UNIVERSITÉ DU QUÉBEC À MONTRÉAL

THE MORPHOSYNTAX OF PRONOUNS

A THESIS
PRESENTED
IN PARTIAL FULFILLMENT
OF THE MASTER DEGREE IN LINGUISTICS

BY
HATEM DOUIK

APRIL 2018

UNIVERSITÉ DU QUÉBEC À MONTRÉAL

LA MORPHOSYNTAXE DES PRONOMS

MÉMOIRE
PRÉSENTÉ
COMME EXIGENCE PARTIELLE
DE LA MAITRISE EN LINGUISTIQUE

PAR
HATEM DOUIK

AVRIL 2018

ACKNOWLEDGMENT

I would like to thank Allah for giving me the patience, the endurance and the courage to finish this paper. Moreover, I would like also thank the members of my dissertation committee - not only for their time and extreme patience, but also for their intellectual contributions to my development as a linguist. Furthermore, I am indebted to Dr. Anna-Maria Di Sciullo. I gratefully acknowledge her help in introducing me to the language faculty device and the generative grammar theories. In addition, special thanks to all members of the Department of Linguistics and the Faculty of the Humanities of the UQÀM who had helped me, or who had tried to prevent me from finishing my research. Most of all, I would like to thank *Ines, Isra & Ahmed* thank you for your constant support throughout my academic career. You have enhanced my ability to get through it.

AVANT-PROPOS

Le présent travail étudie la structure interne des pronoms autrement que reflétée dans la multiplicité de leurs formes et de leurs utilisations. Il propose une perception différente de leur structure interne possible, basée sur l'arrangement des consonnes et des voyelles dans les modèles squelettiques CVCVCV. Certes, nous avons abondamment écrit sur les pronoms depuis les âges médiévaux. Pourtant, bien avant le X^{ème} siècle, des études ont étés posés afin de valider la structure interne des mots grammaticaux.et d'offrir des solides et riches réflexions sur les pronoms. Des grammarians (Sībawayhi, 1982), (IbnYacīš, 2001) (Quirk, 2010), (Ruhlen, 1991), (Adamson et al., 1990), (Ryding, 2005) et (Lewis et al., 2013)), des étymologistes (Algeo, 1978), (Testen, 1998), (Diem, 2007), (Grande, 2013), et des linguistes tels que, (Bohas et Guillaume, 1984), (Beekes, 2011), (Bohas, 1997), (Bohas, 2000), (Bohas, 2002), (Di Sciullo, A.-M. et Williams, 1987b), (Bauer, 2003), (Di Sciullo, AM, 2005), (Bhat, 2006), (Starke , 2010), (Baltin, 2012)) ont traité la structure interne des pronoms. Cependant, la plupart de ces travaux souffrent également de vues restrictives et subjectives, mais le consensus est que les pronoms ont une structure morphologique complexe qui diffère radicalement des mots lexicaux. Dans ce mémoire, nous nous plaçons au niveau de la réconciliation, et nous adoptons la vision des pronoms comme étant une concaténation de suite *c*V selon un modèle squelettique *c*V*c*V*c*V. Chaque consonne dans le modèle (*c*) porte une caractéristique catégorique abstraite, alors que les voyelles (V) ont deux fonctions dépendamment de leur positionnement dans le pronom. Au début et au milieu, V établit des liens phonologiques, ou liaison. Et à la

position la plus à droite, V porte les caractéristiques grammaticales de [genre], [nombre] et [cas]. En tant que tel, et dans un cadre théorique de grammaire générative (Chomsky, 1995), (Radford, 1988), (Spencer, 2005), nous discutons la structure morphosyntaxique des groupes *c*V qui forment des pronoms. Nous suggérons que le diagramme en arbre suivant représente la structure interne des pronoms en arabe.

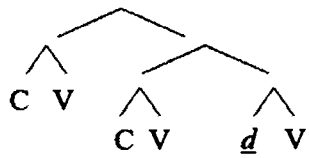

Figure 3-1 Structure interne des pronoms arabes

La structure interne des pronoms interrogatifs, démonstratifs et relatifs est un chaînage binaire ascendant de *c*V. Nous croyons que la concaténation de la consonne morphique *d*V constitue la tête des pronoms puisque la consonne d porte une caractéristique sémantique abstraite de référentialité [ref], et la mélodie vocalique V à sa droite porte les traits grammaticaux, [genre], [nombre] , et [cas].

Mots clés: *Pronoms morphosyntaxiques, apparentés, démonstratifs (proximaux et distaux), interrogatifs, copules pronominales, motifs templatiques, mélodies vocales, consonnes morphiques, racines et concaténation morphémique.*

TABLE OF CONTENT

LIST OF FIGURES

Figure Page

LIST OF TABLES

LIST OF ABBREVIATION

M	Masculine	RelP	Relative Pronoun
S	Singular	ResP	Resumptive Pronoun
F	Feminine	AgrD	Agree Determiner
Duel	Dual	NumP	Number Phrase
Pl	Plural	PersonP	Person Phrase
3p	3rd Personal Pronoun	C	Complementizer
2p	2nd Personal Pronoun	PP	Prepositional Phrase
Ref	Referential/Reflexive	P	Preposition
Acc	Accusative	TP	Tense Phrase
Asser	Assertion	Pro	Pronoun
Gen	Genitive	A	Adjective
Det	Determiner	VP	Verb Phrase
Def	Definite	V	Verb

DP	Determiner Phrase	DemP	Demonstrative pronoun
D	Determiner	InterP	Interrogative pronoun
PCop	Pronominal Copula		
N	Nom		
NP	Noun Phrase		
AP	Adjective Phrase		

ABSTRACT

This present work studies the internal structure of pronouns other than reflected in its multiplicity of their forms and their uses. It proposes a different perception of their possible internal structure based on the arrangement of consonants and vowels in skeletal templates CVCVCV. Certainly, we have abundantly written about pronouns since Medieval Ages. Yet well before the 10t^{h} century, studies abound about the internal structure of grammatical words. From the early inaugural essays and from the oldest articles appears already a detached solid and rich reflections on pronouns. Grammarians (Sībawayhi, 1982), (IbnYacīš, 2001) (Quirk, 2010), (Ruhlen, 1991), (Adamson *et al.*, 1990), (Ryding, 2005), and (Lewis *et al.*, 2013)), etymologists (Algeo, 1978), (Testen, 1998), (Diem, 2007), (Grande, 2013), and linguists such as, (Bohas et Guillaume, 1984), (Beekes, 2011), (Bohas, 1997), (Bohas, 2000), (Bohas, 2002), (Di Sciullo, A.-M. et Williams, 1987b),(Bauer, 2003), (Di Sciullo, A. M., 2005), (Bhat, 2006), (Starke, 2010), (Baltin, 2012)) have dealt with the internal structure of pronouns. However, most of these works also suffer from restrictive and subjective views, but the consensus is that pronouns have a complex morphological structure that differs radically from lexical words. In this paper, we place ourselves at the level of reconciliation, and we adopt the vision of pronouns as being a concatenation of *c*V according to a skeletal template *c*V*c*V*c*V. Each consonant in the template (C) bears an abstract categorical feature, while vowels (V) carry two functions depending on their positioning in the skeletal template. At the beginning and in middle positions, V

establishes phonological links, or *liaison*[1]. And at the rightmost position, V carries grammatical features of [gender], [number], and [case]. As such, and in a theoretical framework of generative grammar (Chomsky, 1995), (Radford, 1988), (Spencer, 2005) we discuss the morphosyntactic structure of CV clusters that form pronouns. We suggest that the following tree diagram represents the internal structure of pronouns in Arabic.

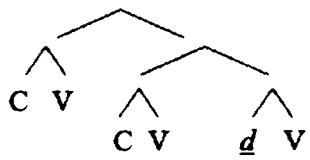

Figure 0-1 Arabic pronouns' internal structure

The internal structure of interrogative, demonstrative and relative pronouns is a bottom-up binary chaining of CV's. We believe that the concatenation of the morphemic consonant *d*V constitutes the head of pronouns since the consonant *d* bears an abstract semantic feature of referentiality [ref], and the vocalic melody V to its right carries the grammatical features, [gender], [number], and [case].

Key Words: *Morphosyntax pronouns, relatives, demonstratives (proximal and distal), interrogatives, pronominal copulas, templatic patterns, vocalic melodies, morphemic consonants, roots, and morphemic concatenation.*

[1] In phonology, liaison means the linking of sounds or words to each other.

CHAPTER I

INTRODUCTION

1.1 Language of study

Arabic is a fusional language, in which morphemes are woven together according to skeletal templates of consonants and vowels CVCVCV. As such, Arabic offers an abundance of unexplained phenomena and others, perhaps, misunderstood, particularly when it comes to the internal structure of pronouns, where morphemes boundaries are not clearly distinguished.

1.2 Problematic

The internal structure of pronouns in Arabic has always been problematic since Medieval Arabian grammarians, up to modern linguists (Chomsky, 2014), (Wiltschko, 1998), (Bhat, 2006), (Di Sciullo, A.-M. et Williams, 1987a), (Di Sciullo, A. M., 2005). Each according to its school of thought, have identified different smaller or bigger units within pronouns. Nevertheless, the general consensus is that pronouns have a complex internal structure. We continue to question the morphosyntaxic structure of pronouns by considering the properties of pronominal copulas, interrogative, demonstrative and

relative pronouns. We hypothesize that pronouns are formed according to a CV-CV-CV skeleton template. Each consonant C bears an abstract semantic feature. The rightmost consonant represents the derivational head, and the rightmost vowel (or the vocalic melody) consonants carries the grammatical features. We claim that pronouns are a bottom-up concatenation of *c*V, and that chaining starts from the consonant morpheme $\underline{d}$V[2], which adjoins to free or bound morphemic consonants.

1.3 Purpose of the study

The aim of this study is to validate the proposal that pronouns are complex morphosyntaxic structures. The second purpose of this study is to prove that pronouns are formed from morphemic consonants $\underline{d}$V's which carry categorical features (cf. table 1-1). Morphemes are bound together to form other types of pronouns.

1.4 Objectives and hypothesis

The main objective of this work is to prove that pronouns are formed according to a CV-CV-CV structure. Our presumptions integrates roots and derivation (*jadʕ*, *ishtiqaq*) (IbnYacīš, 2001; Sībawayhi, 1982), the multi-linear approach (McCarthy, 1979, 1981, 1997; McCarthy et Prince, 1990), the d-pronoun's model (Wiltschko, 1998). Combining these view gives the formal solution that pronouns are CV's concatenation that goes from simple (CV) to more complex chains (CV-CV, CV-CV-CV, and CV-CV-CV-CV). We tested all the possible combinations of consonants and vowels that make minimal words; constituted of one morphemic consonant CV.

---

[2]In this work, the term CV cluster is used as a synonym for the morpheme concept, syn. consonant morpheme

Table 1- 1Optimality table of Arabic consonants and the minimum constituents cV

C	V	Minimal words	C	V	Minimal words
ʿ	*a*	Interrogative *ʿa* (Dummy do)	*k*	*a*	Resumptive 2nd pronoun *–ka* (you m.s)
	i	*		*i*	Resumptive 2nd pronoun *–ki* (you f.s)
	o	*		*u*	*
	ī	*		*ī*	*
	ā	*		*ā*	*
	ū	*		*ū*	*
	an	Preposition *ʿan*		*an*	*
	in	Complementizer *ʿin* (In condition of)		*in*	*
	un	*		*un*	Verb *kun* (become)
	y	Explicative *ʿay*		*y*	Preposition *kay* (for the purpose of)
	w	Conjunction *ʿaw*		*w*	*
	a	*		*a*	Assertion *la* (indeed)
	i	*		*i*	Preposition *li* (for)
	o	*		*o*	*

ḏ	*ī*	Pronominal copula *dī* (qualification)	***l***	*ā*	Negation *lā* (do not)
	ā	Pronominal copula *dā* (qualification)		*ī*	Possession *lī* (my)
	ū	Pronominal copula *dū* (qualification)		*ū*	*
	an	*		*an*	Negation: *lan* (never)
	in	*		*in*	*
	un	*		*un*	*
	y	*		*y*	*
	w	*		*w*	Conjunction: *law* (if)
h	*a*	Resumptive 3rd pronoun *–ha* (her)	***m***	*a*	*
	i	*		*i*	*
	u	Resumptive 3rd pronoun *–hu* (his)		*o*	*
	ī	*		*ī*	*
	ā	*		*ā*	*
	ū	*		*ū*	*
	an	*		*an*	*man* Negation
	in	*		*in*	*min* Preposition

	un	*		*un*	*
	y *w*	Personal pronoun *huya* (he) Personal pronoun *hiya* (she)		*y* *w*	* *
b ***d*** ***dj*** ***ḍ***	*a* *i* *u*	* * *		*a* *i* *o*	* Preposition *bi* (with *
ẓ ***ḥ*** ***ḫ*** ***n*** ***q*** ***s*** ***ṣ***	*ā* *ī* *ū*	* * *	***b***	*ā* *ī* *ū*	* * *
				an *in* *un*	* * *
š ***t*** ***ṭ***	*an* *in* *un*	* * *		*y* *w*	* *
ġ	*y*	*			

	w	*			

Table 1-1 highlights the consonants that could constitute with one vowel minimal words. We mean by minimal word any meaningful units, such as prepositions, complementizer, and adverbs. We pinpoint the three type of vowels in Arabic: three short vowels /a/, /i/ and /o/, three long vowels /ī/, /ā/, /ū/, three nasal diphthongs /an/, /in/, /un/, and two semi vowels /y/ and /w/. The purpose of using this table is to determine the Arabic consonant morphemes. That is to say, the possible acceptable combinations of C's and V's that forms minimal words (CV). As such, the consonants that when combining with one vowel forms a meaningful unit CV are considered as consonant morphemes[3]. We base the hypothesis that Arabic consonants *d, m, h, ', k,* and *l* bear semantic features and grammatical features.

Table 1- 2 Arabic Consonants and semantic features

Consonants	Features
d	[Ref]
m	[Wh]
l	[Asse]
'	[def]
h	[Ref 3rd p]
k	[Ref 2nd p]

[3] Consonant morphemes or morphemic consonants are meaningful minimal units made of one C and one V.

We propose that the cluster *d̲*V is the root formation of pronominal copulas ***d̲a***, proximal (*ha-**d̲a***) and distal (***d̲a**-ka*) demonstrative pronouns, interrogative pronouns *ma-**d̲a***, and relative pronouns *'alla-**d̲ī***. In addition, as shown in the above table, each consonant bears a distinctive feature. We will delve deeper in these features in the following paragraph. We will try to propose all the possible combination of the pronouns, that is to say the interrogative, the relative, and the demonstrative pronouns

Table 1- 3 Semantic features of all possible consonants and vowels' distribution in Arabic pronouns

Features	**Skeletal template**	
Definite	**Consonant**	ʿ
Liaison	Vowel	a
Assertive **Interrogative** **3rd person**	**Consonant**	***l*** ***m*** ***h***
Liaison	Vowel	a
Reflexive	**Consonant**	***d̲***
Grammatical features	Vowel	a i u
	Consonant	***k***
	Vowel	a i u

This table represents all the consonants and the vocalic melodies that make up the relative pronoun '*allaḏī*, the proximal demonstrative *hada*, the interrogative *maḏa*, and the distal demonstrative *ḏaka*.

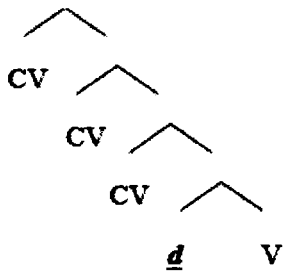

Figure 1-1 CV concatenation in pronouns

Put in a tree diagram as in the above figure, and abiding to the derivation by phase principles (Chomsky, 2001). The first minimal consonant cluster (*ḏ*V) attaches to other *c*V's. Each consonant (C) bears a semantic abstract feature. The rightmost vocalic melody bears the grammatical features. The remaining V's are phonological liaisons.

1.5 Thesis organization

This paper is divided in two main sections in addition to the introduction. Chapter (2) gives a brief overview of classical literature (2.1), and the modern approaches of the internal structure of pronouns (2.2). It tackles works of some medieval Arabian grammarians (IbnYacīš, 2001; Sībawayhi, 1982), who were the first to consider the internal structures of pronouns. Then, we discuss the multi-linear approach and the

skeletal template CVCVC, as proposed by (McCarthy et Prince, 1990). This chapter closes with an introduction to Wiltschko d-pronouns (Wiltschko, 1998) that treats the morphosyntaxic structure of pronouns. In chapter (3) we discuss the pronominal copula *ḏa*, the interrogative pronouns *maḏa*, the proximal demonstrative *haḏa*, the distal demonstrative *ḏa-ka*, and the relative pronoun *'alladī*. We conclude that pronouns in Arabic adhere to a concatenative structure of free and bound consonant morphemes CV's, in which the morpheme *ḏ*V constitutes a derivational basis as illustrated in the following figure.

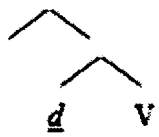

Figure 1-2 Pronouns' structure

As such, we suggest that the pronouns in Arabic are formed according to a CV-CV-CV skeleton with a vocalic adjustment of the rightmost vowel V to carry the grammatical features [genre], [number] and [case].

CHAPTER II

THE INTERNAL STRUCTURE OF PRONOUNS: LITERATURE REVIEW

In this chapter, and in a chronological order, we will tackle the classical and the modern approaches of pronouns. Initially, we will introduce the conceptions of the internal structure of pronouns that have been proposed by medieval Arab grammarians (Auroux, 1994; IbnYacīš, 2001; Sībawayhi, 1982)These advances introduce the notion of consonant root (CCC ف ع ل) (***ktb***, write) and the semantic skeletal templates, as in **CaaCiC** ف ا ع ل (Agent), as ***k*aa*t*i*b*** (writer), or **ma-C-CuuC** م ف ع و ل (Patient) ma-***k***-***t*uu*b*** (something written). At a second level, we will introduce McCarthy's (McCarthy, 1979), (McCarthy et Prince, 1990), and (McCarthy, 1997) multi-linear approach to tackle the phonological, syntactical and semantic aspects of pronouns. We discuss the vocalic melody which constitutes the internal structure of words. (McCarthy, 1979) will introduce the root CCC, the vocalic melody, the grammatical features, and the skeletal template CVCVC. Besides, Wiltschko's d-pronouns (Wiltschko, 1998) proposes that pronouns are decomposable into [DP[PersP[NumP [NP]]]] (Wiltschko, 1998:155). Her proposal will be adapted to generate the tree diagrams.

2.1 Classical approaches of pronouns according to Arab grammarians

The medieval and contemporary Arabic grammarians (Auroux, 1994; IbnYacīš, 2001; Sībawayhi, 1982) distinguish two types of pronouns in Arabic: Personal pronouns (*damir*) and other types of pronouns (*'adaat*[4]) which are generally defined as grammatical tools used to establish connections between units in a given discourse. By contrasting different dialectal variations of the relative pronoun *'allaḏī* to the standard Arabic[5], Zamakhsharī (cited in in (IbnYacīš, 2001)), for instance, had noted that some pronouns' constituents are constant, and that's the case with the consonant *ḏ*. However, the vocalic melody to its right is variable. Moreover, (IbnYacīš, 2001) had documented the proposal of some other grammarians of his time who discussed the possible constituents of pronouns, mainly the grammar schools of Kufa and Basra(Auroux, 1994). In the following paragraphs, we discuss the root C.C.C and the word formation cVcVcV.

2.2 The root and the word derivation in Arabic grammar

Arab grammarians illustrate word formation according to predefined skeletal templates based on the root *fa-ʕa-la* (فَعَلَ) as in the following table.

Table 2- 1 The root and the word derivation

	C.C.C	cV-cV-cVV	cV- cV-cV	Meaning

[4] "... the literal meaning of the term *`adat* refers to the functional of the third part of the speech which serves as a "tool" (*`adat*), an element with a subsidiary value added to the core-sentence composed of two base units which are the other parts of speech, the noun and verb"(Versteegh (1990) : 269).

[5] Standard Arabic, poetic Arabic and other na ming are used to denote Quranic Arabic.

1.	a. *f-ʕ-l*	***fu-ʕa-lī***	*fu-ʕa-li*	Root
	b. *ɣ-l-m*	*ɣu-la-mī*	*ɣu-la-mi*	Standard
	c. *ʾ-l-d*	*ʾa(l)-la-dī*	*ʾa(l)-la-di*	Arabic
2.	a. *f-ʕ-l*	***fa-ʕa-l***	*fa-ʕa-ll*	Root
	b. *q-s-b*	*qa-sa-b*	*qa-sa-bb*	« canes »
	c. *ʾ-l-d*	*ʾa(l)-la-d*	*ʾal-la-dd*	Dialect version
3.	a. *f-ʕ-l*	*fa-ʕa-l*	*fa-ʕa-li-yu*	Root
	b. *h-m-r*	*ah-ma-r*	*ah-ma-ri-yu*	«red»
	c. *ʾ-l-d*	*ʾa(l)-la-d*	*ʾal-la-di-yu*	Dialect version

The examples (1-3) in the above table illustrate the consonant root *f-ʕ-l* of the first column as the derivational consonant root. The predefined skeletal templates, in bold, at the head of the second column (*fu-ʕa-lī*) designates the sense of possession. The forms *fu-ʕa-li* and *fa-ʕa-ll* exemplify the dialect variations. Zamakhsharī, cited in (IbnYacīš, 2001), had compared to the internal structure of standard Arabic forms of pronouns in order to determine its root.

4. Standard variation: ***ʾal-la-ḏī***
Dialectes variations: *ʾal-la-ḏḏ* *ʾal-la-ḏi-yu*

Zamakhshari (IbnYacīš, 2001) considers the fall of / i / in *ʾallaḏi* as a vocalic attenuation, as in the example of the word *ɣulam-ī* (my servant), with a long / ī /, and which can be reduced to *ɣulam-i,* with a short / i/. He posits that this same phenomenon applies to lexical words and pronouns. By comparing the two structures (*ɣulam-i* and *ʾalladī*), he deduces that the declension of *ʾallaḏi* to *ʾallaḏī* is a vocalic attenuation of

the morpheme that begins with the consonant *ḏ*. Along similar lines, he thinks that the redoubling of *ḏ* in *'alladd* by the existence of the consonant redoubling of the last consonant is due to the existence of redoubling of last positioned consonants. He gives the example of *qasa-bb* (canes) which is a dialectal variation from *qasab* (the standard word). He postulates that *'alladd* and *qasa-bb* are constructed according to the same structure *fuʕall* which denotes a sense of exaggeration implied by the redoubling of the last consonant. At a later stage, Zamakhsharī cited in (IbnYacīš, 2001) coincides the variation of the relative pronoun *'al-la-di-yu* with the structure of the word *ah-ma-ri-yu* which is the diminishing form of *ah-ma-r* (red). He explains that the diminutive morpheme, in bold in the third column of example (4), *-yu* has been added to the relative pronoun according to the structure of the word *fa-ʕa-li-yu* deriving the word *ah-ma-ri-yu*. Zamakhshari's approach (IbnYacīš, 2001) when analyzing the relative pronoun is mainly intuitive and it is based on a comparative study between the predefined structures formed according to the basic lexical root *fa-ʕa-la*. What is remarkable in these examples is the presence of a perfect vocalic constant of the first two clusters *fa-ʕa that* is *'al-* and *la*. The variance affects the vocal cluster that begins with the consonant *ḏ*. In what follows, we quote the internal structure of the relative pronoun of the school of Basra and the school of Kufa (Auroux, 1994). In his discussion about the consonant root of *'alladī*'s, Zamakhsharī (IbnYacīš, 2001) proceeds with the perceptions of two major grammar schools of his time: Basra and Kufa Schools (Auroux, 1994).

2.2.1 The Grammar School of Basar (Auroux 1994)

In the study of the possible internal structure of the relative pronoun *'alladī*, this school focuses on the initial morpheme only. It assumes that the root of the relative pronoun *'alladī* is *laḏī*, implying that the morpheme *'al-* is a definite article and is peripheral. They argue that this same *morpheme* is highly frequent in Arabic and it designates

definitude. The definite article (*'al-*) that attaches to nouns and adjectives (*'al-kitāb* "the book", *'al-madrasa* "the school") is very common[6]. By creating a parallel with lexical words, they believe that the morphological root of *'allaḏī* is merely the residual of the word after the obliteration of the prefix [$_{\text{prefix}}$ [*'al-* [*laḏī*]].

2.2.2 The Grammar School of Kufa (Auroux 1994)

On the other hand, the Kufa School (Auroux, 1994) proposes a more complex approach to the internal structure of the relative pronoun *'allaḏī*. These grammarians observe the presence of the morpheme *ḏV* in the demonstrative pronoun *haḏā*. They assert that the morphemic consonant *ḏV* can be isolated from *laḏī*, as *ḏa* can be separated from demonstrative pronoun *ha-ḏa* by the pronoun insertion test as in (5).

5. Pronoun insertion test

haḏa	*'al-rajul*	**Pronoun**	[*ha-*	***huwa***	*-ḏa*]	*'al-rajul*
dem	def-man	**insertion**	dem	pro.3p.m.s	Ref	def-man
« This man »			« The-(he)-is man »			

More interestingly, they consider the consonant *ḏ* as the root of the pronoun *'allaḏī*. The Kufi grammarians (Auroux, 1994) argue that the vowel [-ī] does not appear in all the paradigm of *'allaḏī*, for example in *'allaḏāni* (the relative pronoun for the masculine dual), *-ḏ* is not followed immediately by [-ī], but by another vocalic alternation [*-āni*]. Moreover, in the dialectal variation *'allaḏḏ* (see (1)), the vowel [-ī] is absent. They conclude that the vocalic melody following the consonant *ḏ* is

[6] In lexical words, the absence of *'al-* denotes the indefinite form (*kitāb* "a book", *madrasa* "a school").

peripheral. We translate the perception of Kufa School of the internal structure of *'allaḏī* in (6).

6. [$_{\text{prefix}}$ *'al* [*la* [*ḏ* [$_{\text{suffix}}$ *-ī*]]]]
[$_{\text{prefix}}$ *'al* [*la* [*ḏ* [$_{\text{suffix}}$ *-āni*]]]]

2.2.3 Debates

Zamakhsharī argues that the prefix *'al-* in *'allaḏī* is not a definite article. He explains that the unit *la-ḏī* has no meaning in isolation.

7. Definite form:[$_{\text{prefix}}$ *'al-*[*kitāb*]] → Indefinite form: [*kitāb*]
Definite form: [$_{\text{prefix}}$ *'al-*[*laḏī*]] → Indefinite form: *[*laḏī*]

Zamakhsharī (IbnYacīš, 2001) asserts that the morpheme - *'al* does not behave as a definite article that attaches to nouns or adjectives like in the example below.

8. Indefinite form NP: $_{\text{N}}$ [*kitāb*] (a book)
Definite form NP: DP [prefix 'al- [N kitāb]] (the book)

Indefinite form AP: DP [N kitāb [AP kabir] (a big book)
Definite form AP: DP [N [prefix 'al-[kitāb] [prefix 'al-[kabir]]] (the big book)

Definite form AP: NP [N [kitāb] [prefix 'al-[kabir]]] (a big book)
*Indefinite form AP: NP [N [prefix'al-[kitāb] [-[kabir]]] (the big book)

These examples illustrate that in lexical words (*kitāb*), the definite article *'al-* is not part of the root of the word and can be isolated form the root. The only difference between *kitāb kabir* and *'al-kitāb 'al-kabir* is that the second

utterance is defined and it refers to a specific book, while the first evokes an underdetermined meaning. However, Zamakhsharī maintains that the CVC cluster *'al-* is a definite article that introduces the notion of definiteness, and it establishes a relation between a head and its predicate.

9. DP [NP ['al-kitāb] Adj ['al -kabir]] (The big book)

The morpheme *'al-* of the adjective *'al-kabir* is introduced to adjoin adjectives to nous. In what follows, we present the modern approaches to the internal construction of Arabic words which represent a continuation of the conceptions proposed by the Medieval Arabian grammarians.

2.3 The modern approaches to pronouns

The approach of the internal structure of pronouns as being a consonant root and a predefined skeletal templates is seen to be the oldest and the most influential advance of morphology. This view has been taken up by many contemporary linguists (Bohas et Guillaume, 1984), (Bohas, 1997), (Bohas, 2000). They see the derivation of words in natural languages as being composed of consonantic root with CV's concatenation. For instance, and when dealing with lexical words, (McCarthy, 1979), (McCarthy, 1981), (McCarthy, 1982), identifies the consonant root level CCC that stands for the abstract meaning of words, and the vocalic melodies V-V, which carries the grammatical features. According to this approach, combining the two levels according to a skeletal template CVCVC designates the final morphemic arrangement.

2.3.1 Multi-linear approaches to pronouns

The approach of the internal structure of pronouns as being a consonant root and a predefined skeletal templates is seen to be the oldest and the most influential advance of morphology. This view has been taken up by many contemporary linguists (Bohas et Guillaume, 1984), (Bohas, 1997), (Bohas, 2000). They see the derivation of words in natural languages as being composed of consonantic root with CV's concatenation. For instance, and when dealing with lexical words, (McCarthy, 1979), (McCarthy, 1981), (McCarthy, 1982), identifies the consonant root level CCC that stands for the abstract meaning of words, and the vocalic melodies V-V, which carries the grammatical features. According to this approach, combining the two levels according to a skeletal template CVCVC designates the final morphemic arrangement.

2.3.2 Multi-linear approach, (McCarthy, 1979), (McCarthy, 1981), and (McCarthy et Prince, 1990))

From this point of view, the derivation is done according to a skeletal template CVCVC. The consonants CCC represent the root that carries the abstract meaning of words. Vowels carry grammatical features, such as [perfective], [active], or [causal] features. For example, the form [*batara*] is the result of combining the root (btr) with the skeletal template CaCaCa that transmits a perfective, active meaning. McCarthy (1981) decomposed Arabic words according to a model with vocalic, skeletal and root tiers.

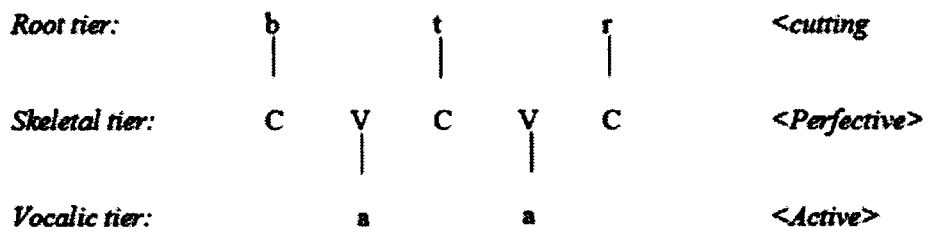

Figure 2-1 Multi-linear approach (McCarthy, 1981)

This approach analyzes the linguistic information that the skeletal CVCVC template is divided into three tiers. (i) The Root tier *btr* which bears the abstract meaning of *cutting*. (ii)The vocalic tier *a-a* caries the grammatical features[7], and the sum is arranged into (iii) a skeletal tier CVCVC that is the final form of the word.

2.3.3 Discussion of the multi-linear approach

It should be noted that (McCarthy, 1981) to the consonant root is very similar to the traditional view of the root and skeletal template. Indeed, both approaches suggest that the meaning of the word is reflected by a consonant root CCC. The rightmost vocalic melody transmits the features [number], [gender], and [case]. The CVCVC skeletal template contributes with a rich variety of semantic, syntactic and phonological information that recalls the predefined structures of medieval grammarians that we discussed earlier chapter. (McCarthy, 1979) has been widely criticized by linguists, such as (Bohas, 1997), (Bohas, 2000)) who asserts his level of analysis proposed does not take into account the phonetic and semantic regularities that are prominent in the language. (Bohas et Guillaume, 1984) gives the example of the words in (10) following McCarthy's example *btr*.

---

[7] Vowels may also refer to the vocal conciliation between morphemes.

10.	***ba***	***ta***	*ra*	(cut)
	ba	***t***	*ta*	(section)
	ba	***ta***	*la*	(divide)
	ba	***ta***	*ka*	(dissect)

Departing from McCarthy' examples *batara.* (Bohas, 1997) suggests a list of words with the same initial and median C's as illustrated in the above example. The words, *ba-ta-ra, ba-t-ta, ba-ta-la,* and *ba-ta-ka* are synonyms with different roots. They share a consistency of CV-CV that is *ba* and *ta* consonant morphemes. In opposition, (Bohas, 1997) suggests that the underlying organizational unit of the Arabic lexicon is not a CVCVC as (McCarthy, 1981) had suggested, but a consonant system based on only two consonants that he calls the etymon (CC). In the examples above, the etymon (b, t) transmits the sense of *cutting.*

Conversely, both (McCarthy, 1979, 1981, 1982; McCarthy et Prince, 1990) and (Bohas, 1997) have dealt only with the internal structure of lexical words only. They did not consider with the internal structure of functional words. There seems to be no compelling reason to argue that pronouns are apparently formed according to the same skeletal template of lexical words CVCVC, with the exception of the consonants that make up relative pronouns do not form a root that resembles *btr*. In the sense that the consonants *b*, *t* and *r* cannot be interpreted in isolation from the word. The consonant *t* has no sense when isolated from the rest of the word. In opposition, the consonants *h*, or *d̲* of the demonstrative pronoun *ha-d̲a* can be interpreted separately, and respectively as a demonstrative and a 3rd person deictic. On these ground, we can argue that the consonants *h* and *d̲* possess some type of meaning. The latter is actually true, because the cluster *d̲*V is the pronominal copula (*d̲u*) which adjoins two nouns as in N [*rjul* (man)] PCop[***d̲u***] N [*mal* (money)] The left most noun is the head and the other noun is its complement. McCarthy's multi-linear model (McCarthy, 1981) does not apply to functional words, or at least to pronouns. However, his model (McCarthy, 1979) sums up an abstract semantic level in the form of a consonant root (CCC) which adjusts to a skeletal template C_C_C_ carrying a functional sense in a sentence and a vocalic level

of vowels (V_V) which in turn transmits syntactic information. It should be noted that the (McCarthy, 1981) does not treat the words consisting of single consonants like pronominal copulas. Nevertheless, his skeletal template remains an essential tool for the analysis of the internal structure of the words in Arabic.

2.3.4 D-Pronouns (Wiltschko, 1998)

Modern approaches represent a continuation from the classical perception of pronouns and consider the complex internal structure of these types of words. Modern linguistic approaches, such as (Chomsky, 1995). (Chomsky, 2001), (Chomsky, 2004) and (Abney, 1987) categorize pronouns in the class of functional words[8]. Based on the analysis of its morphosyntactic structure, as proposed by (Wiltschko, 1998), we distinguish two classes of pronouns: personal pronouns and d-pronouns. Based on the syntactic distribution and the morphological structure of the pronouns, (Wiltschko, 1998) distinguishes a subset in the pronoun class that she calls *d-pronouns*. According to this approach, personal pronouns appear without anaphoric relation with any unit in a given sentence. In contrast, d-pronouns create anaphoric relations with nouns. She explains this fact by analyzing the internal structure of pronouns and she noticed that d-pronouns are DPs that contain an empty NP (Wiltschko, 1998: 148). On the other hand, she claims that personal pronouns contain an empty NP in their internal syntactic structure and do not make reference to the possible reference spectrum, or "*range*". She concludes that d-pronouns can be used as relative pronouns (Wiltschko, 1998: 180).

[8] The delineation of the functional category concept and lexical category (P. Abney, 1987) in the 1980s, raised doubts about the nature of this class in grammar. Abeny (1987) notes that the elements that make up this category are halfway between functional elements and thematic elements (lexical) (Abney, 1987: 63). In other words, elements that bear mainly morphosyntactic and phonological features, but they carry little semantic meaning.

Wiltschko proposes that d-pronouns can be decomposed into a morpheme D^0 (the definite article), an agreement morpheme ($AgrD^0$), and an NP as in (11):

11. $_{DP}$ d-[AgrD...[$_{NP}$ N/Ø]]]] (Wiltschko, 1998 :149).

Moreover, Wiltschko suggests that AgrD can be divided into NumP and PersonP as in (12).

12. [$_{DP}$[$_{PersP}$[$_{NumP}$ [$_{NP}$]]]] (Wiltschko, 1998:155).

Since Wiltschko(Wiltschko, 1998) does not propose a syntactic tree of d-pronouns, we schematize its purpose in the tree structure in the following tree diagram to visualize the relation between the different components of d-pronouns.

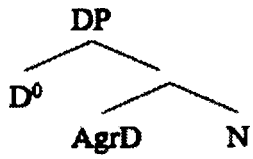

Figure 2-2 D-pronouns' internal structure

Indeed, (Wiltschko, 1998) thinks that there is a complementary relation between a head D^0 and a functional projection, carrying an element that introduces am agreement (AgrD). As for the external syntax of the relative pronoun, she argues that d-pronouns require an antecedent DP containing an NP with which it agrees. She compares d-pronouns to R-expressions[9] which are subject to Condition C of the binding theory

[9] According to Chomsky's theory of government and binding (1995)Noam Chomsky, «Categories and transformations», *The minimalist program* 219(1995)., an R-expression is an NP category analyzed as neither totally anaphoric nor totally pronominal.

(Chomsky, 1995). In other words, d-pronouns are free expressions in all domains, and they cannot have an antecedent that C-commands it (Wiltschko, 1998: 165). It is in this spirit that we analyze the internal structure of pronouns in Arabic.

2.4 Synthesis about pronouns

Medieval Arabian grammarians have shown that pronouns are complex entities. First, they identified two main components of the relative pronoun that are *'al* and *ḏī*. Much attention was given to the final cluster *-ḏī,* mainly the consonant *ḏ* and the vocalic melody to its right. Secondly, the study of the internal construction of words in Arabic made it possible to identify the roles played by consonants and vowels in a word. Thirdly, (Bohas, 1997) shows that two CV's (the etymons) suffice to form a skeletal template. Fourthly, (Wiltschko, 1998) approach demonstrates that pronouns possess a tripartite internal structure. In sum, and based on the previously mentioned works, we presume that consonant morpheme consonant ḏV is likely to be the basis for the formation of the pronoun. The examples below illustrate the different usages of the morphemic consonant *ḏ*V.

13. a. *('al-)wald* *ḏū* *qarnayn*
(Def-) boy Cop.3p.m.s bicornate
« The /a boy with… »

b. *Ha-**ḏāni*** *al-waldāni*
Dem-dual.m Def-boys
« These two boys…»

c. *ma-**ḏā*** *qal-a*
Inter say-3p.m.s
« What did he say? »

d. *'al-'awlad* *'al-la-ḏ̲ī̲na*...
Def-boys m.pl.def that
«The boys that ...»

These examples, illustrates that the consonant morpheme *ḏ̲*V is found in the pronominal copula (13.a), the demonstrative (13.b), interrogative (13.c), and relative pronouns (13.d). A closer look at these pronouns reveals that pronouns have a CV-CV internal structure: a constant consonant *ḏ̲*, and a vocalic variable that carries the grammatical features of [gender] and [number]. Following (Wiltschko, 1998), we put forward the claim that *ḏ̲*V is the AgrD element and that it is divisible in the consonant *ḏ̲* and the vocalic melody to its left baring the syntactic features of [gender] and [number]. The fact that each consonants that made up pronouns has abstract semantic features lend support to the claim that pronouns formation is done by CV concatenation. Chapter 3 deals with pronouns (demonstrative, interrogative, relative and the pronominal copula) according to a tripartite internal structure as proposed by (Wiltschko, 1998), schematized as $_{DP}$ [$_{D}$ [Dem/Inter/Ref] $_{N}$ [$_{AgrD}$ [*ḏ̲*V]]].

CHAPTER III

THE INTERNAL STRUCTURE OF PRONOUNS IN ARABIC

Taking a middle-ground position, we propose a reconciliation of the different approaches that were proposed in the preceding chapter. We hypothesize that pronouns, mainly pronominal copulas (*d*V), demonstrative (*ha*d*a*, *d*a*ka*), interrogative (*ma*d*a*, *limadā*) and relative pronouns (*'alla*d*ī*) are constructed according to a CV-CV-*d*V skeletal template. Based on the previously mentioned works in chapter 2, we presume that pronouns' internal structure consists of CV chaining, and that the morphemic consonant *d*V is the head of the structure. It seems that the consonants C carry abstract semantic features, and the rightmost vocalic melody V carries the grammatical features of [gender], [number] and [case].

3.1 Method of linguistic analysis: Arabic pronouns and d-pronouns

In order to satisfy the objective of this paper, that is to consolidate the complex structure of pronouns, we combine the conception of d-pronouns, proposed by (Wiltschko, 1998), together with McCarthy's multi-linear approach (McCarthy, 1981) to derive a conception of the internal structure of pronouns in Arabic that is based on the arrangement of CV's according to CVCVCV template. As such, we extend McCarthy

multi-linear model (McCarthy, 1981), which is conceived to treat solely the internal structure of lexical words, to the processing of grammatical words, such as pronouns. (McCarthy, 1979), (McCarthy, 1981), and (McCarthy, 1997)) approach makes it possible to identify both the morphemic consonants that constitute pronouns, and the isolation of the basis $\underline{d}$V in pronominal copulas, demonstrative, interrogative, and relative pronouns. The application of this model on pronouns proves that pronouns could be formed according to a skeletal template of at least on CV cluster, and up to four CVs. Then, we matched the morphemic consonants to Wiltschko's d-pronouns. The application of the d-pronoun model (Wiltschko, 1998) makes it possible to recognize the different features that each component of the pronoun's subunits.

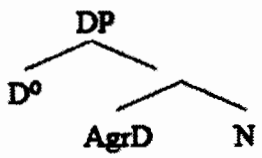

Figure 3-1 the internal structure of d-pronouns

(Wiltschko, 1998) believes that the determiner can be decomposed into a bound morpheme (d- for the definite determiner) which occupies D^0. This determiner morpheme takes as its complement a functional projection, which hosts agreement endings (AgrD). She supports her assumption by the fact that all German determiners have an identical agreement endings as shown below:

d-**er**, d-**es**, d-**em**, d-**en**	*the*
ein-**er**, ein-**es**, ein-**em**, ein-**en**	*a*
dies-**er**, dies-**es**, dies-**em**, dies-**en**	*this*
jen-**er**, jen-**es**, jen-**em**, jen-**en**	*that*
sein-**er**, sein-**es**, sein-**em**, sein-**en**	*his*

(Wiltschko, 1998 p:149)

Furthermore, she presumes that personal pronouns could be analyzed as spell out of phi-features, i.e., they are a mere reflection of category $AgrD^0$. Her view is supported by the morphological paradigms of German determiners and personal pronouns. Departing from the assumption that personal pronoun s are but representations of agreement endings, which are also present within determiners. Wiltschko predicts that by subtracting the bound morpheme d- from the definite determiner paradigm, we are left with the personal pronoun paradigm. She claims that singular masculine and neuter determiners in the nominative, dative, and accusative are easily be as shown in the table below (Wiltschko, 1998).

Table 3- 1 The morphological paradigms of German determiners and personal pronouns Wiltschko (1998:149)

	Definite	**Determiners**	**Personal**	**Pronouns**
sg.	m.	n.	m.	n.
NOM	d-er	d-as	er	es
DAT	d-em	d-em	ihm	ihm

ACC	d-en	d-as	ihn	es

It is still legitimate to extend (Wiltschko, 1998) analysis to Arabic determiners. Her analysis allows us to understand some of the apparently unpredictable forms of Arabic pronouns that would be discussed later in the text. (McCarthy, 1979), (McCarthy, 1981), and (McCarthy, 1997) multi-linear approach remains the best approach to treat fusional languages according to skeletal templates CVCVCV. We follow (Bohas, 1997), (Bohas, 2000) about etymons which considers that the skeletal template could be consisted of two consonants (CV-CV) instead of three (CV-CV-C (V)). However, the case of grammatical words illustrates cases where pronouns are formed of a single consonant C and a vocalic melody V, or minimal words such as the interrogative pronoun *mā*, or the pronominal copula *dā*. Succeeding in proving that each CV cluster has an abstract meaning, we can schematize the internal structure of the pronouns as in the following tree diagram.

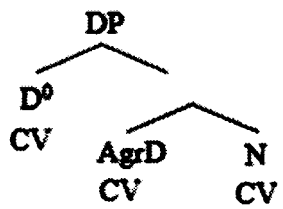

Figure 3-2 Clusters' distribution in pronouns

The internal distribution of pronouns in (Fig.3-2) is built on (Wiltschko, 1998), we placed CV clusters under the constituents identified in d-pronouns. First, we will validate this structure on the demonstrative pronouns, interrogative pronouns, and pronominal copula. Second, the relative pronoun carries a more complex structure than

the other type of pronouns, and poses problems with the application of (Wiltschko, 1998).

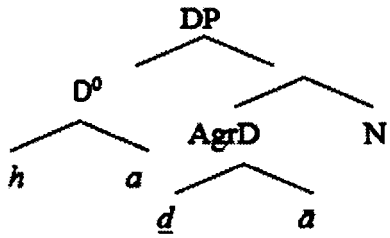

Figure 3-3 The internal structure of demonstrative pronoun

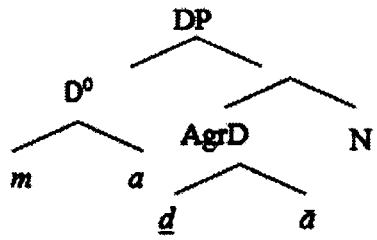

Figure 3-4 The internal structure of interrogative pronoun

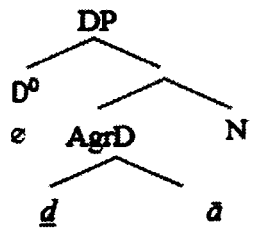

Figure 3-5 The internal structure of pronominal copula

The above tree diagrams go along the lines with (Wiltschko, 1998) proposal of the decomposition of d-pronouns. The terminal D^0 (the definite article) determines the category of pronouns in Arabic, i.e., the morphemes *ha-, ma-, and Ø* are respectively the demonstrative, the interrogative and the copulative. The agreement morpheme ($AgrD^0$) is constituted from a constant consonant *d* and a vocalic variable.

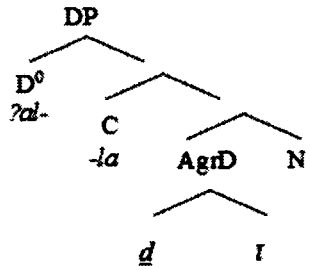

Figure 3-6 The internal structure of relative pronouns

Contrastively, the relative pronoun requires another level of representation in its internal structure in order to account for the morpheme of assertion *-la* which is related to the complementizer (*'inna*) outside the word. Unlike (McCarthy et Prince, 1990), who proposes that each level of his model represents a morpheme, we postulate that functional words are formed by morphemic consonant CV's, and that the concatenation of morphemes is done according to the conception of (Wiltschko, 1998). In order to justify the internal structure of pronouns, we will study the morphosyntactic distribution of CV clusters in pronominal copulas, proximal and distal demonstratives, interrogative and relative pronouns. We will identify the different features of the morphemic consonant *d*V, mainly the referential feature [Ref] of the consonant *d* and the grammatical features of [gender], [number] and [case] that are carried by the rightmost vocalic melody V.

3.2 The pronominal copula

Several linguists(Grande, 2013), (Rabin, 1951),(Garbini, 1984) and (Pennacchietti, 1967) believe that the primordial innovation of the Arabic pronominal category is the entry of the root *ḏū* into the Arabic lexicon from the Amorite[10] *zū*. They believe that the morpheme *zū*, documented through the demonstrators of the Hebrew *zeh* and the Aramaic *dēn*, is at the origin of the pronominal copula *ḏū* of Arabic. They argue that only the consonant of the copula *dū* has undergone an intermediate inter-dental phonological adjustment from / z / to / *ḏ* /. This etymological approach reinforces the idea that the morpheme *ḏ*V constitutes a derivational basis. The following example examines the syntactic distribution of the pronominal copula.

14.	*('al-)walad* $_i$	*ḏū* $_i$	*qarnayen*
	(def-) boy	Cop m.s	bicornate
	« (The/a) bicornate boy …»		
15.	*('al-)bint* $_i$	*ḏāt* $_i$	*qarnayen*
	(def-) girl	Cop f.sbicornate	
	« (The/a) bicornate girl...»		

The main function of the pronominal copula is to relate nouns (*walad*, *bint*) to the complement *qarnayen* (horns). The pronominal copula *dū* introduces a specific qualification, or a unique designation to the nominal antecedent. For instance, the simplification of *walad dū qarnayen* (a boy who has two horns) to *dū qarnayen* (The / a bicornate), proves that the pronominal copula carries an abstract meaning of referentiality that is related to a nominal antecedent. Moreover, the pronominal copula

[10] Ancient Syria towards the 3rd millennium BC

carries the features [gender] and [number] to limit the referentiality in a given statement as in (16).

16. $_{DP}$ [$_{N}$ [*walad*] $_{CP}$ [$_{C}$ [*ḏū*] [$_{N}$ *qarnayen*]]].

The features analysis depicts that the pronominal copula is indexed with the antecedent N. The examples (14-15) illustrate that the feature [gender] *ḏū* [masculine] *dāt* [feminine]) is indexed with the nominal antecedents and not with the adjacent noun to its right. The paradigm of pronominal copulas proves that the latter are sensitive to the feature [number] (*ḏawā* [duel] and *ḏawī* [pl]) as well.

We put forward the view that the decomposition of functional words into consonantal and vocalic constituents and their feature structures in (Di Sciullo, A. M., 2005) and (Baltin, 2012). We assume that the head of the pronominal copula is the consonant *ḏ*, given that it is the constant and that it bears a semantic features of referentiality. The variable part of the word bears rather functional features, such as [gender] and [number] as in (17).

17. $_{DP}$ [$_{N\ [f][s]}$*Bint* $_{i}$ [$_{[Ref]i}$ *ḏ*- $_{[f][s]}$ *āt*] $_{N}$ [$_{[m][duel]}$*qarnayen*]]

The above segmentation illustrates by features correspondence the correlation between N *qarnayen* and the N *walad* via the pronominal copula. The consonant *ḏ* is a pronominal anaphora symbolized by the feature [Ref]. The vocalic melody to the right bears the functional features [gender] and [number]. Only the pronominal copula that carries the features [masculine] and [singular], and is sensitive to the feature [case]. The vocal distribution /ā/, /ū/ and /ī/, indicates respectively the features of [accusative], [nominative] and [genitive], (*ḏ*ā, *ḏ*ū and *ḏ*ī). We can thus assume, based on the

architecture of d-pronouns, that the internal structure of the pronominal copula can be schematized as follow as in the following tree diagram.

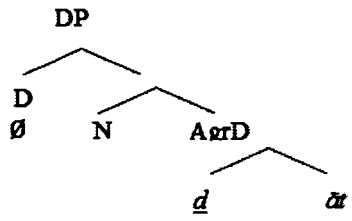

Figure 3-7 The internal structure of pronominal copulas

For these facts, we adopt that the node D^0 in the internal structure of the pronominal copula is an empty set (Ø). In addition, (Wiltschko, 1998) assumes that AgrD can be divided into NumP and PersonP as in (18).

18. [DP [PersP [NumP [NP]]]] (Wiltschko, 1998: 155).

Consequently, the morpheme *d*V could be segmented into two components *d* and a vocal cluster V[11]. The peculiarity of the pronominal copula is that it does not introduce a VP. The ungrammaticality of the examples in (19) illustrates this fact.

[11] In this paper, the letter V designates the vowel or the vocalic melody which is placed to the right of the consonant *d*.

19. **Rajul dū machā* (marcher) **Rajul dū akala* (manger) **Rajul dū fa'ala* (faire)

Semantically, the meaning of the pronominal copula has something to do with the idea of a unique quality possessed by someone or something. The fact of having bicorns becomes a quality that distinguishes the boy from the other boys. Syntaxically, the pronominal copula behaves much like a coordinator of nouns, i.e., adjoining two nominal heads. In the coming sections, we will examine the distribution of the derivative basis *d*V in the interrogative pronoun *madā,* the proximal demonstrative pronoun *hadā,* the distal demonstrative pronoun *dāka,* and the relative pronoun *'alladī.*

3.3 The interrogative pronoun: *mada* (What)

We support our proposal of the internal structure of the interrogative pronoun madā on three main arguments: First, the pronoun insertion test proves the interrogative pronoun madā is decomposable into two CV-CV clusters mV-dV. Second, the morpheme mV- is found in the internal structure of other interrogative pronouns, and forms a constant in their internal structure, such as *ma-n* (who), *ma-tā* (when), *madā* (what). We adopt that the morpheme *ma* is a free morpheme that can be attached to other bound morphemes such-*n, -dā, -tā* or to another free morpheme *d*V to form other types of interrogative pronouns. Thirdly, and most importantly, the morpheme *m*V proper exists in the lexicon as an interrogative pronoun (*mā*) which refers to a set of possible referents that are [-human].

3.3.1 The morpheme *m*V

First, the morpheme *-ma* can appear in the lexicon without any morphological support. Indeed, the interrogative pronoun *ma* introduces the interrogative form.

20. CP [C[*ma* $_i$] TP[VP [*saqata* DP[*t* $_i$]]]
Inter fall-3p.m.s
« What's falling? »

Semantically, the trace in sentence (20) is associated with an object bearing the bipolar feature [+/-human], which could be a person or an object that has fallen. In opposition, *man*, in sentence (21) questions an element marked by the feature [+human] only.

21. CP [C[+human *ma-n* $_i$] TP[VP[*saqata* [+human t $_i$]]]
Inter fall-3p.m.s
« Who's falling? »

The trace *t* in the example (21) must be interpreted as an object endowed with an internal force. The [+human] feature implies that the act of *falling* is triggered by something that can move on its own and causes something to fall. For example, animals and humans can make objects fall, unlike a tree, or a stone that needs an external force to fall. As such, *man* limits the semantic interpretation to elements bearing only the feature [+human]. The answer to the question in (21) is exclusively a person (a man) or an animal (a dog), whereas the answer to the question (20) includes objects in addition to the probable answers to the question (21) (a leaf, or a stone etc.) Second, and in order to justify our segmentation of the interrogative pronoun *madā*, we apply the pronoun insertion test (22).

22. Pronoun insertion test

maḏā qāl-a	**Pronoun**	*mā **huwa** ḏa ('allaḏī)*	*qāl-a*
Inter said.3p.m.s-past	**insertion**	Inter	said-
« What did he say? »		3.p.m.s	
		« What did he say?	

The test in 22 proves that the interrogative pronoun is divisible into two morphemic consonants *m*V- and *ḏ*V. It consolidates the idea that pronouns possess a complex structure that is constructed according to a two-CV skeletal template (CV-CV). At this level, one can deduce that morphemes that attach to the interrogative morpheme *m*V, such as *k*V and *t*V, introduce semantic features that narrow the semantic interpretation of the derived interrogative pronouns (*kam, matā, maḏa, man* and *limadā*). In (20), the interrogative pronoun *ma* is not identified for the feature [+/-human]. However, the morpheme *-n* of '*man* introduces the feature [+human] and restricts the semantic interpretation to an interpretation with nominal entities bearing the feature [+human] only. As for the morpheme *-ta* in the sentence (23) which is found in the interrogative pronoun *mata*, it's rather associated with a temporal reference.

23.	CP [C[time *ma-ta* $_i$]	TP[VP[*saqata*	[time t $_i$]]]
	Inter	fall-3p.m.s	
	« When did he fall? »		

The morpheme *-ta-* introduces a temporal reference to the interrogative pronoun, as in Di Sciullo (2005:121). In opposition, the morpheme *m*V in (24) attaches to the morpheme *ka-*, and the sum refers to quantity.

24.	CP [C [(quantity) *ka* $_i$ *-m*]	TP[VP[*saqatū*	[(quantity) t $_i$]]]
	Inter	fall-3p.m.pl	
	« How many did they fall? »		

25. CP [C[*ma-dā* $_i$] TP[VP[*qāla* [(human)[12] t $_i$]]]
Inter say-3.p.m.s
« What is he saying? »

In the example (25), the interrogative pronoun *ma* attaches to the morpheme *d*V and induces a reference to the feature [–human] entity that is in relation with the trace t_i. Thus, the segmentation of pronouns in Arabic reveals that there skeletal templates vary between simple forms and more complex forms (CV (*ma*), CVC (*man*, *kam*) CV - CV (*mata*, *mada*)). The consonant *m* represents a constant and the other consonants such that *-n*, *ka-*, *-ta* and *dā* represent variables that alters the semantic interpretation of the interrogative pronouns and restrict their usages. The identification of morphemes in interrogative pronouns illustrates that the consonant *m* is a constant and that the morphemes that are added to this consonant be it vowels (V) or more complex vocalic melodies (VCV) change the type of the pronoun interrogative. For example, the morphemes *k*V, *-n*V and *-t*V, contribute respectively by the features [quantity], [-human], [+ time], they are added to the root *-m* to form the interrogative pronoun *kam* "How much/many", man "who", *mata* "when. In the next section, we will discuss the morpheme *d*V of the interrogative pronoun *ma-dā*.

3.3.2 The morpheme *d*V

Along this section, we will justify the nature of the morpheme *d*V on the basis of the corpus of the sentences (26-30). We add more complexity to the example in (26) to exemplify the distribution of the interrogative pronoun *ma* in utterances.

[12] The feature [human] was used in Di Sciullo (2005:121).

26. *mā* *'al-saqit-u* *mina* *'al-samā ?*
Inter falling-m.s from def-sky
« What's falling from the sky? »

In (26), the form *mā* is generated in Spec VP and displaced to Spec TP and to Spec CP as in the following bracketed syntactic representation: [*mā* i] CP[[[*t* i] TP [-*a*] [[*t* i] VP[*'al-saqit-*] PP[*mina 'al-samā*]. In its movement from Spec VP to Spec CP, the trace checks the features of [gender] and [number] with the inflection *–a* under TP. This same phenomenon applies when introducing the demonstrative pronoun *haḏa* with the nominal form of the root *saqata* (*'al-saqit*) as in the following example.

27. *ma* *ha-ḏā* *'al-saqit-u* *mina* *'al-samā ?*
Inter dem-m-s the-falling-3p.m.s from the-sky
«What's (that thing) that's falling from the sky? »

However, the introduction of a conjugated form of *saqata* is ungrammatical as in (28).

28. **ma* *haḏa* *yasqut-u* *mina* *'al-samā* ?
Inter dem-m.s fall-3p.m.s from def.-sky
«What's that falling (thing) from the sky? »

In opposition to (28), the introduction of the relative pronoun *'allaḏī* in (29) makes the sentence grammatical.

29. *ma* *haḏā* *'allaḏī* *yasqut-u* *mina* *'al-samā ?*
Inter dem Rel fall-3p.m.s from def.-sky
«What's that thing that is falling from the sky? »

What's noticeable is that the introduction of the form *maḏā* in (30) instead of *ma haḏa 'allaḏī* is also grammatical.

30.	*ma-ḏā*	*yasqut-u*	*mina*	*'al-samā ?*
	Inter	fall-3p.m.s	from	def.-sky
	«What's falling from the sky? »			

It is probable that the morpheme *ḏa* in *maḏa* and in *'allaḏī* carries similar features in both pronouns. More interestingly is that the combination *maḏā 'allaḏī yasqutu* is accepted and it is a paraphrase of *ma haḏa 'allaḏī yasqut-u* in (29). We adopt (Wiltschko, 1998) configuration of d-pronoun, and we assume that the node AgrD is divided into NumP (a) and PersonP (*ḏ*).

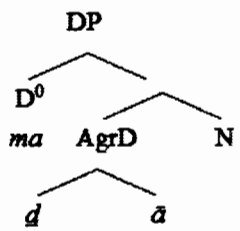

Figure 3-8 The interrogative pronoun's internal structure *maḏā*

The interrogative morpheme *ma* fills the node D^0 as it is constant, and the morpheme *ḏā* is projected under the node AgrD. However, and to some extent, this representation does not apply to the interrogative pronoun, *limadā* "why" because of the necessity of a second level projection that would consider the preposition *li-* as schematized in the above figure

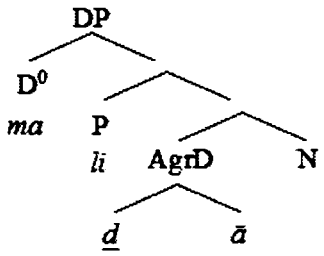

Figure 3-9 The internal structure of the interrogative pronoun limad̲ā[13]

In what follows, we try to apply the same principle of pronoun formation on the distal demonstrative pronoun.

3.4 Proximal demonstratives: *had̲a* (This)

The demonstrative pronoun *hadā* can be decomposed into two independent morphemes. The demonstrative pronoun *hadā* is used to point to an object that is relatively close to the speaker. The sentences (31-33) provide examples on the use of the demonstrative pronoun *hadā*.

31. DP [D [*ha-d̲a*] [[m.s] *walad*]]
« This boy ...»

32. DP [D [*ha-d̲āni*] N[[m.d] *walad-āni*]]
« These two boys ... »

[13] Further discussion could said about this particular type of interrogative pronoun with preposition and several questions and stipulation raised about the nature of the morpheme *wa-* in ''what'' and ''why''.

33. [DP [D *ha* AgrD [*d̲ā* $_i$] [[m.sg] *walad* $_i$]]
« This boy… »

These sentences depict the morpheme *h*V of the demonstrative pronoun as a constant. The variance affects only the morpheme *d̲*V, depending on the features [gender] and [number] of the noun that it designates. The example (32) illustrates that the vocalic melody *-āni* to the right of the consonant *d̲* appears on the noun *walad-āni*. This proves that V carries the feature [number] as well. By corresponding the features and altering between feminine and masculine, and singular and plural, we were be able to determine that only vowels are likely to carry the agreement features. We may presume that the element AgrD contains the consonant *d̲* which is marked for the referential feature [Ref] and a vocalic melody which carries the grammatical features [gender] and [number].

34. [DP [D *ha* AgrD [*d̲ihi* $_i$] [[f.s] *bint* $_i$]]
« This girl… »

35. DP[D *ha* AgrD [*d̲āni* $_i$] [[m.d] *walad -āni* $_i$]]
« These two boys … »

36. DP[D *ha* AgrD [*tāni* $_i$] [[m.d] *bint-āni* $_i$]]
« These two boys … »

In the above examples, we exposed the forms of the proximal demonstratives according to the features [genre] and [number] of the noun it refers to. Indeed, the difference between the three utterances are limited to rightmost vocalic melody. What is noticeable about these examples is the morpheme *–āni* that appears in the pronoun and the noun: *had̲-**āni** walad –**āni***.

3.4.1 The morpheme *h*V of proximal demonstratives

We reiterate the idea of the school of Kufa which has been proposed previously, which is the presence of the same cluster *d̲*V in the relative pronoun and the demonstrative pronoun *hada̲*. They postulate that the *d̲*V (ذ) can be isolated from the morpheme *h̲*V (ه), since the same morpheme is dissociable in the demonstrative pronoun *ha-d̲a*. Indeed, the morpheme *h*V is the resumptive pronoun that attaches to final positions in verbs and prepositions. The examples of verb base (cf. 37 (a, b) and 38 (a, b)) and prepositional base attachment (cf. 39 (a, b), and 40 (a, b)) of the resumptive pronoun (resp) are given below.

37.	a.	*Katab-a*	*kitab*
		write-3p.m.s	book (m.s)
		« He writes a book. »	
38.	b.	*katab-a*	*-hu*
		write-3p.m.s	*-resp m.s*
		« He writes it. »	
39.	*a.*	*Katab-a*	*rasa'il*
		write-3p.m.s	*letter f.pl*
		« He writes it. »	
40.	b.	*katab-a*	*-hunna*
		write-3p.m.s	*-resp f.pl.*
		« He writes it. »	

The resumptive pronoun is composed of a constant consonant *h* and a vocalic melody V which alters to designate the features of [gender] and [number]. As shown in Examples 37 and 38, the resumptive pronoun *h*V substitutes a singular feminine entity *risala* and it attaches to the verb *kataba*. The third person's pronoun may take a prepositional basis, such as *fi* (in) and *min* (from)

41. a. *fi* *'l-manzil*
in def-hous(m.s)

b. *fi* *-hi*
in -resp m.s

42. a. *min* *'l-manazil*
from def-houses(m.pl)

b. *min* *-hum*
from -resp m.pl

Examples (39 (a, b), 40 (a, b)) illustrate that the resumptive pronoun carries the features of [gender] and [number]. The above reveal that the resumptive pronoun is a clitic morpheme that may take prepositional as basis[14].In addition, the internal structure of resumptive pronouns is always correlated with the internal structure of the personal pronouns of the third person. Indeed, the morpheme *h*V constitutes a constant in the internal structure of personal pronouns 3rd person. Third person pronouns: *hu-wa* (he), *hi-ya* (she), *hu-ma* (they, dual.m.f), *hum* (they m.pl), *-hunna* (they f.pl) share a constant consonant, which is *h* and a vocalic variance to accommodate the grammatical features of [gender] and [number]. In fact, the insertion test of the 3rd person pronoun (*huwa*) validates that the internal structure of demonstrative pronouns can be divided into two morphemes as in the following examples.

[14] The resumptive pronoun attached to verbal and nominal bases, respectively *kataba-ha* (he wrote it), *madrasatu-ha* (her school).

44. Pronouns insertion test

hada	*'al-razul*	**Pronoun insertion**	*ha*	***huwa***	*da*	*'al-razul*
dem	def-man		dem	pro.3p.m.s	ref	def-man
« This man »			« This man, right here. »			

Consequently, the insertion of *huwa* in (41) divides the skeletal template into two separate units *ha* and *d̲a*. This test proves that the demonstrative pronoun is decomposable into two morphemes *h*V and *d̲*V. In the following, we question the distribution of the morpheme *h*V in personal pronouns. To identify the syntactic features and to discuss the distribution of the morpheme *h*V in pronouns, we will consider the following examples.

45. a) *hum-ā* *akal-ā*
Pro-dual.m/f eat-3p.duel.m/f
« They (dual.m/f) eat »

b) *hun-na* *akal-na*
Pro-pl.f eat-3p.pl.f
« They (f.pl) eat »

46. a) *akal* *-a* *-hum-ā*
Eat -3p.m. s -resp.3p.dual.m/f
« They eat them (dual.m/f) »

b) *akal* *-a* *-hun-na*
Eat-3p - m.s -resp.3p.f.pl
« He eats them (f.pl) »

First, the flexional morphemes on the verb *akala* (*-ā* and *-na*), bear the features [number] and [gender][15]. Second, the personal pronoun 3rd dual person (*hu-ma*) and the personal pronoun 3rd female plural person (*hun-na*) carry the morphemes (*-a* and *-na*). Third, resumptive pronouns (42 (a, b)) have the same internal structure of personal pronouns (*hunna)*. For instance, the morpheme *–na* in *hu-na* (3rd per.pro.f.pl) carries an agreement element that reflects referential feature of [gender] and [number], as opposed to *hu-m* (3rd per.pro.m.pl) in which the morpheme *–m* changes agreement features. These are the necessary features to establish a relation with the morpheme *h*V that connects in turn a connection to a DP. As such, it would appear that the morpheme *h*V carries an abstract idea of pointing to something in the physical space of the speakers that we symbolizes by the demonstrative feature [dem]. Consequently, the morpheme *h*V is a bound morpheme that needs a morphological support to establish links through its feature [dem]. In the case of personal pronouns, resumptive pronouns and demonstrative pronouns, the morpheme *h*V attaches to flexional morphemes which carry agreement features.

Table 3- 2 The morpheme *h*V in personal, resumptive and demonstrative pronouns,

Personal pronouns	*hV- (3p)*	*-wa (m.s)*
Demonstrative pronouns	*hV- (3p)*	*-da (m.s)*
Resumptive pronouns	*h- (3p)*	*-u (m.s)*

[15] The personal pronoun of the duel *humā* is not sensitive to the feature [gender]. We assume that it is rather represented with a binary feature [+/- gender]

3.4.2 The morpheme *ḏ*V of the demonstrative *haḏa*

We hypothesize that the morpheme *h*V favors attachment with free morphemes, such as the consonant basis *ḏ*V. We illustrate the examples discussed previously in (44-46).

47. DP [D [*ha*] AgrD [[m.sg] *ḏā* i] [[m.sg] *walad*] *i*] « This boy »

48. DP [D [*ha*] AgrD [[f.sg] *ḏihi* i] [[f.sg] *bint*]*i*] « This girl »

49. DP [D [*ha*] AgrD [[m.duel] *ḏāni* i] [[m] *walad* [duel] *-āni*] *i*] « These two boys »

From the examples above, we deduce that the vocalic melodies: / *ā* /, / *ihi* / and / *āni* / carry functional features of [number] and [gender] that are checked with indexed nouns (respectively *walad*, *bint*, *waldāni*). Moreover, the case of the duel (46) supports the features distribution. We note that the same vocalic melody - *āni* of the duel is projected on nouns and on the demonstrative pronoun.

Consequently we could suggest that the demonstrative pronoun *haḏā* has three levels. We propose the representation of the morphosyntactic structure of *haḏā* in the following tree diagram.

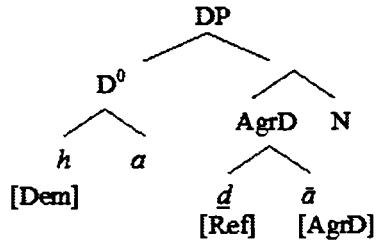

Figure 3-10 The internal structure of the demonstrative pronoun *ha<u>d</u>ā*

Under the umbrella of d-pronouns (Wiltschko, 1998), we placed the morphemic consonants depending on the apparent features they carry. In what follows, we tackle the distal demonstrative pronoun *<u>d</u>āka*, and we will discuss its internal structure by identifying the morphemic consonants and the distribution of the features [genre] and [number].

3.5 Distal demonstrative pronouns *<u>d</u>āka* (That)

The demonstrative pronoun *<u>d</u>āka* refers to something that is distant from the speaker, but that is present in his/her visual space. The following sentence provides an example of the usage of the demonstrative *<u>d</u>āka*.

50. TP [DP [*<u>da</u>*] [*-ka*]] DP [*l-walad* - u]] [VP[*yadrus-u*]
Dem-2p-3p.m.s def. boy-3p.m.s study-3p.m.s
« That boy is studying »

The boys that is studying, in the example (47), is far enough from the speaker to be referred to as the 3rd personal pronoun inflexion (*-a* [3p.m.s]), but still could be seen by the speaker, and it is indexed as the 2nd personal pronoun *–k*. Ultimately, we

hypothesize that the distal demonstrative pronoun *ḏaka* is formed according to a CV-CV skeletal template, one of which is the morpheme *ḏ*V and the other morpheme is the clitic morpheme of the 2nd person -*k*V. In the previous section, we have concluded that the derivational basis of the first type of demonstrative pronoun is the root *ḏ*V, we postulate that this type of pronoun is structured in the same fashion of the demonstrative pronoun *haḏa*. We recall the segmentation proposed for the demonstrative pronoun *hadā*, where we proposed that the vocalic melody of the morpheme *ḏ*V bears the features [number] and [case], and that the consonant *ḏ* bears the feature [Ref][16]. As such, we could argue that (i) the root of the distal demonstrative pronoun *ḏaka* is the morpheme *ḏ*V, and that (ii) the constant consonant *k* is the clitic of the second person in the object position, that is to say, the rightmost vocalic melody carries that the grammatical features: [gender], [number] (as in *til-kum* the distal demonstrative pronoun for the plural masculine and feminine). The data yielded by the above examples provide convincing evidences that the morpheme -*ka* that attaches to verbs in final positions and it functions as an object complement. In fact, the morpheme *k*V adjoins to free morpheme, such as *ḏ*V to form the distal demonstrative pronoun *ḏa-ka*. In the following section, we illustrate the morphosyntactic distribution of the 2nd person resumptive pronoun -*k*V.

[16] The feature [gender] is carried by the consonant *ḏ* because of its complementary distribution with the consonant *t* (the feminine marker). We do not consider the variance with t since it carries the same feature [genre] as in *til-ka* for the singular feminine.

3.5.1 The morpheme *k*V of distal demonstratives

In this section, we will tackle the demonstrative pronoun *d̲āka* and we will identify the two morphemic consonants *d̲*V and -*k*V. The examples in (48 a-d) illustrate examples of the distribution of the morpheme -*ka* in the verb.

51.

a. Darrass-a-ka
teach-3p.m.s-2p-m.s
« He taught you (masculine) »

b. rāsal-at-kunna
write-3p.f.s-2p-f.pl
« She wrote you (feminine) »

c. *la-kuma*
For-2p-d
« For you two (dual.m.f)… »

d. fi-kum
In-2p-m.pl
« Among you (masculine)… »

In the above examples, the morpheme *k*V bears an anaphoric feature. The consonant -*k*- carries the feature [person], which could be interpreted as *someone*. It is obvious that the vocalic melody carries the features [gender] and [number]. In the following table, we present the paradigm of the resumptive pronoun.

Table 3- 3 The distribution of the 2nd person morpheme –*k*V in pronouns

Grammatical features	Personnel pronoun: 2nd person	Resumptive pronoun: 2nd person
m.s	*'an-t-a*	*-k-a*
f.s	*'an-t-i*	*-k-i*
m.f.duel	*'an-t-umā*	*-k-umā*
m.pl	*'an-t-um*	*-k-um*
f.pl	*'an-t-unna*	*-k-unna*

The rightmost vocalic melody varies according to the features [gender] and [number].

We develops the claim that the origin of the morpheme -*k*a which forms the distal demonstrative pronoun by relying on the existence of the complex form *haḏa-ka* found in Tunisian Arabic (TA). We illustrate this with examples of TA in (49-51).

52. Hada-ka lulad
Dem-3p.m.s def.-boy
« This boy … »

53. Hadi-ka lbnaya
Dem-3p.f.s def-girl
« This girl…»

54. Hadu-kum luled / lbnat
Dem-3p.m.s def-boys / def-girls
« These boys/girls … »

The demonstrative pronoun of the TA preserves the form of the pronominal morpheme *h*V- that originate from the personal pronoun *huwa*, while the distal demonstrative pronoun adopts a more complex morphological form *h*V-*d*V-*k*V. The example of the Tunisian Arabic holds that the morpheme *h*V is at the origin of the pronoun *haḏā*. The examples above illustrate that the vocalic melody of the clitic *k*V alters to carry the functional features of [number] and [gender]. The morphemic consonant *d*V of the demonstrative pronoun *ḏaka* is a truncation of the personal pronoun *huwa*. Moreover, it seems logical that demonstrative pronouns, regardless of their types, share at least one same morpheme (*d*V). As such, and when applying the feature correspondence, we can propose the tree representation of the inflection -*k*V as follows:

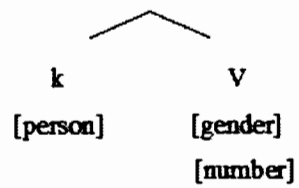

Figure 3-11 The internal structure of the inflection *–ka*

The coming paragraphs are devoted to the analysis of the morphological distribution of morpheme *d*V. We try to justify the morphosyntactic structure of the demonstrative pronoun *ḏāka*.

3.5.2 The morpheme *ḏ*V of the distal demonstrative *haḏa* (This)

The concatenation of the morphemes[17] is marked for position. Among other things, the initial consonant *h* -, which we postulated to be the initial morpheme of the 3rd personal pronoun *h-uwa*, takes the same position in the distal demonstrative pronoun. The clitic *-ka*, which is in the final position of the verb, attaches to a final position also in demonstrative pronouns. We propose the following tree diagram in order to present the syntactic features that contribute to the formation of this pronoun.

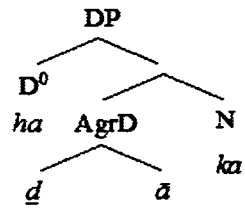

Figure 3-12 The internal structure of the distal demonstrative pronoun of TA

We provide empirical evidence for this morphosyntactic segmentation on the basis of examples from Arabic in (52).

[17] We apply here the structure of Wojdak (2005) that the syntax itself is not ordered in the same way as it appears on the surface: it has no difference if a morpheme appears on the left or on the right. All morphemes are linearized during the spell-out where the vocabulary is inserted. In our analysis, we propose that the order of morphemes in the original word is preserved in the new derivative word. Among other things, if the morpheme is marked for the position (the position of the hyphen in the CV sequence symbolizes the attachment side.) We lay out on the order throughout the text, especially when we raise the problem Complex interrogative pronouns like li-mada (why) that we propose that it is a chain of the interrogative pronoun with the preposition li- (for) which always attaches to the initial position.

55. [DP [Ref *ḏa*] [*-ka*$_{ii}$]] [N [*l-walad* $_{i}$ - *u* $_{ii}$]]
Dem-3p.m.s def. boy-3p.m.s
« That boy … »

In this example, *ḏa* creates the referentiality to the noun *walad*, and *–ka* carries the agreement features. In the next section, we continue the study of the morpheme *ḏ*V. We discuss the features and the distribution of this morpheme in the interrogative pronoun *maḏā*. We will also to validate the model of the internal structure of d-pronouns.

3.6 The relative pronoun *'allaḏī*

In the previous sections we have analyzed the pronominal copula, the demonstrative pronouns, and the interrogative pronouns. We validated their structures according to the -d pronoun model. Indeed, the morpheme architecture coincides perfectly with its model, provided that the morpheme *ḏ*V is decomposed into two: a consonant *ḏ* and a vowel V.

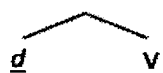

Figure 3-12 The morphemic consonant *ḏ*V

We discussed the distribution of features of the morpheme *ḏ*V. We have concluded that the consonant *ḏ* bears an anaphoric feature [Ref] in relation to a category DP outside the word, and which carries a category N. We have shown that this consonant is predisposed to refer to a possible range of DP for the semantic interpretation. Consequently, we have deduced that the consonant *ḏ* is generated under the node AgrD

in (Wiltschko, 1998) concept, and that the vocalic melody symbolized by V bears the functional features [gender], [number] and [case]. In this section we try to validate (Wiltschko, 1998) on the relative pronoun, while considering the syntactic distribution of the morpheme *dV* in *'alladī*. We first propose the internal structure in the following tree diagram.

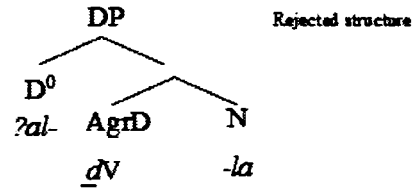

Figure 3-13 The internal structure of relative pronouns

The tree diagram in (Fig 3-13) is rejected for two main reasons. i) the morpheme *-la-* cannot fill the node N because it is a morpheme of assertion which is in relation with a complementizer (*'inna*)[18]. ii) Placing the morpheme *dV* under the agreement node (AgrD) implies that we treat the consonant *d* as an element carrying agreement features, however, it is not the case.

[18] We assume that this morpheme bears the feature [assertion].

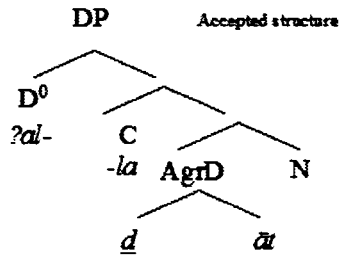

Figure 3-14 The internal structure of the relative pronoun

The above tree diagram takes into consideration the syntactic distribution of the morpheme *d*V as we postulated in the previous sections, under the node AgrD. The addition of a node C for the assertion morpheme favors the treatment of the relative pronoun as a complement. After validating the syntactic distribution of the morpheme *d*V in pronominal copulas, demonstrative pronouns and interrogative pronouns, we apply the derivational model of d-pronouns on relative pronouns. The morpheme *d*V is a derivational basis which has been declined in a CV-CV-*d*V skeletal template by the addition of two related morphemes: the morpheme of definitude *'al-* which usually attaches to nouns or adjectives, and the morpheme of assertion *-la-* which is related to the complement of assertion *'inna*. The relative pronoun *'alladī* is treated according to the CV-CV-*d*V skeletal template, where each CV cluster is a consonant morpheme. The skeletal template is combined in a tree structure with binary branching.

3.6.1 The morpheme *d*V of the relative pronoun *'alladī*

The main purpose of this section is to apply the d-pronoun model to the relative pronoun *'alladī*. We try to demonstrate that the basis of the formation of this type of word is the morpheme *d*V. The latter is divisible into a consonant which carries the referential feature [ref] and a vocalic melody V which carries in turn the grammatical

features of [gender] [number] and [cases], as discussed in the previous sections. We recall the representation of the pronominal copula *d*V.

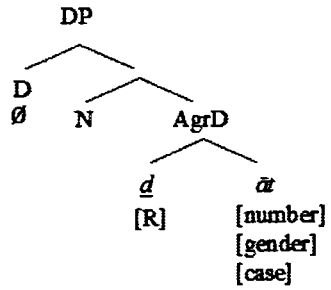

Figure 3-15 The internal structure of pronominal copulas

The sentences in (53, a,-c) illustrate the syntactic behavior of the morpheme dV and the distribution of its features.

56.	*a.*	*'al-walad*	*'al-la-dī...*
		Def-boy	who m.s
	b.	*'al-bint*	*'al-la-tī*19 ...
		Def-girl	*who f.s*
	c.	*'al-'awlad*	*'al-la-dīna...*
		Def-kids	*who m.s*

[19] We do not treat the complementary distribution of the consonants *d* and *t*.

In the examples, the morphemes *'al-* and *la-* do not represent any variance. However, the morphemes (*d̲ī*, *tī* and *d̲īna*) represent variables that carry the features agreement of [gender] and [number], given that the final morpheme represents a morphological peculiarity, i.e., the consonant *d̲* and the vocalic melody V. The features indexing gives hints about the morpheme *d̲*V that is in relation with the element N (*walad*). The vocalic melody V changes its form to bear the agreement features with the noun. The constant consonant *d̲* creates an anaphoric relation with N. Consequently, we could argue that the rightmost V is the element AgrD. The pronominal copula and the relative pronoun share two morphosyntactic similarities and ne crucial similarity.(i)The anaphoric morpheme *d̲*V carries the agreement features. (ii) Both pronouns require a nominal antecedent. However, and contrary to the relative pronoun, the pronominal copula is not sensitive to the feature [definite]. We illustrate this fact in the examples (54-55).

57. *('al-) rajuli* *dū* *jah*
Def-man Cop m.s fame
« (The/a) man who is famous. »

58. *'al- razul* *'alladī* *māt*
Def-man who m.s dead
« (The/a) man who is dead. »

The article (*'al-*) in parentheses symbolizes that the feature [definite] is optional with the pronominal copula. Whereas, *'allad̲ī* requires the presence of the definite article (*'al-*). Indeed, the pronominal copula connects two names, and associates the name to the right of the copula with the name prior to the pronominal copula: DP [(*'al-*) *razul*] *d̲ū* DP [*jah*]. In (54), the pronominal copula never introduces a verbal proposition. In contrast, the subordinate of the sentence (55) introduces a predicate that chooses a verbal proposition. The interpretation of the pronoun *'allad̲ī* as a complementizer is

related to morphemes other than the morpheme *d*V, that is the morphemes *'al-* and /or *-la-*, which we deal with in the coming section.

3.6.2 The median assertion morpheme *-la-* of relative pronouns.

In this section, we propose that the median morpheme *l*V is the morpheme of assertion (*lām tawkid*). It is in relation with to the complementizer *'inna* which imposes a restriction on the word order. While the CP in Arabic allows both the subject-verb (SV) and subject-verb (VS) order, the CPs introduced by *'inna* exclude the order VS. Indeed, Arabic allows both combinations SV (56) or VS (57).

59. *Wald* *katab*
Boy write-3p.m.s
« A boy writes. »

60. *Katab* *walad*
Write-3p.m.s boy
« A boy writes. »

The peculiarity of the completer *'inna* is the obligatory presence of a name adjacent to the right of C. Indeed, the complementizer *'inna* does not allow an adjacency with a VP (cf. 58-59).

61. *'inna* *walad* *katab*
Comp. boy write-3p.m.s
« Effectively, a boy writes. »

62. **'inna* *katab* *walad*
Comp write-3p.m.s boy
« Effectively, a boy writes. »

The complementizer *'inna* requires an adjacent nominal unit: *'inna* + DP, as shown by the ungrammaticality of (59). In addition, *'inna*, which is defined as an emphatic complementizer in Arabic grammar, has a second syntactic feature. In fact, the complementizer *'inna* introduces the assertion morpheme *-la-* to the nominal complementary unit. We support this by the following examples.

63.

'al malik	*'al- ʕadil*
Def- king	Def-Adj (just)

« The king is just. »

64.

'al malik	*dū*	*ʕadl*
Def-king	Cop	N (just)

«The king is just. »

65.

'inna	*al-malik*	*ʕadl*
C	def-king	N (just)

« Effectively, the king is just. »

66.

'inna	*'al-malik*	*la-*	*ʕadl*
C	def-king	Assertion	N(just)

« Effectively, the king is (very) just. »

67.

'inna	*'al-malik*	*la-dū*	*ʕadl*
C	def-man	Assertion-Cop	N(just)

« Effectively, the king is (truly) just. »

The above examples represent a complication of the starting sentence in (60) DP [*'al malik*] AP [*'al- ʕadl*][20]. The sentence (61) illustrates the addition of the pronominal copula *d̲ū* which neutralizes the definite article of the adjective. The sentence (62) marks the instance of the introduction of the complementizer *'inna*. We find that the complement of assertion *'inna* is in complementary relation to the assertion morpheme *-la-;* the latter two share the feature [assertion]. Moreover, the morpheme *la-* attaches to the DP targeted by the emphatic force of the complementizer *'inna*. In sentence (63), the assertion morpheme attaches to the noun to emphasize moral quality (the fact of being just) and is attributed to the antecedent DP (*'al-malik*). The sentence (64) marks the attachment of the assertion morpheme *la-* to the pronominal copula *d̲ū*. The morpheme *d̲ā* creates an anaphoric relation with the nominal antecedent (*'al-rajul*), bearing the features [gender] and [number]. While the assertion morpheme *la-* is related to the complement of assertion *'inna* and it bears the feature [assertion]. We compare the sentence (64) to the sentence (65) which introduces the relative pronoun *'allad̲ī*.

68.	*'inna*	*'al-malik*	*'alladī*	*yaʕdil*
	Comp	def.-man	Comp	justness-3p.m.s
	« Effectively, the king is truly just »			

As we saw in the previous section, the relative pronoun always introduces a predicate with a TP. The consonant *d̲* and the vocalic melody V are in an anaphoric relation with the noun (*malik*), through the consonant *d̲*. The agreement relation of the features [gender] and [number], are mediated through the vocalic melody *ī*. The vocalic melody is also in agreement with the verb (*yaʕdil*). The morpheme *'al* of the relative pronoun is related to the definite article on the name (*'al -malik*). Finally, the morpheme *-la-* is

[20] The definite article in AP is a mark of agreement with the DP. The following section deals with the definite article *'al-* .

in binding relation with the complement of assertion *'inna*. Consequently, one could hypothesize that the pronominal copula and the relative pronoun occupy the same syntactic position in the sentence, that is to say they follow a nominal category and introduce a complement of the previous DP. In the following paragraphs, we will focus on the internal complex structure of relative pronouns.

3.6.3 The initial morpheme *'al-* of *'allaḏī*

In Arabic, adjectives agrees in gender and in number with nouns that they qualify. In the case where nouns are introduced by the definite article *'al-*, adjectives that follow are introduced by the determiner *'al-* as well. The definite article is placed at the beginning of the adjectives and marks the agreement with the nominal antecedent through the feature [definite], introduced by the definite article *'al*. This phenomenon is called the grammatical congruence that we illustrate in the examples (69-70').

69. DP [N *kitāb-un* AP [Adj *kabir-un*]]
Book-m.s-Acc big-m.s-Acc
« A big book »

67'. * DP [*kitāb* AP [Adj *'al-kabir-un*]]
Book- m.s –Acc Def-big-m.s-Acc
« A big book »

70. DP [N[*'al-kitāb-u*] Adj *['al-kabir-u*]]
Def. book-m.s, Acc Def- big-m.s-Acc
« The big book »

68'. * DP [N *'al-kitāb-u*] Adj [*kabir-u*]]
Def. book-m.s, Acc big-m.s-Acc
« The big book»

71. DP [N[*'al-madrasatu* AP [Adj *'al-kabiratu*]]
Def-school f.s-Acc Def-big-fem., sing-Acc
« The big school »

69'. * DP ['al-*madrasatu* AP [Adj *kabiratu*]]
Def-school f.s-Acc big-f.s-Acc
«The big school »

72. DP [*'al-wilayātu* AP [[Adj *'al-mutahidatu*][Adj *'al- 'amarikiyatu*]]]
Def-state f.pl-Acc Def united-f.pl-Acc Def.America-f.pl-Acc
« The United States of America »

70'. * DP [*'al-wilayātu* AP [[Adj *mutahidatu*][Adj *'amarikiyatu*]]]

Def-states-f.pl-Acc united-f.pl-Acc America-f.pl-Acc
« The United States of America »

The examples (69-70) illustrate that the feature [gender], [number], and [definite] are essential for the agreement of the adjective with the nominal antecedent. Contrary to what has just been said, the examples (69'-70') are ungrammatical because of the absence of the feature [definite] from the adjective, or the presence of the feature [definite] with indefinite nouns. As such, the definite article of adjectives differs from the article found on nouns. Hence, we adopt the approach which qualifies *'al-* of adjective as a copula which allows connections with nominal heads. Recall that the agreement of the feature [definite] is not required by the pronominal copula *d̲*V, as the latter can be used with a definite or indefinite DP antecedent, and the addition of *'al-* restricts the use of the anaphoric relationship to a definite antecedent.

Subsequently, in the case of the relative pronoun, *'al-* is a copula allowing connection with nominal antecedents, in the same behavior of the definite article with adjectives. Indeed, the DP's in the examples *'al-kitab-u 'al-kabir-u* and *'al-madrasat-u 'al-kabirat-u* illustrate that the features [gender], [number] and [definite] are compulsory for the agreement with nominal antecedents. The data deduced from the examples appears to suggest that the definite article on adjectives differs from that on nouns. It seems that the pronominal copula is not sensitive to the feature [definite]. On the other hand, the relative pronoun is sensitive to third feature. And since, the morpheme *d̲*V can be used with a definite or indefinite antecedent, the addition of *'al* - restricts the use of anaphoric binding to definite antecedents only. Subsequently, the case of *'al-* in the relative pronoun *'alladī* must be a copula, allowing binding with nominal antecedent and CP.

In addition, the definite article of Arabic depends on the phonological context. It has different realizations according to the initial phoneme of nouns. When nouns begins with one of its phonemes (*b, j, ħ, x, ʕ, ɣ, q, f, k, l, m, h, w, dʒ*), *'al-* it is pronounced *'a-* . Elsewhere, it is realized as *'al-*. As such *'al-* and *'a-* are two allomorphs of the definite article *'al-*. For this purpose, we adopt that the definite morpheme *'al-* in the internal structure of the relative pronoun

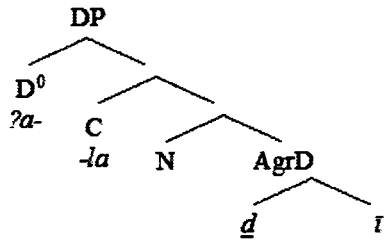

Figure 3-16 The internal structure of the relative pronoun *'alladī*

The relative pronoun 'alladī is realized as 'al because of the phonological environment as the morpheme of assertion starts with *l*.

3.6.4 Synthesis about relative pronouns

Our conclusion about the morphosyntactic structure of relative pronouns confirms the presuppositions of the Kufa School that confirmed the consonantic root *d̲* as the derivational base of that the base of *'alladī*. In this section, and after treating different types of pronouns in Arabic, we can conclude that pronouns are derivational structures arranged on skeletal templates CVCVCV. The cluster *d̲*V constitutes a major component of the internal structure of pronouns. In fact, it constitutes a morphological head. We identified the features carried by the consonant *d̲* and its adjacent vocalic melody V, such as [ref], [gender], [number] and [case]. We concluded that pronouns

formation is a chaining process of CV clustering, in which each consonant (C) possesses an abstract semantic feature. We have illustrated the concatenation of different pronouns to illustrate their morphosyntactic structure.

3.7 The application of the template CV-CV on French pronouns

In the following sections, and departing from the universal view of languages, i.e., that the internal structure of languages is similar across all languages, we will apply the template CV-CV on French pronouns.

3.7.1 French demonstrative pronouns

French demonstratives (*ce, cet*), relatives (*qui / que*), and interrogative pronouns (*qui / quel / quels*) can be processed based on an internal structure arranged according to a CV skeletal template, in which each consonant carries an abstract semantic feature and a vocalic melody that bears the grammatical features of [gender] and [number].

Table 3- 4 The paradigm of French masculine demonstrative pronouns

Singular demonstratives				**Plural demonstratives**			
Simple	Complex			Simple	Complex		
Default	**Assertion**	**Proximal**	**Distal**	**Default**	**Assertion**	**Proximal**	**Distal**
C' *Ce* *Cet*	*Celui*	*Celui-ci*	*Celui-là*	*Ces*	*Ceux*	*Ceux-ci*	*Ceux-là*

Table 3- 5 The paradigm of French feminine demonstrative pronouns

Singular demonstratives				**Plural demonstratives**			
Simple	Complex			Simple	Complex		
Default	**Assertion**	**Proximal**	**Distal**	**Default**	**Assertion**	**Proximal**	**Distal**
Cette	*Celle*	*Celle-ci*	*Celle-là*	*Ces*	*Celles*	*Celles-ci*	*Celle-là*

We note the presence of the consonants *s, l,* and *t* throughout the paradigm of demonstrative pronouns. The multi-linear approach and the skeletal template give a better exemplification of the application this model on French pronouns.

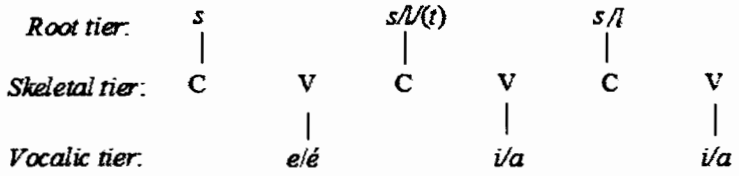

Figure 3-17 Multi-linear Approach: French demonstartives

French pronouns according to the multi-linear approach, we can support the hypothesis that French demonstrative pronouns could be decomposed to CV-CV clusters, in which the morphemic consonant *s*V is the base of derivation as illustrated in the following tree diagram.

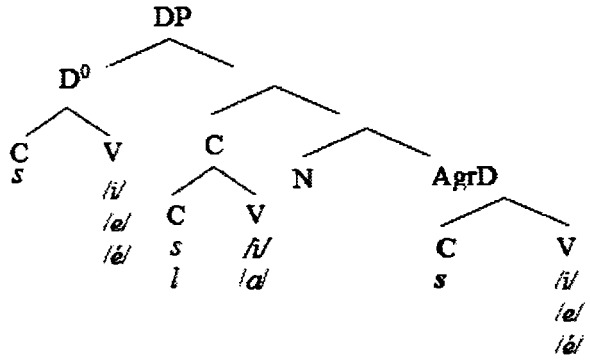

Figure 3-18 The internal structure of French demonstrative pronouns

(McCarthy, 1979, 1981, 1982, 1997; McCarthy et Prince, 1990) findings lend support to the claim that the consonant *s* bears an abstract semantic feature [Dem] and the vocalic melody on the right carries the agreement features [gender], [number], and [case] and other feature such as [proximity], [distance] and [assertion].

3.7.2 The French relative and interrogative pronouns

In contrast to Arabic, French uses the same form for relative and interrogative pronouns (*qui/que*). The following table summarizes the paradigm of pronouns in which the cluster kV constitutes a derivational basis.

Table 3- 6 The skeletal template of French interrogative and relative pronouns

Template CV-CV-CV	French interrogative and relative pronouns	Phonological Transcription
***k* V**	*Qui*	***k-i***
	Que	***k-e***
	Quoi	***k-wa***
k* V *l	*Quel*	***ké-l***
	Quelle	
	Quels	
	Quelles	
Det- k*V *l	*Lequel*	***le-k-él***
	Laquelle	***la-k-él***
	Lesquels	***lé-k-él***
	Lesquelles	***lé-k-él***
***Prep-k*Vl**	*duquel*	***du-k-él***

French relative and interrogative pronouns possess a skeleton template that is organized according to a chaining of CV clusters (*k*V, *k*VC, CV*k*VC) in which the constant consonant *k* is a derivational basis. We presume that the derivative consonant *k* carries the feature [Ref], and the vocalic melody that varies between / *i, e,* and *wa* / changes the type of pronoun according to its syntactic position. At initial positions, *qui* introduces interrogative sentences. With a nominal antecedent, *qui* is interpreted as a relativizer. The form *que,* however, is related to a nominal antecedent that is embedded in complement phrases. The addition of the cluster *l*V to the right or to the left of *k*V derives relative and interrogative pronouns with new functional features. When

introducing a sentence or a discourse, the form (*l*V)-*k*V*l*, is an interrogative pronoun. Elsewhere, it is a relative pronoun in relation with nominal antecedents carrying the functional features [gender], [number] and [definite]. Complex relative pronouns (*l*V)-*k*V*l* are restricted by prepositions (*du*).

3.8 Synthesis about the internal structure of French pronouns

The skeletal template of the interrogative and relative pronoun in French whose morpheme *k*V represents the derivational basis could be represented as in the following tree diagram.

Figure 3-19 The internal structure of French relative and interrogative pronouns

The table below shows the distribution of consonants and vowels in the French interrogative and relative pronouns. The cluster *k*V is the basis of the formation of pronouns and the clusters *l*V on the right and on the left of the base are affixes which limit the syntactic distribution of the pronoun in statements.

Table 3- 7 The table of the distribution of consonants and vowels in French interrogative and relative pronouns

Consonant	***l***
Vowel	a e é
Consonant	***k***
Vowel	e i
Consonant	***l***
Vowel	e
Consonant	***k***
Vowel	e

The skeletal template of the demonstrative pronoun of French can be symbolized in the following tree diagram.

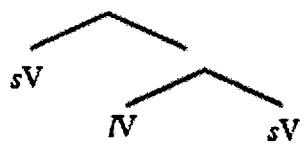

Figure 20 The internal structure of French proximal and distal demonstrative pronouns

The following table represents the distribution of vowels in French proximal and distal demonstrative pronouns.

Table 3- 8 The table of the consonants and vowels distribution in French demonstratives

Consonant	***s***
Vowel	è e e:
Consonant	***s l t***
Vowel	(w)
	i a e
Consonant	***s l***
Vowel	i a

This table is read from top to bottom. The first CV unit has the consonant *s* at its head and the vocalic melody (*é, e* and *e:*) derives the simple form of French demonstratives for masculine /se/ (ce=this), /sé/ (*ces*=these), */se:/* (*ceux*=those who). Adding the second CV unit narrows the meaning of demonstratives. The consonant *t* in */sét/* (*Cette* = this (feminine)) introduces feminine or avoids *hiatus*[21]. Redoubling the consonant *s,* as in */sesi/* (*Ceci*=this one), derives the proximal emphatic form of French demonstratives. In opposition, the adjunction of the consonant *l,* as in */sela/* (*Cela*=that one), derives the distal emphatic form of French demonstratives. The last CV depends on the presence of a higher node with the consonant *l,* as in */selwisi, sella/* (*celui-ci, celle-la*=this one (m.f)), to derive the non-proximal French demonstratives.

[21] The liaison of vowels across word is not permitted in French, as in **ce enfant.* To avoid the hiatus, French adds *t* between the two vowels, as in *cet enfant.*

LIMITS

The most important limitation of this paper lies in the fact that we analyze a syntactic component of Arabic through English. Arabic and English are obviously very different from one another in almost all aspects, and it will be difficult to put forward our remarks, especially for readers who do not speak Arabic, much less for concepts that do not have English equivalence. Not to forget the problematic of morphemic consonants in Arabic. To our knowledge, the literature that deals with Protosemitic languages does not evoke the concept of morpheme in the analysis of this type of language. They use the terms particle, or letter to denote morphemes. In addition, finding references that deal with this topic proved very difficult. Most of the available books and the relevant literature are purely descriptive and lack theoretical analyzes in a generative grammar framework. The only available reviews that deal with the internal structure of pronouns in Arabic go back to about a thousand years (IbnYacīš, 2001; Sībawayhi, 1982).

Add to this that we didn't cover the phonological features of nouns. The phonological adjustments and the choice of the vowels of the vocal melody to the right of the consonant *d̲* were not studied. Furthermore, we couldn't find enough evidence to support the attachment of the assertion morpheme (*la-*) in the relative pronoun *'allad̲ī* and the morpheme *ka-* in the demonstrative pronoun *dā-ka*. Furthermore, and for reasons of space, the modern dialect forms of the relativizer are not addressed. The dialectal form *'illi,* which is used by the majority of Arab speakers would be an interesting topic to be addressed. The consonant morpheme *d̲*V has disappeared, and the skeletal template is reduced for two etymons CVCV *'il-li*.

DISCUSSIONS

This study is only a simple contribution on the exploration of the morphosyntactic form of pronouns. By validating the model of the internal structure of Wiltschko d-pronouns (Wiltschko, 1998), we have examined and compared the internal structure of the pronominal copula with the relative pronoun, demonstrative pronouns and interrogative pronouns. Considering all the results, it seems pertinent to assert that Arabic d-pronouns possess a morphosyntactic structure which consists of at least one cluster *d*V. By way of conclusion, this paper points out the consonant (*d*) as a derivational consonant of pronouns. The results also highlight the theoretical and the etymological researches. In addition, this paper proposes new lines of research for the formation of other types of pronouns such as pronouns which possess a preposition in its internal structure such as *li-mada* (why) and interrogative pronouns *m*V (*mā, man, matā*), and adverbs of negation with the consonant head *l*V (*lā, l-am, l-an*).

Moreover, although this paper is anchored in a generative grammar context in particular (Wiltschko, 1998) d-model, its effects are relevant to prosodic morphological analysis of the derivation of pronouns. A study, that takes into consideration the fact that word formation often takes place in the same subset of distinctive features in a segment (McCarthy et Prince, 1990)), will make it possible to justify the choice of vowels and consonants in a given CV cluster[22]. In the same theoretical framework, the geometry of features and dependency (McCarthy, 1988) will account for the way vocalic distinctive features are classified by phonological processes (notably

[22] Examining the neutrality of the vowel /a /, the role of nasality as in / an, in, un / can further clarify vocalic choices in pronouns.

assimilation and reduction). This paper explores exclusively the morphosyntactic and semantic interfaces and also identifies new paths for morphonological research.

CONCLUSION

This study has gone some ways towards enhancing our understanding of the internal structure of pronouns. Our work has revealed that pronouns have a complex internal structure that is build according to a CVCVCV clustering. The findings in this study reveals that the consonants *('*, *m*, *n*, *d*, *k*, *l*, and *h*) represent that derivational heads and vowels or the vocalic melody carries the grammatical features. Taken together, these results would seem to suggest that the internal structure of interrogative, demonstrative and relative pronouns is composed of the consonant cluster *d*V as the basis and a chaining of cluster CV. The present study adds to a growing body of literature about the consonants features that contribute in determining the different types of pronoun, and the observations we made have several implications for the internal structure of pronouns in other languages.

BIBLIOGRAPHY

Abney, S.P. (1987). *The English noun phrase in its sentential aspect.* Massachusetts Institute of Technology.

Adamson, S.M., Law, V.A., Vincent, N. et Wright, S. (1990). *Papers from the 5th International Conference on English Historical Linguistics*. (Vol. 65). s.l. : John Benjamins Publishing.

Algeo, J. (1978). The taxonomy of word making. *Word, 29*(2), 122-131.

Auroux, S. (1994). *La révolution technologique de la grammatisation. Introduction à l'histoire des sciences du langage*. s.l. : Mardaga.

Baltin, M. (2012). Deletion versus pro-forms: an overly simple dichotomy? *Natural Language & Linguistic Theory, 30*(2), 381-423.

Bauer, L. (2003). *Introducing linguistic morphology*. Edinburgh : Edinburgh University Press.

Beekes, R.S.P. (2011). *Comparative Indo-European linguistics : An introduction.* Amsterdam : John Benjamins Publishing.

Bhat, D.N.S. (2006). *Pronouns*. (Vol. 42). Oxford : Oxford University Press.

Bohas, G. (1997). *Matrices, étymons, racines : éléments d'une théorie lexicologi vocabulaire arabe*. (Vol. 8). s.l. : Peeters Publishers.

Bohas, G. (2000). *Matrices et étymons: développements de la théorie: Séminaire de Saintes 1999*. s.l. : Ed. du Zèbre.

Bohas, G. (2002). Du concret à l'abstrait, sur les deux rives de la Méditerranée. *Langues et Littératures du Monde Arabe*(3), 85-106.

Bohas, G. et Guillaume, J.-P. (1984). *Étude des théories des grammairiens arabes.* (Vol. 118). Damas : Institut français de Damas.

Chomsky, N. (1995). Categories and transformations. *The minimalist program, 2..*, 394.

Chomsky, N. (2001). *Derivation by phase. Ken Hale: A life in language, ed. by Michael Kenstowicz, 1-52* : Cambridge, MA: MIT Press.

Chomsky, N. (2004). *Beyond explanatory adequacy. Structures and Beyond. The cartography of syntactic structures.* (Vol. 3). Oxford : Oxford University Press.

Chomsky, N. (2014). *The minimalist program.* s.l. : MIT press.

Di Sciullo, A.-M. et Williams, E. (1987a). *On the definition of word.* Cambridge, Mass, : MIT Press.

Di Sciullo, A.-M. et Williams, E. (1987b). *On the definition of word.* (Vol Cambridge, Mass : MIT Press.

Di Sciullo, A.M. (2005). *Asymmetry in morphology.* Cambridge, Mass : MIT Press.

Diem, W. (2007). Arabic allaḍī as a conjunction: An old problem and a new approach. Dans Kees, V. (dir.), *Approaches to Arabic Linguistics* (p. 67-112). Boston : Brill.

Garbini, G. (1984). *Le lingue semitiche: studi di storia linguistica.* Napoli : Istituto universitario orientale. Dipartimento di studi asiatici.

Grande, F. (2013). THE COMPOSITE NATURE OF llaḍī, ḥaytu, man/mā-min DISTRIBUTIONAL, TYPOLOGICAL AND PRAGMATIC ASPECTS OF OLD ARABIC RELATIVE MARKERS. *The Arabist Budapest Studies in Arabic 32*, 61.

IbnYacīš, M.a.-D.A.l.-B.Y.b.A. (2001). *Šarḥ al-Mufaṣṣal* Beirut : Dār alKutub allmiyya.

Lewis, M., Simons, G. et Fennig, C. (2013). *Ethnologue: Languages of the World, Dallas, TX: SIL International. Retrieved February 17, 2014.*

McCarthy, J.J. (1979). *Formal problems in Semitic morphology and phonology.* Cambridge University, Cambridge, MA. Ph.D.

McCarthy, J.J. (1981). A prosodic theory of nonconcatenative morphology. *Linguistic inquiry, 12*(3), 373-418.

McCarthy, J.J. (1982). *Prosodic templates, morphemic templates, and morph tiers*. Dordrecht - Holland/Cinnaminson - U.S.A. : Floris Publication.

McCarthy, J.J. (1988). Feature geometry and dependency: A review. *Phonetica, 45*(2-4), 84-108.

McCarthy, J.J. (1997). Faithfulness and prosodic circumscription. Dans Dekkers, J. (dir.), *Optimality Theory*. Oxford : Oxford University Press.

McCarthy, J.J. et Prince, A. (1990). Prosodic morphology and templatic morphology. *Perspectiveson Arabic Linguistics II*,

Pennacchietti, F.A. (1967). Sull'origine della particella negativa araba mā. *Annali dell'Istituto Orientale di Napoli (Nuova Serie), 17*(1), 15-23.

Quirk, R. (2010). *A comprehensive grammar of the English language*. London and New York : Longman.

Rabin, C. (1951). *Ancient West-Arabian*. United Kingdom : Taylor's foreign Press.

Radford, A. (1988). *Transformational grammar: A first course*. (Vol. 1). Cambridge : Cambridge University Press.

Ruhlen, M. (1991). *A guide to the world's languages: Classification*. (Vol. 1). London : Stanford University Press.

Ryding, K.C. (2005). *A reference grammar of modern standard Arabic*. Cambridge : Cambridge university press.

Sībawayhi, A.B.A.b.U.b.Q. (1982). *Al-Kitāb*. (Vol. 5). Cairo : Maktabat al-Ḫānĝi.

Spencer, A. (2005). Word-formation and syntax. *Handbook of word-formation*, 73-97.

Starke, M. (2010). Nanosyntax: A short primer to a new approach to language. *Nordlyd, 36*(1), 1-6.

Testen, D. (1998). *Parallels in Semitic linguistics: the development of Arabic la-and related Semitic particles*. (Vol. 26). Leiden, Boston, Koln : Brill.

Wiltschko, M. (1998). On the syntax and semantics of (relative) pronouns and determiners. *The Journal of Comparative Germanic Linguistics, 2*(2), 143-181.