACHER’} \\ \text{GEND} \quad \text{F} \\ \text{NUM} \quad \text{SG} \\ \text{DEF} \quad + \end{array} \right] \\ \text{DOM} \quad \text{_____} \\ \text{ADJ} \quad \{ \left[\text{PRED} \quad \text{‘CARED-FOR’} \right] \} \end{array} \right]$$

Falk then extends his analysis to other types of noun phrases in Hebrew, including the following in (263). In (263a), the annexed POSS NP is a pronoun, along with an adjunct,

and is modified by an AP, while the CSC in (263b) is modified by an AP, and has a PP POSS that cross-references the pronoun annexed in the CSC.

(263) a. ginat-o ha-metupax-at
garden-his the-cared.for-FSG

his tended garden

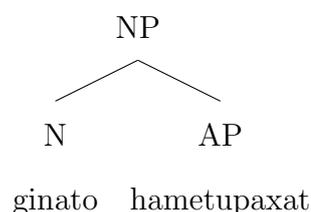
b. ginat-o ha-metupax-at šel ha-more
garden-his the-cared.for-FSG of the-teacher

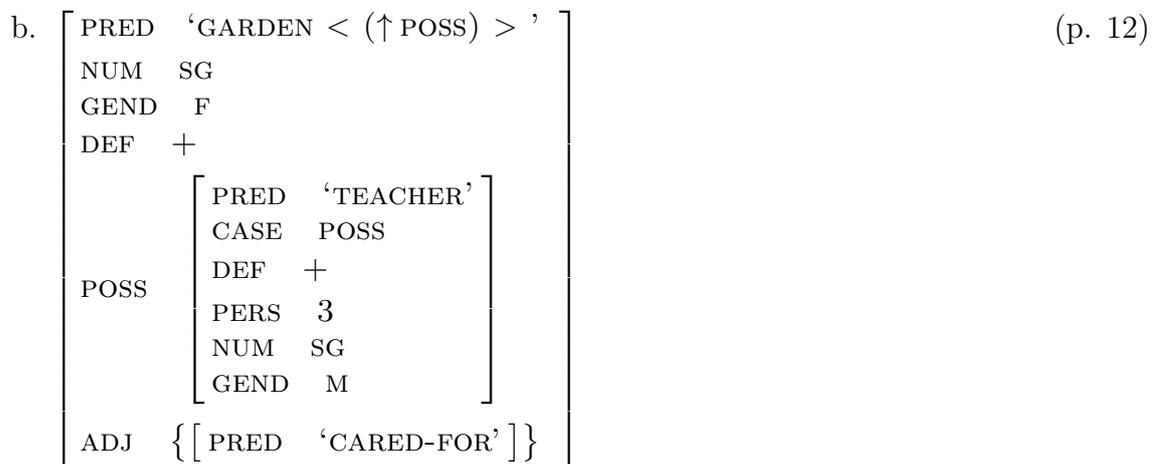
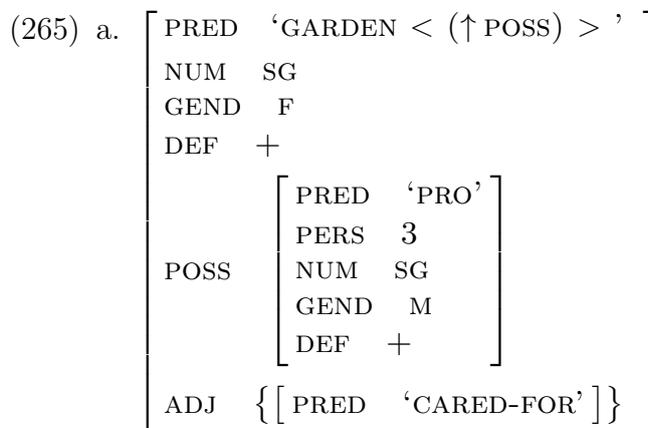
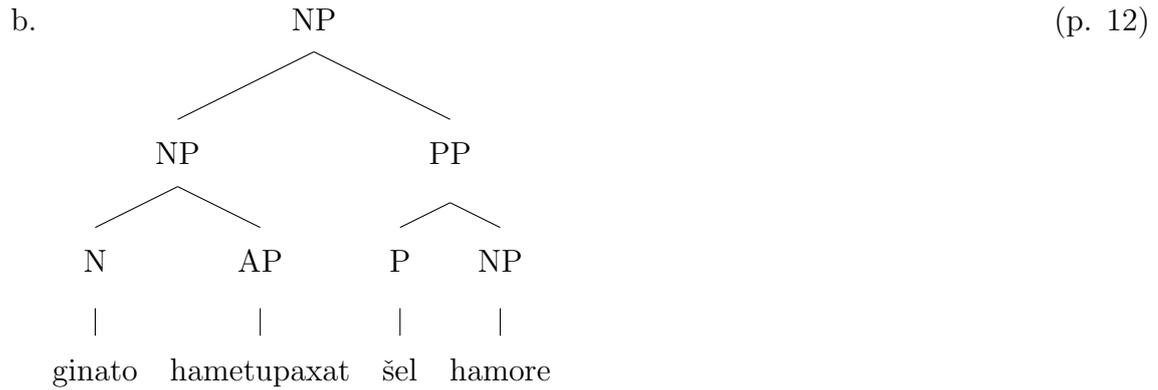
the teacher's tended garden

(p. 11)

Falk introduces Engelhardt (1998)'s proposal with respect to pronominal agreement affixes. According to Engelhardt (1998), *-o* is a POSS agreement suffix in Hebrew. Engelhardt (1998) notes a restriction on POSS agreement suffixes: as agreement morphemes, they can only cross-reference arguments, but not adjuncts. According to Bresnan (2001), the POSS agreement affix, as other agreement affixes, can function as an optional attached pronoun. In LFG terms, this means that the POSS agreement affix has an optional [PRED 'PRO'] feature. In contrast to the constructed noun forms, forms which are suffixed with an agreement pronoun are not morphologically bound forms. Therefore, such non-constructed forms do not require the DOM attribute. Consequently, if the agreement suffix is not pronominal, the POSS will take the form a prepositional phrase, i.e. a *šel phrase*. Finally, the suffixed form is inherently definite as observed by Engelhardt (1998). Falk adopts Engelhardt's proposal, and he proposes the following c-structures and f-structures for the noun phrases in (264-265).

(264) a.





According to Falk, there are two action nominalisation constructions in Hebrew: the accusative action nominalisation construction, and the non-accusative action nominalisation construction. I will limit most of our discussion here to the accusative action nominalisation construction since it looks similar to the accusative maşdar construction in Arabic.

In the construction in (268), the agent argument of the ‘closing’ event is realised as a POSS, i.e. the argument of the action nominal with which this forms a construct state construction, and in turn prompts a nominal head analysis. The object of the construction, which is the theme of the ‘closing’ event, is realised as an accusative-marked phrase, as illustrated below. This part constitutes the verbal element of the structure.

- (266) *sgirat* *ha-mankal* *et* *ha-misrad*
 closure.CONSTR DEF-director ACC DEF-office
 the closure of the office by the director Falk (2001, p. 13)

Falk’s LFG analysis of the Hebrew accusative action nominal construction is based on the head-sharing principle.¹ He proposes that the accusative construction to be analysed as two phrases: an NP and a VP sharing one head. Under his analysis, the shared head, in the Hebrew head-sharing construction, is placed under N. These assumptions are illustrated in the following c-structure and f-structures, adapted from Falk (2001, p. 13).

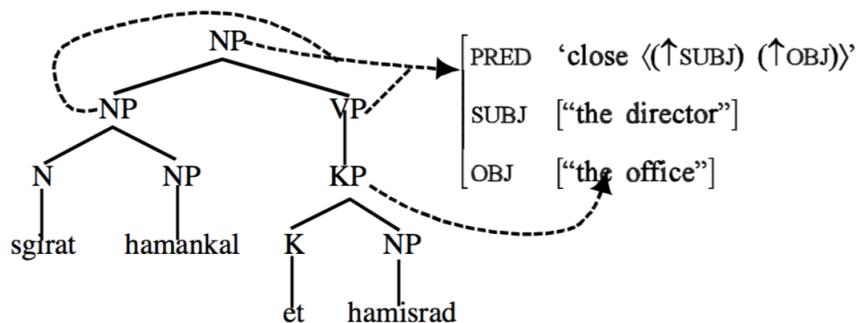


Figure 4.5: Head-sharing analysis of Hebrew accusative action nominals

Within his analysis, the noun *sgirat* ‘closure’ functions as the head of both the NP and the headless VP. The head-sharing results from mapping the two phrases, the NP and VP, to the same part in the f-structure, which is the PRED. Falk proposes the annotated

¹The Head-sharing in LFG, which is a non-derivational framework, is the equivalent of head-movement in derivational frameworks.

c-structure rule in (267) that licenses the structure of the accusative construction in Hebrew.

$$(267) \quad \begin{array}{ccc} \text{NP} & \rightarrow & \text{N} \quad \text{VP} \\ & & \uparrow = \downarrow \quad \uparrow = \downarrow \end{array}$$

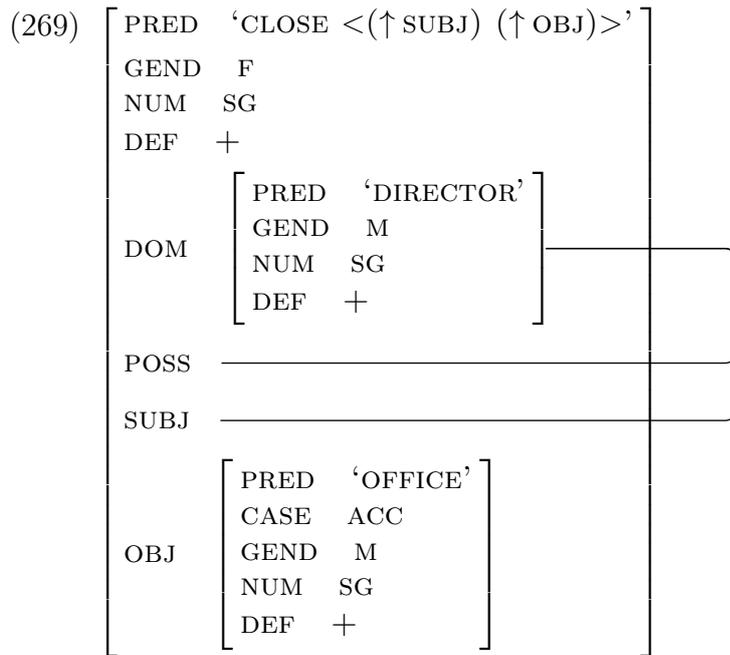
Falk (2001, p. 13)

According to Falk (2001b), mixed categories are a result of category-changing morphology that is language-specific. He adds that such mixed categories result from a mixed argument structure. In Hebrew and Arabic, these involve a mixture of nouns and verbs, their argument structure involves both verbal and nominal elements. Accordingly, the c-structure correspondent of the nominal argument structure must be an NP, while the c-structure correspondent of the verbal argument structure must be a VP. Consequently, both the verbal and nominal projections show up in the c-structure. The morphological word (action nominal) is itself a noun, and therefore it appears under N in the nominal projection. The head-sharing theory requires the head to appear in the head position in the highest projection, and therefore, it is the NP that dominates the two phrases, the NP and the embedded VP.

Falk notices that the subject of the action nominalisation appears in a position normally reserved for the POSS function, and in order to handle this behaviour, he follows the proposal suggested in Bresnan (2001) for gerundive nominals in English, and assumes that accusative action nominalisations in Hebrew include the specification below, where the inner function of the CSC can be the equivalent of a SUBJ, in the appropriate construction, i.e one which involves a mixed category nominal head.

$$(268) \quad (\uparrow \text{POSS}) = (\uparrow \text{SUBJ}) \quad (\text{p. 15})$$

On basis of this, Falk (2001, p. 15) proposes the f-structure in (266), for the phrase in (269).



Thus, the verbal and nominal properties (mixed) of the accusative action nominal construction is accounted for. With respect to the other non-accusative action nominal construction, represented in (270), we find that it is different from *maṣdar* constructions in Arabic. In this type of constructions, the subject is not expressed, or only by an optional *by phrase*, so essentially the action nominalisation has one argument, the object, and that is expressed as the POSS/GEN/dominating element in the CSC. In English, as mentioned earlier, the object may be genitive, usually with a person, and with *of* if not (e.g. *John’s defeat, the defeat of the virus*).

- (270) a. *ibud ha-kolot yadanit alyedey ha-mumxim*
 processing the-votes manually by the-experts
 the manual processing of the votes by the experts
- b. *ibud ha-kolot ha-yadani alyedey ha-mumxim*
 processing the-votes the-manual by the-experts
 the manual processing of the votes by the experts (Falk: 2001, p. 17)

Therefore, it is not of much importance to our analysis. In the following subsections, I will introduce the LFG analyses of *maṣdar* constructions in MSA, which are the focus of

subject and an object argument, and which consequently results in a syntactically hybrid structure of various categories, where a VP is embedded inside a NP. AlSharif faces two main problems. The **first** is the accusative case of the object argument that is always present in normal verbal clauses. The **second** concerns the representation of the external argument of the maṣḍar, i.e. the subject argument, which is realised as a genitive NP that bears a possessor interpretation. Following Bresnan (1997), Al-Sharif suggests that the first problem can be handled within the LFG theory of the head-sharing (Bresnan (1997); Bresnan (2001); Falk (2001b); Bresnan and Mugane (2006); and Bresnan et al. (2016)). Accordingly, in the c-structure, the maṣḍar appears as the highest projection in the whole structure headed by a NP, which dominates the VP. In the f-structure, the maṣḍar appears as the head of the whole structure, and the arguments of the maṣḍar, i.e. the SUBJ, and the OBJ are provided by the elements of the VP part of the c-structure. Al-Sharif (2014) gives more weight to the internal syntax of the Arabic maṣḍar construction, arguing that his proposed analysis is capable of accommodating all the properties of the maṣḍar as a mixed category, in particular by having a phrase which includes elements which belong to different category heads. This analysis enables him to account for the ways in which the maṣḍar has a nominal distribution but at the same time displays verbal modification through the use of adverbs internally.

Regarding the second problem, Al-Sharif, following Falk (2001b), suggests that the relation between the POSS and SUBJ functions can be monitored by including the specification given below.

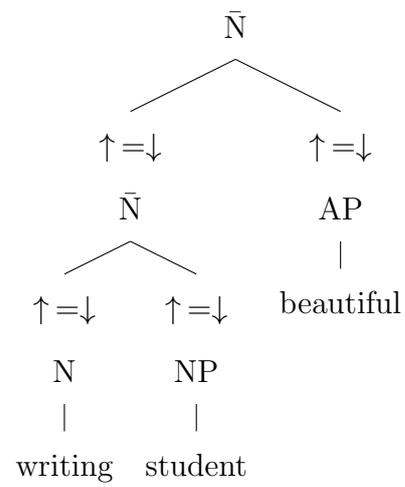
(272) (\uparrow POSS) = (\uparrow SUBJ)

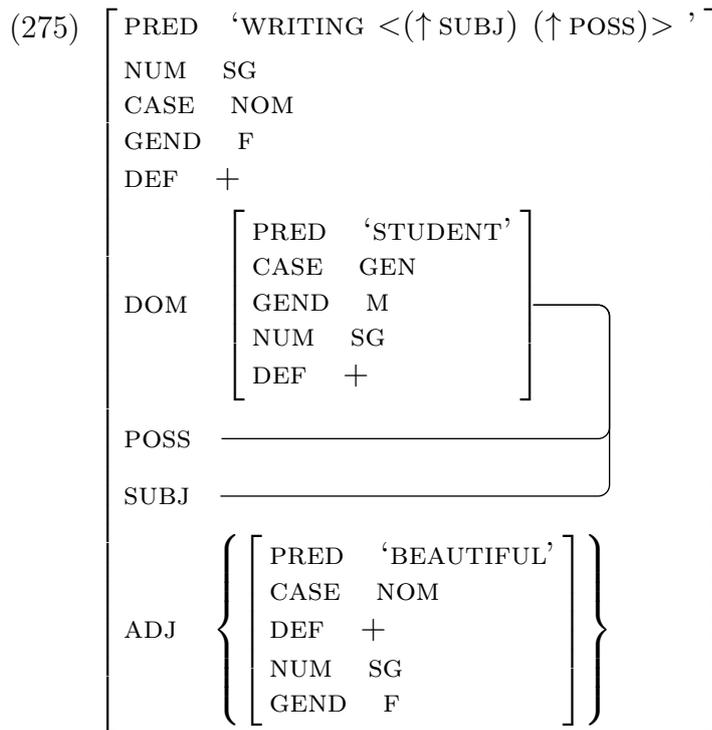
On the basis of this analysis, Al-Sharif (2014, p. 291) proposes the c-structure in (274) and f-structure in (275) for a maṣḍar CSC which is modified by an adjectival modifier, as in (273).

(273) kitāb-at-u ṭ-ṭālib-i l-ḡamīlat-u
 write.MSD-NOM DEF-student-GEN DEF-beautiful-NOM

the beautiful writing of the student

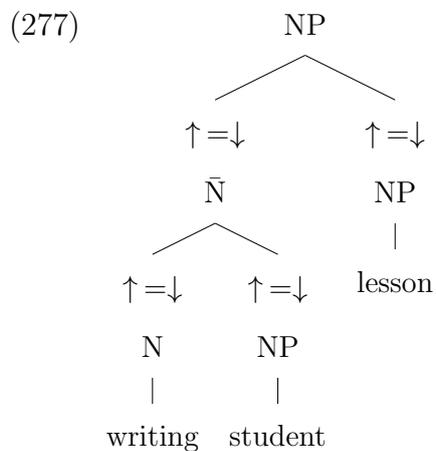
(274)

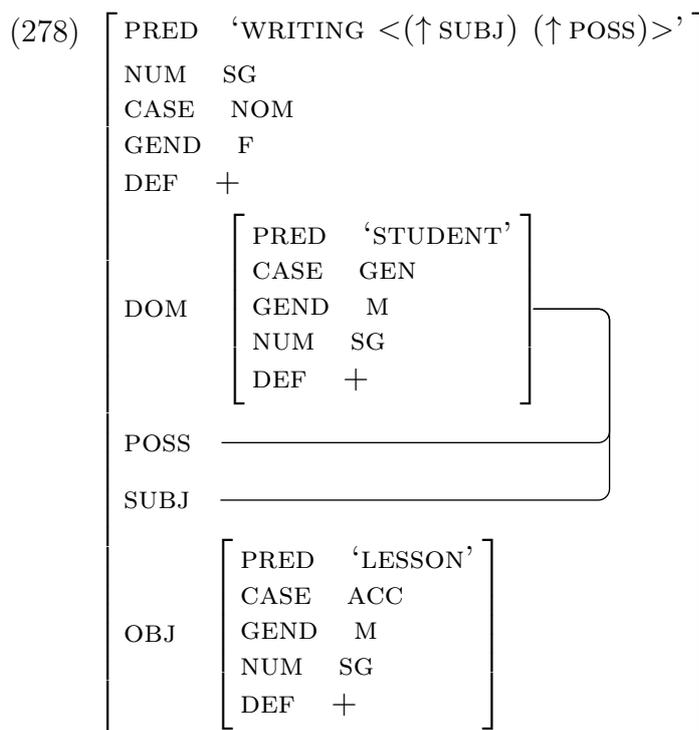




Al-Sharif (2014, p. 292) then shows the important impact of using the Head-Sharing analysis for Arabic *maṣḍar* CSC, when the internal argument, i.e. the object is present. Under his analysis, example (276) would have the *c*-structure in (277) and the *f*-structure in (278).

(276) kitāb-at-u ṭ-ṭālib-i d-dars-a
 write.MSD-NOM DEF-student-GEN DEF-lesson-ACC
 the student’s writing the lesson





Such an analysis enables Al-Sharif to accommodate the **object** argument in this maṣḍar structure which does not have a lexical verb. He states that the object argument is dominated by a VP that is a sister to a higher NP which dominates the head noun, i.e the maṣḍar.

The head-sharing analysis provided by Al-Sharif (2014) for mixed maṣḍar constructions in MSA has many advantages. The first advantage of such an analysis is that all the properties of the maṣḍar, both nominal and verbal, can be accommodated as behaviours of a mixed category, which involves, and allows for a phrase that contains elements which belong to different lexical category heads. The second advantage is that the proposed f-structures enables us to capture the grammatical function of the genitive NP as a Possessor. Moreover, by virtue of this approach we are able to accommodate an object in such a mixed construction, even when they do not include a lexical verb. The object argument is assumed to be dominated by a VP which is a sister to a higher NP that dominates the maṣḍar.

What Al-Sharif (2014) does not discuss, however, is the *maṣḍar* construction which involves a prepositional phrase instead of an accusative object. Therefore, I introduce the following proposals which includes a discussion of both the accusative *maṣḍar* construction and the genitive or PP *maṣḍar* construction in MSA.

4.5.3 Börjars et al. (2015)

Instead of adopting a head-sharing analysis of the Arabic *maṣḍar*, Börjars et al. (2015) provide a distinct analysis that gives more weight to the external syntax of such constructions in Arabic. They analyse the *maṣḍar* constructions in MSA as purely nominal from top to bottom. They argue that these phrases are plain NPs, despite the evidence for some sort of verbal status due to some properties they display. Their analysis covers two types of *maṣḍar* constructions in MSA: *Maṣḍar Mixed Construction A* (MMC A) and *Maṣḍar Mixed Construction B* (MMC B). The first is in effect type C again, but with a pronoun rather than full NP SUBJ/POSS, and the second is in the form of type A, fully nominal, that Sharif did not consider, with the prepositional object. These two constructions are represented in (279a-b) respectively.

- (279) a. *tansiq-u-ha* *iz-zuhōr-a* *muʔaxḫaran*
 arrange.MSD.NOM-3FS.GEN def-flowers.F.PL-ACC recently
 her arranging the flowers recently MMC A: Börjars et al. (2015, p. 49)
- b. *tansiq-u-ha* *il-mutqan-u* *li-iz-zuhor-i* *muxakkaran*
 arrange.BM-NOM-3SGF def-perfect-NOM of-def-flowers-GEN recently
 her perfect arranging of the flowers recently MMC B: Börjars et al. (2015, p. 55)

Börjars et al. (2015, p. 53) propose the following annotated c-structure rules to license the proposed structure for the two constructions in MSA. These are given in (280-282).

$$\begin{array}{ccccccc}
 & \text{NP} & \rightarrow & \text{N} & & \text{NP} & & \text{NP} & & \text{NP} \\
 (280) & & & \uparrow = \downarrow & & (\downarrow \text{CASE}) = \text{GEN} & & (\downarrow \text{CASE}) = \text{ACC} & & (\downarrow \text{CASE}) = \text{ACC} \\
 & & & & & (\uparrow \text{SUBJ}) = \downarrow & & (\uparrow \text{OBJ}) = \downarrow & & (\uparrow \text{OBJ}\theta) = \downarrow
 \end{array}$$

$$\begin{array}{cccc}
 (281) & \text{NP} & \rightarrow & \text{NP} \quad \text{PP} \\
 & & & \uparrow = \downarrow \quad (\uparrow \text{OBL}) = \downarrow
 \end{array}$$

$$\begin{array}{cccc}
 (282) & \text{NP} & \rightarrow & \text{NP} \quad \text{XP} \\
 & & & \uparrow = \downarrow \quad \downarrow \in (\uparrow \text{ADJ})
 \end{array}$$

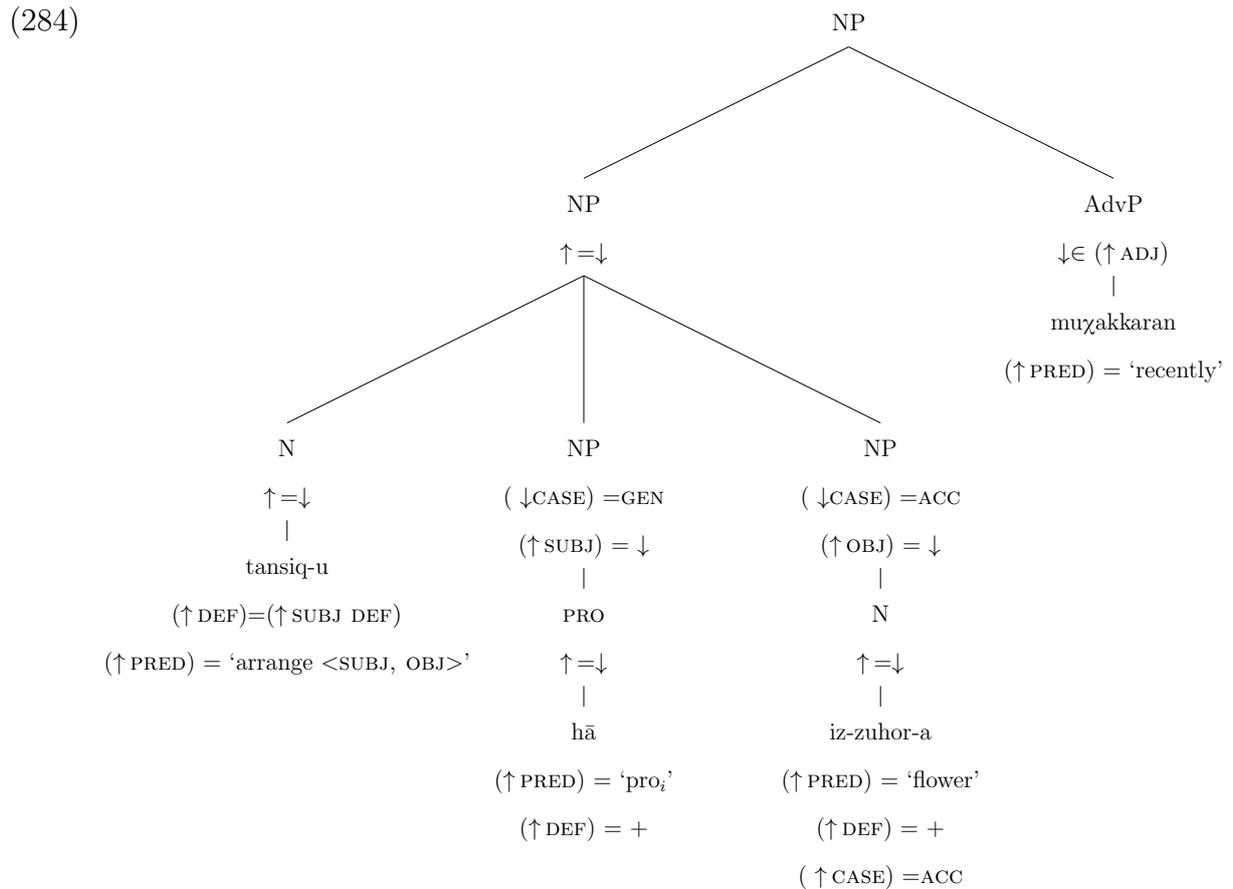
The MMC A in (279a) involves the maşdar head, a genitive NP, in the form of a clitic pronoun on the maşdar, which forms a CSC with the maşdar, an accusative object, and an adverb modifier. This construction displays mixed properties since it combines both nominal and verbal characteristics in one place. The nominal properties include the fact that the whole construction has the external distribution of an NP, and the fact that the maşdar is immediately followed by a genitive NP, which can be a clitic pronoun, or a full NP, and together they form a CSC. The verbal properties involve the ability to take an accusative object and adverbial modifiers, the inability to take adjectival modification, and inheritance of the argument-structure of the related verb. Börjars et al. (2015) show that the adverbial modifier must follow the accusative object argument. The ungrammatical examples below are provided to show that the adverb *muʔaxxaran* ‘recently’ must follow the object argument (283a-b), and the corresponding adjective cannot substitute for the adverb in either position (283c-283d):

- (283) a. *tansiq-u-ha* *iz-zuhōr-a* *muʔaxxaran*
 arrange.MSD-NOM-3FS.GEN DEF-flowers.F.PL-ACC recently
 her arranging the flowers recently
- b. **tansiq-u-ha* *muʔaxxaran iz-zuhor-a*
 arrange.MSD-NOM-3FS.GEN recently DEF-flower.F.PL.ACC
- c. **tansiq-u-ha* *iz-zuhor-a* *ʔal-ʔaxxār-u*
 arrange.MSD-NOM-3FS.GEN DEF-flower.F.PL-ACC DEF-last-NOM

- d. *tansiq-u-ha ?al-?axχ̄ir-u iz-zuhor-a
 arrange.MSD-NOM-3FS.GEN DEF-last-NOM DEF-flower.F.PL-ACC

MMC A: Börjars et al. (2015, p. 49)

The c-structure representation of (279a) is provided in (284) below, taken from Börjars et al. (2015, p. 54)



As illustrated in the c-structure representation above, Börjars et al. (2015) extend the tightly-knit sequence created by the formation of a construct state between the maṣḍar and the subject by additionally allowing such a tightly-knit connection, also between the CSC and the object, noting that it allows no other elements to come in between. In doing so, the core arguments of the MMC A are treated as sisters of the maṣḍar rather than distant cousins as in the head sharing approach, and flat rather than strictly binary branching is preferred. Under their analysis, nothing is allowed to intervene between the maṣḍar and the following genitive NP in the CSC (which is hardly possible in the above

example as they are in one word) or between the genitive NP and the following object NP. In a similar manner, nothing would be allowed to intervene between two internal arguments, i.e. direct object and indirect object, when both are present, as is the case in the context of ditransitive maşdar constructions. Any oblique arguments and/or adjuncts can then only be added at the right periphery of these arguments. That noninsertability is what these researchers use to justify doing what others have always tried to avoid, i.e. to allow into an NP an accusative object when such objects are clearly typical of VPs.

Turning to MMC B represented below as (285a), Börjars et al. (2015) show that this construction is even more nominal than MMC A since it displays more nominal characteristics (as we noted right from the start of our coverage of English equivalents above). MMC B resembles MMC A in that it has the maşdar as the head of the phrase, the genitive NP functioning as the external argument, and in allowing adverbial modification. The only difference is that in MMC B the object is expressed as a PP argument headed by the preposition *li-* ‘of/to’, and not as an accusative object. Additionally, in contrast to MMC A, adjectival modifiers are allowed. As the ungrammaticality of (285b) demonstrates the adjectival modifier must appear before the PP argument, i.e. the prepositional object.

- (285) a. tansiq-u-ha il-muṭqan-u li-iz-zuhor-i
 arrange.MSD-NOM-3SGF DEF-perfect-NOM of-DEF-flowers.F.PL-GEN
 muḫakkaran
 recently
 her perfect arranging of the flowers recently
- b. *tansiq-u-ha li-iz-zuhor-i il-muṭqan-u
 arrange.MSD-NOM-3SGF.GEN of-DEF-flowers.F.PL-GEN DEF-perfect-NOM
 muḫakkaran
 recently

MMC B: Börjars et al. (2015, p. 55)

The c-structure that is associated with (285a) is provided below, taken from Börjars et al. (2015, p. 57)

similar to English in this respect, since the use of postmodification of nouns by semantically appropriate adverbs has been recorded in Payne et al. (2010). Börjars et al. (2015) assume that the possibility of accepting adjectival modification is due to the semantic structures assigned to mixed and nominal constructions.

This analysis has many advantages. This approach provides a categorially uniform analysis. The maşdar phrase is analysed as nominal from top to bottom. Object phrases and adverbial adjuncts are allowed to appear inside NPs just as they can within VPs. This approach takes both the nominal distribution and the nominal internal syntax of the phrase as sufficient means of categorisation that rules out the need for a verbal projection. By doing this, Börjars et al. (2015) overcome the mixed property challenges posed by the maşdar phrase in MMC A. Moreover, this approach allows extension of the maşdar CSC to include a bare object argument. This makes all the core arguments appear as sisters of the maşdar, with the additional advantage that nothing is able to come in between the maşdar head and any of its complements. In addition, this approach accounts perfectly for the more nominal nature of the maşdar in MMC B, which has only one verbal property, and that is the possibility to be modified by an adverbial modifier. MMC B is better analysed within this approach as it does not have a verbal projection, as it does not inherit its corresponding verb argument-structure. It also nevertheless aligns with the possibility that nouns can be sometimes postmodified by adverbs as mentioned in Payne et al. (2010). This confirms that the maşdar in this construction should be analysed as a noun.

Börjars et al. (2015)'s analysis does not provide an explanation for why they treat the maşdar and the following subject pronoun which functions as the external argument, as two separate NPs instead of one. In their analysis, the maşdar word is split up and PRO is treated like a full POSS NP in CSC, which violates the principle that stresses that every leaf on the tree has to be a complete word. This might be justified by considering PRO as a clitic, but they do not explain whether this is legal within LFG or not. That seems to

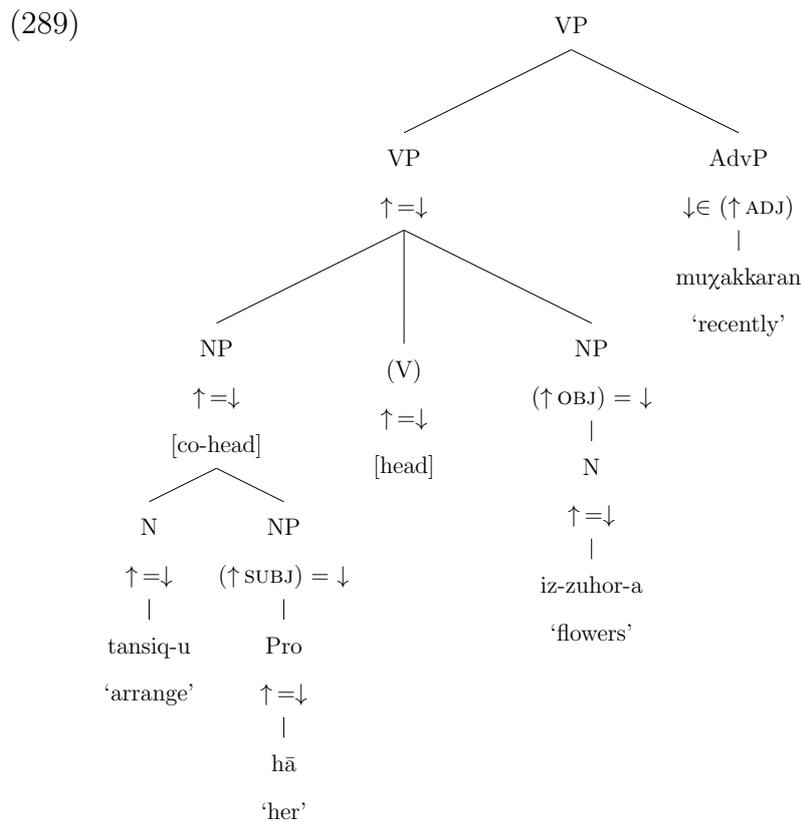
go against some principles of LFG which we referred to above. Still that does not really affect their general reasoning in favour of a purely NP treatment of maṣḍar arguments. More importantly, their analysis does not account for the two possible functions of the subject argument of the maṣḍar which appears in the possessor position, which may be either the subject or the object in certain instances as we saw above. Therefore, a more developed approach that can provide an account for this challenge is required.

4.5.4 Lowe (2019)

While Börjars et al.'s approach provides us with a purely nominal c-structure for all maṣḍar constructions, Lowe (2019) takes an opposing view, and treats the maṣḍar and its subject and object as overall a VP. He assumes that internal syntax is sufficient for categorisation. Therefore, Lowe claims that different categories can be distinguished in terms of the types of specifiers, complements and adjuncts that they are able to admit by assuming the appropriate phrase structure rules. He assumes a standard set of phrase structure rules for NPs and VPs. NPs license determiners and adjectival modification, while they do not license (general) adverbial modification, or object complements. VPs, on the other hand, license adverbial modification and object complements, but not determiners or adjectival modification. Lowe then proposes a mixed projection analysis for the maṣḍar taking the internal syntax of the maṣḍar to be of primary importance for categorisation. Lowe (2019) states that the internal syntax of the CSC and the nominal morphosyntax of the maṣḍar suggest that these are nominal, and at the same time the verbal internal syntax, including the possibility of having an accusative object within the MMC A, and the possibility of adverbial modification with both MMC A and MMC B suggests that the maṣḍar is verbal. Based on this mixed nature of the maṣḍar in Arabic, Lowe suggests that a verbal projection dominating the nominal projection is required for both the accusative and *li*-PP taking structures, i.e. types A and C. Therefore, he proposes a mixed projection for both constructions: they are NPs at the bottom within a VP at the top. Thus, Lowe (2019, pp. 14-15) proposes the c-structure in (289) for the phrase in (288).

- (288) tansiq-u-ha iz-zuhor-a muḡakkaran
 arrange-MSD-NOM-3SGF.GEN DEF-flower.F.PL-ACC recently
 her arranging the flowers recently

(Börjars et al. as cited in Lowe (2019, p. 13))

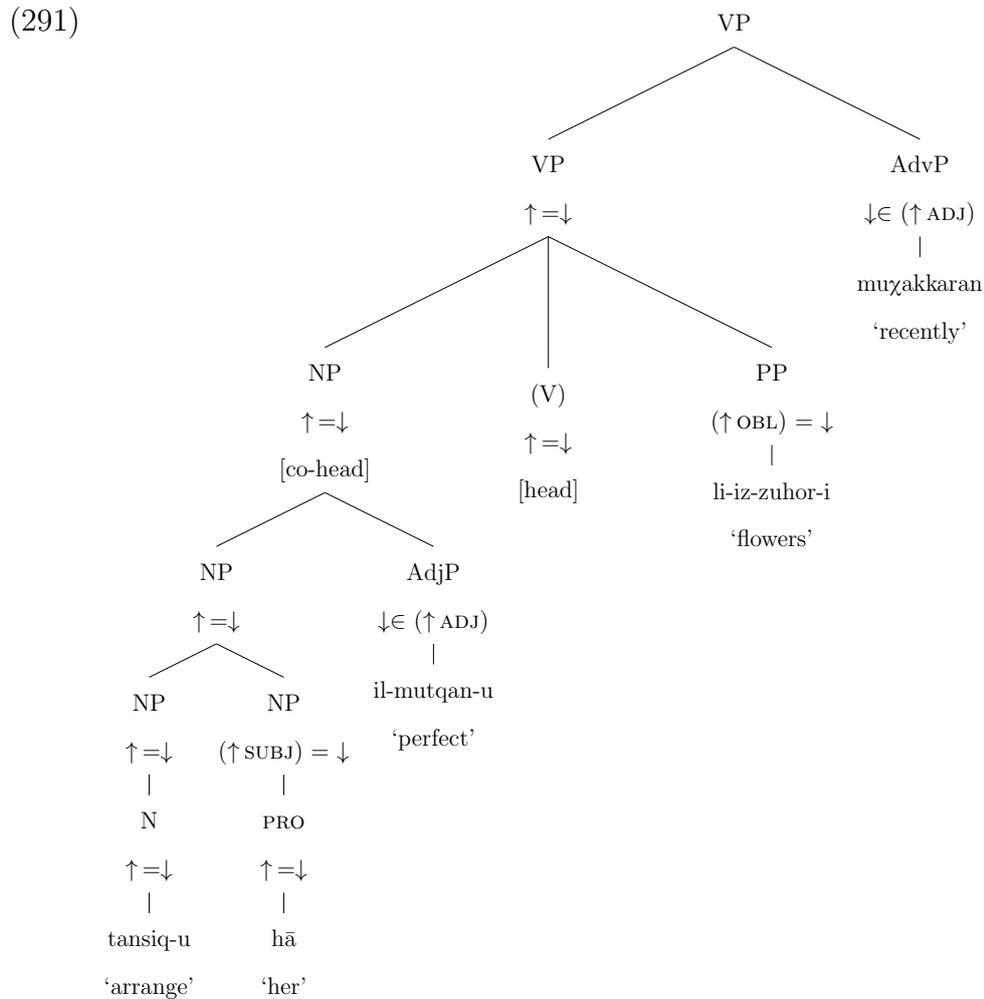


Under his analysis of MMC A, adverbial modification is an adjunct within the verbal projection, and the object phrase is a sister to V, the position which would be occupied by the lexical head of the VP. However, the distribution of the maşdar phrase is nominal, yet the top node is a VP.

Lowe (2019) then proposes an analysis for MMC B. He claims that his analysis can account unproblematically for the constraint imposed on AP modifiers: adjectival modifiers must appear closer to the head than adverbial modifiers. He assumes that AdvP adjuncts are

licensed within the VP, whereas AdjP adjuncts are licensed within an NP. This means that the AdjP adjuncts are necessarily closer to the head than the AdvP adjuncts. He also claims that MMC B must be a mixed projection, just like MMC A, with the same VP-over-NP structure because it permits both adjectival and adverbial modification. Lowe (2019, p. 20) therefore proposes the c-structure in (291) for the phrase in (290).

- (290) tansiq-u-ha il-mutqan-u li-iz-zuhor-i
 arrange.MSD-NOM-3SGF.GEN DEF-perfect-NOM to-DEF-flower.F.PL-GEN
 muḩakkaran
 recently
 her perfect arranging of the flowers recently (Börjars et al. as cited in Lowe (2019, p. 14))



Lowe (2019) states that his proposed c-structure fits the assumptions of standard phrase structure. The oblique complement appears as a sister to V, which is the empty verbal

head, and to the co-head NP which hosts the maşdar and its external argument, the subject. The adjectival modifier appears as a daughter of the co-head NP, within the NP. This means that the adjectival modifier necessarily precedes the adverbial modifier, which appears within the higher VP. He argues once again that the nominal distribution of the VP in MMC B must also be in the phrase structure rules. According to him, the superficial difference between MMC A and MMC B is that MMC A can have an object, and cannot be modified by adjectives, whereas MMC B takes no an object, but then can still be modified by both adjectives, and adverbs. He claims this can be captured by a cooccurrence constraint which prevents adjectives and objects from appearing together in the same phrase. Lowe argues that this constraint can be modelled with relative ease in the syntax: objects must occur closer to the head than adjuncts. Under his analysis, objects can only appear in the verbal part of the projection, and AdjP adjuncts can only appear in the nominal part. If an object and an adjective co-occur, the adjective would necessarily occur closer to the head noun than the object. Lowe (2019)'s proposed constraint rules out such a structure, and this is correlated with the semantics: in structural terms, objects are core arguments, more central to the meaning of a predicate, and therefore appear more naturally closer to the head than an adjunct.

Lowe (2019) proposes a specific constraint to capture the distribution of both MMC A and MMC B. He claims that both structures should not be treated differently in any way, at the level of phrase structure. Lowe argues that it is the internal syntax that is crucial to categorisation, and not the external distribution. In LFG, syntactic generalisations are captured by phrase structure rules, and the c-structure is supposed to directly reflect and represent the generalisations given in the phrase-structure rules. However, within the theory of LFG, grammatical structures, e.g. c-structure, are not required to visibly reflect every constraint in the grammar. Based on this, Lowe (2019) argues that not every phrase structure rule should be reflected or represented directly in the c-structure. According to Dalrymple (2001), as cited in Lowe (2019), p. 25), the mismatch between phrase-structure rules and associated grammatical structures is licensed in LFG via employing meta-categories and phantom nodes.

Lowe adopts the the concept of metacategories in his treatment of the Arabic *maṣḍar*. Lowe explains the difference between a metacategory definition and an ordinary phrase-structure rule. According to Lowe (2019), the difference between a metacategory definition and an ordinary phrase-structure rule is that the metacategory definition can capture syntactic generalisations of the grammar, but it does not result in a corresponding representation of these syntactic generalisations in the c-structure tree. However, an ordinary phrase-structure rule definition can also capture syntactic generalisations of the grammar, and result in a corresponding representation of these syntactic generalisations in the c-structure tree at the same time. Lowe uses the metacategory definition to deal with *maṣḍar* nominalisations. Lowe argues that the *maṣḍar* has the distribution of an NP, but it is not an NP itself. He assumes that the identity of distribution between NPs and *maṣḍar* VPs can be captured unproblematically by assuming a complex category V_{msd} to distinguish *maṣḍar* VPs from finite VPs using the metacategory definition below:

- $\text{NomP} \equiv \text{NP} \mid V_{msd}$

The above metacategory definition enable us to capture the identity of distribution between *maṣḍar* VPs and NPs in the phrase structure rules, as we can do in an analysis where the head of the *maṣḍar* phrase is assumed to be an NP. So, in Lows's analysis the head of the *maṣḍar* phrase is not required to be an NP itself. As mentioned above, this special treatment of the *maṣḍar* phrase is allowed in LFG.

One advantage of the mixed projection approach of to both MMC A and MMC B is that all the properties of the *maṣḍar*, both nominal and verbal, can be accommodated as mixed projections, where one phrase contains the nominal elements, and the other phrase contains the verbal elements. The second advantage is that this approach helps us accommodate the object argument in MMC A and the OBL argument in MMC B, by allowing them to appear as sisters to the empty verbal head (**V**), dominated by a VP that then dominates the nominal projection, which contains the head noun, the *maṣḍar*, and is

a daughter of the higher VP as well. According to Lowe (2019), this approach allows the object complement and the OBL complement to appear closer to the head noun, *maşdar*, and this satisfies the semantic principle where objects are core arguments which are more essential to the meaning of the predicate than an adjunct, which in turn is not central to the meaning of the predicate.

At first sight, it seems that Lowe's mixed projection analysis can account fairly well for both MSA *maşdar* constructions internally, although by treating the whole structure as a VP it does not fit the external distribution of the structure which is clearly that of an NP. In this case, Lowe (2019) is forced to use special constraints in the phrase structure rules to satisfy the general (normal) rules of LFG. There are some other issues that arise with this approach. The first issue is concerned with the assumption of an empty unexpressed verbal head in the position of the lexical head of the VP. Additionally, the potential for the presence of an adverbial modifier after the empty verbal head, i.e. V, such as is not accounted for. Lowe (2019) like Börjars et al. (2015) does not provide an explanation for why he treats the *maşdar* and the following clitic pronoun, functioning as the external argument, as two separate NPs instead of one word in the c-structure. In addition, his analysis does not propose a solution for the two possible functions of the subject argument internal to the *maşdar* construction.

4.6 Conclusion

In this chapter, I have provided a review of the LFG analyses available in the literature for mixed categories. The chapter covers all the present approaches available within LFG. The chapter has been divided into three main sections. In the main first section, I have looked at previous LFG analyses for the English mixed category, the gerund. In the second section, I have provided a review of the previous LFG analyses in other languages of different mixed categories in different languages such as mixed category constructions in Italian, the agentive nominalisations in Giküyü, adjectival participle construction in

German, and mixed category constructions in Japanese, as described in Bresnan (1997) and Bresnan and Mugane (2006). In the third section, I have discussed the previous LFG analyses for mixed action nominalisations in Hebrew and Arabic. I started the discussion with a consideration of action nominal constructions in Hebrew, as analysed in Falk (2001b), and in MSA, as analysed by Al-Sharif (2014), all in versions of the shared head framework which essentially treats the *maṣḍar* structures as an NP containing an NP and VP. The discussion then progressed to Börjars et al. (2015) who by contrast treat the MSA structures as entirely NP with a flat rather than branching representation of the core elements, and Lowe (2019) who treats them as essentially a VP above NPs. All approaches proved to have different strengths and weaknesses in capturing a range of key features of *maṣḍar* in MSA.

This chapter has also described the essence of the existing LFG analyses for *maṣḍar* constructions in MSA. The varied LFG analyses will be exploited to deal with the *maṣḍar* constructions in SA, which are described in the next chapter. At this point we lean towards an approach closer to Börjars et al. (2015), since it seems to have a shorter list of problems than the others. In particular we feel that not attempting to include an empty or implied V node as head of a VP in the construction avoids a great deal of contorted and arcane argumentation to support such a solution that is resorted to in the head sharing and Lowe (2019) approaches. Furthermore some aspects of *maṣḍar* constructions that *prima facie* support a VP analysis such as some occurrences of adverbs seem to be acceptable as normal NP characteristics.

Chapter 5

Maşdar Constructions in SA

5.1 Introduction

Very little work exists in the literature on the Arabic maşdar. The one area which has, however, received some attention, which will be exploited in this chapter for our data, is maşdar constructions in MSA. As mentioned in the previous chapter, accounts of these have been proposed by Al-Sharif (2014), Börjars et al. (2015), and Lowe (2019). These constructions have however been completely ignored in research on SA. In addition, maşdar constructions and mixed category constructions in general have not been discussed previously in any of the Arabic vernacular dialects. No research project has, to my knowledge, been conducted within the theory of LFG on the syntax of maşdar constructions in SA, or on the mixed category constructions in SA in particular, and in Arabic spoken dialects in general. Thus, the main objective of this chapter is to introduce the basic maşdar constructions in SA, which are potential mixed category constructions. Additionally, this chapter aims to provide an LFG analysis to account for these constructions and their controversial behaviours. The LFG analysis comprises lexical entries, c-structures and f-structures.

As mentioned in Chapter one, the maşdar data set provided in this study is restricted to include only one type of maşdar, which is the *Basic Maşdar*. This type of maşdar conveys an action or event reading, which suggests that this type might show both verbal

and nominal properties according to the specific type of construction it appears in. Other types cover the *mīm maşdar*, *ism l-maşdar* ‘the noun of the maşdar’, *maşdar l-marra* ‘the maşdar of one time’, *ism l-hayʔat* ‘the noun of the manner’ and *l-maşdar aṣ-ṣināfi* ‘the made-up maşdar’, refer to Chapter 1.

This is the maşdar type which this study will be concerned with. The decision to concentrate upon the *Basic Maşdar* is due to the fact that it is the most productive class of all maşdar classes. In fact, every verb in SA has at least one *Basic Maşdar* form. It is also the most common type out of the set of maşdar classes, and is a form that is widely used in the daily speech of southern Saudi Arabian speakers.¹

The current chapter will be concerned with investigating a more complex and special form of NPs in Arabic which are *maşdar* NPs. The complexity of such NPs lies in the fact that these NPs headed by maşdar display both verbal and nominal characteristics in some certain constructions. The review of the key LFG literature provided in Chapter 4 will be built on and exploited here for our analysis.

This chapter is organised as follows. The second section provides the morphological and syntactic properties of *maşdar* in SA. The third section describes the maşdar construction A (MC A) in SA. This section details out a description of the mixed properties of this constructions, and provides an LFG analysis of such constructions. The fourth section discusses another type of maşdar constructions in SA which is maşdar construction B (MC B). It also provides an LFG analysis of this construction. The last section summaries the main ideas and concludes the chapter.

¹The other classes of maşādars are also used in daily speech, but these will be excluded from the current study.

as illustrated in (296a-b).

- (295) **kitāb-at** *t-ṭālib* (li) *l-wāğib* *muhimm-a*
 write.MSD-SGF DEF-student.SGM (for) DEF-assignment.SGM necessary-SGF
 The student's writing of the assignment is necessary.

- (296) a. **kitāb-at** *t-ṭālib* *s-sarrīʿ-a* (li) *l-wāğib*
 write.MSD-SGF DEF-student.SGM DEF-fast-SGF for DEF-assignment.SGM
muhimm-a
 necessary-SGF

The student's quick writing of the assignment is necessary.

- b. **kitāb-at** *t-ṭālib* *l-wāğib* *bi-sorʿa*
 write.MSD-SGF DEF-student.SGF DEF-assignment.SGM with-speed
muhimm-a
 necessary.SGF

The student's quick writing of the assignment is necessary.

As illustrated through (295-296) maşdar with two arguments can either take AP or PP modifiers. In (296a), we observe how when the modification of the maşdar comes in between the two arguments, then that modification must be through an AP, as in *s-sarīʿ-a* 'the fast', which modifies the maşdar, and agrees with it in DEFINITENESS, GENDER and NUMBER. Following such an AP modification, the internal noun can only be expressed as a PP. Alternatively, the maşdar *kitāb-at* 'writing' can be modified by the adverb of manner *bi-sorʿa* 'with speed', which is categorically a PP adverbial. The PP adverbial can only ever appear after the maşdar *kitāb-at* 'writing' and its two arguments, i.e. the subject argument, *t-ṭālib* 'the student', and the object one, *l-wāğib* 'the assignment'. This is true when the object argument is expressed as a bare (direct) NP, or as part of a PP, as in (296b).

Maşdar in SA can also take three arguments. This in turn means that the verb with which the maşdar is related has to be itself a ditransitive type. Such verbs subcategorise for three arguments: one external argument and two internal arguments. The subject argument

functions as the CSC complement of the maşdar. The two other arguments, i.e the direct object and the indirect object, have two possibilities in terms of their ordering, and once again these behave exactly as they would behave with respect to the ditransitive verb. The first possibility is that the direct object is linearly followed by the indirect object, which is expressed as a PP. Example (297a) is one instance involving the maşdar *tamrr̄ir* ‘passing’, derived from the verb *marrar* ‘pass’, which is a ditransitive verb subcategorising for three arguments like its corresponding verb. The second possibility is for the indirect object to appear first, and to then be followed by the direct object, or at least the theme argument. This order is represented in (297b). The insertion of the preposition *li* ‘for’ before the indirect object, or rather the argument that functions as the recipient, is optional. In SA, a maşdar that takes three arguments cannot be modified by an AP as in (298). It can only be modified by a PP adverbial. Such a PP appears linearly after both the maşdar and all its three arguments. Consider the following examples:

(297) a. tamrr̄ir ṭ-ṭālib l-kōra li zamil-uh bi-sorfa
 pass.MSD.SGM DEF-student.SGM DEF-ball.SGF to classmate-his with-speed
 abhara-ni
 amaze.PFV-3SGM-1SG.ACC

The student’s quick passing of the ball to his classmate amazed me.

b. tamrr̄ir ṭ-ṭālib (li) zamil-uh l-kōra
 pass.MSD.SGM DEF-student.SGM (for) classmate-3SGM.GEN DEF-ball.F.SG
 bi-sorfa abhara-ni
 with-speed amaze.PFV-3SGM-1SG.ACC

The student’s quick passing of the ball to his classmate amazed me.

(298) *tamrr̄ir ṭ-ṭālib l-kōra li zamil-uh as-sarrifa
 pass.MSD.SGM DEF-student.SGM DEF-ball.SGF to classmate-his DEF-fast.SGF
 abhara-ni.
 amaze.PFV-3SGM-1SG.ACC

However, I will show in the following sub-section that maşādar in SA are indeed nominal forms, and will be providing a showcase of their nominal properties, based upon the properties of SA NPs that were presented in Chapter 2 in section (2.8).

- b. *garā-t* *waşf* *l-mukawin-āt*
 read.PFV.1SG describe.MSD.SGM DEF-ingredient.PLF
 I read the description of the ingredients. (Object)
- c. *astantaġ-at* *bi-tanzīm* *ṭ-ṭullāb*
 enjoy.PFV-1SG with-organise.MSD.SGM DEF-student.PLM
 I enjoyed organising the students. (Complement of preposition)
- d. *ġī-t* *iħtirām* *la-ha*
 come.PFV-1SG respect.MSD.SGM to--3SGF.GEN
 I came to show respect for her. (Adjunct)

In (301a), the plural *maşdar* *taşarūf-āt* ‘behaviours’ is the subject of the verb *tuzaġaġ* ‘annoy’. In (301b), *waşf* ‘description’ is the object of the verb *garāt* ‘read’. In (301c), the complement of the preposition *bi* ‘with’ is the *maşdar* *tanzēm* ‘organising’. Finally, in (301d), the *maşdar* *iħtirām* ‘respecting’ is used as an adjunct.

In SA, *maşādar* appear to have more nominal properties than *maşādar* in MSA, in at least one respect. *Maşādar* in MSA can function as object complements of verbs which semantically entail a verbal complement. However, this is not possible in SA as illustrated in the ungrammatical example in (302) below.

- (302) **hāwal-t* *waşf* *ṭ-ṭarīg*
 try.PFV-1SG describe.MSD.SGM DEF-way.SGF

In this case, in SA, the finite form of the verb will be used instead of the *maşdar* as illustrated in (303):

- (303) *hāwal-t* *a-wşaf* *ṭ-ṭarīg*
 try.PFV-1SG 1SG-describe.IMPV DEF-way.SGF
 I tried to describe the way.

Another nominal property of *maşādar* is their ability to stand alone as an NP with no arguments of their own, just like any other non-event nominals. In this case, however,

the maşdar must be marked with the definite article *al* ‘the’, as a prefix, except of course when it is the possessed noun in a CSC where it is definite but not marked with *l-*, and can be modified by an adjective (AP).

- (304) a. ?a-ħub ***(l-)kitāb-a** n-naqdiyy-a
 1SG-like.SG.IMPV DEF-writing.MSD-SGF DEF-critical-SGF
 I like critical writing.

Another nominal property of maşdar in SA is that they can be additionally modified by a relative clause, as in (305), where what we really have is a substitution of the adjectival modifier by a clausal type modifier.

- (305) t-tağyīr illi gāfid yaşīr fī
 DEF-change.MSD.SGM that sitting.ACT.PTCP.SGM 3SGM-happen.IMPV in
 l-bilād
 DEF-country
 the change that is happening in the country

Moreover, maşdar in SA can be also modified by prepositional phrases (PPs) just like normal nouns as in the following examples.

- (306) a. kitābat-at r-risāla bal-faransi maṭlūb-a
 write.MSD.SGF DEF-thesis-SGF with-DEF-French.SGM required-SGF
 The thesis is required to be written in French.
- b. taʿdīl aṣ-ṣūr-a bal-futuṣub masmūh
 modify.MSD.SGM DEF-picture-SGF with-DEF-photoshop.SGM allowed.SGM
 Modifying the picture with the photoshop is permitted.
- c. naşr l-malābis fi š-šamas mūhim
 publish.MSD.SGM DEF-clothe.PLF in DEF-sun.SGM important.SGM
 Exposing the clothes to the sun is necessary.
- d. tanzīf l-ğurh bal-kūhūl mūfid
 clean.MSD.SGM DEF-wound.SGM with-DEF-alcohol.PLF useful.SGM
 Cleaning the wound with alcohol is useful.

- e. taṣgīm l-ḥamām bal-maṭahir ya-gutal
sterilise.MSD.SGM DEF-bathroom.SGM with-DEF-purifier.SGM 3SGM-kill.IMPV
l-ğarātīm
DEF-germ.PLF
Sterilising the bathroom with the purifier kills germs.

In this regard, maşādar resemble NPs which can be modified by PPs such as the ones in (307), repeated from Chapter 2.

- (307) a. šarā-t ğawāl ba-kamir-ā
buy.PFV-1SG mobile.SGM with-camera
I bought a mobile with a camera.
- b. šarā-t lābtob ba-kamir-ā
buy.PFV-1SG laptop.SGM with-camera
I bought a laptop with a camera
- c. aḫad-t fstān ba-gubaḥa
take.PFV-1SG dress.SGM with-hat.SGF
I bought a dress with a hat
- d. aḫtar-at ḫadyān ba-rabṭa
choose.PFV-1SG shoe.SGM with-hat.SGF
I chose shoes with laces

Also, maşādar in SA head CSCs and FSCs, just like normal nouns, which is another clear nominal property. Consider the following.

- (308) kitāb-at l-walad l-ğamīl-a.
DEF-write.MSD-SGF DEF-boy.SGM DEF-beautiful-SGF
The boy's beautiful writing (Maşdar + NP CSC)

In (309), the maşdar heads the CSC and inherits definiteness from the following genitive NP. The maşdar and the immediately following NP are inseparable, nothing can come in between. This genitive NP is optional because it can be substituted by a pronominal agreement suffix as in illustrated in the following example.

genitive position is not specifically reserved for the object argument. Accordingly, if the sole argument of the maşdar is the subject, the subject argument will assign the GEN case instead.

- (312) *artifaʿ* *l-ʔiṣāb-āt* *bal-fayrus*
 rise.MSD.SGM DEF-infection.PLF with-DEF-virus
 increasing of infections with the virus

For example, the maşdar in (312), *artifaʿ* ‘increase’ has a genitive complement *l-ʔiṣāb-āt* ‘infections’ which serves as the subject of the verbal equivalent of the maşdar.

When both subject and object are expressed, as we have seen repeatedly in examples above, only one of the maşdar’s arguments can be genitive. The argument that immediately follows the maşdar is then always the subject. The object argument is expressed in one of two ways. The first method is to introduce the object argument with the preposition *li* ‘for, to’ (313a). The alternative method is to express the object as an NP, which is usually regarded as typical of verbal rather than nominal constructions (313b).

- (313) a. *kitāb-at* *l-walad* *as-sarīʿa* *li-l-ḥurūf*
 write.MSD-SGF DEF-boy.SGM DEF-fast-SGF to-DEF-letter.PLF
fāğāʔā-tni
 surprise.PFV-3SGF-1SG.ACC
 The boy’s fast writing of the letters surprised me.
- b. *kitāb-at* *l-walad* *l-ḥurūf* *bi-ītqān*
 write.MSD-SGF DEF-boy.SGM DEF-letter.PLF with-perfection
fāğāʔā-ni
 surprise.PFV-3SGF-1SG.ACC
 The boy’s perfect writing of the letters surprised me.

In (313a), the subject *l-walad* ‘boy’ is the (genitive) or external argument which modifies the maşdar *kitābat* ‘writing’. The object, *l-ḥurūf* ‘letters’, is introduced with the preposition *li* ‘for, to’. In example (313b), we have the same phrase, but here we have a bare object.

The above maşdar constructions have been a topic of interest in the research of mixed categories, and have recently sparked heated debate between scholars in the domain of syntax. Different analyses of these constructions have been proposed in the literature (Al-Sharif (2014); Börjars et al. (2015); and most recently Lowe (2019)), as reviewed in the previous chapter. Extending the horizon of the ongoing research on the main Arabic mixed category which is the action/event *maşdar*, and in particular mixed maşdar constructions, the present study offers a detailed investigation and characterisation of those maşdar constructions in SA. This will be the task of the following sections.

5.3 Maşdar in normal constructions

Before we proceed to investigate the maşdar in complex constructions, we should first shed some light on maşdar nominalisations occurring in pure NP constructions. There is strong evidence that maşdar nominalisations in SA head pure NP constructions with NP-like constituents: complements and modifiers. As shown earlier, maşdar nominalisations show *lexical coherence*: selecting dependents of uniformly nominal type such as CSC, adjectival modifiers, relative clauses modifiers and the like. In such constructions, there is no evidence for a syntactic VP inside maşdar nominalisations since there are no VP-style constituents, e.g. selecting for an OBJ complement or adverbial modification, involved in these constructions. It is well-known that maşdar nominalisations are derived from their corresponding verbs. However, the internal structure of the verbal base of the nominalised maşdar is changed to assimilate to the internal structure of the derived noun. Such a relation between morphology and syntax is ‘language-particular phenomenon’, and is widespread crosslinguistically. For example, it is found in Gikūyū and Hebrew as we have seen in the previous chapter. This relationship has been accounted for within Haspelmath (1995, p. 58)’s universal generalisation given below:

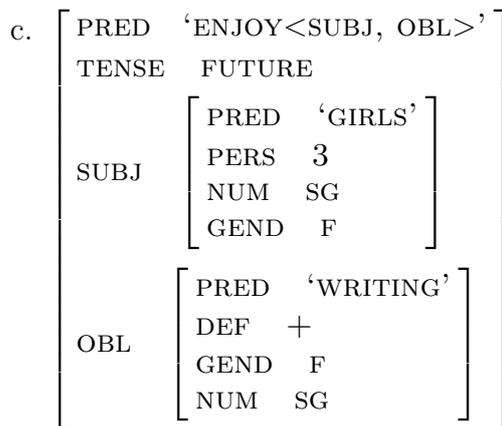
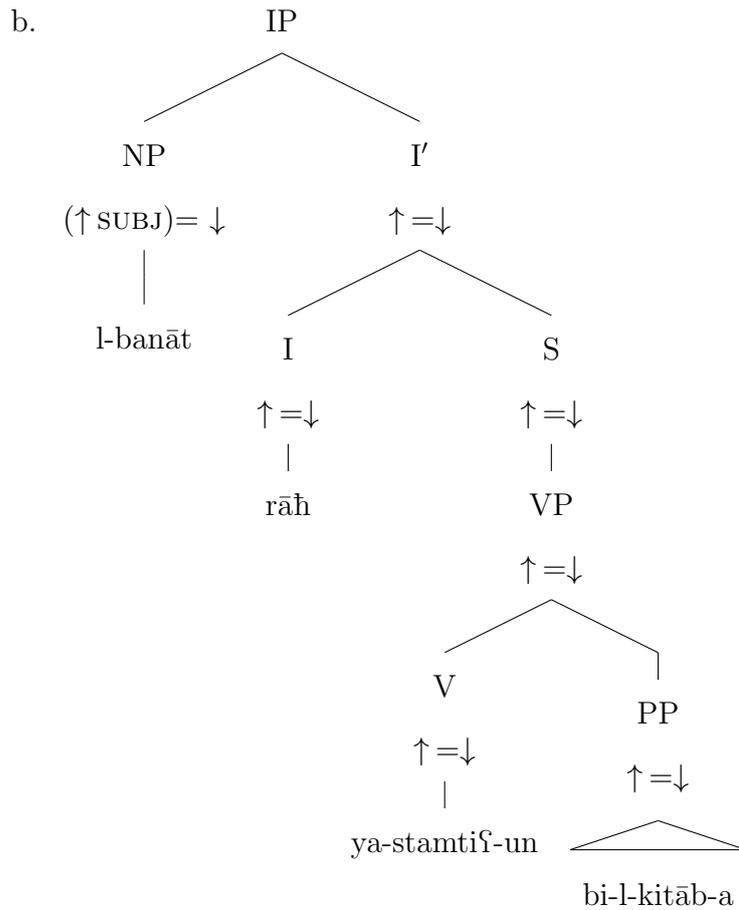
- In words derived by inflectional word-class-changing morphology, the internal syntax of the base tends to be preserved.

- In words derived by derivational word-class-changing morphology, the internal syntax of the base tends to be altered and assimilated to the internal syntax of primitive members of the derived word-class.

Based on this generalisation, maşdar nominalisations in SA and Arabic in general are derived via ‘derivational word-class-changing morphology’ due to the fact that the internal syntactic structure of maşdar nominalisations deviates from the internal syntax of their verbal base. On this basis, I argue that maşdar nominalisations in SA should be treated as pure NPs due to the nominal characteristics they entertain. Based on this view, maşdar nominalisations should be treated as regular NPs that appear in usual nominal structural positions such as subjects, objects, or prepositional objects. Given these assumptions, the examples in (314), (315) and (316) will have the c-structures in (314b-316b) and the f-structures in (314c-316c).

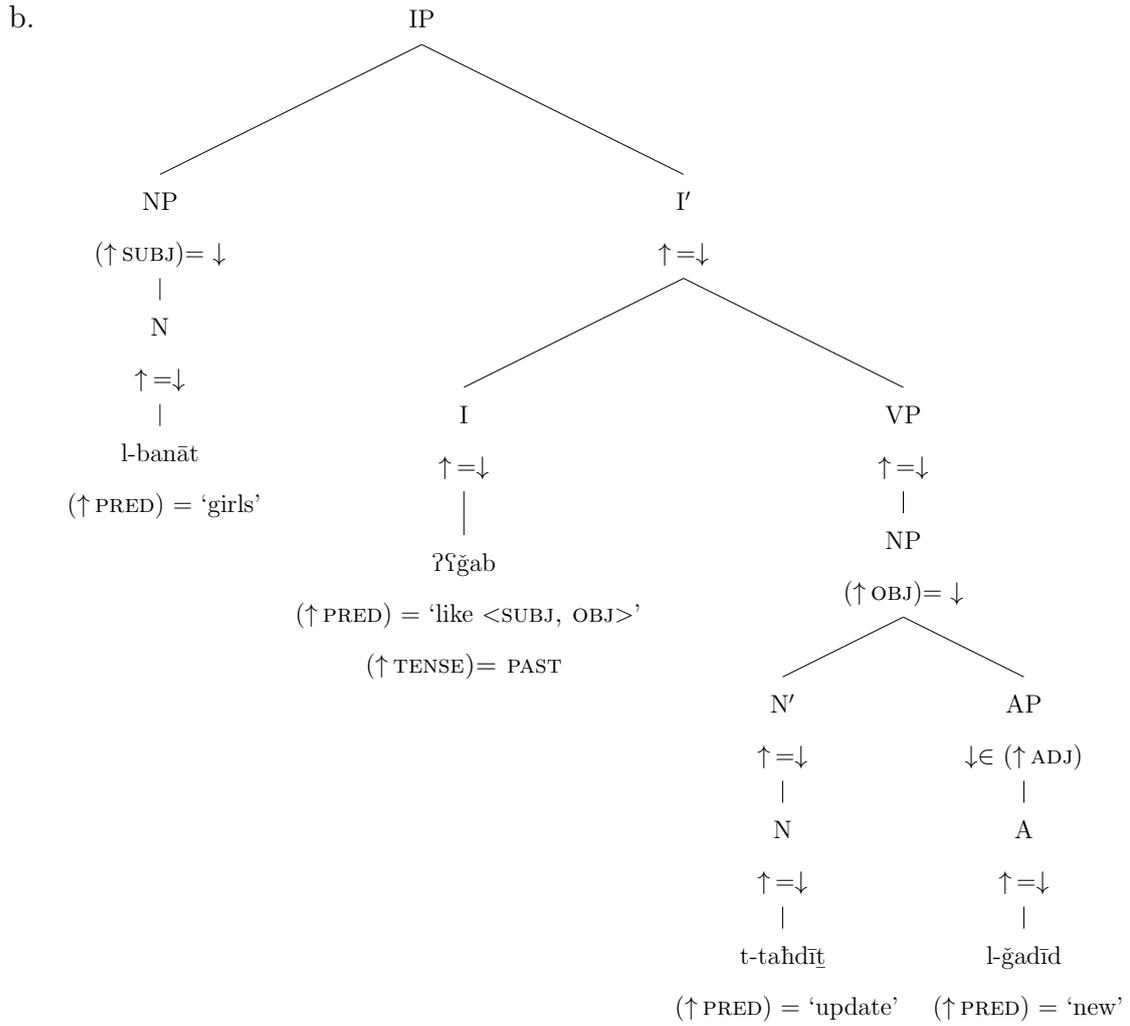
- (314) a. *t-taṭṭīim* *rāḥ* *ya-stamir* *elān ḡūn*
 inject.MSD.SGM 3SGM-be.IMPV.FUT continue.IMPV.3SGM until June

Vaccination will continue until June.



- (316) a. l-banāt ḥāḡab-him **t-taḥdīt** l-ḡadīd
 DEF-girl-PLF like.PFV.3PL DEF-update.MSD.SGM DEF-new.SGM

The girls liked the new update.



c.

PREL	PREL	‘LIKE <SUBJ, OBJ>’																				
TENSE	TENSE	PAST																				
SUBJ	SUBJ	<table style="border-collapse: collapse;"> <tr><td style="border-right: 1px solid black; padding-right: 5px;">PREL</td><td style="padding-left: 5px;">‘GIRLS’</td></tr> <tr><td style="border-right: 1px solid black; padding-right: 5px;">PERS</td><td style="padding-left: 5px;">3</td></tr> <tr><td style="border-right: 1px solid black; padding-right: 5px;">NUM</td><td style="padding-left: 5px;">SG</td></tr> <tr><td style="border-right: 1px solid black; padding-right: 5px;">GEN</td><td style="padding-left: 5px;">F</td></tr> </table>	PREL	‘GIRLS’	PERS	3	NUM	SG	GEN	F												
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NUM	SG																					
GEN	M																					
DEF	+																					
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PREL	‘NEW’																					
NUM	SG																					
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DEF	+																					

Having provide LFG analyses of maşdar nominalisations in normal NP constructions, I will now proceed to investigate the same maşdar nominalisations in more complex constructions.

5.4 Maşdar Construction A

The maşdar construction A (MC A) involves a head (maşdar), which is a mixed category, its complements and modifiers. In MC A, the subject argument of the maşdar is realised as a POSS appearing as a complement to the maşdar within a CSC, which is a nominal construction, while the object argument is realised as a bare NP, which is usually regarded as a verbal property. MC A therefore seems to combine both nominal and verbal properties at the same time. This construction is also known in the literature as a verbal maşdar construction (Assiri (2011), Al-Quarashi (2013), Alsulami (2018), Alotaibi (2018), Alzahrani (2019)). MC A is not used much in daily SA speech, and there are even some speakers of SA who do not judge this construction as acceptable. This construction is more likely to be used on formal occasions in SA.

5.4.1 Properties

Maşdar construction A (MC A) consists of the maşdar head followed by NP-like constituents, and then VP-like constituents. The maşdar and its arguments and modifiers must appear in this order. So, the verbal elements cannot precede the nominal ones. The first nominal property of this construction is that the maşdar head is itself a noun. The second nominal property is that the maşdar has the external distribution of nouns: it can occupy the subject, object or prepositional object positions. In addition, it has no ASPECT and TENSE values.

The most salient nominal property of this construction is that the maşdar head is able to form a CSC with the immediate following NP, just as nouns. Consider the following example in (317).

- (317) **kitāb-at** **l-walad** l-hurūf bi-ītqān
 write.MSD-SGF DEF-boy.SGM DEF-letter.PLF with-perfection
 fāḡāʔā-ni
 surprise.PFV-3SGF-1SG.ACC

The boy's perfect writing of the letters surprised me.

Another important nominal property is that the maşdar nominalisation itself accepts independent possessive pronouns. The possessive pronoun can replace the full possessive NP, as illustrated in (318)

- (318) a. **kitāb-at** **l-walad** l-ḥurūf bi-ītqān
 write.MSD-SGF DEF-boy.SGM DEF-letter.PLF with-perfection
 the boy's perfect writing of the letters
- b. kitābat-**uh** l-ḥurūf bi-ītqān
 write.MSD.SGF-3SGM.GEN DEF-letter.PLF with-perfection
 his perfect writing of the letters
- c. kitābat-**ak** l-ḥurūf bi-ītqān
 write.MSD.SGF-2SGM.GEN DEF-letter.PLF with-perfection
 his perfect writing of the letters

In (318a), the maşdar nominalisation appears in a nominal CSC in which *kitāb-at* is the head noun which takes the *l-walad* as its nominal complement serving as the possessor POSS. Examples (318b-c) show that the full NP *l-walad* can be replaced by the corresponding dependent possessive pronouns *uh* and *ak*, which are attached as suffixes to the maşdar head noun. This nominal property is a strong diagnostic that the maşdar is a noun. This hypothesis is based on the fact that the maşdar nominalisation does not permit pronominal objects, which are allowed in the verbal system. The following data illustrate the difference between maşdar nominalisations and verbs.

- (319) a. **l-walad** kallam-n-**i**
 DEF-boy.SGM talk.PFV.3SGM-EPENTH-**me**.ACC
 The boy talked to me
- b. kitāb-at-**i** wāẓiḥ-a
 write.MSD.SGF-1SG.GEN clear.SGF
 My writing is clear.
- c. *kitāb-at-**ni** wāẓiḥ-a
 write.MSD.SGF-1SG.GEN clear.SGF
 My writing is clear.

Example (319a) shows that the verb takes the pronominal object that must be preceded by the epenthetic element *-n-* that must be added only if the pronominal object is 1SG, whereas the maşdar nominalisation takes a possessive pronoun which appears as *-i* in the case of 1SG as in (319b)². Example (319c) shows that the maşdar nominalisation does not allow for pronominal objects, just as in the nominal system. Based on the above data, pronominal objects are not licensed by maşdar nominalisations, as expected.

Turning to the verbal properties, maşdar nominalisations in MC A are derived from transitive verbs characteristically take a bare (accusative) object, i.e. an NP, as in (320), which is a verbal property.

- (320) kitāb-at l-walad l-ḥurūf bi-ītqān
 write.MSD-SGF DEF-boy.SGM DEF-letter.PLF with-perfection
 faǧāʔā-ni
 surprise.PFV-3SGF-1SG.ACC
 The boy's perfect writing of the letters surprised me.

Another verbal property of MC A is that it allows **only** adverbial modification, not adjectival. Furthermore, beyond the constraint on the nature of the modification, there is additionally a constraint on the linear placement of the adverbial. As illustrated through the data in (321), the PP adverbial modifier can only come after the direct object argument. The earlier placement of the adverbial results in ungrammaticality as illustrated in (321b). The ungrammatical data in (321c-d) is meant to illustrate how adjectival modification, in whatever position, is not available in MC A.

- (321) a. **kitāb-a** l-ḥurūf **bi-ītqān**
 write.MSD-3SGM.GEN DEF-letter.PLF with-perfection
 His writing of the letters with perfection
- b. ***kitāb-a** **bi-ītqān** l-ḥurūf
 write.MSD-3SGM.GEN with-perfection DEF-letter.PLF
- c. ***kitāb-a** l-ḥurūf **l-mutqin-a**
 write.MSD-3SGM.GEN DEF-letter.PLF DEF-perfect-SGF

²The epenthetic *-n-* is known as *nūn ʔ-l-wiqāyah* 'the *nūn* of protection' in Arabic traditional grammar.

- d. ***kitāb-a** **l-mutqin-a** l-ḥurūf
 write.MSD-3SGM.GEN DEF-perfect-SGF DEF-letter.PLF

In the context of some classes of maşdar derived from ditransitive verbs, the maşdar inherits the two internal arguments of its corresponding verb, which are expressed as two bare NPs. Any adverbials are also allowed and must appear in final position.

- (322) **tawşil-ha** l-awlād l-mādaris ş-şabāḥ
 connect.MSD-3SGF.GEN DEF-boy.PLM DEF-school.PLM DEF-morning
 her [the mother's] taking the kids to schools in the morning

Once again, the ditransitive maşdar construction here is also modified by an adverbial, which takes the form of a noun. Additionally, the adverb is required to follow all the arguments of the maşdar. Adjectival modification is also impossible with this version of MC A. Moreover, MC A shows almost the same order as in a corresponding finite VP, which reflects the double nature of the maşdar. The order of arguments in MC A is shown in (323):

- (323) **Maşdar < (Genitive) NP < NP < adverbial Adjunct**

MC A consists of the maşdar head, nominal constituents which include the maşdar form and the its complement (CSC), and verbal constituents which include the accusative object and the adverbial Adjunct.

The order of arguments in the corresponding finite VP is shown below in (324):

- (324) **Verb < (Nominative) NP < NP < adverbial Adjunct**

Examples illustrating this linear order are given in (325a-b) below.

- (325) a. **katab** Targ l-ḥurūf bi-īṭqān
 write.PFV.3SGM Targ DEF-letter.PLF with-perfection
 Targ perfectly wrote the letters.

Transitive verb

- b. waṣal-at l-um l-awlād l-mādaris fi
 connect.PFV.3SGF DEF-mother.SGF DEF-boy.PLM DEF-school.PLM in
 ṣ-ṣabāḥ
 DEF-morning

The mum took the kids to the schools in the morning.

- c. salam l-mūdīr ṭ-ṭulāb l-ğawāyiz fi
 hand.PFV.3SGM DEF-headteacher.SGM DEF-student.PLM DEF-reward.PLF in
 ṣ-ṣabāḥ
 DEF-morning

The headteacher handed the students the rewards in the morning. **Ditransitive verb**

While we can consider the presence of an adverbial means of modification, and the linear order reflective of a VP structure as instances of verbal behaviours that characterise the maşdar, these verbal characteristics are also combined with nominal properties. For example, the MC A has the same external distribution as NPs, and the maşdar head of MC A forms a CSC with the following NP, which is its own argument, and which can be either a full NP, or a clitic pronoun, just like CSC with non maşdar nouns. Such a combination of both properties reflects and confirms the mixed nature of this construction. The following table summarises the mixed characteristics of MC A.

Property	Nominal Properties	Verbal Properties
Distribution of NPs	*	
The head being a noun itself	*	
Heading a CSC	*	
Admitting possessive pronouns	*	
Having no ASPECT value	*	
Having no TENSE value	*	
Taking a bare object		*
Verb-like argument structure		*
Allowing adverbial modifiers		*

Table 5.1: Summary of the verbo-nominal properties of MC A in SA

Given these mixed properties, it can be noted that the external syntax (distribution) of maşdar nominalisations is nominal, whereas the internal syntax is mixed, including nominal constituents and verbal constituents. It should be indicated that the internal syntax is partially verbal, and that these VP-like constituents are the remnants of the corresponding verb arguments after the derivation process. This mismatch between the external syntax and internal syntax of maşdar nominalisations in MC A has been accounted for in Haspelmath (1995). According to Haspelmath (1995)'s universal generalisation, maşdar nominalisations in MC A are derived through 'inflectional word-class-changing morphology' since the internal syntactic structure of the corresponding verbal stem has not changed to assimilate with the internal syntax of the newly formed (nominalised) maşdar. Given that the internal syntax of the maşdar phrase is itself mixed, I argue that MC A in SA and Arabic in general is a truly mixed category construction following the assumption given by Lowe (2016) for other languages.

5.4.2 An LFG analysis

As indicated in Chapter 4, there are different possible analyses for the MSA mixed construction (MC A) in LFG as suggested by Al-Sharif (2014), Börjars et al. (2015) and Lowe

Similar to Börjars et al. (2015) analysis, I will adopt the external syntax criterion, and provide an analysis that assumes that maşdar is a noun from top to bottom. The details are given below.

An argument proposed by Al-Sharif (2014) that favours an analysis of the maşdar phrase in MC A within a theory that allows a head sharing element within LFG includes the fact that this analysis is able to represent the mixed characteristics of MC A. However, this analysis does not provide a categorially uniform analysis of MC A, especially the maşdar itself is nominal and has the external syntax of nouns. In addition, Al-Sharif does not discuss the maşdar construction which involves a prepositional phrase instead of an accusative object.

Another argument proposed by Lowe (2019) that favours an analysis of the maşdar phrase in MC A within a theory that allows mixed projections, and based primarily on its internal syntax, includes the fact that all the properties of the maşdar, both nominal and verbal, can be accommodated in mixed projections. This allows to have one phrase containing the nominal elements, and another one at another level containing the verbal elements. However, Lowe's analysis, which is driven by consideration of the internal syntax, assumes an empty unexpressed verbal head in the position of the lexical head of the VP. This is not satisfactory either intuitively or within the usual rules of LFG. Moreover, the possibility of inserting an adverbial modifier after the empty verbal head, i.e V, was not considered under Lowe's analysis. Additionally, his analysis does not provide a solution for the double function of the subject argument of the maşdar construction, which appears in a position usually reserved for a possessor.

Accordingly, the analysis suggested by Börjars et al. (2015) sounds more plausible and have a shorter list of problems. Choosing this analysis will avoid us all the criticism of the other approaches, i.e. the head sharing and Lowe (2019) approaches. Furthermore, under this analysis, some occurrences of adverbs within maşdar constructions, which prima

facie support a VP analysis, are accounted for by assuming that such occurrences are acceptable as normal NP characteristics. Therefore, our choice of the analysis proposed by Börjars et al. (2015) seems to be correct and the best choice.

Therefore, MC A in SA will be analysed on the basis of its external syntax, as a noun from top to bottom resulting in a categorially uniform analysis. Additionally, this analysis allows object phrases and adverbial adjuncts to appear inside NPs just as they can within VPs. This approach takes the nominal distribution and the nominal internal syntax of the phrase together as a sufficient means of categorisation which rules out the verbal projection. Moreover, this approach allows to extend the maşdar CSC to include the bare object argument under one umbrella. This makes all the core arguments appear as sisters of the maşdar, with the additional advantage that nothing is able to come in between the maşdar head and any of its two complements.

In section (5.4), a description was provided of the mixed properties of MC A in SA. Recall from our discussion that this construction combines nominal and verbal properties at the same time. Nominal characteristics of the maşdar phrase involve having the distribution of NPs and heading a CSC. In addition, the external syntax (distribution) of the maşdar phrase is nominal because it can appear in normal positions of ordinary noun phrases, including the function of subject, object or prepositional object. Verbal characteristics of the maşdar phrase involve selecting a bare (accusative) object, accepting modification by adverbs and possessing part of the same argument structure as its corresponding verb. The LFG analysis, presented below in terms of lexical entries, c-structures and f-structures, will capture and accommodate these mixed properties perfectly, within a categorially uniform analysis.

In its essence, my analysis shares the basic assumptions of Börjars et al. (2015) analysis, but with some differences. What differs from Börjars et al. (2015) analysis is that in the f-structure there is no CASE feature, since SA has lost its case system just like other

Arabic spoken dialects. Additionally, under my analysis the external argument is treated as a POSS. This is in accordance with the fact that the full possessive NP can be replaced by a corresponding possessive pronoun, as shown above. Accordingly, we will have a more consistent analysis, and the assumed problem of having double functions of the external argument is therefore solved.

Based on Börjars et al. (2015) analysis, the maşdar nominalisations are treated as pure nouns. In our analysis, the adverb phrase is licensed as an adjunct within the NP, and the object is licensed as a complement of N. The external distribution is given priority over the partial internal syntax of the maşdar structure. The presence of partial verbal internal syntax does not necessitate a verbal projection. The phrase structure rules suggested in (331-333) allow for the tight-knit nature of the CSC constituent in MC A to be extended to additionally include the bare object. In this way, all core arguments of the maşdar are accommodated appearing as sisters of the maşdar, with an additional advantage that nothing can intervene between the maşdar head and any of its components. The maşdar appears as N and the POSS argument (NP) follows it immediately, followed immediately by the object argument included under a higher NP that is dominated by the highest NP. In the context of a second object argument, as in the case of a ditransitive maşdar, the CSC will be extended to include the second object NP. The adverbial adjuncts still appear inside the NP, but following the NP formed by the maşdar and its complements. In this way, the adverbial modification occurs internal to the NP, in the same way that it can appear within a VP. The optionality of the possessor NP in MC A is indicated by the brackets () around it. The following rule structure is suggested for MC A in SA.

$$(329) \quad \text{NP} \rightarrow \quad \text{N} \quad (\text{NP})$$

$$\quad \quad \quad \uparrow = \downarrow \quad (\uparrow \text{POSS}) = \downarrow$$

$$(330) \quad \text{NP} \rightarrow \quad \text{NP} \quad \text{NP}$$

$$\quad \quad \quad \uparrow = \downarrow \quad (\uparrow \text{OBJ}) = \downarrow$$

$$(331) \quad \text{NP} \rightarrow \quad \text{NP} \quad \text{XP}$$

$$\quad \quad \quad \uparrow = \downarrow \quad \downarrow \in (\uparrow \text{ADJ})$$

In our analysis, following Börjars et al. (2015), the definiteness inheritance, which is an important attribute of the CSC, emerges from the lexical entry of the head noun. The maşdar head noun appears as a distinctive form with no definite markers and bearing the annotation $(\uparrow \text{DEF}) = (\uparrow \text{SUBJ DEF})$. This will force the maşdar to co-occur with the SUBJ, and the whole NP will inherit the definiteness from this SUBJ. Accordingly, we assume that the maşdar inherits the verbal argument structure in its entirety as represented below.

$$(332) \quad \begin{array}{c} \text{' kitāb-at- } \langle (\text{arg}_1, \text{arg}_2) \rangle' \\ \quad \quad \quad \text{-o} \quad \quad \quad \text{-r} \\ \quad \quad \quad | \quad \quad \quad | \\ \quad \quad \quad \text{SUBJ} \quad \quad \quad \text{OBJ} \end{array}$$

Given that I have now established the main ingredients of my analysis, and I provide in what follows the c-structures and f-structures for MC A in SA.

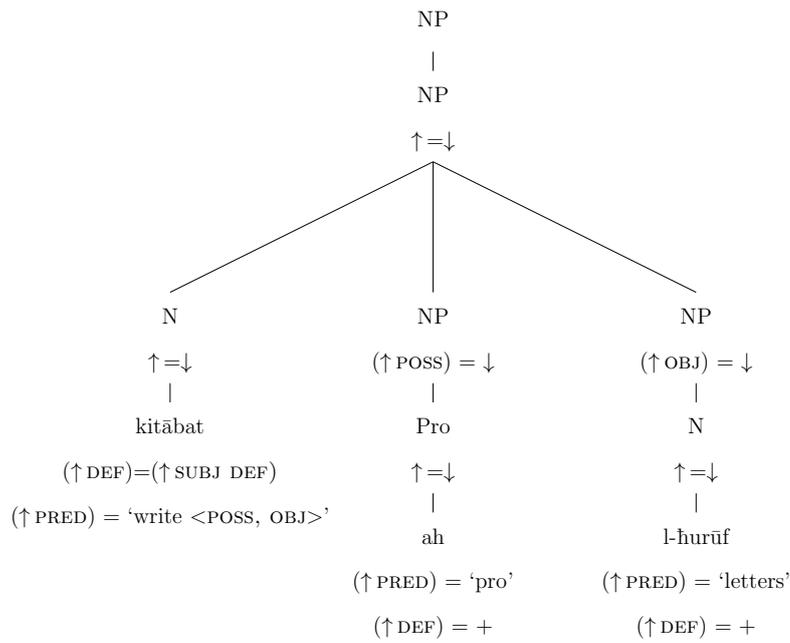
First, the analysis is applied to the maşdar CSC which contains an NP internal argument, i.e. the object. An example of the maşdar CSC with an NP internal argument is the one in (333), and receives the analysis in (334).

$$(333) \quad \text{kitābat-ah} \quad \quad \quad \text{l-ḥurūf}$$

$$\quad \quad \quad \text{write.MSD.SGF-3SGM.GEN DEF-letter.PLF}$$

his writing the letters

(334)



PRED	'WRITE<(↑ POSS) (↑ OBJ)>'										
GEND	F										
NUM	SG										
DEF	+										
POSS	<table style="border-collapse: collapse; border: 1px solid black;"> <tr> <td style="padding: 2px 5px;">PRED</td> <td style="padding: 2px 5px;">'PRO'</td> </tr> <tr> <td style="padding: 2px 5px;">CASE</td> <td style="padding: 2px 5px;">GEN</td> </tr> <tr> <td style="padding: 2px 5px;">GEND</td> <td style="padding: 2px 5px;">M</td> </tr> <tr> <td style="padding: 2px 5px;">NUM</td> <td style="padding: 2px 5px;">SG</td> </tr> <tr> <td style="padding: 2px 5px;">DEF</td> <td style="padding: 2px 5px;">+</td> </tr> </table>	PRED	'PRO'	CASE	GEN	GEND	M	NUM	SG	DEF	+
PRED	'PRO'										
CASE	GEN										
GEND	M										
NUM	SG										
DEF	+										
OBJ	<table style="border-collapse: collapse; border: 1px solid black;"> <tr> <td style="padding: 2px 5px;">PRED</td> <td style="padding: 2px 5px;">'LETTERS'</td> </tr> <tr> <td style="padding: 2px 5px;">GEND</td> <td style="padding: 2px 5px;">M</td> </tr> <tr> <td style="padding: 2px 5px;">NUM</td> <td style="padding: 2px 5px;">SG</td> </tr> <tr> <td style="padding: 2px 5px;">DEF</td> <td style="padding: 2px 5px;">+</td> </tr> </table>	PRED	'LETTERS'	GEND	M	NUM	SG	DEF	+		
PRED	'LETTERS'										
GEND	M										
NUM	SG										
DEF	+										

The above analysis is applied to our MC A illustrated in (335). It can be noted that this construction consists of a maşdar CSC with an internal argument as an NP, which is modified by an adverb. Example (335) will have the lexical entry, the c-structure and f-structure in (337).

- (335) **kitābat-ah** l-ḥurūf bi-ītqān
 write.MSD.SGF-3SGM.GEN DEF-letter.PLF with-perfection
 his writing the letters perfectly

$$(338) \quad \text{NP} \rightarrow \quad \text{N} \quad (\text{NP})$$

$$\uparrow = \downarrow \quad (\uparrow \text{POSS}) = \downarrow$$

$$(339) \quad \text{NP} \rightarrow \quad \text{NP} \quad \text{NP} \quad \text{NP}$$

$$\uparrow = \downarrow \quad (\uparrow \text{OBJ}) = \downarrow \quad (\uparrow \text{OBJ}\theta) = \downarrow$$

$$(340) \quad \text{NP} \rightarrow \quad \text{NP} \quad \text{XP}$$

$$\uparrow = \downarrow \quad \downarrow \in (\uparrow \text{ADJ})$$

As in MC A which is headed by a transitive maşdar, the definiteness acquirement of the CSC emerges from the lexical entry of the head noun. The maşdar head noun appears as a distinctive form with no definite markers and bearing the annotation $(\uparrow \text{DEF}) = (\uparrow \text{SUBJ DEF})$. This will force the maşdar to co-occur with the SUBJ, and the whole NP will inherit the definiteness from this SUBJ. Accordingly, we assume, following Börjars et al. (2015), that the ditransitive maşdar inherits the verbal argument structure, which contains double objects, in its entirety as represented below.

$$(341) \quad \text{'tawşıl-} < (\text{arg}_1, \text{arg}_2 \text{ arg}_3) >'$$

-o	-r	+o
SUBJ	OBJ	OBJ θ

So, the analysis of MC A headed by a ditransitive maşdar, such as the one in (342a), will follow straightforwardly from the above, with the addition of another object argument. In the f-structure, the first NP is represented as OBJ, and the second NP is represented as OBJ θ . The LFG analysis comprises the lexical entry of the ditransitive maşdar in (342b), c-structure and f-structure (342c-d).

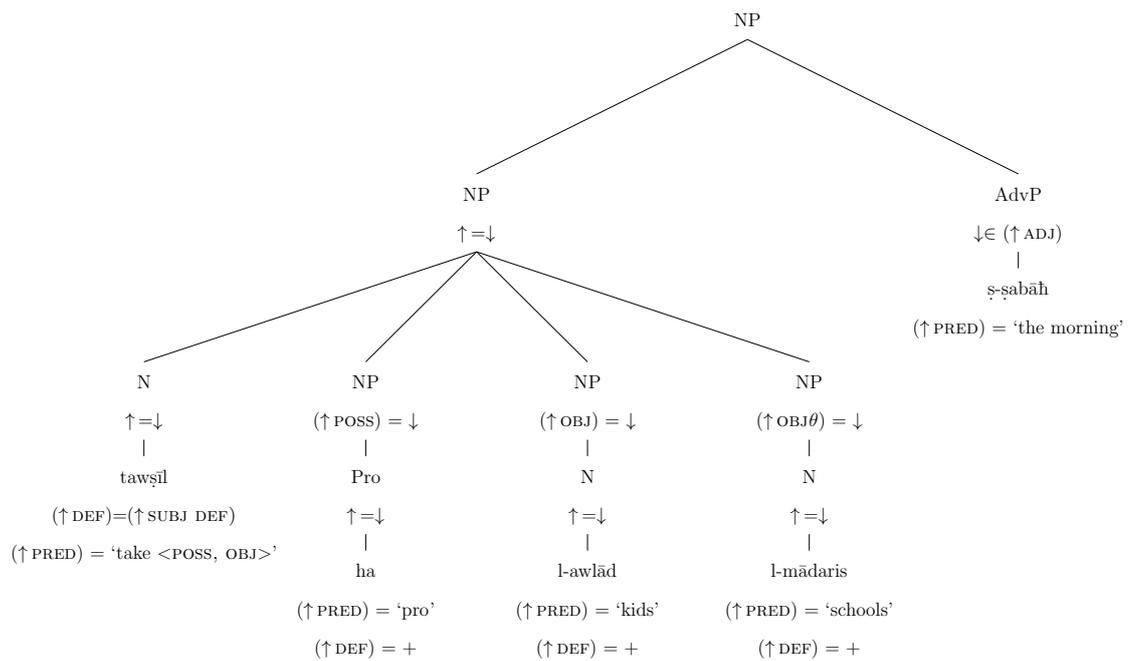
$$(342) \text{ a. } \textbf{tawşıl-ha} \quad \text{l-awlād} \quad \text{l-mādaris} \quad \text{ş-şabāh}$$

connect.MSD-3SGF.GEN DEF-boy.PLM DEF-school.PLM DEF-morning

his [the mother's] taking the kids to schools in the morning

- tawşil** N (↑ PRED) = 'take <(↑ SUBJ), (↑ OBJ), (OBJθ)>
 (↑ DEF) = +
 b. (↑ PERS) = 3
 (↑ NUM) = SG
 (↑ GEND) = M

c.



- (343) kitāb-at l-walad **lil-ḥurūf**
 write.MSD-SGF DEF-boy.SGM to-DEF-letter.PLF
 the boy's writing of the letters

In SA, MC B permits the maşdar to be modified by adjectives only as in (344).

- (344) kitāb-at l-walad **as-sarīfa** lil-ḥurūf
 write.MSD-SGF DEF-boy.SGM DEF-fast-SGF to-DEF-letter.PLF
 the boy's fast writing of the letters

In addition, the maşdar in MC B allows for another adjectival modifier which takes the form of a PP as in (345a-b).

- (345) a. kitāb-at l-walad as-sarīfa lil-ḥurūf
 write.MSD-SGF DEF-boy.SGM DEF-fast-SGF to-DEF-letter.PLF
bal-ingliz-iyya
 with-DEF-English-SGF
 the boy's fast writing of the letters in English
- b. tartīb l-bint l-as-sarīf lil-malābis
 organise.MSD.SGM DEF-bint.SGF DEF-fast-SGM to-DEF-clothes.PLF
ʔalā ḥasab l-alwān
 on according DEF-colour.PLF
 the girl's fast organising of the clothes according to colours

Furthermore, MC B does not permit modification by adverbs as in (346).

- (346)
- *kitābat l-walad as-sarīfa lil-ḥurūf bi-ītqān
 write.MSD-SGF DEF-boy.SGM DEF-fast-SGF to-DEF-letter.PLF with-perfection

Also, the maşdar does not inherit the argument structure of its corresponding verb. In other words, the PP internal argument is not an alternative inherited from the corresponding transitive verbal argument structure. In addition to the other nominal properties which include having the external distribution of NPs, forming a CSC with its possessive NP argument, selecting the possessive pronoun *-i*, and not an object pronoun, as a substitution of the full possessive NP, and the maşdar head is itself a noun form. The internal syntax of MC B in our dialect seems to be more nominal than MC A, and

shows a pure uniformly nominal properties.

The relation between the syntactic structure of the maşdar nominalisations in MC B and the morphological structure of the head can straightforwardly be accounted for by the universal generalisation in Haspelmath (1995) which states:

- In words derived by derivational word-class-changing morphology, the internal syntax of the base tends to be altered and assimilated to the internal syntax of primitive members of the derived word-class (p. 58).

Based on this generalisation, maşdar nominalisations in MC B are derived via ‘derivational word-class-changing morphology’, and the internal syntactic structure of the verbal stem has been changed to match the internal syntactic structure of the newly formed maşdar head noun. Given that, I argue that maşdar nominalisations in MC B should be treated as derived subtypes of the nominal lexical category.

The fully-nominal properties of MC B are summarised in Table (5.2).

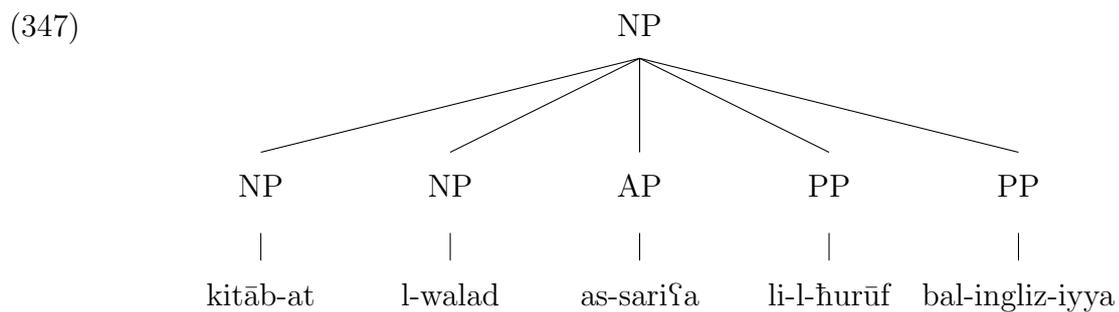
Property	Nominal Properties	Verbal Properties
Distribution of NPs	*	
The head being a noun itself	*	
Heading a CSC	*	
Admitting possessive pronouns	*	
Having no ASPECT value	*	
Having no TENSE value	*	
Selecting prepositional objects	*	
No inherited VP-like constituents	*	
Allowing adjectival modifiers	*	

Table 5.2: Summary of the nominal properties of MC B in SA

On the basis of these purely nominal properties of the MC B in SA, I argue that the maşdar in this construction must be analysed as a non-mixed category, and therefore can be plausibly analysed as a normal noun, on the basis of both the external distribution and the nominal internal syntax and morphosyntax criteria. In this case, a uniform categorical analysis is undoubtedly preferable.

5.5.2 LFG analysis

In LFG, there are two possible analyses of MC B in SA: flat vs. hierarchical c-structure as represented below.



syntax in SA. Additionally, it is definitely more nominal than MC A and its counterpart in MSA. Based on this, I propose that MC B in SA shows exclusively uniformly nominal external and internal syntax that do not require a mixed-category analysis. Accordingly, such maşdar phrases will be analysed as NPs which are headed by maşdar Ns, as we will see below.

This assumption is also supported by our conclusions obtained from the universal generalisation proposed in Haspelmath (1995). We found a strong correlation between the syntactic structure of the maşdar nominalisation and the morphological structure of the maşdar head in SA, which is based on Haspelmath (1995)'s generalisation given below.

- In words derived by derivational word-class-changing morphology, the internal syntax of the base tends to be altered and assimilated to the internal syntax of primitive members of the derived word-class (p. 58).

Based on this generalisation, maşdar nominalisations in MC B are derived via 'derivational word-class-changing morphology' due to the fact that the internal syntactic structure of maşdar nominalisations deviates from the internal syntactic structure of their verbal base. On this basis, I argue that maşdar nominalisations in SA should be treated as pure NPs due to the nominal characteristics they entertain. Based on this view, maşdar nominalisations should be treated as regular NPs since they show pure nominal properties. Given these assumptions, I argue that MC B is less verbal and more nominal, and therefore maşdar nominalisations in such constructions should be treated as normal nouns.

The more nominal nature of MC B leaves us with three main issues. The **first** issue concerns having an internal PP argument, instead of an NP internal argument. The **second** issue concerns the representation of the external argument, which is the subject of the maşdar, as it is realised as an NP that occupies the POSS position bearing a possessor interpretation, just as MC A. The **third** one is that the subject NP, the external argument, in MC B is also optional, as illustrated in the data in (349).

- (349) a. **kitāb-at** l-walad as-sarīʿa lil-ḥurūf
 write.MSD-SGF DEF-boy.SGM DEF-fast-SGF to-DEF-letter.PLF
 bal-ingliz-iyya
 with-DEF-English-SGF
 the boy's fast writing of the letters in English
- b. **kitābat-ah** as-sarīʿa lil-ḥurūf
 write.MSD.SGF-3SGM.GEN DEF-fast-SGF to-DEF-letter.PLF
 bal-ingliz-iyya
 with-DEF-English-SGF
 his fast writing of the letters in English

In regard with the first problem, following Börjars et al. (2015), I adopt a nominal functional structure where the second argument is represented as an oblique. Thus, we can have the mapping in (350) where the second argument is represented as [-o], and mapped to [OBL], instead of an [OBJ]. Accordingly, the first problem is solved.

- (350) 'kitābat- <(arg₁, arg₂)>'
- | | |
|------|-----|
| -o | -o |
| | |
| SUBJ | OBL |

With respect to the second problem which concerns the representation of the subject of the maşdar which appears in a position usually reserved for possessors. To deal with such duplicity of the subject argument, we assume that the external argument of the maşdar is a POSS based on the fact that the full possessive NP argument can be replaced by a possessive clitic pronoun, and accordingly it will be represented as PRO.

With respect to the third problem which concerns the optionality of the possessive NP, the first argument of the maşdar must be interpreted as a possessive pronominal via anaphoric control as illustrated in (351).

- (351) **kitābat-ah** as-sarīʿa lil-ḥurūf bal-ingliz-iyya
 write.MSD.SGF-3SGM.GEN DEF-fast-SGF to-DEF-letter.PLF with-DEF-English-SGF
- his fast writing of the letters in English

Based on these purely nominal properties, I argue that the maşdar in MC B is unambiguously a non-mixed category, and therefore does not require a mixed analysis within LFG. Accordingly, I adopt a similar analysis to Börjars et al. (2015) where the maşdar is treated as a noun from top to bottom reflecting the nominal nature of this construction. By virtue of a uniform nominal analysis, the core of MC B which consists of the maşdar and an immediately following NP are licensed by rule (352). The PP argument is licensed by rule (353), and adjective modifiers are licensed by the adjunct rule in (354).

$$(352) \quad \text{NP} \rightarrow \quad \text{N} \quad (\text{NP})$$

$$\quad \quad \quad \uparrow = \downarrow \quad (\uparrow \text{POSS}) = \downarrow$$

$$(353) \quad \text{NP} \rightarrow \quad \text{NP} \quad \text{PP}$$

$$\quad \quad \quad \uparrow = \downarrow \quad (\uparrow \text{OBL}) = \downarrow$$

$$(354) \quad \text{NP} \rightarrow \quad \text{NP} \quad \text{XP}$$

$$\quad \quad \quad \uparrow = \downarrow \quad \downarrow \in (\uparrow \text{ADJ})$$

According to rule (352), the external argument is a POSS, and it is **optional** since it can be a full NP or a possessive clitic pronoun. Rule (353) shows that the internal PP argument is assumed as OBL. Rule (354) indicates that the adjectival modifiers are represented as ADJ in the f-structure.

Given the basics of our analysis, the maşdar structure in MC B can be treated in the following way. In the c-structure, the two elements of the maşdar CSC appear inseparable, and the AP appears immediately adjacent to the CSC, i.e. directly following the possessive NP, as part of a higher NP. The PP internal argument appears after the AP dominated by a higher NP. In the case of having another adjectival modifier, it appears as a sister of the higher NP, and both of them are dominated by the highest NP. By virtue of this analysis, all the core arguments of the maşdar are accommodated.

According to this analysis, MC B which contains an internal PP argument is analysed as a noun from top to bottom. Thus, example (355) has the analysis in (356-357).

5.6 Conclusion

In this chapter, I have developed an LFG analysis for the basic maṣḍar constructions in vernacular Arabic on the basis of data from SA. I have discussed the basic maṣḍar constructions: MC A and MC B. I have first discussed the maṣḍar nominalisations in normal constructions where the maṣḍar appears as a subject, object or a prepositional object. In such constructions, there is no evidence for a syntactic VP inside maṣḍar nominalisations since there are no VP-style constituents. Additionally, the internal structure of the verbal base of the nominalised maṣḍar in such constructions is changed to assimilate to the internal structure of the derived maṣḍar noun. Based on Haspelmath (1995) generalisation, I have reached a conclusion that the maṣḍar is derived via ‘derivational word-class-changing morphology’ due to the fact that the internal syntactic structure of maṣḍar nominalisations deviates from the internal syntactic structure of their verbal base. Therefore, I have argued that the maṣḍar in such constructions should be treated as pure NPs based on their purely nominal characteristics. Then, I have discussed the maṣḍar nominalisations in complex constructions. I have shown that maṣḍar nominalisations in MC A is a truly mixed construction based on its mixed properties. Given that there is a mismatch between the internal syntax of maṣḍar nominalisations in MCA and their external syntax, I have argued that maṣḍar nominalisations in MC A are derived through ‘inflectional word-class changing morphology’ since the internal syntactic structure of the corresponding verbal stem has not been changed. To deal with such mixed nature of MC A, I have suggested a consistent categorially uniform analysis, based on the proposal for maṣḍar constructions in MSA suggested by Börjars et al. (2015). In addition, I have discussed MC B and shown that this construction, in contrast to MC A, is unambiguously a nominal construction which display full nominal properties, and thus I argued that the maṣḍar nominalisation in this construction is a pure noun that does not require a *head-sharing* analysis. Thus, it was analysed as a normal noun. Based on Haspelmath (1995) generalisation, I have shown that the internal structure of the verbal base of the nominalised maṣḍar in MC B is changed to assimilate to the internal structure of the derived maṣḍar noun. Accordingly, I have argued that maṣḍar nominalisations in MC B

are derived via ‘derivational word-class-changing morphology’, and hence they should be treaded as derived non-finite subtypes of the nominal lexical category. Finally, the data has shown that the mixed MC A resembles its counterpart in MSA. However, the data has also revealed that MC B is different from its counterpart in MSA since it appears to be purely nominal in SA.

Chapter 6

Conclusion

6.1 Introduction

In this work, I have provided a description of a range of different aspects of the grammar of Southern Arabic (SA). In addition, I have provided a description of the basic maşdar constructions in SA. Furthermore, I have developed analyses of the basic noun phrases (NPs) and the basic maşdar constructions in SA within the Lexical Functional Grammar (LFG) framework. The present study provides a concise reference of the grammar of one of the most neglected dialects in Arabic which is the Southern Arabic (SA) spoken in Bisha. There is no source available in the literature which describes or analyses the grammar of this understudied dialect. Additionally, this study has discussed the main mixed category maşdar the ‘source’ in two special constructions in SA: Maşdar construction A (MC A) and Maşdar construction B (MC B). Such constructions in Modern Standard Arabic (MSA) have received some attention in the literature. These constructions alongside other mixed category constructions in different languages are currently the subject of ongoing study in the LFG research. However, the similar constructions in SA have been ignored in the literature. Therefore, the findings of the study make a contribution both to the description of the maşdar, and to the description of mixed categories in the languages of the world. In addition, the study makes a contribution to the LFG through the analyses undertaken in Chapter 2 and 5. Moreover, it makes a contribution to the linguistic literature of Arabic dialects.

This final chapter provides the readers with a summary of the main findings about SA data, and the key contributions of this study made through the description of NPs and maṣdar constructions in SA and their LFG analyses. In addition, the chapter suggests some areas that are not covered in the present study due to time and space restrictions, which represent potential directions for further research in the future.

6.2 Summary and notable findings

In chapter 2, as a fundamental background to the study of maṣdar constructions in SA, I have discussed some key aspects of the SA grammar, and provided a detailed description of verbal and verbless sentences in SA. This includes: word order, subject-verb agreement, verbal inflection and simple tenses, compound tenses, pseudo-verbs, modal forms, verbless sentence structure, negation system, and the different types of noun phrases in SA covering simple NPs, Construct state construction (CSCs), Free state construction (FSCs), pronominal forms, and the main types of modifiers of NP in SA covering demonstratives, adjectives, numerals and relative clauses. A notable finding from this chapter is that SA makes use of the nominal forms **um** ‘mother’ and **ʔabū/bū** ‘father’. Such nouns are used as prepositions which are part of PPs which are used to modify NPs in SA. In terms of LFG analysis, I have provided an LFG account of the basic word orders in SA clauses. Following Bresnan (2001), I argue that the SUBJ can appear either in the specifier position within the IP, giving the SVO word order, or it can appear as a constituent under an S in the IP, producing the VSO word order. In addition, I showed that in SA verbal sentences that contain only the auxiliary as the main verb, it will always appear in the I position in both SVO and VSO. When the auxiliary verb and the main verb are both present in the sentence, the auxiliary occupies the I position, and the main verb is placed in the V position in both SVO and VSO.

Following Dalrymple et al. (2004), I have made use of the ε symbol to represent copulas in the phrase structure rules proposed for predicational verbless sentences in SA, where we

have the copula as an empty string in the c-structure. I found that pronominal copulas in the predicative position in equational sentences in SA and Arabic in general are of mixed nature, functionally verbal and categorially nominal. I have assumed that the pronominal copula is the main predicate of the sentence which takes two arguments: subject and object. The pronominal copula appears under I, and it can be replaced by *kān* to indicate the past tense. Another remarkable finding is that participles in predicational sentences in SA and Arabic in general are of mixed nature, functionally verbal and categorially adjectival and therefore I assumed two possible analyses. In the first analysis, I assumed that both active and passive participles are verbs, and therefore placed them in the I position. However, in the second analysis, I assumed that both active and passive participles are adjectives and hence placed them in the A position. Under these analyses, the participles are the main predicates that takes a subject and object.

In terms of f-structures, I assumed a single tier f-structure analysis for predicational and a double tier f-structure analysis for equational sentences, similar to Dalrymple et al. (2004) and Nordlinger and Sadler (2007). A remarkable finding is that predicational sentences which contain adjectives as a non-verbal predicate in SA are similar to Japanese adjectives in a predicate position. Accordingly, in parallelism with Dalrymple et al. (2004), I assumed a single tier f-structure analysis for adjectival predicational sentences in SA because the presence of the copular is optional in such sentences. For predicational sentences with no copulas included, the non-verbal predicates are treated as the main predicates of the sentence, and the PRESENT TENSE is represented as a FEATURE VALUE in the f-structure. For equational sentences, with copulas included, the pronominal copula is treated as a fully projecting copula appearing in the c-structure under an I node and expressing the PRESENT TENSE. In the f-structure, the copula contributes a predicate, and the PRESENT TENSE is indicated by the TENSE VALUE. The analysis adopted for predicational and equational sentences does not make use of the open XCOMP or the closed PREDLINK analysis as proposed by Dalrymple et al. (2004) for some languages, and suggested by Camilleri and Sadler (2018b) for copular sentences in Arabic.

The discussion in Chapter 3 has shown that mixed categories constructions in many languages are problematic and controversial. Therefore, different proposals have been suggested by many researchers. Lees (1960) has proposed the *Transformational Hypothesis* which assumes that all nominals are deverbal nouns that are derived transformationally from their corresponding verbs. However, Chomsky (1970) has proposed the *Lexicalist Hypothesis*, and classified nominals in English into three main types: the gerundive nominals, the derived nominals, and the mixed nominals. Abney (1987) has proposed his *DP Hypothesis* and classified English gerundive nominals into three types: nominal gerundive construction, verbal gerundive construction, and mixed gerundive construction. later, Grimshaw (1990), adopting the *Lexicalist Hypothesis*, discussed derived nominalisations in English, and argued that they do not form a homogenous class. In addition, Grimshaw argued that the word formation of nominalisations and the event structure are encoded in the lexicon, and assumed a correlation between the event structure inside such nominalisations and the obligatory realisation of argument structure, and based on this correlation, she has distinguished four types of derived nominalisations: CENs, SENs, RNs, and ambiguous nominals. However, Borer (2003) assumed that the word formation of nominalisations and the event structure are encoded in the syntax, rather than in the lexicon. Borer classified nominalisations into two main classes: Argument Supporting (AS)-nominals and Referential (R)-nominals. The most notable finding of this chapter is that simple event nominals and result nominals can pluralise and take arguments in different languages of the world including SA, which is in contrast with Grimshaw (1990)'s assumptions.

In addition, the discussion in Chapter 3 has shown that different approaches to mixed categories in Semitic Languages have been proposed. Siloni (1997) favours a lexical approach to nominals in Semitic languages such as Hebrew and Arabic over the derivational one. According to her, nominals are basically nouns, like any regular noun ignoring the fact that some nominals refer to processes. However, Hazout(1990, 1995) rejects the

lexical approach to nominals in Semitic languages, and argued that nominals in these languages are basically verbs which select their arguments and then go through a number of movement processes taking the shape of phases in order to change their word category from a verb into a noun. For Arabic, Fassi Fehri (1993) provided a Minimalist analysis of *maṣḍar* in MSA, and differentiated between two types of MSA *maṣḍars*: a) *maṣḍar* with arguments, also referred to as process or action nominals, and b) *maṣḍar* with no arguments, i.e. result nominals. He proposed that the former are formed in the syntax, whereas the latter are formed in the lexicon. Kremers (2003) proposed a modified version of Fassi Fehri (1993)'s analysis for the Arabic *maṣḍar*, and argued that the Arabic *maṣḍar* is very similar to English gerunds. Additionally, he claimed that a *maṣḍar* which takes two arguments and selects an accusative object as its internal argument involves a mixture of a DP structure, and a sentence structure.

Chapter 3 has investigated the various approaches suggested to deal with mixed categories from the perspective of different theories that heavily depend upon movement. It has been found that all the minimalist analyses proposed for the Arabic *maṣḍar* suffer from some problems, e.g. some movements are not clear and justified. Therefore, I have reached a conclusion that we are in need of a more flexible theory that does not depend on any sort of movements, and hence I chose LFG to be the theory that this study adopts to analyse the controversial *maṣḍar* constructions in SA.

Chapter 4 has provided the essence for our analysis for SA *maṣḍar* constructions within LFG. In other words, it has provided a review of the LFG literature that has been exploited to analyse the *maṣḍar* constructions in SA. It has been found that the standard LFG approach to mixed categories is the 'head-sharing' approach, developed by Bresnan (1997), which involves a verbal projection embedded within a nominal projection. It has been observed that mixed categories do exist in different languages such as Italian, German, Dagaare, Gikūyū, and Japanese. It was found that the Italian infinitive noun, the Gikūyū agentive nominalisation, the German adjectival participle, and the Japanese ver-

balised nominal are all examples of mixed category constructions which combine verbal and nominal properties or verbal and adjectival ones. Bresnan (1997) has analysed these constructions within ‘head-sharing theory’ in LFG which reflects the mixed properties of such constructions. In addition, the discussion in this chapter has shown that there are two mixed constructions in Hebrew headed by an action nominal: (i) the accusative action nominal construction (ii) the non-accusative action nominal construction. It has been noted that Falk (2001b) has analysed the accusative construction within ‘head-sharing theory’ in LFG. It has also been observed that action nominal constructions in Hebrew resemble in some way the *maṣḍar* constructions in Arabic. A notable finding from the review is that the accusative action nominal construction in Hebrew has been found to resemble its counterpart in SA, however, the non-accusative action nominal construction has been found to be different from its counterpart in SA, the PP *maṣḍar* construction. The non-accusative action nominal construction in Hebrew uses the *by-phrase* to express the subject argument.

In addition, Chapter 4 has provided a review of the previous LFG analyses of mixed *maṣḍar* constructions in MSA. Al-Sharif (2014) has provided a ‘head-sharing’ analysis for the accusative *maṣḍar* construction in MSA. However, the genitive *maṣḍar* construction has not been considered by Al-Sharif (2014). A notable finding from the review of Al-Sharif (2014)’s data is that the accusative *maṣḍar* construction in MSA resembles in many ways its counterpart in SA. Börjars et al. (2015) have taken the external syntax as a sufficient valid criterion for categorisation, and therefore analysed both the accusative *maṣḍar* construction and the genitive *maṣḍar* construction in MSA, and they have provided a uniform analysis analysing the *maṣḍar* phrase as nominal from top to bottom, with no verbal projection. Another analysis of *maṣḍar* constructions in MSA was proposed by Lowe (2019). In contrast to Börjars et al. (2015), Lowe (2019) has taken the internal syntax as a sufficient valid criterion for categorisation, and therefore suggested a mixed projection analysis for both the accusative *maṣḍar* construction and the genitive *maṣḍar* construction. Under his analysis, a verbal projection dominating the nominal projection

was assumed. The review of this analysis has revealed that there are some issues with such an analysis. The first issue concerns the with the assumption of an empty unexpressed verbal head in the position of the lexical head of the VP. Such an assumption is not available in the usual rules of LFG. Additionally, the potential for the presence of an adverbial modifier after the empty verbal head has not been considered. Furthermore, Lowe's analysis has not accounted for the double functions of the subject argument of the *maṣḍar* which appears in a position usually reserved for possessors. Based on the short list of problems it reveals, Börjars et al. (2015) analysis seems to be the basis chosen for our analysis of *maṣḍar* constructions in SA

Chapter 5 is concerned exclusively with *maṣḍar* constructions in SA, hitherto completely neglected in Arabic dialects. Investigating the morphological and syntactic properties of *maṣḍar* in SA, it was found that they combine both verbal and nominal properties which are similar to those of *maṣḍar* in MSA. The verbal properties include inheriting the argument-structure from their related verbs. The nominal properties include showing the distribution of nouns, taking the definite article *l-* 'the', inflecting for plural forms, both broken and sound. A further notable finding is that *maṣḍar* in SA have more nominal properties than their counterparts in MSA. A notable finding is that *maṣḍar* in SA cannot be objects of verbs that semantically entail a verbal complement. However, SA uses the verb-form instead of the *maṣḍar* in this case. This finding is an indication that *maṣḍar* in SA have more nominal properties than those in MSA illustrating a difference between the standard language and the dialect.

Another nominal property is that *maṣḍar* can stand alone with no arguments of their own, just like any other non-event nominals, and can be modified by a relative clause. Another remarkable finding is that *maṣḍar* in SA can also be modified by prepositional phrases (PPs) just like normal nouns. Another nominal property is that *maṣḍar* can form CSCs and FSCs. The data obtained from SA revealed that *maṣḍar* nominalisations can be subjects, objects or prepositional objects, just like regular NPs. Based on Haspelmath (1995)

generalisation, it was found that *maşdar* nominalisations in such normal constructions are derived via derivational word-class-changing morphology since their internal syntax deviates from the internal syntax of their verbal base. Accordingly, I have argued that *maşdar* nominalisations that appear in usual nominal structural positions such as subjects, objects, or prepositional objects should be treated as regular NPs based on their nominal properties.

I have also investigated *maşdar* nominalisations in complex constructions in SA. It was found that *maşdar* construction A (MC A) is a truly mixed construction since it displays both verbal and nominal constructions. It was found that *maşdar* nominalisations in MC A display a mismatch between their internal syntax and external syntax. Based on Haspelmath (1995) generalisation, *maşdar* nominalisations in MC A are derived by ‘inflectional word-class-changing morphology’ since the internal syntactic structure of the corresponding verbal source is kept. Accordingly, following Lowe (2016), I have argued MC A in our dialect, SA, is truly mixed based on the fact that its internal syntax is mixed. Finally, I have examined MC B where the *maşdar* selects a prepositional object. The data obtained from SA showed that this construction display pure nominal characteristics. The nominal characteristics that were found are having the distribution of NPs, the *maşdar* itself is a nominal form heading a CSC, selecting a semantic object which takes the form of a prepositional complement, allowing only AP and PP adjectival modifiers, having a distinct argument-structure from that of its corresponding verb, and the *maşdar* head can be attached to a possessive pronominal pronoun that indicates the semantic subject. It was also found that *maşdar* nominalisations in MC B are derived via ‘derivational word-class-changing morphology’, and the internal syntactic structure of the verbal source has changed to match the internal syntactic structure of the *maşdar* head. Built on this, I have argued that *maşdar* nominalisations in MC B should be treated as derived non-finite subtypes of the nominal lexical category. In terms of LFG analysis, I have argued that MC A is a truly mixed construction based on its mixed characteristics. I have suggested a consistent categorially uniform analysis for both MC A and MC B, where the *maşdar*

is treated as a noun from top to bottom. Our analysis shares the basic assumptions proposed by Börjars et al. (2015), however, the current analysis is more consistent since the external argument was treated as POSS, solving the problem of the dual functions of the external argument. I have argued that assuming that the external argument is POSS is more consistent with *maşdar* constructions. I have concluded that MC A is a truly mixed construction that resembles its counterpart in MSA. However, I found that MC B displays purely nominal characteristics and allows for more than one adjectival modifiers, and hence it can be said that it is different from its counterpart in MSA. This remarkable finding contradicts what has been proposed by Börjars et al. (2015) and adopted by Lowe (2019) for the PP-*maşdar* construction in MSA.

6.3 Further research

With that fact that only basic stuff of the grammar of SA discussed in this work, it is hard to cover all the related issues due to time and space restrictions. However, two *maşdar* constructions have been discussed, and only one *maşdar* form has been included in the data cited in this study, there are plenty of areas remain in need of further research. These include the various aspects of the grammar of SA, where the descriptive facts are not fully explored, need deep future investigation . In addition, other possible *maşdar* constructions headed by different forms of *maşdar* in SA are not fully explored, and indeed in Arabic more generally. Furthermore, there are plenty of the grammatical stuff in SA that are not analysed within LFG or even in any other syntactic theory. Therefore, a massive room is left for further investigation.

The analysis of cases where the head is a ditransitive *maşdar* which has two bare object arguments is discussed in the current study. However, there are many other possible ditransitive *maşdar* constructions which are not fully explored or even not touched in the current study.

For example, there is a remaining issue concerning constructions where a ditransitive

maṣḍar has two PP objects (364).

- (364) taṣḍīr duwal l-ḡalīḡ lil-bitarul li-duwal
 export.MSD.SGM country.PLF DEF-gulf.SGM to-DEF-petrol to-DEF-country.PLF
 l-maḡrib l-ḡarabi
 DEF-sunset.SGM DEF-Arabic.SGM
 the Gulf countries' exportation of petrol to the Arabic West countries

Another remaining issue concerns constructions where the subject (POSS) argument is the sole argument of the maṣḍar, and in some cases it is another maṣḍar as *muḡadl* in (365a)¹, or the subject argument is absent (365b).

- (365) a. artifaḡ mūḡadl l-ḡiṣāb-āt bal-fayrus
 rise.MSD.SGM rate.MSD.SGM DEF-infection.PLF with-DEF-virus
 increasing in the rates of infections with the virus
- b. tawzīḡ ṭ-ṭulāb ḡalā l-fuṣūl ḡalā ḡasab
 distribute.MSD.SGM DEF-student.PLM on DEF-class.PLF on according
 l-ḡumr
 DEF-age.SGM
 classifying the students in classes according to age

Additionally, there is a remaining issue regarding coordinated maṣḍar constructions such as (366).

- (366) rafaz d-duwal l-ḡarabiyy-a lil-ḡ-ḡarrabāt l-ḡawiyy-a
 reject.MSD.SGM DEF-country.PLF DEF-Arabic-SGF to-DEF-strike-PLF DEF-air-SGF
 l-isrāyl-iyya wa gutil l-madanīyn fī ḡaza
 Israeli-SGF and killing.SGM DEF-civil-PLM in Gaza
 rejecting of the Arabic countries to the air strikes and the killing of civilians in Gaza

Furthermore, there is a remaining issue concerning a more complex construction where the maṣḍar head is prefixed with the definite article *l-*, and does **not** appear in a CSC. Additionally, the subject argument appears as a PP, and the two object arguments are PPs as well (367a). Also, negative maṣḍar constructions headed by *ḡadam*, which is itself is a maṣḍar, are in need of attention, as in (367b).

¹The second maṣḍar, which is the subject argument of the main maṣḍar, is a *Mīm* maṣḍar.

- (367) a. *l-atifag bayn d-duwal l-ʕarabiyy-a ʕalā*
 DEF-agree.MSD.SGM between DEF-country.PLF DEF-Arabic-SGF on
muʕahad-at salām maʕa isrāyīl
 treaty-SGF peace with Israel
 the agreement between the Arabic countries regarding the peace treaty with
 Israel
- b. *ʕadam ihtimām min l-wālidān bal-awlād*
 lack.NEG.MSD.SGM interest.MSD.SGM from DEF-parent.DUAL with-DEF-kid.PL
 the parents not taking care of the kids

In addition, another area that the current work has discussed very briefly is the semantics of the syntactic aspects of SA grammar described in the current thesis. Since our focus of interest was on syntax, where I paid considerable attention to the syntactic aspects of the SA facts, and to the external and internal syntax of *maṣḍar*, but I did not pay equal attention to the semantics of all the stuff and *maṣḍar* described in this project. Fassi-Fehri (2005) and Madkhali (2017) have discussed some semantic aspects of *maṣḍars* in MSA. However, this topic has been entirely ignored in all the Arabic dialects. Therefore, semantic studies concerned with the meaning of *maṣḍar* in Arabic dialects are required. Also, the semantic-syntactic criteria suggested by Grimshaw (1990) for derived nominals in English can be applied to *maṣḍar* taken into consideration the differences between the two languages in terms of structure. Examples of complex event *maṣḍar*, simple event *maṣḍar* and result *maṣḍar* are given in (368) below.

- (368) a. **kitab-at** *l-bint li-l-wağib muhimm-a*
 write.MSD.SGF DEF-girl to-DEF-assignment important-SGF
 It is important for the girl to write the assignment.
- b. **l-axtibar** *kan ʕalā ṭ-ṭawila*
 DEF-analyse.MSD.SGM was.PFV.SGM on DEF-table.SGF
 The test/analysis was on the table.
- c. **l-ħafil** *kan giṣēr*
 DEF-event.MSD.SGM was.PFV.SGM short.SGM
 The event was short.

Additionally, as we have seen in Chapter 3 that Grimshaw (1990) has mentioned a fourth type of nominals which are ambiguous because they can have more than one reading. Such nominals do exist in SA. Consider the following data in (369).

- (369) a. **tawgēf** l-mustağer l-ḡagad mūhim
 sign.MSD.SGM DEF-tenant.SGM DEF-contract.SGM important.SGM
 The tenant's signing the contract is important. (complex event reading)
- b. **t-tawgēf** aḡd wagat qiṣēr
 DEF-sign.MSD.SGM take.PFV3.SGM time.SGM short.SGM
 The signing (process) took a short time. (simple event reading)
- c. ḡut **tawgēf-ak** taḡt
 put.IMPV2.SGM sign.MSD.SGM-2SGM.GEN under
 Put your signature at the bottom. (result reading)

In addition, another potential mixed category in Arabic are participles which were discussed briefly in the present work. Active and passive participles are mixed categories which combine both verbal and nominal properties. These mixed properties are not fully explored here. Thus, this type of mixed category constructions remain in need of future elaborate research both in MSA and the dialects. Examples from SA of such constructions are given in (370) below.

- (370) a. l-walad wāgaf ḡalā l-kursī
 DEF-boy.SGM stand.ACT.PTCP.SGM on DEF-chair.SGM
 The boy is standing on the chair.
- b. l-kitāb ma-ktūb bil-almāni
 DEF-book.SGM PASS.PTCP-write.SGM with.DEF-German
 The book is written in German.

Finally, an interesting area that in need of attention and which I have not touched on at all is the negation of maṣḍar generally and the widely used negative coordinated maṣḍar constructions in particular. Examples from SA are given in (371) below.

- (371) a. *mū/māhu/lā ʕaib walā ḥarām*
 not.NEG shame.MSD.SGM and-not.CONJ.NEG forbid.MSD.SGM

literal: neither a shame nor forbidding

intended: neither shameful nor forbidden

- b. *lā ṣalāh walā ʕibādūh*
 not.NEG pray.MSD.SGF and-not.CONJ.NEG worship.MSD.SGF

literal: neither praying nor worshipping

intended: neither making a prayer nor worship

- c. *lā qirā-ah walā kitāb-ah*
 not.NEG reading.MSD.SGF and-not.CONJ.NEG writing.MSD.SGF

literal: neither reading nor writing

intended: neither doing or knowing reading nor writing

Such constructions and other possible constructions are worth to be investigated and analysed in the future.

Notwithstanding the limitations of the current study and the areas that are in need of future further research, I hope that this dissertation has placed SA facts in the realm of linguistic literature, and has widened the loop of research to include mixed category constructions in the Arabic dialects represented here by SA data. For sure SA has been eliminated from the list of undocumented dialects, and thus it cannot be said that it is neglected any more.

6.4 Final remarks

The type of linguistic characterisation that is achieved in this work which covers various aspects of the SA grammar has not to my knowledge previously been carried out in the dialect under investigation. Additionally, the type of linguistic characterisation that is achieved in the current work for the basic maṣḍar constructions has not to my knowledge previously been carried out in all the Arabic dialects.

The task undertaken in the present work has aimed to provide a concise reference of the neglected dialect, SA, and to provide a linguistic characterisation and LFG analysis of maṣdar constructions, which despite of its frequency in both MSA and the dialects, have hitherto been understudied in the Arabic dialect literature, namely maṣdar constructions. I believe the present study has achieved its objectives and that it represents a contribution to the Arabic dialect literature specifically, and to the Arabic and cross-linguistically literature on mixed categories in general.

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