The Copula in Arabic: Description and Analysis

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Dedication

To the memory of my father, Samir Alotaibi (1939-1991)

(may Allah have mercy on his soul)

Acknowledgement

First and foremost, I have to praise Allah for giving me the opportunity to study here at Essex University and for giving me the strength to accomplish this thesis.

My thanks go to my supervisors: Prof Bob Borsley and Dr Doug Arnold for their help and guidance in both academic and non-academic matters. In fact, without them this thesis would not have been completed as it looks now. I would also like to thank my Supervisory Board chairs: Dr Philip Hofmeister, Dr Vineeta Chand and Dr Wyn Johnson for their kindness and advice. Thanks also go to the examiners of my thesis, Prof Louisa Sadler and Prof Ronnie Cann. I am essentially thankful for Prof Turki Alotaibi, Prof Solaiman Aloyuni, Dr Ibrahim Allahim and Dr Solaiman Alzumea for checking part of this thesis' data.

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Abstract

This thesis provides a description and analysis of the copula in Arabic. More precisely, it concerns the copula in Modern Standard Arabic (MSA). First, the thesis describes the copula syntactically. This includes defining the copula in Arabic, stating strategies used to form copular sentences, indicating possible complements of the copula and clarifying contexts in which the copula is absent. Second, the thesis classifies copular sentences in MSA into four types: equational sentences, predicational sentences, specificational sentences and identificational sentences. However, it concludes that equationals and predicationals are the basic copular sentence types in MSA. Third, the present study analyses the overt copula in MSA syntactically within the Head-Driven Phrase Structure Grammar (HPSG) framework. With regard to the semantic contribution of the copula, the thesis shows that MSA has two copulas: a copula of identity and a copula of predication. The former licenses equational sentences, while the latter licenses predicational sentences. Fourth, within HPSG this study analyses verbless sentences in MSA. It argues that there is a null copula in verbless sentences. It also argues that there are two types of the null copula: an equative null copula and a predicative null copula. Fifth, as there is a verbal element in verbless sentences and sentences with an overt copula, the thesis provides a unified account for the copula in MSA by postulating a system of types and constraints. Essentially, the last four points represent the thesis' original contribution to knowledge.

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Transliteration Symbols

أ	ʔ	(glottal plosive)
ب	b	(voiced bilabial stop)
ت	t	(voiceless dental stop)
ث	θ	(voiceless inter-dental fricative)
ج	j	(voiced palatal affricate)
ح	ħ	(voiceless pharyngeal fricative)
خ	x	(voiceless velar fricative)
د	d	(voiced dental stop)
ذ	ð	(voiced inter-dental fricative)
ر	r	(dental trill)
ز	z	(voiced dental fricative)
س	s	(voiceless dental fricative)
ش	š	(voiceless palatal fricative)
ص	S	(voiceless emphatic dental fricative)
ض	D	(voiced emphatic dental stop)
ط	T	(voiceless emphatic dental stop)

ظ	ðˤ	(voiced emphatic inter-dental fricative)
ع	ʕ	(voiced pharyngeal fricative)
غ	ġ	(voiced velar fricative)
ف	f	(voiced labio-dental fricative)
ق	q	(voiceless uvular stop)
ك	k	(voiceless velar stop)
ل	l	(lateral dental)
م	m	(bilabial nasal)
ن	n	(dental nasal)
هـ	h	(voiceless glottal fricative)
و	w	(bilabial glide)
ي	y	(palatal glide)

Vowels:

a	(short central unrounded vowel)
aa	(long low central unrounded vowel)
i	(short high front unrounded vowel)
ii	(long high front unrounded vowel)
u	(short high back rounded vowel)
uu	(long high back rounded vowel)

List of abbreviations

1	First person
2	Second person
3	Third person
ACC	Accusative case
APR	Active participle
DEF	Definite
DU	Dual
F	Feminine
FUT	Future
GEN	Genitive case
INDC	Indicative mood
INDF	Indefinite
IMPR	Imperative
IPFV	Imperfective
JSV	Jussive mood
M	Masculine
MSA	Modern Standard Arabic

NEG	Negative
NN	Nunation
NOM	Nominative case
PFV	Perfective
PL	Plural
PPR	Passive participle
PST	Past tense
PRS	Present tense
RELT	Relative pronoun
SG	Singular
SBJV	Subjunctive mood
Q	Question particle

Chapter 1

Introduction

1.1. Scope and Purpose

This thesis concerns the description and analysis of the copula in Modern Standard Arabic (MSA) within the framework of Head-Driven Phrase Structure Grammar (HPSG). The description of the copula in MSA involves discussions of the syntax of the copula and that of sentences in which the copula appears. It also involves discussions of the syntactic and semantic distinctions among copular sentences. The thesis will provide the reader with a full syntactic description of the copula and sentences containing it. It will also touch on semantic issues when necessary. This description together with previous HPSG studies will provide the background to propose HPSG analyses for the MSA copula.

The full description and analysis of the MSA copula within HPSG is important for a number of reasons. First, the copula has cross-linguistically received considerable attention from linguists (e.g, Bender, 2001; Mikkelsen, 2005, 2011; Müller, 2009, in preparation; Sag et al., 2003; van Eynde, 2008, 2009, 2012, 2015; among others). This calls for an analysis of the MSA copula in order to determine its position cross-linguistically. Second, there seems to be no literature on MSA considering the classification of copular sentences, which is proposed originally by Higgins (1979). Higgins (1979) proposes that copular sentences can be divided into four types: equational sentences, predicational sentences, specificational sentences and identificational sentences. The present study will be the first, to the best of my knowledge, which draws clear distinctions between these types and explores basic copular

sentence types in MSA. The third motivation for the study of the copula in MSA is that there also seems to be no literature on the analysis of the semantics of the copula. I mean that there seems to be no research that answers the question of whether or not the MSA copula contributes semantically. Therefore, this research will attempt to answer this question within the framework of HPSG. The fourth reason behind selecting this topic is that, again, there appears to be no literature that analyses verbless (or nominal) sentences in MSA, which translate English present tense copular sentences, taking into account the semantics of copular sentences. Of course, there are a number of studies that discuss the phenomenon of verbless sentences (e.g. Bahloul, 1993 (MSA); Fassi Fehri, 1993 (MSA); Benmamoun, 2000 (Standard andMoroccan Arabic); Aoun et al., 2010 (Standard, Moroccan and Lebanese Arabic); among others), as we will see in Chapter 6, but none of them have considered the semantics of verbless sentences or discussed their syntactic structure in depth. In fact, as we will see in Chapters 3, 5, 6 and 7, the semantics of copular sentences in MSA is central to any potential analysis of the copula. Consequently, the study of the copula in MSA is needed. Finally, I should here emphasise that the thesis will be mainly concerned with syntax, although it will discuss semantic issues when this is necessary.

1.2. Data

This section indicates data sources and states general glossing policies.

1.2.1. Data Sources

In this thesis, MSA data are supplied from several sources. Part of the data is taken from King Abdul-Aziz City of Science and Technology Arabic Corpus (KACSTAC). The data are also taken from western published sources such as Bakir (1980), Eid (1983, 1991),

Ouhalla (1991), Bahloul (1993), Fassi Fehri (1993), Plunkett (1993), Benmamoun (2000, 2008), Mohammed (2000), Ryding (2005), Aoun et al. (2010) and Alotaibi (2015). Arabic traditional grammar books are also consulted as a source of data (e.g. Magalsah, 1997; Ibn Hisham, 1999; Hassan, 2000; Algalayini, 2006). Examples that are not attributed to any other sources are checked by four Arab grammarians.

1.2.2. Glossing Policies

MSA data in this thesis will be glossed as follows. Verb forms will not be glossed morpho-syntactically. In their English translation, I will write the infinitive form followed by the form's basic information such as whether the form is perfective, imperfective or imperative. Although the verb *lays* appears to be a perfective stem, I will gloss its forms as be.NEG without specifying that it is perfective for reasons of space. Also, the mood will be specified if applicable. Person, number and gender information will addetionally be determined. With regard to other words such as nouns and adjectives, I will gloss them morpho-syntactically. In the translation of nouns, I will indicate the English singular form followed by its person, number and gender information. The morpho-syntactic glossing will determine case affixes, definite articles and nunations (if any). I assume that other details are not crucial for the present study. For example, I assume that proper names, dominastrative pronouns and relative pronouns are definite NPs by definition, and hence, I will not need to gloss them as DEF. As for pronouns, whether they are detached or attached, I will provide their English eqivalance. I may specify their number and gender values, if needed. Note that these are general policies, and thus, they may not be followed for some reasons. For example, some MSA sentences in this thesis are too long which makes it deficult to specify all their morph-syntactic information in one line.

1.3. The organisation of the thesis

The thesis will be organised as follows. In the rest of this chapter, Chapter 1, I will introduce crucial issues to the reader. In Section 1.4, I will introduce basic issues about the linguistics of the Arabic language, including its word order and sentence types. Then Section 1.5 will introduce HPSG, stating its basic assumptions and some of its implications for the Arabic language. Finally, in Section 1.6 the chapter will draw the reader's attention to basic semantic assumptions that the thesis will adopt. Section 1.7 will, then, summarise the chapter.

After establishing the basic assumptions, the thesis, in Chapter 2, will define and describe the MSA copula syntactically. This description includes descriptions of the strategies that determine forms that MSA copular sentences take, the complement categories and basic facts about copula absence in MSA. Then, In Chapter 3, I will discuss in detail the classification of copular sentences into equationals, predicationals, specificationals and identificationals. This classification is important to the question of whether or not the copula contributes semantically, which is eventually addressed in the chapter. Chapters 2 and 3 provide the reader with a full syntactic and semantic description of the copula in MSA. Therefore, in order to analyse the MSA copula within HPSG, Chapter 4 clarifies the current HPSG approaches to the semantics of the copula and the missing copula. This allows us to propose HPSG syntactic and semantic analysis/analyses for the overt MSA copula, which is the main purpose of Chapter 5. We are left with the analysis of copula absence in MSA. Therefore, the missing copula is discussed analytically in detail in Chapter 6.

Now, as Chapter 5 analyses the overt copula and Chapter 6 the missing copula, we need a further chapter to put together these two pieces of analysis. Thus, Chapter 7 will attempt to provide a unified account for the copula in MSA, taking into account conclusions reached in

Chapters 5 and 6. In the last chapter, Chapter 8, I will summarise the thesis and recommend some topics for future studies.

1.4. Arabic Language: Background

This section concerns the Arabic language. It is important in the sense that we need to understand the language which the thesis examines. In Section 1.4.1 I will discuss the level of Arabic this thesis examines, namely MSA. Sections 1.4.2 and 1.4.3 discuss verbs and nouns in Arabic, respectively. Then, Section 1.4.4 discusses subject-verb agreement in MSA. Finally, Section 1.4.5 describes sentence types in MSA.

1.4.1. Overview

This section clarifies the level of Arabic this thesis examines. That is, this thesis concerns the Arabic language in a specific period of time; more precisely, it concerns Modern Standard Arabic.

Arabic language is one of the living languages in the Semitic branch of the Afro-Asiatic family (Ryding, 2005). Significantly, the Arabic language has evolved over stages throughout history into its state now with Modern Standard Arabic along with a variety of dialects (Ryding, 2005). The earliest stage of Old Arabic that is documented is from approximately the seventh century BC to about the third century AD. The following stage is known as the Early Arabic period, when it became closer to the semblance of classical Arabic. This period was from the third century until the fifth century. The third period of the Arabic language is the Classical Arabic period. The start of this era was in the sixth century, and it lasted until the thirteenth century. During this period the Arabic language spread due to the expansion of

the Islamic Empire, and it thus became spoken across North Africa and the Middle East (Aoun et al., 2010). Classical Arabic evolved for different reasons throughout the third period. The fourth stage starts from the thirteenth century until the end of the eighteenth century (Ryding, 2005). Classical Arabic, in this period, became the language of the literature. However, each geographical region had its own dialect that developed further. In other words, Classical Arabic has not been the spoken language of everyday life since that era. The fifth stage starts from about the end of the eighteenth century with the spread of universal education as well as Western writing practices and styles. This is the period of MSA (Ryding, 2005).

There is no agreement on the definition of Modern Standard Arabic, but it can be stated that it is the language of formal media and broadcasting (Ryding, 2005). The modernisation of the Arabic language started around the twentieth century as a result of the establishment of Arab academies (Aoun et al., 2010). According to Aoun et al. (2010), these academies have played a crucial role in two different areas. First, they have protected the Arabic language from the influence of either dialects or foreign languages. Second, they have adapted the needs of the Arabic language to this modern world, for example translating new terminologies (Ryding, 2005).

On the other hand, in the Arabic-speaking world today we have two different types of Arabic language: Modern Standard Arabic and modern dialects. That is, the Arabic-speaking world expands from the Arabic Gulf to the Atlantic Ocean in northwest Africa. Each region, in the Arabic-speaking world, speaks its own dialect, although they all share MSA as a unified language (Ryding, 2005; Aoun et al., 2010). MSA, therefore, is the language of literature and communication, especially between literate Arabs despite the geographically large distances. Ryding (2005) claims that teaching it to children assists in eliminating differences among dialects, although she did not provide any justification. This may lead, to

some extent, to having one universally accepted standard speech in the Arabic-speaking world. Furthermore, MSA exists not only for these reasons, but also for a political one. That is, having one universally accepted standard speech can unify Arab countries because they all speak the same language, MSA.

After giving this overview, we can move on to discuss various aspects of MSA.

1.4.2. Verbs in Arabic

This section gives a brief description of some aspects of verbs in MSA, namely tense, aspect and mood.

1.4.2.1. Tense and aspect

This subsection discusses tense and aspect in Arabic verbs. The reason behind discussing them together is that there is an ambiguity between tense and aspect, as we will see (Fassi Fehri, 2012). Essentially, tense and aspect are not simple issues, and hence, I will address here issues that are relevant to the thesis. We can say that verb forms in MSA can be perfective, as in Table 1.1, or imperfective, as in Table 1.2.

Table 1.1 The paradigm for the perfective stem katab ‘write.PFV’

PERSON	GENDER	Singular	Dual	Plural
First Person	**Masculine**	*katab-tu*	*katab-naa*	
	Feminine			
Second Person	**Masculine**	*katab-ta*	*katab-tumaa*	*katab-tum*
	Feminine	*katab-ti*		*katab-tunna*
Third Person	**Masculine**	*katab-a*	*katab-aa*	*katab-uu*
	Feminine	*katab-at*	*katab-ataa*	*katab-na*

Table 1.2 The paradigm for the imperfective stem ktub ‘write.IPFV’

PERSON	GENDER	Singular	Dual	Plural
First Person	**Masculine**	*ʔa-ktub-u*	*na-ktub-u*	
	Feminine			
Second Person	**Masculine**	*ta-ktub-u*	*ta-ktub-aani*	*ta-ktub-uuna*
	Feminine	*ta-ktub-iina*		*ta-ktub-na*
Third Person	**Masculine**	*ya-ktub-u*	*ya-ktub-aani*	*ya-ktub-uuna*
	Feminine	*ta-ktub-u*	*ta-ktub-aani*	*ya-ktub-na*

The perfective verb form is used almost exclusively in past tense context (Aoun et al., 2010), as shown below:

(1) *katabuu* *l-kitaab-a* *ʔamsi*

write.PFV..3PL.M the-book.SG.M-ACC yesterday

'(They) wrote the book yesterday' (Aoun et al., 2010: 22)

It is clear from (1) that the sentence receives a past tense interpretation. It should be noted that the suffixes in Table 1.1 do not necessarily exist in verb forms that express past tense inrwepretation. That is, the suffix *–uu,* for example, is found in *lays* but the verb form receives present tense interpretation, as in (2) below:

(2) *lays-uu* *fii* *l-bayt-i*

be.NEG-3PL.M in the-house.SG.M-GEN

'(They) are not in the house' (Aoun et al., 2010: 22)

On the other hand, the sentence which employs the imperfective verb forms may receive past, present or future tense interpretations, as shown in (3), (4) and (5), respectively.

(3) *lam* *taktub*

NEG.PST write.IPFV.JSV.3SG.M

'(She) did not write' (Aoun et al., 2010: 24)

(4) *yadrusu*

study.IPFV.INDC.3SG.M

'(He) is studying' (Aoun et al., 2010: 26)

(5) *sa-yadrusu*

FUT-study.IPFV.INDC.3SG.M

'(He) will study' (Aoun et al., 2010: 25)

The above examples show that the imperfective verb form may be used in past, present or future tense contexts. Note that tense in (5) comes from the prefix *sa-*, while in (3) the negative particle *lam* carries the past tense[1].

Moreover, MSA may express compound tenses. That is, tense/aspect may be expressed by two verb forms (Alsharif and Sadler, 2009). For example, the combination of the perfective and imperfective verb forms, as in (6) below, expresses a past progressive interpretation.

[1] With respect to sentential negation in MSA, *laa* is a non-tensed negative particle, while *lam* and lan are tensed forms (Aoun et al., 2010). *laa* is adjacent to an imperfective indicative verb form and the sentence receives present tense interpretation. *lam* is adjacent to an imperfective jussive verb form and the sentence receives past tense interpretation. *lan* is adjacent to an imperfective subjunctive verb form and the sentence receives future tense interpretation. Examples of these negative particles are below (examples are taken from Aoun et al., 2010: 110:

(i) T-Tullaab-u laa yadrusuuna
the-student.PL.M-NOM NEG study.IPFV.INDC.3PL.M
'The students do not study'

(ii) T-Tullaab-u lam yadrusuu
the-student.PL.M-NOM NEG.PST study.IPFV.JSV.3PL.M
'The students did not study'

(iii) T-Tullaab-u lan yadrusuu
the-student.PL.M-NOM NEG.FUT study.IPFV.SBJV.3PL.M
'The students will not study'

As stated, in these examples lam and lan are the elements which carry tense value. For more discussion on sentential negation in Arabic, the reader can refer to Aoun et al. (2010, Chapter 5) and Alsharif and Sadler (2009).

(6) *kaana* *zayd-u-n* *yaktubu* *t-taqriir-a*

be.PFV.3SG.M Zaid-NOM-NN write.IPFV.INDC.3SG.M the-report.SG.M-ACC

'Zaid was writing the report'

However, when a perfective verb form is combined with another perfective verb form, as in (7) below, the sentence receives a past perfect reading.

(7) *kaana* *zayd-u-n* *kataba* *t-taqriir-a*

be.PFV.3SG.M Zaid-NOM-NN write.PFV.3SG.M the-report.SG.M-ACC

'Zaid had writen the report'

All perfective/imperfective verb forms mentioned so far in this section are finite. However, we should note that imperfective verb forms may occur in a non-finite context as in (8) below:

(8) *rafaDa* *ʔan* *yadrusa*

refuse.PFV.3SG.M to study.IPFV.SBJV.3SG.M

'(He) refused to study' (Aoun et al., 2010: 13)

Note that here I use the term 'non-finite' in the sense of Aoun et al (2010), i.e. the clause does not have an independent temporal interpretation.

In sum, we see that perfective/imperfective verb forms occur in a finite context, i.e. they express different tenses/aspects depending on whether or not they combine with certain affixes and/or other verb forms. On the other hand, imperfective verb forms may also occur in a non-finite context.

1.4.2.2. Mood

Mood refers to one of the morphological inflections that affect imperfective verb stems. It should be emphasised that mood only exists with imperfective verbs (Ryding, 2005). There are three mood values in MSA: indicative, subjunctive and jussive. The indicative paradigm is shown in Table 1.2 above. This mood appears to be the basic mood in imperfective verb forms. Essentially, the verb is marked for subjunctive or jussive moods if the imperfective verb occurs after certain words. For example, the imperfective verb form *taktub* in (3) above is marked for jussive mood because it followed the negative particle *lam*.

The subjunctive paradigm is shown in Table 1.3 below:

Table 1.3 The subjunctive paradigm for the imperfective stem ktub 'write.IPFV'

PERSON	GENDER	Singular	Dual	Plural
First Person	**Masculine**	*ʔa-ktub-a*	*na-ktub-a*	
	Feminine			
Second Person	**Masculine**	*ta-ktub-a*	*ta-ktub-aa*	*ta-ktub-uu*
	Feminine	*ta-ktub-ii*		*ta-ktub-na*
Third Person	**Masculine**	*ya-ktub-a*	*ya-ktub-aa*	*ya-ktub-uu*
	Feminine	*ta-ktub-a*	*ta-ktub-aa*	*ya-ktub-na*

Imperfective forms in Table 1.3 are in subjunctive mood. Further, the jussive paradigm is shown below in Table 1.4.

Table 1.4 The jussive paradigm for the imperfective stem ktub 'write.IPFV'

PERSON	GENDER	Singular	Dual	Plural
First Person	Masculine	*ʔa-ktub*	*na-ktub*	
	Feminine			
Second Person	Masculine	*ta-ktub*	*ta-ktub-aa*	*ta-ktub-uu*
	Feminine	*ta-ktub-ii*		*ta-ktub-na*
Third Person	Masculine	*ya-ktub*	*ya-ktub-aa*	*ya-ktub-uu*
	Feminine	*ta-ktub*	*ta-ktub-aa*	*ya-ktub-na*

In sum, we see that the imperfective verb form can be indicative, subjunctive or jussive. Unless something requires the imperfective non-indicative verb form, the imperfective indicative verb form is used.

1.4.3. Nouns in Arabic

We now move on to nouns in MSA. There seems to be two issues which are crucial to the thesis with regard to nouns, namely definiteness and case. These will be briefly discussed in the following subsections.

1.4.3.1. Definiteness

This subsection concerns words that MSA considers to be definite. According to Algalayini (2006) the following words are definite in MSA: proper names, as in (9), definite descriptions, as in (10), personal pronouns, as in (11), demonstrative pronouns, as in (12), relative pronouns, as in (13), and the case of *ʔiDaafa* like that in (14).

(9) *zayd*

Zaid

'Zaid'

(10) *r-rajul*

the-man

'The man'

(11) *huwa*

he

'He'

(12) *haaðaa*

this

'This'

(13) *man*

who.RELT

'Who'

(14) *kitaab-u* *zayd-i-n*

book.SG.M-NOM Zaid-GEN-NN

'The book of Zaid'

For those to be definite means that these words, in formal analysis, have by definition the feature [DEF +][2]. Other nouns will be indefinite. Note that the proper name *zaydin* in (14) has nunation. Nunations in MSA is found in some nouns and adjectives. In this research, I will not discuss this issue.

1.4.3.2. Case

Case in MSA refers to the marking of nouns and adjectives in a certain syntactic position. In other words, case is a realisation of syntactic functions such as subject, object, possessor, etc. It should be noted here that adjectives are also relevant here. Case in nouns and adjectives can be nominative, as in (15), accusative, as in (16), or genitive, as in (17).

(15) a. *zayd-u-n*

Zaid-NOM-NN

'Zaid'

[2] Within HPSG, I assume that the DEF feature is a HEAD feature. This is also assumed for Danish by Neville (2000). It should be noted that, in formal analysis, syntactic and semantic issues arise from analysing NPs as definite NPs. Syntactically, it raises questions such as how the full NP gets the feature [DEF +]? For example, in the case of construct NPs with definite annexes the question is how the full NP has the DEF + feature? Within minimalism, Danon (2010) argues that such an NP in Hebrew, which is a Semitic language like Arabic, involves feature sharing between the two levels of what he calls the construct state nominal (CSN). On the other hand, semantically there is an issue with the analysis of definite NPs, namely, is it analysed as variables or quantifier-free? (Heim, 1982). This thesis, however, will take Arabic definite NPs mentioned above as NPs that have the feature [DEF +] at the top of their structure, leaving the details to future research.

b. *kariim-u-n*

generous.SG.M-NOM-NN

'Generous'

(16) a. *zayd-a-n*

Zaid-ACC-NN

'Zaid'

b. *kariim-a-n*

generous.SG.M-ACC-NN

'Generous'

(17) a. *zayd-i-n*

Zaid-GEN-NN

'Zaid'

b. *kariim-i-n*

generous.SG.M-GEN-NN

'Generous'

Note that (a)'s examples represent nouns' case marking, while examples in (b) express adjectives' case marking. Also, note that nominative and accusative case marking in nouns and adjectives are largely identical to indicative and subjunctive mood marking in verbs, respectively (Ryding, 2005). For example, the noun's nominative marker *–u* is largely

identical to the verb's indicative marker, i.e. they are the same in many cases. In fact, nominative and indicative in traditional grammar are referred to as *rafʕ*.

In sum, nouns and adjectives in MSA can have three possible cases: nominative case, accusative case or genitive case. After the discussion of nouns and verbs in MSA, we can discuss agreement between them in full sentences, which is the main purpose of the next section.

1.4.4. Subject-Verb Agreement

As stated, this section concerns agreement between nouns and verbs. In particular, it concerns subject-verb agreement. It does not include any analysis; therefore, I will only mention basic facts about subject-verb agreement in MSA[3].

In MSA, three features are involved in subject-verb agreement: person, gender and number. If the subject follows the verb, as in (18), the verb agrees with the subject in person and gender but not number, and hence the verb must be singular (Mohammed, 2000).

(18) a. *jaaʔa* *l-ʔawlaad-u*

come.PFV.3SG.M the-boy.PL.M-NOM

'The boys came' (Mohammed, 2000: 64)

b. * *jaaʔuu* *l-ʔawlaad-u*

come.PFV.3PL.M the-boy.PL.M-NOM

'The boys came' (Mohammed, 2000: 64)

[3] For discussions on the analysis of VSO and SVO word order, Section 1.5.3 from this chapter will briefly discuss that. For more discussion, the reader can refer to the relevant literature (e.g. Fassi Fehri (1993) and Mohammed (2000)).

The sentence in (18b) is ungrammatical because the verb in VS order agrees with the subject in number.

Now, if the subject precedes the verb, the verb then shows full agreement, as shown in (19) below. As we will see later, it appears that the apparent subject is a topic and the agreement is with a null pronominal subject. More details will be presented in Section 1.5.3 below.

(19) a. *l-ʔawlaad-u* *jaaʔuu*

the-boy.PL.M-NOM come.PFV.3PL.M

'The boys came' (Mohammed, 2000: 64)

b. * *l-ʔawlaad-u* *jaaʔa*

the-boy.PL.M-NOM come.PFV.3SG.M

'The boys came' (Mohammed, 2000: 64)

Again, the sentence (19b) is ungrammatical because the verb in SV order does not agree with the subject in number.

In sum, if the subject follows the verb, we have partial agreement, i.e. in person and gender but the verb must be singular. On the other hand, if the subject precedes the verb, the verb shows full agreement with the subject in person, number and gender.

1.4.5. Sentence Types

With regard to sentence types, there is no agreement on the division of these types in MSA. Basically, the discussions concern three sentence-types which are distinctive, as shown below:

(20) *zaara* *zayd-u-n* *badr-a-n*

visit.PFV.3SG.M Ziad-NOM-NN Badr-ACC-ACC-NN

'Ziad visited Badr'

(21) *zayd-u-n* *zaara* *badr-a-n*

Ziad-NOM-NN visit.PFV.3SG.M Badr-ACC-NN

'Ziad visited Badr'

(22) *zayd-u-n* *mujtahid-u-n*

Zaid-NOM-NN hardworking.SG.M-NOM-NN

'Zaid is hardworking'

As these sentences show, sentence (22) contains no verb, while the other two sentences contain verbs. The only difference between (20) and (21) is that (21) is a subject-initial clause, whereas (20) is a verb-initial clause. The difference among these sentences leads to different views of Arabic sentence types.

Traditional Arab grammarians classify sentences into two types: *nominal* and *verbal*. In their view, nominal sentences are those which have a noun in their initial position, whereas verbal sentences are those which have a verb in their initial position. Accordingly, sentence (20) will be verbal, while sentences (21) and (22) are nominal. On the other hand, with a different perspective, Cantarino (1974) divides Arabic sentences into two types: *nominal* and *verbal*. The nominal sentence, in this view, is the one that contains no verb, whereas the

sentence that contains a verb is a verbal sentence. Accordingly, sentence (22) is a nominal sentence and sentences (20) and (21) are verbal sentences. Ryding (2005) also divides them in the same way, except that she calls the nominal type *equational*[4]. The distribution of

It, however, appears that all sentences in MSA are verbal. That is, this thesis, as stated in Chapter 6, argues that there is an empty copula in verbless sentences. This is compatible with the assumptions of HPSG in that all MSA sentences are headed by a verb, whether this verb is overt or not.

1.5. Head-Driven Phrase Structure Grammar: Background

This section provides the reader with a brief description of the framework which I will use throughout this thesis, namely Head-Driven Phrase Structure Grammar. In Section 1.5.1, I will give an overview of the HPSG framework. In Section 1.5.2, I will describe types and features in HPSG, and then indicate the basic phrasal types and constraints in this framework. Finally, Section 1.5.3 will indicate the application of HPSG to MSA.

1.5.1. Overview

The HPSG is a theory within generative grammar. It falls under constraint-based theories (Ginzburg and Sag, 2000; Green, 2011). It was originally developed in the 1980s (Flickinger, Pollard and Wasow, 1985; Pollard and Sag, 1987). It is a constraint-based theory in the sense that grammars are sets of constraints to which linguistic objects must conform.

HPSG is also a monostratal theory, and hence, it is a non-transformational theory (Borsley and Borjars, 2011). That is, sentences in HPSG do not undergo the movement process. Thus, there is a single level of representation within this framework. As stated, these

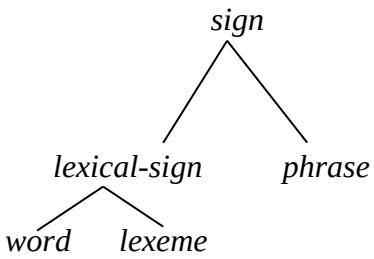
[4] As we will see in Chapter 3, Section 3, the term 'equational' refers to a specific type of copular sentences. Thus, I consider this term misleading, and consequently, do not use it in this meaning.

properties of HPSG do not prevent the theory from being a generative framework. That is, HPSG is a precise and explicit theory, as indicated by Ginzburg and Sag (2000: 2). It should be noted that in this thesis except where noted, I assume the version of HPSG in Ginzburg and Sag (2000)[5].

1.5.2. Types and Features

HPSG assumes that a grammar consists of sets of lexical and phrasal types and constraints to which they are subject. These types are organised in a hierarchal way. In that hierarchy, a subtype inherits some properties from its supertype. That is, HPSG is grammar that employs the feature structure of the type *sign*. As in Ginzburg and Sag (2000) and Sag et al. (2003) the type *sign* consists of two subtypes: *lexical-sign* and *phrase*. The *lexical-sign*, in turn, has two subtypes: *word* and *lexeme*, as in (23) below:

(23)



Let us start by defining the type *sign*. *Sign* specifies the phonology (PHON), syntax and semantics (SYNSEM) of a word/construction in a given language. As stated, the subtype

[5] The most important differences between assumptions in Ginzburg and Sag (2000) and those in this thesis are the following:

(i) I modified and extended the type hierarchy in Ginzburg and Sag (2000: 20) in order to account for facts in Arabic.

(ii) I do not assume a cross-classified type system, unlike that assumed in Ginzburg and Sag (2000) and Sag (1997)..

(iii) Ginzburg and Sag (2000: 409) propose a lexical rule to derive predicative nouns from non-predicative ones. However, following Müller (2009, in preparation) I use a modified version of his Predicative NP Projection Schema.

lexical-sign has two subtypes: *word* and *lexeme*. The type *lexeme* can be seen as an abstract which stores the word's basic information. An example of a lexeme-sign is shown below from Ginzburg and Sag (2000: 18):

(24) A lexeme-sign for the English verb *prove*

$$\begin{bmatrix} \text{PHON} < \textit{prove} > \\ \text{SYNSEM} \begin{bmatrix} \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{AUX} - \end{bmatrix} \end{bmatrix} \\ \text{CONT} \begin{bmatrix} \textit{soa} \\ \text{NUCL} \begin{bmatrix} \textit{prove-relation} \\ \text{PROVER} \ [1] \\ \text{PROVEN} \ [2] \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST} < \text{NP}_{[1]}, \text{NP}_{[2]} > \end{bmatrix} \end{bmatrix}$$

The lexical description in (24) is represented as feature structures (or Attribute-Value Matrices (AVMs)). It specifies PHON and SYNSEM of the verb's lexeme by a set of feature structures. The value of PHON provides the phonological form of the verb, while SYNSEM indicates its syntactico-semantic information. ARG-ST lists the verb's arguments, namely subject (SUBJ) and complement(s) (COMPS). Note that the ARG-ST is licensed by the Argument Realisation Principle (ARP), as shown below in (25) (Ginzburg and Sag, 2000: 23). This means that the description does not need to include the SUBJ and COMPS features since their values are specified by the ARP.

(25) Argument Realisation Principle[6]

$$\begin{bmatrix} \text{SS} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{SUBJ} & [\text{A}] \\ \text{COMPS} & [\text{B}] \end{bmatrix} \\ \text{ARG-ST} \ [\text{A}] \oplus [\text{B}] \end{bmatrix}$$

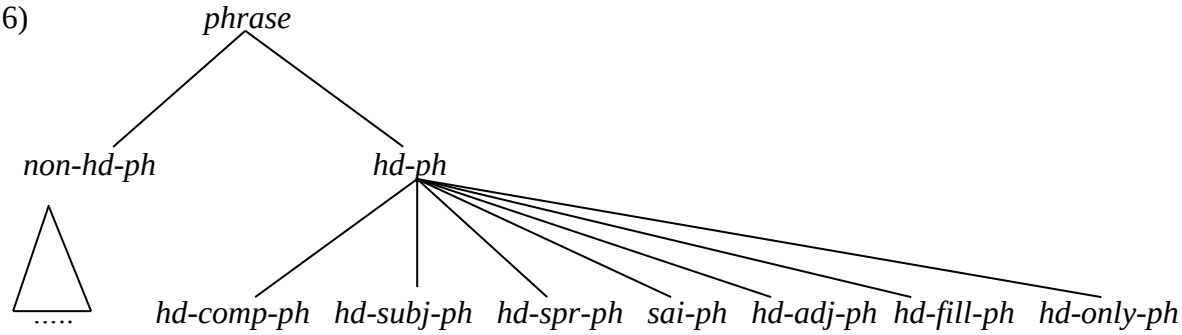
[6] Note that I omitted the SPR feature from the ARP because I do not use this feature in the present thesis.

The ARP ensures that the first member that appears in ARG-ST is associated with the value of the SUBJ feature, whereas the rest with the COMPS feature. Building on that, the first element in the ARG-ST of (24) is the subject of the verb, while the second is the complement.

Returning to the SYNSEM in (24), it has one feature, namely LOC(AL). The feature LOC represents the local syntactic and semantic information. Further, LOC has two features: category and content. That is, the feature CAT(EGORY) indicates syntactic properties, whereas CONT(ENT) expresses the semantic ones. In the CAT value, the lexical description shows that the element is an ordinary verb as [*verb*, AUX -] indicates. Semantically, in the CONT value, the lexical description indicates the semantic relation between the subject and the complement, which the verb contributes. It should be noted here that in this thesis I will limit the formalization of semantics to CONT value and will simplify it. There will be cases where CONT value is represented as a tag, e.g. CONT [4].

The subtype *phrase*, on the other hand, is divided into two subtypes: headed-phrases (*hd-ph*) and non-headed-phrases (*non-hd-ph*). The type *hd-ph* has seven subtypes: head-complement-phrase (*hd-comp-ph*), head-subject-phrase (*hd-subj-ph*), head-specifier-phrase (*hd-spr-ph*), subject-auxilary-inversion-phrase (*sai-ph*), head-adjunct-phrase (*hd-adj-ph*), head-filler-phrase (*hd-fill-ph*) and head-only-phrase (*hd-only-ph*). Thus, the supertype *phrase* will have the following phrasal type hierarchy (Ginzburg and Sag, 2000: 32):

(26)



As a system of type-hierarchy, these phrasal types are organised in a way which generally requires the supertype *phrase* to inherit properties from its supertypes. In other words, types have all the properties of their supertypes unless some constraint requires something different. To explain this, let us take a look at a constraint on the supertype *phrase* as in (27) below[7]:

(27) Empty COMPS Constraint (ECC)

$$\textit{phrase} \rightarrow \left[\text{SS} \mid \text{LOC} \mid \text{CAT} \left[\text{COMPS} \langle\rangle\right]\right]$$

All subtypes of the supertype *phrase* are generally subject to this constraint. The constraint in (27) states that a phrase needs to have an empty COMPS list, [COMPS <>]. Now, let us see the constraint on *hd-ph*, a subtype of *phrase*. Also, all subtypes of the *hd-ph* are subject to the following constraint:

(28) Generalised HEAD Feature Principle (GHFP)

$$\textit{hd-ph} \rightarrow \begin{bmatrix} \text{SYNSEM} & [1] \\ \text{HD-DTR} & \left[\text{SYNSEM} \; / [1]\right] \end{bmatrix}$$

[7] Where HPSG constraints impose restrictions on the daughters in some type of phrase, they are a bit like phrase structure rules. Ginzburg and Sag (2000) use a notation which reflects this. This involves the phrase type on the first line followed by a colon, and information about the phrase itself and its daughters on the second line separated by an arrow and with the head daughter identified by '**H**'. Thus, instead of (i) one has (ii) (Bob Borsley, personal communication).

(i) *phrase-1* → $\begin{bmatrix} \text{SYNSEM} & [1] \\ \text{DTRS} & \langle [2]\text{X}, \text{Y} \rangle \\ \text{HD-DTR} & [2] \end{bmatrix}$

(ii) *phrase-1* :
[SYNSEM [1]] → **H**[X], [Y]

In this thesis, however, I use the former notation because it is the more standard one. This should not affect Ginzburg and Sag's (2000) basic assumptions.

The GHFP requires by default to identify the SYNSEM of the mother of a headed phrase with that of its head daughter. The notation which expresses the default notion is '/'. Here and elsewhere, I use 'defaults' in the sense of Ginzburg and Sag (2000) where a default constraint applies but may be overridden by conflicting a constraint on a certain subtype in the type hierarchy or by idiosyntactic individual lexemes.

One subtype of *hd-ph* is *hd-comp-ph*, which is subject to the following constraint:

(29) *hd-comp-hp* → $\begin{bmatrix} \text{HD\_DTR} & [1]\begin{bmatrix} word \\ \text{COMPS} & A \end{bmatrix} \\ \text{DTRS} & \langle [1] \rangle \oplus A' \end{bmatrix}$

In (29), A is the list of synsems corresponding to the signs in the list of signs A'[8].

In summary, the preceding discussion in this section indicates how a system of type-hierarchy works. It shows that although the system contains similar types, each type has its unique properties, and consequently, may override its supertype.

1.5.3. HPSG and Arabic

This section concerns the how Arabic language is analysed within HPSG. In particular, it discusses the system of types and constraints as well as word order in Arabic. Word order is a large topic, which is difficult to cover in a single section; therefore, I will only deal here with two instances of word order: verb-initial clauses and subject-initial clauses, due to their relevance to the thesis. Section 1.5.3.1 will deal with the system of types and constraints,

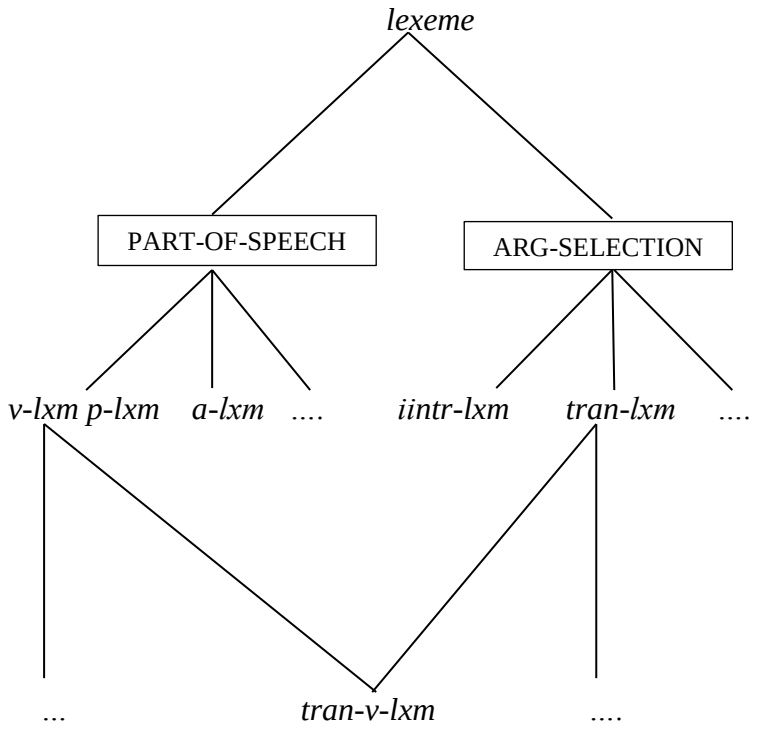
[8] Ginzburg and Sag (2000: 34) assume that this correspondence is only a default, and in fact allow for the possibility that A might contain additional complements that are not realised as daughters. For example, this allows for daughters that have been ellipted, e.g. in cases of VP ellipsis (Doug Arnold, personal communication).

Section 1.5.3.2 will deal with verb-initial clauses, whereas Section 1.5.3.3 with the subject-initial clauses.

1.5.3.1. The system of types and constraints

Building on the system of types presented in the previous section, Section 1.5.2, the type *lexeme* has the following type hierarchy:

(30) The *lexeme* type hierarchy[9]



As (30) shows, the type *lexeme* has two diamensions PART-OF-SPEECH and ARG(UMENT)-SELECTION. In turn, PART-OF-SPEECH has various subtypes, e.g. *v-lxm (verb-lexeme), p-lxm (preposition-lexeme), a-lxm (adjective-lexeme)* and some other types. On the other hand,

[9] Note that here I amended the subtypes proposed by Ginzburg and Sag (2000: 20) to account for facts in MSA.

ARG-SELECTION has subtypes: *intr-lxm (intransitive-lexeme)*, *tran-lxm (transitive-lexeme)* and other subtypes, e.g. the one with empty ARG-ST. What is relevant to the present study is two subtypes, namely *v-lxm* and *tran-lxm*. The following are the constraints on these two types (Ginzburg and Sag, 2000: 22):[10]

(31) *v-lxm* $\Rightarrow$ $\left[\text{SS}\,|\,\text{LOC}|\,\text{CAT}\begin{bmatrix}\text{HEAD} & v\\ \text{SUBJ} & \langle \text{XP} \rangle\end{bmatrix}\right]$

(32) *tran-lxm* $\Rightarrow$ $[\text{ARG–ST} \langle \text{NP,NP,...} \rangle]$

Note that the type *tran-v-lxm* inherits these two constraints from its supertypes. This type, *tran-v-lxm*, will eventually be important as I will assume, in Chapter 7, that the type *tran-v-lxm* has various subtypes and that the type *copula-lxm* is one of them. The motivation for this and more details will be explained in Chapter 7.

1.5.3.2. Verb-Initial Clauses

By verb-initial clauses I mean clauses that have a verb in the clause's initial position, such as (18a) above. In (18a) the first element in the clause is a verb, and hence, the clause is a verb-initial clause. It is agreed that the post-verbal NP is an ordinary subject. However, within HPSG, the framework used in this thesis, there are two approaches to this NP. In the first approach, as in Borsley (1995), the post-verbal nominative NP is analysed as a realisation of the SUBJ feature, i.e. the SUBJ feature will have a nonempty value, [SUBJ <NP>]. On the other hand, in the second approach, as in Sag et al. (2003), the post-verbal nominative

[10] Note that I omitted the feature SPR from the constraint on *v-lxm* in order for the constraint to be consistant with the thesis' assumptions.

NP is analysed as an extra complement, and hence, the clause will not have any realisation of the SUBJ feature, i.e. the SUBJ feature will have an empty value, [SUBJ <>]. Evidence from MSA, essentially, argues for the former approach. Following the lines of Borsley (1995), Alotaibi (2015) argues that the post-verbal nominative NP in MSA is a realisation of the SUBJ feature. The evidence, according to Alotaibi (2015), comes from the fact that verbal objects, prepositional objects and possessors can be realised in MSA as clitics[11], as shown below:

(33) a. *ðahaba* *ʔilay-him* *ʔaħmad-u*

go.PFV.3SG.M to-them.M Ahmad-NOM

'Ahmad went to them' (Alotaibi, 2015: 72)

b. *qaraʔa* *kitaab-a-hum* *ʔaħmad-u*

read.PFV.3SG.M book.SG-ACC-their.M Ahmad-NOM

'Ahmad read their book' (Alotaibi, 2015: 72)

Based on these examples, the prepositional object and possessor should be realisations of the first member of the COMPS list, which entails that the post-verbal nominative NP cannot be in that position. Accordingly, the post-verbal nominative NP can only be a realisation of the SUBJ feature. This thesis argues for this position. On the basis of this analysis, the VSO word order in MSA is subject to *hd-subj-comp*-ph (or *sai-ph* in the term of Ginzburg and Sag (2000)). This constraint can be presented as shown below (Borsley, 2010):

[11] Following Alotaibi (2015), I assume that clitics in MSA are affixes, as glossed. For discussions on clitics in MSA, the reader can refer to Alotaibi (2015: 103).

(34) *hd-subj-comp-ph* constraint

$$\begin{bmatrix} \text{DTRS} < [1] \begin{bmatrix} word \\ \text{SUBJ} < [2] > \\ \text{COMPS} < [3],...,[n] > \end{bmatrix}, [\text{SS}[2]], [\text{SS}[3]],..., [\text{SS}[n]] > \\ \text{HD-DTR} \quad [1] \end{bmatrix}$$

The 'SS' in this constraint stands for the SYNSEM of the head's arguments.

The constraint in (34) says that the structure has a head daughter. The head daughter is a sister of a daughter which is a subject and daughters which are complements. However, in (18) the complement value must be an empty list.

1.5.3.3. Subject-Initial Clauses

By subject-initial clauses I mean instances where the subject occurs before the verb, as in (19a) above.

Fassi Fehri (1993) (with some restrictions) and Mohammed (2000) analyse the preverbal nominative NP as a subject, just like the Arabic postverbal one discussed above, and like preverbal nominative NPs in English. However, a variety of evidence suggests that the preverbal nominative NP is really a topic associated with a null resumptive pronoun which functions as a subject (Ouhalla, 1991; Plunkett, 1993)[12]. The full agreement in such a case is

[12] Although this analysis is preferable, it calls for more details. I will go through some of them as this issue is not the main focus of the thesis. First, this null resumptive pronoun acts syntactically and semantically as resumptive pronouns in that it is a pronoun which is coindexed with its antecedent. Second, this null pronoun has an index whose value is identified with the index of the topic (i.e. the slashed element). Third, this null resumptive pronoun differs from gaps in that the resumptive pronoun is syntactically and semantically a pronoun.

with a null resumptive pronoun[13]. One piece of evidence for this analysis is that the preverbal nominative NP displays properties similar to left-dislocation constructions such as (35) below:

(35) *T-Tullaab-u* *ʔuħibbu-hum*

the-student.PL.M-NOM like.IPFV.INDC.1SG-them.M

'The students, I like them' (Plunkett, 1993: 2241)

Note that the preverbal NPs in (19a) and (35) have the nominative case. The preverbal NP in (35) is coreferential with a resumptive pronoun occurring in object position. However, the preverbal NP in (19a) is associated with a null resumptive pronoun. The reason for the latter pronoun to be null is that the Arabic language is a pro-drop language in which the subject may not be overt (Plunkett, 1993). What strengthens the analysis of preverbal subjects as topics is that the preverbal NP can have accusative case assigned by the complementiser *ʔinna* (Ouhalla, 1991), as in (36) below:

*((36) *qaaluu* *ʔinna* *zayd-a-n* *wasala* *mutaʔaxxir-a-n*

say.PFV.3PL.M that Zaid-ACC-NN arrive.PFV.3SG.M late-ACC-NN

'(They) said that Zaid arrived late' (Ouhalla, 1991: 119)

Note that if the preverbal NP was a subject, then we would have case clash (Ouhalla, 1991). That is, the subject in this case is eligible for two cases, nominative and accusative, at

[13] The formalization of agreement in this word order needs more investigations. I leave this for future research. However, one could say that when verbs can be heads of finite clauses, partial agreement occurs when valance list is identical to ARG-ST list, i.e. when the SUBJ list is non-empty. However, full agreement occurs when the SUBJ list is empty. In the latter case, the first element in the ARG-ST list can either be (i) an ordinary null pronoun or (ii) a null resumptive pronoun coindexed with the topic (i.e. the slashed element).

the same time. It should be nominative as being in subject position, while it should be accusative because the complementiser *ʔinna* assigns this case to it. This shows us that the preverbal NP is, in fact, a topic rather than a subject[14]. This thesis argues for this position.

If we analyse preverbal subjects as topics and topics are normally definite (i.e. familiar entity), then the following example may be problematic for this analysis:

(37) *baqarat-u-n* *takallamat*

cow.SG.F-NOM-NN talk.PFV.3SG.F

'A cow talked' (Fassi Fehri, 1993)

That is, the non-specific indefinite NPs, such as *baqarat* 'a cow', is considered unfamiliar entity. Yet, although it occurs in the topic position, the sentence is grammatical. If definiteness is a condition in topics, then (37) suggests that preverbal subjects can be real subjects. However, the condition of definiteness in topics is questioned by the following grammatical sentence:

(38) *ʕalimtu* *ʔanna* *baab-a-n* *kasara-hu* *l-walad-u*

know.PFV.1SG that door.INDF-ACC-NN break.PFV-it the-boy.SG-NOM

' (I) knew that the boy broke a door' (Alotaibi, 2015: 86)

In (38), the topic in the embedded left-dislocated sentence is indefinite. Alotaibi (2015) argues that if definiteness was a pre-condition of topics in MSA, then examples like (38) would put this in question.

[14] There is other evidence for analysing the preverbal subjects as topics. The reader can refer to the literature for more discussion (e.g. Ouhalla, 1991; Plunkett, 1993; Alotaibi, 2015). For example, as we will see in Chapter 6, Section 6.3.3, MSA does not have wh-phrase + subject + verb in wh-questions, which is what we would expect if apparent preverbal subjects were real subjects.

It follows from the assumption that preverbal subjects are not subjects but topics that MSA may not have *hd-subj-ph*. That is, topics do not combine with a VP but rather with a slashed clause. Therefore, preverbal subjects are *hd-fill-ph*s, which are consequently subject to the following constraint[15]:

(39) *hd-fill-ph* constraint

$$\begin{bmatrix} \text{SLASH} & \{\} \\ \text{HD-DTR} & \begin{bmatrix} \text{HEAD} & \textit{verbal} \\ \text{SLASH} & \{[1]\} \end{bmatrix} \\ \text{DTRS} & \langle [\text{LOCAL } [1]] \rangle \end{bmatrix}$$

The constraint in (39) ensures that fillers including the preverbal subjects are identified with a slashed element in a verbal clause. It should be noted here that the introduction of the SLASH feature is done lexically, i.e. the verb takes SLASH specifications of its subcatogrized arguments. That is, 'words are subject to a constraint … that defines their SLASH value in terms of the SLASH values of their arguments' (Ginzburg and Sag, 2000: 168). Following Ginzburg and Sag (2000: 169) the SLASH Amalgamation Principle can be proposed as follows:

(40) $\textit{word} \Rightarrow / \begin{bmatrix} \text{SLASH} & \{[1] \cup \ldots \cup [n]\} \\ \text{ARG-ST} & < [\text{SLSH}\{[1]\}], \ldots, [\text{SLASH } \{[n]\}] > \end{bmatrix}$

This constraint states that if any argument of the verb is slashed, then the verb itself is slahed.

[15] This is a simplified version of *hd-fill-ph*.

The syntactic structure of this instance of word order will be further discussed within HPSG later in this thesis, more precisely in Chapter 5, Section 5.2.

1.6. Basic Semantic Assumptions

This section briefly discusses basic semantic assumptions that are relevant to this thesis. Section 1.6.1 will distinguish semantics from pragmatics. Section 1.6.2 will then clarify the notion of predicate and arguments in semantics. Finally, semantic types and functions will be addressed in Section 1.6.3.

1.6.1. Semantics vs. Pragmatics

Here, we need to distinguish between semantics and pragmatics as the two deal with the meaning. While semantics deals with the literal meaning of words and the clause meaning on the basis of word order, pragmatics deals with the context that helps in understanding what the speaker means by his/her utterance (Kearns, 2011). This distinction between semantics and pragmatics can be clarified by the following example:

(41) I ate my lunch.

Semantics deals with the literal meaning of *I, ate, my* and *lunch*. It also deals with the meaning of these words on the basis of their word order. Therefore, semantically (41) means that 'The person, who is speaking, at some time before the time of speaking ate a particular thing which is his/her lunch'. Pragmatics, on the other hand, deals with understanding what the speaker means by the utterance on the basis of the context in which the sentence was uttered. Therefore, we need to know the context in which the sentence (41) was uttered.

Suppose that it is Monday afternoon. Emma, the speaker, has just entered the room in which Anna is sitting. Anna invited Emma to have lunch. Then, Emma said 'I ate my lunch'. The utterance in (41) will then pragmatically mean that Emma is not hungry as she has already had her lunch. It may also mean that Emma does not want Anna to buy a meal for her as she had one already.

1.6.2. Predicates and Arguments

By predicate we mean the element that expresses the relationship in the sentence (Portner, 2004; Kearns, 2011). As the thesis is concerned with copular sentences, I will concentrate on predicates in copular sentences. For example, consider the following sentence:

(42) David is tall.

If we remove elements that are entities, assuming that they are arguments of the predicate, we will have the following:

(43) … is tall

Now, the element that expresses the relationship, the predicate, is the adjective *tall*. That is, *tall* assigns the property of being tall to *David*. Essentially, the copula only adds tense to the clause (Müller, 2009, in preparation). Therefore, the primary semantic formula of the meaning of (42) is in (44) below:

(44) TALL(d)

The predicate *tall*, then, is 1-place predicate because it requires one argument to express a complete meaning. Furthermore, the predicate can be a 2-place predicate, as in (45) below:

(45) Kim is afraid of spiders.

Once again, we will remove words that refer to entities in (45), and consequently, we have (46) below:

(46) … is afraid …

As stated above, the copula is not the element that expresses the relation in the sentence but the adjective *afraid*. In other words, the semantic formula for (45) is in (47).

(47) AFRAID(k,s)

Note that the order in this formula is essential. That is, any change in (47) will affect the meaning. Therefore, the formula in (48) will represent the meaning of (49).

(48) AFRAID(s,k)
(49) Spiders are afraid of Kim.

Thus, the arguments' order in (47) and (48) represent two different sentences.

1.6.3. Types and Functions

In this section, we consider the semantic type of words which form a copular sentence. Here, I will concentrate on the copula's arguments. The semantics of the copula will be discussed in detail in Chapter 5, Section 3.

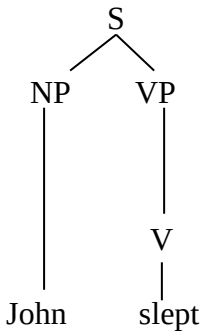
Essentially, the most basic semantic types are types *e* and *t* (Kearns, 2011). Type *e* refers to entities such as names, whereas type *t* refers to truth values (i.e. sentences or statements). Types that are formed from these two types are called 'functions' (Kearns, 2011). Therefore, for example, the proper name *David* in (42) above is of type *e*, the adjective (the predicate) *tall* is of type <*e*,*t*>, while the whole statement is of type *t*. For the adjective *tall* to be of type <*e*,*t*> means that the adjective requires an argument of type *e*, namely *David*, in order to produce a statement of type *t*, namely the statement *David is tall*.

The last issue that needs to be clarified here is how the statement is produced semantically through the combination of types and functions. For reasons of simplicity, I will show this via a sentence with an intransitive verb as in (50) below:

(50) John slept.

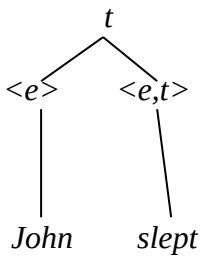
The syntactic structure of this sentence is shown below:

(51)



Now, semantically, *John* is an entity of type *e* and *slept* is a predicate of type <*e*,*t*>. The combination between these types is shown in (52).

(52)



In (52) the predicate *slept* requires an entity in order to produce a statement. In other words, we see that the intransitive verb *slept* takes its argument, which is of type *e*, and produces the statement *John slept*, which is of type *t*.

1.7. Summary

This chapter has provided an introduction to the thesis. It has discussed various topics which the reader needs to be aware of before engaging with the central issues that the thesis deals with. There were three main sections in this chapter, and hence three main topics: Arabic language, the HPSG framework and basic semantic assumptions. The next chapter will start with the main focus of the thesis, namely the description of the copula in Arabic.

Chapter 2

A Description of the Copula in Arabic

2.1. Introduction

This chapter provides a description of the Arabic copula, its arguments and the constructions in which it appears. It addresses the following questions:

1. What is the copula in Arabic?
2. What strategy can we use to have a copular sentence?
3. What are the possible complements in copular sentences?
4. When does the copula disappear? and
5. What syntactic properties do copular sentences have?

To answer these questions, first, in Section 2.2, I will define the copula in Arabic. Then, in Section 2.3, I will discuss strategies used to form copular sentences. In Section 2.4, copula complements will be discussed. Section 2.5 will clarify basic facts about copula absence in Modern Standard Arabic. Finally, Section 2.6 will highlight the properties of copular sentences in MSA.

Although the discussion of copular sentences includes the discussion of copular sentence types, generally I will not discuss copular sentence types here as these will be discussed in detail later in Chapter 3.

2.2. What is a copula?

In this section, I will first attempt to define the copula cross-linguistically and then determine what copulas in Arabic are. The definition of the copula, therefore, guides us towards the criteria of the copula.

2.2.1. Definition of the copula

Different definitions are presented in the literature, each of which attempts to capture the nature of the copula in world languages. Recently, Brown and Miller (2013: 112) define the copula as 'a verb which has no content, but simply links two words or phrases. The classic copula is *be* in English and its equivalent in other languages'. Such a definition assumes that any copula should have no semantic contribution. It follows from this, within the framework of Head-Driven Phrase Structure Grammar, that the copula identifies its SUBJ and CONT values with those of its predicative complement. This means that the copula *be* will have the following simplified lexical description:

(1) Lexical description of the copula with no content

$$\left[\begin{array}{l} \\ \text{PHON} < \textit{be} > \\ \text{SS} \mid \text{LOC} \mid \text{CONT}\ [4] \\ \\ \text{ARG-ST}\ [2] < \text{NP} > \oplus [3] < \left[\begin{array}{l} \text{PRED} + \\ \text{SUBJ}\ [2] \\ \text{CONT}[4] \end{array}\right] > \\ \\ \end{array}\right]$$

This lexical description shows that the copula has two elements in its ARG-ST list: the subject and the predicative argument. The predicative argument has its own CONT value whose value is identified with the copula's CONT value. This is what Brown and Miller's definition implies. However, a wider range of data show that this is not always the case, as the copula may contribute semantically. That is, the copula in equational sentences, as we will see, contributes semantically, as in the following examples:

(2) Cicero is Tully.

(3) *kaana* *hišaam-u-n* *huwa* *muħammad-a-n*

be.PFV .3SG.M Hisham-NOM-NN he Muhammad-ACC-NN

'Hisham was Muhammad'[16]

Within HPSG, there seems to be agreement that the copula in such sentences contributes semantically, i.e. it has its own CONT value (van Eynde, 2008, 2009, 2012, 2015; Müller, 2009, in preparation). If the copula contributes semantically, as in (2) and (3) above, then it should have a lexical description like the simplified one in (4):

[16] MSA examples here and afterwards are in the past tense as the copula does not appear in MSA in the present indicative context. This issue will be discussed below in Section 2.5.

(4) Lexical description of the copula with its own content

$$\begin{bmatrix} \text{PHON} < be > \\ \text{SS}|\text{LOC}|\text{CONT} \begin{bmatrix} identity\text{–}rel \\ \text{THEME} \quad [4] \\ \text{ATTRIBUTE} \ [5] \end{bmatrix} \\ \text{ARG–ST} \ [2] < \text{NP}_{[4]} > \oplus [3] < \text{NP}_{[5]} > \end{bmatrix}$$

The description in (4) shows that the copula has two arguments in its ARG-ST list: an NP subject and a complement of any category, XP. Unlike the lexical description in (1), the copula in (4) has its own CONT value. In other words, the copula itself forms a relationship between the index of its subject and the index of its complement.

Returning to Brown and Miller's (2013) definition of the copula, it appears that their definition does not capture the role of the copula in equational sentences. That is, they assume that the copula never has its own CONT value[17].

Another definition of the copula is found in Trask (1999). Trask (1999: 65) defines the copula as 'a specialized grammatical item, often a verb, which serves only to express identity or class membership'. Unlike the previous definition, Trask's definition distinguishes between the two uses of the copula, namely the identity and class membership uses. Sentences (2) and (3) above are examples of identity use, while examples (5) and (6) below are examples of class membership use:

(5) Kim is in bed.

(6) *kaana* *r-rajul-u* *muʕallim-a-n*

be.PFV..3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man was a teacher' (Aoun et al., 2010: 37)

[17] A similar definition is presented in Luraghi and Parodi (2008).

With regard to class membership, the predicate argument denotes a class and the referent of the subject is a member. That is, in (5) *Kim* is a member of the class of things which are *in bed*, whereas in (6) *the man* is a member of the class of things which have the property of being *a teacher*. Although the latter definition of the copula seems better than Brown and Miller's (2013) definition, it cannot be restricted only to the copula. That is, the notion of expressing class membership can be found with verbs which are not copulas. For example, verbs like *consider* and *regard* also express class membership relation, as examples in (7) show:

(7) a. He considers Kim a fool.

b. He considers Kim to be a fool.

c. He regards Kim as a fool.

In (7), *consider*, for example, expresses class membership relation as *Kim* is a member of the class of things which have the property of being *fool*. Therefore, once again the latter definition does not reflect the nature of the copula and only the copula[18].

2.2.2. The copula in Arabic

Taking previous definitions into account, the only criterion we can utilise to determine the copula in Arabic is that it is the equivalent to the verb *be* in English. This entails

[18] A similar definition is provided by Curnow (2000), although Curnow restricts the copula in the definition to limited cases.

concentrating on the equivalent to the verb *be* and dismissing verbs which may behave like the verb *be*, i.e. verbs of becoming, remaining, seeming and appearing, all of which syntactically behave like the verb *be* in some ways. In traditional grammar, *kaana* belongs to a group of verbs which syntactically behave in the same way; e.g. they take nominative subjects and (accusative and/or predicative) complements (Ryding, 2005: 634-640). Verbs, which belong to this class, are (a) *kaana* 'be', (b) *laysa* 'be.NEG', (c) *baata, ʔaSbaħa, ʔamsaa* and *Saara* 'become', (d) *maa zaala, maa bariħa, maa fatiʔa, maa nfakka* and *ðˁalla* 'remain' as well as (e) *maa daama* - 'as long as'.

It appears that only *kaana* 'be' and *laysa* 'be.NEG' are copulas in MSA[19]. Other verbs are verbs of becoming, remaining, seeming and appearing. In fact, one may argue that verbs of becoming, remaining, seeming and appearing should also be seen as copulas in a broad sense. However, I prefer the narrow sense that assumes *kaan* and *lays* to be the only copulas because this is the criterion we get from the definition of the copula cross-linguistically. This position is adopted by van Eynde (2008, 2009) and Bondaruk (2013). Thus, I will only discuss *kaana* and *laysa* in this research. (3) and (6) above are examples of *kaana*, while the following is an example of *laysa*:

(8) *laysa* *r-rajul-u* *muʕallim-a-n*

be.NEG.3SG.M the-man.SG.M-NOM teacher.SG.M-ACC-NN

'The man is not a teacher' (Aoun et al., 2010: 38)

These two copulas are verbal copulas, as we will see in the following section.

[19] Aoun et al. (2010) appear to consider kaana 'be', laysa 'be.NEG' and lazaala 'is still/remain' to be verbal copulas in Arabic. On the other hand, Ryding (2005) considers only kaana and laysa to be copulas. Ryding treats other verbs which behave like kaana and laysa as verbs of becoming, remaining, seeming and appearing.

2.3. Copular sentence strategies[20]

Copular sentence strategies are the strategies used to obtain copular sentences. That is, we can have a copula sentence by using different strategies. From a grammatical point of view, three strategies are argued for, although there is room for debate. In the following, I will discuss these strategies and investigate whether or not they are copular sentence strategies.

2.3.1. Strategy 1: verbal copulas

As stated above, *kaana* and *laysa* are verbal copulas in MSA. As they are verbal, verbal copulas share some properties with ordinary verbs. First, verbal copulas get inflected in the same way that ordinary verbs do. That is, in ordinary perfective verb stems like *katab* 'write.PFV', if we want the third person masculine singular form, we need to add the suffix *-a* to the perfective stem *katab*. Also, if we want to have the same form with the perfective copula stem *kaan* 'be.PFV', the same suffix is added to the copula stem *kaan*. The following partial paradigms of the perfective verb stem *katab* and the perfective verbal copula stem *kaan* convey this fact.

Table 2.1 A partial paradigm of the perfective verb stem katab 'write.PFV'

	Gender	Singular	Dual	Plural
Third Person	Masculine	*katab-a*	*katab-aa*	*katab-uu*
	Feminine	*katab-at*	*katab-ataa*	*katab-na*

[20] I followed Curnow (2000) in naming them 'strategies'.

Table 2.2 A partial paradigm of the perfective copula stem kaan ‘be.PFV’

	Gender	Singular	Dual	Plural
Third Person	Masculine	*kaan-a*	*kaan-aa*	*kaan-uu*
	Feminine	*kaan-at*	*kaan-ataa*	*kun-na*

These partial paradigms clearly show that the ordinary verb form and the verbal copula form have the same inflectional suffixes. As indicated in Chapter 1, Section 1.4, although *laysa* ‘be.NEG’ gets inflected like perfective verbs, it expresses the negation of the present tense (Ryding, 2005). Table 2.3 shows this fact:

Table 2.3 A partial paradigm of the copula *lays* ‘be.NEG’

	Gender	Singular	Dual	Plural
Third Person	Masculine	*lays-a*	*lays-aa*	*lays-uu*
	Feminine	*lays-at*	*lays-ataa*	*las-na*

The second property shared between verbal copulas and ordinary verbs is that the NP or AP complement of the verbal copulas and ordinary verbs is accusative. Compare:

(9) *kataba* *zayd-u-n* *r-risaalat-a*

write.PFV.3SG.M Zaid-NOM-NN the-letter.SG-ACC

‘Zaid wrote the letter’

(10) *kaana* *r-rajul-u* *muʕallim-a-n*

be.PFV.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

‘The man was a teacher’ (Aoun et al., 2010: 37)

In both (9) and (10), the complement of the copula/ordinary verb takes the accusative case marker. This makes them alike in terms of syntactic functions.

The third property shared here is the possibility of grammatically having subjectless sentences with both verbal copulas and ordinary verbs. First, let us consider the following examples:

(11) *darasa* *xalid-u-n* *l-qanuun-a*

study.PFV.3SG.M khalid-NOM-NN the-law.SG-ACC

'Khalid studied law'

(12) *kaana* *xalid-u-n* *muħaamiy-a-n*

be.PFV..3SG.M Khalid-NOM-NN lawyer.SG.M-ACC-NN

'Khalid was a lawyer'

Now, let us consider these sentences without a subject.

(13) *darasa* *l-qanuun-a*

study.PFV.3SG.M the-law.SG-ACC

'(He) studied law'

(14) *kaana* *muħaamiy-a-n*

be.PFV.3SG.M lawer.SG.M-ACC-NN

'(He) was a lawyer'

Note that the absence of the subject is grammatical in both cases. That is, Arabic is a pro-drop language where the subject can be omitted, i.e. a subjectless language (Mohammed, 2000).

All these properties shared between ordinary verbs and verbal copulas indicate that they are alike. However, verbal copulas differ from ordinary verbs in the variety of possible complements. That is, the complement of a verbal copula can be NP, PP, AP, AdvP or verbal as shown below, respectively:

(15) *kaana r-rajul-u mudarrisan/ fii l-madrasati/ Tawiilan/ hunaa/ yaktubu t-taqriira*

be.PFV the-man-NOM teacher in the-school tall here write the-report

'The man was a teacher/at school/ tall/ here/ writing the report'

This variety does not seem to be possible with ordinary verbs. The possible complements in copular sentences will further be discussed below in Section 2.4.

One further point to mention about verbal copulas is that *kaan* differs from *lays* in that *kaan* can have perfective, imperfective (preceded by a negative particle or not) or imperative forms, while *lays* can only be in the perfective form (with present tense interpretation). The perfective form of *kaan* and *lays* are shown in (3) and (8) above, respectively. The imperfective and imperative forms of *kaan* is shown below:

(16) *lam yakun ʔahmad-u muhaasib-a-n*

NEG.PST be.IPFV.JSV.3SG.M Ahmad-NOM accountant.SG.M-ACC-NN

'Ahmad was not an accountant'

(17) *sa-yakuunu* *s-safiir-u* *ħaaDir-a-n*

FUT-be.IPFV.INDC..3SG.M the-ambassador.SG.M-NOM present.SG.M-ACC-NN

'The ambassador will be present'

(18) *lan* *yakuuna* *zayd-u-n* *hunaa*

NEG.FUT be.IPFV.SBJV.3SG.M Zaid-NOM-NN here

'Zaid will not be here'

(19) *kun* *ʔiijabiyy-a-n*

be.IMPR.SG.M positive.SG.M-ACC-NN

'Be positive'

Notice that the inflectional paradigm of *lays* suggests that it can only be perfective. That is, it does not get inflected in the same way that imperfective verb stems get inflected in (Ryding, 2005).

In sum, the preceding discussion in this section shows that we can use the copulas, *kaan* and *lays*, to form copular sentences. It also shows that *kaana* and *laysa* are verbs. That is, like verbs, they (i) get inflected in the same way, (ii) assign the NP and AP complements an accusative case and (iii) can have no overt subject. Essentially, *kaana* differs from *laysa* in that *kaana* can have perfective, imperfective or imperative verb forms, while *laysa* always has the perfective form (with present tense interpretation).

2.3.2. Strategy 2: The zero copula

In this strategy, the copula fails to appear in the sentence. In other words, there is no overt verbal element, but instead we only have the subject and the complement. Such a sentence in traditional grammar is called a *nominal sentence*. It is also named *equational* in the English description of Arabic grammar (e.g., Mohammed, 2000; Ryding, 2005). The name 'equational', however, is not appropriate for the present research. Copular sentences, whether the copula is overt or not, are theoretically divided into four types: equational sentences, predicational sentences, specificational sentences and identificational sentences. As will be mentioned in Chapter 3, Section 3.3.1., the term *equational* refers to the copular sentencee where both the subject and the complement are definite NPs. In this sense, the term *equational* has a different meaning. Also, the term *nominal* is controversial; it refers to subject-initial sentences in traditional grammar. This will include topics in SVO order where there is an overt verb/copula. Hence, this term is also not appropriate. Therefore, in the present research I will use the term *verbless sentences* to refer to those sentences which lack the use of the copula. This term is used to refer to sentences which satisfy the zero copula strategy in the work of Eid (1991). An example of this strategy is in (20):

(20) *ʕumar-u* *muʕallim-u-n*

Omar-NOM teacher.SG.M-NOM-NN

'Omar is a teacher' (Aoun et al., 2010: 35)

Unlike the verbal copula strategy, the zero copula strategy, as (20) shows, does not make use of any overt verbal element such as *kaana*.

The use of this strategy, however, is limited to one context, i.e. it is used in the present indicative context (Ryding, 2005; Benmamoun, 2008; Aoun et al., 2010). Thus, the absence of the copula in a copular sentence means that the sentence is in a present indicative context. Hence, the sentence in (20) above, for example, only has a present interpretation and not past or future interpretations.

The use of this strategy causes some syntactic effects. First, it follows from the use of this strategy that the copula may not appear in the present indicative form. Such a restriction causes the ungrammaticality of (21) below.

(21) * *yakuunu* *r-rajul-u* *mariiD-u-n*

be.IPFV.INDC the-man.SG-NOM sick.SG.M-NOM-NN

'The man is sick'

(21) is fully ungrammatical. The grammatical version of this sentence is in (22) below.

The absence of the copula in MSA will be discussed in detail in Section 2.5 below.

The second effect of this strategy is that the NP and AP complements in such a construction must be nominative, otherwise the sentence is ungrammatical. Compare (22) to (23) below:

(22) *r-rajul-u* *mariiD-u-n*

the-man.SG-NOM sick.SG.M-NOM-NN

'The man is sick'

(23) * *r-rajul-u* *mariiD-a-n*

the-man.SG-NOM sick.SG.M-ACC-NN

'The man is a teacher'

The case marking in copular sentences will be discussed in detail below in Section 2.6.

The third effect is that the subject in zero copula sentences cannot be omitted, unlike the case in the verbal copula strategy. That is, the omission of the subject results in an incomplete sentence. Compare (22) to (24):

(24) *mariiD-u-n*

sick.SG.M-NOM-NN

'sick'

If the subject is omitted, as in (24), we then have a word which cannot stand as a sentence. Recall from Section 2.3.1 above that in the verbal copula strategy the overt copula agrees with the subject in certain features (e.g. number, gender and person) which allows for the absence of subject. The previous syntactic effects distinguish zero copular sentences from verbal ones.

In sum, the zero copula strategy is restricted to the present indicative context. It differs from the verbal copula strategy in that (i) there is no overt copula and (ii) the NP and AP complements takes the nominative case not the accusative case.

2.3.3. Strategy 3: The pronominal copula

In this strategy, what looks like the personal pronoun appears instead of the verbal copula. This is argued for as an independent strategy by Eid (1983, 1991). Eid argues that what looks like a pronoun in sentence (25) from Egyptian Arabic (EA) shares some features with verbal copulas (Eid, 1991: 32).

(25) *nadia hiyya il-doktora*

Nadia she the-doctor.SG.F

'Nadia is the doctor' (EA, Eid, 1991: 32)

Eid (1991) maintains that there is evidence to support her assumption that the element *hiyya* above behaves like the copula. The first piece of evidence is that the pronoun occurs only in the present tense context where the verbal copula is absent. In other words, this pronoun does not appear with past or future tense interpretations. For example, see sentences (26) and (27) below:

(26) *ʔil-walad kaan zariif*

the-boy.SG.M be.PFV.3SG.M nice.3SG.M

'The boy was nice' (EA, Eid, 1991: 32)

(27) *ʔibn-ii ħa-ykuun mudarris*

son.SG-my FUT-be.IPFV.3SG.M teacher.SG.M

'My son will be a teacher' (EA, Eid, 1991: 32)

While the verbal copula disappears in (25) in present context, it appears in past and future contexts as in (26) and (27). In these sentences, the pronoun does not appear. The second piece of evidence is that the pronoun and the verbal copula cannot co-occur in the same sentence as the ungrammaticality of sentences (28) and (29) conveys:

(28) **ʕali kaan huwwa zariif*

Ali be.PFV.3SG.M he nice.3SG.M (Eid, 1991: 34)

(29) **ʕali huwwa kaan zariif*

Ali he be.PFV.3SG.M nice.3SG.M (EA, Eid, 1991: 34)

However, in MSA the pronoun can co-occur with the verbal copula as in (30) below. This can be seen as evidence that the pronoun is not a copula. That is, it is impossible to have two forms of the copula in one simple sentence[21].

(30*) kaana zuhayr-u-n huwa š-šaaʕir-a*

be.PFV.3SG.M Zuhair-NOM-NN he the-poet.SG.M-ACC

'Zuhair was the poet'

[21] Within HPSG, this seems impossible as it entails having two heads in the same simple clause.

Other evidence which suggests that this pronoun does not behave like a copula is that the complement in the pronominal strategy is nominative. However, if what looks like a pronoun was a form of the copula, we would expect its complement to be accusative, as is the case with verbal copulas. For example, note the complement case marker shown below:

(31) *zuhayr-u-n huwa š-šaaʕir-u*

Zuhair-NOM-NN he the-poet.SG.M-NOM

'Zuhair is the poet'

Note that in (31) the complement *ššaaʕiru* 'the poet' is nominative, while it is accusative in (30) when the verbal copula appears. Further, if the complement in (31) is accusative, the sentence will be ungrammatical, as in (32) below:

(32) **zuhayr-u-n huwa š-šaaʕir-a*

Zuhair-NOM-NN he the-poet.SG.M-ACC

'Zuhair is the poet'

Such evidence suggests that the pronominal copula is not a strategy used to form a copular sentence in MSA since the pronoun is not a copula.

The analysis of the pronominal element as a copula is one possibility which we argue against. Another possible analysis of this pronominal element is to assume that it is a subject

preceded by a topic. However, there is evidence rejecting this analysis. The first piece of evidence is that this apparent pronoun is not preceded by a topic as *zuhairun* in (30) above is not left dislocated. In other words, *zuhairun* would be a topic if it was left dislocated in left dislocation sentences such as that in (33) below.

(33) *zuhayr-u-n* *kaana* *huwa* *š-šaaʕir-a*

Zuhair-NOM-NN be.PFV.3SG.M he the-poet.SG.M-ACC

'Zuhair, he was the poet'

This shows us that the case under discussion is different from left dislocation sentences. That is, the two sentences differ in their word order. The second piece of evidence which conveys that the pronominal element is not a subject can be clarified by the following example:

(34) *kuntu* *ʔanaa* *huwa* *l-muʔallif-a …*

be.PFV.1SG I he the-author-ACC

'I was the author …'

If the pronoun *huwa* 'he' in (34) was a subject, then we would expect it to agree with the verb in person. However, it is clear that they differ in this respect. While the verb has the 1st person form, the pronoun has the 3rd person form. This shows that the pronoun under

discussion is not a subject. Further, the pronoun instead agrees in number and gender with the element which precedes it, as shown by the following examples:

(35) *kaanat l-fataat-u hiya/*huwa l-munassiqat-a*

be.PFV.3SG.F the-girl.SG-NOM she / he the-coordinator.SG.F-ACC

'The girl was the coordinator'

(36) *kaana h aʔulaaʔi hum/*huwa ʔafDal-a fariiq-i-n*

be.PFV.3SG.M those they/ he best.SG-ACC team.SG.M-GEN-NN

'Those were the best team'

Note that in (36) the complement is singular, while the pronoun is plural. This confirms the fact that the pronoun agrees with the element which precedes it.

So far, we have concluded that the pronominal element is not a form of the copula nor a subject preceded by a topic. Hence, what is one possibility left is that this pronominal element is an extra complement. That is, several facts suggest that the sentence subject is the element which precedes the pronoun, e.g. subject-verb agreement facts. If the subject is supplied and the pronoun cannot be a form of the copula, then one possibility is that this pronoun is one of the sentence complements[22].

[22] Eid (1983, 1991) argues that this pronominal element is an anti-ambiguity device which forces sentential vs. phrasal reading. However, this does not explain the syntactic analysis of this element.

One final point to mention about this pronominal complement is that it is optional. Therefore, it can be omitted from (30) above as the following example conveys:

(37) *kaana* *zuhayr-u-n* *š-šaaʕir-a*

be.PFV.3SG.M Zuhair-NOM-NN the-poet.SG.M-ACC

'Zuhair was the poet'

In (37), although the pronoun *huwa* is omitted, the sentence remains grammatical. This suggests the optionality of that element. Consequently, the preceeding discussion in this section suggests that the pronominal copula strategy is not really a strategy in MSA copular sentences. In fact, the pronominal element in the discussed copular sentences is better analysed as an optional complement.

2.3.4. Summary

In summary, it appears that only two strategies are used to form copular sentences in MSA, namely the verbal copula strategy and the zero copula strategy. The pronoun, in so-called pronominal copula strategy, occurs in a type of copular sentence called equational sentences, as we will see in Chapter 3, Section 3.3.1, and can occur with/without an overt copula.

2.4. The copula complement phrasal categories

This section discussess possible complements of the copula. It makes a distinction between what looks like verbal complements and other possible complements.

2.4.1. Possible complements of the copula

As in some other languages, the copulas *kaana* and *laysa* in MSA can have complements of various categories. In particular, the complement can be NP, AP, PP, AdvP or what looks like VP (either with perfective or imperfective forms), as shown below, respectively:

(38) a. *kaana* *r-rajul-u* *muʕallim-a-n*

be.PFV.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man was a teacher' (Aoun et al., 2010: 37)

b. *laysa* *r-rajul-u* *muʕallim-a-n*

be.NEG.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man is not a teacher' (Aoun et al., 2010: 38)

(39) a. *kaanat* *l-ġurfat-u* *kabiirat-a-n*

be.PFV.3SG.F the-room.SG.F-NOM big.SG.F-ACC-NN

'The room was big'

b. *laysat* *l-ġurfat-u* *kabiirat-a-n*

be.NEG.3SG.F the-room.SG.F-NOM big.SG.F-ACC-NN

'The room is not big'

(40) a. *kaana* *l-kitaab-u* *ʕalaa* *l-maktab-i*

be.PFV.3SG.M the-book.SG.M-NOM on the-table.SG.M-GEN

'The book was on the table'

b. *laysa* *l-kitaab-u* *ʕalaa* *l-maktab-i*

be.NEG.3SG.M the-book.SG.M-NOM on the-table.SG.M-GEN

'The book is not on the table'

(41) a. *kaana* *zayd-u-n* *hunaa*

be.PFV.3SG.M Zaid-NOM-NN here

'Zaid was here'

b. *laysa* *zayd-u-n* *hunaa*

be.NEG.3SG.M Zaid-NOM-NN here

'Zaid is not here'

(42) a. *kaana* *zayd-u-n* *kataba* *t-taqriir-a*

be.PFV.3SG.M Zaid-NOM-NN write.PFV.3SG.M the-report.SG-ACC

'Zaid had written the report'

b. **laysa* *zayd-u-n* *kataba* *t-taqriir-a*

be.NEG.3SG.M Zaid-NOM-NN write.PFV.3SG.M the-report.SG-ACC

(43) a. *kaana* *zayd-u-n* *yaktubu* *t-taqriir-a*

be.PFV.3SG.M Zaid-NOM-NN write.IPFV.INDC.3SG.M the-report.SG-ACC

'Zaid was writing the report'

b. *laysa* *zayd-u -n* *yaktubu* *t-taqriir-a*

be.NEG.3SG.M Zaid-NOM-NN write.IPFV.INDC.3SG.M the-report.SG-ACC

'Zaid does not write the report'

Note that *kaana* and *laysa* can have the same range of complements except for the perfective verbal complement, as in (42b) above. That is, the copula *laysa* is a negating verb in the present tense (Benmamoun, 2000), as indicated earlier. Among these complements, the NP, AP, PP and AdvP complements may precede the subject as shown below:

(44) a. *kaana* *muʕallim-a-n* *r-rajul-u*

be.PFV.3SG.M teacher.SG.M-ACC-NN the-man.SG-NOM

'The man was a teacher'

b. *laysa* *muʕallim-a-n* *r-rajul-u*

be.NEG.3SG.M teacher.SG.M-ACC-NN the-man.SG-NOM

'The man is not a teacher'

(45) a. *kaanat* *kabiirat-a-n* *l-ġurfat-u*

be.PFV.3SG.F big.SG.F-ACC-NN the-room.SG.F-NOM

'The room was big'

b. *laysat* *kabiirat-a-n* *l-ġurfat-u*

be.NEG.3SG.F big.SG.F-ACC-NN the-room.SG.F-NOM

'The room is not big'

(46) a. *kaana* *ʕalaa* *l-maktab-i* *l-kitaab-u*

be.PFV.3SG.M on the-table.SG.M-GEN the-book.SG.M-NOM

'The book was on the table'

b. *laysa* *ʕalaa* *l-maktab-i* *l-kitaab-u*

be.NEG.3SG.M on the-table.SG.M-GEN the-book.SG.M-NOM

'The book is not on the table'

(47) a. *kaana* *hunaa* *zayd-u-n*

be.PFV.3SG.M here Zaid-NOM-NN

'Zaid was here'

b. *laysa* *hunaa* *zayd-u-n*

be.NEG.3SG.M here Zaid-NOM-NN

'Zaid is not here'

Now, only complements of *kaana* may precede both the copula and its subject as below:

(48) a. *muʕallim-a-n* *kaana* *r-rajul-u*

teacher.SG.M-ACC-NN be.PFV.3SG.M the-man.SG-NOM

'The man was a teacher'

b. **muʕallim-a-n* *laysa* *r-rajul-u*

teacher.SG.M-ACC-NN be.NEG.3SG.M the-man.SG-NOM

'The man is not a teacher'

(49) a. *kabiirat-a-n* *kaanat* *l-ġurfat-u*

big.SG.F-ACC-NN be.PFV.3SG.F the-room.SG.F-NOM

'The room was big'

b. **kabiirat-a-n laysat l-ġurfat-u*

big.SG.F-ACC-NN be.NEG.3SG.F the-room.SG.F-NOM

'The room is not big'

(50) a. *ʕalaa l-maktab-i kaana l-kitaab-u*

on the-table.SG.M-GEN be.PFV.3SG.M the-book.SG.M-NOM

'The book was on the table'

b. **ʕalaa l-maktab-i laysa l-kitaab-u*

on the-table.SG.M-GEN be.NEG.3SG..M the-book.SG.M-NOM

'The book was/is not on the table'

(51) a. *hunaa kaana zayd-u-n*

here be.PFV.3SG.M Zaid-NOM-NN

'Zaid was here'

b. **hunaa laysa zayd-u-n*

here be.NEG.3SG.M Zaid-NOM-NN

'Zaid is not here'

As the examples above show, the negatiing copula *laysa* does not allow its NP, AP, PP or AdvP complements to precede it.

2.4.2. Is there a VP complement?

Unlike the NP, AP, PP and AdvP complements, the verb and its complement, either with *kaana* or *laysa*, cannot precede the subject. Compare (42a) and (43) to (52) and (53) below:

(52) **kaana* *kataba* *t-taqriir-a* *zayd-u-n*

be.PFV.3SG.M write.PFV.3SG.M the-report.SG-ACC Zaid-NOM-NN

(53) a. **kaana* *yaktubu* *t-taqriir-a* *zayd-u-n*

be.PFV.3SG.M write.IPFV.INDC.3SG.M the-report.SG-ACC Zaid-NOM-NN

b. **laysa* *yaktubu* *t-taqriir-a* *zayd-u-n*

be.NEG.3SG.M write.IPFV.INDC.3SG.M the-report.SG-ACC Zaid-NOM-NN

It is also ungrammatical for the verb and its complement to precede the copula as in (54) and (555).

(54) * *kataba* *t-taqriir-a* *kaana* *zayd-u-n*

write.PFV.3SG.M the-report.SG-ACC be.PFV.3SG.M Zaid-NOM-NN

(75) a. **yaktubu* *t-taqriir-a* *kaana* *zayd-u-n*

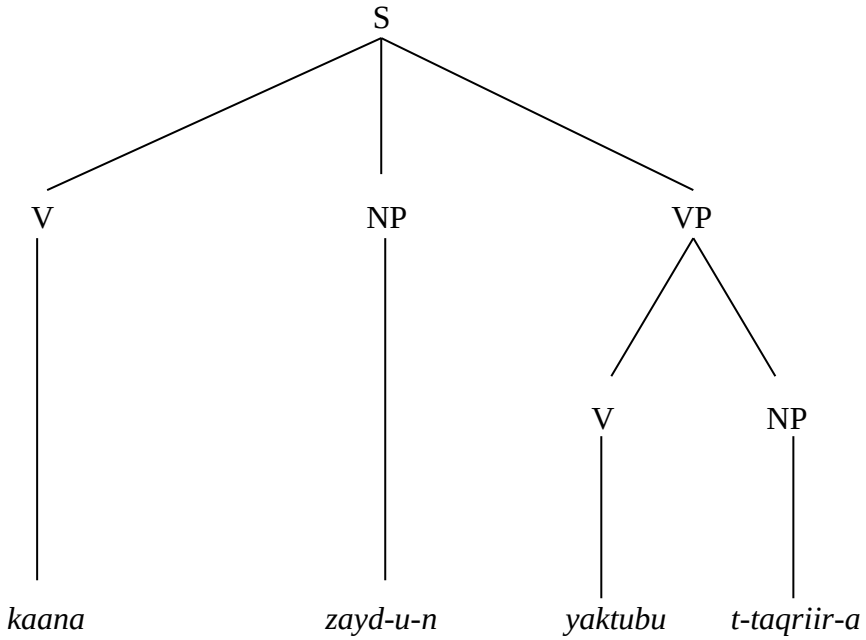
write.IPFV.INDC.3SG.M the-report.SG-ACC be.PFV.3SG.M Zaid-NOM-NN

b. **yaktubu* *t-taqriir-a* *laysa* *zayd-u-n*

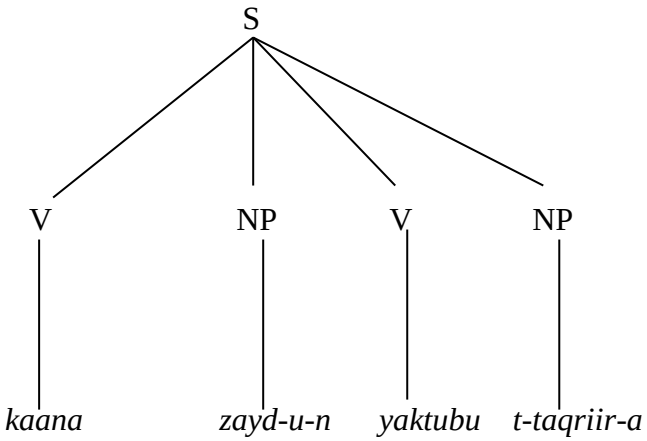
write.IPFV.INDC.3SG.M the-report.SG-ACC be.NEG.3SG.M Zaid-NOM-NN

This test suggests that the verb and its complement do not form a constituent, i.e. a VP complement. In other words, the movement constituency test shows that the verb and its complement can neither precede the subject nor the copula. This reveals that instead of having a structure like (56) with a VP complement, we have a structure like (57) with the copula as the head of a flat structure.

(56)



(57)



In (57), the subject, the verb and its complement are all sisters of the copula in which the copula is the head of the flat structure (Abeillè and Godard, 2002).

On the other hand, a coordination test shows us that the verb and its complement can be coordinated with, for example, a copula's AP complement as in (58):

(58) *kaana baʕD-u T-Tullaab-i ʔaðkiyaaʔ-a wa yaʕmaluuna bi-jiddin*

be.PFV some-NOM the-student.PL-GEN clever.PL-ACC and work.IPFV by-hard

'Some students were intelligent and working hard'

The coordination test, as in (58), contrasts with the movement test as the coordination test reveals that the verb and its complement here form a VP complement. However, the coordination test cannot be relied on as there are well-known cases of non-constituent coordination (Sag et al., 1985). In such cases, two conjuncts which are not governed by the same head are coordinated, as in (59) below:

(59) *ʔaʕTaytu zayd-an kitaab-an wa xaalid-an qalam-an*

give.PFV.1SG Zaid-ACC book.SG-ACC and Khalid-ACC pen.SG-ACC

'I gave Zaid a book and Khalid a pen'

In (59), *xaalid-an qalam-an*, 'Khalid a pen' are not complements of the overt verb *ʔaʕTaytu* 'give.PFV' as this verb already has its own arguments (Two COMPS *zayd-an* 'Zaid'

and *kitaab-an* 'a book')[23]. Therefore, it appears that the coordination test here is not accurate to provide us with the right analysis. Consequently, it seems that the complements of the copula can be NP, AP, PP, AdvP or verbal. However, the assumption that the copula takes a verbal complement is problematic.

A problem arises from analysing the auxiliary, e.g. in (42a) and (43a) above, as a copula that takes a verbal complement. The problem is that the tense/aspect interpretation such sentences have does not come from the copula itself nor from the lexical verb alone. In fact, it is a compound tense that both the copula/auxiliary and the lexical verb express. That is, in compound tenses there is a combination between a (finite) auxiliary verb (i.e. the copula in the above section) and an imperfective indicative or perfective (finite) verb forms (Alsharif and Sadler, 2009). This combination, essentially, gives, for example, sentence (43a) the past progressive interpretation.

If we analyse the auxiliary in (42a) and (43a) as a copula that takes imperfective indicative or perfective verb forms as its complement, it is not clear how tense/aspect can be interpreted. That is, tense in such a case is periphrastic. Note that if the auxiliary perfective form is combined with an imperfective indicative lexical verb form, then it is not necessary to have the same tense/aspect interpretation. For example, while (43a) is given past progressive interpretation, sentence (60) below is given past future interpretation:

(60) *kaana* *zayd-u-n* *sa-yaktubu* *t-taqriir-a*

be.PFV3SG.M Zaid-NOM-NN FUT-write.IPFV.INDC.3SG.M the-report.SG-ACC

'Zaid was going to write the report'

[23] For possible analyses of this phenomenon, see Sag et al. (1985: 156-164).

The difference between (43a) and (60) is that the imperfective indicative verb form in (60) is inflected for future tense by the prefex *sa-*. It is not clear how this can e ensured if we adopt the assumption that the tense auxiliary is a copula that takes perfective/imperfective verb forms as its complement. This, obviously, puts in question the possibility for the copula to have a verbal complement. For this reason, I will not further discuss the analysis of the copula in these constructions in this thesis, and will leave it for future research.

So far, we saw that the copula can take an XP complement that is not headed by a vern. Moreover, it is argued in Aoun et al. (2010) that the complement of the copula can also be a small clause. Argubly, this is the case in existential sentences. This possibility will be examined in the next subsection.

2.4.3. Existential sentences

Existential sentences are sentences with the expletive *hunaaka* 'there' like that in (61) below.

(61)	*kaana*	*hunaaka*	*Taalib-u-n*	*fii*	*l-ħadiiqat-i*
	be.PFV.3SG.M	there	student.SG.M-NOM-NN	in	the-garden.SG-GEN

'There was a student in the garden' (Aoun et al., 2010: 70)

Aoun et al. (2010: 69) argue that the expletive *hunaaka* 'there' in (61) is the subject, while the indefinite NP and the PP form a small clause occurring in the complement position of the copula *kaana*. Now, in order to ensure that this is the right analysis we need to perform

certain tests. First, if the expletive *hunaaka* was the subject, then we would expect it to be ropicalised because normally subjects can be fronted. However, sentence (62) below conveys that this is not possible.

(62) **hunaaka kaana Taalib-u-n fii l-ħadiiqat-i*

there be.PFV.3SG.M student.SG.M-NOM-NN in the-garden.SG-GEN

'There was a student in the garden'

The ungrammaticality of (62) may be regarded as evidence that the expletive *hunaaka* is not the subject of the sentence. However, one may argue against this evidence because not all subjects can be topicalised. For example, unlike some other subjects in English, the expletive *there* cannot be topicalised as shown below[24].

(63) a. I think Kim is clever

b. Kim, I think is clever

(64) a. I think there is raining

b. *There, I think is raining

[24] In English, there is clear evidence that the expletive *there* is the subject (e.g. raising and question tags), as exemplified below:

(i) There seems to be a problem.

(ii) There is raining, isn't there?

On the other hand, it appears that there is no evidence that the expletive *hunaaka* is the subject of the sentence. Thus, let us move on to the small clause complement.

The analysis that the complement is a small clause is rejected by the fact that the expletive *hunaaka* may occur between the indefinite NP and the PP, as shown below.

(65) **kaana* *Taalib-u-n* *hunaaka* *fii* *l-ħadiiqat-i*

be>PFV.3SG.M student.SG.M-NOM-NN there in the-garden.SG-GEN

'There was a student in the garden'

(66) *kaana* *fii* *l-ħadiiqat-i* *hunaaka* *Taalib-u-n*

be.PFV.3SG.M in the-garden.SG-GEN there student.SG.M-NOM-NN

'There was a student in the garden'

The preceding discussion calls for re-determining the subject and the complement in existential sentences. In fact, three facts support the assumption that the indefinite NP is the subject of the sentence. First, subject-verb agreement facts in MSA show that the indefinite NP is the element that agrees with the copula, as the glossing conveys. For example, the copula and the indefinite NP in (61) agree in person and gender. Therefore, if the indefinite NP is, for instance, 3rd person feminine as in (67), the verb needs to agree with it in person and gender as well.

(67) *kaanat* *hunaaka* *fataat-u-n* *fii* *l-maħall-i*

be.PFV.3SG.F there girl.SG.F-NOM-NN in the-shop.SG-GEN

'There was a girl in the shop'

Accordingly, if the copula does not agree with the indefinite NP, the sentence will be ungrammatical, as in (68) below.

(68) **kaanat* *hunaaka* *Taalib-u-n* *fii* *l-ħadiiqat-i*

be.PFV.3SG.F there student.SG.M-NOM-NN in the-garden.SG-GEN

'There was a student in the garden'

However, we know that, for instance, in English the copula agrees with the indefinite NP where it is clear that the indefinite NP is not a subject, as exemplified below:

(69) a. There is a cow in the field.

b. *There are a cow in the field.

c. There are cows in the field.

d. *There is cows in the field.

Therefore, it appears that subject-verb agreement is not convenient because agreement in existential sentences seems to be different from agreement elsewhere.

The second piece of evidence that the indefinite NP is the subject in MSA is the nominative case marking that the indefinite NP has as in (61) above. The nominative case marking, essentially, is the case that the subject has. In other words, if the indefinite NP were a complement of the copula *kaana*, we would expect it to be accusative.

The third piece of evidence comes from the effect of *ʔinna* on the subject in MSA (*ʔinna* is a word used to emphasise the speech). First, consider the following sentence:

(70) *fii* *d-daar-i* *rajul-u-n*

in the-house.SG-GEN man.SG.M-NOM-NN

'A man is in the house'

Now, if *ʔinna* occurs in the sentence initial position, the subject must be accusative. Otherwise, the sentence will be ungrammatical, as shown below:

(71) a. *ʔinna* *fii* *d-daar-i* *rajul-a-n*

indeed in the-house.SG-GEN man.SG.M-ACC-NN

'A man is in the house'

b. **ʔinna* *fii* *d-daar-i* *rajul-u-n*

indeed in the-house.SG-GEN man.SG.M-NOM-NN

'A man is in the house'

Examples in (71) show that the subject in such a case is the element that is affected by *ʔinna.* Let us now consider the following existential sentences:

(72) a. *hunaaka Taalib-u-n fii l-ħadiiqat-i*

there student.SG.M-NOM-NN in the-garden.SG-GEN

'There is a student in the garden'

b. *ʔinna hunaaka Taalib-a-n fii l-ħadiiqat-i*

indeed there student.SG.M-ACC-NN in the-garden.SG-GEN

'There is a student in the garden'

c. **ʔinna hunaaka Taalib-u-n fii l-ħadiiqat-i*

indeed there student.SG.M-NOM-NN in the-garden.SG-GEN

'There is a student in the garden'

Examples in (72) show that the indefinite NP in existential sentences is the element affected by the word *ʔinna*, just like the subject in (71) above. This suggests that the indefinite NP in existential sentences is the subject.

The latter two pieces of evidence suggest that the indefinite NP in existential sentences is the subject. If this is correct, then what we should know about indefinite NPs in copular sentences is that when they occur in subject position, a complement must precede them, otherwise the sentence will be ungrammatical. This is shown in (73) below.

(73) a. *kaana fii d-daar-i rajul-u-n*

be.PFV.3SG.M in the-house.SG-GEN man.SG.M-NOM-NN

'A man was in the house'

b. **kaana* *rajul-u-n* *fii* *d-daar-i*

be.PFV.3SG.M man.SG.M-NOM-NN in the-house.SG-GEN

'A man was in the house'

Now, if we look at the existential sentences presented so far, we will see that existential sentences are grammatical only if the expletive *hunaaka* precedes the indefinite NP. This implies that the expletive is the complement in existential sentences as is the case with the PP in (73). Based on that, the copula takes its arguments, i.e. an indefinite NP subject and the expletive *hunaaka* as its complement. Therefore, I consider the PP as an optional complement[25]. This is confirmed by the grammaticality of (74) below.

(74) *hunaaka* *mawDuʕ-aani* *muhimm-aani*

there topic.M-DU.NOM important.M-DU.NOM

'There are two important topics' (Ryding, 2005)

In (74), although the PP is omitted, the sentence remains grammatical. Consequently, I argue that the expletive *hunaaka* is an AdvP complement but with special word order as a result of having an indefinite NP subject. This emphasises that the complement of the copula cannot be a small clause. It should be noted that there is no overt copula in (74). In fact, this is an example for copula absence in MSA, which will be the focus of the next section.

[25] This is the second case in which the copula takes an optional complement. The first case is the pronominal complement discussed in Section 2.3.3 above.

2.4.4. Summary

Section 2.4 shows that the copula can take NP, AP, PP and AdvP complements. Although what looks like a verbal complement is similar in some ways to other complements, it is different enough to be excluded from the copula's possible complements.

2.5. Basic facts about copula absence in MSA

Generally speaking, the copula may be absent in MSA in the present indicative context[26] (Bahloul, 1993; Ryding, 2005; Benmamoun, 2008; Aoun et al., 2010; Ryding, 2014). That is, in the present indicative context the copula has three possible situations: (i) it must be absent, (ii) it must be overt or (iii) its appearance is optional. It must be absent in the deictic present tense[27] as in (22) above, repeated below as (75):

(75) *r-rajul-u* *mariiD-u-n*

the-msn.SG-NOM sick.SG.M-NOM-NN

'The man is sick' (Fassi Fehri, 1993)

This sentence is in the present tense as it accepts the adverb *ʔalʔaana* 'now' and the sentence remains grammatical (Fassi-Fehri, 1993). For example:

[26] Eid (1983: 198) argues that there is no present tense form of a copula in Egyptian Arabic. In MSA, however, there are present jussive, subjunctive and indicative forms of the copula *kaana*, although the present indicative form is forbidden except in certain contexts where it is obligatory, as we will see in this section.

[27] Following Benmamoun (2000: 47), (assume that deictic contexts refer to sentences that contain (i) 'individual-level predicates that describe states of affairs that are permenent' or (ii) 'stage-level predicates that describe situations that are true in the present moment only'. Generic contexts, however, refer to sentences that contain stage-level predicates that describe situations that are usually true in the past and present and are expected to be true in the future (Benmamoun, 2000: 47).

(76) *r-rajul-u* *mariiD-u-n* *ʔalʔaana*

the-msn.SG-NOM sick.SG.M-NOM-NN now

'The man is sick now' (Fassi Fehri, 1993)

In contrast, (75) does not accept past adverb. The use of such an adverb causes ungrammatical sentences as in (77):

(77) * *r-rajul-u* *mariiD-u-n* *ʔamsi*

the-msn.SG-NOM sick.SG.M-NOM-NN yesterday

'The man is sick yesterday' (Fassi Fehri, 1993)

The ungrammaticality of (77), together with the grammaticality of (76), suggest that sentence (75) receives present tense interpretation.

The absence of the copula in the present indicative context means that it appears otherwise. That is, with respect to tense, it appears in past and future contexts as shown below (Sentence (78a) is presented above as (6)).

(78) a. *kaana* *r-rajul-u* *muʕallim-a-n*

be.PFV.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man was a teacher' (Aoun et al., 2010: 37)

b. *sa-yakuunu* *r-rajul-u* *muʕallim-a-n*

FUT-be.IPFV.INDC.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man will be a teacher' (Aoun et al., 2010: 37)

Therefore, if the sentence receives past or future interpretation, the copula must appear.

However, with regard to mood, the copula appears in imperfective jussive and subjunctive forms, as shown below, respectively.

(79) *lam* *yakun* *ħulum-a-n* *ʕaadiyy-a-n*

NEG.PST be.IPFV.JSV.3SG.M dream.SG.M-ACC-NN regular.SG.M-ACC-NN

'It was not a regular dream' (Ryding, 2005: 636)

(80) *lan* *yakuuna* *l-ʔaxiir-a* *min* *nawʕ-i-hi*

NEG.FUT be.IPFV.SBJV.3SG.M the-last.SG.M-ACC from kind.SG.M-GEN-his

'It will not be the last of its kind' (Ryding, 2005: 645)

The absence of the copula in these contexts causes ungrammatical sentences, as shown below:

(81) **lam* *ħulum-u-n* *ʕaadiyy-u-n*

NEG.PST dream.SG.M-NOM-NN regular.SG.M-NOM-NN

Intended: 'It was not a regular dream'

(82) **lan* *l- ʔaxiir-u* *min* *nawʕ-i-hi*

NEG.FUT the-last.SG.M-NOM from kind.SG.M-GEN-his

Intended: 'It will not be the last of its kind'

While *lam* and *lan* negate past and future tenses, the copula *laysa* is used to negate the present tense, as shown in (8) above, repeated below as (83).

(83) *laysa* *r-rajul-u* *muʕallim-a-n*

be.NEG.3SG.M the-man.SG.M-NOM teacher.SG.M-ACC-NN

'The man is not a teacher' (Aoun et al., 2010: 38)

As the copula must be absent in the deictic present indicative context, its appearance in that context causes an ungrammatical sentence, as exemplified in (21) above.

The second situation that the present indicative copula has is where it must appear overtly. That is, certain words need to be followed by a present indicative form of the verb (Bahloul, 1993). These words include *qad* 'may', and *ʕindamaa, lammaa* and *ħiina* 'when/whenever'. In these contexts, the appearance of a present indicative form of the copula is obligatory. If the present indicative form is not overt, the sentence will be ungrammatical, as exemplified below:

(84) a. *ʔism-u-haa* *maryam-u*

name.SG-NOM-her Maryam-NOM

'Her name is Maryam'

b. **qad ʔism-u-haa maryam-u*

may name.SG-NOM-her Maryam-NOM

Intended:'Her name may be Maryam'

c. *qad yakuunu ʔism-u-haa maryam-a*

may be.IPFV.INDC.3SG.M name.SG.M-NOM-her Maryam-ACC

'Her name may be Maryam' (KACSTAC)

(85) a. *ʔab-uu-ka fii l-bayt-i*

father.SG-NOM-your.SG.M in the-house.SG-GEN

'Your father is in the house' (Bahloul, 1993)

b. **ʕindamaa/*lammaa/* ħiina ʔab-uu-ka fii l-bayt-i, …*

when/whenever father.SG-NOM-your.SG.M in the-house.SG-GEN

Intended: 'When/whenever your father is in the house, …' (Bahloul, 1993)

c. *ʕindamaa/lammaa/ħiina yakuunu ʔab-uu-ka fii l-bayt-i,…*

when/whenever be.IPFV.INDC father.SG-NOM-your in the-house-GEN

'When/whenever your father is in the house, …' (Bahloul, 1993)

The third situation that the present indicative copula has is where the appearance of this copula is optional. It is optional in generic present indicative contexts, as in (86) below:

(86) a. *yakuunu* *l-jaww-u* *ħaarr-a-n* *fii S-Sayf-i*

be.IPFV.INDC the-weather.SG-NOM hot.3SG.M-ACC-NN in the-summer-GEN

'The weather is hot in summer'

b. *l-jaww-u* *ħaarr-u-n* *fii S-Sayf-i*

the-weather.SG-NOM hot.3SG.M-NOM-NN in the-summer-GEN

'The weather is hot in summer'

In (86), the present indicative copula can optionally be absent.

Consequently, it can be stated that the overt present indicative copula has three situations: (i) it is forbidden in the deictic present tense context, (ii) it is obligatory after certain words such as *qad* 'may' and (iii) it is optional in the generic present tense context.

The above discussion is summarised in the Table 2.4.

Table 2.4 Copula appearance in MSA

Context	**Affirmative**	**Negative**
Past tense	Obligatory	Obligatory
Present Tense	Obligatory/Forbiden/optional	Obligatory
Future Tense	Obligatory	Obligatory

2.6. Properties of copula constructions

This section attempts to gather properties of copular sentences, whether they are formed by verbal or zero copula strategies. It seems that there are three main properties: the fact that they are finite clauses, the expression of the head and the complement's case marking.

2.6.1. Copular sentences are finite clauses

Notice that by ;finite clauses; I mean clauses that have a tense interpretation. With the verbal copula strategy, it is clear that sentences (78a) and (78b) above are finite clauses: That is, they receive past and future tense interpretations, respectively. Further, verbless sentences are finite because they receive a present tense interpretation, as discussed in Section 2.5 above. Another piece of evidence which confirms that verbless sentences are finite clauses is the fact that categories which play the role of complements in the verbal copula strategy are identical to those which are predicates in verbless sentences, as shown below:

(87) *kaana r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.PFV the-man-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man was a teacher/at school/ tall/ here'

(88) *r-rajul-u mudarris-u-n/ fii l-madrasat-i/ Tawiil-u-n/ hunaa*

the-man-NOM teacher-NOM-NN in the-school-GEN tall-NOM-NN here

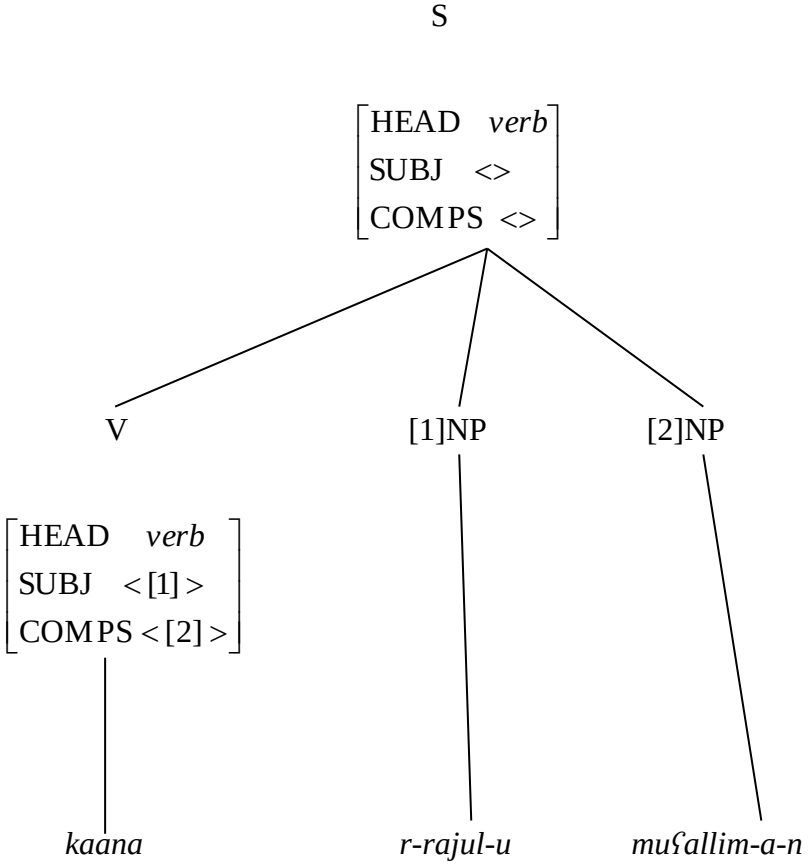
'The man is a teacher/at school/ tall/ here'

Apart from case marking, the fact that (87) and (88) are identical is difficult to explain without assuming an empty copula in verbless sentences, which means that copular sentences, whether the copula is overt or not, are all finite clauses. This issue will be discussed further in Chapter 6, Sections 6.2 and 6.3.

2.6.2. The expression of the head

The standard view within HPSG is that if a sentence has a verb, then this verb is the head of the sentence. Building on that, when the verbal copula strategy is used, the copula will be the head. For example, sentence (78a) above should have the structure in (89) below.

(89)



The structure in (89) indicates that the verbal copula is the head of the sentence. However, in the zero copula strategy, as in (90) below, there is no overt verb to head the sentence. That is, the sentence consists only of the subject and the predicate.

(90) *r-rajul-u* *muʕallim-u-n*

the-man.SG-NOM teacher.SG.M-NOM-NN

'The man is a teacher' (Aoun et al., 2010: 38)

What we note from the comparison between (78a) and (90) is that the verb is the head in sentence (78a), and it is missing in (90). In other words, the head is missing from the surface in (90).

2.6.3. The complement case marking

The complement case marking was discussed above in Sections 2.3.1 and 2.3.2. However, as this issue is important in the discussion of copular sentences, I will briefly repeat the main points here with some details.

If the copula is overt, the case marking of the NP and AP complements is accusative, as exemplified in (38a) and (39a) above, repeated below as (91):

(91) a. *kaana* *r-rajul-u* *muʕallim-a-n*

be.PFV.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man was a teacher' (Aoun et al., 2010: 37)

b. *kaanat* *l-ġurfat-u* *kabiirat-a-n*

be.PFV.3SG.F the-room.SG.F-NOM big.SG.F-ACC-NN

'The room was big'

Further, these complement cannot be nominative, as shown by the ungrammaticality of (92) below.

(92) a. **kaana* *r-rajul-u* *muʕallim-u-n*

be.PFV.3SG.M the-man.SG-NOM teacher.SG.M-NOM-NN

'The man was a teacher (Aoun et al., 2010: 37)

b. **kaanat* *l-ġurfat-u* *kabiirat-u-n*

be.PFV.3SG.F the-room.SG.F-NOM big.SG.F-NOM-NN

'The room was big'

However, in the zero copula strategy the NP and AP complements are nominative, as shown below (example (93a) is presented above as (20)):

(93) a. *ʕumar-u* *muʕallim-u-n*

Omar-NOM teacher.SG.M-NOM-NN

'Omar is a teacher' (Aoun et al., 2010: 35)

b. *l-bayt-u* *kabiir-u-n*

the-house.SG.M-NOM big.SG.M-NOM-NN

'The house is big' (Aoun et al., 2010: 35)

Moreover, if the NP or AP complements are accusative, the sentence will be ungrammatical as in (94):

(94) a. **ʕumar-u* *muʕallim-a-n*

Omar-NOM teacher.SG.M-ACC-NN

' ' Omar is a teacher'

b. * *l-bayt-u* *kabiir-a-n*

the-house.SG.M-NOM big.SG.M-ACC-NN

' 'The house is big'

With respect to the PP and AdvP predicative complements, they do not show any case. Therefore, they always have the same form, whether the copula is overt or not, as shown below ((95) is presented above as (40a) and (41a)):

(95) a. *kaana* *l-kitaab-u* *ʕalaa* *l-maktab-i*

be.PFV.3SG.M the-book.SG.M-NOM on the-table.SG-GEN

'The book was on the table'

b. *kaana* *zayd-u-n* *hunaa*

be.PFV.3SG.M Zaid-NOM-NN here

'Zaid was here'

(96) a. *l-kitaab-u* *ʕalaa* *l-maktab-i*

the-book.SG.M-NOM on the-table.SG-GEN

'The book is on the table'

b. *zayd-u-n* *hunaa*

Zaid-NOM-NN here

'Zaid is here'

In short, if there is an overt copula, the NP and AP complements must be accusative. Also, if there is no overt verb, in verbless sentences, the NP and AP complement must be nominative. Otherwise, sentences will be ungrammatical.

2.7. Summary

This chapter showed that there are two overt forms of the copula: *kaana* and *laysa*. These copulas can form copula sentences and assign their NP and AP complements the accusative case. However, MSA has similar sentences to those formed by the overt copulas, namely, verbless sentences. Verbless sentences are similar to overt copular sentences except that (i) the copula is not present overtly and (ii) the NP and AP complements have the nominative

case. Apart from these two aspects, the two types of sentence just look the same. Next chapter, however, will discuss the classification of copular sentences proposed originally by Higgins (1979) and show that this classification is true for overt copular sentences and verbless sentences.

Chapter 3

Copular Sentence Types in Modern Standard Arabic

3.1. Introduction

This chapter concerns copular sentence types in Modern Standard Arabic. We need to discuss this issue because it affects the analysis of the copula as we will see. In Section 3.2, I will introduce the notion of copular sentence types in modern literature by using English examples. Copular sentence types in MSA will then be discussed in detail in Section 3.3. Section 3.4 will apply some syntactic tests in order to confirm the distinctions between the copular sentences discussed in Section 3.3. Section 3.5 will discuss the possibility of reducing the number of copular sentence types mentioned in Section 3.3. The question of how many copulas there are in copular sentences will be addressed in Section 3.6 (The question is whether or not we have a copula for each type of copular sentences). Finally, I will conclude the chapter in Section 3.7 by summarising what I have accomplished.

What should be noted here is that MSA lacks the use of the copula in certain contexts, as indicated in Chapter 2, Section 2.5. Therefore, in the discussion of copular sentence types, there will be examples that do not contain any overt form of the copula, along with examples with overt copulas. This does not mean that the sentences with no overt copulas are not copular sentences, but it does mean that MSA may express copular sentences without the copula itself being overtly present.

3.2. The phenomenon in modern literature

Higgins (1979) proposes that copular sentences can be classified into four types: equational, predicational, specificational and identificational sentences (cited in Mikkelsen, 2011 and Bondaruk, 2013). Table 3.1 provides an example of each type of copular sentences (examples are supplied by Geist (2007) and Mikkelsen (2011)):

Table 3.1 Types of copular sentences

No.	Sentence type	Example
(1)	**Equational sentences**	Cicero is Tully
(2)	**Predicational sentences**	John is a teacher
(3)	**Specificational sentences**	The murderer is John
(4)	**Identificational sentences**	That (man) is Joe Smith

In this section, I will briefly discuss these four types in English as analysed by Mikkelsen (2005, 2011). Sentence (1) above is an example of an equational sentence. In this sentence, *Cicero* is the name of a person, and *Tully* is also the name of a person, but in fact, they are names of the same person. What this equational sentence does is that it equates the two elements in the sentence, as we see in (1). This represents one possibility for equational sentences where two proper names are equated. Other possibilities will be discussed in Section 3.3.1 below. The sentence *John is a teacher* is an example of a predicational sentence. That is, the post-copula element, namely *a teacher*, describes a property of the pre-copula element, *John.* Such a sentence, therefore, predicates the predicative complement of the subject. Specificational sentences specify a property of the post-copula element. For example, in sentence (3) *the murderer* specifies a property of *John*. The fourth type of

copular sentences is the identificational sentence. In sentence (4), which is an example of this type, the subject consists of either a demonstrative pronoun, *that*, or a demonstrative phrase, *that man*. This type appears to be used in teaching names and things.

3.3. Classification of copular sentences in MSA

The preceding section provided an overview of copular sentence types. All examples were in English, and no details were mentioned. However, this section concerns copular sentence types in MSA. Therefore, equational, predicational, specificational and identificational sentences will be discussed in depth, and MSA will be the language in question. It should be noted that in this section, I follow Mikkelsen's (2005, 2011) and Geist's (2007) assumptions regarding English copular sentences for reasons of simplicity. I will question these assumptions in Section 3.5 when I discuss the reduction of the number of copular sentence types.

3.3.1. Equational sentences

Equational sentences equate the two elements in the sentence (Mikkelsen 2011). That is, they indicate that the two elements are identical. For example, sentence (5) shows that the subject and the complement of the copula are identical. Note that *Hisham* is another name of *Muhammad*.

(5) a.

kaana	*hišaam-u-n*	*huwa*	*muħammad-a-n*
be.PFV.3SG.M	Hisham-NOM-NN	he	Muhammad-ACC-NN

'Hisham was Muhammad'

b. *hišaam-u-n* *huwa* *muħammad-u-n*

Hisham-NOM-NN he Muhammad-NOM-NN

'Hisham is Muhammad'

Note that in (5a), the complement of the copula is accusative as a result of the verbal copula being overt.

The crucial point here is that the two elements in an equational sentence are of type <*e*>; i.e. they are entities (Geist, 2007; Kearns, 2011). This means that the meaning of such elements is of type <*e*>. Essentially, the two NPs are definite in equational sentences, and consequently, we can reverse them, as in (6) below:

(6) a. *kaana* *muħammad-u-n* *huwa* *hišaam-a-n*

be.PFV.3SG.M Muhammad-NOM-NN he Hisham-ACC-NN

'Muhammad was Hisham'

b. *muħammad-u-n* *huwa* *hišaam-u-n*

Muhammad-NOM-NN he Hisham-NOM-NN

'Muhammad is Hisham'

If we do so, the element in subject position is the one we concentrate on. That is, in (5), we intend to relate something about *Hisham*. Thus, we say that he is *Muhammad*. However, in (6), our concern is with *Muhammad*, and we want to say that he is *Hisham*.

The equational sentence type, as (5) and (6) show, expresses an identity relationship (Geist, 2007). They indicate the relationship between the subject and the complement. For instance, in examples such as (5), the sentence clarifies that *Hisham* and *Muhammad* are indeed identical entities, i.e. *Hisham* is identical to *Muhammad*.

In the two equational sentences presented above, there are two possible situations. Let us see what they are and how they apply to examples like (5). In the first possible situation, the hearer knows *Hisham* and also knows *Muhammad*, but he/she does not know that they are the same person. Hence, the speaker uses the equational sentence to clarify for the hearer that they are indeed the same person. In the second situation, however, the hearer knows *Hisham*, but he/she does not know that he has another name. Therefore, the speaker uses the equational sentence to inform the hearer that *Hisham* is also called *Muhammad*.

Before we leave sentences (5) and (6), it should be noted that these sentences make use of a personal pronoun, *huwa*, which occurs between the subject and the complement. As indicated in Chapter 2, Section 2.3.3, this should be understood as a property of MSA; i.e. it makes use of personal pronouns (3rd person forms) in equational sentences[28]. The discussion here applies to examples such as (5), but not (7) which is another possibility for equational sentences.

[28] Modern Hebrew also makes use of personal pronouns in equational sentences (Rothstein, 2001). Some other languages may use different elements. For example, Russian makes use of an obligatory demonstrative pronoun in equational sentences (Geist, 2007). However, as Geist (2007: 93) clarifies, the pronominal elements in Modern Hebrew and Russian differ, and hence, their treatment differs as well.

(7) a. *kaana* *huwa* *muħammad-a-n*

be.PFV.3SG.M he Muhammad-ACC-NN

'He was Muhammad'

b. *huwa* *muħammad-u-n*

he Muhammad-NOM-NN

'He is Muhammad'

We are concerned with an instance in which the personal pronoun occurs between the subject and the complement. However, the personal pronoun *huwa* in sentence (7b), for example, occurs in the subject position. *huwa,* in (7b), must be the subject because the subject in verbless sentences cannot be omitted, as indicated in Chapter 2, Section 2.3.2. Therefore, it is impossible for *huwa* to be preceded by a null subject.

Returning to the pronoun in examples like (5), it is indicated in Chapter 2, Section 2.3.3 that it appears that this personal pronoun in MSA is an optional complement, which means that it can be omitted as in (8) below:

(8) a. *kaana* *hišaam-u-n* *muħammad-a-n*

be.PFV.3SG.M Hisham-NOM-NN Muhammad-ACC-NN

'Hisham was Muhammad'

b. *hišaam-u-n* *muħammad-u-n*

Hisham-NOM-NN Muhammad-NOM-NN

'Hisham is Muhammad'

As (8) shows, the pronoun is omitted and the sentences remain grammatical.

The preceding discussion indicates two possibilities for equational sentences. An equational sentence may equate two proper names, as in (5) above, or it may equate a pronoun and a proper name, as in (7) above. However, these are not the only possibilities available. That is, an equational sentence may equate two pronouns as in (9) below.

(9) a. *kuntu* *ʔanaa* *ʔiyyaka* *wa* *ʔanta* *ʔiyyaya*

be.PFV.1SG I.NOM you.ACC and you.NOM me.ACC

‘I was you and you were me’’

b. *ʔanaa* *ʔanta* *wa* *ʔanta* *ʔanaa*

I.NOM you.NOM and you.NOM I.NOM

‘I am you and you are me’

In (9), two pronouns are equated. Note that the pronoun in the complement position takes the accusative form in (9a), while it takes the nominative form in (9b). This is because the copula is overt in (9a) and overtly absent in (9b).

It should be noted that proper names and pronouns are of type <*e*>. However, some researchers, e.g. Bondaruk (2013) and Geist (2007), consider examples like the following to be ambiguous:

(10) a. *kaana* *zayd-u-n* *l-muhandis-a*

be.PFV.3SG.M Zaid-NOM-NN the-engineer.SG.M-ACC

‘Zaid was the engineer’

b. *zayd-u-n* *l-muhandis-u*

Zaid-NOM-NN the-engineer.SG.M-NOM

'Zaid is the engineer'

The reason behind their ambiguity is that the definite description in the complement position can either be of type <*e*> or of type <*e,t*>. In such sentences in English, a *wh*-question test confirms this ambiguity (Geist, 2007: 85)[29]. If we apply the same test to sentence (10b), for example, we will have the following:

(11) *man* *zayd-u-n?*

Who Zaid-NOM-NN

'Who is Zaid?

(12) **maa* *zayd-u-n?*

what Zaid-NOM-NN

'What is Zaid?

Now, the *wh*-question test shows that we can use *man* 'who' but not *maa* 'what' to ask about the definite description *the engineer*. This reveals that the definite description *the engineer* is of type <*e*>. That is, an equational sentence, where we have two elements of type <*e*>, is an answer to a *who*-question, whereas a predicational sentence is an answer of a *what*-

[29] Geist (2007: 85) argues that an English sentence like *John is the president of the club* can be either equational or predicational. It can be equational as the definite description can be questioned by *who* in *Who is John?.* It can be predicational, however, as the definite description can also be questioned by *what* in *What is John?.*

question. However, as we will see below in Section 3.4, this test is not helpful in distinguishing equationals from predicationals. In other words, it does not prove whether the definite description is semantically of type <*e*> or <*e,t*> as definite and indefinite NPs are questioned by *who* in such a context. Therefore, as we have no evidence that the definite description is of type <*e,t*>, then it seems that it is of type <*e*>. Normally, the definite article turns the definite NP from being of type <*e,t*> to being of type <*e*> (Kearns, 2011). Consequently, it seems that definite descriptions in MSA are unambiguous and that they are of type <*e*>. This issue will be discussed in detail in Section 3.5.2 below. Based on that, an equational sentence may equate two definite descriptions, as below.

(13) a. *kaana* *l-muʕallim-u* *l-munassiq-a*

be.PFV.3SG.M the-teacher.SG.M-NOM the-coordinator.SG.M-ACC

‘The teacher was the coordinator’

b. *l-muʕallim-u* *l-munassiq-u*

the-teacher.SG.M-NOM the-coordinator.SG.M-NOM

‘The teacher is the coordinator’

As noted, all previous examples consist of definite NPs plus the copula (if any). Therefore, the question is whether indefinite NPs can be equated? If we attempt to equate two indefinite NPs, the result will be ungrammatical sentences as in (14) below.

(14) a. **kaana* *rajul-u-n* *muʕallim-a-n*

be.PFV.3SG.M man.SG-NOM-NN teacher.SG.M-ACC-NN

'A man was a teacher'

b. **rajul-u-n* *muʕallim-u-n*

man.SG-NOM-NN teacher.SG.M-NOM-NN

Intended: 'A man is a teacher'

These sentences are ungrammatical because this is not one of the cases where we can grammatically have indefinite NP subjects (Algalayiini, 2006). That is, indefinite NPs can be subjects with, for example, a PP complement as in (15) below:

(15) a. *kaana* *fii* *d-daar-i* *rajul-u-n*

be.PFV.3SG.M in the-house.SG-GEN man.SG-NOM-NN

'A man was in the house'

b. *fii* *d-daar-i* *rajul-u-n*

in the-house.SG-GEN man.SG-NOM-NN

'A man is in the house'

Sentences in (15) are not equational sentences but predicational sentences as we will see. In sum, equational sentences in MSA equate two definite NPs, e.g. two proper names, two pronouns, two definite descriptions, etc. The semantic type of the subject and the complement(s) in this type of sentence is type <*e*>.

3.3.2. Predicational sentences

The second type of copular sentences is predicational sentences. Predicational sentences predicate a property of the subject (Mikkelsen, 2011). In other words, the predicative complement describes a property of the subject (Geist, 2007). For example, see the predicational sentences in (16) below.

(16) a. *kaana* *ʕumar-u* *muʕallim-a-n*

be.PFV.3SG.M Omar-NOM teacher.SG.M-ACC-NN

‘Omar was a teacher’

b. *ʕumar-u* *muʕallim-u-n*

Omar-NOM teacher.SG.M-NOM-NN

‘Omar is a teacher’

Omar, in (16), is the subject, and the predicative complement, *muʕallim a teacher*, describes a property of that subject, i.e. the property of being a teacher..

Semantically, the subject in predicational sentences is of type <*e*> (i.e., an entity), while the predicative complement is of type <*e,t*> (Geist, 2007). What <*e,t*> means is that the element is a semantic function, a function from individuals to truth values or**,** more precisely, a 1-place predicate (Kearns, 2011: 58-59). This predicative element takes an entity as its argument in order to produce a proposition. Note that the proposition is of type *t* (i.e., truth value). For example, the predicative complement *a teacher* in (16) takes *Omar* as its

argument in order to produce the proposition *Omar is a teacher*. As is clear from (16), the sentence has a non-verbal predicate.

Hengeveld (1992: 29) provides two criteria for non-verbal predicate constructions. The first criterion is the selection restrictions. That is, the non-verbal predicate is the element that restricts the kind of subject that it selects. For example, the non-verbal predicate *a teacher* in (16) above requires its subject argument to be human. Therefore, if we replace the human subject with a non-human one, the sentence will be semantically anomalous,[30] as in (17) below.

(17) *kaanat* *l-baʕuDat-u* *muʕallimat-a-n*

be.PFV.3SG.F the-mosquito.SG.F-NOM teacher.SG.F-ACC-NN

'The mosquito was a teacher'

That is, sentence (17) can only be accepted if it is used metaphorically.

Furthermore, if the non-verbal predicate requires the subject to be animate, as in (18), the use of an inanimate subject causes a semantically anomalous sentence, as in (18b).

(18) a. *kaana* *r-rajul-u* *mariiD-a-n*

be.PFV.3SG.M the-man.SG-NOM sick.SG.M-ACC-NN

'The man was sick'

[30] Hengeveld (1992) claims that such a sentence is ungrammatical. However, the problem here seems to be in the semantic level. Note that in English, for example, you can say the following:
(i) It is absurd to say that the mosquito was a teacher.

b. *kaana* *l-jidaar-u* *mariiD-a-n*

be.PFV.3SG.M the-wall.SG.M-NOM sick.SG.M-ACC-NN

'The wall was sick'

Although the same copula *kaana* 'be.PFV' appears in all these sentences, the non-verbal predicate is the one that restricts the selection of the subject, not the verbal copula[31].

The second criterion for non-verbal predicates is the valence of non-verbal predicates. That is, it is the non-verbal predicate that determines the number of arguments the sentence requires. For example, all non-verbal predicates mentioned so far in sentences (16)-(18) require one argument, namely the subject. However, if the non-verbal predicate requires two arguments, as in (19), the absence of the second argument causes an ungrammatical sentence, as in (19b) below.

(19) a. *kaana* *haðaa* *s-sariir-u* *manuum-a-n* *ʕalay-hi*

be.PFV.3SG.M this.SG.M the-bed.SG.M-NOM slept.PPR.SG.M-ACC-NN on-it

'This bed was slept on'

b.. **kaana* *haðaa* *s-sariir-u* *manuum-a-n*

be.PFV.3SG.M this.SG.M the-bed.SG.M-NOM slept.PPR.SG.M-ACC-NN

'This bed was slept'

In (19b), the sentence does not tell us whether the bed is slept on or under.

[31] The question of whether the copula in MSA is a raising verb will be addressed in Chapter 5, Section 5.3.

Again, although the same copula appears in sentences (16)-(19), their grammatical/semantic status differs based on non-verbal predicate requirements. In fact, following Hengeveld (1992), (i) the selection restrictions as well as (ii) the valence of non-verbal predicates argue for the conclusion that non-verbal predicates are the main predicates in non-verbal predicate constructions.

After we defined the semantic types of elements in predicational sentences, let us now discuss the variety of subjects available in predicational sentences. The subject in predicational sentences can be a simple NP as in (16) above, a complex NP containing a relative clause as in (20) below, a free relative clause as in (21)[32], or a quantificational expression as in (22).

(20) a. *kaanat* *l-haqiibat-u* *llati* š*taraytu-haa* *kabiirat-a-n*

be.PFV.3SG.F the-bag.SG.F-NOM that.SG.F buy.PFV.1SG--her big.SG.F-ACC-NN

'The bag that I bought was big'

b. *l-haqiibat-u* *llati* *štaraytu-haa* *kabiirat-u-n*

the-bag.SG.F-NOM that.SG.F buy.PFV.1SG-her big.SG.F-NOM-NN

'The bag that I bought is big'

(21) a. *kaana* *maa* *ʔaʕTayta-hu* *ʕaliyy-a-n* *ɵamiin-a-n*

be.PFV.3SG.M what give.PFV.2SG.M-him Ali-ACC-NN valuable-ACC-NN

'What you gave to Ali was valuable'

[32] Mikkelsen (2011: 1806) provides English examples with similar constructions, such as the following:
(a) The hat is big.
(b) The hat I bought for Harvey is big.
(c) What I bought for Harvey is big.

b. *maa ʔaʕTayta-hu ʕaiyy-a-n ϴamiin-u-n*

what give.PFV.2SG.M-him Ali-ACC-NN valuable-NOM-NN

'What you gave to Ali is valuable'

(22)a. *kaana kull-u šaxS-in masʔuul-an ʕan nafsihi*

be.PFV.3SG.M every-NOM body-GEN responsible-ACC about himself

'Everybody was responsible for himself'

b. *kull-u šaxS-in masʔuul-un ʕan Nafsihi*

every-NOM body-GEN responsible-NOM about Himself

'Everybody is responsible for himself'

Syntactically, in predicational sentences, there are no restrictions on the predicative complement. This means that it can be an NP, an AP, an AdvP or a PP. The possibility of having NP or AP complements is illustrated in examples (16)-(22). In sentence (16), for example, the predicative complement *a teacher* is an NP. However, the complements in (20)-(21), *big* and *valuable* are APs. Furthermore, sentence (23) below illustrates the possibility of having an AdvP complement, whereas sentence (24) illustrates the possibility of having a PP complement.

(23) a. *kaana zayd-u-n hunaa*

be.PFV.3SG.M Zaid-NOM-NN here

'Zaid was here'

b. *zayd-u-n* *hunaa*

Zaid-NOM-NN here

'Zaid is here'

(24) a. *kaana* *l-kitaab-u* *ʕalaa* *l-maktab-i*

be.PFV.3SG.M the-book.SG-NOM on the-table.SG-GEN

'The book was on the table'

b. *l-kitaab-u* *ʕalaa* *l-maktabb-i*

the-book.SG-NOM on the-table.SG-GEN

'The book is on the table'

The possibility of having an NP, AP, AdvP and PP complements can be illustrated with the same subject, for example, a simple NP (i.e., a proper name), as shown in (25).

(25) a. *kaana* *ʕaliyy-un* *ʔustaað-an* */fi* *l-jamiʕat-i* */Tawiil-an* */hunaa*

be.PFV Ali-NOM teacher-ACC / in the-university-GEN /tall-ACC here

'Ali was a teacher/at the university/tall/here'

b. *ʕaliyy-u-n* *ʔustaað-u-n* */fii* *l-jamiʕat-i* */Tawiil-u-n* */hunaa*

Ali-NOM-NN teacher-NOM-NN in the-university-GEN /tall-NOM-NN here

'Ali is a teacher/at the university/tall/here'

Coordination is also possible, as in (26) below.

(26) a. *kaana* *xalid-un* *muʕallim-an* *wa* *ðakiyy-an*

be.PFV.3SG.M Khalid-NOM teacher.SG.M-ACC and clever.SG.M-ACC

‘Khalid was a teacher and clever’

b. *xalid-un* *muʕallim-un* *wa* *ðakiyy-un*

Khalid-NOM teacher.SG.M-NOM and clever.SG.M-NOM

‘Khalid is a teacher and clever’

Ascriptive and ascriptional are also names of predicational sentences in the literature (Mikkelsen, 2011).

In sum, the subject in predicational sentences is an NP of type <*e*>, while the complement is predicative of type <*e,t*>. The complement can be indefinite NP, AP, PP or AdvP. Evidence, however, shows that the predicative complement is the main predicate in the clause.

3.3.3. Specificational sentences

Specificational sentences clarify who someone is or what something is (Mikkelsen 2011). They are called ‘specificational’ because they specify who or what the value of the variable element in the initial position is (Geist, 2007: 80). That is, such sentences show that the variable given in the initial element has the value in the copula complement. In other words, the complement answers a question raised by the subject. For example, the subject in

(27) expresses the property of being a headteacher, and the sentence specifies that this property is assigned to *Muhammad*, so the one whose job is to manage the school is *Muhammad*.

(27) a. *kaana* *mudiir-u* *l-madrasat-i* *huwa* *muaħmmad-a-n*

be.PFV..3SG.M manager.SG.M-NOM the-school-GEN he Muhammad-ACC-NN

'The headteacher was Muhammad'

b. *mudiir-u* *l-madrasat-i* *huwa* *muħammad-u-n*

manager.SG.M-NOM the-school-GEN he Muhammad-NOM-NN

'The headteacher is Muhammad'

Again, because the two elements in (27) are definite NPs, the personal pronoun is inserted. However, as indicated in Section 3.3.1, this pronoun can be omitted, as shown below.

(28) a. *kaana* *mudiir-u* *l-madrasat-i* *muħammad-a-n*

be.PFV.3SG.M manager.SG.M-NOM the-school-GEN Muhammad-ACC-NN

'The headteacher was Muhammad'

b. *mudiir-u* *l-madrasat-i* *muħammad-u-n*

manager.SG.M-NOM the-school-GEN Muhammad-NOM-NN

'The headteacher is Muhammad'

As (28) shows, the pronoun is omitted, and the sentences remain grammatical.

The subject of specificational sentences can be a definite description, as in (27) above. It can also be a free relative, as in (29) below, providing us with pseudo-cleft constructions.

(29) a. *kaana* *man* *qabalta-hu* *huwa* *ʕumar-a*

be.PFV..3SG.M who meet.PFV.2SG.M-him he Omar-ACC

'The one **w**ho you met was Omar'

b. *man* *qabalta-hu* *huwa* *ʕumar-u*

who meet.PFV.2SG.M-him he Omar-NOM

'The one **w**ho you met is Omar'

In (29), the free relative clause *who you met* occurs in the subject position.

According to Mikkelsen (2005: 130), the subject in specificational sentences is of type <e,t>, whereas the complement is of type <e>. This clarifies the distinction between specificational sentences and equational sentences in the sense of Mikkelsen. That is, while equational sentences equate the two elements, specificational sentences specify the value of a variable in the subject position. Therefore, the role of equational sentences is not to specify a value but rather to equate the two elements. I will return to this issue and discuss it in detail in Section 3.5 below.

Based on Mikkelsen's (2005) view, an overlap between specificational sentences and equational sentences may occur. We may have one sentence, such as (30) below, with two possible readings: a specificational reading and an equational reading, which means that such sentences are ambiguous. That is, the subject in these sentences can be interpreted as being of type <*e*> or of type <*e,t*>.

(30) a. *kaana* *l-ʔustaað-u* *huwa* *ʕaliyy-a-n*

be.PFV.3SG.M the-teacher.SG.M-NOM he Ali-ACC-NN

'The teacher was Ali'

b. *l-ʔustaað-u* *huwa* *ʕaliyy-u-n*

the-teacher.SG.M-NOM he Ali-NOM-NN

'The teacher is Ali'

If we assume that *the teacher* is a well-known name of *Ali*, then the sentences are given an equational reading. In other words, these sentences equate two elements that are of type <*e*>. The same is true if we are familiar with *the teacher* but it is new information that his name is *Ali*. On the other hand, if we assume that *the teacher* denotes the property of being a teacher, i.e., of type <*e,t*>, then the sentences are given a specificational reading. In the latter reading, the sentences specify that the one who is the teacher is *Ali*. This is a consequence of following Mikkelsen's (2005) assumptions regarding specificational sentences.

It should be noted here that the personal pronoun cannot occur in the subject position in specificational sentences. If it does occur, the sentence becomes an equational sentence, as examplified in (7) above[33].

In sum, the subject in specificationals in MSA is a definite description or a free relative clause, i.e. definite NPs, while the complement is a definite NP, e.g. a proper name. Following Mikkelsen (2005), the subject in this type is of type <*e,t*>, while the complement is of type <*e*>.

3.4.4. Identificational sentences

The initial position in identificational sentences is occupied by a demonstrative pronoun or a demonstrative phrase (Mikkelsen, 2011), as shown in (31) and (32) below.

(31) a, *kaanat* *haaðihi* *hiya* *iiddat-a*

be.PFV.3SG.F this.SG.F she Jeddah-ACC

'This was Jeddah'

b. *kaana* *haaðaa* *r-rajul-u* *huwa* *zayd-a-n*

be.PFV.3SG.M this.SG.M the-man.SG-NOM he Zaid-ACC-NN

'This man was Zaid'

[33] The impossibility of having a personal pronoun in the initial position in specificational sentences is also found in Russian. Geist (2007) considers this to be evidence that specificational sentences are fronted predicationals. That is, the personal pronoun cannot occur in the predicative complement position. For more detail and discussion, see Geist (2007: 95-96).

(32) a. *haaðihi* *hiya* *jiddat-u*

this.SG.F she Jeddah-NOM

'This is Jeddah'

b. *haaðaa* *r-rajul-u* *huwa* *zayd-u-n*

this.SG.M the-man.SG-NOM he Zaid-NOM-NN

'This man is Zaid'

In (31a) and (32a), the subject position is occupied by a demonstrative pronoun, *haaðihi*, 'this', while in (31b) and (32b), the subject position is occupied by a demonstrative phrase, *haaða rrajulu*, 'this man'.

It appears that identificational sentences are used in teaching names of people and of things (Mikkelsen, 2011). Imagine that you and your friend are on an aeroplane, and from the window, you see a city that you do not recognise. You ask your friend about the name of this city. In such a context, your friend can use a sentence such as (32a) to tell you the name of this city. In another context, imagine that your friend asks you about the name of a man standing in front of you and that you know it is your friend Zaid. In this context, you can use sentence (32b) to introduce this man to your friend[34].

[34] As Mikkelsen (2011) argues, the subject in identificational sentences does not have to be a demonstrative pronoun/phrase. Therefore, I consider sentence (i) equivalent to (32b):

(i) *r-rajulu* *l-waqifu* *hunaaka* *huwa* *Zaydun*
the-man the-standing There he Zaid
'The man standing there is Zaid'

The subject in (i), *rrajulu*, 'the man', is a definite description, and the sentence appears identificational.

Note that in sentences (31) and (32), personal pronouns are inserted between the subject and the complement because both matrices are definite NPs. Once again, this pronoun is not obligatory and can be omitted, as below.

(33) a. *kaanat* *haaðihi* *jiddat-a*

be.PFV.3SG.F this.SG.F Jeddah-ACC

'This was Jeddah'

b. *kaana* *haaðaa* *r-rajul-u* *zayd-a-n*

be.PFV.3SG.M this.SG.M the-man.SG-NOM Zaid-ACC-NN

'This man was Zaid'

(34) a. *haaðihi* *jiddat-u*

this.SG.F Jeddah-NOM

'This is Jeddah/This, Jeddah is …'

b. *haaðaa* *r-rajul-u* *zayd-u-n*

this.SG.M the-man.SG-NOM Zaid-NOM-NN

'This man is Zaid/this man, Zaid is …'

As (33) and (34) show, the pronoun is omitted, and the sentences remain grammatical.

The complements of this copular sentence type can be definite NPs, as presented in (31)-(34), but it can also be indefinite NPs. That is, we have two criteria for identificational

sentences, namely their subject position is occupied by a demonstrative pronoun/phrase and they are used in teaching names of people and things. If we apply those criteria to sentence (35) below, the sentence appears to satisfy those criteria.

(35) a. *kaana* *haaðaa* *qalam-a-n*
be.PFV.3SG.M this.SG.M pen.SG.M-ACC-NN
'This was a pen'

b. *haaðaa* *qalam-u-n*
this.SG.M pen.SG.M-NOM-NN
'This is a pen'

In sum, the subject in identificationals is a demonstrative pronoun or a demonstrative phrase, while the complement can be predicative or notn-predicative.

According to Mikkelsen (2011), it is typically assumed that identificational sentences do not form a separate type. This leads us to question whether we can reduce the number of copular sentence types presented thus far. Therefore, we need to apply some syntactic tests in order to distinguish between these types. This is the main purpose of the following section.

3.4. Syntactic tests to distinguish between various types of copular sentence

Following Mikkelsen (2005), Geist (2007) and Bondaruk (2013), I apply some syntactic tests to MSA copular sentences, which should assist in distinguishing one type of copular sentence from another. All the tests I will mention here work well for English (see Mikkelsen

(2005), Geist (2007) and Bondaruk (2013), among others). For instance, Mikkelsen (2005: 72) and Bondaruk (2013: 143) use question tags to distinguish between equational and predicational sentences, on the one hand, and specificational sentences, on the other. In the case of English, as in Mikkelsen (2005), the question tag contains a human-reference pronoun, *he* or *she*, in equational and predicational sentences, whereas this pronoun has non-human-reference, *it*, in specificational sentences, as exemplified below (examples are supplied by Mikkelsen (2005: 72)):

(36) She is Molly Jacohson, isn't she?

(37) The tallest girl in the class is Swedish, isn't she?

(38) The tallest girl in the class is Molly, isn't it?

In the equational sentence in (36) and the predicational sentence in (37), a human-reference pronoun, *she*, is used, while a non-human-reference pronoun, *it*, is used in the specificational sentence in (38). In the case of MSA, however, the tag question used, i.e., *ʔalaysa kaðalika*, 'isn't (the matter) like that?', does not contain any pronoun at all. This fact is confirmed by the following data:

(39) *hišaam-un* *huwa* *muħammad-un,* *ʔa-laysa* *kaðalika?*

Hisham-NOM he Muhammad-NOM Q-be.NEG like.that

'Hisham is Muhammad, isn't (the matter) like that?'

(40) *xalid-u-n* *mujtahid-u-n,* *ʔa-laysa* *kaðalika?*

Khalid-NOM-NN hardworking.SG.M-NOM-NN Q-be.NEG like.that

'Khalid is hardworking, isn't (the matter) like that?'

(41) *T-Tabiib-u* *huwa* *ʕaliyy-u-n,* *ʔa-laysa* *kaðalika?*

the-doctor.SG.M-NOM he Ali-NOM-NN Q-be.NEG like.that

'The doctor is Ali, isn't (the matter) like that?'

In the above examples, question tags do not express any difference between copular sentence types. That is, the equational sentence in (39), the predicational sentence in (40) and the specificational sentence in (41) have the same question tag form. Therefore, we cannot rely on this test to distinguish between these types.

Another test is found in the literature. This test is the occurrence in the complement position of *consider* (Geist, 2007: 103; Bondaruk, 2013: 142). Based on this test, predicational sentences should be the only type that can occupy the complement position of *consider*, as shown below (examples are supplied by Geist (2007: 103)):

(42) They considered Cicero (to be) a talented politician.

(43) They considered Cicero *(to be) Tully.

(44) They considered the best politician *(to be) Cicero.

In these examples, only the predicational sentence in (42) can grammatically occur in the complement position of *consider*. The copula, however, must appear in the equational and specificational sentences as shown in (43) and (44), respectively. In MSA, on the other hand, this test also is not helpful. That is, equational, predicational and specificational sentences can all occur in that position in MSA, as the following examples show:

(45) *ʕadadtu* *hišaam-an* *muħammad-an*
consider.PFV.1SG Hisham-ACC Muhammad-ACC
'I considered Hisham to be Muhammad'

(46) *ʕadadtu* *xalid-an* *mujtahid-an*
consider.PFV.1SG Khalid-ACC hardworking.SG.M-ACC
'I considered Khalid hardworking'

(47) *ʕadadtu* *T-Tabiib-a* *ʕaliyy-an*
consider.PFV.1SG the-doctor.SG.M-ACC Ali-ACC
'I considered the doctor to be Ali'

The equational sentence in (45), the predicational sentence in (46) and the specificational sentence in (47) can be small clauses. Because all those types can be small clauses in *ʕadadtu*, 'consider', constructions, again, this test indicates no difference between copular sentence types.

Question-answer pairs also act as a test that can be used to distinguish between predicational sentences and specificational sentences (Mikkelsen, 2005: 76-77; Bondaruk, 2013: 141-142). While predicational sentences answer questions of *what*, specificational sentences answer questions of *who*. This test is applied to English below. According to Bondaruk (2013), (49) below gives a specificational interpretation to (48), while (50) gives a predicational interpretation to the same sentence[35] (examples are supplied by Bondaruk (2013: 25, 32)).

(48) Mark is my best friend.

(49) Who is Mark?

(50) What is Mark?

In MSA, however, *man*, 'who'[36], is used in questioning both predicational and specificational sentences. That is, the predicational sentence in (52) and the specificational sentence in (53) can be answers of *who*-question in (51).

(51) *man* *muħammad-u-n?*

Who Muhammad-NOM-NN

'Who is Muhammad?'

[35] Geist (2007: 85) treats a similar example as ambiguous between predicationals and equationals. That is, she assumes that a who-question in (ii) gives an equational meaning to sentence (i), while a *what*-question in (iii) gives a predicational meaning:

(i) John is the president of the club.
(ii) Who is John?
(iii) What is John?

[36] MSA has other question words which mean 'what', namely *maa* and *maaðaa*

(52) *muħammad-u-n* *muhandis-u-n*

Muhammad-NOM-NN engineer.SG.M-NOM-NN

‘Muhammad is an engineer’

(53) *l-muhandis-u* *huwa* *muħammad-u-n*

the-engineer.SG.M-NOM he Muhammad-NOM-NN

‘The engineer is Muhammad’

Given that *man,* ‘who’, is used in questioning both types of copular sentence, i.e., predicational and specificational sentences, question-answer pairs, once again, do not help in distinguishing one copular sentence type from another. It should be noted that the question in (48) can also have the following answers, where (54) is an equational sentence and (55) is an identificational sentence.

(54) *muħammad-u-n* *huwa* *hišaam-u-n*

Muhammad-NOM-NN he Hisham-NOM-NN

‘Muhammad is Hisham’

(55) *haðaa* *huwa* *muħammad-u-n*

this.3SG.M he Muhammad-NOM-NN

‘This is Muhammad’

To conclude, three syntactic tests were used to distinguish between copular sentence types: question tags, their occurrence in the *consider* complement position and question-answer pairs[37]. It was noted that none of these tests could distinguish one copular sentence type from another. Therefore, in the next section, I will attempt to distinguish between these types via other means.

3.5. Discussion

In this section, I will attempt to distinguish between copular sentence types not by syntactic tests supplied by the literature but by some other means, such as (i) basic facts about the language and (ii) the semantic type of the copula's arguments. The aim is to determine whether or not we can reduce the number of copular sentence types available in MSA. The issue of reducing copular sentence types is discussed in the literature (Birner, Kaplan and Ward, 2007; Heycock and Kroch, 1999; Mikkelsen, 2005; Mikkelsen, 2011). It seems that the classification of copular sentences into four types, as proposed by Higgins (1979), is not universally accepted.

3.5.1. Equationals vs. predicationals

Let us start with equational sentences versus predicational sentences. The distinctions are clear between these two types. That is, those two types differ in various respects. The semantic distinction that defines the two types of sentences is the semantic type of the copula complement. In equational sentences, the complement is of type <*e*>, whereas in predicational sentences, it is of type <*e*,*t*>. This means that unlike equational sentences, the

[37] There are other syntactic tests in the literature which either do not apply to MSA or do not indicate any difference. These tests include agreement and negation (see Bondaruk (2013) and Müller (2009, in preparation)).

complement in predicational sentences is a function that requires an argument to produce a proposition. Again, this is not true for equational sentences. In equational sentences, the complement has the same semantic type that the subject has (i.e., type <*e*>)[38]. Essentially, this semantic difference is reflected in the syntax, as we will see.

A second distinction between them is in the definiteness/indefiniteness of the elements that form each copular sentence. In equational sentences, the subject and copula complements are definite NPs, as shown above in Section 3.3.1, e.g. examples (5)-(10). In contrast, the copula's NP complement in predicational sentences can only be indefinite, as exemplified in (16) above.

A third distinction between equational sentences and predicational sentences arises from the difference between, for example, (5) and (16) above. That is, the personal pronoun, *huwa*, appears in equational sentences, as in (5), but it does not appear in the predicational sentence (16). To clarify this, consider the contrast in grammaticality between (56) and (57) below.

(56) *kaana* *zakiyy-u-n* *huwa* *l-muhandis-a*

be.PFV.3SG.M Zaki-NOM-NN he the-engineer.SG.M-ACC

'Zaki was the engineer'

(57) **kaana* *ʔahmad-u* *huwa* *Tabiib-a-n*

be.PFV.3SG.M Ahmad-NOM he doctor.SG.M-ACC-NN

'Ahmad was a doctor'

[38] This suggests that, unlike predicationals, the subject and the complement in equational sentences are arguments of a predicate. This issue, however, will be discussed in detail in Chapter 5, Section 5.3.

Essentially, the pronoun is inserted in both sentences. However, in the equational sentence, (56) the insertion is grammatical, but it is ungrammatical in the predicational sentence (57). The reason for this, as indicated earlier, is that the personal pronoun appears between two definite NPs. As the predicational sentence (57) shows, the subject and the complement differ in their definiteness/indefiniteness status (i.e., the subject is definite, but the complement is indefinite). Therefore, the personal pronoun should be taken as a character of MSA equational sentences.

A fourth distinction between these two copular sentence types stems from the variety of categories available for each type. More precisely, they differ in terms of the categories available in the complement position. While the copula complement in predicational sentences can be of various categories, i.e.. an NP, an AP, a PP or an AdvP, as exemplified in Section 3.3.2 above, in equational sentences, it is a definite NP, as exemplified in Section 3.3.1 above.

The preceding discussion in this subsection shows us that equational sentences and predicational sentences form separate types. However, we need to determine whether we can say the same about specificational sentences.

3.5.2. Specificational sentences

In terms of their constructions, specificational sentences are similar to equational ones. That is, the two types consist of two definite NPs, and hence, the personal pronoun is optionally inserted between the subject and the complement. On the other hand, according to Mikkelsen (2005), they differ in terms of the semantic type of their subjects. As stated above, Mikkelsen (2005) argues that the subject in English specificational sentences is of type <*e,t*>.

However, the subject is of type <*e*> in equational sentences. To discuss this in depth, let us consider an example of specificational sentences, as in (58) below.

(58) a. *kaanat* *l-mudiirat-u* *hiya* *hind-a-n*

be.PFV.3SG.F the-manager.SG.F-NOM she Hind-ACC-NN

'The manager was Hind'

b. *l-mudiirat-u* *hiya* *hind-u-n*

the-manager.SG.F-NOM she Hind-NOM-NN

'The manager is Hind'

The two elements that form the copular sentence in these sentences are definite NPs, and the personal pronoun is inserted into both of them between the subject and the complement[39]. If we argue, with Mikkelsen (2005), that the subject in specificational sentences is of type <*e*,*t*> and we know that this means that it is a 1-place predicate (Kearns, 2011), then this suggests that specificational sentences are inverted predicationals. That is, the semantic type of the subject in specificationals, accordingly, is of the same semantic type as that of the predicative complement in predicational sentences (i.e., both elements are of type <*e*,*t*>). However, one objection to this assumption is that not all categories that occupy the complement position in predicational sentences can occupy the subject position in specificational sentences[40]. For example, indefinite nominal, adjectival and prepositional phrases can occupy the complement position in predicational sentences, as shown below:

[39] The subjects in these sentences can be either referential or non-referential, depending on the situation in which this sentence is uttered (Donnellan, 1966).

[40]This objection is discussed in Heycock and Kroch (1999) and Geist (2007). For a detailed discussion, see Heycock and Kroch (1999: 379-380) and Geist (2007: 95-96).

(59) *kaana* *ʔahmad-u* *Tabiib-a-n*

be.PFV.3SG.M Ahmad-NOM doctor.SG.M-ACC-NN

'Ahmad was a doctor'

(60) *kaana* *xalid-u-n* *kariim-a-n*

be.PFV.3SG.M Khalid-NOM-NN generous.SG.M-ACC-NN

'Khalid was generous'

(61) *kaana* *ʕaliyy-u-n* *fii* *l-madrasat-i*

be.PFV.3SG.M Ali-NOM-NN in the-school.SG-GEN

'Ali was at school'

These categories, however, cannot occupy the subject position in specificational sentences, as the ungrammaticality of the following examples conveys:

(62) **kaana* *Tabiib-u-n* *ʔahmad-a*

be.PFV.3SG.M doctor.SG.M-NOM-NN Ahmad-ACC

(63) **kaana* *kariim-u-n* *xalid-a-n*

be.PFV.3SG.M generous.SG.M-NOM-NN Khalid-ACC-NN

(64) **kaana* *fii* *l-madrasat-i* *ʕaliyy-a-n*

be.PFV.3SG.M in the-school.SG-GEN Ali-ACC-NN

In these examples, case marking assists us in distinguishing subjects from complements. The subject in MSA follows the copula, as shown in (62)-(64), but it may be topicalised, as shown below. In both instances, those categories cannot grammatically occupy the subject/topic position.

(65) **Tabiib-u-n* *kaana* *ʔahmad-a*

doctor.3SG.M-NOM-NN be.PFV.3SG.M Ahmad-ACC

(66) **kariim-u-n* *kaana* *xalid-a-n*

generous.3SG.M-NOM-NN be.PFV.3SG.M Khalid-ACC-NN

(67) **fii* *l-madrasat-i* *kaana* *ʕaliyy-a-n*

In the-school.SG-GEN be.PFV.3SG.M Ali-ACC-NN

Only definite NPs can occupy that position, as the grammaticality of (68) shows:

(68) *kaana* *T-Tabiib-u* *ʔahmad-a*

be.PFV.3SG.M the-doctor.SG.M-NOM Ahmad-ACC

'The doctor was Ahmad'

If we follow Mikkelsen's assumption for specificational sentences, then the facts presented so far show that the <*e,t*> subject in specificationals behaves differently from other <*e,t*> elements. That is, not all <*e,t*> elements can occupy subject position in specificational sentences. To resolve this within Mikkelsen's assumptions, we would argue, with Geist (2007), that due to some syntactic restrictions on subject position, not all <*e,t*> elements can occur in that position. However, this way of dealing with specificational sentences, in fact, complicates the issue, and hence, simplicity suggests that the subject in specificationals is of type <*e*>. This is supported by various arguments. First, there is no evidence that definite descriptions in MSA in specificationals' subject position are elements of type <*e,t*>, but rather normally definite descriptions are of type <*e*> (Kearns, 2011), as shown above in Section 3.3.1. Second, I assume, with Partee (1992: 119), that type <*e*> is the unmarked type of subject position. Third, I also assume, with Geist (2007: 85), that the semantic interpretation of NPs is reflected in the syntactic structure, and it is clear that equationals and specificationals have the same syntactic structure (i.e. they consist of two definite NPs with an optional pronoun that occurs between the subject and the complement). The latter point implies that these two types of sentences also share the same semantic type of their arguments. These arguments, altogether, suggest that subjects in specificational sentences are of type <*e*>.

Given that the complement in specificational sentences is of type <*e*>, specificational sentences appear to be a subtype of equational sentences. That is, both the subject and the complement in specificational sentences are of type <*e*>, which means that they are equated[41].

The question left here is, what is the difference between equationals and specificationals? It seems that the difference occurs in two aspects of pragmatics. First, the initial element in specificationals is non-referential (attributive in Donnellan's (1966) term), depending on the situation in which the sentence is uttered. It should be noted that here I use the term 'referential' in the sense of Donnellan (1966). This attributive/non-referential use is not available for equationals because the subject in this type may, for instance, be a proper name or a pronoun, which are clearly referential. This explains why personal pronouns cannot occur in subject position in specificationals, as pointed out above in Section 3.3.3. A second difference between equationals and specificationals occurs in what Heycock and Kroch (1999) call 'information-packaging instructions'. That is, the subject in specificationals is the ground that the speaker expects the hearers to bear in their belief, while the complement is the focus that provides the value of the variable in subject position. For example, let us take the specificational sentence in (68) above. In (68), the speaker expects the hearer to bear in mind that there is a variable, namely *the doctor*, and hence, he or she instructs the hearer to add to their belief that *Ahmad* is the value of this variable[42].

[41] The elimination of specificational sentences under equationals is proposed in the literature by Heycock and Kroch (1999).

[42] In specificational psudo-clefts, it is clear that there is a variable in the *wh*-relatives (Heycock and Kroch (1999). However, with definite descriptions, this can be shown by *iota* operator. For example, the definite description in (79) above, *the doctor*, will have the following semantic representation where the definite description is a variable:

(i) *Ix*[doctor(*x*)]

This means it is the unique *x* that satisfies *doctor*. It seems, however, that the definite description in such a case is an instance of what Kearns (2011) calls 'Familiarity Theory of Definiteness', and hence, it is a pragmatic and not semantic matter.

In short, we conclude that specificationals are a subtype of equationals and that there are differences between them. The next subsection will investigate whether or not identificationals can also be reduced under other types of copular sentence.

3.5.3. Identificational sentences

Now, we arrive at identificational sentences. Recall that in identificational sentences the subject position is typically occupied by a demonstrative pronoun or a demonstrative phrase (Mikkelsen, 2011). Hence, I think that, first, we should identify the semantic type of demonstrative pronouns. According to Zaki (2011), Arabic demonstratives are of type <*e*>. Based on this, the initial element in identificational sentences is similar to those in equationals and predicationals; i.e., they are all of type <*e*>. Hence, we need to consider the complement in this type of sentence. As indicated in Section 3.3.4 above, the complement in identificational sentences can be either definite or indefinite NP. If it is definite, as in (31)-(32) above, the sentence appears to be equational because both elements are of type <*e*>. On the other hand, if the complement of this type is indefinite, as in (35) above, the sentence appears predicational. That is, the complement in such a case seems to denote a property, i.e., of type <*e,t*>. Thus, I argue that in MSA, identificational sentences are split up and distributed into equational sentences and predicational sentences.

3.5.4. Summary

In conclusion, it appears that there are two basic types of copular sentence in MSA: equational sentences and predicational sentences. Specificational sentences are considered a subtype of equational sentences, whereas identificational sentences can be categorised into

equational sentences and predicational sentences. The following table shows the basic types of copular sentence and the semantic type of their arguments:

Table 3.2: Basic types of copular sentence

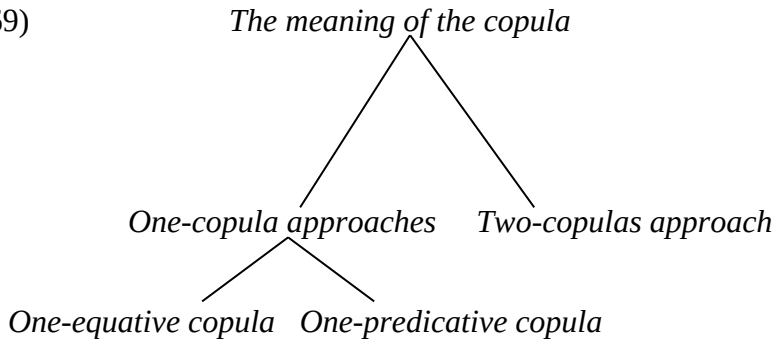
Type	**SUBJ**	**COMPS**
Equationals	*e*	*e*
Predicationals	*e*	*e,t*

These two basic types have distinctive properties. Equational sentences equate two definite NPs of type <*e*> between which an optional pronoun is inserted, while predicational sentences consist of an NP subject of type <*e*> and a predicative NP, AP, PP or AdvP, i.e. of type <*e,t*>.

3.6. The meaning of the copula

A question arises from the classification of copular sentences. It concerns the semantics of the copula itself. The question is whether or not we have a copula for each type presented above, or instead, whether we only have one copula that works for all these types. In the literature, three approaches are proposed: the two-copula approach, the one-predicative copula approach, and the one-equative copula approach (Mikkelsen 2011: 1814-1816; van Eynde, 2008)[43], as summarised informally in (69) below.

(69)



I will briefly discuss them in the following subsections. Note that this section only provides an overview of approaches available in the literature. It will not include any data as the data were already discussed in preceding sections. Chapter 4, Section 4.2, however, will discuss in detail HPSG approaches to the meaning of the copula, while Chapter 5, Section 5.3 will apply these approaches to MSA data.

3.6.1. The two-copula approach

Based on this approach, we have two types of copulas: a copula of identity and a copula of predication (Mikkelsen 2005, Heller 2005). The first type, a copula of identity, is where the copula is meaningful (i.e., it takes two arguments of type <*e*>). This is found in equational sentences. That is, the two elements that form a copular sentence in equational sentences are of type <*e*>. The denotation of this type is shown in (70) below.

(70) $\|\text{be}_{Ident}\| = \quad \lambda x \lambda y[y = x]$

The second type of copula in this approach is one in which the copula is meaningless (i.e. it takes one element of type <*e*>, plus a predicative element of type <*e,t*>, so it only links

[43] Although Mikkelsen (2011) mentions four approaches to the meaning of the copula, I only indicate approaches that are explicitly proposed in the literature, ignoring those that are implicit in authors' works.

the predicative element to the subject). This is clearly found in predicational sentences. The denotation of this type of copula can be presented as follows:

(71) $\|be_{pred}\| = \lambda P \lambda x[P(x)]$

In sum, the former copula applies to equational, specificational and some instances of identificational sentences. The latter, however, applies to predicational and some instances of identificational sentences.

3.6.2. The one-predicative copula approach

According to this view, we only have a single copula (Geist, 2007; Partee, 1986; Williams, 1983). The copula, in such a view, takes one element of type <*e*> and one predicative element of type <*e*,*t*>. Hence, the role of the copula is to predicate the predicative element of the subject. The denotation of the copula in such an approach is presented above in (71).

Obviously, this approach represents the situation in predicational sentences and some instances of identificational sentences. In such sentences, the sentence consists of one predicative element and one element of type <*e*>. Hence, (71) can apply straightforwardly. However, in equational sentences, apart from the copula, these sentences consist of two elements of type <*e*>, and neither of them is predicative. Thus, (71) cannot apply, because it requires one element to be predicative. As a result, there is a need to extend this approach in order to account for equational, specificational and some instances of identificational sentences. Within this approach, this can be handled by making use of type-shifting. That is

to derive the predicational use from the copula complement (Partee, 1986)[44]. More precisely, Partee makes use of the operator *ident*. The role of this operator is to shifts the NP complement which is of type <*e*> to the corresponding predicative reading (see Geist (2007 for more discussion on this issue). Accordingly, this approach has an unambigious copula, but copular sentences are still ambigious (Heycock and Kroch, 1999).

3.6.3. The one-equative copula approach

Essentially, there is another model of the one-copula approach, namely the one-equative copula approach. van Eynde (2008, 2009, 2012, 2015) argues for this approach. In his view, the copula in all copular clauses contributes the identity relation. Accordingly, this approach assumes no use of a predicative copula in predicational sentences. All elements that form a copular sentence are assumed to be of type <*e*>, as we will see in Chapter 4, Section 4.2. Based on this assumption, the copula has the denotation in (70) above in which the two arguments of a copular sentence are equated.

3.7. Conclusion

The copula sentence types in MSA were discussed in this chapter. It was assumed that primarily, there are four types: equational sentences, predicational sentences, specificational sentences and identificational sentences. Latter in the chapter, I argued that equational sentences and predicational sentences clearly form separate types and that identificational sentences, they can be categorised into equationals and predicationals. As for specificational

[44] Geist (2007) argues that the derivation should be from the copula itself. However, iIt is not clear to me whether her approach differs from the two-copulas approach. That is, in each approach there are two copulas, a predicative copula and an identity one. Also, it should be noted that type-shifting can be used for another purpose. For example, Műller (2009) uses the type-shifting to obtain the same result within HPSG, as we will discuss in Chapter 4, Section 4.2, and apply to MSA data in Chapter 5, Section 5.3.

sentences, I argue that they are a subtype of equational sentences. Eventually, there was an issue regarding the classification of copular sentences, namely the meaning of the copula itself. With regard to this issue, there are three approaches: the one-predicative copula approach, the one-equative copula approach and the two-copulas approach. As this study adopts HPSG and intends to explore which approach is most suitable for Arabic, HPSG literature will be discussed in detail in the following chapter, Chapter 4, and then in Chapter 5 we will see the consequences of applying them to MSA copular sentences.

Chapter 4

Previous HPSG Approaches to the Copula

4.1. Introduction

This chapter reviews previous HPSG approaches to the copula.. Hence, Section 4.2 below will review previous HPSG approaches to the semantics of the copula, whereas Section 4.3 will review HPSG approaches to the analysis of the missing copula. The chapter will, then, be summarised in Section 4.4. Note that in this chapter I will present all approaches as proposed in their original works. Latter in this thesis, If I adopt one of these approaches, some modifications may be made to ensure consistency with the thesis' assumptions.

4.2. Previous HPSG approaches to the semantics of the copula

This section discusses whether or not the copula contributes semantically. Hence, in this discussion of HPSG approaches to the copula, it is essential for the reader to bear in mind the distinctions between copular sentence types. This classification, as stated earlier in this thesis, raises the question of whether or not we have a copula for each type? Or do we have one copula for all types?

Basically, there seems to be agreement within HPSG that the copula in equational sentences such as (1) below contributes the identity relation (Müller, 2009, in preparation; van Eynde, 2008, 2009).

(1) Cicero is Tully

In (1), *Cicero* and *Tully* are elements of type <*e*>, and the copula in this sentence contributes the identity relation by expressing that *Cicero* is identical to *Tully.* Therefore, to avoid repetition the reader should refer to Section 4.2.1 below for the assumptions of this analysis. Accordingly, in the following, I will discuss HPSG approaches to the semantics of the copula in predicational sentences and show the problems contained in those approaches. Mainly, there are two different analyses: the identity analysis and the raising analysis[45].

4.2.1. The identity analysis

This approach treats predicational sentences, such as (2) below, in the same way that equational sentences are treated by, namely, the identity analysis.

(2) Kim is clever

van Eynde (2008, 2009, 2012, 2015) argues for this analysis within HPSG[46].

4.2.1.1. Main assumptions

van Eynde (2008, 2009, 2012, 2015) assumes that the copula is not semantically vacuous and that it contributes the identity relation. Based on this, he assumes that there is no difference between the predicative and non-predicative elements, which means that they receive the same analysis.

Before we look at the proposed lexical item for the copula[47], let us consider van Eynde's arguments for the assumption that the predicative copula is not semantically vacuous. van

[45] I follow van Eynde's naming of these approaches.

[46] van Eynde's treatment is favoured for nonverbal predicates in Modern Hebrew over the raising analysis by Haugereid et al. (2013). However, since the original HPSG analysis is proposed by van Eynde (2008, 2009, 2012), I will only discuss his approach and show the problems that arise from the application of such an analysis.

Eynde (2008: 265) argues that there are facts to support this view. I will mention them here, and will evaluate them in the following subsection. First, he argues that although the copula *be* belongs to a paradigm that contains verbs, such as *seem*, *remain* and *become*, the copula has a different meaning. For example, the following sentences have different meanings even though they share the same subject, predicate complement and tense (van Eynde 2008: 265).

(3) a. He was ill.

b. He seemed ill.

c. He remained ill.

d. He became ill.

According to van Eynde, this shows us that the copula cannot be semantically vacuous because it expresses a different meaning.

The second argument is that in many languages the copula combines with the EXPERENCER, as shown in (4) below.

(4) That coffe is expensive to me.

The EXPERIENCER in (4) is '*to me'*. van Eynde argues that if we say that the copula is semantically vacuous, it is not clear which word assigns this role. Therefore, if we assume that this role is assigned by the copula, then the copula cannot be semantically vacuous. van Eynde's third argument is regarding copula omission. He argues that the copula omission in some languages is not sufficient evidence to claim that the copula is semantically vacuous. This would mean that articles are also semantically vacuous because they are absent in some

[47] Basically, van Eynde (2008, 2009) argues that predicate selectors, such as *seem* and *consider*, contribute semantically. He explicitly assumes the same for the predicational copula. Because of the purpose of this research, I will concentrate on the copula.

languages, such as Latin and German. See the contrast between the English sentence in (5) and its equivalent in German in (6):

(5) He is a teacher.

(6) *er* *ist* *lehrer*

he is teacher.

"He is a teacher." (Müller, 2009: 215)

van Eynde points out that if copula omission is sufficient evidence, then this entails that the English article *a* in (5) is semantically vacuous because German does not use such an article, as shown in example (6).

From van Eynde's perspective, both the subject and complement of the copula are of type <*e*>, i.e. they are entities. This means that the complement of the copula sentence is the same as the object of transitive verbs, such as *meet*. However, as predicate selectors, the copula differs from transitive verbs in the relationship between the predicate argument and the subject of the copula. This relationship is captured in van Eynde's proposal in the co-referential-relation (*coref-rel*) in the CONTENT value of the copula itself. van Eynde (2008: 264) emphasises that these elements are co-referential and not identical. That is, identity entails agreement in number, person and gender information, whereas this is not wanted as PER, NUM and GEND information may not be shared as shown in (7) and (8) (van Eynde, 2008: 264):

(7) I am a linguist.

(8) We are a team.

As these examples show, there is no agreement between the complement and the subject, but the sentences are grammatically correct.

Assuming that all predicate selectors, including the copula, contribute semantically, van Eynde (2012: 363) provides the following lexical description for the copula *be*:

(9) Lexical entry for the copula *be*

$$\begin{bmatrix} \text{PHON } (be) \\ \\ \text{ARG-ST} \quad < \text{NP}_{[1]}, \text{XP}_{[2]} > \\ \\ \text{SS|LOC|CONT|NUCL} \begin{bmatrix} be-rel \\ \text{THEME} \quad [1]\ index \\ \text{ATRIBUTE} \quad [2]\ index \end{bmatrix} \end{bmatrix}$$

As (9) shows, there are two arguments in the copula ARG-ST, namely the subject and the complement (or the predicate and its target in van Eynde's term). The relation between these elements is ensured in the copula CONTENT value. That is, the indices of the subject and the complement are the value of NUCL|*be-rel*[48]. Hence, the copula here contributes semantically.

4.2.1.2. Problems with the identity analysis

Müller (2009, in preparation) criticises van Eynde's proposal. Müller points out that the identity analysis faces some problems. First, the pronoun and proper names cannot be used as predicates. For example, the sentences in (10) and (11) are ungrammatical.

(10) *He seems him[49].

(11) *He seems John Malkovich.

[48] Although van Eynde (2012) calls this type of relation *be-rel*, he (2008) explicitly assumes that the copula receives the identity analysis. I, however, use the *identity-rel* lable in this thesis.

[49] *Seem* and *be* are similar in various ways, and hence, generally if something is true for *seem*, it should be true for *be* (Stefan Müller, personal communication).

Although the identity analysis treats all predicate selectors, including the copula, in the same way, (10) and (11) are ungrammatical, which indicates that there is a difference between the copula of identity and the copula of predication. In other words, this seems to show that *seems* is different from the copula of identity. Müller (in preparation: 43) points out that the identifying copula must appear in order for (10) and (11) to be grammatical.

(12) He seems to be him.

(13) He seems to be John Malkovich.

In fact, based on the identity analysis, we expect (10) and (11) to be grammatical as predicative and non-predicative elements receive the same analysis. However, it appears that such an assumption fails to explain the ungrammaticality of (10) and (11).

A second problem with the identity analysis concerns the differences found in the question tags and the pronouns in left dislocation. For example, consider the differences between the following sentences (Müller, 2009: 215):

(14) The guest of honour was happy, wasn't he/she/*it?

(15) The director of *Anatomy of a Murder* is Otto Preminger, isn't it?

(16) The director of *Anatomy of a Murder*, that's Otto Preminger.

According to Müller, the identity analysis needs to account for the difference between the question tags in (14) and (15). That is, based on the identity analysis, there should be no difference in terms of the question tags between (14) and (15) because the analysis assumes there is no distinction between predicative and non-predicative elements. However, a difference clearly exists. We see that the pronoun used in (14) can be either *he* or *she* but not

it, whereas in (15) the pronoun *it* is grammatically correct[50]. This is true for the pronoun, *that*, in left dislocation in (16). This pronoun is used instead of *he/she* because *The Director of Anatomy of a Murder* is a predicate.

A third problem with the identity analysis concerns expletive subjects and subjectless constructions. Müller (in preparation: 44-45) points out that the identity analysis provides an account of the predicates with referential subjects. However, it does not account for predicates that have expletive subjects or predicates that have no subject at all. For example, the following sentences are problematic in the identity analysis (Müller, in preparation: 44):

(17)	*in*	*der*	*mensa*	*ist*	*es*	*lout.*
	in	the	commons	is	it.EXPLETIVE	loud.
	"It is loud in the commons."					

(18)	*weil*	*schulfrei*	*ist.*
	because	school.free	is.
	"Because there is no school."		

In (17) the subject is expletive, but in (18) there is no subject at all. Such sentences are problematic because the identity analysis assumes that the copula assigns a role to the subject. However, we see in (17) and (18) that the subject can be expletive or there may be no subject at all. Consequently, there is no argument that can be identified with the THEME role

[50] Linguists who assume that specificational sentences are subtype of equational sentences would argue that in (18) *he* would also be okay, but maybe the interpretation of the main clause would be slightly different. Arguably, the point is that a definite description that is subject of an identity statement can be an antecedent of it even though it has a human referent. This is not possible elsewhere; for example, this is not possible in predicational sentences, as shown below:

(i) *The director of Anatomy of a Murder is late, isn't it?

in the verb/copula *corefer-rel*. The same problem is also true for English. An English example like the following would receive the same criticism:

(19) It's raining.

(20) It is impossible to fool everyone.

(21) There is a flaw in the argument.

The subject in these examples is expletive, which means that it cannot play any semantic role. Taking all of these facts into consideration, Müller argues that three versions of the copula are needed for the identity analysis: one that takes referential subjects, one that takes expletive subjects and one that does not take a subject at all. Even if these distinctions were made, the analysis needs to ensure that the right copula is used with the right predicate. That is, the predicate itself determines whether it takes a referential subject, expletive subject or no subject at all. For example, in German the predicate in example (22) takes no subject. This explains the ungrammaticality of (23) (Müller, in preparation: 45):

(22) *weil* *ihm* *schlecht* *ist.*
because him.DAT bad is
"Because he is sick."

(23) * *weil* *der mann* *ihm* *schlecht* *ist.*
because the man.NOM him.DAT sick is

We should note that the EXPERIENCER in van Eynde's arguments is not evidence that the copula contributes semantically. That is, in English, for example, the acceptability of an experiencer depends fully on the predicate argument, not the copula. Consider[51]:

(24) That coffe is expensive to me.

(25) # John is tall to me.

(26) John is a teacher to me. (only with the meaning 'John is my teacher')

(27) *John is an engineer to me.

Notice that although these copula constructions share the same copula, the acceptability of the experiencer is dependent on the predicate.

The previous facts about predicates show us that the lexical items proposed by van Eynde (2008, 2009, 2012) face problems in terms of licensing English and German. Therefore, let us move on to the raising analysis and see how it analyses such a phenomenon.

4.2.2. The raising analysis

One should first note that such an approach assumes that the copula is semantically vacuous. Thus, the CONTENT value of the copula is identified with that of the predicate argument. Also, the predicative argument requires a SUBJ whose value is identical to the copula's SUBJ value. In this way, the copula is treated as raising verbs that raise the element in the SUBJ list of the predicate and make it their own argument[52]. The following sections present previous HPSG approaches to copula constructions that adopt the raising analysis. I

[51] Thanks go to Ronnie Cann and Louisa Sadler for this observation.

[52] I should emphesise here that the copula is different from raising verbs. That is, the copula under the current approach is semantically vacuous, while it is known that raising verbs have some semantics. Essentially, under the current approach the copula's semantic vacuity entails the raising analysis to provide the copula with SUBJ and COMPS values, and that is the reason behind calling this approach to the copula 'The raising analysis'.

will first explain the lexical-rule approach for predicative nouns, followed by indicating problems faced by such an approach. Then, I will show the Predicative NP Projection Schema that is proposed to resolve problems of the lexical-rule approach.

It should be noted that the raising analysis seems fairly plausible with an AP or a PP complement. Issues arise with nominal complements.

4.2.2.1. Lexical rules for predicative nouns

This section represents an earlier version of the raising analysis that is proposed for predicative NPs. We will also discuss problems this approach has.

4.2.2.1.1. Main assumptions

Pollard and Sag (1994) and Ginzburg and Sag (2000) propose a lexical rule for predicative nouns. Such a rule applies to a noun and makes it predicative. In other words, it takes the noun, as used in (28), and makes it predicative, as used in (29).

(28) John knows an engineer.

(29) John is an engineer.

Pollard and Sag (1994: 360) propose the lexical rule in (30) and Ginzburg and Sag (2000: 409) propose the lexical rule in (31).

(30) Predicative NP lexical rule

N[-PRED,SUBJ<>]:[RESTRICTION[2]][1] ⇒ *LR* N[+PRED,SUBJ<[XP[1]>]:[2]

(31) Singular predicative noun lexical rule[53]

$$\begin{bmatrix} lxm \\ SS|LOC|CAT[HEADn] \\ ARG\text{–}ST \ \langle [1] \rangle \oplus [A] \end{bmatrix} \Rightarrow LR \begin{bmatrix} word \\ SS|LOC|CAT \begin{bmatrix} HEAD \begin{bmatrix} AGR|NUM\,sg \\ PRED\ + \end{bmatrix} \\ SPR\ \langle [1] \rangle \\ SUBJ\ \langle [2] \rangle \end{bmatrix} \\ ARG\text{–}ST\ \langle [2],[1] \rangle \oplus [A] \end{bmatrix}$$

The lexical rules in (30) and (31) take a noun as their input, and produce as their output a predicative one and add a SUBJ to its valence list. The role of the copula in such proposals is to raise the SUBJ of the predicate argument and make it its own subject, as in example (29) above. In (29), the predicative element, *an engineer*, requires a SUBJ whose value is identified with the subject of *is*.

It should be noted here that Pollard and Sag (1994) appear to make no distinction between equational and predicational sentences. In other words, it appears that they treat the complement in both types as a predicative complement. That is, they (1994: 360) assume that 'predicative proper nouns', such as *Tully* in (1) above, are problematic for their analysis.

[53] Unlike what the lexical rule of Polard and Sag (1994) does, this lexical rule does not make any change in the index/content in the output. It is also unclear why this rule is limited to singular nouns. Ginzburg and Sag (2000) did not justify this.

4.2.2.1.2. Problems with the lexical rule approach

van Eynde (2008: 255-259; 2009: 262–268) criticises the lexical rule approach, although some of these criticisms were originally realised by Pollard and Sag (1994: 360)[54]. According to van Eynde, such an approach faces various problems. First, there is an ambiguity between the predicative and non-predicative nouns because the ordinary noun is analysed as predicative if it occurs in a predicative position. As pointed out by Kasper (1997) (cited in Müller, 2009: 220-221; Müller, in preparation: 40), if we apply the lexical rule to a noun in a predicative position, this rules out grammatical sentences, such as the following.

(32) He is a good candidate.

The lexical rule changes the INDEX value of *candidate* from *index* to *event*. In other words, it changes the INDEX value of the noun from the value used with referential nouns to that used with predicative ones. Thus, relying on standard assumptions of adjunct modifiers like *good* in (32) can no longer identify its INDEX value, which is of type *index*, with the value of the predicative noun, which is of type *event*, in the usual way.

The second problem in the lexical rule approach that van Eynde (2008, 2009) considers is that the lexical-rules approach does not account for determiners in predicative NPs, which is something that Pollard and Sag (1994: 360) also accept. This can be clarified by the semantic representation based on the lexical-rules approach below, where (34) is the semantic representation of the copula sentence in (33) (van Eynde, 2009: 365).

(33) John is a teacher.

(34) *teacher(John)*

[54] It should be noted that Pollard and Sag (1994) do not discuss problems as deeply as van Eynde (2008, 2009) does. van Eynde also adds some other problems.

As the semantic representation shows, the representation does not account for the determiner, *a*.

The third problem with the lexical rule approach concerns pronouns and proper nouns, which occur in the copula's complement position (van Eynde, 2009: 365–366). Examples of such cases include (1) above and the following example (van Eynde, 2009: 366):

(35) That book is mine.

According to van Eynde, pronouns and proper nouns in such a position cannot bear the SOA/event content.

The fourth problem with this version of the raising analysis concerns the assignment of the EXPERENCER role in copular sentences (van Eynde, 2009: 366–367). As discussed in Section 4.2.1 above, one piece of evidence that van Eynde uses to support his assumption that the copula is not semantically vacuous is the assignment of the EXPERENCER role. That is, based on the lexical-rule approach, the copula can no longer assign this semantic role.

4.2.2.2. The Predicative NP Projection Schema approach

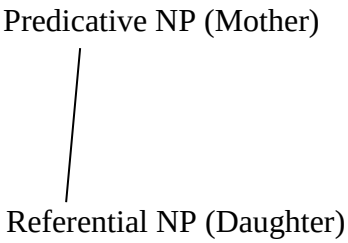
Müller (2009, in preparation) proposes an alternative analysis to those presented in Sections 4.2.1 and 4.2.2 above. He argues that his analysis accounts for predicational sentences and specificational sentences[55].

[55] Müller assumes that specificational sentences are inverted predicationals, and hence, they all receive the same analysis. However, as indicated in Chapter 3, Section 3.5, MSA specificational sentences are a subtype of equationals.

4.2.2.2.1. Main assumptions

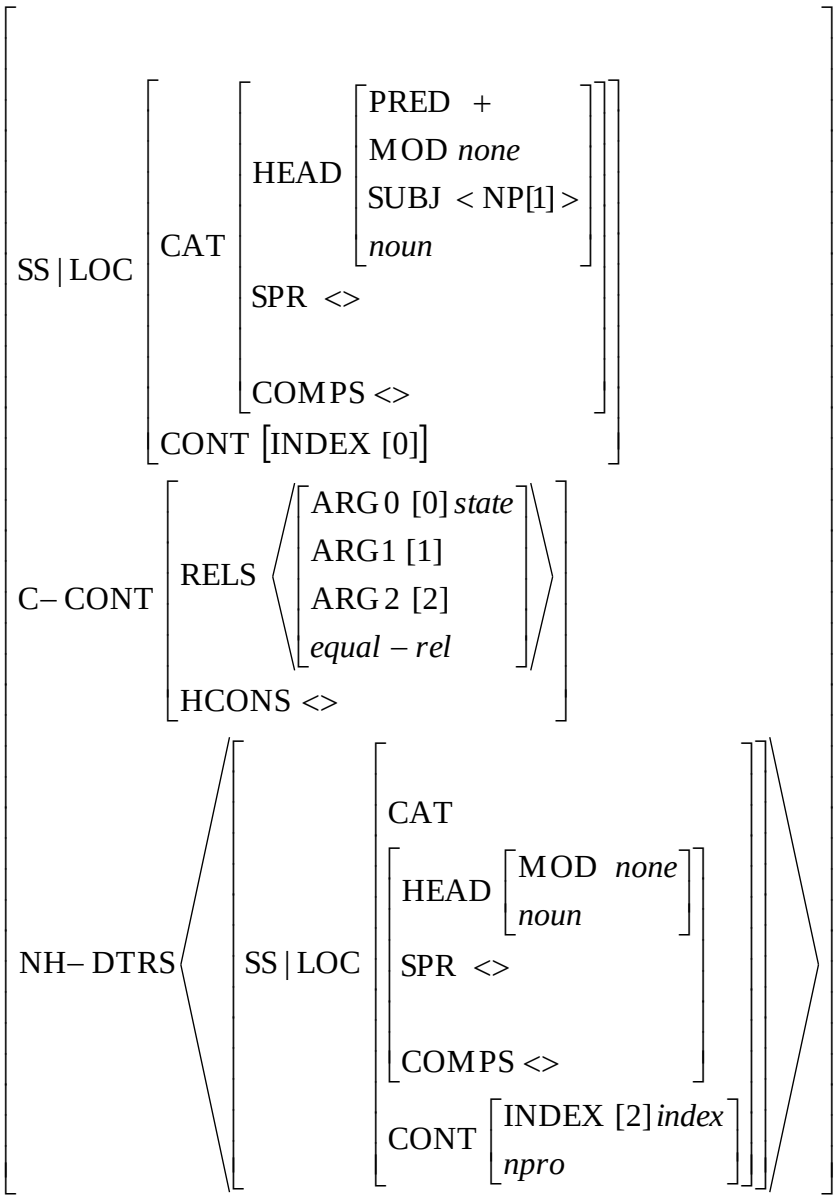
Unlike the lexical-rules approach, Müller assumes that the referential NP is mapped to a predicative version only at the full NP level. This resolves the objections to the lexical rule approach that it does not account for determiners and the possibility of modifying the NP by an adjective. That is, the Predicative NP Projection Schema keeps the NP daughter referential while the NP mother is predicative. Thus, we have a unary branching structure where the mother is a predicative NP and the daughter is referential. This can be simplified as follows:

(36)



In Müller's view, the predicative NP is licensed by the Predicative NP Projection Schema as shown in (41) below (Müller, 2009: 225; In Preparation: 24):

(37) Predicative NP Projection Schema



There are several things that need to be clarified in order to read this schema. First, the [HEAD | PRED +] indicates a predicative phrase. The predicative NP requires a subject whose value is identified with the subject value of the clause. Essentially, the CONT | INDEX value of the predicative NP mother is of the *eventuality* type. Such a schema has only one daughter, which is a non-head daughter, which creates a unary branching structure. This non-head

daughter is an ordinary NP whose INDEX value is of the *index* type. The C-CONT[56] in the Predicative NP Projection Schema accounts for the semantics of the construction, essentially, for the relation between arguments, i.e., the relation between the NP daughter and the subject. The referential NP daughter enters *equal-rel* with the referential subject[57], which accounts for the semantic role of the two arguments in such a construction. As stated, we see that this analysis keeps the daughter NP referential, which allows for the addition of a modifier. That is, the daughter NP index is also of type *index*. This is one difference between this schema and the lexical rule approach. Note that the INDEX value of the daughter NP differs from the INDEX value of the mother NP as a result of Predicative NP Projection Schema application.

We should state here that Müller (In preparation) accepts that this schema, as presented above, would overgenerate to proper names. Accordingly, nothing in the schema can rule them out[58].

To better understand this schema, let us apply it to the following sentence:

(38) He is a nice guy.

The schema licenses the referential NP in the predicative position, namely *a nice guy*. It makes a referential NP predicative with appropriate SUBJ value, which provides a unary branching structure. In this structure, the referential NP is not the head daughter of the phrase.

[56] With respect to the representation of sign's semantic contribution, Müller assumes Minimal Recursion Semantics (MRS, Copestake, Flickinger, Pollard and Sag, 2005) because MRS allows for underspecifying scope relations. Breifly, C-CONT is the feature that presents the constructional content. Unlike what is usually the case, C-CONT can be used to specify a new semantic contribution that is not necessarily contributed by the head daughter. Readers who are interested in this issue can refer to Copestake et al. (2005) and Müller (in preparation: 15).

[57] Müller (in preparation) assumes that this relation is of type *equal-rel* because the agreement between the subject and the predicate in numer and gender is not necessary. He left the additional work on constraints on agreement for future research (Müller, in preparation: 24-26).

[58] Althoug he did not formalize a solution for this problem, Müller (in preparation) suggests that this can be resolved by requiring that the main relation of the NP daughter must not be of type *named_rel*. This type of relation is assumed to be contributed by proper names in Pollard and Sag (1994).

Müller (in preparation: 27) points out that lexical rules, such as those in Section 4.2.2, are still needed with a determinerless predication, such as *mayor of Seattle,* as presented in (39). This explains why (40) is ungrammatical.

(39) Sylvia is mayor of Seattle.

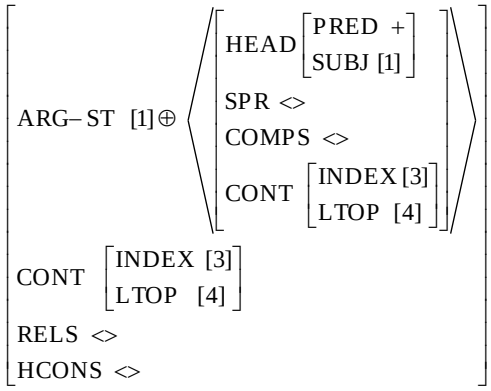
(40) *Sylvia is new mayor of Seattle.

(40) is ungrammatical because the modifier, *new*, cannot identify its INDEX value with the INDEX of the predicate because the index value in the predicative noun is of the *event* type, while the index value in the adjective is of the *index* type (Müller, in preparation: 27). In other words, if the Predicative NP Projection Schema licenses (39), then it will allow for modifying the predicate which will cause an ungrammatical sentence. Another piece of evidence which shows the need of a lexical rule in (39) is that *mayor of Seattle* is not possible as a referential NP, as (41) conveys:

(41) *I met mayor of Seattle.

Müller (in preparation) goes further and provides constraints on the entry for the predicative copula in Danish, English and German. This constraint accounts for both predicational and specificational sentences in all three languages. However, as this thesis considers specificational sentences a subtype of equationals, and as facts in German are not relevant, let us concentrate on the entry for the copula in predicationals in English and Danish, as proposed by Müller (in preparation: 20).

(42) Lexical entry for the predicative copula in English and Danish



In this entry, 'HCONS provides the local top for the complete structure and a semantic index' (Mőller, in preparation).

The crucial part of this lexical entry is the embedded predicate, which requires a subject and has the content value shown above. Since the copula in such a context is semantically vacuous, it identifies its CONTENT value with that of the embedded predicate. However, the embedded predicate is on the ARG-ST of the copula in addition to the subject. That is, [1] in the copula ARG-ST refers to the SUBJ list of the embedded predicate, and hence, [1] is raised from the embedded predicate to the ARG-ST of the copula.

In predicational sentences in English and Danish (i.e., if the predicate argument occurs in the complement position) [1] contains the subject. The embedded predicate is mapped to the copula COMPS list, while the SUBJ of the embedded predicate is mapped to the copula SPR, as shown in (43) below (Müller, In Preparation: 21). By doing so, the copula combines

with its COMPS via the Head-Complement-Schema, and combines with its SPR in a later step via the Head-Specifier-Schema (Müller, In Preparation)[59].

(43) The Mapping to the SPR and COMPS of the copula in predicational sentences

$$\begin{bmatrix} \text{SPR} & [1] \\ \text{COMPS} & [2] \\ & \\ \text{ARG-ST} & [1] \oplus [2] \left\langle \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{PRED} & + \\ \text{SUBJ} & [1] \end{bmatrix} \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{bmatrix} \right\rangle \end{bmatrix}$$

In short, Müller assumes that the copula in predicational sentences is semantically vacuous. This seems straightforward except for NP complements where problems arise. To resolve this, he assumes the Predicative NP Projection Schema.

4.2.2.2.2. Remarks

It should be noted here that the approach that Müller proposes seems to be the most recent approach which discusses this issue in depth. His approach has not been criticised in literature. However, in the following, I will stress problems that face the earlier version of the raising analysis and see how Müller resolves or avoids these problems in his approach.

One problem that faces the raising analysis concerns the predicative NP. According to van Eynde (2008, 2009), as indicated above, there is an ambiguity in the predicative NPs in the raising analysis. However, Müller (2009, In preparation) avoids this problem by assuming

[59] It is not clear to me how Müller is using SUBJ and SPR. Here, SUBJ seems rather different from the usual feature of that name.

the Predicative NP Projection Schema, which applies to referential NPs and turns them into predicative NPs. Essentially, although Müller (in preparation: 41) claims that his analysis does not have any problem that van Eynde (2008, 2009) discusses, in his earlier paper, Müller (2009: 225) accepts that there is still ambiguity in the Predicative NP Projection proposal. In the same paper, Müller argues that he reduced the ambiguity to the full NP projection level, while keeping the NP daughter referential. Therefore, as van Eynde (2009: 365) points out, it appears that Müller's (2009, in preparation) proposal still has ambiguity, even when it is reduced to the full NP projection level.

Another problem that van Eynde (2008, 2009) argues the raising analysis has is that the latter does not account for determiners in predicative NPs. Müller (2009, In preparation), however, solves this problem by applying the Predicative NP Projection Schema to the referential NP. This means that determiners are accounted for at the daughter NP level. Furthermore, Müller (In preparation) explicitly argues that the Predicative NP Projection Schema obtains a parallel semantic representation to that proposed in the identity analysis without any need to assume that the copula contributes semantically (see the discussion about this issue in Müller (in preparation: 40-41). This claim apllies to the VP in sentence (44) below:

(44) Mary is a woman.

(45) [is a woman]

Recall that C-CONT in the Predicative NP Projection Schema represents the relation between the complement and the subject in the construction.

The third problem that faces the raising analysis, as van Eynde (2008, 2009) argues, is that it cannot license pronouns and proper names in complement position. However, this

objection does not apply to Müller's proposal. That is, Müller (In preparation) explicitly states that his proposal does not apply to equational sentences as he assumes that the copula in equational sentences contributes semantically[60].

The assignment of EXPERIENCER role, as indicated in Section 4.2.1 above, is one piece of evidence that van Eynde (2008, 2009) uses for his proposal. We indicated there that this is not true. Müller (in preparation: 42–43) replies to this by stating that this element, which van Eynde analyses as the EXPERIENCER, is in fact an adjunct that combines with the copular clause[61].

4.2.3. Summary

The preceding discussion showed that within HPSG there seems to be an agreement that the copula in equational sentences contributes semantically. However, it was shown that the disagreement starts in the analysis of the copula in non-equational sentences. In this respect, Section 4.2 presented two different approaches to the copula: the identity analysis and the raising analysis. The raising analysis, in turn, has two versions.

Each approach has been criticised; therefore, solutions are needed. Although Pollard and Sag (1994: 360) highlight some problems facing their lexical-rule proposal, van Eynde (2008, 2009) adds new problems and discusses them in detail. However, Müller (2009, in preparation) provides an account of predicational sentences in which he attempts to solve or avoid criticism against the raising analysis. As the lexical rule approach is an earlier version of the raising analysis, I will not apply it to MSA data. Other approaches will be applied, however.

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[60] Mueller (2009, In preparation) does not provide an account of equational sentences, although he considers it to be a trivial case.

[61] The discussion of this issue goes further. However, for the purpose of this thesis, I do not discuss the details. For more discussion on this issue with Dutch and German data, see Mueller (In preparation: 41–43) and van Eynde (2009: 366–367).

4.3. Previous HPSG approaches to the missing copula

Copular sentences normally contain an overt form of the copula. However, there are cases where the copula is absent from the sentence. For example, while Standard English normally has a present form of the copula, Modern Standard Arabic, as indicated in Chapter 2, Section 2.5, has sentences which receive present-tense interpretation but with no overt copula. Therefore, we need to explore how such a phenomenon can be treated within HPSG. In the following I will review some HPSG approaches to verbless sentences. As we will see, those studies propose either lexical or constructional analyses. Section 4.3.1 will review constructional approaches, while Section 4.3.2 will review lexical approaches.

4.3.1. Constructional Approaches

In this section, I will discuss some constructional approaches. Such approaches do not assume any kind of empty categories, but rather the verbless sentences can stand as finite clauses without the copula.

4.3.1.1. Sag and Wasow (1999) and Sag et al. (2003)

Black English or the African-American Variation of English (AAVE) has instances where the copula is missing. Data from this language variant show examples, such as the following:

(46) He a expert. (Bender, 2001: 82)

(47) You in trouble. (Bender, 2001: 77)

(48) *I the winner. (Bender, 2001: 84)

As these examples show, the copula omission is not allowed in all contexts. That is, copula omission in 1SG is ungrammatical as in (48) above. Essentially, the above examples express a missing element, namely the copula, i.e. those sentences would appear in the Standard American English (SAE) as:

(49) He **is** an expert

(50) You **are** in trouble.

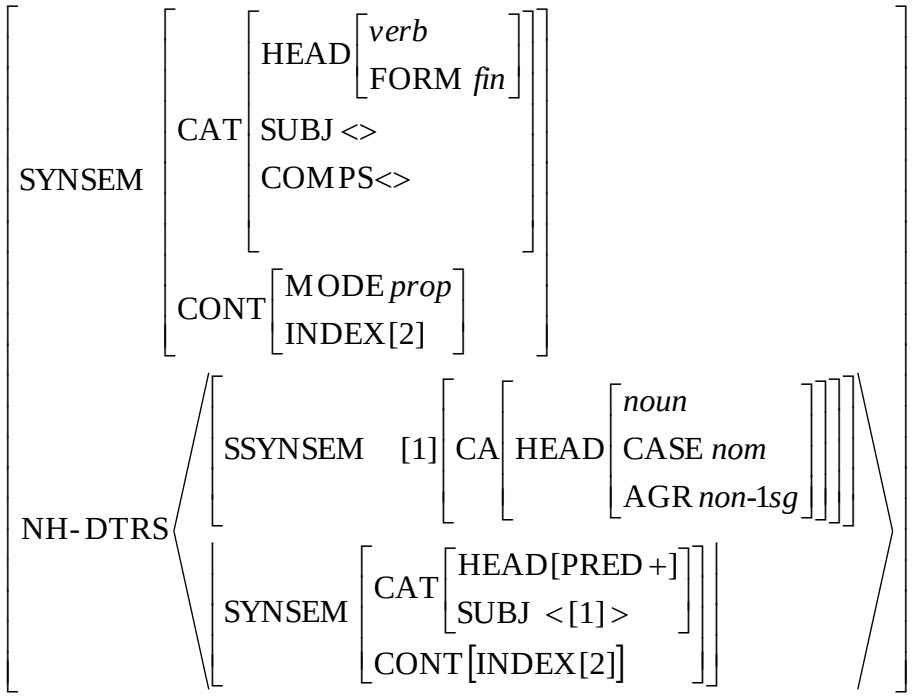
(51) I am the winner.

The bold words above indicate the missing copulas in AAVE.

Sag and Wasow (1999) and Sag et al. (2003) propose a constructional analysis for AAVE verbless sentences. They assume that verbless sentences in AAVE are allowed wherever SAE allows a finite clause. Thus, they propose a Zero Copula Phrase (ZCP) which applies wherever AAVE calls for a finite clause[62]. More specifically, wherever a non-1sg nominative NP is followed by a predicate phrase, the clause stands as a finite clause (Sag et al, 2003: 461). The Zero Copula Phrase can be shown as below (Sag et al., 2003: 462).

[62] Some studies are influenced by the Zero Copula Phrase analysis, e.g. Avgustinova (2006) and Henri and Abellé (2007).

(52) The Zero Copula Phrase



This ZCP ensures that the verbless sentences stand as a finite clause as the feature [FORM *fin*] shows. The ZCP consists of two elements, namely the subject and the complement, and neither of them is a head daughter. The construction, therefore, is headless. The subject must be nominative and its form must also be non-1sg as the feature [CASE *nom*] and [AGR *non-1sg*] show. As for the complement, it is [PRED +], which means that it is predicative. The INDEX value of the predicative complement is identified with the INDEX value of the construction itself to encode the relation between the construction and the predicative complement.

Note that the ZCP correctly predicts the grammaticality/ungrammaticality of examples (46)-(48) above. For example, sentence (46) is grammatical in AAVE as the subject is nominative and not 1sg; moreover, the complement is predicative. Although this proposal seems promising, it is still not enough to account for facts from long-distance dependencies.

That is, despite the acceptance of the following sentences in AAVE, the ZCP rules them out (Sag et al. 2003: 463):

(53) How old they say his baby?

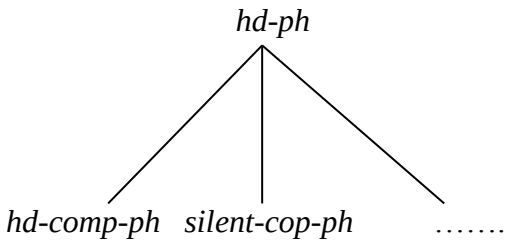
(54) Tha's the man they say e in love?

As ZCP conditions that the subject is adjacent to the predicative complement, this is violated in (53) and (54) as one of them is absent[63]. In the following section, Bender (2001) develops an analysis to account for facts whose grammaticality ZCP does not predict.

4.3.1.2. Bender (2001)

Taking into account the criticism of Sag and Wasow's (1999) and Sag et al's (2003) analyses, Bender (2001) provides a constructional analysis to account for copula absence in AAVE. Bender proposes the following phrasal type-hierarchy:

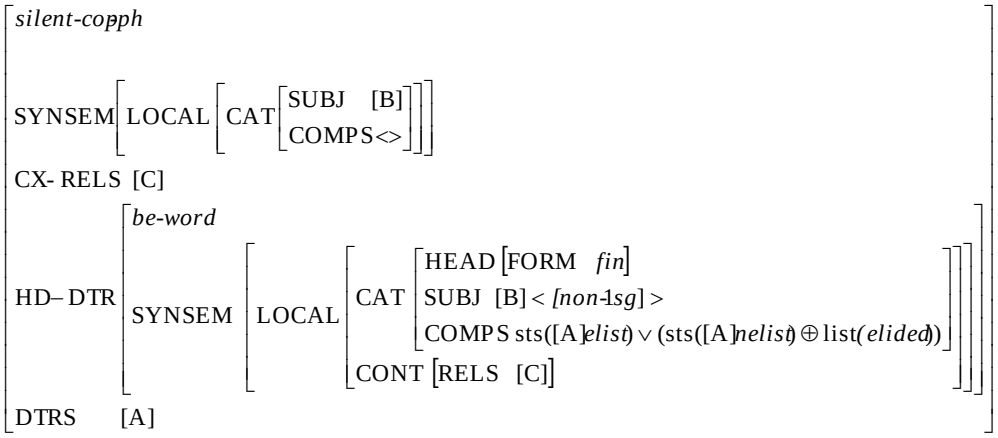
(55)



The *silent-cop-ph* can be shown as below (Bender 2001: 128):

[63] If unbounded dependencies involved an empty category as in Pollard and Sag (1994), there would probably be no problem, but there is a problem if they involve a missing complement as in much HPSG work (Bob Borsley, personal communication).

(56) The *silent-copula-phrase*



It should be noted here that in this analysis the NH-DTRS feature is replaced by the DTRS feature. All daughters, including the head daughter, are listed in DTRS feature. In the case under discussion the head daughter should appear as the first member in DTRS's value. Essentially, the value of HD-DTRS feature must be *be-word*, and the phrase is headed by a finite verb as [FORM *fin*] shows. This ensures that the *silent-cop-ph* licenses only verbless sentences. That is, HD-DTR does not appear in the DTRS list. Based on this assumption, the verbless sentences can stand as a finite clause with no lexical element functioning as a copula; hence, no head daughter is realised in the surface. The CX-RELS feature expresses the semantic contribution of the construction. Notably, the value of CX-RELS is identified with the value of the RELS feature in the head daughter. This is so to incorporate the relations between the unexpressed head daughter and the semantic contribution relation of the construction.

Now, let us see how the *silent-cop-ph* accounts for copula absence in AAVE and rule out ungrammatical sentences. First, the [FORM *fin*] specification rules out non-finite instances such as the following:

(57) *You got to e good, Rednall! (Bender, 2001: 83)

The feature value [SUBJ <*non-1sg*>..] ensures the grammaticality of sentences like (46) above, and the ungrammaticality of examples like (48).

In the case of subject extraction as in (54) above, the HD-DTR will have a *gap* in its SUBJ list, and the SLASH feature will pass upon the tree (as usual).

The grammaticality of complement extractions is ensured by COMPS specifications. The COMPS in *silent-cop-ph* can be an empty list as in (58) below.

(58) Where your car? (Bender, 2001: 90)

That is, the complement in (58) is fronted as it is a wh-word. Further, the COMPS in *silent-cop-ph* can be a non-empty list which begins with a canonical element as in (59) below:

(59) They say they're best friend and shit, but they not. (Bender, 2001: 115)

The complement in (59) starts with a canonical element, namely *not*, adjoined to an elided list. If neither of the complement constraints mentioned so far is satisfied, then the sentence appears ungrammatical. This explains the ungrammaticality of (60) below:

(60) *They say he('s) wild and he e. (Bender, 2001: 124)

To clarify, the complement in (60) is neither an empty list nor a non-empty list which begins with a canonical element. Thus, the sentence is ungrammatical.

Although Bender's (2001) constructional analysis is more sufficient than Sag and Wasow's (1999) and Sag et al's (2003) analyses, Bender's proposal is not enough to account for all copula absence facts in AAVE. For example, sentence (61) is ungrammatical in AAVE. However, based on *silent-cop-ph* this sentence should be grammatical.

(61) *?What it? (Bender, 2001: 125)

That is, this sentence satisfies constraints in *silent-cop-ph*. In particular, it satisfies the first half of the COMPS constraint as its complement is an empty list.

4.3.1.3. Avgustinova (2006)

The **c**opula in Russian, as some other languages, may be absent. It appears in all contexts except for the present-tense indicative-mood context, which is the default tense/mood interpretation (Avgustinova 2006: 28). The examples below show this fact (2006: 33–34):

(62) *otec* *(*est)* *gord* *rezul'tatami.*

father.NOM is proud.PRED-ADJ.SG.M results.INST.PL

'Father is proud of the results' (vgustinova, 2006: 33)

(63) *otec* *byl* *gord* *rezul'tatami.*

father.NOM was proud.PRED-ADJ.SG.M results.INST.PL

'Father was proud of the results' (Avgustinova, 2006: 33)

(64) *otec* *budet* *gord* *rezul'tatami.*

father.NOM will.be proud.PRED-ADJ.SG.M results.INST.PL

'Father will be proud of the results' (Avgustinova, 2006: 34)

Those examples differ in tense, although they appear to be equivalent. That is, (62) receives a present tense interpretation, whereas (63) and (64) receive past and future

interpretations, respectively. Essentially, a copula is missing in (62), but appears in (63) and (64).

Avgustinova (2006), significantly, classifies Russian copula use into two different types: inflectional-copula and assembling-operator-copula. The former appears as an inflectional marker with non-verbal but morphologically signalled predicative categories, e.g., Rassain short adjectives, while the latter appears with non-verbal and non-morphologically signalled predicative categories. In both types, the copula may be absent. For simplicity, I will divide the discussion into two subsections.

4.3.1.3.1. Morphologically signalled predicative categories[64]

Avgustinova (2006) argues that a morphologically signalled predicative category, like those in examples (62)-(64), is the head in copular constructions and takes an optional attributive specifier (SPR). (65) below shows this proposal for Russian predicative adjective (2006: 35).

(65) Combinational potential of Russian predicative adjective

$$\begin{bmatrix} pred-adjectives \\ \text{DEPS} < [1],[3]\,\text{infl}-cop\,|[2]> \\ \text{VALENCE} \begin{bmatrix} \text{SUBJ} < [1] > \\ \text{SPR} < [3] > \\ \text{COMPS}\,[2] \end{bmatrix} \end{bmatrix}$$

As (65) shows, the dependent list (DEPS) of predicative adjectives consists of two members and a list. The first member is identified with the SUBJ in the VAL list, the second

[64] Based on Avgustinova's (2006: 33-35) discussion, the morphologically signalled predicative category is the one which has a distinctive form for predicative use. This form is different from that in attributive use, for example.

with the SPR and the third with the complement of the predicative adjective. Now, we need to see the structure of the copular constructions with the predicative adjectives. Note that such a structure represents the structure of examples like (63) and (64) where the copula is overt. This is shown below in (66) (Avgustinova 2006: 35).

(66) Copula construction headed by predicative adjective

$$\begin{bmatrix} head-all-val-ph & \\ \text{TENSE} & [5] \\ \text{MOOD} & [6] \\ \text{VALENCE} & \begin{bmatrix} \text{SUBJ} & \langle\rangle \\ \text{SPR} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{bmatrix} \\ \text{HD-DTR} & [4]\begin{bmatrix} pred-adjective & \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle [1] \rangle \\ \text{SPR} & \langle [2]\begin{bmatrix} \text{SPEC} & [4] \\ \text{TENSE} & [5] \\ \text{MOOD} & [6] \end{bmatrix} \rangle \\ \text{COMPS} & [3] \end{bmatrix} \end{bmatrix} \\ \text{NH-DTRS} & \langle [1],[2],[3] \rangle \end{bmatrix}$$

The *hd-all-val-ph* above shows that in instances of predicative adjective, the *pred-adj* is the head daughter which selects the copula as its SPR. This SPR is a marker. In this structure, the TENSE and MOOD values of the phrase are identified with the SPR's TENSE/MOOD values[65].

As stated, the copula (i.e. the SPR) may be absent; hence, the analysis needs to ensure that the present-indicative interpretation is realised wherever the copula is missing. To ensure this, Avgustinova (2006: 36) assumes that a default constraint on the *clause* requires any clause to receive present-tense and indicative-mood interpretation if the SPR has a non-empty value.

[65] In this way, it behaves more like a head than a specifier.

Based on that *clause* constraint, wherever the copula is absent, the construction bears a present-indicative interpretation. The constraint on *clause* is shown below (2006: 36).

(67) *Clause* constraint

$$\textit{clause} \rightarrow \begin{bmatrix} \text{TENSE} & \textit{present} \\ \text{MOOD} & \textit{indicative} \\ \text{VAL} & [\text{SPR} < [2] >] \end{bmatrix}$$

(67) says that a clause will have a present-tense and indicative-mood interpretation whenever its VAL|SPR value is not discharged. In other words, copular clauses that lack copulas themselves will have the present-indicative interpretation. Essentially, Avgustinova did not say how the defaultness of present-indicative interpretation is ensured, although she (2006: 34) explicitly assumes this. That is, on the face of (67) copular clauses that have past/future tense copulas as specifiers will be ruled out as those clauses must have empty VAL|SPR values.

In fact, Avgustinova (2006) did not provide us with the structure of sentences that has no overt copula. However, based on (67) I assume that the structure of a verbless sentence like (62) above should be as follows:

(68) Verbless construction headed by the predicative adjective

$$\begin{bmatrix} head-all-val-ph \\ \text{TENSE } present \\ \text{MOOD } indicative \\ \text{VALENCE} \begin{bmatrix} \text{SUBJ } <> \\ \text{SPR } <[2]> \\ \text{COMPS } <> \end{bmatrix} \\ \text{HD-DTR } [4] \begin{bmatrix} pred-adjective \\ \text{VAL} \begin{bmatrix} \text{SUBJ } <[1]> \\ \text{SPR } <[2]> \\ \text{COMPS } <[3]> \end{bmatrix} \end{bmatrix} \\ \text{NH-DTR } <[1],[2],\,|\,[3]> \end{bmatrix}$$

(68) shows that the construction receives present-indicative interpretation if the SPR is not discharged, i.e. it has non-empty value as in [VALENCE|SPR <[2]>]. Unlike copular clauses with past or future tense copulas, sentence (62) above lacks the copula. It follows from that, on the basis of Avgustinova's (2006) approach, that such a clause will have a non-empty (unsaturated) VAL|SPR value, and hence, the clause receives a present indicative interpretation. Essentially, this analysis, as formalized, seems odd. That is, it is not normal to assume final clausal structures with unsaturated VAL|SPR values.

The above discussion explores the analysis of copular constructions headed by morphologically signalled predicative categories. Now, we turn to Avgustinova's second type of copular constructions, where the copula itself is the head.

4.3.1.3.2. Non-morphologically signalled predicative categories

This subsection is concerned with cases where there is 'no morphological signalling of the predicative status' (Avgustinova, 2006: 36). In such a case, the copula is the head. The copula combines with non-morphologically signalled predicative categories. As stated, there

are two possible constructions here. One has an overt copula, and the other contains no copula. Avgustinova (2006) proposes a constructional analysis to account for such instances. If the copula is overt, then we have a headed phrase of type *hd-all-val-ph*. Otherwise, we have a non-headed phrase. Avgustinova did not indicate any example that belongs to such a type, although she discusses the possible structures. The structure of the overt copula phrase is in (69) below (2006: 37).

(69) Construction headed by the copula

$$\begin{bmatrix} head-all-val-ph & \\ \text{CAT} & \begin{bmatrix} \text{TENSE} & [1] \\ \text{MOOD} & [2] \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle\rangle \\ \text{COMPS} & \langle\rangle \end{bmatrix} \end{bmatrix} \\ \text{HD-DTR} & [C]\begin{bmatrix} assembling\text{-}operator & \\ \text{TENSE} & [1] \\ \text{MOOD} & [2] \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} & \langle [A] \rangle \\ \text{COMPS} & \langle [B] \rangle \end{bmatrix} \end{bmatrix} \\ \text{NH-DTRS} & \langle [A],[B]\begin{bmatrix} non-verbal & \\ \text{EXT-ARG} & [A] \end{bmatrix} \rangle \end{bmatrix}$$

This structure shows that the TENSE/MOOD values of the phrase are identified with the TENSE/MOOD values of the head daughter; namely, the copula. Note that the copula here, according to Avgustinova, is analysed as an assembling operator which puts together two elements that are non-verbal and lexically non-predicative categories.

If the copula is absent, a *silent-copula-ph* is proposed. Consequently, the structure of verbless constructions is headless as in (70) below (Avgustinova 2006: 36)[66].

[66] As indicated earlier, such an analysis is influenced by Sag and Wasow's (1999) and Sag et al.'s (2003) analyses.

(70) Non-headed construction

$$\begin{bmatrix} silent\text{–}cop\text{–}ph & \\ \text{CAT} & \begin{bmatrix} \text{TENSE} & present \\ \text{MOOD} & indicative \\ \text{HEAD} & \begin{bmatrix} assembling\text{–}operator \\ \text{FORM} \quad fin \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{SUBJ} <> \\ \text{COMPS} <> \end{bmatrix} \end{bmatrix} \\ \text{NH–DTRS} & < [\text{A}], [\text{B}] \begin{bmatrix} non\text{–}verbal \\ \text{EXT–ARG} \quad [\text{A}] \end{bmatrix} > \end{bmatrix}$$

What should be noted here is that non-morphologically signalled predicative categories behave as predicative categories in requiring an argument once they occur in predictive positions (Avgustinova, 2006: 36). Accordingly, the predicative complement in (70) requires an external argument, namely the SUBJ[67].

4.3.2. Non-constructional approaches (empty copula)

This section discusses some lexical approaches. The approaches mentioned here assume a phonologically empty copula in the analysis of verbless sentences.

4.3.2.1. Bender (2001)

In order to account for copula absence in AAVE, Bender (2001) examines different approaches to verbless sentences. Bender's constructional analysis was discussed above in Section 4.2.1.2. Here, I will discuss her lexical analysis. In her lexical analysis, Bender

[67] The motivation for assuming two different types of copula is not clear to me. That is, the copula is treated as SPR in some cases, whereas in others it is the head.

(2001) proposes a phonologically empty copula. This empty copula has a lexical entry. In addition, Bender (2001) argues that the phonologically empty copula is an inflected form of the verb *be*, thus, it is a subtype of *word* and has the DAUGHTER feature. The assumption that the phonologically empty category is an inflected form of the verb *be* means it is an inflected form like *is* and *am*.

Now, let us see the constraints on the phonologically empty category (Bender 2001: 119) and how they account for copula absence in AAVE. Those constraints are shown below.

(71) The phonologically empty copula for AAVE

$$\begin{bmatrix} \text{PHON} \langle\rangle \\ \text{SYNSEM} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{FORM} & \textit{fin} \\ \text{INV} & - \end{bmatrix} \\ \text{COMPS} \ \textit{elist} \vee \textit{nelist}(\textit{canonical}) \oplus \textit{list}(\textit{elided}) \\ \text{ARG-ST} \ \langle [\text{non-1sg}], \ldots \rangle \end{bmatrix} \end{bmatrix} \\ \text{DAUGHTER} \ \textit{be-lxm} \end{bmatrix}$$

As the empty copula is assumed to be phonologically empty, the PHON feature has an empty value. The DAUGHTER's feature value is *be-lxm*, assuming that all copulas are subtypes of *be-lxm*. The constraint ARG-ST <[*non-1sg*]…> rules out examples like (48) above where the copula appears, while the constraint [FORM *fin*] rules out non-finite clauses, as in (57) above.

The constraint [INV -] prevents an empty copula from being inverted. This results in the ungrammaticality of the following:

(72) *e he ever tall! (Bender, 2001: 87)

(72) shows that the copula must appear if it is inverted.

As for copula complement, the constraints on the COMPS attempts to account for it, although it is still problematic. As discussed above, the first half of the COMPS constraint allows examples like (58) above, whereas the second half allows those like (59) above. If the sentence does not satisfy one of these constraints, it appears ungrammatical, as exemplified in (60) above.

As indicated earlier, Bender's (2001) analysis does not account for some instances of complement extraction, as discussed above in Section 4.3.1.2.

4.3.2.2. Borsley (2004, 2011)

Borsley (2004, 2011) provides an HPSG analysis of English comparative correlative constructions (CCs). The CC constructions consist of two clausal constituents, each of which starts with a phrase containing *the* and a comparative word; he argues that there is evidence that the first clause is a subordinate clause, and the second is a main clause. The following is an example of such constructions:

(73) The more I read, the more I understand.

As indicated, (73) consists of two clausal constituents. The second clause, *the more I understand*, is the main clause, whereas the first, *the more I read*, is the subordinate clause.

What is relevant in Borsley's analyses is the instance of copula omission in examples like (74).

(74) The more intelligent the students, the better the marks.

In this sentence, there are no verbs/copulas, in both the main and the subordinate clauses. In other words, we would expect the sentence to be something like the following:

(75) The more intelligent the students **are**, …

However, the copula is omitted here. Borsley (2004, 2011) assumes that the copula in English CCs may be omitted in certain circumstances. That is, it may be omitted if (a) its complement is fronted, (b) it is the main verb in the construction, (c) *that* is not present and (d) the subject has a non-specific interpretation. All these conditions are met in (74) above. That is, the copula complements, namely *the more intelligent* and *the better*, are fronted and the copula is the main verb in this construction. In addition, *that* is not present here and the subjects (i.e. *the students* and *the marks*) have a non-specific interpretation. On the other hand, one of these conditions is missing in the following ungrammatical sentences:

(76) a. *The more intelligent the students, the more marks given

b. *The more intelligent the students, the better the marks will

c. *The more intelligent the students, the better it seems the marks

d. *The more intelligent that the students, the better that the marks

e. *The more intelligent they, the more pleased we

In (76a), the complement is not fronted, as the second clause is thought to be passive. In (76b-c), the copula is not the main verb in the construction; (76d) is ungrammatical because *that* is present. The condition that the subject must have non-specific interpretation can be violated if the subject is a pronoun, as in (76e).

Borsley (2004, 2011) calls each of the two clausal constituents in (74) above *'the*-clause'. He argues that *the*-clauses seem to be filler-gap phrases with unusual properties. In his

analysis of copula omission, he points out that this is a result of (a) special properties the verb *be* has and (b) one construction, namely *head-filler-phrase* (2004: 89). He also assumes that (a) only *hd-filler-ph* can have an empty head and (b) only the verb *be* can have a phonologically null form.

In order to account for copula omission, Borsley (2004: 90; 2011: 15) assumes a phonologically empty form of *be* with a lexical description shown below:

(77) The Phonologically empty copula in English CCs

$$\begin{bmatrix} \text{PHON} <> \\ \text{HEAD} \begin{bmatrix} \text{FORM} \ \textit{fin} \\ \text{NULL} + \end{bmatrix} \\ \text{SUBJ} < [1] \text{NP}[\text{F}'] > \\ \text{COMPS} <> \\ \text{SLASH} \{ \text{XP}[\text{SUBJ} < [1] >] \} \end{bmatrix}$$

In this description, the PHON feature has an empty list value, as the copula is assumed to be phonologically null. The HEAD is verb, but it is [NULL +] in order to allow for copula omission. In other words, [NULL +] will pick up the phonologically empty copula. The letter 'F' in the SUBJ specification stands for any restriction that may be assumed on the subject. Recall that such a construction needs the complement to be fronted. Therefore, the COMPS feature has empty list value. This is to ensure that this construction does not have in-situ complement; however, the SLASH feature ensures that this complement is fronted[68].

4.3.2.3. Müller (2014)

Müller (2014) provides an account of German verbless sentences. Examples of such sentences include the following, where (78) corresponds to (79):

[68] Arnold and Borsley (2014) use coordination to argue against the empty copula. See Arnold and Borsley (2014) for more discussion.

(78)	*ein*	*treppenwitz*	*der*	*musikgeschichte,*	*dass*	*die*	
	a	stair.joke	of.the	music.history	that	the	
	kollegen	*von*	*rammstfln*	*vor*	*funf*	*jahren*	*noch*
	colleagues	of	rammstein	before	five	years	still
	im	*vorprogramm*	*von*	*sandow*	*spielten.*		
	in.the	before.program	of	sandow	played		

'It is an irony of musical history that the colleagues from (the band) Rammstein were still playing as the support group of Sandow a few years ago.

(79)	*dass*	*die kollegen*	*von*	*rammstein*	*vor*	*funf*	*jahren*
	that	the colleagues	of	rammstein	before	five	years
	noch	*im*	*vorprogramm*	*von*	*sandow*	*spielten,*	*ist*
	still	in.the	befor.program	of	sandow	played	is
	ein	*treppenwitz*	*der*	*musikgeschichte.*			
	a	stair.joke	of.the	music.history			

The copula *sein* 'be' in (78) is omitted. In such a sentence, Műller (2014) argues that the assumption of an empty copula is preferable to a constructional analysis. According to

Mőller (2014), any constructional account requires more rules than the ones required in a lexical analysis. Further, the generalisation in a construction-based approach implies some facts that lexical rules with empty elements express explicitly and more economically.

4.3.3. Summary

Some different approaches to verbless sentences were discussed above. One possible approach to account for the missing copula is to assume an empty copula. Such an analysis requires a lexical description for the empty copula with appropriate properties. Alternatively, a constructional analysis is proposed. In the latter analysis, a clause with a missing copula can stand as a finite clause. Hence, the constructional analysis accounts for the missing copula sentences without assuming phonologically empty copulas.

4.4. Conclusions

This chapter, Chapter 4, reviewed previous HPSG approaches to the copula. There were two groups of these approaches. The first was the studies that discussed the analysis of the semantics of the copula. They attempted to determine whether the copula contributes semantically or not. The second group discussed whether or not verbless sentences contain an empty copula. Each group of research will be applied to MSA data in the following two chapters, i.e. Chapters 5 and 6.

It should be noted here that in the analysis of the semantics of the overt copula in Chapter 5 I will apply van Eynde's (2008, 2009) and Müller's (2009, in preparation) approaches. I will not apply the lexical rule approach of Pollard and Sag (1994) and Ginzburg and Sag (2000) because it is an earlier version of the raising analysis of the copula. As stated, this earlier

version was criticised and the problems it has were avoided or minimised by the most recent version that Müller proposes. On the other hand, in the analysis of MSA verbless sentences in Chapter 6 I will apply three approaches proposed above, namely an empty copula analysis and two constructional analyses. That is, all approaches discussed under the non-constructional approaches argue for an empty copula in verbless sentences, although each of them has some useful features. The two constructional analyses I will apply to MSA are Sag and Wasow's (1999) and Bender's (2000) approaches because they differ significantly in various respects. I will not apply Avgustinova's (2006) approach to MSA because her approach seems odd in various ways, as discussed above. The application of all these approaches to MSA data will help us evaluate them and see which one is better adopted. Next chapter, however, will discuss the analysis of the MSA overt copula syntactically and semantically.

Chapter 5

The Overt Copula in Modern Standard Arabic: An HPSG Analysis

5.1. Introduction

This chapter concerns the analysis of the overt copula in Modern Standard Arabic. Recall that in Chapters 2 and 3 we presented MSA data in which the copula is overt. This chapter attempts to analyse this data within HPSG. The discussion here is divided into two main parts: the syntax and the semantics of the copula. Accordingly, Section 5.2 will discuss the main syntactic properties of the copula in MSA. Section 5.3, then, will attempt to explore whether or not the copula contributes semantically. Apparently, the latter section will apply HPSG approaches presented in Chapter 4, Section 4.2, to the copula in MSA. A summary of the chapter is provided in Section 5.4.

5.2. The syntax of the copula

In this section, I will attempt to provide a syntactic analysis for the verbal copulas *kaan* and *lays*. For reasons of simplicity, in this partial analysis I will simplify the CAT|OMPS value. That is, the complement of the copula may or may not be predicative, and I will not

specify this here[69]. For the same reasons, I will not specify the CONT(ENT) value in any lexical description. However, I will defer the discussion of such issues to Section 5.3, where I discuss the detailed analyses. Therefore, this section is intended as a kind of preparation for the following section, Section 5.3.

5.2.1. The verbal copula *kaan*

As stated in Chapter 2, Section 2.3.1, *kaan* is a verbal copula. However, what distinguishes it from ordinary verbs is that *kaan* takes a set of complements that does not seem to be available for ordinary verbs. That is, this verbal copula takes a phrasal complement, i.e. an NP, an AP, a PP or an AdvP complement. This is shown by the following example:

(1) *kaana r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.PFV the-man-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man was a teacher/at school/ tall/ here'

As it is a verb, this verbal copula should have the feature [HEAD *verb*] in the specification of its HEAD value in addition to other features. The lexical description of *kaana* should also ensure the possibility of having a variety of phrasal complements, i.e. NP, AP, PP and AdvP complements. Note that this means that the phrasal complement cannot be a VP. Therefore, the phrasal complement needs to have the feature [HEAD $\neg$ *verb*]. This feature ensures that the

[69] The discussion of predicative/non-predicative complements leads us to the question of whether or not the copula is semantically vacuous, which is the main focus of Section 5.3 in this chapter.

head of the phrasal complement cannot be a verb. These facts are included in the following lexical description of *kaana*.

(2) Preliminary lexical description of *kaana* with a phrasal complement

$$\begin{bmatrix} \text{PHON} < kaana > \\ \\ \text{SS}\,|\,\text{LOC}|\,\text{CAT} \begin{bmatrix} \text{HEAD } verb \\ \\ \text{SUBJ } [2] \\ \text{COMPS } [3] \end{bmatrix} \\ \\ \text{ARG-ST } [2] < \text{NP} > \oplus [3] < \begin{bmatrix} phrase \\ \text{HEAD } \neg\ verb \end{bmatrix} > \end{bmatrix}$$

The lexical description in (2) indicates that *kaana* is a verb. This copula requires two arguments: an NP subject and a phrasal complement whose head is not a verb (i.e. a non-verbal complement). Accordingly, this phrasal complement can be an NP, an AP, a PP or an AdvP, as indicated by the ARG-ST list. Note that among those phrasal complements the NP and AP complements which take accusative case, a fact that is true with all verbs. Therefore, we need a constraint that requires the NP and AP complements of verbs to be accusative. This constraint is shown below:

(3) The constraint on NP and AP complements' case (simplified)

$$\begin{bmatrix} \text{HEAD } verb \\ \text{COMPS} < [\, phrase, \text{HEAD } noun \vee adj, \text{CASE}[1]], \ldots > \end{bmatrix} \rightarrow \ [1] = acc$$

The constraint in (3) says that if a noun or an adjective occurs in the complement position of a verb, then the NP's or AP's case needs to be accusative. Note that this constraint

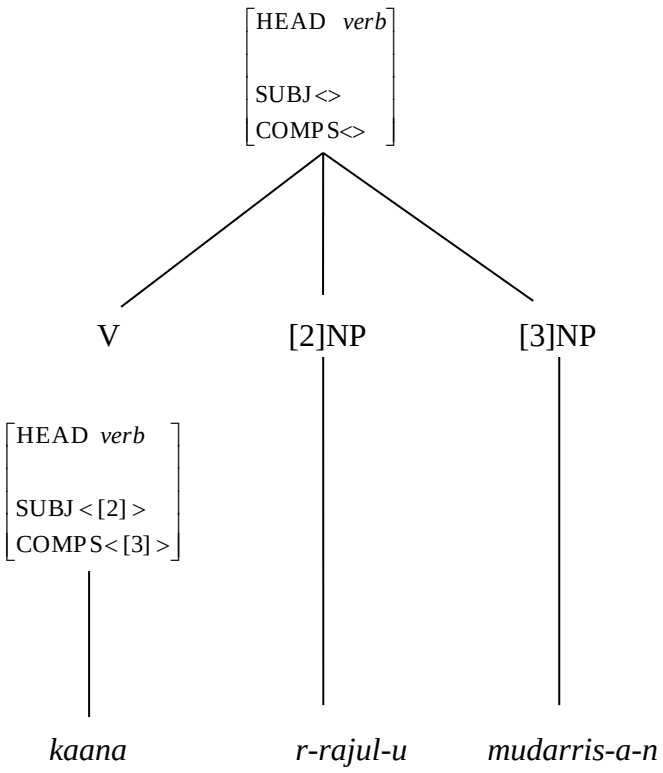
licenses the complement of the copula because it is a verb. Given this, the syntactic structure of sentence (4) below is shown in (5).

(4) *kaana* *r-rajul-u* *mudarris-a-n*

be.PFV.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man was a teacher'

(5)



The phrasal type of this structure is *hd-subj-comp-ph*. That is, the subject here does not combine with a phrasal head, VP, to be *hd-subj-ph*, but rather the verbal copula takes both its complement and its subject as sisters. As specified by the copula requirement, the copula requires a subject and a complement. The copula combines with its requirements: therefore,

SUBJ and COMPS values are empty at the top of the structure. The constraint on *hd-subj-comp-ph* is presented in Chapter 1, Section 1.5.3.

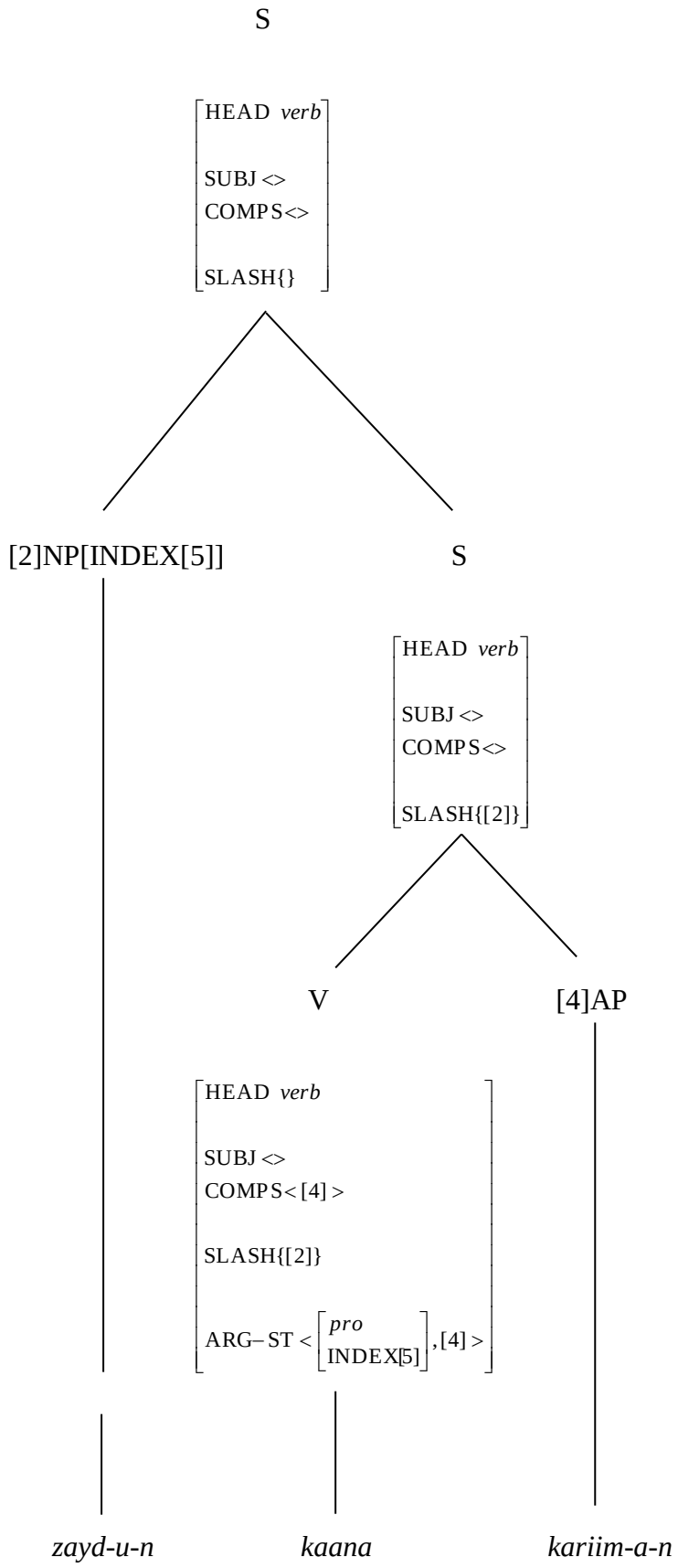
The subject in (4) and its proposed structure in (5) are sisters of the copula. However, the subject in MSA may be topicalised, i.e. it may precede the copula, as indicated in Chapter 1, Section 1.5.3. This change in word order affects the structure. That is, the preverbal subjects are better analysed as topics associated with a null resumptive pronoun. Therefore, the sentence in (6) should have the structure in (7).

(6) *zayd-u-n* *kaana* *kariim-a-n*

Zaid-NOM-NN be.PFV.3SG.M generous.SG.M-ACC-NN

‘Zaid was generous’

(7)


S
HEAD verb
SUBJ <>
COMPS <>
SLASH{}
[2]NP[INDEX[5]]
S
HEAD verb
SUBJ <>
COMPS <>
SLASH{[2]}
V
[4]AP
HEAD verb
SUBJ <>
COMPS < [4] >
SLASH{[2]}
ARG–ST < pro INDEX[5] , [4] >
zayd-u-n
kaana
kariim-a-n

Unlike the structure in (5), the phrasal type of the structure in (7) is of type *hd-fill-ph*. That is, the topic here combines with a slashed clause which is of type *hd-subj-comp-ph*. At the top of the *hd-subj-comp-ph* the copula is supplied with its complement, as the COMPS value is empty. The subject of this slashed clause, essentially, is a null pronoun coindexed with the topic. The copula combines with its slashed topic in the *hd-fill-ph*, and hence, SUBJ, COMPS and SLASH values are empty at the top of the structure. The constraint on the *hd-fill-ph* is presented in Chapter 1, Section 1.5.3.

Now, let us move on to the second copula, namely *lays*, and explore its syntax.

5.2.2. The negating verbal copula *lays*

As indicated with *kaan*, *lays* is also a verb and should have the feature [HEAD *verb*]. That is, *lays* may have any phrasal category as its complement, just like *kaan*. This is shown by the following:

(8) *laysa r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.NEG the-man-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man is not a teacher/at school/ tall/ here'

Another feature of *lays* is that it is a negating verb, i.e. a verb that is only used for negation. It is precisely a negating verb in the present tense. Consequently, we need to consider two features. First, we need to add the POL(ARITY) feature with *neg(ative)* as its value. This will ensure that such a verb is used in negation. Second, we need to ensure that this is a negating

verb in the present tense. Therefore, the feature-value [TENSE *pres*] should restrict the negation to present tense context. Like *kaana, lays*'s phrasal complement needs to have the feature-value [HEAD ¬ *verb*] to prevent the complement from being a VP.

Taking the preceding discussion into account, the lexical description of *lays* should be as in (9) below:

(9) Preliminary lexical description of *laysa* with a phrasal complement

$$\begin{bmatrix} \text{PHON} < \textit{laysa} > \\ \text{SS}\,|\,\text{LOC}\,|\,\text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{POL}\ \textit{neg} \\ \text{TENSE}\ \textit{pres} \end{bmatrix} \\ \text{SUBJ}\ \ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{ARG-ST}\ [2] < \text{NP} > \oplus [3] < \begin{bmatrix} \textit{phrase} \\ \text{HEAD} \neg \textit{verb} \end{bmatrix} > \end{bmatrix}$$

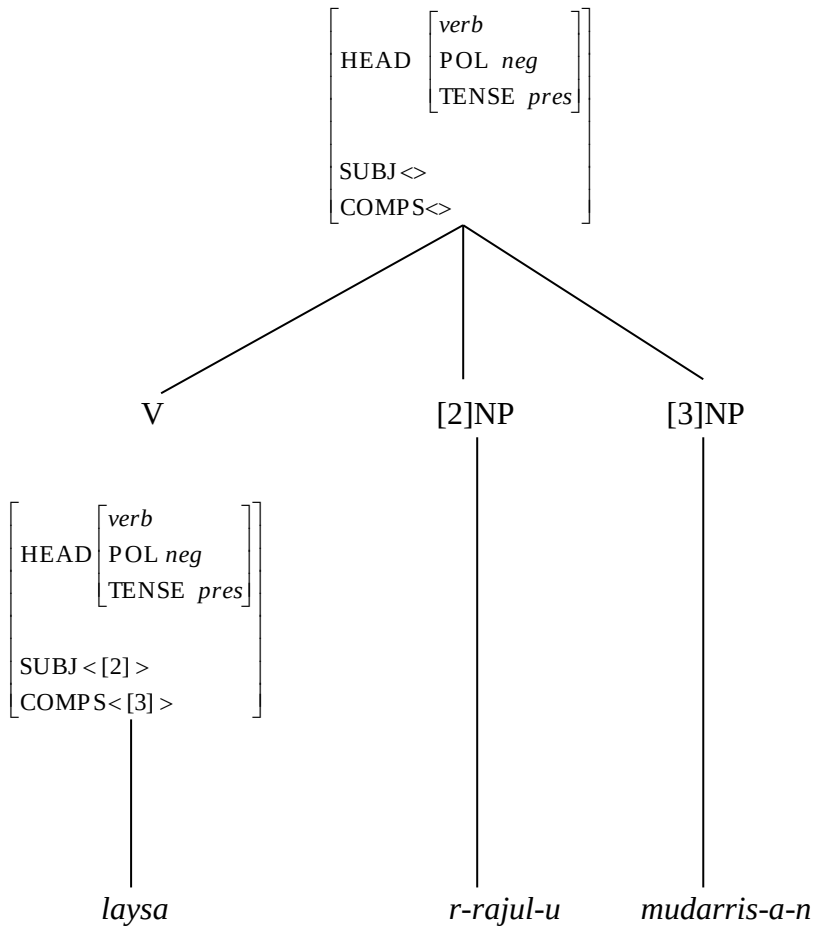
The lexical description in (9) specifies the features of *lays*. It says that it is a verb and it a negating verb in the present tense context. The ARG-ST list indicates that the copula requires two arguments: an NP subject and a phrasal complement that is not headed by a verb, i.e. an NP, an AP, a PP or an AdvP. The sentence in (10) below and its proposed structure in (11) represent the possibility of having an NP complement.

(10) *laysa* *r-rajul-u* *mudarris-a-n*

be.NEG.3SG.M the-man.SG-NOM teacher.SG.M-ACC-NN

'The man is not a teacher'

(11) S



The structure in (11) is similar to that in (5) above, and hence, what is said there is also true here.

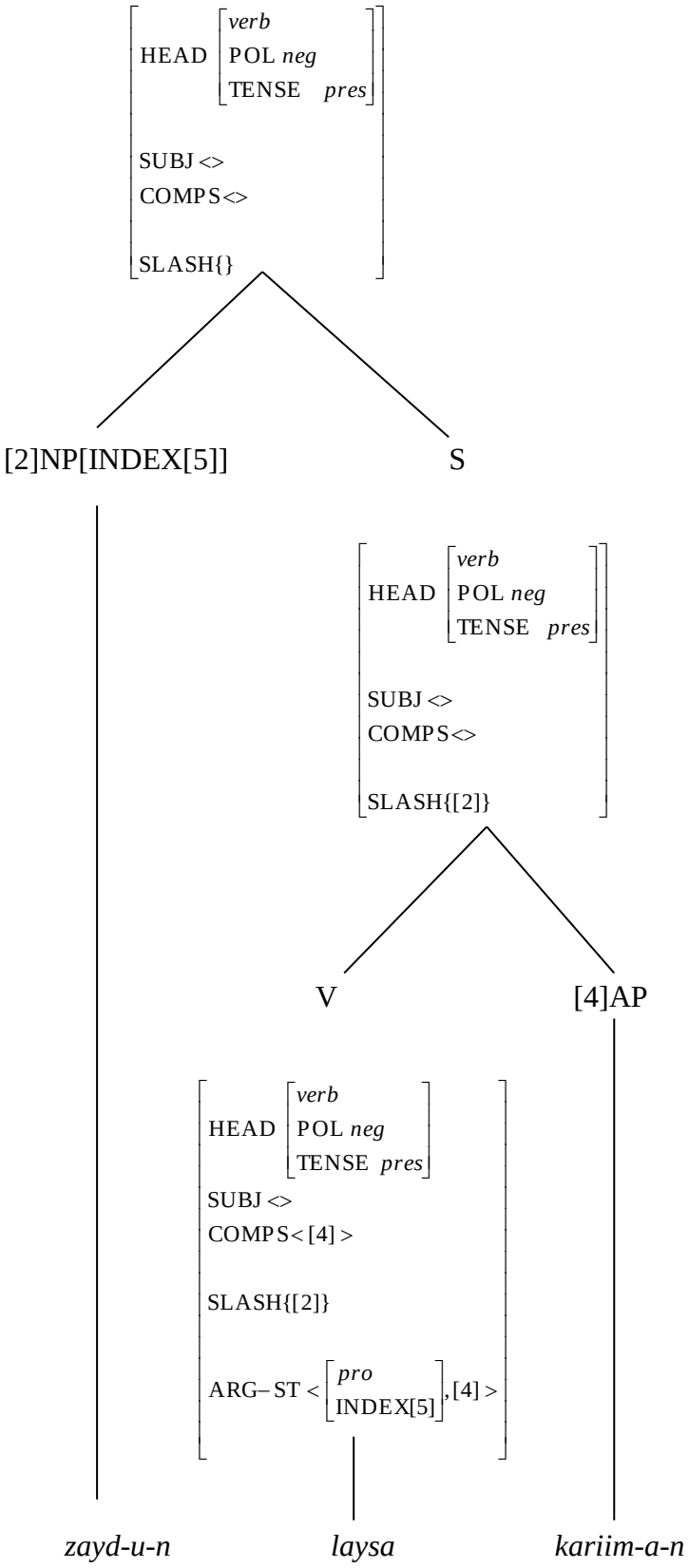
Turning to the topicalised subjects, *lays*, just like *kaan*, can be preceded by a topicalised subject. Thus, the sentence in (12) should have the structure in (13) below.

(12) *zayd-u-n* *laysa* *kariim-a-n*

Zaid-NOM-NN be.NEG.3SG.M generous.SG.M-ACC-NN

'Zaid is not generous'

(13) S


HEAD [verb, POL neg, TENSE pres]
SUBJ <>
COMPS <>
SLASH{}
[2]NP[INDEX[5]]
S
HEAD [verb, POL neg, TENSE pres]
SUBJ <>
COMPS <>
SLASH{[2]}
V
[4]AP
HEAD [verb, POL neg, TENSE pres]
SUBJ <>
COMPS < [4] >
SLASH{[2]}
ARG–ST < [pro, INDEX[5]], [4] >
zayd-u-n
laysa
kariim-a-n

As in the case with *kaan*, this structure is of type *hd-fill-ph*. Therefore, what is said about (7) above is also true here.

In short, so far we see various syntactic properties of *kaan* and *lays*. However, it should be noted here that the preceding discussions in this chapter apply to the copula in MSA predicational sentences. The copula in equational sentences, on the other hand, has slightly different syntactic properties since equational sentences involve an optional pronominal element. The following section explores the syntactic properties of the copulas in these sentences and attempts to account for the pronominal element in these sentences.

5.2.3. *kaan* and *lays* in equational sentences

This section concerns the syntax of the copulas in equational sentences. As indicated in Chapter 3, Section 3.5.1, the pronoun *huwa* and its other forms are considered a special characteristic of equational sentences in MSA. Thus, I will start by reminding the reader about the syntactic status of this pronoun, which was discussed in Chapter 2, Section 2.3.3. I repeat this for convenience. Notice that the pronoun we are interested in here is the one in which the pronoun occurs between the subject and the complement as in (14) below:

(14) *hišaam-u-n* *huwa* *l-mudarris-u*

Hisham-NOM-NN he the-teacher.M.SG-NOM

'Hisham is the teacher'

This pronoun agrees with the NP that precedes it in number and gender, while it always has the third person form.

Eid (1983, 1991) proposes an analysis for a similar case in Egyptian Arabic. Eid (1991) argues that such a pronoun is a form of the copula which (i) appears only in present tense context and (ii) does not co-occur with past and future forms of the copula. However, as far as MSA is concerned, two facts argue against this analysis. First, this apparent pronoun can co-occur with the copula as (15) shows.

(15) *kaana* *hišaam-u-n* *huwa* *l-mudarris-a*
be.PFV.3SG.M Hisham-NOM-NN he the-teacher.SG.M-ACC
'Hisham was the teacher'

Second, the comparison between (14) and (15) indicates that this apparent pronoun has no effect on the complement case marking. That is, if we assume that the pronoun is a special form of the copula, then we would expect the complement of this pronoun to be accusative, as with the copula. However, we see that the complement in (14) remains nominative. These two facts show us that the analysis of the pronoun as a form of the copula is not the right analysis for MSA.

Another analysis can be proposed, namely that the pronoun is a narrow subject in the left-dislocation construction, just like the pronoun *huwa* in (16) below:

(16) *hišaam-u-n* *kaana* *huwa* *l-mudarris-a*
Hisham-NOM-NN be.PFV.3SG.M he the-teacher.SG.M-ACC
'Hisham, he was the teacher'

However, this analysis also seems inappropriate. That is, the case we are interested in is different from left-dislocation constructions. While the subject *hišaamun* in (16) is left-dislocated, it is not like that in (15), the case in which we are interested. In fact, the case we are interested in has the following word order with the pronoun as an optional element:

(17) COP+SUBJ+(PRO+)COMPS

A second fact argues against the assumption that the pronoun is a subject. That is, the pronoun may not agree with its preceding topic, as the following example conveys:

(18) *kuntu ʔanaa huwa l-muʔallif-a …*

be.PFV.1SG I he the-author.SG.M-ACC

'I was the author …'

In (18), if the pronoun was a subject coindexed with a preceding topic, then we would expect it to agree with that topic in person as well as number and gender. However, it is clear that they differ in person value; i.e. while the pronoun *huwa* has the 3rd person form, the preceding pronoun *ʔanaa* has the 1st person form. This suggests that the pronoun *huwa* is not a subject preceded by a topic. Note that, as example (16) above conveys, the pronoun *huwa*, when it is subject, agrees with the preceding topic, namely *hišaamun,* in person as well as number and gender.

A third fact follows from (18). That is, if the pronoun *huwa* was a subject, then it would agree with the copula *kuntu* in person among other features. However, it is clear that they differ in this feature; i.e. while the copula has the 1st person form, the pronoun under

discussion has the 3rd person form. This also suggests that the pronoun *huwa* is not the subject of the clause. It also suggests that the element that precedes *huwa*, namely *ʔanaa* 'I' is the subject as it satisfies MSA subject-verb agreement requirements.

The preceding discussion shows that the pronoun under discussion is neither a form of the copula nor a subject. We therefore need to account for this pronoun by using a different analysis. One possibility is to analyse the pronoun as an optional complement. Before we discuss this analysis, it is worth indicating the lexical description of this pronoun. Such a pronoun has the following lexical specifications:

(19) The lexical description for *huwa*

$$\begin{bmatrix} \text{PHON} < \textit{huwa} > \\ \text{SS} \mid \text{LOC} \mid \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{pro} \\ \text{CASE } \textit{nom} \end{bmatrix} \\ \text{SUBJ} <> \\ \text{COMPS} <> \end{bmatrix} \\ \text{ARG-STR} <> \end{bmatrix}$$

The lexical entry in (19) states that this lexical item is a pronoun, and its case is nominative[70]. An essential part in the description is the valence list. That is, such a pronoun does not require any argument, i.e. the SUBJ and COMPS values are empty lists. Given the lexical entry for *huwa*, we can proceed with the analysis. The proposed analysis treats the pronoun as an optional complement of the copula, *kaana* or *laysa*. Therefore, it will appear as an optional argument in the copula's ARG-ST list. The analysis should also ensure that the pronoun agrees with the subject in number and gender, as discussed earlier. It also needs to

[70] The analysis of this nominative pronoun as an optional complement is problematic in that we expect the complement of the copula to be accusative. I will return to this issue below and suggest a solution.

ensure that the pronoun under discussion always has the 3rd person form. This is shown in the following partial lexical description of the copula:

(20) Partial lexical description for the copula with the pronoun as an optional complement[71]

$$\left[\begin{array}{l} \text{SSLOC}|\text{CAT}|\text{VAL}\left[\begin{array}{l}\text{SUBJ}[2]\\ \text{COMPS}[3]\end{array}\right] \\ \text{ARG-ST}[2] < \text{NP}[\text{INDEX}\left[\begin{array}{l}\text{NUM}[6]\\ \text{GEND}[7]\\ \text{PER}\ per\end{array}\right]] > \oplus [3] < (\text{NP}[pro, \text{CASE}\ nom, \text{INDEX}\left[\begin{array}{l}\text{NUM}[6]\\ \text{GEND}[7]\\ \text{PER}\ 3\end{array}\right]],) \text{NP} > \end{array}\right]$$

The lexical description in (20) shows that the copula requires arguments as SUBJ and COMPS have nonempty lists. As the ARG-ST indicates, the subject list consists of one element that is specified for NUM and GEND. The PER value is underspecified, and hence, it can have 1st, 2nd or 3rd person values. The first argument in the COMPS list, i.e. the pronoun, is optional. This pronoun is coindexed with the subject in NUM and GEND. However, its PER value is specified, i.e. it must have the 3rd person form. Further, this pronoun must have the nominative form as the CASE value shows[72]. The second argument in the COMPS list is an NP, which will be in an accusative case as the constraint in (3) above states, just like all verbal complements. By these specifications, we capture the optionality of such a pronoun with its properties. Essentially, based on (20), the pronoun is allowed to appear in all copular sentences regardless of the definiteness/indefiniteness of its arguments. This is unwanted. That is, if one of the copula's arguments is indefinite, the appearance of the pronoun is ungrammatical, as in (21) below.

[71] Note that this partial lexical description is true for *kaan* and *lays*.

[72] Note that this is the HPSG account for agreement, (e.g. Pollard and Sag (1994)), where NUM, GEN and PER are INDEX features, while CASE is a HEAD feature. However, Kathol (1999) accounts for agreement by proposing the AGR(EEMENT) feature which has NUM, GEND, PER and CASE as values of the HEAD|MORPHOSYNTAX feature.

(21) **kaana* *zakiy-u-n* *huwa* *Tabiib-a-n*

be.PFV.3SG.M Zaki-NOM-NN he doctor.SG.M-ACC-NN

'Zaki was a doctor'

In fact, the pronoun optionally appears between two definite NPs, i.e. in equational sentences. Therefore, we need to revise (20) and ensure that the pronoun occurs between two NPs, each of which is definite, i.e. [DEF +]. This is ensured in (22) below:

(22) Partial lexical entry for the copula with the pronoun as an optional complement (revised)

$$\left[\begin{array}{l} \text{SSLOC}|\text{CAT}|\text{VAL}\left[\begin{array}{l}\text{SUB J}[2]\\ \text{COMPS}[3]\end{array}\right] \\ \text{ARG}-\text{ST}[2] < \text{NP}[\text{DEF}+, \text{INDEX}\left[\begin{array}{l}\text{NUM}[6]\\ \text{GEND}[7]\\ \text{PER } per\end{array}\right]] > \oplus [3] < (\text{NP}[pro, \text{CASE } nom, \text{INDEX}\left[\begin{array}{l}\text{NUM}[6]\\ \text{GEND}[7]\\ \text{PER } 3\end{array}\right]],) \text{ NP}[\text{DEF}+] > \end{array}\right]$$

(22) ensures that the pronoun occurs between two definite NPs. The NP that precedes it in the ARG-ST list is the subject, whereas the NP that follows the optional pronoun is the obligatory complement.

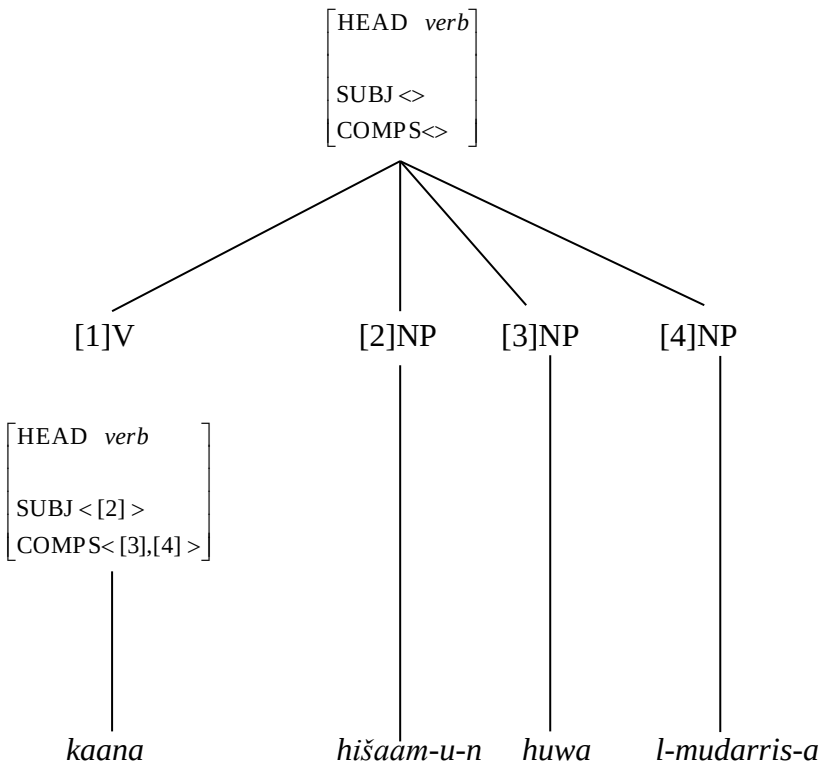
Another problem needs to be solved. That is, the pronominal complement must be nominative, whereas the constraint in (3) above requires the complement of the copula to be accusative. To resolve this, we also need to revise this constraint. That is, one may assume that the NP and AP complements of a verb are accusative by default, as stated below:

(23) The constraint on NP and AP complements' case (revised)

$$\begin{bmatrix} \text{HEAD } verb \\ \text{COMPS} < [\, phrase, \text{HEAD } noun \vee adj, \text{CASE}[1]], \ldots > \end{bmatrix} \rightarrow / [1] = acc$$

The revised constraint in (23) says that the NP or AP complement of he verb's case should be [1] where [1] is accusative by default. This allows us to have a nominative complement if the copula requires that. In the case under discussion, the copula's ARG-ST specifies that the pronominal complement needs to have the nominative form. Given this, the structure of sentence (15) in which the pronoun is analysed as an optional complement is shown in (24) below:

(24)



As stated about (5) above, the phrasal type of this structure is also *hd-subj-comp-ph*. The structure consists of a head daughter, a daughter which is the subject and two daughters which are complements. The copula takes its arguments as sisters.

As the preceding discussion explored an optional complement that appears in certain circumstances, we should now be able to provide the reader with a full description of the copulas in equational sentences. Let us take, first, the copula *kaan* and its proposed lexical description. This is shown in *kaan*'s lexical entry below:

(25) Preliminary lexical description of *kaana* in equational sentences

$$\begin{bmatrix} \text{PHON} < \textit{kaana} > \\ \text{SS}\,|\,\text{LOC}|\,\text{CAT} \begin{bmatrix} \text{HEAD} \quad \textit{verb} \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{ARG-ST}\ [2] < \text{NP}[\text{DEF+}] > \oplus [3] < (\text{NP}[\textit{pro}, \text{CASE}\,\textit{nom}],)\ \text{NP}[\text{DEF+}] > \end{bmatrix}$$

The description in (25) ensures that the copula ARG-ST consists of two lists where [2] is the subject list, whereas [3] is the complement list. The subject list consists of one element, a definite NP. In the complement list, however, there are two elements. The first complement is an optional nominative pronoun adjacent to a definite NP. This accounts for equational sentences data.

Essentially, what we say about *kaan* in equational sentences is also true for the copula *lays* in terms of their argument structure. For example, we can have an equivalent to sentence (15) above (with *kaan*) as in (26) below:

(26) *laysa* *hišaam-u-n* *(huwa)* *l-mudarris-a*

be.NEG.3SG.M Hisham-NOM-NN he the-teacher.SG.M-ACC

'Hisham is not the teacher'

As (26) conveys, the copula *lays* takes a definite subject, an optional nominative pronominal complement and an obligatory definite NP complement. The syntactic structure of (26) would be similar to that in (24) above. Consequently, we can propose a lexical description for *lays* in equational sentences as in (27) below:

(27) Preliminary lexical description of *lays* in equational sentences

$$\begin{bmatrix} \text{PHON} < \textit{laysa} > \\ \text{SS}\,|\,\text{LOC}\,|\,\text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{POL} \quad \textit{neg} \\ \text{TENSE} \quad \textit{pres} \end{bmatrix} \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{ARG-ST}\ [2] < \text{NP}[\text{DEF}+] > \oplus [3] < (\text{NP}[\textit{pro}, \text{CASE}\ \textit{nom}],)\ \text{NP}[\text{DEF}+] > \end{bmatrix}$$

As is the case with (25), the description in (27) accounts for the syntactic properties of *lays* in equational sentences.

In conclusion, as a characteristic of equational sentences the pronoun *huwa* and its other forms in MSA do not appear to be a form of the copula nor a narrow subject in left-dislocation constructions. The properties of such a pronoun in MSA copular sentences may be better analysed as an optional nominative complement. Taking this into account, lexical descriptions of *kaan* and *lays* in equational sentences were provided. Now, as the preceding

sections dealt with the syntax of the copula, leaving some complex issues aside, the following section will discuss whether or not the copula contributes semantically.

5.3. Does the copula contribute semantically?

This section attempts to answer the question as to whether or not the copula contributes semantically. Also, I will clarify here the distinction between predicative and non-predicative elements (if applicable). To understand the discussion, one needs to bear in mind copular sentence types. Recall from Chapter 3, Section 3.5 that MSA has two basic types of copular sentences: equational and predicational sentences. The distinctions between these two types are important because they should determine whether or not we have a single copula for all copular sentences. In the following, Section 5.3.1 will discuss the assumption that there is one-equative copula which works for all copular sentences, whereas Section 5.3.2 will discuss the assumption that there is a one-predicative copula. Section 5.3.3 will then discuss the position that argues for two copulas, one for equational sentences and another for predicational sentences.

5.3.1. The identity analysis

Within HPSG van Eynde (2008, 2009, 2012, 2015) argues for this position. In this section, I will propose an analysis along his lines. The following subsections will discuss how the copula in MSA is analysed based on this proposal, and its consequences.

5.3.1.1. The analysis of the copula

The discussion here applies to all copular sentences such as (1) and (15) above, repeated below as (28):

(28) a. *kaana r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.PFV the-man-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man was a teacher/at school/ tall/ here'

b. *kaana hišaam-u-n (huwa) l-mudarris-a*

be.PFV.3SG.M Hisham-NOM-NN he the-teacher.SG.M-ACC

'Hisham was the teacher'

Such an approach assumes no difference between predicative and non-predicative elements. Therefore, it assumes that both the subject and the complement, even in predicational sentences in (28a), are of type <*e*> (van Eynde, 2008). The role of the copula, hence, is to be the predicate which takes the subject and the complement(s) as its arguments. Consequently, this approach treats what is typically assumed to be a predicative complement in (29) as the object in (30) below.

(29) *kaana zayd-u-n muhandis-a-n*

be.PFV.3SG.M Zaid-NOM-NN engineer.SG.M-ACC-NN

'Zaid was an engineer'

(30) *qaabala* *zayd-u-n* *muhandis-a-n*

meet.PFV.3SG.M Zaid-NOM-NN engineer.SG.M-ACC-NN

'Zaid met an engineer'

The copula, in this approach, as the ordinary verb, has its own semantics.

As indicated in Chapter 4, Section 4.2.1 van Eynde (2008) argues that a number of arguments support this proposal. I will apply them now to MSA data, and in the following subsection I will examine how good they are. First, in many languages, van Eynde argues, the copula combines with EXPERIENCER. For example, consider the following example from MSA:

(31) *kaana* *xalid-u-n* *ħaziin-a-n* *bi-n-nisbati* *lii*

be.PFV.3SG.M Khalid-NOM-NN sad.SG.M-ACC-NN by-the-connecting to.me

'Khalid was sad to me'

The EXPERIENCER in (31) is *binnisbati lii* 'to me'. If the EXPERIENCER role, van Eynde argues, was not assigned by the copula, then it would not be clear what word in the sentence assigns this role. Hence, if we assume that this role is assigned by the copula, then the copula is not semantically vacuous.

Second, van Eynde (2008) also argues that copula absence, as is the case in MSA, cannot be taken as evidence that the copula is semantically vacuous. That is, if the copula absence was evidence, then this means that the article *a* in English is semantically vacuous because such an article is not employed in Arabic. For example, compare (32) to (33) below:

(32) Kim was a teacher

(33) *kaana* *ʕumar-u* *muʕallim-a-n*

be.PFV.3SG.M Omar-NOM teacher.SG.M-ACC-NN

'Omar was a teacher'

Based on these assumptions, the complete lexical description for the identity copula should ensure that the copula contributes the identity relation between the subject and the complement. It should also ensure that the complement of the copula can be (i) an optional nominative pronoun adjacent to a definite NP or (ii) an indefinite NP, an AP, a PP, or an AdvP. Essentially, the identity analysis has problems which we will see in the following subsection.

5.3.1.2. Discussion

Although the one-equative copula analysis (i) provides a simpler analysis for copular sentences and (ii) assumes a single copula for all copular sentences, (a) it is problematic and (b) has no good evidence that strongly argues for it. Let us first discuss van Eynde's arguments with some MSA data, and then move on to problems that face this approach.

van Eynde uses the EXPERIENCER role to argue that the copula is meaningful. In fact, as discussed earlier, an experiencer is possible with various types of sentences expressing an individual's judgement such as the following:

(34) *bi-n-nisbati* *lii,* *waliid-u-n* *yaʕrifu* *l-kaθiir-a*

by-the-connecting to-me Waleed-NOM-NN know.IPFV.INDC.3SG.M the-much-ACC

'To me, Waleed knows much'

In (34) it is clear that the ordinary verb *yaʕrifu* 'know.IPFV' already takes its arguments regardless of the EXPERIENCER. Therefore, this argument that van Eynde provides does not seem to be evidence that the copula is not semantically vacuous. According to Müller (in preparation), this element is an adjunct which may combine with clauses including copular clauses.

The second argument that van Eynde uses is that the articles in languages which employ them must be semantically vacuous if we use copula omission as evidence that it is semantically vacuous. In fact, this argument is weakened by the fact that the indefinite article does not exist in MSA at all. This is different from the copula that is omitted only in particular contexts.

Now, even if van Eynde's arguments were strong enough to argue for this proposal, this approach would face various problems. I will shed light here on three problems. First, as indicated in Chapter 3, Section 3.3.2, the selection restrictions and the valence requirements in predicational sentences suggest that the complement in predicational sentences is the main predicate in the sentence. For example, compare the following examples:

(35) a. *kaana* *r-rajul-u* *mariiD-a-n*

be.PFV.3SG.M the-man.SG-NOM sick.SG.M-ACC-NN

'The man was sick'

b. *kaana* *l-jidaar-u* *mariiD-a-n*

be.PFV.3SG.M the-wall.SG.M-NOM sick.SG.M-ACC-NN

‘The wall was sick’

Although (35a) and (35b) share the same copula, the predicative complement is the element which selects the kind of subject it requires. Therefore, because the complement *mariiD* ‘sick’ requires its subject to be animate, (35b) is semantically anomalous.

A second problem appears with expletive subjects. Consider the following example:

(36) *kaana* *huwa* *l-kasal-a*

be.PFV.3SG.M it the-laziness.SG.M-ACC

‘It was the laziness’

The essential part in the one-equative copula analysis is that the copula assigns a semantic role to its subject. However, if we assume with Fassi Fehri (1993, 2012) that the subject in (36) is expletive, and we know that the expletive subject does not play any semantic role, then examples like (36) show that there is a predicative copula which is semantically vacuous. Consequently, the equative copula is not appropriate. Essentially, Fassi Fehri (1993, 2012) did not provide evidence that the pronoun *huwa* is expletive, and hence, one may not consider examples like (36) problematic.

A third problem comes from the possibility for all copular sentence types to occur in the complement position of *consider*, as in (37) and (38) below:

(37) *ʕadadtu* *hišaam-a-n* *l-mudarris-a*

consider.PFV.1SG Hisham-ACC-NN the-teacher.SG.M-ACC

'I considered Hisham to be the teacher'

(38) *ʕadadtu* *xalid-a-n* *mujtahid-a-n*

consider.PFV.1SG Khalid-ACC-NN hardworking.SG.M-ACC-NN

'I considered Khalid hardworking'

According to Heycock and Kroch (1999), copula absence in the small clause position shows that it is semantically vacuous, and hence, argues against the assumption that it is always meaningful. That is, if the copula was meaningful, it would not be absent in such sentences. The latter problem seems to be the main evidence for the assumption that there is only one-predicative copula in MSA. Therefore, in the following section I will return to this issue and clarify whether or not it is strong evidence.

5.3.2. The raising analysis

This approach stands in an opposite position to the identity analysis presented above in Section 5.3.1, i.e. it proposes a single-predicative copula for all copular sentences. As indicated in Chapter 4, Section 4.2.2, this approach is called 'the raising approach' because the copula's semantic vacuity entails the raising analysis, and thus, the copula raises the

arguments of its predicative complement and makes them its arguments. In the following, I will consider the proposed analysis for the copula and discuss the application of this approach and problems that may arise.

5.3.2.1. The analysis of the copula

Although this approach is not proposed explicitly within HPSG, to the best of my knowledge, it is discussed in various non-HPSG works (e.g. Williams (1983), Partee (1986), Heycock and Kroch (1999)). This approach licenses all copular sentences, such as those in (28) above, regardless of its sentence type. In other words, this approach assumes that the copula is always predicative (or semantically vacuous).

With insight from Heycock and Kroch (1999), one can take the copula absence in MSA's small clauses when a copular clause occurs in the complement position of *consider,* as exemplified in (37) and (38) above, as evidence that it is always semantically vacuous. This instance, if we follow Heycock and Kroch, suggests that the copula is always meaningless. In other words, as stated above, if the copula contributed semantically, it would not be omitted at least with small clauses that receive equational interpretation as in (37) above (Heycock and Kroch, 1999).

Such an approach should propose a lexical description for the copula that ensures various things. First, it should ensure that its complement can be (i) an optional nominative pronoun adjacent to a definite NP or (ii) a phrasal category that is not headed by a verb. Second, it should give the predicative status to the complement of the copula (i.e. it should be [SUBJ <NP>]). Third, the CONT of the copula in this lexical description needs to be identical to that of its predicative complement.

This raising analysis can license predicative APs, PPs, and AdvPs because they are typically [SUBJ <NP>]. However, predicative NPs such as the one in (39) require a slightly different analysis:

(39) *kaana* *xalid-u-n* *rajul-a-n* *laTiif-a-n*

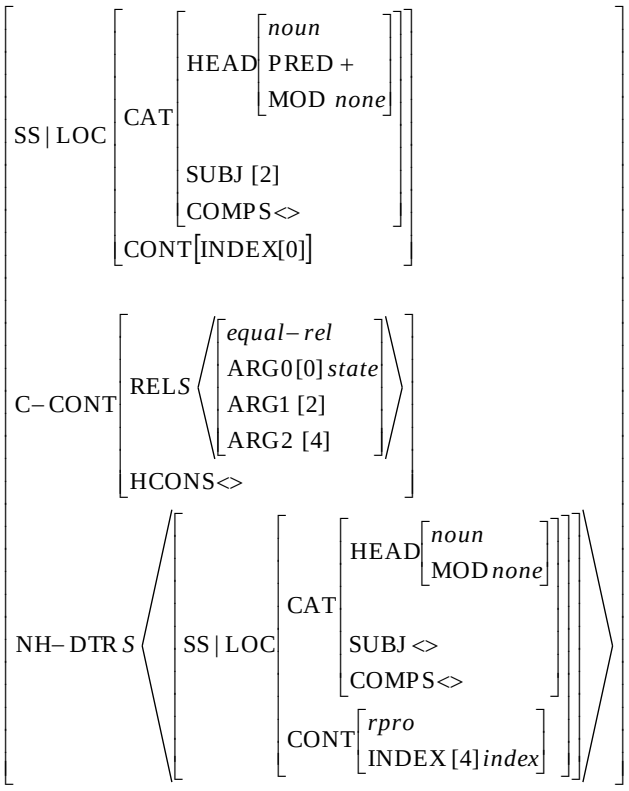
be.PFV.3SG.M Khalid-NOM-NN man.SG-ACC-NN nice.SG.M-ACC-NN

'Khalid was a nice man'

As indicated in Chapter 4, Section 4.2.2.2, the issue with this predicative NP is that if we assume that the noun *rajulan* 'a man' is predicative, the adjective *laTiifan* 'nice' cannot identify its INDEX value with the INDEX value of the predicative noun in the usual way. That is, the index value in the predicative noun is of type *event*, while the index value in the adjective is of type *index*. For this reason, the raising analysis proposes the Predicative NP Projection Schema (Müller, 2009; Müller, in preparation). This schema is shown in (40) below[73]:

[73] I amended the schema proposed by Müller (2009, in preparation) in order to be consistent with the lexical descriptions I propose in this thesis. For example, Müller assumes that the subject is not in the valence list. However, following standard HPSG works I assume the subject is in the valence list. In other words, Müller has a non-standard SUBJ feature which is not a VALENCE feature.

(40) The Predicative NP Projection Schema

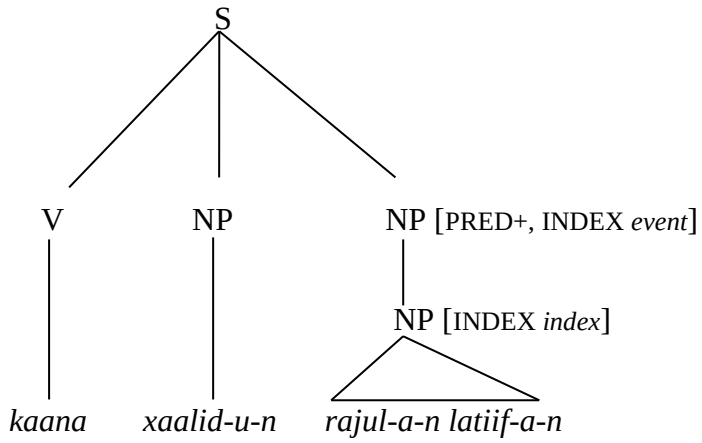


This schema licenses a unary branching structure that has a predicative NP mother with one single referential NP daughter. That is, it licenses the full NP and makes it predicative with appropriate SUBJ value. Therefore, it keeps the NP daughter referential, allowing for adjective-noun combination. Note that C-CONT in this schema expresses the relations between the NP daughter and the subject of the clause[74]. That is, C-CONT holds *equal-rel* between the subject of the predicative NP, and hence the subject of the clause, and the referential NP daughter. This relation represents the semantic contribution of the predicative NP, and hence

[74] Müller (in preparation), who originally proposes this schema, did not indicate how the embedded NP, in the unary projection, exerts any selectional restrictions on the subject of the predicative phrase. I leave this for future research.

the semantics of the clause[75]. According to this proposal, example (39) above should have the following structure:

(41)



Essentially, the schema in (40) licenses the predicative complement that requires a subject, and hence, the copular sentence that is licensed by this schema should be as follows:

(42) COP+NP+NP

Therefore, it accounts for (i) predicational sentences and (ii) equational sentences that have only one complement, i.e. the case in which the pronominal complement is omitted. However, this schema would be inappropriate for equational sentences when the pronominal complement appears. That is, nothing in the schema can account for the pronominal complement and the definiteness of the NP that follows it. I will return to this issue in the following subsection.

[75] Notice that the inex of the predicative NP is of type *state*, which is different from that of type *event*. Although *state* and *event* are subtypes of a common supertyoe, i.e. *eventuality*,*event* is a 'punctual' eventuality, while *state* is an eventuality that is extended in time.

5.3.2.2. Discussion

As stated with the identity analysis, the raising analysis also provides a simpler analysis and assumes one-single copula for all copular sentences. However, there seems no strong evidence that can argue for it in MSA. This approach is also problematic, as we will see.

Let us start with the main evidence for this proposal, namely the fact that all copular sentences occur in the complement position of the verb *consider* with no overt copula. In fact, this argument does not seem to be sufficient. That is, the copula in MSA is absent even in equational sentences, which are not small clauses, where clearly there is an identity relation[76]. This suggests that the appearance/absence of the copula in MSA occurs in particular contexts regardless of its semantics. This entails that a meaningful verb may be missing from the surface in particular contexts, and hence, one may assume a phonologically empty copula as we will see in Chapter 6[77].

Now, we move on to problems that this analysis seems to have. First, the Predicative NP Projection Schema proposed above does not account for an instance of equational sentences. That is, this schema does not account for the pronominal complement and the definiteness of the NP that follows this pronoun. Therefore, in order to resolve this, one may assume a second Predicative NP Projection Schema. The new schema should add the feature [DEF+] to the referential NP daughter. This should ensure the definiteness of the obligatory NP complement. Also, the new schema should ensure that the predicative NP takes, in addition to its SUBJ, a complement. This can be ensured by giving the predicative NP a nonempty COMPS list. Although this new second schema appears to satisfy requirements, it is still problematic in that phrases must have an empty COMPS list (Ginzburg and Sag, 2000).

[76] On the obvious analysis, the identity relation comes from the copula. Heycock and Krock (1999) assume that it comes from the complement.

[77] In fact, a meaningful verb is missing in cases of gapping such as the following:

(i) Kim went to London, and Lee to Paris.

Therefore, the raising analysis proposed here seems to be unable to account for the pronominal complement in equational sentences.

A second problem that faces the raising analysis is that an ambiguity occurs in the analysis of predicative NPs. Müller (2009) himself accepts that there is an ambiguity in the predicative NP analysis, although he argues that he reduced it to the full NP level[78]. More precisely, as a unary branching structure, it is ambiguous whether this predicative phrase contains a predicative element as a daughter or not.

van Eynde (2008, 2009) highlights an issue with regard to the role of the EXPERIENCER in copular sentences. We saw that this is not a problem for the raising analysis because this element can be analysed as an adjunct without assuming that the copula is meaningfull.

5.3.3. Distinguishing copular sentences

This approach differs from previous approaches discussed in Section 5.3 from this chapter in that it assumes two copulas: a copula of identity for equational sentences and a copula of predication for predicational sentences. This approach is adopted by Müller (2009, in preparation) for English, Dutch and German. This approach also seems appropriate for MSA. In the following, I will discuss this approach and its consequences. Therefore, I will start with the analysis of the copula in equational sentences, and then move on to the copula in predicational sentences. I will, then, conclude by discussing consequences of this approach.

[78] There is an ambiguity whenever there is a unary branching structure. Ginzburg and Sag (2000) propose a unary branching analysis for elliptical answers to questions such as Lee in Who did this? Lee. It follows that Lee is ambiguous. It can be an NP or a clause consisting just of an NP.

5.3.3.1. The copula in equational sentences

The discussion here applies to equational sentences where there are two definite NPs between which an optional personal pronoun is inserted, such as the sentence (28b), repeated below as (43):

(43) *kaana* *hišaam-u-n* *(huwa)* *l-mudarris-a*

be.PFV.3SG.M Hisham-NOM-NN he the-teacher.SG.M-ACC

'Hisham was the teacher'

Recall from Chapter 3, Section 3.3.1 that both the subject and the complements in equational sentences are of type <*e*>, and that the copula contributes the identity relation. Therefore, the analysis needs to ensure that (i) the copula contributes the identity relation, (ii) the arguments of the copula are definite elements and (iii) the first element in the COMPS list is an optional nominative pronoun. Based on these assumptions, the lexical description for the identity copula *kwn* should be as in (44) below. Note that this lexical description licenses the copula root.

(44) The lexical description of the copula *kwn* in equational sentences

$$\begin{bmatrix} \text{PHON} < \textit{kwn} > \\ \text{SS}\,|\,\text{LOC}\begin{bmatrix} \text{CAT}\begin{bmatrix} \text{HEAD}\ \textit{verb} \\ \text{SUBJ}\ \ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{CONT}\begin{bmatrix} \textit{identity-rel} \\ \text{THEME}\ \ [8]\textit{index} \\ \text{ATTRIBUTE}\ \ [9]\text{index} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST}\ [2] < \text{NP}\{\text{DEF+}\}_{[8]} > \oplus\ [3] < (\text{NP}[\textit{pro}, \text{CASE}\,\textit{nom}],)\ \text{NP}[\text{DEF+}]_{[9]} > \end{bmatrix}$$

In addition to the copula's valence requirements, the description in (44) states that the copula itself encodes a relation between the index of the subject and the index of the obligatory complement. This relation is the identity relation. Note that the optional pronominal complement does not identify its index value with the subject nor the obligatory complement because it identifies its NUM and GEND values with that of the subject, while it must have the 3rd person form regardless of the subject PER value.

Just like the copula *kwn*, the copula *lays* contributes the identity relation in equational sentences. That is, an equivalent to example (43) above is in (45) below:

(45) *laysa* *hišaam-u-n* *(huwa)* *l-mudarris-a*

be.PFV.3SG.M Hisham-NOM-NN he the-teacher.SG.M-ACC

'Hisham is not the teacher'

Therefore, we need a lexical description for *lays* in equational sentences. Notably, *lays* has similar properties to *kwn*.This is shown in (46).

(46) The lexical description of the copula *lays* in equational sentences

$$\begin{bmatrix} \text{PHON} < \textit{lays} > \\ \text{SS}\,|\,\text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{POL} \quad \textit{neg} \\ \text{TENSE} \quad \textit{pres} \end{bmatrix} \\ \text{SUBJ} \quad [2] \\ \text{COMPS} \quad [3] \end{bmatrix} \\ \text{CONT} \begin{bmatrix} \textit{identity-rel} \\ \text{THEME} \quad [8]\,\textit{index} \\ \text{ATTRIBUTE} \quad [9]\,\text{index} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST} \; [2] < \text{NP}\{\text{DEF+}\}_{[8]} > \oplus \; [3] < (\text{NP}[\textit{pro}, \text{CASE}\,\textit{nom}],)\; \text{NP}[\text{DEF+}]_{[9]} > \end{bmatrix}$$

The lexical description in (46) is identical to that in (44) except for (i) its PHON value and (ii) the specifications of its HEAD feature, which we explained earlier.

5.3.3.2. The copula in predicational sentences

The predicational sentences are analysed in a different way. This approach assumes the raising analysis only for predicational sentences. That is, the copula is assumed to be semantically vacuous, which entails the raising analysis. Thus, it identifies its semantic content with the semantic content of the predicative complement. A predicational sentence, as stated in Chapter 3, Section 3.4.2, can have a phrasal complement, i.e. an indefinite NP, an AP, a PP, or an AdvP complement as in (28a) above repeated as (47) below.

(47) *kaana r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ huna*

be.PFV the-man.SG-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man was a teacher/at school/ tall/ here'

Based on these assumptions, the lexical description proposed for the copula *kwn* with a phrasal (or non-verbal) complement in predicational sentences should be as in (48) below.

(48) The lexical description of the predicative *kwn* with non-verbal complement

$$\left[\begin{array}{l} \text{PHON} < \textit{kwn} > \\ \\ \text{SS} \mid \text{LOC} \left[\begin{array}{ll} \text{CAT} & \left[\begin{array}{l} \text{HEAD} \quad \textit{verb} \\ \\ \text{SUBJ [2]} \\ \text{COMPS[3]} \end{array}\right] \\ \text{CONT [4]} & \end{array}\right] \\ \\ \text{ARG-ST [2]} < \text{NP} > \oplus [3] < \left[\begin{array}{l} \textit{phrase} \\ \text{HEAD} \neg \text{verb} \\ \text{PRED+} \\ \text{SUBJ [2]} \\ \text{CONT[4]} \end{array}\right] > \end{array}\right]$$

The lexical description in (48) says that the copula requires two arguments: a subject and a phrasal predicative complement that is not headed by a verb. The predicative complement, however, requires a subject, the value of which is identified with the value of the copula subject. Essentially, the copula identifies its CONT value with the CONT value of the predicative complement.

As indicated earlier in Section 5.3.2 from this chapter, this analysis works with predicative APs, PPs and AdvPs. However, predicative NPs require a slightly different analysis, namely the Predicative NP Projection Schema that is discussed in detail in Section 5.3.2 above. What has been said there applies here as well except that this schema only licenses predicative NPs in predicational sentences.

What is said for the predicative *kwn* is also true for *lays* in predicational sentences. That is, the predicative *lays* takes a non-verbal complement, as exemplified in (8) above, repeated below as (49).

(49) *laysa r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.NEG the-man.SG-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man is not a teacher/at school/ tall/ here'

Accordingly, the lexical description of the predicative *lays* with non-verbal complement should be as in (50) below.

(50) The lexical description of the predicative *lays* with non-verbal complement

$$\begin{bmatrix} \text{PHON} < \textit{lays} > \\ \text{SS} \mid \text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{verb} \\ \text{POL} \quad \textit{neg} \\ \text{TENSE} \quad \textit{pres} \end{bmatrix} \\ \text{SUBJ} \ [2] \\ \text{COMPS}[3] \end{bmatrix} \\ \text{CONT} \ [4] \end{bmatrix} \\ \text{ARG-ST} \ [2] < \text{NP} > \oplus [3] < \begin{bmatrix} \textit{phrase} \\ \text{HEAD} \neg \text{verb} \\ \text{PRED} + \\ \text{SUBJ} \ [2] \\ \text{CONT}[4] \end{bmatrix} > \end{bmatrix}$$

The lexical description in (50) is identical to that of *kwn* with non-verbal complement except for PHON and HEAD specifications. Therefore, what is said there applies here.

5.3.3.3. Discussion

As stated, the approach that distinguishes between the copula in equational sentences and the copula in predicational sentences seems appropriate for MSA. It does not have

problems that the one-equative copula and one-predicative copula approaches have. It accounts for expletive subjects and selection restrictions by proposing a predicative copula. It also accounts for the distinctive syntactic property of equational sentences by accounting for the optional pronominal complement, i.e. it proposes a distinctive equative copula that contributes semantically and has its own syntactic selections. Essentially, the appearance/absence of the copula in MSA is independent from whether or not it contributes semantically. Therefore, the occurrence of copular clauses (as small clauses) in the complement position of *consider*, as argued by Heycock and Krock (1999), is not relevant to the issue under discussion. Further, the discussion on the ambiguity in the analysis of predicative NPs that is offered in Section 5.3.2. above also does not seem to be a real problem for the two-copulas approach.

The preceding discussion shows that the two-copulas approach is not problematic for MSA. However, one may argue that we have ambiguous copulas in the two-copulas approach. Based on this approach we have two types of copula: one which contributes semantically and applies to equational sentences, and another which is semantically vacuous and applies to predicational sentences. In fact, the two copulas have the same morphological form. Nevertheless, these two copulas differ in their semantics and syntactic selections. That is, the copula in equationals is meaningful and selects a definite NP subject and a definite NP complement preceded by an optional pronominal complement. The appearance of this pronominal complement is not available for the copula of predication. The copula in predicational sentences, however, is meaningless and selects a subject (whether it is definite, indefinite or explative) and an indefinite NP, AP, PP, AdvP complement. This variety also is not available for equational sentences. Consequently, having an ambiguous copula is not an issue for the two-copulas approach. In Chapter 7, essentially, I will show in detail how this approach can provide a better account for the copula in MSA.

5.4. Summary

The analysis of the syntax and the semantics of the copula was discussed in this chapter. We concluded that it is preferable to assume that MSA has two copulas which differ in their syntax and semantics. The first is the equative copula, whereas the second is the predicative copula. The following chapter will discuss copula-less sentences. This is relavant to this research because one may assume a phonologically empty verbal copula in such a case.

Chapter 6

The Missing Copula in Modern Standard Arabic: An HPSG Analysis

6.1. Introduction

This chapter concerns the analysis of the missing copula (or verbless sentences) in Modern Standard Arabic. As reviewed in Chapter 4, Section 4.3, there are various approaches to verbless sentences within the HPSG framework. This chapter, further, will review previous approaches to Arabic verbless sentences before exploring possible HPSG analyses. Therefore, first, in Section 6.2, I will review the literature on the analysis of verbless sentences in Arabic. Then, in Section 6.3, I will attempt to explore the HPSG analyses of MSA verbless sentences. Section 6.4 will discuss the analyses proposed in Section 6.3 and favours one of them. The chapter will then be summarised in Section 6.5.

It should be noted that the conclusion we reached in Chapter 5 affects the analysis of MSA verbless sentences. That is, Chapter 5, Section 5.3.3.3 suggests that there are two copulas in MSA, which in turn differ in their syntactic selection and semantic properties. As stated, these differences are built on the differences between equational sentences and predicational sentences. Essentially, as suggested by data in Chapter 3, Section 3.3, whenever there is a copular sentence with an overt copula, there is a counterpart with no overt copula, i.e. a verbless sentence. Consequently, syntactic and semantic distinctions between overt

copular sentences discussed in Chapter 5 should also be considered with their counterparts where there is no overt copula. In other words, overt copular sentences and verbless sentences share some syntactic and semantic properties.

6.2. Previous analyses on Arabic verbless sentences

There are a number of studies that discuss the issue of the missing copula in Arabic. However, for reasons of space I will focus on the main syntactic approaches to verbless sentences in Arabic. Basically, there are three different analyses: the zero/empty copula analysis, the small clause analysis and the exceptional T analysis[79]. In the following I will review these approaches and consider the consequences of applying them.

6.2.1. The small clause analysis

The small clause analysis is proposed by Mouchaweh (1986) (cited in Benmamoun, 2000). This approach, essentially, assumes no functional categories in the structure. In other words, the sentence in (1) below consists only of the subject and the predicate, and no functional category.

(1) *r-rajul-u* *mariiD-u-n*

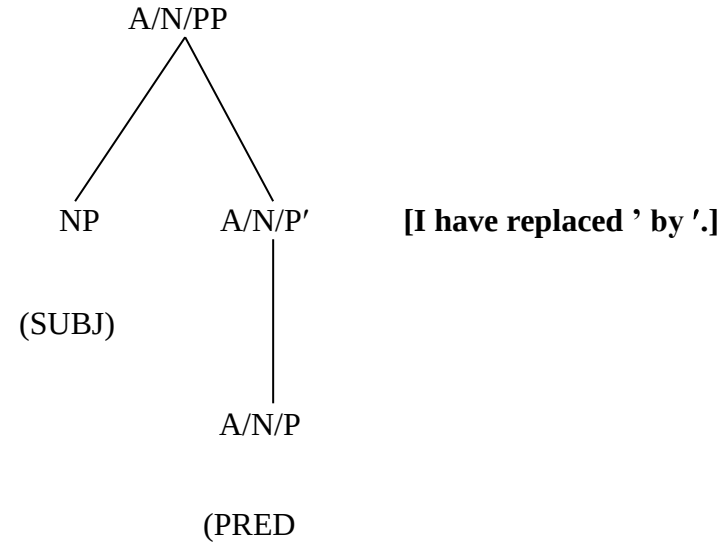
the-man.SG-NOM sick.SG.M-NOM-NN

‘ The man is sick’ (Fassi Fehri, 1993: 87)

[79] There is an HPSG study by Mutawa et al. (2008) which cannot be classified under any of these approaches. This study, however, seems to conflict HPSG assumptions. For this reason, I did not include it in the list of previous analyses to Arabic verbless sentences.

Therefore, this approach assumes that the subject and the predicate are contained within the small clause as shown below (Benmamoun, 2000: 39):

(2)



[I have replaced ’ by ′.]

The important point in (2) is that the mother of the subject has the same basic category as the sister[80]. Accordingly, the AP, NP or PP predicates with the subject form a small clause that has no functional category. In other words, this approach assumes that verbless sentences are non-finite clauses.

The small clause analysis, however, faces problems (Benmamoun, 2000: 39-42). For example, it cannot explain why present tense adverbs like *ʔalʔaana* ‘now’ are grammatical with the small clause, while the past tense adverb *ʔamsi* ‘yesterday’ is not, as shown in (3) and (4) below.

[80] Such a structure is also assumed within minimalism for the small clause complement in MSA existential sentences (Aoun et al., 2010).

(3) *r-rajul-u* *mariiD-u-n* *ʔalʔaana*

the-man.SG-NOM sick.SG.M-NOM-NN now

‘ The man is sick now’ (Fassi Fehri, 1993: 88)

(4) **r-rajul-u* *mariiD-u-n* *ʔamsi*

the-man.SG-NOM sick.SG.M-NOM-NN yesterday

‘The man is sick yesterday’ (Fassi Fehri, 1993: 88)

The sentence in (4) is ungrammatical because the specification of the temporal adverb *ʔamsi* ‘yesterday’ which bears [+ past], is not compatible with the verbless sentence, which receives present tense interpretation. This interpretation is confirmed by the grammaticality of (3). This evidence clearly argues for the finiteness of verbless sentences; in particular, it argues for having a present tense interpretation. Within minimalism this fact indicates that there should be a functional category, namely T (i.e. tense projection), or an empty copula that bears tense value.

Another problem that Benmamoun (2000) mentions arises from the fact that small clauses take the tense of the main clause when they occur as embedded clauses, as shown below from Benmamoun (2000: 40):

(5) *šuft* *ʕumar* *naaʕis*

see.PFV.1SG Omar sleeper.APR

'I saw Omar and he was sleeping'

Not 'I saw Omar and he is sleeping'[81]

According to Benmamoun, although the embedded small clause in (5) is tenseless, it bears the tense of the main clause, namely the past tense. However, if verbless sentences are embedded as in (6), the verbless sentence receives a different tense from the tense in the main clause:

(6) *qal* *balli* *ʕumar* *f-d-dar*

say.PFV.3SG that Omar in-the-house

'(He) said that Omar is in the house' (Benmamoun, 2000: 40)

While the main clause in (6), Benmamoun argues, receives past tense interpretation, the verbless clause, which is embedded, receives present tense interpretation. This shows that verbless sentences are different from small clauses. In fact, this argument from Benmamoun does not seem straightforward. That is, the embedded verbless sentence may also have the tense of the main clause. Consider the following example:

[81] It seems that 'I saw Omar sleeping' would seem like a more natural translation since the original Arabic sentence is not a coordinate structure. In other words, *Omar* in (5) appears to be the object of *saw*.

(7) *qaala lii ʔinna-hu mariiD-u-n*

say.PFV.3SG.M to.me that-him sick.3SG.M-NOM-NN

'(He) said that he is sick (= at the time of saying)' (Fassi Fehri, 2012: 97)

(8) *qaala lii ʔinna-hu kaana mariiD-a-n*

say.PFV.3SG.M to.me that-him be.PFV.3SG.M sick.3SG.M-ACC-NN

'(He) said that he was sick (= has been)' (Fassi Fehri, 2012: 98)

The reader can refer to Fassi Fehri (2012) for more discussion and justification (e.g. pp. 96-99).

Further, the distribution of verbless sentences shows that they can stand on their own, as exemplified in (1) above. That is, typically small clauses are subordinate clauses. Also, the predicate in verbless sentences can be coordinated with, for example, an ordinary verb, as in (9) below.

(9) *zayd-un nabiih-un wa yaʕrifu kull-a l-ʔijaabaati*

Zaid-NOM intelligent.3SG.M-NOM and know.IPFV.INDC.3SG.M all-ACC the-answers

'Zaid is intelligent and knows all answers'

Sentence (9) suggests that verbless sentences are finite as their predicate can be conjoined with a verb which is clearly finite.

Previous evidence, altogether, argues that verbless sentences in MSA are finite clauses. By contrast to the small clause analysis, there are two approaches that argue for the finiteness of verbless sentences, namely the empty copula analysis and the exceptional T analysis, which will be discussed below.

6.2.2. The empty copula analysis

Fassi Fehri (1993) argues that sentences like (1) above contain a phonologically empty copula, which means that the sentence is headed by an empty V[82]. He proposes that this empty copula occurs if mood, aspect and/or tense are not specified as indicated in (10) below (Fassi Fehri, 1993: 156):

(10) Spell out the copula as *kwn* when Mood, Aspect, and/or Tense are specified, otherwise spell it out as zero.

This means that sentence (1) above has the same syntactic structure as sentence (11) below:

(11)	*kaana*	*r-rajul-u*	*mariiD-a-n*
	be.PFV.3SG.M	the-man.SG-NOM	sick.SG.M-ACC-NN

'The man was sick' (Fassi Fehri, 1993: 87)

[82] Bakir (1980) proposes a deletion analysis in which verbless sentences contained a deleted copula.

Based on this assumption, in both sentences, (1) and (11), there is a verbal copula. One of the differences between these verbal copulas is that the copula in (11) is realised phonologically, whereas it is not realised in phonology in (1)[83]. Essentially, the verbal copula in (1) fails to appear on the surface because mood, aspect and tense are not specified (Fassi Fehri, 1993: 87).

According to Fassi Fehri (1993), empirical evidence which supports his proposal comes from temporal adverbs. As exemplified in (3) and (4) above, Fassi Fehri argues that sentence (4) is ungrammatical because the specification of the temporal adverb *ʔamsi* 'yesterday', which bears [+ past], is not compatible with the specification of the zero/empty verb morphology, which bears [- past]. Arguably, this evidence that Fassi Fehri mentions only argues for the finiteness of verbless sentences; in particular, it argues for having a finite sentence with a present tense interpretation. This does not entail that there is an empty copula. That is, this evidence is compatible with a constructional headless analysis within HPSG, as we will see below in Section 6.3.2. Evidence for an empty copula analysis, however, will be discussed in detail below in Section 6.3.3.

Aoun et al. (2010) criticise the empty copula analysis[84]. The obvious problem that faces the empty copula approach is case assignment. That is, the overt copula assigns the accusative case to the nominal and adjectival complements as in (12) below:

(12) a. *kaana* *ʕumar-u* *muʕallim-a-n*

be.PFV.3SG.M Omar-NOM teacher.SG.M-ACC-NN

'Omar was a teacher'

[83] Of course, they also differ in whether or not mood, aspect and tense are specified.

[84] Aoun et al. (2010) indicate three problems that face the empty copula analysis, namely case assignment, selection and minimality. However, selection applies to some Arabic dialects not to MSA, while minimality is a technical issue within minimalism. Therefore, the only problem that applies to MSA as a language is case assignment.

b. *kaanat* *l-ġurfat-u* *kabiirat-a-n*

be.PFV.3SG.F the-room.SG.F-NOM big.SG.F-ACC-NN

'The room was big'

In these examples, complements are assigned the accusative case. However, in sentences where the copula is phonologically empty, complements are nominative as in (13) below:

(13) a. *ʕumar-u* *muʕallim-u-n*

Omar-NOM teacher.SG.M-NOM-NN

'Omar is a teacher'

b. *l-ġurfat-u* *kabiirat-u-n*

the-room.SG.F-NOM big.SG.F-NOM-NN

'The room is big'

Further, if the complement is assigned the accusative case, sentences in (13) will be ungrammatical as shown in (14):

(14) a. **ʕumar-u* *muʕallim-a-n*

Omar-NOM teacher.SG.M-ACC-NN

'Omar is a teacher'

b. **l-ġurfat-u kabiirat-a-n*

the-room.SG.F-NOM big.SG.F-ACC-NN

'The room is big'

While we expect the copula, whether it is phonologically realised or not, to behave in the same way, it is clear that overt and zero/empty copulas are not alike in terms of syntactic functions. That is, the overt copula assigns the accusative case to its NP and AP complements, whereas the empty copula does not.

6.2.3. The exceptional T analysis[85]

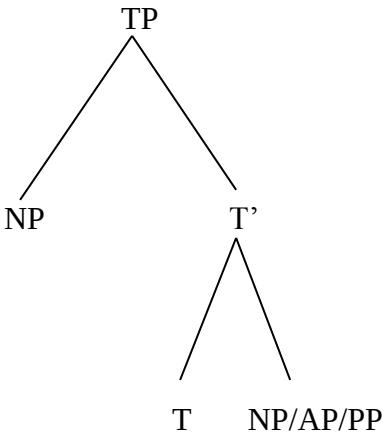
Benmamoun (2000, 2008) and Aoun et al (2010) argue that there is a tense projection in sentences which have verbal predicates. In turn, tense attracts verb movement to tense with past tense verbs. Therefore, a past tense verb must be present in the sentence. However, tense does not attract verb movement to tense with present tense verbs. In this approach, the functional category T only has the feature [+V] with past tense sentences. On the other hand, in present tense sentences there is no [+V] feature. That causes verb attraction to tense in past tense sentences and not present tense sentences.

The same assumptions apply to copular sentences. The past tense form of the copula must be present in the sentence as tense attracts verb movement to tense, while the absence of the present form of the copula is grammatical as tense does not attract verb movement to

[85] HPSG has been reluctant to assume special functional categories like T. It appears that the nearest HPSG equivalent of this analysis would be one with an empty V, more precisely one in which there is a positive present tense form of the copula with no phonology (Bob Borsley, personal communication); in other words, a phonologically empty copula as proposed below in Section 6.3.3.

tense. Consequently, there is a tense projection even when the present tense form of the copula is absent within the proposal of Aoun et al. (2010: 45), as shown in (15) below:

(15)



One argument that Aoun et al (2010) provide to support their view is case assignment. They argue that the nominative case assigned to the subject in verbless sentences in (1) above is a structural case. Aoun et al. argue that in such contexts the case can only come from tense. This is a standard Principles and Parameters assumption.

Another argument Aoun et al. (2010) offer is the occurrence of an expletive in verbless sentences as in (16) below:

(16)	*hunaaka*	*Taalib-u-n*	*fii*	*l-bayt-i*
	there	student.SG.M-NOM-NN	in	the-house-GEN

'There is a student in the house' (Aoun et al., 2010: 43)

That is, ‘expletives are not required and are not licensed by lexical categories, but rather by functional categories, particularly T’ (p. 43). However, this is a weak argument; all finite sentences have T for Minimalism, but not all finite sentences allow *hunaaka*.

It should be noted that this analysis assumes that T can have the same range of complements as the copula. However, it is clear that T is different from the copula. In other words, normally T takes a VP complement. This analysis, however, involves it taking a different set of complements, rather like the copula. Another point to mention with regard to this analysis is that it cannot explain why verbless sentences and verbal copular sentences have the same range of complements, as the comparison between (17) and (18) shows. Note that some of these sentences are indicated above, but they are repeated below for convienence.

(17) a. *ʕumar-u* *muʕallim-u-n*

Omar-NOM teacher.SG.M-NOM-NN

‘Omar is a teacher’

b. *l-ġurfat-u* *kabiirat-u-n*

the-room.SG.F-NOM big.SG.F-NOM-NN

‘The room is big’

c. *l-kitaab-u* *ʕalaa* *l-maktab-i*

the-book.SG.M-NOM on the-table.SG.M-GEN

‘The book is on the table’

(18) a. *kaana* *ʕumar-u* *muʕallim-a-n*

be.PFV.3SG.M Omar-NOM teacher.SG.M-ACC-NN

'Omar was a teacher'

b. *kaanat* *l-ġurfat-u* *kabiirat-a-n*

be.PFV.3SG.F the-room.SG.F-NOM big.SG.F-ACC-NN

'The room was big'

c. *kaana* *l-kitaab-u* *ʕalaa* *l-maktab-i*

be.PFV.3SG.M the-book.SG.M-NOM on the-table.SG.M-GEN

'The book was on the table'

Note that the complements of T in verbless sentences in (17) have the same categories as the complements of the verbal copula in (18). These similarities are completely accidental based on the approach under discussion. The same criticism applies to existential sentences in (19) and (20) below (Aoun et al., 2010: 70).

(19) *kaana* *hunaaka* *Taalib-u-n* *fii* *l-ħadiiqat-i*

be.PFV.3SG.M there student.SG.M-NOM-NN in the-garden.SG.F-GEN

'There was a student in the garden'

(20) *hunaaka* *Taalib-u-n* *fii* *l-ħadiiqat-i*

there student.SG.M-NOM-NN in the-garden.SG.F-GEN

'There is a student in the garden'

Apparently, existential sentences in (19) and (20) look the same except for the appearance/absence of the copula. Once again, this similarity is completely accedantal in the approach under discussion[86].

6.2.4. Remarks

This section sheds the light on two issues that any analysis of MSA verbless sentences needs to consider. The first is the classification of copular sentence types. As stated in Chapter 5, Section 5.3.3, MSA data show that there are two subtypes of the copula in MSA. These two copulas differ in their semantics and syntactic selection. However, none of the discussed approaches account for these facts. All preceding discussion in this chapter only considers two questions about verbless sentences. The first is whether or not verbless sentences are finite. The second is whether or not there is a null form of the copula in these sentences. Essentially, the answer to these questions is not enough to account for MSA verbless sentences. That is, copular sentence types as well as their syntactic and semantic properties should also be taken into account, i.e. as stated earlier, whenever we have a copular sentence with an overt copula, there is a counterpart verbless sentence.

[86] Differences between verbless sentences and overt copular sentences are problematic for an empty copula analysis but similarities between the two types of sentence are problematic for an analysis without an empty copula. As we will see in Section 6.4 from this chapter, differences between the two types of sentence can be accounted for within the analysis of the empty copula.

The second essential fact that needs to be handled is the present indicative form of the copula. As indicated in Chapter 2, Section 2.5, the present indicative form of the copula must appear after certain words such as *qad* 'may' (Bahloul, 1993). Also, this form appears optionally in generic present tense contexts (Benmamoun, 2000). In fact, apart from Bahloul (1993), none of the proposals discussed here consider the obligatory apparence of that form, while none of them provides a formal analysis of its optional appearance. Apparently, any analysis of MSA verbless sentences needs to account for the obligatory absence of this form, the obligatory appearance of it and also the optional appearance of it.

In the following, basic facts discussed in Chapter 2, Section 2.5 and the distinctions between copulas in copular sentence types discussed in Chapter 5, Section 5.3.3 will be handled within HPSG.

6.3. The HPSG analyses of MSA verbless sentences

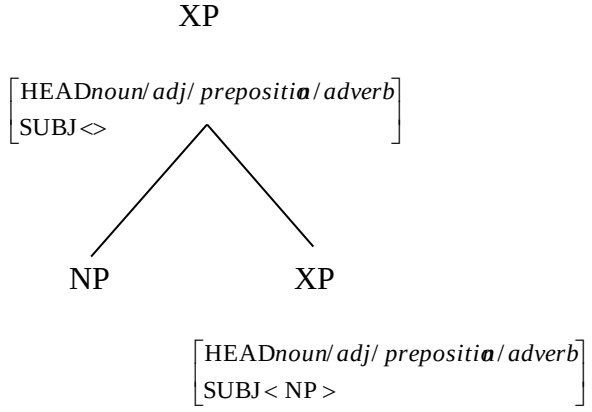
Recall from Chapter 4, Section 4.3 that within HPSG there are two main proposals to account for verbless sentences, namely the lexical analysis and the constructional analysis. However, the discussion in Section 6.2 above shows that there is another possible HPSG analysis that can be proposed here, namely the small clause analysis. In the following, I will explore the consequences of adopting each approach. Note that within constructional analyses there are different models, as we will see below.

6.3.1. The small clause analysis

As indicated in Section 6.2.1 above, one possible analysis of MSA verbless sentences is to analyse them as small clauses. Within HPSG, this means that the NP subject and the non-

verbal predicate are sisters and form a small clause. The mother of these two daughters is [SUBJ <>], while the XP predicate is [SUBJ <NP>], as simplified below:

(21)



In (21) we have what looks like a predicate headed clause. However, as argued in Section 6.2.1 above, evidence suggests that verbless sentences are finite. The fact that verbless sentences only accept the present tense adverb *ʔalʔaana* 'now', as exemplified in (3) and (4) above, shows that verbless sentences are finite present tense clauses. Also, the distribution of verbless sentences shows that small clauses can stand on their own as exemplified in (1) above.

Not only these facts but also the syntactic structure of MSA sentences and the semantics of MSA copular sentences argue against the small clause analysis. As discussed in Chapter 1, Section 1.5.3, MSA does not seem to have *hd-subj-ph* independently from verbless sentences because subject-initial clauses are in fact *hd-fill-ph*s. This can be an argument because if we assume that verbless sentences are small clauses, the phrasal type of its syntactic structure may be *hd-subj-ph*. On the other hand, verbless sentences may not contain any predicative element, as (22) below shows:

(22) *hišaam-u-n* *(huwa)* *muħammad-u-n*

Hisham-NOM-NN he Muhammad-NOM-NN

'Hisham is Muhammad'

In (22) none of the elements that form this verbless sentence is a predicate, and hence, they must all be [SUBJ <>]. Accordingly, the predicate is missing in (22). This suggests that the small clause analysis is not appropriate for some verbless sentences which have no predicative element. Further, the optional pronominal complement will still be problematic, even if we derive a predicative version from the non-predicative complement, as discussed in Chapter 5, Section 5.3.2.

The preceding discussion emphasises that the small clause analysis is inappropriate for MSA verbless sentences. Essentially, the discussion presented in this chapter so far suggests that any HPSG analysis needs to consider the feature [TENSE *pres*]. This feature will ensure that verbless sentences are finite present tense clauses.

6.3.2. The constructional analysis I

This section discusses a simple constructional analysis that can be proposed for Arabic. Unlike the small clause analysis, this analysis assumes that verbless sentences are finite present tense clauses. In the following I will discuss this proposal and its application to MSA.

6.3.2.1. The formalisation

A simple constructional analysis can be proposed along the lines of Sag and Wasow (1999). In this analysis, the verbless sentence like (1) above forms an S with two daughters,

namely the subject and the predicate argument. First, let us propose the Zero Copula Phrase (ZCP) for MSA verbless sentences as in (23) below. Notice thst the formalization in Sag and Wasow (1999) would be different from (23)[87]. However, the basic idea would be the same.

(23) Zero Copula Phrase for MSA verbless sentences

$$\begin{bmatrix} \text{SS} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{TENSE } \textit{pres} \end{bmatrix} \\ \text{SUBJ} \langle\rangle \\ \text{COMPS} \langle\rangle \end{bmatrix} \\ \text{CONT} \begin{bmatrix} \text{MODE } \textit{prop} \\ \text{INDEX}[2] \end{bmatrix} \end{bmatrix} \\ \text{HD-DTR} \quad \textit{none} \\ \text{DTRS} \left\langle \begin{bmatrix} \text{SS}[1]\left[\text{CAT} \mid \text{HEAD } \textit{noun}\right] \end{bmatrix}, \begin{bmatrix} \text{SS} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD}[\text{PRED} +] \\ \text{SUBJ} \langle [1] \rangle \\ \text{COMPS} \langle\rangle \end{bmatrix} \\ \text{CONT} \left[\text{INDEX } [2]\right] \end{bmatrix} \end{bmatrix} \right\rangle \end{bmatrix}$$

Based on this version of ZCP, the ZCP licenses a verbless sentence wherever MSA calls for a finite present tense clause. The ZCP, then, expresses the finite present tense interpretation. As stated earlier, the verbless sentences in such an analysis consist of two daughters where neither of them is the head daughter. This is ensured by the fact that the value of the feature HD-DTR is *none.* The first daughter in DTRS list is the NP subject, while the second is a predicate argument. The predicate argument requires a subject whose value is identified with the value of the subject of the clause. It should be noted that the INDEX value

[87] One difference, which may not be significant, is that Sag and Wasow (1999) assume the Head Feature Principle, which requires the mother to identify its SYNSEM with that of the head daughter. Otherwise the clause will be headless. Ginzburg and Sag (2000), on the other hand, assume the GHFP, which we discussed in Chapter 1. The effect of this difference on (23) is that Ginzburg and Sag (2000) consider the phrase to be a headed phrase, while Sag and Wasow (1999) consider it headless.

in the predicate argument is identified with the INDEX value of the clause to express the relation between the predicate argument and the semantics of the clause.

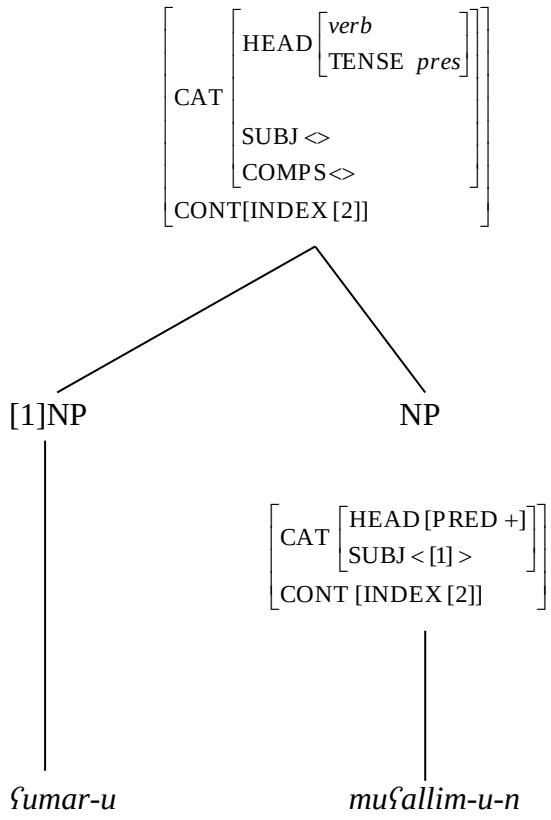
Building on the ZCP, the structure of a verbless sentence like (17a) above, repeated below as (24), should be something like the simplified structure in (25):

(24) *ʕumar-u* *muʕallim-u-n*

Omar-NOM teacher.SG.M-NOM-NN

'Omar is a teacher' (Aoun et al., 2010: 35)

(25)



In (25) the two NP daughters stand as a finite clause. Neither of the two NPs is the head daughter. That is, the sentence is headed by a finite verb that is not lexically expressed. However, based on the GHFP the phrase is considered a headed phrase.

6.3.2.2. The basic facts

The ZCP appears to account for some of the basic facts. The constraint [TENSE *pres*] accounts for the finiteness of verbless sentences as exemplified in (3) above. It also rules out the absence of the copula in non-finite contexts, as (26) below shows.

(26) a. **ʔuriidu ʔan muhandis-u-n*

want.IPFV.INDC.1SG to engineer.SG.M-NOM-NN

'I want to be an engineer'

b. *ʔuriidu ʔan ʔakuuna muhandis-a-n*

want.IPFV.INDC.1SG to be.IPFV.SBJV.1SG engineer.SG.M-ACC-NN

'I want to be an engineer'

The missing copula in (26a) is in a non-finite context, and hence, the ZCP would not license it.

This constraint, further, excludes past and future contexts as the verbal copula in MSA must appear in these contexts. In other words, the absence of the copula is ungrammatical in sentences that receive past or future tense interpretations, as exemplified in (4) above.

Although the ZCP in (23) accounts for some facts, the next subsection will show that this version of ZCP is not enough to account for all basic facts presented in Chapter 2, Section 2.5.

6.3.2.3. Further facts

As indicated in Chapter 2, Section 2.5, MOOD is also central in the analysis of MSA verbless sentences. That is, an overt present tense (or imperfective) form of the copula must appear in copular sentences if this form of the copula is in subjunctive or jussive forms. More precisely, *lam* and *lan* negative particles are followed by imperfective copulas. However, *lam* takes an imperfective jussive copula, while *lan* takes an imperfective subjunctive copula as shown below:

(27) *lam* *yakun* *ħulum-a-n* *ʕaadiyy-a-n*

NEG.PST be.IPFV.JSV.3SG.M dream.SG.M-ACC-NN regular.SG.M-ACC-NN

'It was not a regular dream' (Ryding, 2005: 636)

(28) *lan* *yakuuna* *l- ʔaxiir-a* *min* *nawʕ-i-hi*

NEG.FUT be.IPFV.SBJV.3SG.M the-last-ACC from kind.SG.M-GEN-his

'It will not be the last of its kind' (Ryding, 2005: 648)

Essentially, if these copulas are missing as in (29) and (30) below, such sentences will be ungrammatical:

(28) **lam* *ħulum-u-n* *ʕaadiyy-u-n*

NEG.PST dream.SG.M-NOM-NN regular.SG.M-NOM-NN

'It was not a regular dream'

(30) **lan* *l- ʔaxiir-u* *min* *nawʕ-i-hi*

NEG.FUT the-last-NOM from kind.SG.M-GEN-his

'It will not be the last of its kind'

Sentence (28) is ungrammatical as the missing verbal copula is in jussive mood. The same is true for sentence (30). That is, the absence of the copula is ungrammatical because the mood of the missing copula is subjunctive. Therefore, the constraints in the ZCP need to be revised to include MOOD, as indicated in (31) below.

(31) The ZCP's HEAD specifications (revised)

$$\begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{TENSE } \textit{pres} \\ \text{MOOD } \textit{indic} \end{bmatrix} \end{bmatrix}$$

The revised version of the ZCP's HEAD specifications correctly predicts the grammaticality of (22) above and rules out (28) and (30). That is, the new version licenses verbless sentences whenever MSA calls for an indicative mood clause. However, MSA in (28)

and (30) calls for a jussive or subjunctive mood clause, and hence, the ZCP does not license them.

Furthermore, MSA data shows that the constraints in (31) incorrectly predict the grammaticality of some verbless sentences. That is, the following modal sentence is ungrammatical because the particle *qad* 'may' needs to be followed by an overt present indicative verb, which is missing in this sentence:

(32) **qad* *sm-u-haa* *maryam-u*

may name.SG.M-NOM-her Maryam-NOM

'Her name may be Maryam'

Sentence (32) is ungrammatical because the present indicative form of the copula is required as the grammatical version below conveys:

(33) *qad* *yakuunu* *sm-u-Haa* *maryam-a*

may be.IPFV.INDC.3SG.M name.SG.M-NOM-her Maryam-ACC

'Her name may be Maryam' (KACSTAC)

However, based on (31), sentence (32) above should be grammatical as the missing verb satisfies the constraints in (31). For this reason, the ZCP's HEAD specifications need to be revised again to rule out (32) above.

Once again, recall from Chapter 2, Section 2.5, that the present indicative form of the copula must appear after certain words in MSA such as *qad* 'may' and *iḥina* 'when/whenever' (Bahloul, 1993). In order to handle this, let us take the modal particle *qad* as an example. Other words after which the present indicative copula must appear will require similar treatments. *qad*, in fact, expresses epistemic possibility and, as stated, has some requirements. Therefore, it is essential to look at the lexical description of *qad* proposed by Althawab (2014: 241). Note that this description simplifies the CONT value.

(34) A lexical entry for the particle *qad* (modified)[88]

$$\left[\begin{array}{l}\text{SS}\left[\begin{array}{ll}\text{CAT} & \left[\begin{array}{ll}\text{HEAD} & \left[\begin{array}{l}\textit{particle}\\ \text{MODAL+}\\ \text{MOD}<[1]\text{V}\left[\begin{array}{l}\text{TENSE}\ \textit{pres}\\ \text{MOOD}\ \textit{indic}\end{array}\right]>\end{array}\right]\end{array}\right]\\ \text{CONT}\left[\textit{epis\_poss\_rel}\right]\end{array}\right]\end{array}\right]$$

The description in (34) states that *qad* is a modal particle that modifies a present indicative verb. As we are concerned with the copula, (34) states that a present indicative form of the copula appears with *qad*. On the basis of this lexical entry, an analysis that analyses verbless sentences with present indicative interpretation, for example a phonologically empty copula, can be appropriate to fulfil this requirement. This means that on the basis of some analyses the modal particle *qad* may not be followed by an overt verb. Nothing in (34) prevents that, although it is ungrammatical. However, apart from the *qad* examples, we know from data presented in Chapter 2, Section 2.5 that the copula must

[88] Althawab (2014) uses the feature [VFORM *imperf*] as a value of the MOD feature. However, I changed this to [TENSE *pres*, MOOD *indic*] to be consistent with this thesis' assumptions. This change should not affect Althawab's (2014) conclusion.

disappear in a present indicative context. This, in turn, means that a present indicative copula must disappear in a particular context, and must appear in another context. Therefore, we need a feature that can distinguish between these two instances. Following Borsley (2004), I suggest the use of the feature NULL with either +/- values. The feature [NULL -] is added to *qad*'s lexical description to ensure that *qad* must be followed by an overt form of the copula. The revised version of (34) is shown below in (35):

(35) A lexical entry for the particle *qad* (revised)

$$\left[\begin{array}{l}\text{SS}\left[\begin{array}{l}\text{CAT}\left[\begin{array}{l}\text{HEAD}\left[\begin{array}{l}\textit{particle}\\ \text{MODAL+}\\ \text{MOD}\langle[1]\text{V}\left[\begin{array}{l}\text{TENSE}\ \textit{pres}\\ \text{MOOD}\ \textit{indic}\\ \text{NULL}\ -\end{array}\right]\rangle\end{array}\right]\end{array}\right]\\ \text{CONT}\left[\textit{epis}\_\textit{poss}\_\textit{rel}\right]\end{array}\right]\end{array}\right]$$

As stated, the feature [NULL -] in (35) ensures that the particle *qad* is followed by an overt present indicative verb. The feature [NULL +] will then be added to the ZCP's HEAD specifications to prevent it from licensing (32) above, as shown in (36) below.

(36) The ZCP's HEAD specifications (revised)

$$\left[\begin{array}{l}\text{HEAD}\left[\begin{array}{l}\textit{verb}\\ \text{TENSE}\ \textit{pres}\\ \text{MOOD}\ \textit{indic}\\ \text{NULL+}\end{array}\right]\end{array}\right]$$

The addition of those features, namely [NULL -/+] rules out example (32) above. That is, the modal particle *qad* requires an overt form of the copula, while the ZCP licenses verbless sentences whenever MSA calls for a null form of the copula.

To sum up, two features were added to the description of ZCP, namely [MOOD *indic*, NULL +]. The addition of those features in the analysis of MSA verbless sentences enables the ZCP to account for most of the basic facts presented in Chapter 2, Section 2.5. Now, let us assess the ZCP analysis in the following subsection.

6.3.2.4. Limitations

One advantage of adopting the ZCP analysis is that it correctly predicts the nominative case marking on the nominal and adjectival complements. That is, the ZCP does not assume any verbal element that requires the complement to be accusative. However, although the revised version of the ZCP accounts for most of the basic facts, it is still unable to account for all facts. That is, it does not account for (i) the optionality of the present indicative copula in the generic present tense context and (ii) the ungrammatical appearance of the present indicative copula in the deictic present tense context[89]. It also cannot explain why the predicate in verbless sentences has the same set of categories as the complements in verbal copular sentences, as exemplified in (17) and (18) above. It also cannot explain why existential sentences, whether the copula is overt or not, look the same except for the appearance/absence of the copula, as exemplified in (19) and (20) above. In fact, under the current approach, similarities between these two sets of examples are completely accidental.

[89] These two issues will be accounted for in Chapter 7, Section 7.4. I will not discuss them anymore in this chapter.

Note that the preceding discussion in this section only applies to predicational verbless sentences. The ZCP identifies the index of the verbless sentence with the index of its predicate argument. However, as stated in Chapter 3, Section 3.3.1, none of the elements that form equational sentences is a predicate except for the overt copula. Now, as the copula is missing in equational verbless sentences like (22) above, none of the elements that form (22) is a predicate. This means that the ZCP does not license MSA equational verbless sentences because they have no predicate. In fact, sentence (22) still requires a predicate that contributes the identity relation and allows for the optional pronominal complement. These are some limitations of the first constructional analysis.

6.3.3. The empty copula analysis

This approach assumes an empty form of the copula for verbless sentences. The following subsections will discuss this proposal and its consequences.

6.3.3.1. Basic assumptions

This approach is proposed in various works that discuss verbless sentences in Arabic (e.g. Fassi Fehri, 1993; Borsley and Krer, 2012; Althawab, 2014; Alotaibi, 2015). On the basis of this proposal, verbless sentences contain a phonologically empty form of the copula. This makes verbless sentences identical to sentences which have an overt form of the copula in terms of their having a verbal head. This form of the copula is realised phonologically in overt copula sentences, while it is phonologically empty/null in verbless sentences.

Now, as this approach assumes a form of the copula in verbless sentences, we need to recall the conclusion we reached in Chapter 5, Section 5.3.3 that the overt copulas can be

equative or predicative. That is, the empty form of the copula and overt forms of the copula should share some properties. Recall from Chapter 3, Section 3.3 that whenever we have a copular sentence with an overt copula, there is a counterpart example with no overt copula. This suggests that as the overt copulas can either be equative or predicative, the empty/null copula should share this property with them. It follows from this that the null copula can either be equative or predicative. The equative null copula takes an optional pronominal complement as well as an obligatory definite NP complement. The predicative null copula, like overt copulas, has a phrasal/non-verbal predicative complement.

6.3.3.2. The formalisation

Taking the preceding discussions in this section into account, the null form of the copula can either be equative or predicative which differ in their semantics and syntactic selection. Therefore, we need to propose a lexical description for the null copula in each case. Let us start with the lexical description of the equative null copula, which licenses sentences like (22) above.

(37) The lexical description for the equative null copula in MSA

$$\begin{bmatrix} \text{PHON} <> \\ \text{SS|LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{TENSE } \textit{pres} \\ \text{MOOD } \textit{indic} \\ \text{NULL+} \end{bmatrix} \\ \text{SUBJ } [2] \\ \text{COMPS } [3] \end{bmatrix} \\ \text{CONT} \begin{bmatrix} \textit{identity-rel} \\ \text{THEME } [8]\textit{index} \\ \text{ATTRIBUTE } [9]\textit{index} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST } [2] < \text{NP}\{\text{DEF+}\}_{[8]} > \oplus [3] < (\text{NP}[\textit{pro}, \text{CASE } \textit{nom}],)\ \text{NP}[\text{DEF+}, \text{CASE } \textit{nom}]_{[9]} > \end{bmatrix}$$

Based on (37), the equative null copula differs from equative *kwn* presented in Chapter 5, Section 5.3.3.3 in three aspects. The first is the value of PHON feature. That is, the null copula is not realised in phonology. The second aspect is the specification of HEAD feature. That is, the equative null copula in (37) licenses sentences in which MSA requires a finite, present tense, indicative mood and null copula. The third distinction between them is the case marking of the obligatory NP complement. That is, the equative null copula requires its obligatory NP complement to be nominative, while this complement must be accusative in the case of equative *kwn.* Later in this section, I will return to the syntactic structure of sentences that contain a null copula.

Moving on to the predicative null copula with a non-verbal complement, it licenses predicational verbless sentences such as (24) above. Accordingly, the predicative copula licenses sentences that have an NP subject and a predicative NP, AP, PP or AdvP complement. The proposed lexical description for the predicative null copula is shown below in (38).

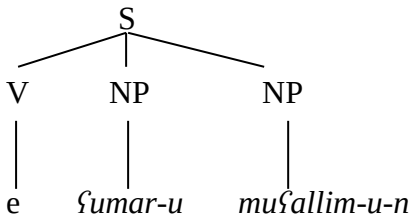
(38) The lexical description for the predicative null copula in MSA

$$\begin{bmatrix} \text{PHON} <> \\ \text{SS}\,|\,\text{LOC}\begin{bmatrix} \text{CAT}\begin{bmatrix} \text{HEAD}\begin{bmatrix} \text{verb} \\ \text{TENSE}\ \textit{pres} \\ \text{MOOD}\ \textit{indic} \\ \text{NULL+} \end{bmatrix} \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{CONT}\ [4] \end{bmatrix} \\ \text{ARG-ST}\ [2]\langle \text{NP} \rangle \oplus [3]\langle \text{NP}\begin{bmatrix} \text{PRED+} \\ \text{SUBJ}\ [2] \\ \text{CASE}\ \textit{nom} \\ \text{CONT}[4] \end{bmatrix} \vee \text{AP}\begin{bmatrix} \text{PRED+} \\ \text{SUBJ}\ [2] \\ \text{CASE}\ \textit{nom} \\ \text{CONT}\ [4] \end{bmatrix} \vee \text{PP}\begin{bmatrix} \text{PRED+} \\ \text{SUBJ}\ [2] \\ \text{CONT}\ [4] \end{bmatrix} \vee \text{AdvP}\begin{bmatrix} \text{PRED+} \\ \text{SUBJ}\ [2] \\ \text{CONT}\ [4] \end{bmatrix} \rangle \end{bmatrix}$$

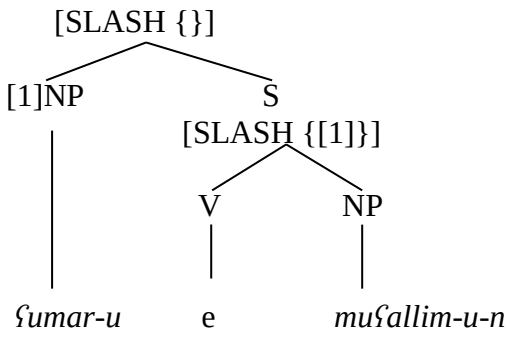
The description of the predicative null copula in (38) differs from the *kwn* predicative copula presented in Chapter 5, Section 5.3.3.3 in three aspects. The first is the phonological realisation. That is, the predicative null copula has an empty value for the PHON feature, i.e. it is invisible. The second distinction is the specification of the HEAD feature. That is, the predicative null copula is a finite, present tense, indicative mood and NULL + copula. The third distinction is that the NP and AP complements need to have a nominative case, unlike the case with those of the overt copula. Note that the PP and AdvP predicative complements in (38) do not have the CASE feature within their specification. The reason behind this is that predicative PPs and AdvPs in MSA do not show case marking. As it is semantically vacuous, the predicative null copula in (38) identifies its CONT with the CONT of its predicative complement.

Now, let us investigate the syntactic structure of verbless sentences under the null copula approach. In fact, their syntactic structure is problematic. That is, the copula in such sentences has no phonological content, and hence, it may be before or after the subject. This means that sentence (24) above may have a structure of a verb-initial clause, as in (39), or a structure in which the subject is topicalised, as in (40).

(39)



(40) S



There are arguments, however, suggesting that the empty copula occurs initially in the structure. It was concluded in Chapter 1, Section 1.5.3 that VSO word order is the basic word order in MSA. Now, in the case of MSA verbless sentences no evidence seems to argue against this assumption. Also, a second piece of evidence comes from the distribution of MSA *wh*-questions (Alotaibi, 2015). That is, in MSA the question word is normally followed by a verb. This is the case in question formation as shown below:

(41) a. *man* *zaara* *zayd-a-n?*

who visit.PFV.3SG.M Zaid-ACC-NN

'Who visits Zaid?' (Alotaibi, 2015)

b. *man* *kaana* *mujtahid-a-n?*

who be.PFV.3SG.M hardworking.3SG.M-ACC-NN

'Who was hardworking?'

In (41a) and (41b) the *wh*-word is followed by ordinary/copular verbs. However, if the verb does not follow the *wh*-word, the sentence will be ungrammatical as in (42) below:

(42) **man r-rajul-u Daraba?*

who the-man.SG-NOM beat.PFV.3SG.M

'Who has the man beaten?' (Alotaibi, 2015)

As discussed in Chapter 1, Section 1.5.3 the NP that precedes the verb is a topic. Therefore, (42) is ungrammatical because topics cannot follow the *wh*-word. Hence, the grammatical version of (42) is (43).

(43) *man Daraba r-rajul-u?*

who beat.PFV.3SG.M the-man.SG-NOM

'Who has the man beaten?'

The NP subject in verbless sentences, on the other hand, grammatically follows the *wh*-word, as in (44) below:

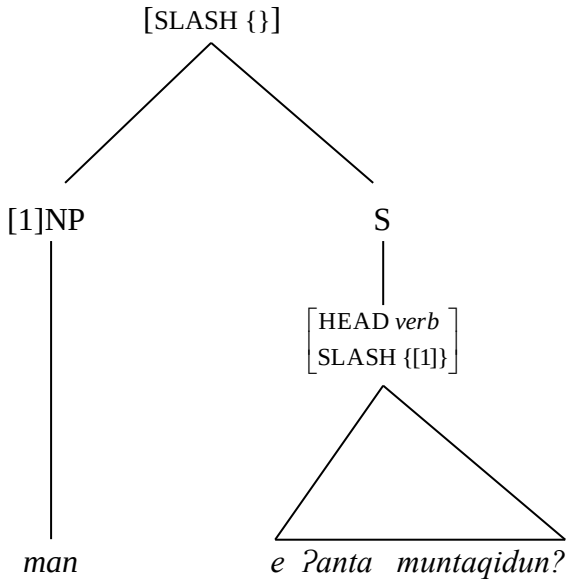
(44) *man ʔanta muntaqid-u-n?*

who you.SG.M critic.APR.SG.M-NOM-NN

'Who are you criticising?' (Alotaibi, 2015)

This argues that a subject can be preceded by a null copula, although it does not exiplicitly argue that it cannot be followed by a null copula. That is, while the topic (a pre-verbal subject in some analyses) cannot precede the verb in (42) above, it can do so in a verbless sentence like (44). This suggests that the element that follows the *wh*-word in (55) is not a topic but rather a post-verbal subject, and hence, a phonologically empty copula needs to be assumed. This empty copula follows the *wh*-word as elsewhere. Accordingly, the assumption of an invisible form of the copula in verbless sentences treats all *wh*-questions in the same way and clarifies that the *wh*-phrase is always followed by a verbal element (whether it is visible or invisible). This assumption also allows all *wh*-questions to have the same syntactic structure. For instance, like other *wh*-questions, a verbless sentence in (44) above should have the simplified structure in (45) below.

(45) S



Like the structure of all *wh*-questions in MSA, the slashed clause in (45) is headed by a verb, although it is invisible. This verb, likewise, follows the *wh*-word[90]. If this is correct, then it suggests that it is the post-verbal subject that appears in verbless sentences. That is, if such an element is analysed as a post-verbal subject in interrogative verbless sentences, then this should also be the case in declarative verbless sentences. However, as Bakir (1980) mentions, a structure with an SVO word order is also possible, i.e. a structure like (40) above. In fact, evidence is not strong enough to argue whether or not the empty copula occurs initially in verbless sentences.

6.3.3.3. Assessment

The null/empty copula analysis seems to account for almost all basic facts of verbless sentences. The constraints [TENSE *pres*, MOOD *indic*, NULL+] ensure the grammaticality of verbless sentences and rule out ungrammatical sentences, as exemplified above in Sections 6.3.2.2 and 6.3.2.3. Further, as this analysis assumes a form of the copula in verbless sentences, it is not surprising that verbless sentences and copular sentences with overt forms of the copula have the same set of complement categories. These are exemplified in (17) and (18) above. Also, it is not surprising that existential sentences with/without an overt form of the copula look the same, as exemplified in (19) and (20) above. That is, this analysis assumes that there is a form of the copula in both instances.

Essentially, the assumption that there are two null forms of the copula like the overt ones proposed in Chapter 5, Section 5.3.3.3 accounts for differences between copular sentences in their semantics and syntactic selection. That is, the null form of the copula, just like the overt forms, can either be equative or predicative. The equative null form, like the

[90] For a detailed analysis of wh-questions in MSA, the reader can refer to Alotaibi (2015).

overt forms, contributes semantically and selects two NP complements. Likewise, the predicative null form of the copula is semantically vacuous and selects a predicative complement.

Although the assumption of an empty copula in verbless sentences appears to account for almost all MSA data, it is still problematic. As indicated in Section 6.2.2 above, case assignment is a complication for this analysis. Once again, if we assumed that there is an (invisible) verb in verbless sentences, then we would expect this (invisible) verb to behave in the same way as the visible one. More precisely, we would expect the invisible copula to assign the accusative case to its NP or AP complements just like the overt copula. However, invisible copulas assign a nominative case to their complements as in (13) above, repeated below as (46):

(46) a. *ʕumar-u* *muʕallim-u-n*
Omar-NOM teacher.SG.M-NOM-NN
'Omar is a teacher'

b. *l-ġurfat-u* *kabiirat-u-n*
the-room.SG.F-NOM big.SG.F-NOM-NN
'The room is big'

Although these sentences, under the empty copula proposal, are assumed to be verbal sentences with invisible verbal copulas, the invisible copulas do not behave like overt copulas in assigning their nominal/adjectival complement the accusative case. Moreover, if these

complements of the empty copula are accusative, the sentences in (46) will be ungrammatical as shown in (14) above, repeated below as (47):

(47) a. **ʕumar-u* *muʕallim-a-n*

Omar-NOM teacher.SG.M-ACC-NN

'Omar is a teacher'

b. **l-ġurfat-u* *kabiirat-a-n*

the-room.SG.F-NOM big.SG.F-ACC-NN

'The room is big'

This appears problematic for the empty copula analysis, although one may not consider it a serious problem.

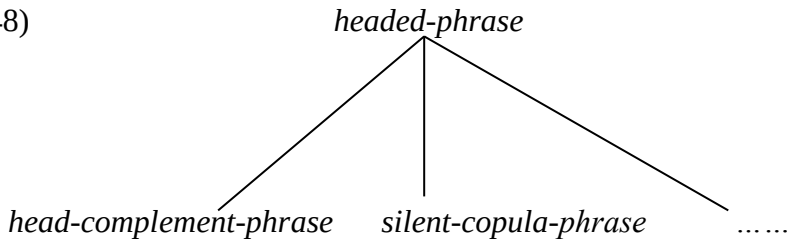
6.3.4. The constructional analysis II

The fourth possible analysis and second constructional analysis is along the lines of Bender's (2001) *silent-copula-phrase* analysis. It is more complicated than the constructional analysis mentioned in Section 6.3.2, but similar to the empty copula analysis discussed in Section 6.3.3. In the following, I will discuss its assumptions and consequences.

6.3.4.1. The formalisation

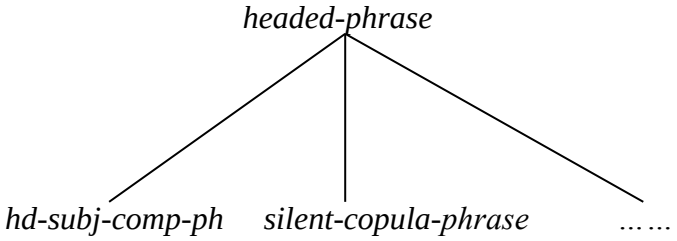
Bender (2001) assumes the following type-hierarchy:

(48)



In (48) the *headed-phrase* has subtypes. One important issue about (48) is that it assumes a *head-complement-phrase* as a subtype of the *headed-phrase.* As stated in Chapter 1, Section 1.5.3 MSA does not seem to have the *head-complement-phrase* headed by a verb nor a *head-subject-phrase*, but rather a *head-subject-complement-phrase* (*hd-subj-comp-ph* for short). Therefore, we need to revise (48) to match facts in MSA. The revised version is shown in (49) below.

(49)



The type-hierarchy in (48) states that headed phrases in MSA have various subtypes. One of these subtypes is the *silent-copula-phrase* type, which licenses verbless sentences. The *silent-copula-phrase*, essentially, is a special version of *hd-subj-comp-ph* which is subject to the following constraint:

(50) *hd-subj-comp-ph* →

$$\begin{bmatrix} \text{SS} \mid \begin{bmatrix} \text{SUBJ} <> \\ \text{COMPS} <> \end{bmatrix} \\ \text{HD-DTR}[1] \begin{bmatrix} \textit{word} \\ \text{SS} \begin{bmatrix} \text{SUBJ} <[2]> \\ \text{COMPS} <[3],...,[n]> \end{bmatrix} \end{bmatrix} \\ \text{DTRS} <[1],[\text{SS}[2]],[\text{SS}[3]],...,[\text{SS}[n]]> \end{bmatrix}$$

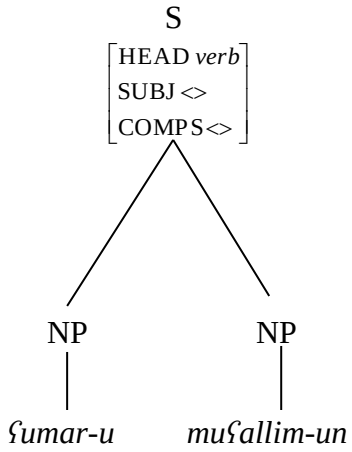
The constraint in (50) states that the HD-DTR requires a subject and complement(s). The HD-DTR, significantly, appears as the first member in the DTRS list. This is the important feature that is shared between the supertype, *headed-phrase*, and its subtypes. That is, the NON-HEAD-DAUGHTERS (NH-DTRS) feature is replaced by the DAUGHTERS (DTRS) feature, as assumed in Ginzburg and Sag (2000). The HEAD-DAUGHTER (HD-DTR) should, then, appear as the first member in the DTRS list. In the *silent-copula-phrase*, however, the HD-DTR (or the silent copula) does not appear in the DTRS list, and hence, it does not contribute to the phonology of the phrase. This feature makes the *silent-copula-phrase* silent. The *silent-copula-phrase* proposed for MSA verbless sentences is shown in (51):

(51) *silent-copula-phrase* →

$$\begin{bmatrix} \text{SS} \mid \begin{bmatrix} \text{SUBJ} <> \\ \text{COMPS} <> \end{bmatrix} \\ \text{HD-DTR} \begin{bmatrix} \textit{kwn-word} \\ \text{SS} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{verb} \\ \text{TENSE } \textit{pres} \\ \text{MOOD } \textit{indic} \\ \text{NULL+} \end{bmatrix} \\ \text{SUBJ} <[2]> \\ \text{COMPS} <[3],...,[n]> \end{bmatrix} \end{bmatrix} \\ \text{DTRS} <[\text{SS}[2]],[\text{SS}[3]],...,[\text{SS}[n]]> \end{bmatrix}$$

The only difference betweethen *hd-subj-comp-ph* in (50) and the *silent-copula-phrase* in (51) is that the head daughter in (51) is not identified as one of the daughters in the DTRS list. Assuming with Bender (2001) that the phonology of the phrase comes from its daughters, the head daughter will be invisible in the *silent-copula-phrase*. This means that sentence (24) above should have the structure in (52) below.

(52)



Based on the *silent-copula-phrase,* the head daughter in (64) is not realised as a daughter in the structure because it has no phonological content. Note that the *silent-copula-phrase* gives verbless sentences such as (22) above a finite, present tense and indicative mood interpretation.

As Bender (2001) herself admits, the difference is not clear between the *silent-copula-phrase* and the empty copula analysis. The two analyses assume a verbal head in verbless sentences. Recall from Section 6.3.3 above that the verbal head may or may not contribute semantically. This distinction in the semantics also affects the syntactic selection of this verbal head. Apparently, the same assumptions apply to the verbal head in the *silent-copula-phrase*. To avoid repetition, I excluded the discussion of semantics from this section. In fact,

as we will see in Section 6.4 below, the analysis of the empty copula seems preferable for MSA, and hence, we do not need to go into details about the *silent-copula-phrase* analysis.

6.3.4.2. Assessment

The advantages, criticisms and assessment of this analysis are the same as those indicated in Section 6.3.3 above. Thus, what is said there applies here. That is, like the empty copula analysis, this constructional analysis also assumes a verbal head. The central difference between these two analyses is that the former is a lexical analysis, while the latter is a constructional analysis.

6.4. Discussion

This section discusses the competition between the four HPSG analyses of verbless sentences presented in Section 6.3 above. I will finally argue in favour of the phonologically empty copula analysis.

6.4.1. Overview

The preceding section, Section 6.3, discusses four syntactic analyses of verbless sentences, namely the small clause analysis, the empty copula analysis and two constructional analyses. Clearly, MSA data argues against the small clause analysis, as discussed in detail in Section 6.3.1 above. Therefore, three analyses are left, namely an empty copula analysis and two constructional analyses. Notice that some discussions will be repeated below for convienence.

The empty copula analysis and the constructional analysis II are similar in the way that they assume that verbless sentences are headed by a verbal element. While this verbal element is phonologically empty in the empty copula analysis, it is not realised in the DTRS list in the constructional analysis II. This makes those two analyses alike. The constructional analysis I, on the other hand, assumes that the verbless sentence stands as a finite clause, although there is no verbal head that is lexically expressed. This makes the constructional analyses I different.

The difference between these approaches enables us to say that there are two major approaches. The first approach assumes a verbal head in verbless sentences, whereas the second does not. To clarify the consequences of the adaptation of each model, let us start with the latter. As the constructional analysis I does not assume any verbal head in verbless sentences, such an approach, as stated earlier, is not able to explain how verbless sentences and overt copular sentences have the same range of complement categories. This approach is also unable to explain why existential sentences look the same apart from the copula appearance/absence. Based on this analysis, these similarities are a complete accident. However, it is clear from the basic facts that verbless sentences and overt copular sentences only differ in tense/mood interpretation and the case of nominal/adjectival complements. Of course, such an approach correctly predicts the nominative case of the NP and AP complements, as discussed above. A crucial fact that this constructional analysis does not account for is the equational verbless sentences. The constructional analyses I requires the complement to be predicative, and it is clear that none of the overt elements in equational verbless sentences such as (22) above is predicative.

As for the constructional analysis II and the empty copula analysis, the two analyses assume a verbal head, hence, they account for the fact that both verbless sentences and overt copular sentences have the same range of complements. That is, the verbal head selects for

the same complements in the two types of sentences. These approaches also account for the similarity between existential sentences with/without the overt copula; they assume a verbal head in the two instances. Again, this verbal head selects the same arguments. As these two approaches assume a verbal head, they also account for the fact that there are two copulas in MSA, as discussed in Section 6.3.3 above. Simply, they assume two empty/silent copulas which differ in their semantics and syntactic selection. However, case assignment is a complication for these analyses. Clearly, we see that the NP and AP complements of an overt verb are accusative, whereas the NP and AP complements of the empty/silent copula are nominative.

In fact, the approaches that assume a verbal head are preferable. Such approaches can account for (i) the distinction between equational and predicational verbless sentences and (ii) the similarities between verbless sentences and overt copular sentences. Syntactically, the account of the identical range of complements in verbless sentences and overt copular sentences is more important than the account of case assignment. That is, the account of the same range of complements available in copular sentences treats all copular sentences in the same manner, i.e. there is a verbal head in all copular sentences. This will only leave the complication of case assignment. However, the account of case assignment complication, as in the constructional analysis I, leaves us with two different constructions: one of these constructions has a verbal head, whereas the other does not. This is not preferable since (i) this provides us with two different analyses of apparently the same set of examples and (ii) the two types of constructions are the same except for tense/mood interpretation and the copula appearance/absence.

6.4.2. Favouring the phonologically empty copula analysis

This subsection considers the competition between the empty copula analysis and the constructional analysis II. However, it favours the empty copula analysis.

6.4.2.1. The syntactic structure

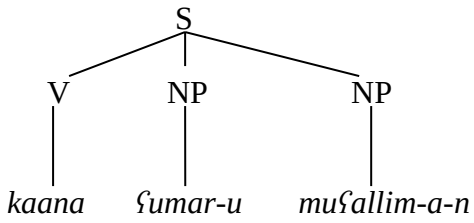
In fact, the empty copula analysis provides us with the same syntactic structure for both verbless and verbal copula sentences, whereas the constructional analysis II provides us with two different structures. To clarify this, the structure of a verbal copula sentence in (17a) above, repeated below as (53), is shown in (54). This structure would be the same based on lexical or constructional approaches.

(53) *kaana* *ʕumar-u* *muʕallim-a-n*

be.PFV.3SG.M Omar-NOM teacher.SG.M-ACC-NN

'Omar was a teacher'

(54)



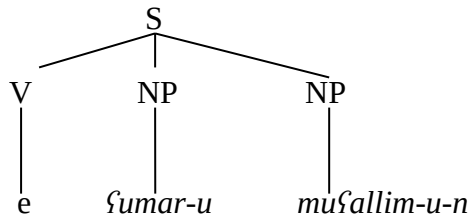
Now, let us see the syntactic structure of the verbless sentence in (24) above, repeated below as (55), where (56) is the structure based on the phonologically empty copula analysis and (57) is the structure based on the constructional analysis II:

(55) *ʕumar-u* *muʕallim-u-n*

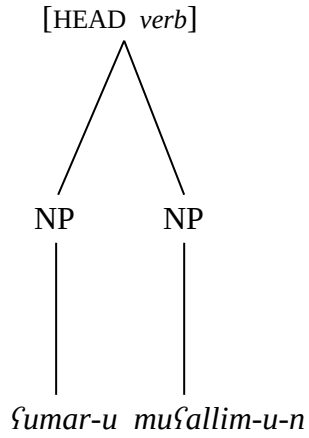
Omar-NOM teacher.SG.M-NOM-NN

'Omar is a teacher'

(56)



(57)



It is clear from the syntactic structures in (56) and (57) that the structure based on the empty copula provides a simpler analysis where both verbless and verbal copular sentences have the same syntactic structure[91]. Therefore, the empty copula analysis is preferable[92].

[91] I have been mentioning the term 'simplicity' without defining it. In fact, by simplicity I mean the assumptions that provide us with a simple, not a complicated, analysis, e.g. in terms of its syntactic structure and so on.

[92] The same argument (among others) is used in Alqurashi and Borsley (2012) to account for both definite and indefinite relative clauses in Arabic.

6.4.2.2. The complication of case assignment

If we favour the empty copula analysis, then this leaves us with the complication of case assignment, i.e. the fact that the NP and AP complements of the empty copula are nominative. This complication can be handled by assuming that the NP and AP complements of a verb are accusative by default as shown in (58) below. Note that not only the overt copula selects for accusative NPs and APs, but this is the case with all verbs. The constraint in (58) should ensure that.

(58) The constraint on NP and AP complements' case (simplified)

$$\begin{bmatrix} \text{HEAD } verb \\ \text{COMPS} < [\, phrase, \text{HEAD } noun \vee adj, \text{CASE}[]1], \ldots > \end{bmatrix} \rightarrow / [1] = acc$$

The constraint in (58) states that the default case for the verb's NP and AP complements is accusative. Therefore, this constraint can be overridden. In fact, this constraint is overridden by the requirements of the empty copulas presented above in Section 6.3.3. That is, the equative null copula and the predicative null copula require their NP or AP complements to be nominative[93]. Consequently, the empty copula is an exception to the default constraint in (58).

6.5. Conclusion

In this chapter, I discussed the analysis of copula absence in MSA. First, I provided a review of previous studies that attempted to analyse this phenomenon in Arabic. Then, I attempted to provide syntactic analyses for MSA verbless sentences within the framework of

[9393] This is the second exceptional case. The first case is the pronominal complement indicated in Chapter 5, Section 5.2.3.

HPSG. In this context, four analyses were proposed, namely the small clause analysis, the empty copula analysis and two constructional analyses. The empty copula analysis was finally favoured as it unifies the analysis of both verbless and verbal copular sentences. For this reason, we need to account for similarities between verbless sentences and verbal copular sentences. This is the main purpose of next chapter, Chapter 7.

Chapter 7

The Copula in Modern Standard Arabic: A Unified Account

7.1. Introduction

This chapter attempts to provide a unified account for the copula in Modern Standard Arabic. Chapter 5 analysed the overt copula, while Chapter 6 argued in favour of the empty copula, and hence, we need to capture similarities between the two instances. In other words, one may ask about where the lexical descriptions presented in the preceding chapters come from. Thus, this chapter provides a system of types that captures facts about copular sentences, and also addresses relevant issues to the unification of the analysis of the copula. Therefore, Section 7.2 will provide an overview of the phenomenon of copular sentences in MSA, taking into account conclusions reached in Chapters 5 and 6. Then, Section 7.3 will introduce the postulation of a system of type-hierarchy for the copula in MSA. Section 7.4 will then discuss possible subtypes and their constraints, whereas Section 7.5 will provide the reader with full lexical descriptions of copulas in MSA. In Section 7.6, I will address issues that arise from unifying the account of the copula. Finally, the chapter will be summarised in Section 7.7.

7.2. Overview

The verbal copula, whether it is realised phonologically or not, can be equative or predicative. This accounts for the distinctions between equational sentences and predicational sentences in MSA. As indicated in Chapter 5, there are two overt verbal copula lexemes, *kwn* 'be' and *lays* 'be.NEG'. The third copula is *null*, as discussed in Chapter 6. The following are the basic types the copula has:

(1) Possible copulas in MSA

- *kwn*
- Equative *kwn*
- Predicative *kwn* with a non-verbal complement

- *lays*
- Equative *lays*
- Predicative *lays* with a non-verbal complement

- *null*
- Equative *null* copula
- Predicative *null* copula with a non-verbal complement

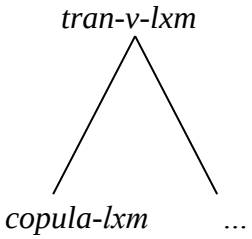
0

In sum, each of these verbal copulas presented in (1) above can be equative or predicative.

7.3. Introducing a system of types and constraints

This section attempts to postulate a system of types and constraints in order to capture similarities between copula types presented earlier. As all these verbs are copulas, I assume that all copulas belong to one type called *copula-lxm*. Building on the system of types and constraints presented in Chapter 1, Section 1.5.3, I assume that the type *copula-lxm* is one subtype that the type *tran-v-lxm* has, as shown below:

(2) Extending the type hierarchy



The system in (2) says that *tran-v-lxm* type has various subtypes, one of them is *copula-lxm*. The type *copula-lxm* is a subtype of *tran-v-lxm* because the copula is a kind of verbs, as discussed in detail in Chapter 2, Section 2.3.1. It is also, like transitive verbs, has a COMPS list. This means that the type *copula-lxm* inherits all constraints from its supertypes. The *copula-lxm* type also inherits from its supertype, *tran-v-lxm*, the following constraint:

(3) NP and AP complements' case

$$\left[\text{SS}\,|\,\text{LOC}|\,\text{CAT}\left[\begin{array}{l}\text{HEAD } \textit{verb}\\ \text{COMPS} < \left[\begin{array}{l}\text{HEAD } \textit{noun} \vee \textit{adj}\\ \text{CASE [1]}\end{array}\right], \ldots >\end{array}\right]\right] \rightarrow / [1] = \textit{acc}$$

The constraint in (3) states that if a transitive verb takes an NP or AP complement, then the case of the NP and AP is accusative by default. Apparently, this constraint can be overridden, as we will see.

Constraints on *copula-lxm* will ensure that the various forms of the copula have the right form, ensuring that the same forms appear with the various possible subtypes. For example, the third person singular masculine form, i.e. *kaana,* appears with all uses, i.e. equative and predicative uses, as indicated in detail in Chapter 3, Section 3.3. The derivation of words from lexemes is done by a lexical rule. The following is an example of deriving a verbal word from the copula lexeme.

(4) A 3rd person singular masculine verbal copula's lexical rule[94]

$$\left[\begin{array}{l} \text{INPUT} \left\langle [3], \left[\begin{array}{l} \textit{copula-lxm} \\ \text{CONT} \left[\text{RESTR} \ \ [\text{A}]\right] \end{array}\right] \right\rangle \\ \\ \text{OUTPUT} \left\langle \begin{array}{ll} \text{F}3\textit{SGM} < [3] >, & \left[\begin{array}{l} \text{CAT} \left[\text{HEAD} \left[\begin{array}{l} \text{FORM} \ \ \textit{fin} \\ \text{AGR} \ \ 3\textit{sgm} \end{array}\right]\right] \\ \text{CONT} \ \left[\text{RESTR} \ \ [\text{A}] \oplus \ldots \right] \\ \\ \text{ARG-ST} \ \ \langle [\text{CASE} \ \ \textit{nom}], \ldots \rangle \end{array}\right] \end{array} \right\rangle \end{array}\right]$$

The lexical rule in (4) takes the copula lexeme as input and gives us the third person singular masculine form as output. Note that 'F 3SGM' in the output is just a name of a subject that is third person singular masculine. The rule, hence, ensures that the copula has the same index as its nominative subject.

[94] I follow Sag et al. (2003) in formalizing this rule. I also modified it to be consistent with the thesis' assumptions.

Another constraint will ensure that when the copula has the positive present indicative form, then this form, by default, does not have a phonological content, as shown in (5) below.

(5) The positive present indicative copula constraint

$$\begin{bmatrix} \text{SS}|\text{LOC}|\text{CAT}|\text{HEAD} \begin{bmatrix} \textit{copula} \\ \text{POL } \textit{pos} \\ \text{TENSE } \textit{pres} \\ \text{MOOD } \textit{indic} \end{bmatrix} \end{bmatrix} \rightarrow / \left[\text{NULL}+\right]$$

The constraint in (5) says that in copular sentences, the positive present indicative form of the copula is phonologically empty by default. Here, I assume that [NULL +] will be [PHON <>]. This constraint is overridden when the overt positive present indicative form is required. For example, it is overridden when *qad* 'may' requires the modification of an overt positive present indicative form of the copula as in (6) below:

(6) *qad* *yakuunu* *sm-u-haa* *maryam-a*

may be.IPFV.INDC.3SG.M name.SG.M-NOM-her Maryam-ACC

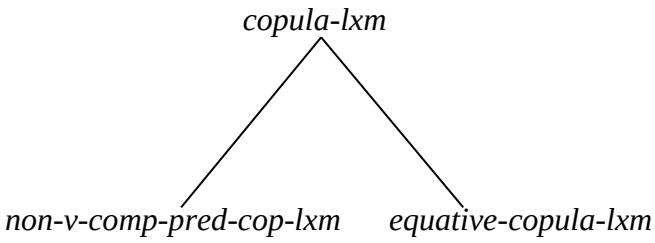
'Her name may be Maryam' (KACSTAC)

Note that the constraint in (5) does not account for the optionality of the generic present indicative copula. I will return to this issue below in Section 7.6.

7.4. Equative and predicative uses

Now, we move on to the possible subtypes of the type *copula-lxm*. Assuming with Ginzburg and Sag (2000) that the verb lexeme expresses its semantics, the copula, as a verb, will have two possible lexemes: an equative copula lexeme (*equative-copula-lxm*) and a predicative copula lexeme. As the latter is used with non-verbal complements, I will call it non-verbal complement predicative copula lexeme (*non-v-comp-pred-cop-lxm*). These two types are added to the type hierarchy as shown below:

(7)



Note that these two subtypes also differ in their syntactic selections. The following subsections will indicate constraints on both of them.

7.4.1. The type *equative-copula-lxm*

As stated, the equative copula contributes the identity relation and takes three arguments, i.e. definite NPs..The second argument is an optional nominative pronoun that agrees with the subject in number and gender only. This pronominal complement, however, must be in a third person form. Theerefore, the *equative-copula-lxm* subtype is constrained as in (8) below.

(8) A constraint on *equative-copula-lxm*

equative-copula-lxm →

$$\begin{bmatrix} \text{SS}|\text{LOC}|\text{CONT}\begin{bmatrix} \textit{identity-rel} \\ \text{ARG}[1] \\ \text{ARG}[2] \end{bmatrix} \\ \text{ARG-ST} < \begin{bmatrix} \text{NP} \\ \text{DEF}+ \\ \text{INDEX}[1]\begin{bmatrix} \text{NUM}[3] \\ \text{GEN}[4] \end{bmatrix} \end{bmatrix}, (\begin{bmatrix} \text{NP} \\ \text{PRO}+ \\ \text{CASE}\,\textit{nom} \\ \text{INDEX}\begin{bmatrix} \text{PERS}\,3 \\ \text{NUM}[3] \\ \text{GEN}[4] \end{bmatrix} \end{bmatrix},) \begin{bmatrix} \text{NP} \\ \text{DEF}+ \\ \text{INDEX}[2] \end{bmatrix} > \end{bmatrix}$$

The constraint in (8) ensures four facts. First, it ensures that the equative copula contributes the identity relation between the index of the subject and the index of the obligatory complement. Second, it ensures that the arguments of the equative copula are definite NPs. Third, it also ensures that the first complement is nominative and that it is optional. Finally, it ensures that the pronominal complement agrees with the subject in number and gender, while it is always 3rd person. It should be noted that the requirement of the pronominal complement in (8) to be nominative overrides the default constraint on the case of verbs' nominal and adjectival complements presented in (3) above..

7.4.2. The type non-v-comp-pred-cop-lxm

Moving on to the second subtype of the *copula-lxm* type, the constraint on the *non-v-comp-pred-cop-lxm* type needs to ensure that the predicative complement can be NP, AP, PP, AdvP, but not a VP. As the copula in predicational sentences is semantically vacuous, the constraint on this type also needs to identify its subject and content with those of its predicative complement. These are ensured in the following constraint:

(9) *non-v-comp-pred-cop-lxm* $\rightarrow$ $\begin{bmatrix} \text{SS}|\text{LOC}|\text{CONT}\ [2] \\ \text{ARG-ST}\ \langle [1], \begin{bmatrix} \textit{phrase} \\ \text{HEAD}\ \neg \textit{verb} \\ \text{SUBJ}\langle [1] \rangle \\ \text{CONT}[2] \end{bmatrix} \rangle \end{bmatrix}$

We see how the constraint in (9) ensures the two facts. First, it ensures that the copula identifies its SUBJ and CONT values with those of its predicative complement. As indicated, this follows from the fact that the predicative copula is semantically vacuous. Second, it also ensures that the only complement this copula has is headed by any word except for a verb. Thus, the complement in this type can be an NP, an AP, a PP, an AdvP, but not a VP.

7.5. The lexical descriptions for the possible copulas

In this section, I will indicate full lexical descriptions under each of the maximal types in the type-hierarchy proposed above. Note that those lexical descriptions inherit properties from types they belong to. In the following, I will discuss each maximal type separately. Also, note that the lexical descriptions, which I will mention below, were presented earlier in Chapters 5 and 6 (may be in a slightly different presentation).

7.5.1. The lexical descriptions under the *equative-copula-lxm* type

Let us start with the lexical descriptions under the *equative-copula-lxm* type. This type has three lexical descriptions, each of which represents one copula. The first lexical description is the lexical description of the equative *kwn*, the second is the lexical description

of the equative *lays* while the third is the lexical description of the equative *null* copula. Each of these lexical descriptions is distinctive from the other in some respects, but is similar to the rest in other respects. First, the equative *kwn* has the following lexical description:

(10) The lexical description of the equative *kwn*

$$\begin{bmatrix} \text{PHON} < \textit{kwn} > \\ \text{SS}\,|\,\text{LOC}\begin{bmatrix} \text{CAT}\begin{bmatrix} \text{HEAD} & \textit{verb} \\ \text{SUBJ} & [2] \\ \text{COMPS} & [3] \end{bmatrix} \\ \text{CONT}\begin{bmatrix} \textit{identity-rel} \\ \text{THEME} & [8]\,\textit{index} \\ \text{ATTRIBUTE} & [9]\text{index} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST}\ [2] < \text{NP}\begin{bmatrix} \text{DEF} + \\ \text{INDEX}[8]\begin{bmatrix} \text{GEND}\,[6] \\ \text{NUM}\ \ [7] \\ \text{PER}\ \ \textit{per} \end{bmatrix} \end{bmatrix} > \oplus [3] < (\text{NP}\begin{bmatrix} \text{PRO} + \\ \text{CASE}\ \ \textit{nom} \\ \text{INDEX}\begin{bmatrix} \text{GEND}\,[6] \\ \text{NUM}\ \ [7] \\ \text{PER}\ \ 3 \end{bmatrix} \end{bmatrix},)\ \text{NP}\begin{bmatrix} \text{DEF} + \\ \text{INDEX}\ \ [9] \end{bmatrix} > \end{bmatrix}$$

To explicate this description properly, we should say that such a lexical description licenses the copula in sentences such as (11) below:

(11) *kaana* *hišaam-u-n* *(huwa)* *l-mudarris-a*

be.PFV.3SG.M Hisham-NOM-NN he the-teacher.SG.M-ACC

'Hisham was the teacher'

In such a sentence, we have the copula *kaana* 'be.PFV' and three definite NPs. The second NP is optional. Returning to the lexical description in (10), this description states that the

copula contributes the identity relation between the subject and the obligatory NP complement. The first complement, however, is optional and nominative. It agrees with the subject in number and gender only. The optional pronoun, essentially, must be in a 3rd person form. These properties are inherited from the constraint on *equative-copula-lxm* type. The HEAD specification, however, is inherited from *v-lxm* type as *copula-lxm* is a subtype of it. The accusative case of the obligatory NP complement is inherited from the constraint on the *tran-v-lxm* type.

Moving on, the second lexical description under the *equative-copula-lxm* type is the equative *lays*. It licenses the copula in sentences such as (12) below:

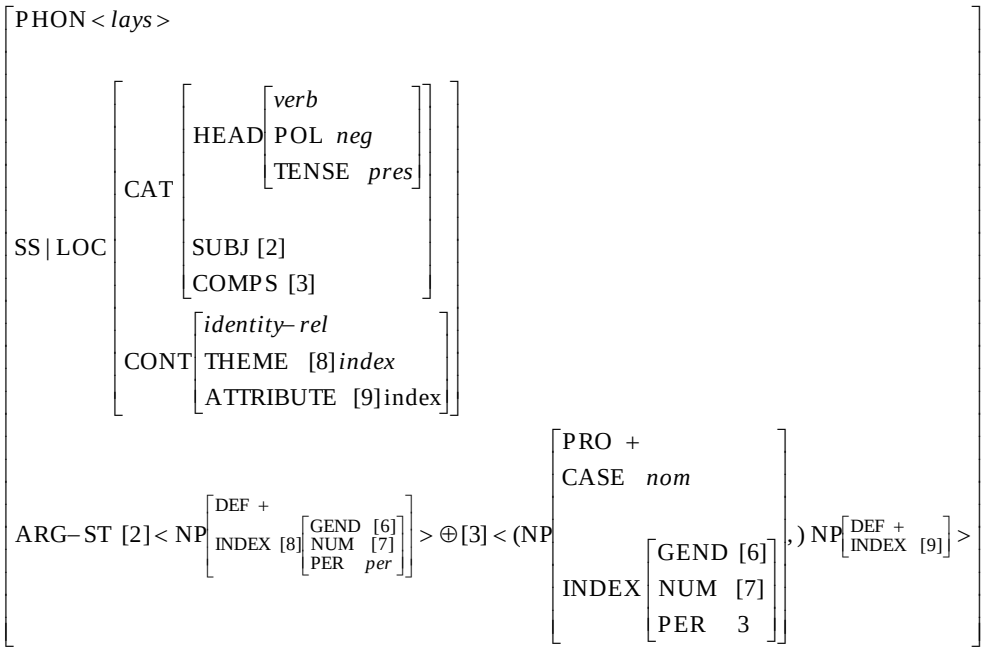
(12) *laysa* *xaalid-u-n* *(huwa)* *l-mudiir-a*

be.NEG.3SG.M Khalid-NOM-NN he the-manager.SG.M-ACC

'Khalid is not the manager'

The copula in sentence (12) is licensed by the following lexical description:

(13) The lexical description of the equative *lays*



The PHON value ensures that the phonological content of this copula is *lays*, whereas the HEAD specifications ensure that this copula is a negating verb in the present tense. Apart from these two aspects, (13) and (10) are alike. Therefore, what is said there is also applicable here.

The third possible lexical description is that of the equative *null* copula. This lexical description licenses the copula in sentences such as the following:

(14) *hišaam-u-n* *(huwa)* *muħammad-u-n*

Hisham-NOM-NN he Muhammad-NOM-NN

'Hisham is Muhammad'

As an equational sentence, the copula in (1) is licensed by the following lexical description:

(15) The lexical description for the equative null copula

$$\begin{bmatrix} \text{PHON} \langle\rangle \\ \text{SS}|\text{LOC}\begin{bmatrix} \text{CAT}\begin{bmatrix} \text{HEAD}\begin{bmatrix} \textit{verb} \\ \text{TENSE}\ \textit{pres} \\ \text{MOOD}\ \textit{indic} \\ \text{NULL}+ \end{bmatrix} \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{CONT}\begin{bmatrix} \textit{identity-rel} \\ \text{THEME}\ [8]\textit{index} \\ \text{ATTRIBUTE}\ [9]\textit{index} \end{bmatrix} \end{bmatrix} \\ \text{ARG-ST}\ [2]\langle \text{NP}\begin{bmatrix} \text{DEF}\ + \\ \text{INDEX}\ [8]\begin{bmatrix} \text{GEND}\ [6] \\ \text{NUM}\ [7] \\ \text{PER}\ \textit{per} \end{bmatrix} \end{bmatrix}\rangle \oplus [3]\langle (\text{NP}\begin{bmatrix} \text{PRO}+ \\ \text{CASE}\ \textit{nom} \\ \text{INDEX}\begin{bmatrix} \text{GEND}\ [6] \\ \text{NUM}\ [7] \\ \text{PER}\ 3 \end{bmatrix} \end{bmatrix},)\ \text{NP}\begin{bmatrix} \text{DEF}\ + \\ \text{INDEX}\ [9] \end{bmatrix}\rangle \end{bmatrix}$$

In this lexical description, the PHON value ensures that this form of the copula is not realised phonologically. HEAD specifications, further, ensure that this copula is used whenever MSA calls for a present indicative null verb. As indicated earlier, the null copula differs from *kwn* and *lays* in that the null copula takes nominative NP and AP complements. This is ensured by the following constraint:

(16)
$$\begin{bmatrix} \text{SS}|\text{LOC}|\text{CAT}\begin{bmatrix} \text{HEAD}\begin{bmatrix} \textit{copula} \\ \text{NULL}+ \end{bmatrix} \\ \text{COMPS}\langle \begin{bmatrix} \text{HEAD}\ \textit{noun} \vee \textit{adj} \\ \text{CASE}\ [1] \end{bmatrix}, \ldots \rangle \end{bmatrix} \end{bmatrix} \rightarrow [1] = \textit{nom}$$

The constraint in (16) states that the case of the null copula's NP or AP complement must be nominative. Clearly, this overrides the default constraint in (2) above. Once again, apart from the points discussed so far, (10), (13) and (15) are alike. Clearly, the reason behind these similarities is that these are all equative copulas which inherit the same properties from its supertypes.

Now, we can move on to the lexical descriptions under the *non-v-comp-pred-cop-lxm* type.

7.5.2. The lexical descriptions under the *non-v-comp-pred-cop-lxm* type

As is the case with the *equative-copula-lxm* type, the *non-v-comp-pred-cop-lxm* type also has three lexical descriptions, namely the lexical description of the predicative *kwn* with a non-verbal complement, the lexical description of the predicative *lays* with a non-verbal complement and the lexical description of the predicative *null* copula.

Let us start with the lexical description of the predicative *kwn*. This description licenses the copula in sentences such as the following:

(17) *kaana r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.PFV the-man.SG-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man was a teacher/at school/ tall/ here'

The complement in (17) is non-verbal. In other words, it is an XP complement which is not headed by a verb. Essentially, *kwn* in this type is licensed by the following lexical description:

(18) The lexical description of the predicative *kwn* with a non-verbal complement

$$\begin{bmatrix} \text{PHON} < \textit{kwn} > \\ \\ \text{SS}\,|\,\text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \;\; \textit{verb} \\ \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{CONT}\ [4] \end{bmatrix} \\ \\ \text{ARG-ST}\ [2] < \text{NP} > \oplus [3] < \begin{bmatrix} \textit{phrase} \\ \text{HEAD} \neg \text{verb} \\ \text{PRED} + \\ \text{SUBJ}\ [2] \\ \text{CONT}\ [4] \end{bmatrix} > \end{bmatrix}$$

This lexical description in (18) differs from that in (10) in three aspects. The first is that the complement in (18) can be an NP, an AP, a PP or an AdvP, which is the only complement. However, there are two NP complements in (10). The second distinction is the predicative status of the complement. That is, the phrasal complement in (18) is predicative, unlike the complements in (10). The third distinction is that the copula in (18) identifies its subject and content with those of the predicative complement because the copula is semantically vacuos, while the copula in (10) contributes semantically.

The second lexical description under the *non-v-comp-pred-cop-lxm* type is the lexical description of *lays*. It licenses the copula in sentences such as the following:

(19) *laysa r-rajul-u mudarris-a-n/ fii l-madrasat-i/ Tawiil-a-n/ hunaa*

be.NEG the-man.SG-NOM teacher-ACC-NN in the-school-GEN tall-ACC-NN here

'The man is not a teacher/at school/ tall/ here'

The copula in a sentence such as (19) is licensed by the following lexical description:

(20) The lexical description of the predicative *lays* with a non-verbal complement

$$\begin{bmatrix} \text{PHON} < \textit{lays} > \\ \text{SS}\,|\,\text{LOC}\begin{bmatrix} \text{CAT}\begin{bmatrix} \text{HEAD}\begin{bmatrix} \text{verb} \\ \text{POL}\ \textit{neg} \\ \text{TENSE}\ \textit{pres} \end{bmatrix} \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{CONT}\ [4] \end{bmatrix} \\ \text{ARG-ST}\ [2] < \text{NP} > \oplus [3] < \begin{bmatrix} \textit{phrase} \\ \text{HEAD}\neg\text{verb} \\ \text{PRED}+ \\ \text{SUBJ}\ [2] \\ \text{CONT}\ [4] \end{bmatrix} > \end{bmatrix}$$

We say here what we said about (18) except for two aspects, namely PHON and HEAD specifications. That is, *kwn* with a non-verbal complement and *lays* with a non-verbal complement differ in these two aspects.

The third lexical description under the *non-v-comp-pred-cop-lxm* type is the lexical description of the predicative *null* copula. This description licenses the copula in sentences like the following:

(21) *r-rajulu* *mudarris-u-n/* *fii* *l-madrasat-i/* *Tawiil-u-n/* *hunaa*

the-man.SG-NOM teacher-NOM-NN in the-school-GEN tall-NOM-NN here

'The man is a teacher/at school/ tall/ here'

The copula in such a sentence is licensed by the following lexical description:

(22) The lexical description for the predicative *null* copula

$$\begin{bmatrix} \text{PHON} <> \\ \text{SS}|\text{LOC}\begin{bmatrix} \text{CAT}\begin{bmatrix} \text{HEAD}\begin{bmatrix} \text{verb} \\ \text{TENSE } \textit{pres} \\ \text{MOOD } \textit{indic} \\ \text{NULL+} \end{bmatrix} \\ \text{SUBJ [2]} \\ \text{COMPS [3]} \end{bmatrix} \\ \text{CONT [4]} \end{bmatrix} \\ \text{ARG-ST [2]} < \text{NP} > \oplus [3] < \begin{bmatrix} \textit{phrase} \\ \text{HEAD} \neg \textit{verb} \\ \text{PRED+} \\ \text{SUBJ [2]} \\ \text{CONT[4]} \end{bmatrix} > \end{bmatrix}$$

The PHON value in (22) ensures that this form of the copula is not realised phonologically, while HEAD specifications ensure that this form occurs in a present indicative context. Again, the NP and AP complements of the null copula need to be nominative, as ensured by the constraint in (16) above. Apart from the aspects mentioned so far, the *null* copula with a non-verbal complement, *lays* with a non-verbal complement and *kwn* with a

non-verbal complement are alike. Once again, the similarities between these three lexical descriptions occur because they inherit the same properties from the type they belong to, the *non-v-comp-pred-cop-lxm* type.

7.5.3. Summary

The preceding discussion shows that we can capture facts about the copula by building a system of types and constraints (i.e. a system of type-hierarchy). The supertype *copula-lxm* ensures, among other things, that the copula has the right form, whereas its subtypes *equative-copula-lxm* and *non-v-comp-pred-cop-lxm* ensure that the copula can have either predicative lexeme or equative one. In turn, the maximal types express all possible copulas that each type can have, providing us with six possible copulas which differ in their semantics and syntactic selection.

7.6. Further issues

As the system of types and constraints presented above argues for a unified analysis, there are issues that we need to discuss to confirm the unification of the analysis, namely the present indicative forms and the existential sentences. In the following, we will discuss these two issues separately.

7.6.1. On the present indicative forms

This section concerns the account of the possible situations that the present indicative form of the copula has. As we unified the analysis, the present indicative form of the copula, accordingly, can have one of the following situations (Bahloul, 1993; Benmamoun, 2000)[95]:

- It must be phonologically empty in deictic present indicative contexts, as in (23) below:

(23) a. *zayd-u-n* *Tawiil-u-n*

Zaid-NOM-NN tall.3SG.M-NOM-NN

'Zaid is tall'

b. **yakuunu* *zayd-u-n* *Tawiil-a-n*

be.IPFV.INDC.3SG.M Zaid-NOM-NN tall.3SG.M-ACC-NN

'Zaid is tall'

In (23), when the copula is realised phonologically, as in (23b), the sentence is ungrammatical.

- It must be phonologically realised after certain words such as *qad* 'may', as in (24) below:

[95] Note that some of the data in this section were mentioned earlier in the thesis. However, I repeated them here for convenience.

(24) a. *qad yakuunu xaalid-u-n mujtahid-a-n*

may be.IPFV.INDC.3SG.M Khalid-NOM-NN hardworking.3SG.M-ACC-NN

'Khalid may be hardworking'

b. **qad xaalid-u-n mujtahid-u-n*

may Khalid-NOM-NN hardworking.3SG.M-NOM-NN

'Khalid may be hardworking'

In (24), when the present indicative form is not phonologically realised, the sentence is ungrammatical, as in (24b).

- The phonological realisation is optional in generic present indicative contexts, as in (25) below:

(25) a. *yakuunu l-jaww-u ħaarr-a-n fii S-Sayf-i*

be.IPFV.INDC the-weather.SG-NOM hot.3SG.M-ACC-NN in the-summer-GEN

'The weather is hot in summer'

b. *l-jaww-u ħaarr-u-n fii S-Sayf-i*

the-weather.SG-NOM hot.3SG.M-NOM-NN in the-summer-GEN

'The weather is hot in summer'

In (25), the present indicative form can either be realised phonologically or not.

Now, any account of the copula needs to consider these facts. To handle them, let us start with the lexical description of the empty copula, as in (26) below:

(26) A lexical description of the empty copula (simplified)

$$\begin{bmatrix} \text{PHON} <> \\ \text{SS}\,|\,\text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \text{verb} \\ \text{TENSE}\ \textit{pres} \\ \text{MOOD}\ \textit{indic} \\ \text{NULL}+ \end{bmatrix} \\ \text{SUBJ}\ [2] \\ \text{COMPS}\ [3] \end{bmatrix} \\ \text{CONT}\ [4] \end{bmatrix} \end{bmatrix}$$

Comparing (23) to (25), this empty copula can be deictic or generic. This is ensured by making (26) underspecified for generic/deictic values. However, in order to ensure the ungrammaticality of (23b) we need to state that the deictic present tense copula must be absent unless something overrides. Therefore, we need to revise the default constraint in (4) above to be as in (27) below:

(27) The positive present indicative copula constraint (revised)

$$\begin{bmatrix} \text{SS}\,|\,\text{LOC} \begin{bmatrix} \text{CAT}\,|\,\text{HEAD} \begin{bmatrix} \textit{copula} \\ \text{POL}\ \textit{pos} \\ \text{TENSE}\ \textit{pres} \\ \text{MOOD}\ \textit{indic} \end{bmatrix} \\ \text{CONT}\ \textit{deictic} \end{bmatrix} \end{bmatrix} \rightarrow\ /\ \left[\text{NULL}+\right]$$

The constraint in (27) states that if the copula is a deictic present indicative one, then it is phonologically empty by default. This means that the copula must be phonologically empty

unless this default constraint is overridden. For this reason, sentence (23b) is ungrammatical. That is, the copula in (23b) must be phonologically empty because nothing overrides the default constraint. In other words, in (23b) nothing requires the phonological realisation, and hence, the default constraint must not be violated. However, the case is different in (24). In particular, the feature [NULL +] in (26) prevents the empty copula from occurring after words such as *qad* 'may'. That is, the modal particle *qad* 'may' requires to adjacent to an overt present indicative verb. This is conveyed by the feature [NULL -] in (28) below:

(28) A lexical entry for the particle *qad*

$$\begin{bmatrix} \text{SS} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD} \begin{bmatrix} \textit{particle} \\ \text{MODAL+} \\ \text{MOD} < \text{V} \begin{bmatrix} \text{TENSE } \textit{pres} \\ \text{MOOD } \textit{indic} \\ \text{NULL -} \end{bmatrix} > \end{bmatrix} \end{bmatrix} \\ \text{CONT} \begin{bmatrix} \textit{epis\_poss\_rel} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

This, consequently, rules out (24b) in that the empty copula is not consistent with the requirement of *qa**d***.

Now, we arrive at the complexity of examples in (25). In (25), the overt present indicative form of the copula is optional. It is optional in the generic present tense context. In fact, we need to ensure that if the present indicative form of the copula is generic, then it can be overt or covert. This can be ensured by assuming that the generic present indicative form of the copula is underspecified for the feature NULL, i.e. [NULL -/+]. Again, I assume here that the feature NULL with either -/+ values represents the possibility of having empty/nonempty PHON values. Note that this does not conflict the default constraint in (27) above. That is, it

concerns the generic present tense copula, whereas (27) concerns the deictic present tense one. Also note that the generic empty copula will not appear after *qad* 'may' because *qad* always selects the overt form, i.e. [NULL -].

In sum, the preceding discussion in this section accounts for the three possible situations that the present indicative form of the copula has, i.e. when the copula must be phonologically empty, when it must be realised phonologically and when the phonological realisation is optional.

7.6.2. The copula in existential sentences

This section considers the analysis of the copula in existential sentences. This is important to show the adequacy of the unified analysis proposed in this chapter. Existential sentences in MSA are sentences such as (29)-(31) below:

(29)	*kaana*	*hunaaka*	*Taalib-u-n*	*fii*	*l-ħadiiqat-i*
	be.PFV.3SG.M	there	student.SG.M-NOM-NN	in	the-garden.SG.F-GEN

'There was a student in the garden'

(30)	*laysa*	*hunaaka*	*Taalib-u-n*	*fii*	*l-ħadiiqat-i*
	be.NEG.3SG.M	there	student.SG.M-NOM-NN	in	the-garden.SG.F-GEN

'There is not a student in the garden'

(31) *hunaaka* *Taalib-u-n* *fii* *l-ħadiiqat-i*

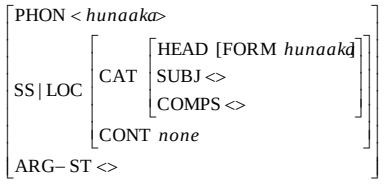
there student.SG.M-NOM-NN in the-garden.SG.F-GEN

'There is a student in the garden'

In these examples, we have a form of the copula, whether this form is realised phonologically, as in (29) and (30), or phonologically empty, as in (31).

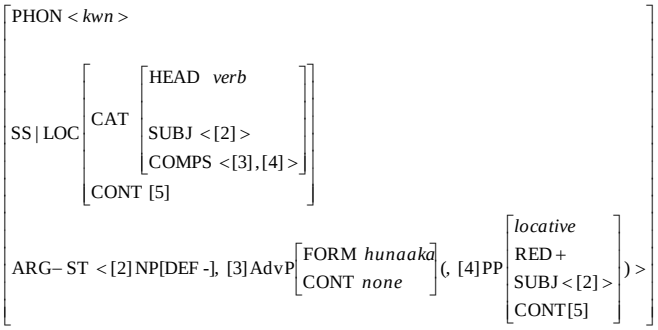
As the copula in these sentences is concerned, let us first concentrate on overt forms of the copula, for example *kaana* in (29). As indicated in Chapter 2, Section 2.4.3, the examination of the syntax of existential sentences shows that they have the copula *kaana*, an indefinite NP subject and two complements, namely an obligatory expletive AdvP and an optional locative predicative PP. Taking the system of type-hierarchy in (2) above into account, the copula *kaana* in existential sentences falls under the *non-v-comp-pred-cop-lxm* type. That is, this copula does not select a definite NP complement. This means that *kaana* is predicative and should have the lexical description for the predicative *kwn* presented above in (18). This lexical description, clearly, is not appropriate for what I will call *exist(ential)-kwn*. That is, the copula in existential sentences selects a restricted set of arguments, i.e. it takes an indefinite NP subject, and two complements, a semantically empty AdvP as well as an (optional) locative predicative PP. Thus, the *exist-kwn* needs a slightly different lexical description, which will be restricted in some ways, but also extended to allow the expletive *hunaaka.* The new lexical description should fulfil the requirements of the *exist-kwn.* In order to do this properly, we need to consider the lexical description of the expletive *hunaaka*, as in (32) below.

(32) The lexical description for the expletive *hunaaka* in MSA



Along the lines of Sag et al. (2003), the expletive *hunaaka* should be the only word in MSA that has [FORM *hunaaka*]. Other adverbs have [FORM *advform*]. This expletive has no content, and hence its content value is *none*. It also does not require any arguments as [ARG-ST <>] indicates. Now, we can move on to the lexical description that the *exist-kwn* should have. This lexical description is shown in (33) below.

(33) The lexical description of the *exist-kwn*



The lexical description of the existential *kwn* shows that it takes an indefinite subject, an expletive adverbal complement and a second optional locative predicative PP complement. Other copulas, namely *lays* and *null*, should have identical lexical descriptions to (33) except for PHON value and HEAD specifications. Now, as there are properties shared between

existential copulas and copulas with a non-verbal complement, a lexical rule is needed to derive the existential copula from the *non-v-comp-pred-cop-lxm* type. This lexical rule is provided in (34) below:

(34) *Exist-copula* lexical rule

$$\begin{bmatrix} \text{CONT}[4] \\ \text{ARG-ST} < [2]\text{NP}, [3] \begin{bmatrix} \textit{phrase} \\ \text{HEAD} \neg \textit{verb} \\ \text{SUBJ} < [2] > \\ \text{CONT}[4] \end{bmatrix} > \end{bmatrix} \Rightarrow$$

$$\begin{bmatrix} \text{CONT}[5] \\ \text{ARG-ST} \left\langle [2]\text{NP}\begin{bmatrix}\text{DEF} -\end{bmatrix}, [3]\text{AdvP}\begin{bmatrix}\text{FORM } \textit{hunaaka} \\ \text{CONT } \textit{none}\end{bmatrix}, [4]\text{PP}\begin{bmatrix}\textit{locative} \\ \text{PRED} + \\ \text{SUBJ} < [2] > \\ \text{CONT}[5]\end{bmatrix} \right\rangle \end{bmatrix}$$

The lexical rule in (34) takes the ARG-ST of the *non-v-comp-pred-cop-lxm* type as input and provides us with the *exist-copula* as output. The output, essentially, states that the form of the AdvP needs to be *hunaaka*, and hence, only the expletive *hunaaka* will be selected. It also states that the NP subject needs to be indefinite as [DEF -] indicates, whereas the PP complement needs to be locative and predicative[96]. The predicative PP requires a subject whose value is identified with the value of the copula's subject. Finally, the semantics of the existential copula is identified with that of the predicative PP, which keeps the copula semantically vacuous. Here, it should be emphasised that the output will apply to *kwn*, *laysa*, and the null copula.

[96] In English, for example, the predicative complement in existential sentences may be other than the locative PP. I will return to this issue in MSA in Chapter 8, Section 8.2.

In short, this section shows that the system of types and constraints proposed in this chapter can account for the distribution of copular sentences, including existential sentences.

7.7. Conclusion

This chapter argued for a unified account of copular sentences, whether the copula is overt or not. The unified account was captured by postulating a system of type-hierarchy that ensures that the predicative and equative uses of the copula share something in common, namely the phonology and morphology. The syntactic and semantic distinctions are ensured by providing postulated subtypes of the supertype *copula-lxm*. The unified account also considers existential sentences instances of copular sentences, and derives the existential copula from the *non-v-comp-pred-cop-lxm* type.

Chapter 8

Conclusion

8.1. Summary

As the title of this thesis indicates, the thesis has investigated the copula in Arabic. It concerned two matters related to the Arabic copula. First, it has attempted to provide a full description of the copula. This includes syntactic and semantic issues that the description involved. Second, the thesis has tried to analyse the copula in Arabic within the framework of Head-Driven Phrase Structure Grammar (HPSG). The analysis has covered the overt as well as missing copulas in Arabic. The thesis has attempted to unify these analyses, which was the main focus of Chapter 7.

The chapters of this thesis were organised as follows. The first chapter was intended to be an introduction to the thesis. Therefore, it introduced three main issues to the reader: the Arabic language, the HPSG framework and basic semantic assumptions. The introduction of these issues seemed crucial because I needed the reader to be aware of the basic facts and assumptions that the discussions in this thesis are built on. In the 'Introduction to Arabic' section, the reader was made aware of basic facts about Arabic language, including some aspects of its morphological and syntactic systems. With regard to the HPSG framework, the chapter introduced the theory's central assumptions to the reader; the section about HPSG discussed the position of HPSG among syntactic theories and how it analyses natural languages. This section also showed how Arabic language interacts with HPSG and its phrasal

type assumptions. Finally, the chapter paid attention to some semantic issues that the thesis assumed such as semantic types and functions.

The second chapter provided a description of the Arabic copula. Before engaging with the description of the Arabic copula, the chapter established the criteria of the copula cross-linguistically. It showed that the only criterion we had was the equivalence to verb *be* in English. Now, although this definition seemed narrow, the thesis adopted this narrow definition following van Eynde (2008) and Bondaruk (2013). The chapter, then, clarified what possible strategies MSA speakers can use in order to have a copular sentence. These strategies were verbal copula strategy, zero copula strategy and pronominal copula strategy, although the latter did not seem to be a strategy as the chapter concluded. This means that the pronoun in MSA is not a form of the copula. The chapter also discussed what complement a copula may take. It indicated that the complement of the copula can be an NP, an AP, a PP, or an AdvP. As the copula may be missing in certain circumstances, the chapter described this context. The discussions in Chapter 2 led to summarising syntactic properties that a copular sentence has, which was the focus of the last main section in this chapter.

The third chapter moved on to discuss the classification of copular sentence types, originally established by Higgins (1979). These types were equational sentences, predicational sentences, specificational sentences and identificational sentences. First, the chapter attempted to show this classification by briefly discussing it in the English language in order for the reader to understand the basic classification. After that the chapter discussed this classification in MSA in detail. Each sentence type was discussed in depth, providing the reader with its properties. Following the literature, the chapter then applied some syntactic tests in order to distinguish between the four sentence types. However, as none of the tests applied was able to distinguish one type from another, the chapter attempted to distinguish between them by other means. Eventually, the chapter concluded that there are two basic

copular sentence types in MSA, namely equational sentences and predicational sentences. Specificational sentences were assumed to be a subtype of equational sentences, as proposed for English by Heycock and Kroch (1999), while identificational sentences were split up and distributed into equational sentences and predicational sentences.

After describing the copula in MSA and its sentences, we needed to know current HPSG approaches to the overt copula as well as the missing copula. This was important to start the HPSG analysis of the copula in MSA. Therefore, the fourth chapter was intended to provide the reader with these approaches. First, the chapter indicated the previous HPSG research on whether or not the overt copula contributes semantically. In this context van Eynde (2008, 2009, 2012, 2015) assumes that the copula contributes semantically even in predicational sentences. On the other hand, Pollard and Sag (1994) and Müller (2009, in preparation) assume that the copula can also be predicative, which means that it can be semantically vacuous. These approaches were applied to MSA's overt copula in Chapter 5, Section 5.3, as we saw. The second half of the fourth chapter concerned previous HPSG approaches to the missing copula. In this context, there were two main approaches, namely a constructional approach and a lexical approach. Sag et al. (2003) as well as Henri and Abeillè (2007) propose a constructional analysis to the missing copula/ verbless sentences, whereas Borsley (2004) and Müller (2014) argue in favour of a phonologically empty copula analysis. Bender (2001), however, proposes lexical and constructional analyses for AAVE, but she does not favour one of them. The application of HPSG approaches to MSA verbless sentences was discussed in Chapter 6, Section 6.3, as we saw.

The preceding chapters established what the reader needed to be aware of in order to analyse the copula in MSA. Therefore, the following chapters analysed the overt copula as well as verbless sentences, and then attempted to unify the analysis of the copula in MSA.

The fifth chapter, consequently, was intended to analyse the overt copula in MSA within the framework of HPSG. The first half of this chapter attempted to analyse the MSA copula from a syntactic perspective. This included the distinctive syntactic properties displayed by equational and predicational sentences. The second half of this chapter, on the other hand, was set to answer the question of whether or not the MSA copula contributes semantically. It showed that the detailed examination of MSA copular sentences emphasised that there are two copulas in MSA, namely a copula of identity and a copula of predication. These copulas differ in their semantics and syntactic selections. That is, while the predicative copula is semantically vacuous and selects an indefinite NP, an AP, a PP, or an AdvP as its complement, the copula of identity contributes the identity relation and selects two complements: an optional pronominal NP and a definite NP. The latter copula is for equational sentences, whereas the former is for predicational sentences. Now, as the fifth chapter proposed an analysis for the overt copula in MSA, the following chapter discussed the analysis of verbless sentences.

The sixth chapter, as indicated above, concerned the analysis of Arabic verbless sentences. Before proposing any analysis, the chapter reviewed previous syntactic approaches to verbless sentences in Arabic. These approaches are the small clause analysis, the empty copula analysis and the exceptional T analysis. Apart from the exceptional T analysis, it was possible to propose an HPSG equivalent to each of the other analyses. The exceptional T analysis is related to theoretical assumptions of minimalism, a transformational theory that contrasts HPSG in various respects. After reviewing previous approaches to Arabic verbless sentences, the chapter proposed four possible HPSG analyses for MSA verbless sentences, namely two constructional analyses, a small clause analysis and a phonologically empty copula analysis. Each of these proposals was criticised, and hence, we needed a further section to discuss them and favour one of them. The phonologically empty copula analysis

won the competition, and problems this analysis has were resolved. This analysis was favoured due to a number of reasons such as the similarities between copular sentences and verbless sentences, which are difficult to explain without the assumption of a phonologically empty copula in verbless sentences.

The last main chapter, the seventh chapter, was necessary to gather analyses discussed in Chapters 5 and 6. In other words, it was crucial to unify the analysis of the copula in MSA. We assumed in Chapter 6 that there is a null copula in verbless sentences, which means that there is a verbal copula in verbless sentences just like the case in overt copular sentences. Therefore, Chapter 7 postulated a system of type-hierarchy which ensured that there are some shared properties between overt and covert copulas. This system also ensured that there are distinctive properties which distinguish copular sentences from each other. On the other hand, as the system unified the analysis of copular sentences, two issues followed from this unification. First, the present indicative form of the copula *kwn* has three possible situations. That is, it must be phonologically empty in deictic context; it must be phonologically realised after certain words such as *qad* ‘may’; and it optionally has a phonological realisation in generic context. The chapter attempted to account for these three cases within HPSG. The second issue arising from the unification is the analysis of existential sentences and the existential copula. The chapter also accounted for that within HPSG.

8.2. Recommendations for future research

The study of the copula is an important topic. It is also a huge topic so that a researcher cannot cover all the issues. Therefore, although the present study has considered some of the main issues in the study of the copula in MSA, there are issues that it did not discuss in depth. In this section, I will mention some topics that one may be interested in studying in depth.

First, as the present research has been concerned with the copula in MSA, it would be interesting to study the copula in Arabic dialects. This topic, to the best of my knowledge, has not been discussed in depth in Arabic dialects. Of course, some researchers have studied the missing copula in some Arabic dialects (e.g. Aoun et al. (2010)). However, this does not cover all Arabic dialects and differences that may occur between them. This also does not provide a complete discussion of copular sentence types, namely equationals, predicationals, specificationals and identificationals. Once again, this topic has not been discussed in depth in Arabic dialects. For example, Eid (1983, 1991) discusses equational sentences in Egyptian Arabic. However, she seems to concentrate on the syntactic status of the pronominal element in equational sentences. It is also interesting to discuss in depth the analysis of what looks like the copula's verbal complement, as highlighted in Chapter 2.

Another possible topic to study is existential sentences. The present research has described and analysed existential sentences such as the following:

(1)	*kaana*	*hunaaka*	*Taalib-u-n*	*fii*	*l-ħadiiqat-i*
	be.PFV.3SG.M	there	student.SG.M-NOM-NN	in	the-garden.SG.F-GEN

'There was a student in the garden' (Aoun et al., 2010: 70)

As in (1), the predicative complement is a PP (i.e. *fii lħadiiqati* 'in the garden'), which is true for English as the translation conveys. In English, however, the predicative complement may not be a PP. That is, it can be, for example, a gerund VP, as in (2), an infinitival VP, as in (3), or an AP, as in (4).

(2) There were five students protesting the decision. (Pollard and Sag, 1994: 145)

(3) There was every reason to believe him. (Pollard and Sag, 1994: 148)

(4) There is no one absent. (Pollard and Sag, 1994: 148)

It would be interesting to see whether or not the predicative complement in Arabic existential sentences can be something different from PPs. If the answer is yes, then what predicative complement can we have in these sentences? Recall that the copula identifies its semantics and argument structure with that of the predicative complement, and hence, it is important to know exactly what sort of complements these sentences have.

It would also be interesting to see whether the Arabic language has cases of what are called 'presentational *there*-insertion' such as the following:

(5) There emerged from the lake a large green monster.

(6) There hangs on the wall a picture of Chomsky.

Another interesting topic is to investigate whether or not the expletive *hunaaka* ‘there’ or its equivalent in Arabic dialects can appear with verbs other than the copula. For example, see the sentences below from Pollard and Sag (1994: 137):

(7) a. There tends to be disorder after a revolution.

b. There seems to be some misunderstanding about these issues.

c. There kept being problems with the analysis.

As stated, on the basis of examples in (7) it is important to know whether the Arabic expletive can appear with such verbs. This will assist in obtaining a complete analysis of expletive elements in Arabic.

Specificational pseudo-cleft constructions are also one topic that the present study did not discuss in depth. By ‘specificational pseudo-clefts’ I mean sentences such as the following:

(8) a. *kaana* *man* *qabalta-hu* *(huwa)* *ʕumar-a*

be.PFV.3SG.M who.RELT meet.PFV.2SG.M-him he Omar-ACC

‘The one **w**ho you met was Omar’

b. *man* *qabalta-hu* *(huwa)* *ʕumar-u*

who.RELT meet.PFV.2SG.M-him he Omar-NOM

‘The one **w**ho you met is Omar’

The present study briefly mentioned this phenomenon as an instance of specificational sentences. However, the study of this phenomenon seems important as stated by Heycock and Kroch (1999). In their study of English specificational pseudo-clefts, Heycock and Kroch argue within transformational approaches that this phenomenon 'constitute[s] a difficult challenge for linguistic theory, displaying effects of core syntactic conditions in a noncanonical configuration that cannot be normalized with standard syntactic operations' (Heycock and Krock, 1999: 365). Therefore, it would be interesting to explore the nature of these constructions in Arabic within transformational and non-transformational approaches, and see their behaviour in more details.

The preceding topics in this section are some issues that should be addressed by future research.

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