The Arabic Influence on Northern Berber

BY

MAARTEN KOSSMANN

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CONTENTS

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CHAPTER ONE

INTRODUCTION

For over a thousand years, Berber and Arabic have been in contact. This contact takes place in a large zone, stretching from the Atlantic Ocean in the west to the Libyan/Egyptian border region in the east. This region is known in Arabic as *al-maɣrib*, i.e. 'the west', and as Maghrib or Maghreb in western scholarly literature. The great majority of its inhabitants nowadays speak a variety of Arabic. Important groups of Berber speakers live in Morocco, Algeria and Libya, and to a lesser extent also in Mauritania, Tunisia and Egypt.

The history of Berber–Arabic linguistic contact has two sides. On the one hand, native speakers of Berber played a major role in the development of the modern Maghribian Arabic varieties, which have undergone important substrate influence. On the other hand, during the long period between the 7th century CE and today, Berber varieties have been influenced by Arabic.

This book studies the Arabic influence on Berber in the Maghrib. It provides a picture of most realms of the language: phonology, morphology, syntax, and lexicon. It focuses on the differences and similarities in contact-induced developments between the Berber varieties; to some degree it could be considered a dialectology of contact-induced change.

The Berber languages studied here have been subsumed under the label northern Berber. This is to be understood as a purely geographic term, referring to the parts of Africa north of the Sahara, as well as the northern half of the Sahara. It includes all Berber varieties, except Zenaga, Tetserrét and Tuareg. The reason for this exclusion is that, on the one hand, Tuareg and Tetserrét have undergone only slight influence from Arabic, and therefore present an essentially different situation than the other Berber languages. Zenaga, on the other hand, has been strongly influenced by Arabic. However, our present state of knowledge, which focuses on the Berber part of the grammar and lexicon, makes it difficult to assess this aspect of the language. Moreover, Catherine Taine-Cheikh, the great specialist of Zenaga and Mauritanian Arabic is working on this subject at the moment.

The large majority of speakers of Berber and Maghribian Arabic are Sunni Muslims. Among Berber speakers, there is a smaller group of Ibadhi

Muslims, who belong to the Kharijite group, an early secession in Islam. They are mainly found in Mzab (Algeria), in Djerba (Tunisia) and in Zuwara and Djebel Nefusa in Libya. In addition, there used to be important Jewish communities in northern Africa, which have mostly moved to Israel, France, Canada and other countries in the 20th century.

Language contact can be studied from a number of different angles. The most important dichotomy is between a synchronic and a diachronic account. Synchronic contact linguistics is concerned with the way languages interact in a multilingual society, and the production and usage of the multilingual individual. Synchronic accounts focus on widely different subjects, such as processing of multiple languages in the bilingual brain, mixing of languages in bilingual discourse, and the ways and reasons speakers choose one out of several language options they have at their disposal. In most synchronic contact studies, the presence of several discrete linguistic systems is a premise, and the subject is the interaction between these different systems.

Diachronic accounts have a different focus. They are mainly concerned with the ways a single language changes under the influence of other languages. This also presupposes the existence of discrete linguistic systems. Different from the synchronic accounts, diachronic research is interested in changes within a single system, under the influence of others. Thus, while synchronic studies consider several (basically changeless) systems in multilingual usage, diachronic studies consider a single changing system. Of course, nobody would doubt that the main triggers behind the changes studied in diachronic contact linguistics are to be found in the kind of processes described by synchronic contact linguistics. However, there is no reason to assume that they present a simple mirror image of it; what is found in synchronic multilingual usage is by no means always transferred to the single system. As often remarked by Sarah Thomason (e.g. 2008), diachronic contact linguistics is a sub-discipline of historical linguistics.

Synchronic and diachronic research in language contact have their own complications and simplifications. Synchronic research concerns an enormous range of subjects, from psycholinguistics to the in-depth analysis of language structures (as in much of code-switching studies), to sociolinguistics of different kinds. While taking into account the vast diversity of contexts, it has to abstract away (as far as possible) from the diachronic question of language-internal diversity, taking the different languages basically as monolithic chunks. Diachronic research, which focuses on one single system, basically abstracts away from usage, restricting itself to

the same idea of a system ("langue" in Saussurian terms) which underlies the actual usage of this system ("parole"). It does not, however, represent this system as basically changeless, but is interested in the way it develops and changes under the influence of the (socio)linguistic circumstances it is subjected to.

This book deals exclusively with the diachronic side of language contact, i.e., the way the Berber language(s) changed under the influence of Arabic. This subject has not escaped the attention of the linguistic community. Already in the early days of Berber studies, scholars devoted attention to it, e.g., René Basset (1906) and Hugo Schuchardt (1908). In Berber studies, the identification of Arabic elements has always been an important element in description, even though the synchronic one-language focus of modern descriptive grammars, such as Bentolila (1981) and Kossmann (1997) tends to marginalize the subject somewhat. There are quite a few works that deal with Arabic influence on Berber on a local scale. The most elaborate among these are the lexical studies by Miloud Taïfi on Middle Atlas Berber (1979) and by Rabah Kahlouche on Kabyle (1992),[1] and the grammatical study by Lameen Souag on Siwa (2010). They are supplemented by remarks and small-scale studies on other varieties. Overviews of Arabic influence on Berber tend to be rather short (Boukous 1989, Ameur 2011), but valuable remarks can be found in these works and in overviews focusing on Berber in general (e.g. Galand 2010).

The Berber situation of long-standing language contact has not found much attention in the literature on language contact. There is one major exception to this: Lameen Souag's elaborate comparison of grammatical borrowing in the Berber language of Siwa and in the Northern Songhay language Kwarandzey in Tabelbala in Algeria (Souag 2010). Elements of morphology were studied in Kossmann (2010a), which presents a cross-linguistic study of one specific type of borrowing, while Kossmann (2009a) studies lexical borrowing as part of the cross-linguistic survey by Haspelmath & Tadmor (2009). This relative negligence is regrettable. Berber provides a text book example of longstanding language contact, in which second language learners of Berber only played a minor role, if any. Put otherwise, Berber provides an unequivocal example of contact-induced change in the context of language maintenance (Thomason & Kaufman 1988), or to use the terms of Van Coetsem (1988, 2000), of recipient language agentivity. Until recently, the prominent pattern in marriage was

[1] Unfortunately, I have not been able to consult these unpublished dissertations.

endogamy, which makes that multilingual households were traditionally rare. Thereby, Berber is basically different from some of the better-studied cases of contact-induced change in situations of language maintenance, such as the Vaupés linguistic area (Aikhenvald 2002).

Arabic influence on Berber provides an ideal situation for studying divergence in language contact outcomes. It is found over a large array of varieties, spoken in a very large area, many of which have been relatively isolated from each other. There are therefore many more or less independent, but similar, language contact situations. Berber itself is typologically relatively homogenous, and the same is true for Maghribian Arabic. This makes the linguistic premises of the contact more or less the same over the whole area. Finally, there is little reason to assume that the basics of the language contact situation were radically different regionally. Thus, as remarked above, we seem to be dealing everywhere with cases of language maintenance where mixed marriages do not play a role. The only investigation that I know of that has a similar type of sample (although mine is much smaller) is the Romani study by Elšík & Matras (2006), which also concerns situations of language maintenance without intermarriage. The basic difference with the Berber sample is that Romani languages have been in contact with a wide array of typologically very different languages. In the case of Berber, both donor and recipient language are relatively homogenous.

While writing with an audience in mind that is interested in contact linguistics, I have chosen a presentation that is not driven by theoretical or general typological considerations. I prefer to give a descriptive analysis of what is found in the Berber languages, which can be used—I hope—in different theoretical frameworks and with different typological interests in mind. The presentation (with exception of some parts in the last chapter) is therefore deliberately un-theoretical and un-typological, even though my implicit viewpoints on these matters will no doubt be clear to the informed reader. For more explicit viewpoints, one can refer to Kossmann (2010a), Kossmann (fc-a) and Kossmann (fc-b).

The present investigation aims at a presentation of contact-induced change as found in all northern Berber varieties. In practice, such an aim has many caveats. Documentation of Berber is dense in some regions, and quite sparse in others. Thus we know much more about Kabyle than about neighboring Chaouia, and for highly interesting varieties such as El-Fogaha and Awdjila in Libya, our knowledge is based on a word list and a few texts only. Moreover, subjects have been studied in different ways and with different depth according to the regions. As a result, on certain

subjects, data are unavailable for some regions, can only be deduced by means of analysis of published texts for others, while for other regions they are easily extracted from grammatical or lexical works. I have tried to use as much the available literature as possible. Unfortunately, I had only restricted access to the large corpus of "grey" literature, especially PhDs and MA theses that were prepared at different universities in France, Algeria and Morocco. There is no doubt that I have missed important observations because of this. In my presentation, I try to treat all Berber varieties on an equal basis. In practice, of course, the amount and nature of available material put important restrictions on this. Moreover, my better acquaintance with eastern Moroccan Berber, as well as the fact that I have easy access to digital corpora for these varieties, has no doubt led to some overrepresentation. In view of the highly interesting contact phenomena found in this region, this is not necessarily a bad thing.

In order to relate to earlier, unattested, varieties of Berber, sometimes reconstructed forms (marked by an asterisk) are provided. Such reconstructions either refer to an earlier stage of the given form in the variety under consideration, or to Proto-Berber reconstructions. Context will make clear which level of reconstruction is meant. Where Proto-Berber is concerned, reconstructions are my own, following the principles set out in Kossmann (1999a, 2001). Other researchers have different reconstructions. As the exact shape of the reconstructions hardly ever plays a role in the analysis, I do not think my idiosyncrasies at this point have major impact on the argumentation.

Variation within Maghribian Arabic is quite important. In this study, I only refer to this variation where it is relevant to the analysis of the contact phenomena in Berber. When statements are made about Arabic which are true for all over the Maghrib, I tend to use Moroccan or Algerian Arabic as the language of reference.

The book has the following structure. The next chapter introduces Berber and Maghribian Arabic and sketches the main lines of their common history and the sociolinguistic background of the language contact. This is followed by a chapter that surveys the pre-Islamic and early Islamic history of Berber in contact. After this comes the main part of the book, which focuses on the Arabic impact on Berber. As lexical borrowing is the driving force behind many of the contact phenomena in phonology and morphology, this part starts with the lexicon. This is followed by chapters on phonology, morphology, and syntax. Many sections begin with a contrastive presentation of the Berber and Arabic facts in order to give a grounding to the analysis of contact-induced change. The final chapter

gives a summary of the findings, an assessment of variation within Berber as to contact phenomena and a general characterization of the Arabic influence on northern Berber.

A Note on Terminology

In this book, I will use the term "Berber" in a consequent manner. In northern Africa, nowadays the autonym *tamaziɣt* or its French derivate *langue amazighe* are used. I will stick to the term Berber, which is commonly used in scientific productions, also those written by scholars who are very active in the Berber cause, such as Salem Chaker. The term *tamaziɣt*, although wide-spread in the Berber-speaking world, is by no means traditional in all regions, and may sometimes have different connotations than "Berber language" alone. Moreover, in scientific literature, it has been used as a term for what is called here Central Moroccan Berber. Using the term in a scientific context therefore runs the risk of confusion.

As for Arabic, I basically use the term Maghribian Arabic for all varieties of Arabic spoken west of Alexandria. In practice, when making general statements, the term may have more restricted meaning, referring mainly to Algerian and Moroccan Arabic.

Written Arabic is referred to as Classical Arabic or as Standard Arabic. Although the two are by no means identical, the differences are only rarely relevant to the issues studied here. Therefore, I will use the terms interchangeably, similar to the Arabic use of *al-fuṣḥā*, which can refer to both.

Abbreviations, Transcriptions and Glosses

Abbreviations of languages, varieties and sources have been kept to a minimum. The main change lies in the omission of the element Beni, Ayt ('sons of') in tribal names, e.g. 'Iznasen' instead of 'Beni Iznasen'. Similarly, I often use 'Nefusa' instead of 'Djebel Nefusa' and 'Senhadja' instead of 'Senhadja de Sraïr'. Different from many other authors, I have not used European or Arabic adjectival forms to refer to language names; I rather use the geographical name ('Mzab' instead of 'Mozabite', 'Ouargla' instead of 'Ouargli') or the autonym ('Tarifiyt' instead of 'Riffian', 'Tashelhiyt' instead of 'Shilha'). The main exception to this is the use of 'Kabyle' for the language of Kabylia.

Transcriptions of Berber and Maghribian Arabic have been harmonized to a large degree. My preferred transcription practice is somewhat more phonetic than that of other researchers. It has not always been possible to follow this line, as a number of major publications in the field use a transcription that underrepresents (marginal) phonological contrasts. In such cases, I had of course to stay with the original transcriptions. This is the case, for example, of major studies such as Bentolila (1981) and Chaker (1983), who do not write spirantization and schwa. A different, and more awkward problem is posed by Italian transcriptions of Libyan varieties, esp. those of the oases. These notations transcribe many shades of vowel pronunciation. From the data, it is difficult to make out to what extent these phonetic variants represent different phonemes, nor is it easy to decide to which phoneme a certain vowel shade in a specific word should be assigned. Van Putten (fc.) provides a detailed orthographic analysis of the vowel notations in Paradisi's materials on Awdjila (Paradisi 1960a; 1960b). For the other dialects, esp. Sokna (Sarnelli 1924–25) and El-Fogaha (Paradisi 1963), such an analysis does not exist, nor is it probable that the much more restricted materials on these varieties would allow us to make one. On the basis of what we know about Awdjila and Siwa, I have made an educated guess of the phonemic (or at least broad phonetic) structures the notations represent. For the original transcription, the reader can consult the source. Stress is non-phonemic (if existent at all) in most northern Berber varieties west of Tunisia. In eastern varieties it is relevant. I have written stress in these varieties according to the sources. As verbs have different stress patterns according to their aspect in these varieties, they are not marked for stress when the citation form is provided.

I follow common berberological practice in calling the vowels /a/, /i/, /u/ (and in some varieties also /e/ and /o/) "plain vowels". Their quantity depends on context, and is often half-long. The vowels *ə* and *ă* are called "central vowels" or, where appropriate, "short vowels".

Sentences are provided with a glossing line. The glossing system aims to be practical. As such, I have chosen to underrepresent the wealth of morphological marking found in the noun, except where this is relevant to the argumentation. In glossing nominal morphology, the "state" difference is mentioned when visible in the form. Number can mostly be inferred from the translation gloss, while gender is not marked in the glossing line. In this way, the glossing line remains reasonably short and easier to process. Except where relevant to the presentation, I do not mark morphological boundaries within the noun. Within the verb, hyphens are used to set apart the subject inflection. Morphological boundaries within the verb

stem are only marked when relevant to the presentation. Aspectual stems are always glossed, also where the same form is used with different stems. As the formation of aspectual stems is regulated by the formal shape of the verb (e.g., having three consonants and no plain vowel), there is no functional background to the merger of the stems in some cases, while other verbs, with other formal structures, do not merge them. In some cases, the Berber variety is not well-enough known to be sure about the glossing; this is especially the case of the Libyan oasis dialects. I still did my best to provide glosses in such situations.

I follow the same type of glossing for Arabic. For nouns, I only gloss the Construct State. The Arabic Free State is not glossed except where relevant to the presentation. For verbs, I gloss person/gender/number marking, as well as the aspectual division.

The differentiation between affixes, clitics and unbound forms is a difficult matter in Berber and Maghribian Arabic. In large parts of northern Berber and Maghribian Arabic, there is no word accent that could provide arguments for bound or non-bound status. I consider non-subject bound pronouns and spatial markers on the verb clitics (different from, e.g., Abdel-Massih 1971), while I consider the subject markers affixes to the verb. Outside the verbal domain, bound pronouns are considered affixes, i.e. when following a preposition or a noun. Deictic elements are written as clitics when attached to nouns, but as affixes when attached to pronouns. I write preverbal and postverbal particles, which mostly indicate mood, aspect, or negation, as separate words. A few locally restricted elements are also considered clitics, among others the resultative marker in Siwa and Awdjila and the locative marker in Ghadames and Awdjila. All this is to some degree arbitrary, and different choices would be defensible.

The following abbreviations are used:

AD	the prospective particle *ad* (and allomorphs) (Berber)
ADDR	addressee (in Siwa pronominal forms)
aka	also known as
ANP	anaphoric deictic clitic (Berber)
AO	aorist (Berber)
Ar.	Arabic
ARA	Arabic pronominal series (Berber)
BCE	Before Common Era (aka BC)
COU	counterfactual
CE	Common Era (aka AD)
CS	construct state (Arabic)

D	Adagh (Tuareg)
DEF	definite article (Arabic)
DEM	demonstrative basis (Berber)
DIM	diminutive (Arabic, Ghomara)
DIST	distal deictic clitic (Berber)
DO	direct object (Berber)
EA	état d'annexion / annexed state (Berber)
EL	état libre / free state (Berber)
ELAT	elative (Arabic, Siwa)
F	feminine
f.	female
FOC	focus particle (*i, ay*, etc.) (Berber)
FR	free state (Arabic)
FT	future (Ghadames, Awdjila Berber)
FUT	future marker
Gh	Ghat (Tuareg)
H	Ahaggar (Tuareg)
HYP	hypothetical
IO	indirect object (Berber)
IPFT	imperfect (Arabic)
IPFV	imperfective pre-verbal particle (Berber, Arabic)
IPT	imperative
IPV	imperfective (Berber)
La	Laoust (1932)
LOC	locative (Ghadames, Awdjila)
M	masculine
m.	male
MAr.	MaghribianArabic
Mor.	Moroccan
N	Naumann (2012)
NEG	negation
NEG2	postverbal negation
NIPV	negative imperfective (Berber)
NP	Noun Phrase
NPV	negative perfective (Berber)
O	oblique (Arabic)
P	plural
PAST	past marker (Berber)
PF	feminine plural
PFV	perfective preverbal particle

PM	masculine plural
PN	personal name
PNG	Person/Gender/Number
PRED	predicative particle (Berber)
PROH	prohibitive
PROX	proximal deictic clitic (Berber)
PRTA	active participle (Arabic)
PT	perfect (Arabic)
PTC	participle (Berber)
PV	perfective (Berber)
Q	Iqəřɛiyən (aka Guelaïa), a variety of Tarifiyt
Q	yes/no question
RC	relative clause
REL	relative marker
RESULT	resultative perfective (Siwa, Awdjila)
S	Souag (2010)
S	singular
SF	feminine singular
SM	masculine singular
VENT	ventive particle ("hither") (Berber)
VOC	vocative particle
W	Iwellemmeden (Tuareg)
War	Ayt Waryaghel (Tarifiyt)
WE	Eastern Iwellemmeden (Tuareg)
WW	Western Iwellemmeden (Tuareg)
Y	Ayer Tuareg

The hyphen stands for a morpheme boundary, = marks a clitic boundary.

Transcription System

The system of transcription as used here is basically the one generally used in Maghribian studies. The following signs are different from standard phonetic transcriptions, and/or from other systems used in the field.

Following standard transcriptions of Kabyle, the affricate *tt*^{s} is written *ʈʈ* or *ʂʂ* depending on whether it constitutes a realization of /tt/ or a strengthening of /ss/. For other Berber varieties where /t/ is pronounced [ʦ] (e.g. Figuig), /t/ has been written.

sign	IPA	alternatives (Arab studies)	alternatives (Berber studies)
a	aˑ, ɑˑ	ā	
ă	ɐ	a	
ā	aː, ɑː		aa, aʳ, ar (all only for Tarifiyt)
b̲	β		b
č	ʧ		tš, tc
d̲	ð		d
ḍ	dˤ		
ḍ̲	ðˤ	ḍ, ẓ (only Classical)	ḍ̲, ḍ
e	e	ē	é
ə	ə	e	e
ɣ	ɣ ~ ʁ	ġ	ġ, gh
g̲	ɟ		g
ǧ	ʤ	j	dj, dž, ll (the latter only for Tarifiyt)
ḥ	ħ		
i	iˑ, ɪˑ	ī	
ī	iː		ia, ea, iʳ, ir (all only for Tarifiyt)
k̲	ç		k
l̩	lˤ		
o	oˑ	ō	
r	ɾ		
ř	r, ɹ (Tarifiyt, Zayan)[2]		l, r
ṛ	ɾˤ		
ṣ	sˤ		
ṣṣ	tsː (only Kabyle)		tts
š	ʃ		c
t̲	θ		t
ṭ	tˤ		
ṭṭ	tsː (mainly Kabyle)	tt, ttˢ	tt
u	uˑ, ʊˑ	ū	
ū	uː		ua, oa, uʳ, ur (all only for Tarifiyt)
ŭ	ʊ	u	
x	x	ḫ	ḫ
y	j		
ẓ	zˤ		
ž	ʒ		j
ε	ʕ	ᶜ	ᶜ
ʔ	ʔ	’	’

[2] The sound transcribed as <ł> in Loubignac (1924).

Berber and Maghribian Arabic sound systems are similar enough to be written with the same transcription system. This is the reason that I choose the Berberologist representation of the plain vowels (the vowels that are mostly half-long, and that can occur in open syllables) with simple *a, i, u* rather than the common Arabist representation, which writes them *ā, ī, ū* word-internally, and *a, i, u* in word-final position. Consequently, the Arabic short vowels are written with a breve sign: *ă, ŭ*.

For transcribing Standard and Classical Arabic, I use Arabist conventions in writing long vowels with a macron (*ā, ī, ū*), short vowels without.

CHAPTER TWO

BERBER AND ARABIC

In this chapter, a basic introduction is provided to the linguistic and sociolinguistic situation of Arabic and Berber in northern Africa. The first section deals with the shared Afroasiatic heritage of Berber and Arabic, and its relevance for the study of Arabic contact influence on Berber. The second and third section provide an overview of linguistic and dialectal classification within Berber and Arabic. The following two sections deal with the sociolinguistics of Arabic and Berber, while the last section tackles the intricate problem of dating Arabic-influenced innovations in Berber.

2.1 The Afroasiatic Heritage

The Berber family is a separate branch of the Afroasiatic language family, also known as Hamito-Semitic.[1] Afroasiatic includes the following other branches: Chadic (a large group of languages spoken mainly in Nigeria, Cameroon and Chad), Cushitic (mainly in northeast Africa), Ancient Egyptian and Semitic; for a recent overview of Afroasiatic, see Frajzyngier & Shay 2012. Most researchers now admit the existence of a sixth branch, Omotic, a group of languages spoken in southern Ethiopia. Afroasiatic as a language phylum has an enormous time depth, comparable to highly-disputed groupings such as Nostratic (the language family that would unite, among others, Indo-European and Altaic). Still, its existence is more widely accepted than that of, for instance, Nostratic (e.g. Aikhenvald & Dixon 2001:8).

[1] Greenberg (1966:50–51) has rightly challenged binary terms such as Semito-Hamitic and Hamito-Semitic, which suggest a relation of equality between Semitic on the one hand and the other branches of the family (so-called Hamitic) on the other—a point of view which was for some time also ideologically loaded (Meinhof 1912). Since Greenberg, hardly any researcher has maintained the idea of a binary split between Semitic and the rest (cf. however Vycichl 1981); however in French and Russian tradition, the term Hamito-Semitic is still widely used. Greenberg's term, Afroasiatic, is hardly more lucky than the earlier terminology, except for its lack of ideological connotations; only part of Semitic is nowadays spoken in Asia, and all other language groups—as well as most modern Semitic languages—are African (a similar critique of the term is given by David Cohen, Lonnet & Mettouchi 2006:10).

Berber itself is a close-knit language family, and the differences between the different varieties do not exceed those found within the Germanic or Romance language groups. Arabic is part of another branch of Afroasiatic, the Semitic language family. As such it is more closely related to Semitic languages such as Amharic, Hebrew and Akkadian than to Berber. Even if one would propose a sub-classification of Afroasiatic in which Berber and Semitic belong together, excluding any of the other branches at that stage (reformulating Rössler's "Semitic character of the Libyan language", Rössler 1952), the time span between the dissolution of Berbero-Semitic and modern Berber and Maghribian Arabic would be enormous. Our earliest documentation of Semitic languages dates from the middle of the third millennium BCE; the language of these documents is clearly an early stage of Akkadian, and not Proto-Semitic. In order to reach the Proto-Semitic stage, a very short chronology would have to add at least a thousand years (probably more); one would need at least one more millennium in order to reach a putative Berbero-Semitic node. All in all, this puts us in the middle of the fifth millennium BCE for an ultra-short chronology; greater time depth is certainly more probable.[2] This means that Berber and Arabic have been separated for at least 6,500 years. If one compares this to the putative date of Proto-Indo-European, which mainstream Indo-European linguistics puts somewhere between 4,500 and 2,500 BCE (Mallory & Adams 2006:103), modern Berber and modern spoken Arabic are at least as distant from each other in time as modern English and modern Hindi.

Nevertheless, Arabic and Berber present a number of similarities which may be considered common Afroasiatic heritage. These similarities concern in the first place lexicon, e.g., Classical Arabic *dam* 'blood' (well-attested in Semitic) and Zenaga Berber *əḍämmän* 'blood (plurale tantum)' (well-attested in Berber), Classical Arabic *lisān* 'tongue' (pan-Semitic), Tuareg *iləs* 'tongue' (pan-Berber), also well-known elsewhere in Afroasiatic (Newman 1980:26). There are important similarities in other domains

[2] Blažek (2012) cites time depths reconstructed independently by George Starostin and Aleksandr Militarev that put proto-Afroasiatic around 10,000 BCE, and the split of Semitic and Berber at 7710 BCE (Starostin) and 8960 BCE (Militarev), respectively. Lipiński (2001:48) considers the split to lie somewhere in the middle of the fourth millennium BCE or earlier. A late date is reached by the Automated Similarity Judgment Program (ASJP), which puts Proto-Afroasiatic at 6016 BP (4066 BCE; Holman e.a. 2011), i.e. about 6,000 years later than Starostin and Militarev. The results of ASJP are at many points highly problematic; thus South Semitic is put at 3804 BP (1854 BCE), while Semitic as a whole would have split up in 3301 BP (1351 BCE), i.e. five hundred years later! The last date is certainly wrong; the first texts in Akkadian are about 1,200 years older than the putative date of Proto-Semitic.

too. Thus, Arabic and Berber verbal lexemes are both built on the basis of (mostly) three consonants, while valency derivations and aspectual marking are to a large degree expressed by changes in the vowel schemes. In northern Berber, this system has become opaque to a large degree, due to the merger of all short vowels, but in those Berber varieties where this merger did not take place it is still visible. Compare the morphological structure of the Classical Arabic verb *MLK* 'to own' and Ghadames Berber *KRZ* 'to till the soil' (exx. have the 3SF prefix):[3]

Classical Arabic:	Imperfect active 3SF:	*t-amlik-*
	Imperfect passive 3SF:	*t-umlak-*
	Factitive derivation impf. active 3SF:	*t-umallik-*
	Causative derivation impf. active 3SF:	*t-umlik-*
Ghadames Berber:	Aorist 3SF:	*t-ăkrəz*
	Perfective 3SF:	*t-əkrăz*
	Imperfective 3SF:	*t-əkărrăz*

While the functions of the schemes are different in the two language groups, the systems are formally quite similar.

The deep genetic ties between Arabic and Berber posit a methodological problem in the study of their mutual influence. When certain features are common to Arabic and Berber, should they be considered diffusion through language contact or common heritage? Fortunately, this problem can be solved in most cases by taking recourse to languages that have not gone through a period of intensive contact. In the case of Arabic, non-Maghribian varieties and Classical Arabic can take this function. While the status of Classical Arabic as the origin of the modern Arabic "dialects" is debatable (see Owens 2006 for a recent polemics), it is sufficiently related to modern Maghribian Arabic to serve as a source of reference. Its standardization took place at a period when northern Africa had undergone arabicization only on a small scale, and therefore predates the period when language contact between Berber and Arabic intensified. Moreover, being a variety based in the Arab Peninsula, there is little chance of ancient contact influence from Berber.[4] The same is true, of course, for the modern spoken Arabic varieties of the Middle East. Even

[3] Normally the 3SM is used in paradigm examples; I refrained from this here because of some low-level assimilatory processes concerning this prefix in Ghadames Berber.

[4] Some Arabic lexicographers interested in the origin of weird and foreign terms in the Qur'ān posit the existence of Berber words in the Holy Book. The adduced words do not bear any resemblance to attested Berber words, and the suggestion of Berber influence at this early stage can therefore be discarded. E.g., Al-Suyūṭī (1967 edition, 105–120).

in Nile Valley Arabic, there is little to no reason to believe that Berber had any influence, and this is even more so the case in varieties spoken more to the east.

For Berber, Tuareg plays a similar role to Middle Eastern varieties for Arabic. Most Tuaregs live outside the sphere of influence of spoken Arabic. Although there are Arabic-speaking groups in the southern Sahara, their numbers and prestige are not important enough to play much of a role in language contact. Classical Arabic does play a role as the language of religion, and there are scores of loanwords to be found in Tuareg that belong to this domain (Prasse 1986). Some of these seem to have reached Tuareg through the medium of other languages, such as Hausa. Thus one remarks the Niger Tuareg form *ălwăḷḷa* 'ablution', which takes up Arabic *al=waḍāʔa* 'purity' in its Hausa form (*àlwàlàá* 'ablution'). Arabic words from other semantic fields have only occasionally been taken over in Tuareg, and there is no reason to believe that Arabic exercized much influence on the grammar of the language. Therefore, Tuareg can serve as a contrast language to the other Berber languages: once a feature found in northern Berber and Maghribian Arabic is also found in Tuareg and—let's say—Levantine Arabic, chances are high that they either constitute common Afroasiatic heritage or unrelated parallel developments. A contact scenario is excluded here, except for some specific lexical items.

2.2 Berber Classification

There exists a long tradition of treating Berber as one single language, which started during the colonial period, e.g. in André Basset's *La langue berbère* (1952), and which was continued in much of North-African scholarship. To some degree, the reasons behind this are ideological: especially now that a unitary Berber identity is proposed and lived by many people, the unity of the language has become a central issue. Authors have stressed the basic grammatical unity that would underlie all Berber varieties, and have dismissed the differences as superficial and of little importance. This could be called the unity-in-diversity argument. On the other hand, the unitary view of Berber is related to the difficulties one encounters when trying to define the different languages it would be constituted of. This was the major point in Basset's view, and the same argument has been brought forward by Salem Chaker (1995:7–19). As much of Berber constitutes a kind of dialect continuum, defining the borders of individual languages is highly problematic. This could be called the continuum argument. In practice, the two arguments are often combined.

Both argumentations are not without validity. However, the result is misleading, as it suggests that the differences between Berber varieties are much less than those within families that are commonly considered to consist of different languages. Thus, in my feeling, the differences between, say, Zenaga and Tarifiyt are certainly not smaller than those between Romanian and French, and the differences between Tarifiyt and Figuig Berber may be comparable to those between Spanish and Portuguese.

Other authors, mainly outside the French-inspired berberological tradition, have—often quite naively—divided Berber into numerous languages. *Ethnologue* (Lewis 2009) has no less than 25 Berber languages, including four different Tuareg languages and five different languages in the Algerian oases of the northern Sahara. At several points, it suggests that some of the languages should be split up even further. The criteria for a classification as "dialect" or "language" are unclear in this source, especially as, different from *Ethnologue*'s findings in other parts of the world, the classification is not based on mutual comprehension tests.

Aside from the question of defining languages, the historical subclassification of the different varieties of Berber is highly problematic. This is due to the fact that most of Berber constitutes a kind of discontinuous continuum of varieties that are either neighbors, or are separated from each other by Arabic-speaking regions. In the latter case, in spite of the important geographical distances sometimes involved, the linguistic continuum is still perceptible. In such a situation, there are no major linguistic impediments to the spread of innovations (or the later spread of old features, lost in one of the varieties), which makes the definition of a linguistic border rather arbitrary. A number of features may serve one subclassification, while other features may support a different classification. As subclassification is irrelevant to the purpose of this book, I shall not further abide on it (see Kossmann 1999a and Kossmann fc.-c for discussions).

In this study, I speak of Berber languages in plural, but I deliberately remain vague about how many and which languages should be distinguished. Moreover, I do not make any use of historical subclassifications. Instead, I follow a division into different blocks, which are differentiated on geographical and linguistic grounds.

The Major Blocks of Berber Varieties

In the following, the major blocks of Berber varieties will be presented, as well as some of the internal divisions within these blocks. The first two blocks are separated linguistically and geographically from the other

Berber languages. They are not part of a linguistic continuum and should, in any definition of the term, be considered separate languages. The other blocks are part of the continuum, and should not be equated with "languages"—one may argue in some situations that one block consists of several languages and the other way round.

In the presentation, I add the main references that were used for these languages in the present study. The list is by no means exhaustive, and many important works are left unmentioned. For general overviews of Berber, one may consult A. Basset (1952), Galand (1988), Galand (2010), Kossmann (2012a).

1. *Zenaga of Mauritania and Tetserrét of Niger*

This block consists of two parts:

A. *Zenaga* is the original language of Mauritania. Nowadays it is spoken by about 3,500 persons in the southwestern part of the country. As all speakers are over 40 years old, it is critically endangered (Taine-Cheikh 2008:xviii). Reff. Taine-Cheikh (2008).
B. *Tetserrét* is the in-group language of part of the Ayttawari Seslem and the Kel Eghlal n Enniger in Niger, tribes that are ethnically Tuareg and fully incorporated in the Tuareg social network. Like Zenaga, the language, which may since long not have had much more than 2,000 speakers, seems to be highly endangered (Khamed Attayoub 2001, Khamed Attayoub & Walentowitz 2000–2001). As shown conclusively in Lux (2011), Tetserrét is closely related to Zenaga, and much less so to neighboring Tuareg varieties. Reff. Lux (2011).

2. *Tuareg*

Tuareg (aka Tamasheq in anglophone literature) is a block of closely-related varieties spoken by the Tuaregs in Mali, Burkina Faso, Niger, and Algeria. Following ethnic divisions, the Tuareg varieties are normally divided into a number of groups:

A. *Adagh* (aka Tadghaq, Tadaq), the Tuareg variety of the Adagh des Ifoghas in Mali and of one of the tribes in Burkina Faso.
B. *Taneslemt*, the Tuareg variety spoken close to the Niger river near Timbuktu in Mali.
C. *Iwellemmeden* (aka Tawellemmett), spoken in eastern Mali, in Niger, and by the Oudalan tribe in Burkina Faso.

D. *Ayer* (aka Aïr, Tayert), spoken in the region around Agadez and more to the east in Niger.
E. *Ahaggar* (aka Tahaggart, Hoggar), spoken in the Hoggar mountains in southern Algeria. The variety of the Ajjer mountains in the Algerian-Libyan border land is basically the same.
F. *Ghat*, the only Tuareg language spoken by traditionally sedentary people, in the oasis of Ghat in western Libya.

Depending on the dialectal pronunciation of the word *ta-mazəɣ-t, the dialects are also known as *tămašăq* (encompassing A and B), *təmažəq* (encompassing C and D) and *tămahăq* (E). The Malian autonym is used in some sources as a cover term for the whole group. This is not generally accepted by speakers of other groups, and I will stick to the traditional exonym Tuareg (cf. Aghali-Zakara 1984).

Tuareg is spoken by about 1,5 million people (cf. the calculation in Kossmann 2011a:1, note 1), mostly in Niger and Mali. Tuareg is a national language in Niger, Mali and Burkina Faso. Reff. Foucauld (1951), Heath (2005, 2006), Ritter (2009), Kossmann (2011a) and literature cited there.

3. *South-Central Morocco*

Southern and Central Morocco are home to many different varieties, which form a linguistic continuum which does not seem to be divided by strong isogloss bundles. Still the differences between the extreme ends are quite important. For geographical and ethnographical reasons, the region is traditionally divided in two parts, which are considered two different languages or, in another discourse, two different dialects.

A. *Tashelhiyt* (aka Sous-Berber, Shilha). This is the language of the mainly sedentary population of the western part of the High Atlas, the Sous plains and the Anti-Atlas in southwestern Morocco. The language is relatively homogenous. There exists a continuous written tradition of Tashelhiyt in Arabic script since the 16th century (van den Boogert 1997), and medieval Moroccan Berber texts also seem to belong to this variety (van den Boogert 2000). According to the figures of the 2004 census (HCPM), there are over 3,250,000 Tashelhiyt speakers in the home area; one has to add to this considerable numbers of speakers living outside the home region. Thus it is reasonable to assume that the majority of Berber-speakers in greater Casablanca, Rabat-Sale and Marrakech (together around 850,000 persons) speak Tashelhiyt. Together with emigrants in France and elsewhere, an estimate of 4 million speakers is probably on the low side.

The name Tashelhiyt is well-established, and in intellectual circles always understood as referring to southwestern Moroccan Berber. The term is derived from Moroccan and Algerian Arabic *šəlḥa* "non-Arabic indigenous language", which can refer to any Berber variety, and even to the Northern Songhay language of Tabelbala (Algeria, Souag 2010:31). There are quite a number of other Berber populations that refer to their language as Tashelhiyt (e.g. Ayt Seghrushen in the Middle Atlas, p.n.). Reff. Destaing (1938), Aspinion (1953), Galand (1988). I did not have access to Stroomer (fc.).

B. *Central Moroccan Berber* (aka Tamazight, Middle Atlas). This is the language of the traditionally mainly semi-nomadic (transhumant) and sedentary populations of the eastern High Atlas, the eastern-Moroccan oases of the Dades, Guir and Ziz region, and the Middle Atlas. The easternmost varieties of Berber spoken in the Middle Atlas share many features with Zenatic varieties more to the east. As they are quite different and as there are important isogloss bundles separating these varieties from the other Central Moroccan varieties, they are taken to be part of a different block (see below). In the homeland, Central Moroccan Berber (including the eastern Middle Atlas) has way over 2 million speakers (census 2004, HCPM); one has to reckon with important communities outside this area.

Central Moroccan Berber is dialectally very diverse. There are a number of main groups that one can distinguish, but the exact borders are difficult to draw. In the first place there are the varieties immediately to the north of the western High Atlas (Demnat region), which are quite close to Tashelhiyt. A second group is constituted by the varieties of the eastern High Atlas, such as Ayt Ayache, Ayt Hdiddou and Ayt Izdeg. A number of tribes in the Middle Atlas also belong to this group, such as the Ayt Mguild and the Ayt Ndhir. The dialects of the Dades, Guir and Ziz oases may also belong here. Finally, there are a number of varieties on the northwestern side of the Middle Atlas which are relatively different from the others, and from each other, most notably those of the Zemmour and the Zayan.

Central Moroccan Berber is mostly known under the names Tamazight or Middle Atlas Berber. Both terms are misleading. Tamazight is the autochthonous name of Berber among many different groups, also far outside the Central Moroccan area. In modern political usage, Tamazight is used for Berber in general, irrespective of its dialectal background, and Berber has gained official recognition in Morocco and Algeria under this name. Therefore, restricting the term to the Central Moroccan varieties is bound to create ambiguity. The term Middle Atlas Berber, which is some-

times used as an alternative, is unlucky for the simple reason that many of the varieties described by this term are spoken in the High Atlas, or even south of it. For this reason, I will use the term Central Moroccan Berber. Reff. Laoust (1918), Loubignac (1924), Laoust ([3]1939), Bisson (1940), Willms (1972), Penchoen (1973b), Ennaji (1985), Taïfi (1991), Sadiqi (1997), Azdoud (2011).

4. *Northwestern Moroccan Berber*

Most of northwestern Morocco is Arabic-speaking. There are two Berber varieties that are clearly different from neighboring Tarifiyt (see below) which are spoken in this region. They have some features in common with the south-central Moroccan block, but for the time being are best regarded a block on their own.

A. *Senhadja de Sraïr*. This is the language spoken in the high mountain region around Ketama. There is important dialectal variation within this variety (cf. Lafkioui 2007 for data). Despite claims to the contrary (e.g. *Ethnologue*, Lewis 2009), the variety is well-alive and does not seem to be in immediate danger. The number of speakers may be around 70,000 (based on the 2004 census, HCPM). Reff. Renisio (1932), Ibáñez (1959), Lafkioui (2007).

B. *Ghomara*. This is the language of two tribes in the region west of El Jebha. Recent research has shown that the variety is well-alive. The number of speakers is difficult to estimate, as the 2004 census data on Berber are clearly too low in this bilingual region. El Hannouche (2008:21), after a meticulous calculation, comes to a total of about 10,000 speakers. Reff. El Hannouche (2008), Mourigh (fc.).

Northwestern Moroccan Berber will play an important role in the rest of this study, as it displays a degree of influence from Arabic not found elsewhere in Berber. In fact, under some definitions, it would not be unrealistic to call Ghomara Berber a mixed language (see 13.8).

5. *Zenatic*

The Zenatic group is a widely diffused group of varieties that share a number of salient linguistic characteristics (Destaing 1920b, Kossmann 1999a). The internal diversity is great, and where they border on other blocks their inclusion or exclusion from one or the other is to some degree arbitrary. The Zenatic block has the following sub-groups:

A. *Tarifiyt* (aka Rif Berber, Riffian). This is the language spoken in the north-eastern part of Morocco. It has remarkable dialectal variation (Lafkioui 2007), and its westernmost varieties are not easily understood by speakers of its easternmost varieties. In the home area, it has over 1,2 million speakers (2004 census, HCPM). There are large communities of Tarifiyt speakers in the Netherlands and Belgium.

Two groups can be distinguished within Tarifiyt. The first group comprises the western-most varieties, spoken around Elhoceima, most important of which is Ayt Waryaghel.[5] The second group consists of the central varieties, spoken around Nador, most important of which is Iqəřɛiyən (aka Guelaïa). Reff. Biarnay (1917), Chami (1979), Lafkioui (2007), Kossmann (2009a, 2009b, personal notes).

B. *Beni Iznasen* (aka eastern Riffian, eastern Tarifiyt). This variety is spoken in the extreme north-east of Morocco. It has about 100,000 speakers. There are important communities in the Netherlands and Germany. Beni Iznasen takes an intermediate position between Tarifiyt and the western Algerian varieties. Reff. Renisio (1932), Kossmann (2000a, personal notes).

C. *Eastern Middle Atlas Berber*. The eastern-most varieties of the Middle Atlas present many similarities to Tarifiyt and other Zenatic varieties. Different from these, they also have clear links to other varieties of the Middle Atlas, and therefore take a kind of intermediate position between the two blocks. The eastern Middle Atlas group consists of two major groups. On the one hand there is the widely-diffused Ayt Seghrushen tribe, on the other hand, there is a group of varieties spoken in the mountains south of Taza, best-known of which is Ayt Warayn. Altogether, the eastern Middle Atlas group may count between 150,000 and 200,000 speakers. Reff. Destaing (1920a), Bentolila (1981).

D. *Western Algerian dialects*. The western Algerian group is a diffuse set of varieties spoken in small patches all over the north-western part of Algeria. The best-known groups are Beni Snous in the far west, Djebel Bissa near Ténès, and Chenoua just west of Algiers. Other varieties for which we have data are Beni Messaoud, Beni Menacer and Metmata, all of which are spoken in the region west of Algiers. Reff. Destaing (1907, 1914), Laoust (1912), Genevois & Reesink (1973).

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[5] Lafkioui (2009a) calls these varieties "central Tarifiyt", because in her terminology "western Tarifiyt" refers to the Senhadja de Sraïr varieties.

E. *Chaouia of the Aures* (aka Tashawit, Shawiya). This is one of the main varieties in Algeria, spoken in a large area south of Constantine. *Ethnologue* (Lewis 2009) has an estimate of 1,4 million speakers in 1993. Reff. Penchoen (1973a).

F. *Northern Saharan oasis dialects*. In a number of larger and smaller oases in the northern part of the Sahara, a relatively compact group of varieties is spoken. They fall into different groups:

F1. So-called Sud-oranais dialects, which are spoken in oases in the western part of the Saharan Atlas in Algeria and along the Saoura and Zousfana rivers. Most important is Figuig in Morocco (around 15,000 speakers). It is difficult to estimate the number of speakers in the other oases, but all in all there may be around 30,000 to 40,000 speakers. Reff. Kossmann (1997, 2010b), Saa (2010).

F2. Gourara (aka Taznatit), the variety of a large group of small oases in western Algeria, best-known of which is Timimoun. Reff. Boudot-Lamotte (1964), Bellil (2000).

F3. Tidikelt and Tuat, the variety of some larger and smaller oases further to the south. It is unclear if these varieties still survive to the present day; they are almost undocumented.

F4. Mzab, a confederation of seven oases in the north-central part of the Algerian Sahara. The culture of the Mzab has been strongly influenced by refugees from the Rostamid imamate in Tahert (present-day Tiaret in northern Algeria). The Mozabites belong to the Ibadhi brand of Islam, which is different from both the Sunna and the Shi'a. They have important links to other Ibadhi communities more to the east, such as in Djerba (Tunisia) and Djebel Nefusa (Libya) (Brugnatelli 2008a). According to 2008 census data, the municipalities in which these oases lie count about 250,000 inhabitants; presumably most of these have Berber as their native language. Reff. Delheure (1984).

F5. Ouargla, an oasis in the northeastern Algerian Sahara, partly Ibadhi and thence part of the large Ibadhi network. Reff. Biarnay (1908), Delheure (1987).

F6. Oued Righ, a group of oases north of Ouargla, most important of which is Touggourt. There exists no reliable documentation on these varieties, and their present state is unknown.

G. *Tunisian Berber and Zuwara*. The easternmost varieties of Zenatic are spoken in a number of villages in mainland Tunisia, on the Isle of Djerba and in the Libyan fishing port of Zuwara. Djerba and Zuwara are Ibadhi, and therefore part of the greater Ibadhi network. These varieties are in some respects quite different from Djebel Nefusa Berber (see under 7), and on the other hand share many characteristics with it. Like in the case of the eastern Middle Atlas varieties, their assignment to one or the other block is somewhat arbitrary. Reff. Mitchell (2009).

6. *Kabyle*

Kabyle is the main Berber variety spoken in Algeria. *Ethnologue* (Lewis 2009) has an estimate of 2,5 million speakers in Algeria. The 1966 census, which was the last one to include a question on language, had about 1,3 million speakers of Kabyle in Kabylia (Chaker 2004). According to the population statistics of the 2008 census,[6] the two provinces in Algeria which make up the bulk of Kabylia, Béjaïa and Tizi Ouzou, have over 2 million inhabitants, without doubt in majority Berber-speaking. One can add to this Kabyle speakers in neighboring provinces, as well as the large Kabyle community in Algiers and in France. Chaker (2004) gives a higher estimate of 5,5 million Kabyles in total: 3 to 3,5 million in Kabylia, and 2 to 2,5 outside Kabylia. To what extent these all still speak Kabyle as their first language is difficult to assess.

Kabyle has important dialectal variation. Naït-Zerrad (2004) makes a subdivision in four groups: Extreme-West, West, East and Extreme-East. These are spread out over two regions, Greater Kabylia ("Grande Kabylie", province of Tizi Ouzou) in the west and Lesser Kabylia ("Petite Kabylie", province of Béjaïa) in the east.[7] Especially the Extreme-East varieties are very different from the rest. Reff. (among many others): Basset & Picard (1948), Dallet (1982), Chaker (1983), Rabhi (1994).

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[6] From http://www.ons.dz/collections/, accessed March 9, 2012.

[7] Some authors, including Naït-Zerrad, prefer "Eastern Kabylia" to the term "Petite Kabylie", felt to be pejorative. I have kept to the, in my feeling, less ambiguous "Lesser Kabylia", hoping that the English translation is felt to be less negatively loaden than its French counterpart.

7. *Djebel Nefusa*

This is a group of dialects spoken in the western mountains in Libya. Somewhat arbitrarily assuming that half of the population in the regions Djabal al-Gharbi and Nalut speak Berber, there would be about 200,000 people speaking Djebel Nefusa Berber. The variety of Djebel Nefusa is difficult to assign to one of the blocks, as it has many features in common with Zenatic, but also with other blocks such as the Libyan-Egyptian oases and Ghadames. There is important dialect variation within this group, which is unfortunately hardly studied (Vermondo Brugnatelli, p.c.). Reff. Beguinot (^{2}1942), Provasi (1973).

8. *The Libyan-Egyptian Oases*

This block consists of the varieties of three eastern Saharan oases: Sokna in de Al Djufra region and El-Fogaha on the northeastern periphery of the Fezzan in Libya, and Siwa in western Egypt. The former two are probably now extinct (see 2.4), Siwa Berber is still very much alive and spoken by the great majority of the inhabitants of the oasis (about 15,000 people). This block has a number of communalities with Zenatic, and less so with Ghadames and Awdjila. Siwa Berber is characterized by some highly original innovations, which makes it quite different from other Berber languages. Reff. Sokna: Sarnelli (1924–1925); El-Fogaha: Paradisi (1963); Siwa: Laoust (1932), Vycichl (2005), Souag (2010), Naumann (2012).

9. *Ghadames*

This language is spoken in the oasis of Ghadames on the Libyan side of the Libyan-Algerian border. It is very different from other Berber varieties, although it shares a number of features with close-by Djebel Nefusa Berber. Reff. Lanfry (1968), Lanfry (1973). Kossmann (fc.-d) presents a grammatical sketch of Ghadames Berber based on Lanfry's materials.

10. *Awdjila* (*aka Augila*)

This language is spoken in Awdjila, one of the oases in the Djalu region in eastern Libya. While it has some retentions shared with Ghadames, it is best considered an entity on its own. Reff. Paradisi (1960a). Van Putten (fc.) presents a grammatical analysis of the language based on Paradisi's materials.

2.3 Maghribian Arabic and the Arabicization of Northern Africa

The Islamic conquest of northern Africa did not only introduce the new creed, but also lead to the introduction of Arabic as a language of communication. Since William Marçais (Marçais & Guîga 1925–1961:I/xxviii ff.; W. Marçais 1956) the Arabicization of northern Africa is commonly viewed as a two-step process. The first step was the establishment of Arabic as a language of urban life and of trade networks, which took place between the seventh and the twelfth century CE. According to Marçais' model, this stratum is still reflected in the Arabic varieties spoken nowadays (or until recently) by three groups: the Muslims of a number of ancient cities (among others: Fes, Tlemcen, Jijel, Cherchell); all Jewish varieties, as far as they are different from those of the Muslims in a certain locality; a number of rural regions which were presumably arabicized from nearby urban centers (mainly the Jbala in Morocco, the Traras in western Algeria, the region of Jijel in Algeria, and the Tunisian coast). The second stratum was introduced by the nomadic influx starting in the 11th century CE, which lead ultimately to the arabicization of the northern Sahara as well as most of the plains and High Plateaux. This stratum is mostly represented by rural dialects. Referring to the importance of the nomadic tribe of the *Banū Hilāl* in the establishment of the second stratum, Marçais called the first stratum "pre-Hilalian" dialects and the second stratum "Hilalian"; other terminologies use "sedentary" vs. "nomadic", which is a purely historical characterization, as nowadays "nomadic" (= "Hilalian" = second stratum) dialects are mostly spoken by sedentary rural and urban populations. In the following, the terms "first-stratum dialects" and "second-stratum dialects" will be used. The two dialect groups can be distinguished linguistically by a number of features. Some of these features have a background in general characteristics of Arabic dialectology common to the east and the west. In Arabic dialectology of the east, there is a basic distinction between sedentary dialects on the one hand and nomadic dialects on the other (cf. the recent overview in Vicente 2008). One important difference is found in the cognate of Classical Arabic /q/, which is voiced [g], [ɢ], in nomadic varieties, while it is voiceless in sedentary varieties: [q], [ʔ], etc. The first-stratum dialects of the Maghrib correspond to eastern Arabic varieties of the sedentary type, and typically have [q] or [ʔ]. The second-stratum dialects correspond to eastern Arabic varieties of the nomadic type and typically have [g] (at least in basic vocabulary). Other differences between first- and second-stratum dialects are typical of the

Maghrib. Thus, first stratum dialects tend to lose the difference between second person singular feminine and masculine forms, while second stratum dialects are more conservative in this respect.

While the basic distinction between the two strata stands beyond doubt, there are a number of complications in applying it to the modern situation.[8] In the first place, the chronological division between the two strata only concerns their original implantation in the Maghrib. It does not mean that all regions that have first-stratum dialects today were already arabicized by the time the second stratum came in. Thus, Lévy (1998:12) rightly points to the case of the Jbala in northwestern Morocco, which was probably arabicized from neighboring cities such as Fes, Tetuan, Tangier and Ceuta, all (presumably) first-stratum varieties. As a result, Jbala Arabic is also a first-stratum variety. As the influence of these cities is a constant factor in the region, there is no reason to date this arabicization to a very early period. Similarly, due to historical factors, localities that had a first-stratum variety at an early point in time may have changed to a second-stratum dialect, or may have been re-berberized. Souag (2009a) convincingly shows that Siwa Berber has borrowed extensively from a first-stratum Arabic dialect, even though nowadays all speakers of Arabic in the region speak a second-stratum variety. This is best understood as the remnants of an early Arabic oasis dialect in Siwa, which in the course of time was abandoned in favor of Berber. Similarly, Arabic loans in Berber languages along the caravan trail from the coast to the central Sahara suggest that there have been first-stratum Arabic dialects in a region where nowadays only Berber and second-stratum dialects appear (see 5.3.2.3). Finally, a number of ancient important cities, that probably had first-stratum dialects at an earlier period, have lost their Arabic character altogether, as is the case of Nakūr on the Tarifiyt coast, which does not exist any more, and of Ceuta, which has been out of Arabic hands since 1415. As a result of these factors, our present view of the extension of first-stratum dialects before the advent of the second stratum may be both too broad (disregarding later extensions) and too restricted (as it has been lost at several places).

Moreover, the history of the Maghreb is characterized by many natural and man-made catastrophes, and related movements of populations. As a result, some regions were almost depopulated at a certain time, and were resettled later by people from outside. This is true of a number of

[8] The following discussion owes much to Lévy 1998.

cities which were occupied for some time by European countries, and which were resettled by people from the surrounding countryside after their return to Muslim rule. Thus, after the English left in 1684, Tangier, lying on the outskirts of the Jbala, acquired a first-stratum dialect from its surroundings. Oran (finally relinquished by the Spanish in 1691) and Casablanca (almost uninhabited in the late 18th century), took over second-stratum dialects from their rural environment. Moreover, the large-scale deportation of whole tribes, as happened for instance in Morocco under Moulay Ismail (r. 1672–1727), had important effects on the distribution of Berber and Arabic dialects.

The history of Jewish Arabic has similar caveats. Where different from Muslim varieties, Jewish dialects all belong to the first stratum. One is tempted to consider them archaic representatives of the Arabic of the cities where they are spoken—archaic, because there was no major influx of second-stratum Arabic speakers like with the Muslim population. However, as stressed by Chetrit (2007:431 and elsewhere), because of persecutions, in Morocco Jewish life almost came to a stand-still between the 12th and the 14th centuries CE, with Jews either hiding their faith (and thus probably not distinguishing themselves by their language), or taking refuge in the extreme south. The Jewish communities of many cities therefore reflect later repopulation; their language either reflects southern Jewish Arabic varieties, or derives from the Muslim language of the city as spoken in the 15th century, and became distinctly "Jewish" only later due to internal developments and due to the evolution of the Muslim variety.

In historical dialectology, the difference between the two strata is of utmost importance. This should not distract us from the fact that most first-stratum and second-stratum dialects have been in continuous contact with varieties of the other stratum. As a result, large-scale convergence has taken place, and many regional Maghribian features are not specific to one or the other stratum. For example, the introduction of a future marker in Moroccan Arabic is general for both, even though the choice of the marker is different between the two types: *maši* (and variants) is found in some of the more old-fashioned first-stratum dialects, while *ɣa*(*di*) is found in all second-stratum dialects and nowadays gaining ground everywhere. In fact, the difference between the two types of dialects seems to lie mainly in a relatively small number of highly salient phonetic and morphological features. Their salience suggests that in many regions the difference between the two strata is consciously preserved, targeting features that would appear even in short conversations, such as the use of [q], [ʔ] vs. [g], or the absence of a gender distinction in the

second person singular. Other features are transferred from one to the other type, apparently without a problem. Thus, for example, Maghribian Arabic dialects of the second stratum spoken by nomads tend to have a two-vowel distinction in the short system between *ə* and *ă* (e.g. in the vicinity of Mzab, Grand'Henry 1976), which corresponds to the situation in many eastern Arabic nomadic varieties. These are varieties that have little or no contact with first-stratum dialects. First-stratum dialects typically have a system with *ə* and, more or less marginally, *ŭ*. The large majority of rural second-stratum dialects in the Maghrib have a system with *ə* and *ŭ*, and apparently converged at this point with the first-stratum system. As a result, Maghribian dialects of the two types are mostly easily distinguished, but still very similar in many parts of their structure. Once the need for differentiation is felt to be less, dialects of different types can converge freely, resulting in a variety that can no more be defined as belonging to one or the other stratum.

The most important synthesis on Maghribian Arabic is Ph. Marçais (1977); Heath (2002) provides a detailed dialectal overview for Morocco. More localized studies include, among many others, Caubet (1993), Maas (2011) for Morocco; Boucherit (2002) for Algeria, Singer (1984) for Tunisia, and Owens (1984) for Libya. Some of the main lexical resources are Harrell (1966), Prémare (1993–1999), Iraqui-Sinaceur e.a. (1993), Beaussier (1931).

2.4 Sociolinguistics of Berber-Arabic Contact

The current sociolinguistic situation of Berber is regionally diverse. On the macro-level, Berber (or a variety of it) is nowadays an official language in a number of countries. Since independence, Tuareg has been practically or officially treated as a national language in Niger, Mali, and Burkina Faso (Elghamis 2011). Language politics in these countries were and still are very different from those in the north. Mali, Niger and Burkina Faso present themselves as multilingual states, and foster an ideology in which all national languages have equal status. Tuareg is just one of many different languages in these countries, and its presence is not considered a problem for the unity of the country (the presence of Tuaregs as an ethnic group is another story). In the states of the Maghrib, the situation is different. Many of these states ideologically adhere to Arabic nationalism, which presents the Arabic world as a unity, and Arabness as a central element of national identity. One of the foremost symbols of this unity is the (standard) Arabic language (Suleiman 1994). In such a context, the presence of

other languages than Arabic, and especially of other native languages than Arabic, is easily interpreted as a threat to national and pan-Arabic unity. In the Maghrib, this feeling was strengthened by colonial policies which treated Berbers (i.e. speakers of a Berber language) different from Arabs (i.e. native speakers of Arabic), a policy which was interpreted as a colonial machination to divide the country (cf. for a recent analysis focusing on the Berber perspective, Wyrtzen 2011). After independence, Berber lost the little status it had enjoyed during colonial rule in Morocco and Algeria, and for a long time it became a politically undesirable subject. While public manifestations of Berber were more or less severely suppressed, no coordinated strategy was instigated to act on the actual usage of the language in the rural domain (cf. among others Ennaji 1997). Rather than considering this usage a problem, its existence was denied, either by calling Berber "just a dialect of Arabic", or by simply not mentioning it at all.

As a reaction to the official suppression of Berber, a nationalist movement came into being, which demanded for official recognition of Berber (Maddy-Weitzman 2011), in addition to a number of other issues. After a long political struggle, Berber finally gained this recognition. In Algeria, Berber was declared in 2002 in a constitutional amendment a national language in the same way as Arabic ("Tamazight is likewise [*scil.* like Arabic, MK] a national language"). In Morocco, it appears in the reformed constitution of 2011 as an "official language" (*luɣa rasmiyya*, langue officielle) of the state, being the "common heritage of all Moroccans without exception". During the first decade of the 21st century, both in Morocco and in Algeria, experiments were started that introduced a standardized version of Berber in primary education. While the success of these experiments is debated, the recognition of Berber has certainly lead to a boost in linguistic pride. Since 2000, the official Berber script, Tifinagh,[9] appears more and more in the public domain. Its usage, still highly controversial in the late 1990s, seems to cause much less sensitivity from non-Berbers than before. A telling example is the Arabic/French weekly newspaper *Tanger Télégramme*, published in the traditionally Arabic city of Tangier, which has a Tifinagh version of its name on the Arabic title page (april 2011). Tifinagh and the Berber cause do not play a role in the newspaper, and the use of Tifinagh in the title is therefore hardly functional. The interesting

[9] Moroccan and Algerian Tifinagh is based on the traditional script of the Tuaregs, but greatly diverges from it. In Morocco and Algeria, it constitutes a cultural innovation, as there was no continuous tradition of Tifinagh writing before. Cf. Elghamis 2011.

point is that it is apparently not considered something that would dissuade the (majoritary) Arab readership from buying the newspaper.

In the other countries where Berber is spoken, the situation is different. In Mauritania, Tunisia, and Egypt, Berber speakers constitute only small minorities. In none of these countries Berber is a major political issue, and no steps towards officialization or suppression have been taken. In Libya, Berber used to be vehemently suppressed and banned from all public and semi-public domains by the Ghadaffi regime. During the Libyan Revolution of 2011, Berber speakers played an important role, and marked their resistance to the regime by a display of Berber nationalist markers, including the use of Tifinagh. The present political situation in Libya does not allow for predictions about the institutional future of Berber, but at least at the moment the language has high visibility, and there is strong pressure towards its recognition.[10]

The number of Berber speakers in the different countries is difficult to establish, as only few recent censuses include questions on language use, and census results tend to be biased. Even for the colonial period, when authorities were not necessarily unfavorable to Berber, census results are to be used with caution. Thus, while according to figures from 1906 (Doutté & Gautier 1913), about 30% of the Algerian Muslim population was Berber-speaking, the 1948 Algerian census had only 17% for this group. Picard's critique clearly shows that the difference between the two figures is mainly due to different census techniques and not to a decrease in the percentage of Berber speakers (Picard 1957a:199ff.). For example, in the 1948 census the term "Kabyle" was used, which does not refer to all speakers of Berber in Algeria. An educated guess by André Basset for the late colonial period estimates that one third of the (Muslim) population of Algeria and somewhat less than half of the Moroccan population spoke Berber at that time (A. Basset 1952:4).

After independence, due to Arab ideology, only the 1966 census gave figures for language use. According to these results, 17,8% of the Algerian population would be Berber-speaking, which is certainly below the real percentage (Chaker 1984:8). Until recently no further census data on northern African countries have taken native language into account. Estimates for most of the recent period tend to be based on figures from

[10] Cf. the Constitutional Declaration of August 3, 2011, Article 1, in which Arabic is declared the official language (*luɣa rasmiyya*), but where other languages are considered national languages (*luɣāt waṭaniyya*). See https://www.temehu.com/NTC/tnc-constitutional-declaration-in-arabic.pdf (retrieved March 2012).

the colonial period, extrapolation of these figures, or are simply more or less (often less) educated guesses. Even if one trusts colonial figures, their extrapolation to modern times is problematic. Before 1950, the large majority of the population of Algeria and Morocco lived in the countryside; this has changed considerably since. For example, in Algeria, in 1960 30,5% of the population lived in cities, fifty years later, this was the case of 66,5%;[11] in Morocco, the urban population increased from 29,4% in 1960 to 56,7% in 2010. As traditionally Berber is a language of the rural population, and speakers tend to shift to Arabic once they have settled in an urban area (Abbasi 1977:101), urbanization certainly had impact on the nation-wide percentage of Berber speakers (Hoffman 2006:150; Ennaji 2010:76). One has to keep in mind, however, that urbanization does not by necessity immediately lead to language loss. It is telling, for instance, that in the 1991 Algerian elections, which were won by the fundamentalist FIS, parties with a strong embedding in Berber cultural groups (FFS and RCD) gained 18,4% of the voters in Algiers (Fontaine 1992:157). Therefore, one may well conclude that almost one fifth of the population of Algiers felt enough connection to their Berber roots to make this influence their voting behavior; this attachment could very well be related to language maintenance. In fact, percentages are probably higher for Algiers, as many Berber speakers undoubtedly voted for other parties, whose popularity was not restricted to speakers of Arabic.

The only recent census that explicitly includes language is the 2004 census in Morocco. According to this census, Berber is spoken by 28% of the population (HCPM). This figure is much lower than estimates of the late colonial period and afterwards (e.g. Boukous 1997, Ennaji 1991, who give an estimate of 40%, Ennaji 2010:74 even "approximately half of the population"),[12] and has been subject to severe criticism. There are certainly a number of caveats to the census data. In the first place, the figure represents the answer to what language is used in daily life. It is thereby less inclusive—especially in an urban setting—than questions about which language is the first language of a person; moreover it is sensitive to ideological pressure: as Arabic has higher status, a person who uses both Arabic and Berber in his daily life may choose to give Arabic rather

[11] Data according to *Perspective-Université de Sherbrooke*: http://perspective.usherbrooke.ca/bilan/servlet/BMTendanceStatPays?langue=fr&codePays=DZA&codeStat=SP.URB.TOTL.IN.ZS&codeStat2=x); accessed March 2012.

[12] The Wikipedia article "Languages of Morocco" (retrieved February 27, 2012) gives at one point a staggering 50–65% of the population as Berber speakers.

than Berber as an answer. In the second place, there were many problems in the practicalities of the census; even though it was in principle carried out as a house-to-house survey, data were sometimes provided by village officials. Such a situation could lead to over-representation of Arabic for the afore-mentioned reason; on the other hand, it may also explain the extremely high figures for Berber in some areas, which amount to 100% in quite a number of municipalities. There is no doubt that the census hides Berber in some places; thus the linguistic island of Ghomara Berber is invisible in the statistics. On the other hand, Hassaniya, the Arabic variety of the Western Sahara and Mauritania, is registered as "Amazigh" (i.e. Berber), thereby boosting the figures in favor of Berber.

The geographic distribution of municipalities in Morocco with large percentages of Berber speakers according to the 2004 census corresponds very well to data from the colonial period. Thus, what seems to have happened in between is not so much language loss (or concealment by the census) in the traditional areas where Berber is spoken, but a change in relative weight of these areas vis-à-vis the over-all population of Morocco.[13] Therefore, while 28% may be on the low side, the strong decrease in relative importance over the last fifty years may be realistic, as an effect of urbanization (see above). This decrease in percentage conceals two facts: first, that in its heartlands Berber only marginally lost ground, and second, that there are many more speakers of Berber nowadays than there were in the late colonial period. André Basset (1952:4) estimated the number of Berber speakers in Morocco about 3 million; according to the 2004 census, there are almost 8,5 millions speakers of Berber.

For Libya, no population statistics are available. The most viable way of estimating the Berber-speaking population is looking at the population statistics of the regions where Berber is spoken on a large scale, i.e. Nalut, the Western Mountains (Djebel Nefusa) and Zuwara. Neither of these regions is exclusively Berber-speaking. Large parts of Nalut and the Western Mountains are Arabic (e.g. Zintan), while one has to reckon with many Arabic-speaking immigrants in the port town of Zuwara. If we—arbitrarily—estimate that around half of the population in these two regions speaks Berber, there would be about 300,000 persons, i.e., about 5% of the Libyan population.

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[13] Thus, Abbasi's (1977:102) prediction is borne out: "The trend will continue to show a relatively stable form of bilingualism in the rural Berber regions, and a less stable or transitional one in the cities where Arabic is taking over most societal domains."

Berber in Tunisia is confined to a number of villages, and Berber speakers constitute less than 1% of the population. Their exact numbers are not known, and estimates range from between 45,000 and 50,000 persons (Gabsi 2011:142) to 60,000 (Hamza 2007:28) and 109,000 persons (Hamza 2007:67).[14] In Egypt, Berber is only spoken in the oasis of Siwa, by approximately 15,000 people (Souag 2010:17).

Different from what is sometimes suggested, most Berber languages are not immediately endangered. The Moroccan data from the 2004 census are telling in this respect: large regions in the High Atlas, the Middle Atlas and the Rif have over 95% of Berber speakers. The UNESCO *Atlas of the World's Languages in Danger* lists six endangered Berber languages. The first among these is Judeo-Berber. While the endangerment of Berber as spoken by Jews stands beyond doubt, it is questionable that it was very different from neighboring Muslim Berber varieties except for religious terminology; Chetrit (2007) even suggests that many alleged Judeo-Berber communities were basically Arabic-speaking and used Berber only for contacts with Muslims. A second endangered variety given by the *Atlas* is Ait Rouadi Tamazight, a variety spoken in the Tadla plain west of the Middle Atlas. Again, there is no doubt about local language loss here (Bennis 2001:638, 2011),[15] but there is no reason to consider this variety a language on its own; it is doubtful that it differs very much from surrounding, very viable dialects. Figuig Berber is also counted as endangered; in this case, the endangerment is highly questionable, as the local inhabitants of the oasis are almost all Berber-speaking, and language shift seems to be rare. Something similar is true for Senhadja de Sraïr, which has been declared dead by several sources (e.g. *Ethnologue*, Lewis 2009), but which is well-alive (Lafkioui 2007). The last case, Beni Iznasen is somewhat different. The Beni Iznasen tribe is traditionally bilingual, i.e., certain fractions are Arabic-speaking while others use Berber (already Voinot 1912). Over the last decades, language shift is taking place at least in parts of the region (El Kirat 2001), and seems to be completed in the larger urban centers, such as Berkane. Still, in many villages the language is spoken by the entire population, including children and adolescents (Stanly Oomen, p.c.), and El Kirat's dark view of its future may be too pessimistic. Finally, the status of Ghomara Berber is unclear. Like in the case of Senhadja de Sraïr, the

[14] The last figure may refer to Berber identity rather than to knowledge of the Berber language.

[15] In fact, the community has already shifted to Arabic entirely, Bennis 2011.

lack of linguistic studies on northwestern Moroccan Berber since independence has given the impression that the language would be dead or at least disappearing fast. Recent fieldwork in the area (El Hannouche 2008, Mourigh fc.) shows that it is still spoken by many people of different age groups. Mourigh (p.c.) observed that Arabic seems to prevail nowadays among primary school children in the sea-side village of his fieldwork, which could point to incipient language shift. To what extent this also applies to the mountainous heartland of the language is impossible to say.

The situation seems to be less favorable in Algeria. While the great blocks of Kabylia and the Aures are not in danger, the many small pockets in central and eastern Algeria are definitely under pressure. Their decrease has a long history: thus Picard (1957a:200–201) notes that small Berber-speaking groups such as the Achacha of the Dahra, the Bel Halima in the vicinity of Frenda and the Tarifiyt migrant community in the old town of Arzew had already shifted to Arabic by the late colonial period. There are no recent surveys of these regions, but observations by Lameen Souag suggest that several communities are shifting now, and that Berber is no more learned by younger speakers (Lameen Souag p.c.). It is impossible to make out to what extent this tendency is general among these language islands.

In Tunisia, the situation of Berber seems to differ from village to village. Brugnatelli (1998) remarks that on the island of Djerba it is still widely spoken in some villages, while it is increasingly rare in others. On the mainland, the situation of Berber has been described in alarming terms (Battenburg 1999, Gabsi 2011, Hamza 2007). The exact situation is not very clear, however, and even a work like Hamza (2007), which has the death of Berber in Tunisia as its subject, remains vague about the situation in the villages. His statement that "superficially" transmission of Berber to younger speakers has ceased in the 1980s pertains to immigrants in Tunis (Hamza 2007:221); however, the same situation may (with a certain time lag) be true for the villages too, where he observed a "significant decrease" amongst the children younger than 10 years old (Hamza 2007:172).

In Libya, the recent resurgence of Berber activism clearly shows its vitality in the Djebel Nefusa and in Zuwara. Elsewhere, things are less clear. According to observations by Adam Benkato (p.c.), Awdjila Berber is still alive. Most male speakers seem to be over forty, but the situation among women is unknown. There is no information on the fate of Ghadames Berber, but there is no reason to believe it has died out. In the central Libyan oases of Sokna and El-Fogaha, Berber was apparently abandoned in course of the 20th century. According to the cadi of Sokna,

in the early 1920s only four or five people could still speak Berber (Sarnelli 1924–1925:3). In El-Fogaha, Umberto Paradisi only found three good speakers of the language in the early 1960s (Paradisi 1961:294).

All over the Maghrib, most speakers of Berber also know Arabic, and, to quote Ennaji (2010:125), "[m]onolingual Berbers are usually children, old men and women living on the mountains or in the desert". I am not aware of any sophisticated sociolinguistic surveys on language use and knowledge in Berber-speaking rural areas, but there seem to be two main types of multilingualism in the countryside. In some regions, virtually all Berber speakers can also communicate in dialectal Arabic. The fluency and quality of their Arabic varies from person to person and ranges from perfect bilingualism to strong dominance of Berber. This seems to be the case in many regions, such as, in Morocco, the Sous plains in the south (Hoffman 2006), the northern part of the Middle Atlas (Kossmann 2012b), Figuig (Melhaoui & Kossmann 2006) and Tunisia (Hamza 2007:172). For other regions, a difference between male and female practices is reported. Thus Hoffman (2006) describes Tashelhiyt speaking women from the eastern Anti-Atlas mountains as monolingual, while the male population speaks both languages. In this region, most males stay only part of their life in the village, and spend the other part in the city, while women tend to remain in the home village. I would not be surprised if migration patterns are more important here than gender (as far as they do not coincide). In the 1990s I have met young male Berber-speakers from the region of El Hoceima who told me they had had no knowledge of Moroccan Arabic before they moved to an Arabic city. They acquired Standard Arabic through education before they acquired Moroccan Arabic and initially had considerable problems in coping with it. I heard similar anecdotes about Berber speakers in Zuwara in Libya.

Bilingual speakers tend to use Berber in the domain of the village and the family, and Moroccan Arabic in the outside domain. One example of this is the situation in the northern Middle Atlas town of Imouzzar. The Graz corpus of spoken Moroccan conversations built by Utz Maas[16] contains many Arabic outdoor conversations from this town featuring

[16] In the framework of the project *Arabisch im Mittleren Atlas* at the universities of Graz and Vienna, financed by the Austrian Science Fund (FWF), with the collaboration of Abderrahmane Assini. Cf. for a description http://www.uni-graz.at/en/fzsaawww/fzsaawww_forschung/fzsaawww_beschreibung.htm.

only Berber native speakers. On the other hand, the same speakers consider using Arabic at home to be disrespectful to their parents (Kossmann 2012b). Again, it should be noted that patterns of language use are strongly determined by local and temporal constraints. Thus the northern Middle Atlas situation is in no way duplicated in the oasis villages of Figuig, where Berber is the language of choice between Berber speakers, and Arabic is only used in conversations with outsiders. As for the temporal axis, I have been told by Berber migrants in Oujda, a large Arabic-speaking city in eastern Morocco, that using Berber in a café was considered inappropriate in the 1970s and 1980s, but that this changed during the 1990s. In this migration context, Tarifiyt speakers would use Berber more in public than people coming from Figuig. The official recognition of Berber by the Moroccan government will undoubtedly strengthen this tendency.

Besides such anecdotal information, there are only few studies that quantify (reported) language use concerning Berber and Arabic. One of these is Brahimi & Owens (2000), who study 147 Algerian Berber speakers. Among these, 9 reported only little or no (!) knowledge of Berber, 39 considered themselves to speak Berber "rather well", and 37 to speak it "well". Seven out of 147 Berber speakers reported to have no knowledge of dialectal Arabic, while 35 spoke "a little" dialectal Arabic. The research was done both in a Berber-speaking area (Tizi Ouzou in Kabylia) and in an Arabic-speaking city (Oran). 29 out of 144 Berber respondents (3 were "missing" in the statistics) came from Oran. Unfortunately, the overview article in which these figures were published does not specify the results according to place of residence or age of the respondents.

Bentahila & Davies (1992), basing themselves on a questionnaire completed by over 200 young "fluent Berber-Arabic bilinguals" in Morocco, observe a strong decay of Berber usage in the family domain, especially between siblings. This is exemplified in the table below:

Table: Language usage with siblings of young Berber-Arabic bilinguals in Morocco (adapted from Bentahila & Davies 1992:200)

	speakers with monolingual parents and grand-parents	speakers with bilingual parents and monolingual grand-parents	speakers with bilingual parents and grand-parents	total
Berber only	76%	32%	28%	48%
Berber + Arabic	20%	25%	28%	22%
Arabic only	4%	42%	44%	29%

These figures suggest a situation of language shift, especially given that only few young people are monolingual (which would have kept them outside the sample). However, the interpretation of the data is complicated by the fact that Bentahila & Davies do not differentiate between urban and rural speakers (people from both groups took part in the survey), nor between speakers who moved away from their home region and those that stayed there. Therefore, it is impossible to make out to what extent these factors co-predict language choice.

Bilingualism is often depicted as a threat to the maintenance of Berber (already so in Bernard & Moussard 1924), and even authors that do not consider the language to be endangered immediately point to the "contraction" of the language to the local domain (e.g. Hoffman 2006). In fact, contraction may be the wrong term. Before the colonial period, Berber was essentially a rural language, spoken by farmers and transhumant nomads. The "inside" and the "outside" domains basically coincided. Urbanization, mass education and improvement of infrastructure greatly expanded the "outside" domain, and created new contexts of language use. Thus the kind of street corner conversations in which Imouzzar youngsters use Arabic are a relatively new context; one hundred years ago, the local Berber populations had little to do with urban centers like Imouzzar (which hardly existed). Seen from this angle, Berber did not so much contract, but rather failed to expand into new domains.

Among the many subjects that are understudied in Berber linguistics, code-switching stands out. In Maghribian linguistics in general, code-switching is among the most thoroughly studied subjects, and many analyses have been made, taking different angles of research. With very few exceptions, this research concerns one out of two contact situations. In the first place the interaction between the diglossic "Low" language dialectal Arabic and the "High" languages Standard Arabic (Boussofara-Omar 2006) and French (Abbasi 1977, Bentahila & Davies 1983, 1995, Heath 1989, and many others) is studied.[17] A few studies concern Berber and one of the "High" varieties, most notably Mettouchi's analysis of Berber-French code-switching in a rural Kabyle setting (Mettouchi 2008). In the second place, code-switching in emigration contexts has been a subject of research. This concerns the interaction between Moroccan heritage languages (mostly Moroccan Arabic) and the dominant language of the country. Especially

[17] Cf. already the short note on Arabic-French code-switching among Jews in Algiers in M. Cohen 1912:12.

in the Netherlands, this type of code-switching has been studied in considerable depth (esp. Nortier 1990, Boumans 1998). Code-switching between Berber and dialectal Arabic is almost consistently neglected. The most important exception is Hamza (2007), who has an elaborate section on code-switching between Tunisian Berber and Tunisian Arabic, Standard Arabic, and French. His data suggest that this is pervasive in these small communities which are mostly isolated from each other. A different situation is presented by Tigziri (2008), basing herself on an unpublished MA thesis from Tizi-Ouzou (Kebbas 2002), showing examples from the high city of Tizi Ouzou, a community which is traditionally Arabic-speaking, but where Berber is much used as a second language. It is ironic that one of the rare pieces of explicit data on code-switching involving Berber and dialectal Arabic outside Tunisia concerns the highly marked situation of a community of Arabic speakers that use Berber as a second language.

One reason for this lack of research may be that Berber-dialectal Arabic code-switching is much less pervasive than with the "High" languages French and Standard Arabic, and therefore provides less interesting material for the theoretical study of code-switching. The Graz corpus of spoken Moroccan conversations brings interesting insights at this point. Among the conversations recorded in Imouzzar in the northern Middle Atlas, most are uniquely in Arabic without any switches to Berber. This is remarkable, as most of the speakers involved are bilingual, and even many people raised in Arabic are able to understand Berber. Switches to and from Moroccan Arabic without any clear functional explanation are rare.[18] Apparently, in this community, the usage contexts of Moroccan Arabic and Berber are kept apart well-enough to make code-switching less likely or interesting to the speaker (Kossmann 2012b).

It is impossible to say to what extent these observations are representative for the usage of Berber speakers outside Imouzzar. It is very well possible—even likely—that code-switching patterns differ according to the region and to the social setting (e.g. rural vs. urban), and that other Algerian and Moroccan Berber communities have the same pervasive code-switching as found in Tunisia.

Generally speaking, Berber-Maghribian Arabic bilingualism is asymmetrical: Berber speakers learn Maghribian Arabic as a second language,

[18] In the corpus, there are hardly any intrasentential switches within Arabic discourse towards Berber. switches. There are more intrasentential towards Arabic within Berber discourse, most of them, however, to Standard Arabic rather than to the vernacular (Kossmann 2012b).

or as a second first language, while native speakers of Arabic typically do not learn Berber. While this is true on the macro-level, on the micro-level the situation is somewhat more subtle. In the first place, in small Arabic-speaking communities enclosed by Berber communities, it is not rare to find native speakers of Arabic who have learned to speak Berber. This is what I observed in the small town of Driouch in the Rif, where the original population is a small group of Arabic-speaking Beni Oukil *šurafāʾ*, while the entire surrounding population speaks Berber. It is also what is witnessed by Tigziri's account of language usage in the high city of Tizi Ouzou in Kabylia. It may be much more general than is often assumed, and in some instances it may have lead to full-fledged berberization of Arabic-speaking regions. For Béjaïa in Algeria, Philippe Marçais remarked in the 1950s that "l'élément kabyle a repris assez complètement possession de Bougie pour faire de cette vieille capitale, centre médiéval de culture arabe, une cité berbérophone" (Ph. Marçais 1957:226).

Arabic-speaking individuals can become bilingual because they move into a Berber-speaking community. This seems to be rare among civil servants (which is a major source of discontent among Berber speakers), but may be more general with people who have other reasons, e.g. when running a small store.

Because of the long tradition of endogamy among rural populations, marriage is not among the major forces in bilingualism. Thus in Morocco, in 1995, one third of married rural women was married to a relative, half of them with a full cousin, while according to figures from 1986, in Algeria, 40% of the women was married to a relative (*Population et développement*, 1998:115). However, in pre-colonial society, another practice integrated many Arabic-speakers into Berber communities, adoption. Adoption of an adult person or a group of persons implied that they were protected by the tribe, but did not immediately mean full integration (cf. for a recent account, Venema & Mguild 2003). Not only persons could thus be integrated, whole sub-fractions might change allegiance in this way.[19] One may assume that the gradual integration of such foreign elements often lead to linguistic integration. In the case of speakers of Arabic, this would mean bilingualism in Berber and subsequent loss of Arabic. It is very well possible that such incorporated speakers of Arabic were to some degree

[19] It is instructing in this regard to read the abbreviated genealogies of Beni Iznasen fractions and esp. sub-fractions given by Voinot (1912:193ff.).

instrumental in the introduction of Arabic elements into Berber (Kahlouche 2001:31).

All authors agree that the modern linguistic situation cannot be projected on earlier periods. It seems that the restriction of Berber monolingualism to women is something that took place during the last century. In fact, many regions that are now bilingual were described as monolingual in the early colonial period. Thus Destaing describes the situation in Imouzzar in the Middle Atlas, now a bilingual town, as follows:

> Chez les A. Seghrouchen d'Imouzzer, les femmes et les enfants ne parlent que le berbère; ceux des hommes qui sont bilingues (berbère et arabe) sont en petit nombre, ils ont appris le peu d'arabe qu'ils savent au contact des Arabes voisins, notamment sur les marchés. (Destaing 1920a:lxxi)

Similar observations have been made in south-western Morocco, e.g. by Jean Podeur, describing the situation with the Ayt Souab in the Anti-Atlas in the late 1940s:

> Seul le dialecte berbère est employé en tribu, tant sur les marchés que dans la vie sociale. Sur 12 chefs de fraction, 5 ne parlent ni comprennent l'arabe et, fait remarquable, le commerçant ou l'ouvrier revenus en tribu pour y séjourner définitivement oublient très vite l'arabe qu'ils ont pu apprendre ou utiliser auparavant. (. . .) Les femmes, sauf de très rares exceptions (quelques filles de marabouts), ne parlent que le berbère. (Podeur 1995:23)

The same situation is described by Hanoteau in the 1850s for Kabylia:

> Parmi ces populations [i.e. of Algeria, MK], plusieurs sont restées constituées en groupes très compacts, sans mélange d'éléments étrangers, et, par l'effet de leur isolement, l'idiome berber est encore dominant, quelque fois même exclusivement parlé dans leur pays. Tels sont, par exemple, les Kabyles du Jurjura. Quelques-uns d'entre eux, qui voyagent pour leur commerce, apprennent bien à parler l'arabe; leurs tolba étudient dans cette langue, la science du droit et des traditions islamiques; mais la masse du peuple, toutes les femmes, sans exception, et les hommes qui vivent sédentaires, ne parlent et ne comprennent que le kabyle. Pendant la dernière expédition de M. le Maréchal Randon, la tribu des Beni Iraten avait fourni soixante-trois otages pris parmi les gens les plus influents de tous les villages et, sur ce nombre, deux seulement pouvaient s'exprimer en arabe d'une manière à peu près intelligible. (Hanoteau 1858:xvii–xviii)

The situation was not the same everywhere, though, and other early accounts attest to a strong percentage of bilinguals, e.g. Destaing on the Beni Snous in western Algeria and Voinot on the Beni Iznasen, their neighbors on the Moroccan side of the border:

> Tous les habitants de la tribu savent parler l'arabe (Destaing 1907:xxviii)
>
> Les éléments fixes de chacune des deux races [*scil.* Arabs and Berbers, MK] ont conservé l'usage de leur langue propre, mais tous les Berbères connaissent aussi la langue arabe qui est très répandue. (Voinot 1912:179)

It is impossible to reconstruct the pre-colonial language situation on the basis of such observations alone; one can only conclude that monolingualism was much more wide-spread than it is now, but that bilingual communities also existed, and did not all emerge as a result of the social upheavals of the colonial and post-colonial period.

For earlier periods, we know even less about the sociolinguistics of Berber. It is not unlikely that the early colonial accounts reflect a long-standing stable situation, but there is nothing to prove it, nor is there any reason to exclude the contrary assumption.

Diglossia

Northern Africa (and the Arab world in general) is characterized by High-Low diglossia. This means that several varieties (languages) are used within one community and that their choice is governed by a functional split between domains of usage. In Northern Africa the Low domain is occupied by Berber and Maghribian Arabic, while the High domain is occupied by Standard Arabic. The place of French in such a division is somewhat complicated, but it is certainly closer to the High domain than to the Low domain. In the theoretical literature on diglossia, there exist different opinions about the degree of linguistic similarity which is needed in order to consider a situation diglossic. In the original definition by Ferguson (1959), only an interaction between linguistically related codes could be called diglossia. Later studies have extended this to cover sociolinguistically similar cases where the languages are far apart linguistically (e.g. Fishman 1967). In the case of Northern Africa, the restrictive definition of diglossia does not make much sense. In this definition, Maghribian Arabic would be in a diglossic relation to Standard Arabic, while Berber, which has a similar sociolinguistic relation to Standard Arabic in the same countries, would be entirely different. More inclusive approaches have a tendency to consider any functionally compartmentalized use of different linguistic systems diglossia. This definition may be over-inclusive, and a more restrictive approach seems to be preferable. I therefore follow Hudson (2002:15) in considering the linguistic relatedness of the two varieties as less determinant for the characterization of diglossia, and the existence of the High-Low discontinuum as the main point.

An important characteristic of diglossia is that it is not defined in terms of social status of the individuals. In a diglossic community, all speakers use the Low variety in the appropriate situations. Thus, any speaker of Maghribian Arabic, whatever his or her social class, will use this in the context of informal conversation; using Standard Arabic would be utterly inappropriate, and deemed ridiculous. Usage of the High variety of course depends on the access the speaker has to this variety. Standard Arabic is acquired through schooling. In countries with high percentages of illiteracy, such as Morocco with 43% of illiterates among inhabitants of 10 years and older (2004, HCPM), this means that a large proportion of the population has only very limited access to the High variety. They can therefore only marginally participate in those realms of communication where Standard Arabic is demanded and used. Functional illiteracy is much higher than actual illiteracy, and not so many people are able to use the High variety in all its functions.

As High vs. Low is not an indicator of social class in itself (although access to High is), the terms are somewhat delusive, as they attach social values to different domains of usage. In the Maghribian situation, the difference is not essentially one of prestige, but one of the written vs. the spoken domain. Standard Arabic is used in the written domain, which includes read-aloud written communication, such as news bulletins, speeches, and sermons. Maghribian Arabic and Berber belong to the spoken domain. Consequently, Standard Arabic is basically a language used in one-sided communication, while Maghribian Arabic and Berber are typically used in (but not restricted to) interactive communication. As writing and the domains for which writing is used (including religion), have high prestige, Standard Arabic is also a high-prestige language. The result is an interesting clash between prestige and communicative function in medialized conversation, such as found in television talk shows. While the prestige of mass media demands for the use of the high-prestige language, Standard Arabic, the dialogic nature of conversation entails the use of the Low variant. This clash is resolved by a type of discourse that uses the linguistic structures of the Low variety, but boosts it by the insertion of large amounts of vocabulary and idioms from Standard Arabic. This has been analyzed as an intermediate language system on its own (Mitchell & Al-Hassan 1994, Youssi 1992), but recent analyses consider it a code-switched discourse, in which a Maghribian Arabic matrix is filled with code-switched insertions from Standard Arabic (Boussofara-Omar 2006, Bassiouny 2009). As will be illustrated in section 4.1.4, a similar type of speech is sometimes encountered in the much rarer context of Berber

in mass media, in which Berber is the matrix, and Standard Arabic the inserted language.

Standard Arabic is a prototypical High language, being confined to the written domain and its derivates. In the Maghrib, it is nobody's native language, and it is hardly ever used in face-to-face interaction. The situation of French is somewhat different. In the modern-day Maghribian states (except for Libya), French plays an important role as a language of prestige. It is the most common language in interaction with foreigners, and it continues to play an important role in the teaching of many subjects in school and at university (Grandguillaume 1983). Like Standard Arabic, it is fully entrenched in the written domain, and literary and scientific written production are as least as often in French as in Standard Arabic. Still its domains of usage are different from that of Standard Arabic. It is perfectly possible for those who master French to carry out a conversation in this language. This is neither considered extremely unnatural, nor felt as inherently inappropriate. The relatively strict compartmentalization between the written and the spoken domain does therefore not apply to French. Moreover, French functions as a first language for some groups. This has been shown for parts of the Moroccan Jewish community (Bentahila & Davies 1992), and anecdotal evidence points to similar behavior among some elite Muslim families in Morocco. Furthermore, the continuing contact with France enhances the naturalness of French as a language of spoken interaction. It therefore does not fit the domain-specific definitions of diglossia, and rather functions as a language of prestige with wider functions.

The present situation is very different from that during the colonial period. In pre-independence Algeria, the use of Standard Arabic was strongly discouraged, and mainly restricted to the religious and the nationalist domain. French was not only the language of colonial administration, but also the native language of 11% of the Algerian population (Weiler 1957:143). After independence, Standard Arabic became the official language of the new state and the French-speaking non-Muslim population almost completely left the country. The situation was less extreme in Tunisia and Morocco, where Standard Arabic was less severely suppressed, and where the European population was much smaller. Still, in both countries Standard Arabic gained much importance after independence.

The function of other European languages in the Maghrib is relatively marginal. Spanish is still an important language of communication with foreigners in northern Morocco. This may be partly a heritage of the colonial period (northern Morocco was a Spanish protectorate from 1912 to 1956),

but is strengthened by relations with neighboring Spain, and especially the Spanish enclaves of Ceuta and Melilla. Italian does not play much of a role in Libya anymore.

2.5 Diglossia and the Arabic Influence on Berber

Diglossia with Standard and Classical Arabic has a long history in the Maghrib, and one may assume that some kind of diglossia was already installed shortly after the first wave of islamization. Therefore, one has to reckon with the possibility of Standard Arabic influence on Berber varieties, not mediated by Maghribian Arabic. The evidence for this kind of influence is very weak, however. I am not aware of any structural influence of Arabic on Berber that would be accounted for by Standard Arabic only. On a lexical level, it is more difficult to exclude Standard (or Classical) Arabic influence. For example, the take-over of verbs implies to such an extent introduction into Berber word patterns (which are more similar to those of Maghribian Arabic than to Standard/Classical Arabic) that it is often impossible to distinguish a Standard/Classical item from a Maghribian Arabic item. Our knowledge of the history and development of dialectal lexicon is so restricted that is in most cases impossible to identify lexemes as Standard/Classical Arabic loans with certainty. With nouns one would expect less problems, as their form is much more free in Berber and Standard/Classical lexemes should be recognizable. This is indeed the case with obviously recent introductions postdating the colonial period (Kossmann 2009a). For earlier periods, it is almost impossible to find unambiguous instances of Standard Arabic loans. In other word classes the same obtains; the only possible case I know of is the introduction of the numeral *ṯnayən* 'two' in a number of northern Moroccan and western Algerian varieties, while all neighboring Arabic vernaculars have a different lexeme, *žuž* (see 9.3.1). All in all, there is little to no evidence of immediate influence by Standard/Classical Arabic on Berber. It may however be that a more detailed analysis of the etymology of Arabic loans would yield some more results.

2.6 The Dating of Arabic-Based Berber Innovations

Arabic has been a constant factor in northern Africa for over a thousand years. Due to the spread of bilingualism over the past hundred years (see above), its importance within Berber speech communities has increased

considerably. Therefore, it is a legitimate question to what extent the contact-induced changes treated in this work are recent innovations or elements with a longer history.

There is no doubt that the influence of Arabic on the Berber language is gradually expanding. In Figuig, for example, younger speakers use Arabic loans that are not accepted as "good" Berber by speakers of the older generation. Thus, in Lower Figuig, the original term *iyṛan* 'palm garden' is being replaced by Arabic *lɣabət* 'palm garden'. Working with younger speakers in the 1990s, I was given *lɣabət*, although *iyṛan* was mentioned as a possibility. However, I was criticized by an older speaker of the language because of my insertion of the word *lɣabət* in the lexicon of Kossmann (1997), as this was the Arabic word, and *iyṛan* was the correct Berber term. The same older speaker had no problem with many other Arabic loanwords (including the use of Arabic pronouns with *ɛəmməṛ-* 'never', see 9.1.1), so his critique seems to reflect actual language change rather than etymological purism. Similarly, speakers are able to mention words that elderly people use, but for which younger speakers would use the Arabic term instead. The same is undoubtedly true for other regions as well. Thus Souag (2009b:240) points to the gradual decrease in use of Berber-based numerals in a couple of varieties, apparent from the sources.

While there is no doubt about this gradual process over the last century, this does not mean that the main lines of Arabic influence on Berber are recent, and a result of the social changes that accompanied the advent of colonialism and subsequent modernization. The colonial histories of Algeria and Morocco are very different. Algeria was colonized from 1830 onwards (Greater Kabylia since 1857), while in Morocco colonization started only in the first decades of the 20th century. The Ayt Atta of the Djebel Saghro surrendered in 1934, only 22 years before Morocco regained its independence. The preparation of the conquest, and the subsequent installment of colonial administration everywhere in northern Africa lead to a great demand for scientific studies, and, especially for Morocco, we have quite dense and competently carried-out linguistic documentation from the late pre-colonial and the first years of the colonial period. Thus, for example, Edmond Destaing gathered the materials for his study on Ayt Seghrushen Berber of Imouzzar (Destaing 1920a) in 1915, at a time when Imouzzar was not yet under French rule, while other detailed descriptions were published only a few years after colonization. The linguistic data in these works therefore reflect pre-colonial usage. For Algeria, early works on Kabyle also document pre-colonial usage. Thus Brosselard (1844) is a

very early dictionary of the Berber of Lesser Kabylia.[20] Hanoteau (1858) is a grammar of Kabyle based on data collected when Greater Kabylia had not yet surrendered to French rule.

More time depth can be reached by studying Berber manuscripts. Northern Berber manuscripts fall into two types: Islamic treatises and admonitions, and vocabularies. The analysis of Arabic influence in such texts is often problematic. In Islamic treatises and admonitions, the text genre entails the usage of much Arabic vocabulary. Some of this is no doubt genuine borrowing, while others are necessary insertions in order to express concepts not nameable otherwise. There are also many terms that seem to be inserted from Arabic, even though there are Berber forms available. Gutova (2011:203) notes that certain salient terms that are given only in Arabic in one Kabyle manuscript are presented with Berber translations in another manuscript from roughly the same period. This probably does not reflect a difference in the spoken language, but different pedagogic tools. One writer chose to teach the technical terminology in Arabic (no doubt explaining them orally in Berber), while the other chose to use a Berber equivalent in order to be understood without oral explanation. Word lists have different difficulties. Word lists were meant to explain Arabic words to a Berber readership. As there is rarely need to explain an Arabic word that is represented by a loan in Berber, such lists mainly contain Berber vocabulary. As such they constitute an invaluable tool for Berber lexical studies, but provide only restricted information on borrowing.

There are three main traditions of Northern Berber manuscripts:[21] the Kabyle tradition, the Ibadhi tradition of Tunisia and western Libya, and the Tashelhiyt tradition. The Kabyle tradition is relatively recent. All known manuscripts date from the 18th or 19th century (Gutova 2011:9), and therefore only slightly predate (if at all) the outburst of colonial studies on Kabyle in the 1840s and 1850s. The Ibadhi tradition of Tunisia and Libya is mainly known from one single manuscript, the translation by Abū Zakarīyā' al-Ifrānī (Brugnatelli 2011a:30) of the *Mudawwana* of Abū Ġānim al-Ḫurāsānī. The date of its execution is unknown, but the fact that in the 16th century a glossary was compiled of Berber terms that had gone out

[20] Venture de Paradis (1844) is much less useful, as it combines elements from different Berber languages in a "purist" way, using as little Arabic materials as possible.

[21] In addition, there is the largely unstudied Tuareg manuscript tradition, cf. among others Norris (1982), Elghamis (2011), Kossmann & Elghamis (fc.).

of usage (Bossoutrot 1900) puts it way back in the Middle Ages (Ould-Braham 2008:56, Brugnatelli 2011a:30). No edition of this huge text (some versions have almost 900 pages, Brugnatelli 2011a:29) exists up to now, so the exact impact of the text on our understanding of Berber linguistic history is not yet clear. The Tashelhiyt tradition is much more diverse. It falls into two main periods. The most recent period starts in the 16th century, and stretches well into the 20th century. During this period a huge number of original works were written on all kinds of Islamic subjects (van den Boogert 1997). The language is clearly an archaic version of modern Tashelhiyt, and, while sometimes unusual from a southwestern Moroccan perspective, holds little surprises to the Berberologist. This tradition seems to be based to some extent on an older tradition. Only two texts of this older, medieval, tradition survive with certainty. One of them is the Arabic-Berber vocabulary *Kitāb al-'Asmā'* by Ibn Tunart, compiled in 1146 CE, containing over 2,500 Berber words and phrases (van den Boogert 2000:359). The other is a fragment consisting of one leaf from a manuscript possibly dating from the 14th century CE, now held in the Leiden University Library (van den Boogert 2000:359). Unfortunately, there is no edition of these texts up to now.

In order to give an impression of the time depth of Arabic influence on Berber, two cases will be presented. In the first place, I compare the Kabyle lexical materials contained in Dallet (1982) and Chaker (1984) with those in Brosselard (1844), concerning words for basic items, using as a data base the terms studied in chapter four. Among the dozens of Arabic loans in this set, only very few are Arabic in the newer sources and Berber in Brosselard (1844).[22] Brosselard's dictionary is based on Kabyle only, and in fact may basically reflect usage around Béjaïa.[23] The only word in this set where a Berber term has been substituted by an Arabic term after 1844 is 'onions'. Brosselard (1844) provides two forms, that can be interpreted as the Arabic loan *ləbṣəl* and an ancient Berber term *aẓlim*. Later sources only have the Arabic term, *ləḇṣəl*, and *aẓlim* seems to have been lost. All in all, Arabic material in this type of lexicon seems to be stable, and no

[22] There are some dialectal differences between the Greater Kabylia data in Dallet (1982) and Chaker (1984) and the basically Lesser Kabylia data in Brosselard (1844). Cf. also Brahimi (2000:376–377) for a similar study of sixteen words in Kabyle.

[23] Thus, for example, the dictionary has in a consequent way *ṭ* for *ḍ*, which reflects eastern Kabyle usage. One of the members of the committee responsible for the compilation of the dictionary was the imam of Béjaïa, Sidi Ahmed ben el Hadj Ali (Brosselard 1844:i).

major changes can be deduced. Clearly, the bulk of Arabic elements in the Kabyle basic lexicon was already present before the beginning of the colonial period.

The second feature is the morphology of unintegrated Arabic nouns. As will be shown in chapter six, Arabic nouns are often taken over in a quasi-Arabic form. In this form, no Berber affixes are used. Instead, the Arabic article is preserved (without function), as are Arabic plural formations. In the feminine singular, the Arabic ending *-a* is represented by *-ət*, which is neither clearly Berber, nor clearly Arabic in origin. Cf. for example Figuig *zzənq-ət* 'street', which comes from Arabic *z=zənq-a* 'the street'. This feature is found in the great majority of Berber languages. The study of written sources shows that this borrowing pattern is very old, as it is amply attested in medieval manuscripts (see 6.3.1).

The language itself provides only little evidence that could lead to a chronology of the borrowings. The set of early Islamic terms is clearly discernable, and may be dated to a very early period, when spoken Arabic only had marginal importance in Berber societies (see 3.4). For later periods, Berber only rarely gives clues to the chronology of borrowings, and mostly only on a very local scale. It is telling that the introduction of Arabic loan phonemes such as the voiced pharyngeal fricative *ɛ* is already attested in medieval sources, as witnessed by the *Mudawwana* form *lɛurəṯ* 'woman'.

Clearly the major lines of Arabic influence on Berber were already in place before the French, Spanish and Italians took power. This puts us in an awkward position when it comes to the relationship between social setting of language contact and effects of contact-induced change, as we lack detailed information on this from before the colonial period. One remarks the early attestation of some of the more salient features of this contact influence, such as the parallel systems in noun morphology (Kossmann 2010a), which are found in medieval texts from different corners of the Berber-speaking world. Therefore, one should be extremely cautious when commenting upon the social circumstances under which Berber languages acquired Arabic features. As mentioned above, it seems to be generally true that language shift by Arabic speakers to Berber has never been more than a marginal phenomenon, so the situation can be roughly subsumed under the heading "language maintenance" in the Thomason & Kaufman (1988) framework. It is unlikely that there was wide-spread bilingualism in Arabic among Berber speakers at an early date, although there may have been important differences between communities.

Moreover, the integration of Berber warriors in the armies of basically Berber reigns such as the Almoravides, the Almohads and the Merinids may have lead to more knowledge of Arabic than found in later periods, when many Berber groups were outside the worldly power of the rulers. But in the end we simply do not know.

CHAPTER THREE

BERBER IN CONTACT: THE PRE-ISLAMIC AND EARLY ISLAMIC PERIODS

Although the focus of this book is on the influence of Arabic on Berber, it is relevant to look at what we know about the pre-Islamic contact history of Berber. In order to do so, first a short introduction into the earliest reconstructible history of the language group is given. After this, pre-Roman (mainly Punic) and Latin lexical borrowings are studied. Finally, I shall discuss evidence for a set of early Islamic terms, coined by missionaries who apparently used Berber in the teaching of the new creed.

3.1 Proto-Berber

Berber languages belong to the Afroasiatic phylum. As the cradle of Afroasiatic is normally not posited in the Maghrib, it must have been introduced to this part of the world at a certain moment in time. In the absence of any positive evidence, it is impossible to establish this date, and the only thing about which we can be reasonably sure is that it predates the Proto-Berber stage.

Following the mainstream model of historical linguistics, most scholars interested in the historical evolution of Berber posit the former existence of an entity called Proto-Berber, i.e., a largely unitary language from which all modern Berber varieties derive (Kossmann 1999a). The speech community using this language should be definable in time and in space—the date being roughly the moment when the entity started to split up; the space being the place where this happened or—if the split-up was the effect of geographical diffusion (whether linked to demic expansion or not)—the place where the language was spoken just before this diffusion.

There exist several suggestions for a dating of Proto-Berber (as defined above). Louali & Philippson (2004a) put their equivalent of what I call Proto-Berber in the first millennium BCE. This agrees with my personal impression that the differences between different varieties of Berber recall those between Germanic or Romance languages, which suggests a date between 500 BCE and the beginning of the Christian era (similarly Múrcia 2011:II/351–2). Lexicostatistic research carried out by Václav Blažek, using

the calibrated glottochronological method, also has a date in the first millennium BCE (680 BCE) (Blažek 2010). Other datings are much earlier. Ehret (1999) posits an early northern Afroasiatic settlement in Tunisia and eastern Algeria, corresponding to the Capsian culture. Proto-Berber would have evolved in this region, and started to diffuse over most of northern Africa in the third millennium BCE. The author does not provide any evidence, and the sketched scenario looks rather arbitrary. It was taken up by the archaeologist Jean-Loïc Le Quellec (1998:483ff.), who points to several problems in Ehret's reconstructions (e.g. 495ff.), but unfortunately fails to see the general lack of convincing argumentation. Malika Hachid (2000:26ff) also basically follows Ehret, but considers the Neolithic Capsian culture to be Berber from the beginning. Blench (2001), pointing to the lack of archaeological evidence for later dispersal (183–4), comes to a date around 4500 BCE, associating Proto-Berber with the introduction of livestock in the later phases of the Neolithic Capsian culture.[1] He explains the high degree of similarity between modern Berber varieties from lack of differentiating innovations because they would have been "highly mobile populations already speaking closely related languages, constantly encountering one another in open terrain" (184). Put otherwise, Berber speech communities would have remained in contact over wide stretches of territory for a long period of time; as a consequence linguistic differentiation would have been much less prominent than in speech communities which develop in relative isolation from each other. While the model as such is interesting, its application to northern Africa is not that evident. Most of the territories nowadays populated by speakers of Berber are of a mountainous type. Whatever kind of nomadism took place in the mountains, it probably did involve high mobility, and even less so frequent encounters in open terrain. Of course, one could save the story by assuming that for the first few thousand years Proto-Berber speakers were centered in the plains. This, however, fails to explain the absence of archaeological evidence for a later dispersal into the mountains, which, after all, was the main reason for positing the early date.

Blench points to the reconstructibility of a number of terms for livestock (similarly Louali & Philippson 2004a). This would suggest, according to him, that the introduction c.q. spread of Berber was related to the

[1] As remarked by Blench, "Capsian" refers to different cultural complexes; Hachid (2000) seems to refer to an older complex, as she puts the date of linguistically differentiated Berber several millennia earlier than Blench.

introduction of livestock in northern Africa. It may be relevant in this context that the reconstructible terminology concerns as much primary livestock terminology (terms for animals) as terms for secondary products (i.e. products other than meat) and their usage,[2] e.g. **əndu* 'to be churned (milk)', **aɣVḇ* 'buttermilk', **ăẓẓəg* 'to milk', **ta-ʔḍuḇ-t* 'wool', **ălləm* 'to spin', **ăzḍəʔ* 'to weave'. Moreover, a number of agricultural terms are also reconstructible (Chaker 2006:240): **t-umẓ-en* 'barley', **i-rd-ăn* 'wheat', **əẓẓu* 'to plant'.

The link with Capsian, made by most authors with an early chronology is mainly based on the idea that Capsian (rather as a whole than only the Neolithic phase) would be an introduction from the east.[3] This view has been contested by archaeologists (Linstädter 2008:47 with reff.), and a local development seems to be the preferred analysis nowadays. Moreover, northern Moroccan cultures from the same period (and even a little earlier) had animal husbandry too, as well as cereals (Kahf Taht El-Ghar in Morocco, around 4500 BCE, Ballouche & Marinval 2003; Linstädter 2008). Recently, Daugas & El Idrissi (2008) have suggested that these cultures are to be linked to Saharan complexes rather than to European Mediterranean cultures. As a consequence, if one wants to posit an early date for proto-Berber, these Moroccan (and Saharan?) cultures would constitute equally probable candidates as the Capsian.

The most important problem, however, lies in the idea that reconstructibility of livestock terminology in a proto-language indicates a link between this proto-language and the introduction of livestock, as formulated by Blench: "If some livestock terminology can be reconstructed . . . then it is at least more probable that the spread of Berber speech was related to the diffusion of livestock production and can thus be assigned to the 'Capsian Neolithic' " (Blench 2001:178). Reconstructible agricultural terminology of course strongly suggests that proto-Berber flourished in a culture which had animal husbandry and some crop growing, and thus provides us with a *terminus post quem*. However, for resolving the question whether to take

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[2] It is not certain, however, that all these words originally refer to the handling of animal products; weaving is of course also possible with plant material.

[3] The choice of Capsian is sometimes related to arguments pertaining to physical anthropology (explicitly so, Hachid 2000). According to an analysis which has been popular for some time, but which is not uncontested, the Capsian human type would be an intrusion from the east, superseding and eventually ousting the "older" Mechtoid human type. Genetic analysis does not confirm this scenario; modern Berber-speaking populations show clear affinities with European populations (Coudray e.a. 2006; Coudray e.a. 2009).

an early neolithic origin for proto-Berber or a much later date, the argument is irrelevant. If proto-Berber is dated around 500 BCE, one expects it to be replete with cattle terms, as nobody would doubt that North-Africans had livestock by then.

The "homeland" of Proto-Berber is even less studied than its probable dating and, as far as I know, no proposal has been put forward using linguistic arguments. Of course, an identification with the Capsian automatically implies a homeland in eastern Algeria and Tunisia, which is where this archaeological culture is found. Based on the idea that differentiation is larger in the home area than in the zones the language spread to later, one could indeed defend an origin in the eastern part of the present extension of Berber, e.g., in modern-day Libya. Some of the most aberrant languages, Ghadames and Awdjila, are spoken there. Moreover, both Tuareg and Zenatic probably have their roots in western Libya or Tunisia, while Kabyle, which represents quite a different type of language, is spoken not far away from it. The argument is inherently weak in principle when dealing with dialect continua which have undergone thousands of years of convergence and (demic) movement. It is further weakened by the fact that the most aberrant Berber language of all is Zenaga, the most likely candidate for a first branching off the Berber family (cf. Blažek 2010). This language is spoken nowadays in south-western Mauritania, at the opposite end of the present-day Berber-speaking territory.

In the context of Berber studies, the idea of a reconstructible entity "Proto-Berber" is not generally accepted. A number of scholars have suggested that Berber is in fact a mixture of a Semitic language and something else. In the case of Werner Vycichl, this model implied the demise of the idea of Afroasiatic, and the reintroduction of the earlier point of view, which has a primary split between Semitic and the other branches (called Hamitic). Vycichl considered Berber a blend of a Semitic and a Hamitic stratum. Durand (1991, esp. 97, 114, 124), following up on suggestions by Giovanni Garbini, has a similar scenario, but refrains from identifying the non-Semitic stratum. Models of this type suffer from many problems. In the first place, the argumentation only has a small basis, largely the issue whether roots are basically triliteral (which would be the Semitic stratum) or biliteral (which would represent the other stratum). As there exists a fierce debate in Semitic linguistics about root structure (cf. also Durand 1991), while researchers on other branches of Afroasiatic have no problem in identifying at least some triradical roots, this part of the argumentation is rather problematic. Moreover, Berber (whatever its history) has had enough time to lose radicals; in fact some of the categories adduced by

Durand as original bilateral roots can now be shown to have contained a third radical in an earlier stage of the language (Taine-Cheikh 2004, Kossmann 2001, Prasse 2011). Finally, the mixing scenario seems to be introduced too light-heartedly. Language mixing is not a very common thing in the history of languages, and most reported cases show compartmentalization between lexicon and grammatical structure (e.g. Ma'á, Media Lengua, Old Helsinki Slang) or between different parts of grammar / lexicon (e.g. Michif with French nouns and nominal morphology and Cree verbs and verb morphology). The free mixing of everything with everything as implied in Durand's and Vycichl's proposals does not seem to be attested anywhere.

A much more basic piece of critique to the concept of proto-Berber has been provided by Lionel Galand. Commenting on Kossmann (1999a:20), who proposes a largely uniform, but not necessarily variation-less proto-Berber entity, he remarks: "Mais si l'on admet la possibilité (…) de telles différences, que reste-t-il de l'uniformité? Comment pourra-t-on la mesurer et dire qu'elle est plus grande dans le proto-berbère que dans le pan-berbère?" (Galand 2010:14). Abstracting away from the more basic theoretical issue at stake (what do we mean by "proto-language"?), this remark inspires one to rethink the whole issue of the uniformity of "reconstructed" proto-Berber. There exist a number of apparently ancient features in Berber that seem to be unrelated to any geographical factors, and do not in any way cluster into sub-groups; such as the pronunciation *ṭ* rather than *ḍ* (see 5.3.2) and the devoicing of *ɣ* in final position (except when part of a root) (cf. Kossmann 1999a:20; 239–240). This suggests that the proto-Berber reconstructed in Kossmann (1999a) may have been an amalgam of different dialectal groups, which were brought together and split up later into new groups with a different distribution. This opens the road to a view of "proto-Berber" suggested by Múrcia (2011:II/359–360), which considers it the result of koineification, in which many different Berber varieties converged, without necessarily reaching uniformity. Berber languages, because of their similarity and geographical proximity, are in a continuous dynamics of convergence and divergence, and the proposed early Berber koinè would constitute an early and decisive factor in the relative unity of the modern Berber lects. Múrcia dates the formation of this koinè somewhere in the period between 500 BCE and 500 CE. The earliest date for this koinè lies in the same period as where Louali & Philippson (2004a) posit "proto-Berber", which would allow us to converge the two (probably better called Common Berber). However, the study of Berber words attested in Greek and Latin sources (Múrcia 2011) shows that

a number of pan-Berber sound changes must have occurred at a much later time. Thus, antique sources transcribe the modern Berber sound /ɣ/ in a consequent manner as /c/, which suggests a plosive pronunciation; similarly the Berber sound /f/ is often rendered by a plosive /p/. From an Afroasiatic point of view, it is reasonable to assume that Berber */ɣ/ goes back to */q/, while */f/ represents earlier */p/. The antique evidence suggests that, at least in parts of the Berber speaking area, plosive pronunciations of these phonemes were still in use during Roman times. This implies that the pan-Berber fricativization of these phonemes had not yet been completed in that period, and is better considered part of the koineization process than a proto-Berber sound change.

Assuming a koineization process somewhere in Antiquity, followed by large-scale population movements (amply described in Ibn Khaldûn's works) and subsequent convergence processes, leaves us with little evidence to distinguish between a proto-Berber inheritance and a koinè generalization. In such a model, proto-Berber would still be the ancestor of the pre-koinè Berber languages/dialects; however, as we have no idea about the extent and the nature of the pre-koinè linguistic variation, only very little can be said about it. As a consequence, any dating for proto-Berber becomes elusive, and there is no more reason to keep with a late dating in the first millennium BCE than to adhere to neolithic or earlier scenarios.

The idea of a koinè rather than a proto-language as the basis of modern Berber has not yet been worked out in detail. In this study, the term "proto-Berber" will be maintained; however, its reference may be rather to the antique koinè rather than to a reconstructible proto-language.

3.2 Pre-Roman Loans in Berber

Before the first writings on northern Africa by Greek authors, remarkably little is known about the history of Berber. Sources from pharaonic Egypt hardly provide any evidence for a linguistically definable Berber entity. Two pieces of evidence have been presented in the past to show that a Berber language was spoken in the vicinity of the Nile. In the first place, a stela from the last century of the 3rd millennium BCE, set up in honor of the XIth Dynasty ruler Antef, shows a number of royal dogs and their names. Two of these names have been associated with Berber etyma (R. Basset 1899, Maspéro 1898), which suggests that at that time Berber was present at the borders of the Egyptian empire. Unfortunately, the evidence

for the linguistic identification of the names is rather weak—one term is only attested in Tuareg and seems to be a Tuareg-internal innovation post-dating pharaoh Antef by several millennia, while the other presents numerous other problems (Kossmann 2011b). It seems wiser to discard the "evidence" provided by this stela altogether. The other piece of evidence comes from the alleged presence of Berber loanwords in Nobiin, a Nile Nubian language (cf. for a summary Blažek 2000). As shown in Jakobi & Kossmann (fc.), most of the proposed loans do not stand the scrutiny of Berber and Nubian historical linguistics, and only one etymon, *aman* 'water, Nile' (the same in Nobiin as in Berber), provides a really strong parallel. It is not very probable that such a basic term would have been borrowed as the only term in a contact situation, and the similarity between the two is best considered coincidence. Nobiin has a number of other terms for basic concepts that are not found elsewhere in Nubian; none of these seems to have a Berber correlate.

Based on the evidence deconstructed above, authors have identified the different tribes of the western desert with Berbers (e.g. Behrens 1981, 1984–1985, Bechhaus-Gerst 1989). While this identification cannot be excluded on the forehand, there is no positive evidence for it.

Ancient Egyptian contributed only little to the Berber language. Two Egyptian loanwords have been identified with some certainty: **te-ḇăyne* 'date' from ancient Egyptian *bnr*(.)*, bnj*(.*t*), Coptic *bnne, beni* (Vycichl 1951:71, Kossmann 2002b) and **a-sḇan* 'loose woody tissue around the palm tree stem' from ancient Egyptian *šnj-bnr.t*, Coptic *šnbnne* (also attested without *n* following *š*) (Kossmann 2002b). They clearly reflect the introduction of date palm cultivation from Egypt.

Much more influence was exerted by the Phoenicians, originally a people from modern-day Lebanon. From the beginning of the first millennium BCE they started a trade network throughout the Mediterranean, and founded trading colonies along the Mediterranean coast. With the foundation of Carthago, according to legend in 814 BCE, an important Phoenician political entity on the African mainland was established, which used Punic (the local variant of Phoenician) as its official language. Carthago was in close contact with its indigenous neighbors, and Punic influence on the local culture has been considerable. Punic as a language lost its official status when Carthago became part of the Roman empire. As a spoken language, it continued to exist well into Roman times, as witnessed by the presence of Punic inscriptions in Latin script, found in military establishments in Libya, which date at earliest to the second century CE (Kerr 2007). Later authors, among others Augustine, attest to

the survival of Punic into late Antiquity; however, Múrcia (2011:I/616ff.) suggests that at least some of these testimonies may point to Berber speakers rather than to Punic—the term *lingua Punica* being used for any indigenous African language.

The lexical impact of Phoenician and Punic on Berber was a major item in Berber studies during the first decades of the 20th century. Both Hans Stumme (1912) and Hugo Schuchardt (1912) contributed to the issue, and made a large number of proposals (see also Colin 1927:88–89). It should be noted, however, that many of these are highly speculative. This may be illustrated by one example from Schuchardt, who relates Kabyle *iḏmim* 'hawthorne' to Hebrew P *ʔəḏamīm* 'red' (P of *ʔāḏom*) (Schuchardt 1912:164). Indeed, the fruits of the hawthorne are red, but this does not immediately relate the Hebrew plural adjective to the Berber plant name (if the extension to the plant name would have been attested in Hebrew, the identification would be less elusive). Moreover, as Schuchardt himself admits, Berber *idammən* 'blood', which he does not consider a loan, presents a good alternative derivation.

Werner Vycichl (1952; 1958; 2005) took a critical look at the proposed evidence, and retained about twenty Punic loans which, according to him, are certain ("nur sicheres Material", Vycichl 1952:199). As far as I know, no further original research has been undertaken in the matter (cf. however van den Boogert 1997:221–222). There are several analyses based on Vycichl's work (Múrcia 2011:I/328ff., Malášková & Blažek 2011), as well as a somewhat uncritical compilation from earlier sources by Haddadou (2008).[4]

All in all, there are a dozen or so reasonably convincing Punic loans in Berber. They are all nouns and concern mainly the following semantic fields:

– cultivated plants (see also 12.6.5), e.g. Tashelhiyt (etc.) *aẓalim* 'onion'; Central Moroccan Berber (etc.) *aɣəssim* 'cucumber'; Nefusa (etc.) *armún* 'pomegranate'; Ahaggar Tuareg *ăhatim* 'olive'; Tashelhiyt (etc.) *aɣanim* 'reed'; Djerba *aḍfu* 'apple'. Possibly also Lesser Kabylia *aḡusim* 'walnut'; Ghadames *ašašid* 'almond'.

[4] Haddadou, for example, includes Punic "loans" which are mentioned in Schuchardt (1912) because they end in *-im*, but which are not compared by Schuchardt (nor by Haddadou) to Semitic forms.

– cultural objects, e.g. Central Moroccan Berber (etc.) *agadir* 'wall, embankment'; Tashelhiyt *amadir* 'hoe'; Iznasen (etc.) *aməsmir* 'nail'; Ghadames (etc.) *ener* 'lamp (in earthenware)'; Iznasen (etc.) *afḍiṣ* 'hammer'. Possibly also Central Moroccan Berber (etc.) *agəlzim* 'small hoe'.
– mineral resources (see also 12.6.4): Central Moroccan Berber (etc.) *aẓarif* 'alum'. more problematic (see below) is Tashelhiyt *anas* 'copper', Awdjila *anís* 'nickel', Sokna *nas* 'copper'.[5]

Punic loanwords are attested all over the Berber world, except in Zenaga of Mauritania.[6] Their absence in the latter variety may be due to historical circumstances (maybe the ancestors of the Zenaga were not in contact with the Carthaginians), but the incompatibility of most of the terms with Sahelian nomadic life is a more probable explanation, combined with the high influence of Arabic on Zenaga lexicon.

The lexical impact of Punic on Berber is quite weak; one of the reasons may be that the heartland of the Punic empire lies in a region that is nowadays fully arabicized. Moreover, the identification of Punic loanwords is complicated by a number of circumstances. In the first place, Phoenician and Punic lexicon is only sparsely known, and for many of the adduced loanwords no direct correlate is known from these languages. Instead, one has to rely on attestations in Hebrew, which is closely related to Phoenician, and assume that the word also existed in its northern neighbor. Second, Phoenician and Hebrew are themselves related to Arabic, and share many roots with this language. The reasons to assume a Punic basis for certain etyma are manyfold. In the first place, there are a number of nouns which incorporate the non-Arabic plural marker *-im*, which would betray a Punic origin (Stumme 1912, Schuchardt 1912). Second, in some words, the Berber vowels do not correspond to those in Arabic, but mirror the vowel in Punic. This is the case, for example, of *armun* 'pomegranate', which fits Hebrew *rimmōn* better than Arabic *rummān*. A similar argument applies to *aməsmir* 'nail' (Vycichl 1958, Hebrew *masmēr*, Arabic *mismār*), *ener* 'lamp' (Hebrew *nēr*, Arabic *nūr* 'lamp') and *aḍfu* 'apple' (Hebrew *tappūᵃḥ*,

[5] Awdjila *i* often derives from **a*. Marijn van Putten (p.c.) plausibly suggests that the well-attested Berber form *t(a)nast* 'key' could be related to this term.

[6] Malášková & Blažek (2011) point to Zenaga *agədri* 'parquet, sol', which would be cognate to *agadir* 'wall'. This was already proposed and rejected by Francis Nicolas (1953:304). The word, which is also used in Hassaniya Arabic, is not given in Taine-Cheikh 2008. The semantic development is not impossible but certainly not evident. I have no idea what meaning of French 'parquet' is intended by Nicolas, as the normal meaning 'parquet floor' does not make sense in a Sahelian nomadic environment.

Arabic *tuffāḥ*). In all these examples, the Punic geminate is represented by a simple consonant in Berber, something which never happens with a loan from Arabic. In the third place, while the root may be attested both in Phoenician/Hebrew and in Arabic, the semantics of the Berber word sometimes corresponds better to Punic than to Arabic, e.g. *aẓarif* 'alum', as compared to Hebrew *ṣārīf* 'alum' and Classical Arabic *ṣirf* 'pure', *ṣarafān* 'copper, lead'. Similarly, Berber *afḍis* 'hammer' seems to belong to Hebrew *paṭṭīš* rather than to Arabic forms of the root.[7] Finally, a Punic history is assumed in loans which lack certain foreign consonants that one would expect to be preserved in loans from Arabic. This is the case of Tashelhiyt *anas* 'copper' as compared to Arabic *nuḥās* (cf. the amply attested Arabic loan *nnḥas* elsewhere in Berber). The argumentation is circular in this case ("as Arabic pharyngeals are always preserved, cases where they are absent cannot be Arabic"); moreover Hebrew has a different vowel: *nəḥōšeṯ* 'copper, bronze'.

Apart from the problem of distinguishing between Arabic and Phoenician items, the possible impact of Hebrew also demands reflection.[8] Judaism has long been an important religion in Northern Africa, and influence from Hebrew or Aramaic, as languages of the Scriptures, should not be excluded on the forehand. The clearest case of this is the well-attested Berber verb **ălmәd* 'to learn', which Vycichl considers a Punic loanword. While this is not impossible, another source could be Hebrew *lāmaḏ* 'to learn', a highly salient item in Jewish culture, which puts high value on formal learning. Similarly, there is no reason to consider the verb *ɣәr* 'to read, to shout' a loan from Punic rather than from Hebrew *qārā*(*ʔ*) 'to read'. More probably the similarity in form is due to common Afroasiatic inheritance, and merely the extension of the meaning to reading was influenced by Hebrew, which uses a single verb for reading aloud and calling.

An interesting problem is posed by the numerals 5–9 in those Berber languages that have not introduced the Arabic terms (see 9.3). While the numeral 'two' (e.g. Tashelhiyt *sin*) looks like Semitic *ṯny*, and probably constitutes an Afroasiatic inheritance, the numerals 'three' and 'four' are

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[7] The Classical Arabic noun *fiṭṭīs* 'a great hammer such as is used by a blacksmith' (Lane 1863–1893:2417) is badly attested (it is absent, e.g. from Bélot 1860) and may be a loanword itself.

[8] As there has been a continuous presence in northern Africa of Judaism, and therefore also of Hebrew, loans from Hebrew need not be very old (cf. Vycichl 1972). Moreover, some of them may have been mediated by (Judeo-)Arabic.

very different from Semitic, cf. Tashelhiyt *kraḍ* 'three' and *kkuẓ* 'four' as compared to Classical Arabic *ṯalāṯ* 'three' and *'arbaɛ* 'four'. The numerals 5–9, on the other hand, are quite similar to Semitic forms, compare:

	Tashelhiyt	Classical Arabic
5.	*smmus*	*xams*
6.	*sḍis*	*sitt* (cf. the ordinal *sādis* 'sixth')
7.	*ssa*	*sabɛ*
8.	*tam*	*ṯamān*
9.	*tẓa*	*tisɛ*

'Ten' is very different again: Tashelhiyt *mraw* vs. Classical Arabic *ɛašar*. The concentration of Semitic-like numerals in the higher half of the decade makes an analysis as an Afroasiatic inheritance less likely, and one is tempted to posit a Semitic background to the Berber numerals. The forms suggest a language different from both Arabic and Punic; in Punic, for example, the ancient Semitic root *šds* 'six' was assimilated to *šš* (Friedrich & Röllig ²1970:120), cf. Hebrew *šēš*, while Berber "preserves" the dental stop. Moreover, in Hebrew and Punic **ṯ* has become *š*, while the Berber form *tam* would imply a plosive interpretation of **ṯ*.[9] Thus, Van den Boogert's proposal to consider them loans from Punic or Phoenician (van den Boogert 1997:221) cannot be maintained, although a different Semitic background remains an intriguing possibility.

Berber also has a number of pre-Roman *Wanderwörter*, i.e., words that are attested in many different languages of different stocks and that seem to have spread together with the commodities they designate. The origin of such words is notoriously difficult to establish, and due to the different possible mediating languages (many of which are unknown to us), correspondences can be highly irregular and unexpected. Such travelling words are especially found in Berber metal names (cf. R. Basset 1896). Thus one remarks the similarity between Hebrew *barzèl* 'iron' and generally attested Berber *uzzal* 'iron' (Ghadames *wăzzal*). In view of the irregularity of the correspondence, an immediate loan from Punic is improbable; we are rather dealing with the same item, mediated by different languages. Similarly, the Berber forms for 'lead', *buldun* 'lead' (Mzab, Ouargla), *aldun* 'lead' (Tashelhiyt Central Moroccan Berber, Kabyle, Zenaga,[10] Tuareg WE),

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[9] Remark that the (probably regular Afroasiatic) correspondent of Semitic **ṯ* is *s* in the case of "two".

[10] *āldūn*; the shape of the noun, with its two long vowels, suggests it is loan from northern Berber or a reborrowing from Hassaniyya Arabic. The initial long vowel could represent the same as the consonant *h* in Ahaggar Tuareg *ahăllom*, however.

tildúnt (Awdjila: 'tin'), *aldom ~ aldon* (Tuareg WE, Y), *ahăllon* (Tuareg H), show highly irregular reflexes in the first syllable. At this point they resemble the many similar but irregular forms found in Indo-European languages, such as Latin *plumb-* and Greek *mólubd-* 'lead' (Boutkan & Kossmann 1999:92).[11] Undoubtedly a *Wanderwort* is Berber *aẓrəf* 'silver', relatives of which are also found in Germanic and Slavonic languages, and which may have an Iberian source (Boutkan & Kossmann 2001). In another sphere, the Berber word *abaw* 'faba bean' (with irregular reflexes such as Siwa *awáw* [N] and Ouargla *aw*) seems to be related somehow to (pre-?)Indo-European forms (cf. Kuipers 1995) but is clearly not a direct loan from Latin *faba* (cf. already the doubts expressed by Schuchardt, 1918:24). Boutkan & Kossmann (1999a; 2000; 2001) have pointed to Berber parallels to words in Indo-European languages that probably have a substratum origin there. While the presented forms are certainly not sufficient to conclude that a Berber-like language used to be spoken in Europe at an early time, nor that Berber and parts of Indo-European share the same substratum, the results are tantalizing.

A *Wanderwort* from the east seems to be represented by one of the Berber terms for 'onion': Tuareg (H) *efăleli*, Ghadames *aflelo*, Sokna *afəlilu*, El-Fogaha *ifalélən* (probably a plural); Siwa *afəllú* [N]. This can be compared to Nile Nubian forms such as Nobiin *fillee* (Jakobi & Kossmann fc.).

3.3 Latin Loans in Berber

Massive Roman influence on northern Africa started with the fall of Carthago in 146 BCE, and the integration of the colony Africa (basically modern Tunisia and western Libya) into the Roman empire. More western parts of Northern Africa were reduced to vassal states, which, in the course of the following centuries were annexed to the empire. From 44 CE (annexation of Mauretania) until the end of the Roman empire,

[11] Schuchardt (1918:14ff.) derives the Berber word from Spanish *latón* 'brass'. The origin of the Spanish term is debated. Corominas & Pascual (1980; VII:604) consider it a loan from Arabic *lāṭūn* 'brass'. They adduce some evidence that the Arabic term, which mainly occurs in Maghribian and Spanish sources, also existed in the eastern Arabic world. Ullmann (1991; II.2:762), on the other hand, considers the Arabic word a loan from Spanish. In view of early Spanish forms which apparently have the Arabic article *al-* (e.g. *allaton*, already attested in 852, Corominas & Pascual l.c.), it seems that an Arabic origin of the word is preferable. Whatever the direction of transmission in Arabic and Spanish, the Berber forms with their irregular variation in the first syllable do not look like borrowings from the Islamic period, and Schuchardt's derivation must therefore be discarded.

much of Northern Africa was under direct Roman control. The borders of the Roman empire were basically the Atlas mountains in Morocco, the High Plateaus in Algeria and the desert in Tunisia and Libya. From the point of view of the modern distribution of Berber languages, it included the territories of all modern groups, except for Zenaga, Tashelhiyt, parts of Central Moroccan Berber, the northern Saharan oases, and Tuareg. Of course, there is no reason to assume that in Roman times all modern language (dialect) groups were to be found at the same place as today—if they existed as groups at all.

Like anywhere in the Roman world, Latin spread as a language, first of the elites and, later on, of the common people. However, different from Europe, it does not seem to have replaced local languages entirely. Thus Múrcia (2011) convincingly argues that Berber was spoken all over northern Africa during the Roman period. While one can safely assume that certain regions were basically Romance speaking (e.g. northern Tunisia) with some influx of Berbers from elsewhere, many parts apparently remained Berber-speaking.

The Latin influence on the Berber lexicon is more important than that of Punic. It has been studied by a number of authors, esp. Schuchardt (1918), Laoust (1920), Colin (1926, 1927, 1930), Brugnatelli (1999), Vycichl (2005:16–32) and Haddadou (2008). While many of the proposed derivations are quite hazardous, there is a core of about 40 words that constitute reasonably certain loans from Latin and/or African Romance.[12]

It is often difficult to keep loans stemming from the times of the Roman empire apart from later Romance loans. In fact, it is theoretically useful to make a distinction between four types of Latin/Romance loans:

a. Latin loans, i.e., loans dating from the time that northern Africa was part of the Roman empire.
b. African Romance loans, i.e., loans taken over from Romance-speaking populations in northern Africa after the fall of the Roman empire.

[12] I exclude a number of well-known etymologies, such as the pan-Berber noun Tashelhiyt *ifilu* 'thread' (Naït-Zerrad 1998–2002:556), which resembles Latin *filum*. As the noun is related to the verb *fəl* 'to set up the loom', I prefer considering this a chance resemblance. Similarly, I leave out the Berber verb *rgl* 'to close' (with all kinds of nominal derivations) even though it is similar to Latin *rēgula* 'slat'. Finally, in spite of the fact that several terms for parts of the plough have been borrowed from Latin, I am not convinced that *azaglu* 'yoke', well-attested in Algeria and Morocco, goes back to Latin *iugulum* (e.g. recently Brugnatelli 1999:328). In this word, both the consonants and the vowels would show entirely unexpected correspondences with the putative Latin source.

c. Precolonial non-African Romance loans, i.e., words taken over from Romance languages spoken outside of northern Africa; this includes the *lingua franca*, the Romance-based Mediterranean pidgin that was spoken until 1830 by enslaved European prisoners in cities such as Algiers.
d. Colonial and post-colonial Romance loans.

In many (if not most) cases, non-African Romance loans have been transmitted through the medium of Maghribian Arabic. As African Romance may have persisted for some time after the Islamic conquest (Lewicki 1953, Múrcia 2011:I/462ff.), transmission of African Romance forms through the medium of Arabic should not be excluded either.

We do not know how African Latin and Romance developed, so it is difficult to differentiate between the loanwords of the first and second stratum (Adams 2003:247; 2007:571ff.). Similarly, the difference between African Romance and non-African Romance forms is not always clear. In the case of domestic items, such as 'bed' or 'lentil', an African Romance (or Latin) background seems *a priori* more probable—it is difficult to imagine such loans being transmitted through Mediterranean trade networks. In other cases there is no way to decide upon this.

In the following, I will lump together the words that I consider probable loans from Latin or African Romance, with the exception of the Latin month names (see 3.4). They will be summarized under the name "Latin loans".[13]

The way Latin loans are integrated into Berber is far from homogenous, and it is worthwhile considering the possibility of a chronological stratification on the basis of formal characteristics. There are a number of interesting features which show variation. In the first place, the Latin ending *-us* appears in two shapes.[14] In a number of words, Berber has *-us*:[15]

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[13] Latin forms are quoted according to Glare (1981) and, in the case of words that are only attested in later Latin, Souter (1949).

[14] The Latin ending is only rarely lacking altogether. This is one of the points that make Brugnatelli's interpretation of *uday* 'Jew' from Latin *iudaeus* problematic (Brugnatelli 2008b:47ff.).

[15] In the literature, a number of forms with *-uz* in Berber have been adduced, especially Central Moroccan Berber (Zemmour) *ablaluz* 'asphodel' (also attested elsewhere in Morocco and Algeria), which would come from Latin *asphodelus*. The phonetic resemblance is far from perfect; moreover Central Moroccan variants without the repetition of *l* (e.g. Zayan *abluz*) suggest that *ablaluz* is an expressive reduplication from a basis *abluz*, which resembles Latin even less. The other example, *yulyuz* 'july' < *iulius*, belongs to the group of Romance month names and will be treated in section 3.4. One remarks however the Tuareg (Y) variant *angăloz* 'angel' instead of more widely attested Tuareg *angălos*.

cattus	'cat'	Ghadames *takaṭṭust*
asinus	'donkey'	Rif *asnus* 'donkey foal'
pullus	'chick'	Tashelhiyt *afullus* 'chicken'
pirus	'pear-tree'	Kabyle *ifirəs* 'pear'
carduus	'thistle'	Chaouia *ḵarḍus* 'fig in the stage that it will be pollinated' (A. Basset 1961:71, 72)

In other words, Berber has *-u* for Latin *-us*:

hortus	'garden'	Iznasen *urṯu* 'field'
mūrus	'wall'	Ouargla *muṛu* 'wall'
saccus	'bag'	Iznasen *asaḵu* 'double bag put on a donkey'
ulmus	'elm'	Kabyle *ulmu* 'elm'
carabus	'boat'	Iznasen *aɣəṛṛabu* 'boat'
furnus	'oven'	Tashelhiyt *afarnu* 'oven'

One way to interpret this is that the group with *-us* preserves an older form of Latin, in which the final *s* had not yet been lost. An alternative explanation has the forms with *-us* taken over from the Latin nominative form, while the forms with *-u* would represent the Latin accusative *-um*. Final *m* was already lost in spoken Latin during the classical period (Väänänen ^{3}1981:66), and Latin neuter nouns in *-um* are always taken over in Berber with *-u*, never with *-um*, e.g. *castrum* 'fortified post' > Nefusa *ɣasrú* 'castle' (Colin 1927:93). It is well-known that the Latin accusative functioned as the basis for many case-less forms in modern Romance, so its use as the basis for Berber loans is not unexpected.

Apart from the nouns in *-us*, only few Latin loans in Berber allow us to decide on the case of the original Latin form. The evidence is ambiguous. On the one hand, there are a few forms which are undoubtedly nominative, e.g. *falco* 'falcon' > Iznasen *falḵu* 'bearded vulture' (cf. the Latin accusative form *falconem; falco* is only attested in late Latin). A few other loans take a Latin oblique form as their basis: *lens* (Acc: *lentem*) 'lentil' > Tashelhiyt *tilintit* 'lentil'; Latin *mercēs* (Acc: *mercēdes*) '(divine) recompensation' > Ouargla *amərkidu* 'type of alms given in order to thank God for something'. It is interesting to note that corresponding to nominative-based Iznasen *falḵu* (< *falco*), Medieval Tashelhiyt had accusative-based *afəlkun* (< *falconem*) (van den Boogert 1997:116).

The Berber interpretation of a number of Latin phonemes is variable, and the variation may be (partly?) due to a difference in chronology. Latin *p* is taken over in two shapes: *f* and *b*:

pirus	'pear-tree'	Kabyle *ifirəs* 'pear'
pūlēium	'pennyroyal'	Kabyle *fləggu* 'pennyroyal'
pullus	'chick'	Tashelhiyt *afullus* 'chicken'

pascha	'Easter'	Tashelhiyt *tafaska* 'feast'
pastināca	'parsnip'	Ouargla *tafəsnaxt* 'carrot'
patina	'shallow pan or dish for cooking or serving food'	Tashelhiyt *tafḍna* 'cauldron'
apium	'celery'	Ouargla *abiw* 'celery'
peccātum	'sin'	Tuareg *abăkkaḍ* 'sin'

One interpretation of the situation is that loans with *f* were taken over at a stage when Berber *f* was still pronounced [p]; the loanwords would have shared in the Berber phonetic innovation. At a later stage, when Berber no more had a sound [p], Latin/Romance *p* was interpreted as *b*.

Latin *c* is sometimes taken over as *ɣ*, sometimes as *k*:

ca, cua (not in clusters) > *ɣ*

castrum	'fortified post'	Nefusa *ɣasrú* 'castle'
carabus	'boat'	Iznasen *ayəṛṛabu* 'boat'
causa	'case'	Tashelhiyt *taɣawsa* 'thing'
siliqua	'carob'	Menacer *ṯasliɣwa*, Iznasen *ṯasliwɣa* 'carob (tree)'

ca, cua (not in clusters) > *k*

carta, charta	'paper'	Ouargla *tkirḍa, tkurḍa* 'piece of paper'
camisia	'shirt'	Tuareg (H) *tekămest* 'shirt, gown'
carduus	'thistle'	Chaouia *ḵarḍus* 'fig in the stage that it will be pollinated' (A. Basset 1961:71, 72)

in clusters and when long > *k*

pascha	'Easter'	Tashelhiyt *tafaska* 'feast'
falco	'falcon'	Iznasen *falḵu* 'bearded vulture'
furca	'fork'	Iznasen *ṯfurka* 'catapult'
scāla	'ladder'	Tashelhiyt *taskala* 'ladder'
lectus/m[16]	'bed'	Iznasen *aləḵṯu* 'elevated part of the bedroom'
mercēs	'recompensation'	Ouargla *amərkidu* 'type of alms'
saccus	'bag'	Iznasen *asaḵu* 'double bag put on a donkey'

ce/cy/ci > *k*

celsa	'mulberry tree'	Chaouia *ṯḵilsa* 'mulberry tree' (A. Basset 1961:101)
cydonia	'quince'	Chaouia *taktunya* 'quince'
cicer	'chick-pea'	Tashelhiyt *ikikr* 'red pea'

[16] Cf. Colin 1927:98.

The only context in which Berber *ɣ* < *c* is found is before Latin *a* and *ua*. The plosive pronunciation *k* is preserved where Latin *c* precedes a palatal vowel, while Romance languages normally have palatalization in this context. This is even the case of *mercēs* (Acc: *mercēdes*), clearly a Christian term.

Possibly, at an early stage, Latin *c* was taken over as *ɣ* (maybe at that time still pronounced as plosive [q]) before low vowels, and as *k* before high vowels. In a later stage—after **q* had become *ɣ* in Berber?—Latin *c* would have been taken over as *k* before low vowels as well.

Latin /t/ appears in two forms: *t* and *ḍ* (or its long counterpart *ṭṭ*):

hortus	'garden'	Beni Snous *urṯu* 'orchard'
lectus	'bed'	Iznasen *aləḵṯu* 'elevated part of the bedroom'
lens	'lentil'	Tashelhiyt *tilintit* 'lentil'
tēmō	'plough beam'	Kabyle *aṯmun* 'plough beam'
blitum	'k.o. spinach, blite'	Kabyle *bliṯu* 'chard'
peccātum	'sin'	Tuareg *abăkkaḍ* 'sin'
carta, charta	'paper'	Ouargla *tkirḍa, tkurḍa* 'piece of paper'
patina	'shallow pan or dish for cooking or serving food'	Tashelhiyt *tafḍna* 'cauldron'
tabula	'board'	Ghadames *toḍăbla* 'board of wood for making doors'

One suspects that *abəkkaḍ*, as a Christian term, is a relatively late borrowing (see 3.4).

Our data are too scanty to allow for an integrated account of these forms. One remarks that there are only two loans which have both *p* and *c* in Latin. Among these, one has *p* > *f* and *c* > *ɣ* (Ouargla *tafəsnaxt*[17] 'carrot' < *pastināca*), while the other has *p* > *f* and *c*(*h*) > *k* (Tashelhiyt *tafaska* 'feast' < *pascha* 'Easter'). This may reflect different moments of take-over, but could also be due to different phonetic environments (intervocalic position for *c* in *pastināca* vs. part of a consonant cluster in *pascha*). Similarly, forms in *-us* are not restricted to what one would suppose to be the earliest stratum. Thus, the noun *cattus* 'cat' is only attested in late Latin sources. In Berber it appears with different stem-initial consonants *takaṭṭust* (Ghadames), *yaṭṭus* (Sened, Siwa), *ayaḍus* (Medieval Tashelhiyt), *qaṭṭús* (Nefusa). The noun also exists in Arabic dialects of the region, probably borrowed from Berber, and forms with /q/ may in fact represent

[17] With assimilation *ɣt* > *xt*.

reborrowings from Arabic (cf. Colin 1927:96–7; Kossmann 1999a:198). The late chronology of this Latin word does not concur with an early chronology of borrowings in *-us*.[18] Similarly, in Chaouia *ḵarḍus* (< *carduus*) the preservation of *-us* goes along with the reflex *k* for *c* before *a*, which might be a later variant, while earlier loans would have *ɣ* < *c*. Concluding, a chronological interpretation of the differences in reflexes is extremely problematic.

Semantically, borrowings from Latin/African Romance cluster in a number of domains (Schuchardt 1918, Haddadou 2008); the following presents the more probable cases:

useful plants and trees:

apium	'celery'	Ouargla *abiw* 'celery'
blitum	'k.o. spinach, blite'	Kabyle *bliṭu* 'chard'
carduus	'thistle'	Chaouia *ḵarḍus* 'fig in the stage that it will be pollinated' (A. Basset 1961:71, 72)
celsa[19]	'mulberry tree'	Chaouia *ṯḵilsa* 'mulberry (tree)' (A. Basset 1961:101)
cicer	'chick-pea'	Tashelhiyt *ikikr* 'red pea'
cydōnium	'quince'	Central Moroccan Berber *taktuniyt*, Kabyle *ṯaḵṯunya*, Chaouia *taktunya* 'quince' (Huyghe 1907:510)
lens	'lentil'	Tashelhiyt *tilintit, tiniltit* 'lentil
pastināca	'parsnip'	Ouargla *tafəsnaxt*,[20] Mzab *tifəsnəxt* 'carrot'
pirus	'pear-tree'	Tashelhiyt *tafirast*, Central Moroccan Berber *tafirast* 'pear(-tree)' Menacer *ṯfirast*, Kabyle *ifirəs* 'pear', Chaouia *ṯafiraṯ* 'pear tree' (A. Basset 1961:315)
pūlēium	'pennyroyal'	Tashelhiyt *fliyu*, Central Moroccan Berber *fləyyu*, Snous *fliyu* Kabyle *fləggu* 'pennyroyal'
rubia	'madder'	Tashelhiyt *tarubi*, Central Moroccan Berber *tarrubya*, Metmata *awrubya*, Figuig *ṭrubya*, Kabyle *ṯarubya* 'madder'
siliqua	'carob'	Central Moroccan Berber *tasliɣwa*, Iznasen *ṯasliwɣa*, Menacer *ṯasliɣwa*, Figuig *tasliwɣa*, 'carob (tree)'

[18] On the Christian term *angelus* 'angel', found in Tuareg *ănğălos* (H, Ghat); *ăngălos* (WE), *ăngăloz* (Y), see section 3.4.

[19] Only attested in late Latin, Souter (1949:45).

[20] with assimilation *ɣt* > *xt*.

other agricultural terms:

ager	'piece of land'	Tashelhiyt *igr* 'field' (generally attested in Moroccan and Algerian dialects, see NZ III:846)
hortus	'garden'	Tashelhiyt *urti* 'orchard', Central Moroccan Berber *urti, urtu* 'orchard' Rif *uaṯu* 'fig tree', Iznasen *urṯu* 'field (*sic?*)', Snous *urṯu* 'orchard', Menacer *urṯu* 'orchard', Kabyle *urṯi* 'orchard (esp. figs)', Chaouia *urti* 'garden' (only in toponyms) (A. Basset 1961:325)
iugum	'yoke, pair of draught animals, couple'	Tashelhiyt *tawgtt* 'pair', *tayugʷa* 'pair of oxen', Central Moroccan Berber *tayuggʷa* 'pair of draught animals', Iznasen *ṯyuya* 'pair', Snous *ṯiyuyya* 'pair of oxen', Metmata *ṯiyuḡa* 'pair of oxen', Mzab *ǧu*, *tǧuǧa* 'pair', Ouargla *tgugət* 'pair', Kabyle *ṯayuḡa, ṯayuḡʷa* 'pair', Chaouia *ṯiug*(*g*)*a* 'pair' (A. Basset 1961:291)
tēmō	'plough beam'	Central Moroccan Berber *atmun*, Kabyle *aṯmun* 'plough beam' (see Laoust 1920:286), Chaouia *aṯmuni* 'plough beam' (A. Basset 1961:52)

wild plants and trees

alga	'sea-weed'	Zuwara *talga* 'sea-weed' (Serra 1970:43)[21]
taeda	'pine'	Central Moroccan Berber *tayda* 'pine'
ulmus	'elm'	Kabyle *ulmu* 'elm'

animals

asinus	'donkey'	Tashelhiyt *asnus*, Central Moroccan Berber *asnus*, Rif *asnus* 'donkey foal'
cattus[22]	'cat'	Ghadames *takaṭṭust* Sened, Sened *yaṭṭus*, Siwa *yaṭṭús* [N], Medieval Tashelhiyt *ayaḍus* (van den Boogert 1997:116), Nefusa *qaṭṭús* (possibly *qəṭṭús*)
falco[23]	'falcon'	Iznasen *falḵu* 'bearded vulture', Rif *faršu* 'bearded vulture', Kabyle *afalku* 'k.o. bird of prey, falcon, eagle?' Chaouia *falku* 'k.o. bird of prey' (Huyghe 1907:200), Medieval Tashelhiyt *afəlkun* (van den Boogert 1997:116)
pullus	'chick'	Tashelhiyt, Central Moroccan Berber *afullus* 'chicken', Iznasen *afəllus* 'chick', Rif *fiǧǧus* 'chick', Snous *afullus* 'chick', Menacer/Metmata *fullus* 'chick', Figuig *fullus* 'chick', Mzab *fullus* 'chick', Ouargla *fullus* 'chick', Chaouia *fullis* 'chick' (A. Basset 1961:104)

[21] Cf. however Chaouia *ṯalga* 'partie de la tige de l'épi qui est coupé quand on récolte l'orge pour les *iu̯zan* (i.e. part of the ear of a cereal)' (Basset 1961:73). If this is somehow related to the Zuwara term, the resemblance with Latin *alga* is probably due to chance.

[22] Only attested in late Latin.

[23] Only attested in late Latin, Souter 1949:144.

useful objects

furca	'fork, Y-shaped piece of wood'	Iznasen *ṯfurka* 'catapult', Snous *ṯfurkət* 'forked branch', Kabyle *afurk* 'branch', *ṯafurka* 'two-branched pitchfork' (NZ III:627)
līma	'file'	Tashelhiyt *talima*, Central Moroccan Berber *tilima*, Iznasen *ṯlima* 'file'[24]
patina	'shallow pan or dish for cooking or serving food'	Tashelhiyt *tafḍna* 'cauldron', Central Moroccan Berber *tafḍna* 'cauldron', Iznasen *tafəḍna* 'iron bowl', Chaouia *tafaḍna* 'big jug for cooking' (Huyghe 1907:474)
saccus	'bag'	Central Moroccan Berber *asaku*, Iznasen *asaḳu* Metmata *saḳu*, Menacer *saḳu* Kabyle *ṯasakuṯ* 'double bag used as a donkey's saddle', Chaouia *sakku* 'double bag' (A. Basset 1961:13). Cf. Mzab *saču* 'kind of tapestry, often made from rags'[25]
scāla(*e*)	'ladder'	Central Moroccan Berber *taskala*
sūbula	'shoemaker's awl'	Iznasen *ṯissubla*, Figuig *tissubla*, Mzab *tisubla*, Ouargla *tsubla*, Tuareg *tăsubla* (H Y), *tăsobla* (WE Y), *tăsugla* (H), *subla* (N) 'awl'
tabula	'board'	Ghadames *toḍăḇla* 'board of palm wood for making doors'

terms for parts of the house etc.

castrum	'fortified post'	Nefusa *ɣasrú* 'castle'
furnus	'oven'	Tashelhiyt *afarnu, afrran* 'oven', Central Moroccan Berber *afəṛṛan* 'oven', Iznasen *afəṛṛan* 'oven', Figuig *afəṛṛan* 'oven', Kabyle *afarnu* 'big flame, oven', Nefusa *ufərnú* 'oven'. The word is also well-attested in Maghribian Arabic (Moroccan Arabic *fəṛṛan* 'public bread oven'). Tuareg *fărno* (D) 'oven as used by sedentary people' is probably a recent loan from French *fourneau* (Ritter 2009:II–556)
gallīnārium	'hen-house'	Snous *gənnayru* 'hen-house'[26]

[24] The Latin nature of this term is challenged by the Zenaga term *täššaʔyimt* (< **tas*(*s*) *aʔlVmt*) 'wooden plane', which looks like an instrumental derivation from the same root. Especially the presence of a glottal stop in the Zenaga form goes against an interpretation as a loanword from Latin (Kossmann 2012c:250).

[25] Note that donkey's saddles are often woven from rags.

[26] Behnstedt & Woidich (2012:364) point to similar forms in Arabic varieties of eastern Algeria and Tunisia. They consider them "wohl aus regionalem ital. *gallinaro oder span. gallinero . . ." It is difficult to see how a term like this would have spread from regional Italian or Spanish to Algeria. Therefore a Latin or African Romance background seems to be more likely.

lectus/m	'bed'	Tarifiyt *řəšṯu* 'elevated part of the bedroom where beddings are put', Iznasen *aləḵṯu* 'id.'
mūrus	'wall'	Mzab *maṛu* 'wall', Ouargla *muṛu* 'wall'

religious terms and terms related to learning

angelus	'angel'	Mzab *anǧəlus* 'young child, vague supernatural spirits', Chnini (Tunisia) *anglus* 'child' (A. Basset 1950:222), Ghadames *anǧalús* 'inspiration (?)' (only used in a fixed expression), Tuareg *ănǧălos* (H, Ghat); *ăngălos* (WE), *ăngăloz* (Y) 'angel', Ancient Nefusi <anaǧlusan>, <wanaǧlusan> (Bossoutrot 1900:490, 494, translated in Arabic as *al-malā'ikah* 'angels'), <'nǧlwsn> (Lewicki 1934:290)
carta, charta	'paper'	Mzab *tkirḍa*, Ouargla *tkirḍa, tkurḍa*, Ghadames *takərḍa*, Siwa *tyərṭá* 'paper' (Vycichl 2005:193), Tuareg *tăkarḍe* (general exc. D)
daemōn	'evil spirit'	Ancient Nefusi <idaymunan> (Bossoutrot 1900:491, translated in Arabic as *aš-šayāṭīn*)
mercēs	'wages, recompensation'	Ouargla *amərkidu* 'type of alms given in order to thank God for something', Tuareg *emărked* (H D WE Y) 'divine recompensation' Ancient Nefusi <amarkīḏu> 'divine recompensation' (Ar. *al-ʔaǧr, aṯ-ṯawāb min Allāh*) (Bossoutrot 1900:491).
pascha	'Easter'	Central Moroccan Berber *tafaska* 'month of the ɛīd al-kabīr', Ouargla *tfaska* 'major religious celebration', Ghadames *tafaṣka* 'major religious celebration', Tuareg *tăfaske* 'ɛīd al-kabīr' (general except D & Gh)
peccātum	'error, sin'	Kabyle *aḇəkkaḍu* 'sickness (?)' (only used in a fixed formula), Tuareg *abăkkaḍ* (general except D) 'sin'

others

carabus[27]	'boat'	Central Moroccan Berber *ayərrabu*, Iznasen *ayəṛṛabu* 'boat'
causa	'case'	Tashelhiyt *taɣawsa*, Central Moroccan Berber *taɣawsa*, Tashelhiyt *taɣawsa*, Figuig *tɣawsa*, Mzab *tɣawsa*, Ouargla *tɣawsa*, Kabyle *ṯaɣawsa*, Chaouia *tɣawsa* (A. Basset 1961:2) 'thing'.

[27] Only attested in late Latin and considered a dialectal form, Souter 1949:39.

The dialectal distribution of Latin loans over the northern Berber territory is even. There are relatively few Latin loans in the easternmost languages; this may be due to a difference in superstrate (Coptic or Greek rather than Latin), but probably simply reflects the poor state of lexicography in the region. In Tuareg, Latin loans are much less prominent than elsewhere, probably due to the fact that most of the terms concern agriculture of a type that is not practiced by the Tuaregs. Tuareg does preserve, however, a number of Latin religious terms (see below). The same reasons related to natural environment could explain the quasi-absence of Latin loans in Zenaga (on *pascha*, see below). Moreover, Zenaga is nowadays spoken far outside the former realm of the Roman empire.

In general, the Roman *limes* does not seem to have been a major impediment to the spread of Latin vocabulary. One remarks the presence of Latin loans in Tashelhiyt, spoken in a region that was never part of the Roman empire. Still, it is remarkable that a number of loans only occur in Chaouia, one of the Berber languages spoken closest to the heart of Roman Africa, not far from southern Tunisia, where, as shown by Múrcia (2011:I/463ff.), Romance may have survived much longer than elsewhere.

The Names of the Solar Calendar

The Islamic calendar is based on a lunar calendar. There is a difference in length of about half a month between the twelve months of the lunar calendar and the solar year. As a consequence, the lunar months do not coincide with natural seasons. This is unpractical in an agricultural setting, where seasons are much more fundamental than the moon, and in all Islamic cultures there exist solar calendars in addition to the religious lunar calendar (see Drouin 2000 for overview and analysis). Traditional rural Berber and Arabic varieties in the Maghrib use a set of month names clearly derived from the Julian calendar (cf. also the Italian *Wikipedia* entry 'Calendario Berbero', mostly written by Vermondo Brugnatelli, accessed March 2012; Ritter 2009:I/992–993). There does not seem to be a basic distinction between Berber and Arabic forms of the names, but there is some regional variation. In many sources only part of the month names are given, often because informants do not know the entire sequence. Thus, for example, for Figuig I could only elicit the names of the first eight months, the other names were unknown to the speakers I consulted. The following table presents a number of examples:

Latin	Middle Atlas	Kabyle	Ghadames
ianuarius	*ənnayr*	*yənnayər*	*ayănnar*
februarius	*fəbrayər*	*fuṛaṛ*	*furar*
mars	*marṣ*	*məɣṛəs*	
aprilis	*ibril*	*yəḇrir*	*ibrir*
maius	*mayyu*	*maggu* (< **mayyu*)	*mayo*
iunius	*yunyu*	*yunyu*	
iulius	*yulyuz*	*yulyu*	
augustus	*ɣušt*	*ɣušt*	
september	*ššutanbir*		
october	*ktubər, štubər*	*tuḇəṛ*	
november	*ənnwanbir*		
december	*ddužanbir*	*ḇuğambər*	

There are a number of important locuses of variation in these forms. The word 'January' has in some varieties an initial sequence *yə* (> *i*), while others lack it, e.g. the difference between *nnayər* in Central Moroccan Berber and *innayr* in Tashelhiyt. Forms without *y* are mainly found in central and northern Morocco as well as adjacent parts of Algeria. In the eastern part of the Maghrib (Tunisia, Libya) we find forms ending in *-ar* instead of *-ayər*, e.g. Ghadames *ayănnar*, cf. also Maltese *jannar*.

The term 'February' shows a lot of variation, especially in its first syllable. In Berber and in Arabic a sequence of two labial consonants as in *feb-* is unusual. Maghribian varieties have dealt with this problem in different ways. In a number of languages, the sequence *f–b* was maintained, in spite of the phonotactic problems, e.g. Central Moroccan Berber *fəbrayər*, Figuig *fubṛayəṛ*. Other western varieties have deleted the first syllable altogether, e.g. Ntifa *brayr*, while still others have substituted the first consonant by a non-labial fricative, e.g., Tashelhiyt *xubṛayr*, Ayt Seghrushen *šbrayəl* (Destaing 1920:215), Beni Snous *šəbrayr*. In varieties more to the east, the *b* of *februarius* was vocalized into *u*, e.g. Kabyle *fuṛaṛ*, Ghadames *furar*. In Maltese, this *u* was lost, giving *frar*.[28] Like in *ianuarius*, the word ends in *-ayər* in western varieties, while it has *-ar* in the east, e.g. Ghadames *furar*.

The month March is normally *maṛṣ* (with or without pharyngealization). In a number of dialects, a form *məɣṛəs* is found, which seems to be the result of folk etymology, based on the Arabic verb *ɣrəs* 'to plant'.

[28] Apparently, in the predecessor of Maltese, the first vowel was short, while in the predecessor of the Libyan forms it was long, i.e. **fŭrār* vs. **fūrār*. In Maltese, short vowels have undergone deletion in unstressed open syllables.

The month name April shows different attitudes to the sequence *r–l*, which is rare in Berber and in Maghribian Arabic. Many varieties keep the sequence, others generalize *r* (Ghadames *ibrir*, Figuig *yəbrir*, etc.). The month names June and July have variants with and without final *h* (*yunyu* and *yunyuh*) and *z* (*yulyu* and *yulyuz*), respectively. As shown by van den Boogert (2002:150), these are mnemonic names, in which a numerically used letter is added to the basis of the month name. This is possible with all month names, but only became fixed as part of the name in the case of the similarly sounding months *yunyu* and *yulyu*.

The month name August is *ɣušt* almost everywhere. One remarks however the term *awússu*, attested in Berber and Arabic varieties in southern Tunisia and western Libya (Paradisi 1964, esp. fn. 3), where it refers to August, or more specifically to the hottest period of the year. The same term appears in the Maltese month name *awissu* 'August'. Both *ɣušt* and *awi/ussu* derive from Latin *augustus*.

The month names starting with September are less well-attested, and will not be dealt with here in detail.

When studying the month names in the Maghrib a number of observations can be made. In the first place, there seems to be a split between western and eastern systems, the western systems using forms in *-ayr* for the first two months, while the eastern system has *-ar* (in Kabyle—in between east and west—the two months are treated differently). This coincides with the presence or absence of vocalization of *b* in the form *furar* 'February'. In the second place, the Latin month name *Augustus* appears in two highly different forms: *ɣušt* and *awussu*.

One might assume that the Latin month names are survivals of African Romance forms that first entered Berber (Galand 2010:142) and then were taken over in Arabic. Logical as it may seem, there are a number of caveats to this assumption (Ritter 2009:I/993, citing earlier literature; Souag fc.). The Maghribian month names contain a number of consonants that are rare in genuine Berber words, and for which one may doubt their existence in pre-Islamic Berber. These are *š* (*ɣušt, šutanbir*) and *ž* (*dužanbir*). This suggests that the names entered Berber from Arabic rather than the other way round. Moreover, outside of the Maghrib Arabic varieties also have Latin month names that, at least partly, share characteristic features with the Maghribian type, cf. the month names in modern Cairene Arabic (Hinds & Badawi 1986) and in Andalusian Arabic (Corriente 1997):

Middle Atlas Berber	Cairene Arabic	Andalusian Arabic
ənnayər	*yanāyir*	*yannayr*
fəbrayər	*fabrāyir*	*fabrayr, fibrayr*
marṣ	*māris*	*mars*(*i*)*, mārs*
ibril	*ʔi/abrīl*	*abrīl*
mayyu	*māyu*	*māyu*(*h*)
yunyu	*yunya, yunyu*	*yūnyuh, yūniyyu*
yulyuz	*yulya, yulyu*	*yūlyuh*
ɣušt	*aɣusṭus*	*aɣušt, aɣušt*(*uh*)
ššutanbir	*sibtimbi/ar*	*šutanbar* (etc.)
ktubər, štubər	*ʔuktōbar*	*uk/qtūbar, uqtūfar*
ənnwanbir	*nufimbir*	*nuw/banbar, nūfanbar*
ddužanbir	*disimbi/ar*	*dužunbu/ir, dužanbar* (etc.)

There are a number of similarities, which do not seem to stem from the fact that all forms ultimately go back to Latin, but point to a more recent common source. Thus, the fate of the Latin ending *-us* is similar. In shorter month names it is preserved as final *-u: mayyu, yunyu, yulyu*, while it is lost in longer month names: *nnayər, fəbrayər*. In Maghribian Berber and Arabic and in Andalusian Arabic, *ɣušt* 'August' is an exception. One also remarks the use of forms with *š* and *ž* in Andalusian in the same month names where they are found in the Maghrib. Finally, both Egyptian and Andalusian Arabic have the interpretation *-ayVr* from the sequence *-arius*, also found in the western part of the Maghrib.

It looks as if the originally Latin month names reached the western Maghrib through the medium of Andalusian Arabic, or that they have the same common Arabic source. The situation in the east is a little bit more complicated. The form *furar* 'February' is not attested outside the Maghrib, and is also found in Maltese, which attests to its anciennity. Moreover, in this region we find the form *awi/ussu* < *augustus*. This form is certainly not a loan mediated by Arabic, which suggests that it was taken over immediately from Late Latin or African Romance.

How can we interpret this situation? Maybe the following cautious scenario is to be preferred. Before Islam, there were undoubtedly solar calenders being used in the Maghrib. Documentation of genuine Berber calenders is found in some Arabic manuscripts whose materials probably go back to the 9th century CE (van den Boogert 2002). In the calendars described by van den Boogert, there is no trace of Latin influence. Apparently, in the western Maghrib, the Latin/Romance solar calendar was introduced through the medium of Arabic, possibly from Andalusia. More to the east, one may assume that a Latin-based system existed, which provided forms such as *awi/ussu* and possibly *furar*. However, during

the Islamic period, this ancient Latin calender was partly substituted by Latin/Romance names mediated by Arabic. A similar partial substitution of month names is found in Maltese, which has both non-Italian forms such as *awussu* and Italian forms such as *marzu* and *april*.

The Maghribian month names are also used in Tuareg and in Zenaga. This is clearly due to secondary diffusion from the north.

3.4 Early Islamic Terminology

From the 7th century onwards, Islam started to spread over northern Africa. We do not have a clear picture of the religious situation immediately preceding this spread. It is certain that there were sizeable Christian and Jewish communities, as well as adherents to traditional religion(s). The pace of spread of Islam over northern Africa is also difficult to ascertain. It is generally assumed that Christianity remained an important factor until the Almohad persecutions of the 12th century CE; Lewicki (1967a) has argued that traditional religion survived at least until the 9th century in northern Africa. Judaism survived the persecutions, and was reinforced in the course of the 15th and 16th century by the immigration of refugees from the Iberian peninsula.

The first centuries of Islamic northern Africa were characterized by a lack of unity. Many regions were dominated by the Kharijite brand of Islam, which, in its peaceful Ibadhi version, still survives in Mzab, Ouargla (partly), Djerba, Zuwara and Djebel Nefusa. During Fatimid rule, there is little doubt that Shiism played a role, although the extent of this role is difficult to measure, and no traces of it remain today. Sunni Islam, to which almost all inhabitants of northern Africa adhere nowadays, must also have been an important factor from early times onwards. Finally, in the course of the ninth century CE, a specifically Berber Islam-based creed emerged among the Barghwata, a group living in western Morocco, with a Berber *Qur'ān* revealed to a Berber prophet. This "heresy" was fiercely combatted and there are no surviving traces of it, except the relations by Arab historians.

Whatever brand of Islam was embraced, there is no reason to assume that conversion led to immediate language shift to Arabic, except maybe in some urban areas. In order to convey the Message, there was need for a Berber terminology for key concepts of Islam. The present distribution of many specifically Berber terms for Islamic religious concepts suggests that a uniform Berber Islamic terminology was consciously created in order

to meet this need, no doubt by early missionaries. In later periods Arabic became the main vehicle of Islamic communication, so the creation of special non-Arabic lexicon is not expected in a later period. In this section, words which may have been part of this early terminology will be studied (cf. van den Boogert & Kossmann 1997).

Ideally, for a term to be attributed to the early stratum of Islamic terminology, it should be well-attested all over Berber, and have a form which is sufficiently un-Arabic to distinguish it from later borrowing. As in Islamic societies Arabic is a constant factor, and therefore causes constant replacement of "indigenous" terms by genuine Arabic terms, it is rare to find non-Arabic Islamic terms which are attested all over the Berber territory. As a result, there exist a number of terms which are badly attested but which still may belong to the earliest stratum.

A second problem is the degree to which this early Islamic terminology drew upon existing monotheistic resources. Many important concepts are shared between Islam and Christianity, and it is only logical that missionaries would make use of these communalities, taking over Christian terms and adapting their semantics to Islamic content. These Christian terms may have been drawn from Berber (i.e. Berber loans from Latin or Greek concerning Christian concepts), but they may also have been taken immediately from African Romance.

There are three types of Islamic religious terms which are possibly part of the earliest stratum of missionary activity:

- Newly coined terms or terms taken over from Berber, i.e., Berber-based forms
- Ancient Christian of Jewish terms which were inserted into the Islamic lexicon, mainly from Latin (or maybe Greek)
- Arabic terms

From the first group simple loan translations from Arabic should be discarded, as they may have been coined at any point in time. Thus (archaic) Nefusa *ábrid* 'religion' (originally 'road') (Brugnatelli 2005:131) is an obvious calque on Arabic *ṭarīq*(*a*) 'road, creed', and must not stem from the earliest stratum.

The third group is most problematic, as it is difficult to make a difference between earlier and later loanwords. In some cases, this can be shown by the degree of phonological and morphological integration (see below), while the lack of this integration betrays a later origin. However, there are cases where it is impossible to decide. Thus, for example, the

verb *amən* 'to believe' (< Ar. *ʔamana*) could belong to the early stratum, but there is no convincing evidence to prove this.

Newly Coined Terms

The most important group of newly coined terms are the names of the daily prayers (van den Boogert & Kossmann 1997:320–321).

1. 'midday prayer (*ṣalāt aḍ-ḍuhr*)'. Figuig *tizzarnin*, Gouara *tizzaɛnin* (Boudot-Lamotte 1964:529), Mzab *tizzarnin*, Ouargla *tiẓilla n təzzarnin*, Zuwara *tizzarnin* (Mitchell 2009:326), Medieval Tashelhiyt *tizwarn*, Pre-modern Tashelhiyt *tizwarnin*, Tuareg *amud ən tezzar* (H D N WW), *amud ən təzzar* (Y), *tezzar, tizzar* (WE), Zenaga *ṯeẑbaṛən*. Derived from the Berber verb *zwar ~ zzar* 'to precede'. El-Fogaha has a local word for 'noon': *myári*.

2. 'afternoon prayer (*ṣalāt al-ɛaṣr*)'. Gourara *takzin* (Boudot-Lamotte 1964:535), Mzab *takkʷəẓin*, Ouargla *takkʷəẓin*, Nefusa *tuqzín* (Provasi 1973:529), Zuwara *tuqzin* (Mitchell 2009:326), Tashelhiyt *takʷẓin*, Tuareg *takkəṣt* (H), *amud ən taḳəst* (WE Y), *amud ən takkăṣt* (D N WW), Zenaga *takkuẓən*. Derived from the numeral *kkuẓ* 'four'.

3. 'evening prayer (*ṣalāt al-maɣrib*)'. This prayer is found in two variants: Mzab *tisəmməsin*, Ouargla *tisəmməsin*, El-Fogaha *tsəmsín*, is derived from the numeral *səmməs*, *səmmus* 'five'. Zuwara *timutšu* (Mitchell 2009:327), Medieval Tashelhiyt *tiwwutši*, pre-modern Tashelhiyt *tinwutši, tiwwutši* and Zenaga *tnutʸšaʔn* are derived from **ti n wutši* 'those of eating', possibly because it is the time of the day that fast is broken during Ramadan. A number of other languages have transparent loan translations from the Arabic meaning 'prayer of sunset': Ghadames *ammúd n aḇənnəḇən*, Awdjila *mnišw*, Tuareg *amud n əlməẓ* (WY), etc.

4. 'night prayer (*ṣalāt al-ɛišāʔ*)'. The following terms are attested: Figuig *tinyiṭ*, Mzab *tinniḍəs*, Ouargla *tiẓilla n tinniḍəs*, Zuwara *tiniḍəṣ* (Mitchell 2009:327), Medieval Tashelhiyt *tiyyiṭs*, Pre-modern Tashelhiyt *tinyiḍs, tiyyiṭs*, Ghadames *ammúd n tənéḍəs*, El-Fogaha *tniṭást*, Zenaga *tənnʸuḍaššən*. The term is derived from **ti n yiḍəs* 'those of sleeping'. Tuareg has transparent terms: *amud n tsoṭsen* 'prayer of going to sleep', *amud n ăẓuẓəǧ* (H) 'prayer of the evening milking'.

There is no old term for the morning prayer (*ṣalāt al-faǧr*); most Berber languages use a loan from Arabic, others have a transparent construction

with '(prayer of) sunrise / morning', e.g. Ouargla *tiẓilla n ɣabəššа*, Tuareg *amud n ăzăl* (WE), Zenaga *t(ä)näzzätt*. I do not know the background of Zuwara *talži* (Mitchell 2009:327).

Different from Arabic, all ancient Berber names for the canonical prayers are plurals. There are a number of terms which do not have a broad diffusion any more, but which may still belong to this early stratum:

5. 'prayer, to pray'. Most Berber languages use an early loan from Arabic (see below), *taṣallit*. However, in a number of languages a different term is found: Ghadames *mud* 'to pray' *amud* 'prayer', *ălmúdu* 'mosque'; Awdjila *mud* 'to pray', *amúd* 'prayer', *ammúd* 'mosque', Tuareg *muhəd* (H), *umad* (others) 'to pray', *amud* (general) 'prayer'. The derivation of this word is not clear; Kossmann (1999a:104) cites a proposal by Nico van den Boogert (p.c.), which relates *amud* to verbs meaning 'to do, to make' (Gourara *mmud*, Medieval Tashelhiyt *amuwəd* 'action', Zenaga *änṃuʔḏ* 'blacksmith') and Saharan oasis verbs related to kitchen work: Figuig *mmud* 'to roll couscous', Mzab *mmud* 'to cook', Ouargla *mmud* 'to cook'. The semantic link to prayers is not immediately clear.

6. 'God'. Mainly attested in Ibadhi sources: Ancient Nefusi <ywš>[29] (Bossoutrot 1900:490), *yūš* (Lewicki 1934:282), *yuš* ~ *ayuš* (Brugnatelli 2010:61), Mzab Berber *yuš* (Delheure 1984, only in a formulaic expression). In the 11th century CE, also in an Ibadhi context, the form *akuš* is attested (Le Tourneau 1960:164).[30] A similar form, *yākūš, yākuš, yakūš* is given by El-Bekri (Lewicki 1967b:227) as a term used by the Moroccan Barghwata sect. More materials are given in Motylinski (1905). The background of the term is unclear. Marcy (1936) provides a hasardous derivation from Latin *iesus* 'Jezus', which has not found acceptation. Camps & Chaker (1986), following earlier suggestions, derive the term from the verb 'to give'. This works well with forms such as Mzab *yuš* (cf. the well-attested verb *uš* ~ *wš* 'to give'), but runs into difficulties in explaining forms with *k*. They propose a link with modern Kabyle *ṯuḵši* 'gift', and assume an ancient verb root KŠ. As *wš* is probably derived from the same proto-Berber root as Kabyle *əfk* (Kossmann 1999a, nr. 491), while the origin of *ṯuḵši* is unknown, this derivation is problematic (cf. also Brugnatelli 2010:62). One wonders whether (*y*)*akuš* could be an Arabic transcription of **yaguš* (cf. about the

[29] Unvocalized in the manuscript.
[30] The Arabic edition by Isma'il Al-'Arabi has <'bykyš> (1979:82).

spelling <k> for *g* in ancient representations of Berber, van den Boogert 2000:364).

Berber languages nowadays mostly use other terms (for an overview, see Brugnatelli 2010). The presence of *yuš/(y)akuš* both in the eastern Ibadhi area and in Morocco, however, suggests that it was an ancient, generally used term.

7. 'prophet'. This term is exclusively attested in an Ibadhi context. It appears in Ibn Ghānim's commentary on the Mudawwana (Bossoutrot 1900:490): <wisar> (État d'Annexion?), P <(')isaran>. It is also attested in an orally transmitted, originally 19th century (?), Nefusa poem by Abū Fālɣa (Brugnatelli 2005:131) in the forms *isr-ánnaɣ* 'our prophet' (Serra 1986:527) and *ísər* (Serra 1986:533).

There is nothing that indicates that this term was used outside the eastern Ibadhi network. However, its Berber form (for which no clear derivation exists) makes it a logical candidate for a creation by the early missionaries. Its loss elsewhere is not unexpected, and mirrors the loss of the term *(y)akuš* in Moroccan Berber, which we would not have known about without Arabic sources.

Re-utilized Christian Terms

The interpretation of Christian words as part of the early Islamic terminology is hasardous. The reason they are presented here as such is that the great majority of these terms have (or seem to have had formerly) a technical Islamic meaning. One cannot exclude the possibility, however, that some of the terms under consideration are genuine survivals of Christian words, which did not pass through the mould of the early Islamic missionaries. This is especially the case of terms which have a profane meaning in modern Berber, such as Tunisian *anglus* 'child'. There is no doubt that this word has undergone a semantic shift from an earlier meaning 'angel'; it is difficult, however, to date this shift, and it could be pre-Islamic. Still, the fact that the technical meaning 'angel' is also attested in Berber—which points to reutilization in an Islamic context—makes it equally possible that the semantic shift post-dates the introduction of Islam.

Most re-utilized Christian terms are found in the eastern Ibadhi network and in Tuareg. Only one term is found all over northern Africa, *tafaska*.

1. 'feast, *εīd al-kabīr*'. From Latin *pascha* 'Easter' we find Central Moroccan Berber *tafaska* 'month of the εīd al-kabīr', Ouargla *tfaska* 'major reli-

gious celebration', Djerba *tfaska* 'major religious celebration' (Brugnatelli 2001:170), Zuwara *tfáṣka* '*ɛīd al-kabīr, ɛīd aṣ-ṣaɣīr*' (Mitchell 2009:337), Ghadames *tafaṣka* 'major religious celebration', Tuareg *tăfaske* '*ɛīd al-kabīr*' (general exc. D & Gh). The equation of the *ɛīd al-kabīr* with the Jewish/Christian *pascha* may be based on the element of slaughtering a sheep. In Zenaga, an obviously related term is used, *tfəskih* (Taine-Cheikh 2008:164), but here it means 'springtime'. As remarked by Taine-Cheikh (l.c.), there is no way to link these semantics immediately to the Islamic religious feasts, which have no fixed moment in the solar year. I think, however, that her proposal to compare *tfəskih* with forms such as *tafsut* 'springtime' in Tuareg and Tashelhiyt misses the point. I would rather suggest that the Zenaga meaning is derived independently from *pascha*, focusing on the time of the year rather than on the religious content. One remarks that in Wolof and other languages of the region, the borrowed term *tabaski* is used for the *ɛīd al-kabīr*. As other religious borrowings from Berber in these languages have overt Zenaga characteristics, one wonders whether the religious meaning was formerly also present in some Zenaga varieties.

2. 'angel'. From Latin *angelus* we find Tuareg *ănğălos* (H, Ghat); *ăngălos* (WE), *ăngăloz* (Y) 'angel', Ancient Nefusi <anağlusan>, <wanağlusan> (Bossoutrot 1900:490, 494, translated in Arabic as *al-malāʾika* 'angels'), <ʾnğlwsn> (Lewicki 1934:290). In a number of varieties, the term does not refer to angels anymore, but the semantic development is unproblematic: Mzab *anğəlus* 'young child, vague supernatural spirits', Chnini (Tunisia) *anglus* 'child' (A. Basset 1950:222), Ghadames *anğalús* 'inspiration (?)' (only used in a fixed expression), and probably also Djerba *anglusən* 'kind of illness' (Brugnatelli 2001:171). It is not certain that the word was taken over from Latin; Greek *ángelos* would be an alternative.

3. 'divine recompensation'. From Latin *mercēs* 'wages, recompensation' we find Ouargla *amərkidu* 'type of alms given in order to thank God for something', Tuareg *emărked* (H D WE Y) 'divine recompensation', Ancient Nefusi <amarkīḍu> 'divine recompensation' (Ar. *al-ʔağr, aṯ-ṯawāb min Allāh*) (Bossoutrot 1900:491).

4. 'sin'. From Latin *peccātum* 'error, sin' we find Tuareg *abăkkaḍ* (general exc. D) 'sin' and Kabyle *aḇəkkaḍu* 'sickness (?)', which is only preserved in a fixed formula. It also appears in the Djerba compound expression *war-abəkkaḍu* ~ *war-ibəkkaḍən* 'angel, little child', from a literal meaning 'without sin' (Brignatelli 2001:171).

One more term is only attested in the framework of the eastern Ibadhi network:

5. 'evil spirit'. From Latin *daemōn* 'evil spirit': Ancient Nefusi <idaymunan> (Bossoutrot 1900:491), translated in Arabic as *aš-šayāṭīn*. As was the case with *angelus*, it is not certain that the word was borrowed from Latin rather than from Greek (*daímōn*).

Early Loans from Arabic

A couple of loanwords from Arabic are unusual in the way they are integrated into Berber phonology and morphology. As all of them refer to basic Islamic concepts, it is logical to trace their insertion back to the first missionary activities.

1. 'prayer, to pray' (Arabic *ṣalāh* 'prayer', *ṣallā* 'to pray'). In most northern Berber languages, one finds a term *ta-ẓalli-t*, P *ti-ẓilla* 'prayer' and a corresponding verb AO *ẓẓall*, PV *ẓẓull* 'to pray': Tashelhiyt *taẓallit*, P *tiẓilla* 'prayer', AO *ẓẓall*, PV *ẓẓulli/a* 'to pray'; Central Moroccan Berber *taẓallit*, P *tiẓulla* 'prayer', AO *ẓẓal*, PV *ẓẓulli/a* 'to pray'; Rif *ṯẓağğiṯ* 'prayer', AO *ẓẓağğ*, PV *ẓẓuğğ* 'to pray'; Iznasen, Beni Snous *ṯẓalliṯ*, P *ṯiẓilla* 'prayer', AO *ẓẓall*, PV *ẓẓull* 'to pray'; Kabyle *ṯaẓalliṯ*, P *ṯiẓilla* 'prayer', AO *ẓẓall*, PV *ẓẓull* 'to pray'; Figuig, Mzab, Ouargla *ṯẓallit*, P *tiẓilla* 'prayer', AO *ẓẓall*, PV *ẓẓull* 'to pray'; Nefusa[31] *dẓallít*, P *dẓalliwín ~ dẓallitín* 'prayer', AO *ẓall*, PV *ẓall* 'to pray'; El-Fogaha *taẓallít ~ təẓallít* 'prayer', AO *ẓáll*, PV *ẓúlli/a* 'to pray'; Siwa *təzallit*, P *təzilla* 'prayer', AO *ẓall*, PV *ẓall* 'to pray' [La], Zenaga *taʔẓalliʔḍ* 'prayer'.

The term is unusual among Arabic loans for a number of reasons. In the first place, the interpretation of Arabic *ṣ* as *ẓ* is very rare, and the two most common examples are basic Islamic terms (see below and 5.2). In the second place, the plural formation with apophony *a* > *i* (*tiẓilla*) is highly marked in Berber; only Central Moroccan Berber *tiẓulla* has the expected plural apophony *a* > *u*.[32]

The gemination in the noun can only be understood if it is considered a verbal noun derived from *ẓẓall*. Otherwise it would be very unexpected to have single *l* in Arabic taken over as *ll*. The verb itself belongs to a rare

[31] Beguinot (²1942:252) has notations with *å*, which could also be interpreted phonologically as *dẓəllit, dẓəlliwin, dẓəllitin, ẓəll*, respectively.

[32] The form *tiẓilla* also occurs in this region, e.g. Ayt Hdiddou *tiẓilla* (Azdoud 2011:554).

verbal type in Berber, the type $C_1C_1VC_2C_2$. While the final geminate can be understood from the Arabic geminate present in the stem II verb *ṣallā*, the initial geminate has no background in Arabic.

Van den Boogert & Kossmann (1997) suggest that the shape of the verb was inspired by the Berber verb **gʸgʸall* 'to vow', which belongs to the same uncommon verb class, In view of the importance of vows in Berber culture, this association has probably been intentional.

The many specificities of *taẓallit, ẓẓall* make the term entirely different from other Arabic loans. This suggests that the adaptations took place in a period before the bulk of Arabic loanwords came in. Therefore there are good reasons to consider these terms part of the early missionary terminological set.

One remarks, however, that a number of Berber languages have a different word for 'prayer, pray', based on a Berber verb, *mud* (see above).

2. 'fasting, to fast' (Arabic *ṣawm* 'fasting', *ṣām* 'to fast'). Berber languages all have forms with initial *ẓ*: Tashelhiyt: *aẓum* (AO=PV) 'to fast'; Central Moroccan Berber *aẓum* 'fasting', *aẓum* (AO=PV) 'to fast'; Central Moroccan Berber (Ayt Hdiddou) *uẓum* 'fasting', AO *uẓum*, PV *aẓum* 'to fast' (Azdoud 2011:506); Tarifiyt *ẓum* (AO=PV) 'to fast'; Iznasen *aẓumi* 'fasting', *ẓum* (AO=PV) 'to fast'; Beni Snous *aẓum* 'fasting', *ẓum* (AO=PV) 'to fast'; Beni Salah (Destaing 1914) *uẓum* 'fasting', *uẓum* (AO=PV) 'to fast'; Kabyle AO *uẓum*, PV *uẓam* 'to fast'; Figuig *tiẓumt* ~ *aẓum* 'fasting', *ẓum* (AO=PV) 'to fast'; Mzab *ẓum* (AO=PV) 'to fast'; Ouargla *uẓum* 'fasting', *uẓum* (AO=PV) 'to fast'; Ghadames *óẓúm* 'fasting', AO *əẓum* PV *ăẓum* 'to fast'; El-Fogaha *uzúm* 'fasting', AO *úzum*, PV *uzúm* 'to fast'; Awdjila *ẓum* 'to fast'; Siwa [La] *izum* 'fasting', *zum* 'to fast'; Zenaga *uẓuṃ* 'fasting', AO *uẓuṃ* PV *aẓuṃ* 'to fast'; Tuareg *ăẓum* 'fasting', AO *uẓam*, PV *ăẓum* (also dialectal forms: *iẓam*, *oẓam*, *eẓam*) 'to fast'.

The verb belongs in most languages to the class VCVC, and this seems to be the original shape of the verb. Its vowels are not entirely clear, as this is a class which has undergone important analogical reformations in many varieties. For the time being, a reconstruction AO=PV *uẓum* seems to cover most of the attestations; however, other reconstructions are certainly possible (e.g. AO *uẓum* PV *aẓum*). The medial vowel in the verb takes up the imperfective vowel of the Arabic verb (*y-aṣūm*) or, alternatively, with monophthongization, comes from the Arabic noun *ṣawm*. The treatment of the initial *ṣ* and the introduction of the verb into a rare verbal class suggest an early date for the integration of the word. Therefore, like with *ẓẓall*, it is logical to consider this part of the early missionary creations.

3. 'mosque' (Arabic *masǧid*). In most Berber languages, the word 'mosque' is clearly derived from Arabic, but has an unexpected reflex of Arabic *ǧ*: Tashelhiyt *timzgida* 'mosque', Central Moroccan Berber *timəzgida* 'mosque'; Rif *ṯamziyḍa* 'mosque'; Iznasen *ṯaməzḏiya* (with metathesis) 'mosque'; Figuig *taməzgida* 'mosque'; Mzab *taməzǧida, taməǧǧida, tamәždida* 'mosque' (in Mozabite *g > *ǧ in Berber words); Ouargla *taməzgida* 'mosque'; Nefusa *tməzgidá* 'mosque'; El-Fogaha *tməzgída* 'mosque'; Siwa *amәzdəg* 'mosque'; Tuareg *tamăžžida* (H), *taməzgəda* (D), *taməzgidda* (WE), *taməzgədda* (WW, WE, Y) 'mosque'. Ghadames and Awdjila employ derivations from the local word for 'to pray', Ghadames *ălmúdu* 'mosque', Awdjila *ammúd* 'mosque', both probably from **anmud*(*u*) 'place for praying'. Other dialects have different loanwords from Arabic.

The Berber forms all look very similar, and all are quite different from the Arabic original. In the first place, one remarks the interpretation *g* for Arabic *ǧ*. In Maghribian Arabic *ǧ* > *g* only occurs when there is a sibilant later on in the word, e.g. Moroccan Arabic *gəzzār* 'butcher' < *ǧazzār*. When the sibilant precedes, *ǧ* becomes *ž*, as in the default case, e.g. Moroccan Arabic *sžəṛ* 'trees' < *sağar*. In the case of *timzgida*, the *ǧ* is taken over as *g*, even though the sibilant precedes the *ǧ*, which shows it is of a different kind. Moreoever, the Arabic consonant *s* always assimilates to *g* in the Berber form. Although voice assimilations are quite common in Berber, they tend not to be generalized all over the Berber speaking territory. Secondly, one remarks that, with the exception of Siwa Berber, the noun is feminine in Berber, and ends in *-a*. Neither of these phenomena are found in the Arabic original. It is interesting to note that Spanish has a similar form, *mesquita*, which also has an irregular plosive realisation of *ǧ*, and which is also feminine. All in all, the term looks very different from other Arabic loanwords in Berber, which allows us to integrate it in the group of early Islamic loans.

In conclusion, the following terms are candidates for belonging to the early set of Islamic terms. As remarked above, not all of them are well-attested, and for a few terms there exist several options:

	new coinage	Arabic loan	Christian term
God	*yuš, yak/guš*		
prophet	*isər*		
to pray	*mud*	*ẓẓall*	
midday prayer	*tizzarnin*		
afternoon prayer	*takkʷẓin*		
evening prayer	*tisəmmsin*		
	tinwutši		
night prayer	*tinyiḍs*		
to fast		*uẓum*	
feast			*tafaska*
mosque		*timəzgida*	
angel			*anǧəlus*
evil spirits			*idaymunən*
divine recompensation			*amərkid*(*u*)
sin			*abəkkaḍ*(*u*)

CHAPTER FOUR

LEXICON

4.1 Introduction

Berber is a big lexical borrower among the languages of the world. In the Leipzig World Loanword Database (Haspelmath & Tadmor 2009), which provides a comparison of borrowing in a ca. 1500 words data base of over forty languages, Tarifiyt (Q) takes a second place with over 50% of borrowings. Tarifiyt is a high borrower among Berber languages, but certainly not the highest; a similar count for Ghomara would without doubt yield a much higher percentage.

The analysis and presentation of lexical borrowing is not as straightforward as that of contact-induced change in phonology and grammar. Phonology and grammar are normally presented as logical well-ordered structures; if the order is pertubated, this is accounted for, or presented as, an exception, thus implying the further coherence of the system. Coherence in the lexicon is of a different nature and is impossible to describe as a set of well-ordered rules. As a consequence, presentation of lexicon mostly takes arbitrary forms, such as alphabetical order of words or roots. Lexical investigations based on semantic fields invariably hurt upon the problem of inclusion or exclusion of certain terms.

The study of lexical borrowing can take several points of view. In the first place, it accounts for the way foreign lexicon is integrated into phonology and morphology. In the present book, this is studied in the respective chapters on phonological and morphological interference. A second point of view looks at the way lexical semantics change in borrowing. A third point of view asks which lexical items are taken over and why. In this part of the book, I shall take this third point of view. Questions of semantic change automatically arise when considering the lexical distribution of borrowing, and it will not be studied as a subject on its own.

The presentation of lexical borrowing in northern Berber takes the following structure. In the first place, cases of functionally explainable borrowing are studied. This concerns words in a number of semantic fields of concepts absent in the pre-borrowing situation, as well as a less well-defined class of words which are used to fill in gaps left by semantic changes or tabooization of terms.

Functionally grounded borrowings certainly constitute an important group in Berber loanwords. There are, however, hundreds of loanwords for which there is no easy functional explanation. In order to present this problem, the impact of borrowing on so-called basic lexicon is studied, using different "basic lexicon" word lists and different Berber languages.

Finally, borrowing and lack of borrowing will be studied in a number of semantic fields that were certainly present in the pre-contact situation.

By this three-way method, I try to shed some light on the process of lexical borrowing in northern Berber (see also Ameur 2011 for a recent overview). It does not add up to a single grand narrative, however. I very much doubt that such a grand narrative is possible at all.

4.1.1 *Core Borrowings vs. Cultural Borrowings*

In the research on loanword typology a basic distinction is made between core borrowings and cultural borrowings (e.g. Haspelmath 2009). Cultural borrowings are newly introduced concepts, while core borrowings are "loanwords that duplicate or replace existing native words" (Haspelmath 2009:48). It should be stressed that cultural borrowing does not happen by necessity, that is, a language community may use different means than borrowing to coin a name for the new concept. Moreover, language ideologies sometimes consider borrowings inappropriate and there can be institutional efforts to replace loanwords—often cultural borrowings—with "native" new forms. One of the best-known cases of this is the Turkish language reform of the 1920s (Lewis 1999), which, among others, led to the replacement of many Arabic borrowings by "genuine" Turkish words. In the context of the Berber national movement, such replacement of loans by "genuine" Berber words has a long history (Achab 1996). Especially since the introduction of Berber as a school subject in Morocco in 2003, neologisms are propagated on a large scale, using, e.g. *tinml* for 'school', *aslmad* for 'teacher' and *asrrad* for 'soap'.[1] For the time being, most of these neologisms are used in writing-related contexts, i.e. in school books, newspaper articles, and written literature, often explained by a translation in French or Arabic in the text or by a word list elsewhere in the publication. With the exception of a few terms, such as *azul* 'hello' and *tiləlli* 'freedom', they are only rarely used in spoken language, and most are not understood by the majority of Berber speakers.

[1] Examples from the first lessons in the first-year primer *Tifawin a tamaziɣt* (Rabat: IRCAM 2003).

The opposite of cultural borrowings are core borrowings, i.e. those borrowings that express concepts that were already present before the borrowing took place.

From a functional point of view it is preferrable to redefine the two categories somewhat and look at the effect of the borrowing on the lexicon. Therefore, I will use the terms "additive" borrowing and "substitutive" borrowing. Additive borrowing occurs when a concept is taken over for which, at the time of the take-over, no appropriate term is available. There is, so to say, a gap in the lexicon that has to be filled. Substitutive borrowing, on the other hand, substitutes or creates an alternative to an existing term. A typical example of an additive (cultural) borrowing is Tarifiyt *ttumuḇin* 'car' (< Arabic *t=tumubil* < French *automobile*); a typical example of substitutive borrowing is Tarifiyt *ḍḥəš* 'to laugh' (< Arabic *ḍḥək*), which took the place of the common Berber verb *əḍṣ* 'to laugh'.

4.1.2 *Additive Borrowing*

The most common type of additive borrowing is found when speakers of a language are confronted with concepts that they did not consider relevant before. Most trivial among these borrowings are those that denote new types of objects. A community presented with new types of objects will have to find a way of naming them. There are different possibilities here. In the first place, one may extend the meaning of an existing word in order to encompass the new object, i.e. the new item is inserted into a pre-existing lexical category, e.g. English 'pepper', originally used for bays of the *Piper* tree, also came to denote American plants belonging to the *Capsicum* family, such as Chili pepper. A Berber example is Tarifiyt *ṯaẓrut* 'battery' for what originally only referred to 'little stone'. In the second place, a new term may be coined. One example of this seems to be the Moroccan Arabic and Berber form *xizzu* 'carrot', whose etymology is a mystery (see 4.6.5).

A third possibility is the borrowing of the term together with the object. This type of borrowing is pervasive in northern Berber in certain lexical categories. Among the somewhat arbitrary semantic categories imposed by the schemes of the Loanword Typology Project (LWT, Haspelmath & Tadmor 2009), Tarifiyt Berber has percentages of over 90% borrowings in the categories "religion and belief" and "modern world" (Kossmann 2009a:198). As expected, the category "modern world" contains many loanwords from French and Spanish, some of which entered Tarifiyt through Moroccan Arabic, while others were taken over directly from the source

language. Similarly, it is no wonder that in an Islamic society the category "religion and belief" is to a large extent occupied by loanwords from the main language of religion, Arabic. In some cases, the large-scale borrowing, paired with the absence of a native term elsewhere in northern Berber, may be the only reason to assume that a certain concept was new at a time. Thus, almost all Berber languages use a loan for the verb 'to fry' (e.g. Tashelhiyt *qlu*, Tarifiyt *qřa*, Kabyle *əqli* < Arabic *qla*). Maybe this is because the usage of frying meat in oil was introduced during the Islamic period (in some regions of the Middle Atlas, it is still considered a new practice); however, as we only have the lexical evidence, this is far from certain, and hardly anything is known about pre-Islamic Berber culinary usages.

A more subtle type of cultural borrowing is found when a concept has a more detailed lexicalization in the contact language; put otherwise, when what is expressed in one language by a single word is expressed in the contact language by several words. Bilingual speakers may (but must not) feel the urge to copy the conceptualization of the contact language onto their native language, and borrow one or both terms. In such a case the gap does not appear because the referent was not known before, but because it was not expressed in sufficient detail to the mind of the bilingual speaker. In Berber-Arabic contact, such cases are difficult to discern, as we often do not know what the semantic structure of pre-contact Berber was; explanations of this type easily lead to circular argumentation. One example could be the rather general take-over of the Arabic verb *faq* 'to wake up'. In languages such as Tuareg, a single verb, *ənkər*, is used for 'to wake up' and 'to get up'. The two concepts are related, but certainly not identical—one can easily wake up and not get up immediately. Maghribian Arabic, on the other hand, makes the difference: *naḍ* refers to getting up and *faq* to waking up. Most northern Berber languages have kept the original verb *nkr, kkər* in the meaning 'to get up', and introduced Arabic *faq* in the meaning 'to wake up'. Only Ghadames has preserved the ancient situation (*ănkər* 'to wake up, to get up'), while Tashelhiyt uses a different Berber verb, *duy* 'to wake up', originally, it seems, a semantic extension from a verb 'to leap up, to wake up suddenly' (still used in this meaning in Central Moroccan Berber).

Other cases are less obviously additional borrowings, but may still belong to this category. One remarks that in certain meanings, the ancient word has become specialized, while a borrowing has taken over the general meaning. This may be due to a contact-induced specialization. One example of this is the verb 'to choose'. In most northern Berber languages, this is a loan from Arabic, e.g. Tashelhiyt *xtar*, Tarifiyt *ixḍā*, Nefusa *əxṭar*.

In a number of languages, there is a Berber term (often alongside an Arabic loan), *əfrən* (Kabyle, Mzab, Ouargla, Ghadames). The verb *əfrən* is well-attested elsewhere, but there it has become specialized in the meaning 'sort out' (esp. cereals and the like), e.g. Tarifiyt *fən*.

Still more subtly, borrowing may occur when the contact language uses a simple lexeme in order to express what is said by means of a phrasal expression in the native language. In this case, one has to assume that speakers acquired a feeling of need towards a lexematic way of saying things, and felt a gap here, which was filled by means of the borrowing.[2] As in the case of more detailed lexicalization, it is difficult to prove this for Arabic loans in Berber without being circular. One possible case is the verb 'to sow'. Most basic agricultural actions ('to plow', 'to harvest', 'to thresh') have well-attested Berber expressions, which no doubt go back to proto-Berber (see 4.7.4). However, the verb 'to sow'—basic in the cereal-based culture suggested by the reconstructability of words such as 'barley' and 'wheat'—is never expressed by a Berber verb. Almost all northern Berber languages have a loan from Arabic, *əzrəɛ* (or similar forms). Only two languages use Berber expressions. In Ghadames, 'to sow' is expressed by means of semantic extensions of other verbs, *ăbbəs* 'to sprinkle, to sow' and *ăkrəz* 'to cultivate, to sow' (elsewhere this verb means 'to plow', a meaning less relevant in an oasis context). In Tashelhiyt the phrasal expression *gr amud* 'to throw seeds' is used.[3] It is quite possible that this was the original state of affairs and that the introduction of a borrowing elsewhere reflects a wish to be more concise, similar to the way the concept is expressed in Arabic.

The above cases had addition of concepts or conceptualizations. There is a second type of additive borrowing: borrowing that occurs when, for some reason or another, a native term becomes less appropriate for the concept it originally denoted. This has been called "therapeutic borrowing" by Martin Haspelmath (2009:50), i.e. borrowing when the original word has become inavailable. There are two types of therapeutic borrowing. The first has to do with avoidance. Thus the rather common substitution of the Berber word for 'fire' (probably *timəssi*) by an Arabic euphemistic term (*lɛafiyt* < Arabic *l=ɛafya* 'fire', itself a euphemism meaning literally 'well-being, forgiving') is due to the connotation of 'fire' with Hell-fire.

[2] Of course, one could also consider this substitutive borrowing, as the phrasal expression is substituted by the borrowed lexeme.

[3] Tuareg and Zenaga do not provide much evidence, as both are nomadic varieties.

Similarly, the enormous variation in terms for 'tail', both borrowed and unborrowed, may be related to the widespread association of the tail with the penis, thus causing a continuous cycle of substitution, as the association is not with the word but with the meaning. Taboo avoidance of a similar type is probably the cause for the many lexical substitutions found in the term 'egg', which is also used for 'testicle', even though in this case borrowing is not a common solution.

In one part of the lexicon, avoidance patterns are particularly clear. This is the part concerned with (little) children (cf. Galand 2002a [1970]:382). The use of avoidance words seems to be motivated by the wish to keep malevolent creatures (such as djinns) from taking interest in the child.[4] Tarifiyt is amongst the most creative languages in this respect, cf. the following dialectal forms (see Lafkioui 2007, map 121 for their distribution):

aḥənžia	'boy', seemingly an expressive modification from Arabic *xənzir* 'pig'
aḥḥram	'boy', from Arabic *ḥarām* 'forbidden'
aḥāmuš	'boy', from Arabic *ḥarām* 'forbidden' with the expressive suffix *-uš*
afrux	'boy', from Arabic *fərx* 'young bird'; this usage is also found in eastern Arabic dialects, cf. Behnstedt & Woidich 2011:42.
aniḇu	'boy, baby', from a Berber word meaning 'guest' elsewhere.

In addition, there are forms such as *lbəẓẓ* 'children', which probably comes from an onomatopoea meaning 'making lots of buzzing noise', and *arba* which is related to the verb *rbu* 'to carry on the back'.

Similar formations are found elsewhere in northern Africa, cf. for example Figuig *ləɛwərt* 'boy' < Arabic *ɛəwra* 'shame', Mzab *burəxs* 'children' (elsewhere, *burəxs* refers to crickets); maybe also Beni Snous *afḏiḍ* '4–5 years old child' (< *afḍiḍ* 'tick'?).

A second type of motivated borrowing in basic lexicon disambiguates words that have become homonyms due to phonological developments. One case of this is found the general borrowing of the meaning 'new' in Moroccan and Algerian Berber. This is probably due to the increasing similarity of four frequent verbs: *ini* 'to say', **ănḇəy* 'to see', **ănəy* 'to ride, to mount' and **ăynəy* 'to be new'. In northern Berber (except Ghadames and Awdjila), phonological rules would lead to forms such as **ini* 'to say', **nəy* 'to see', **nəy* 'to ride' and **ynəy* 'to be new'. Final *əy* has become *i* in many Berber varieties. In Berber, *ini* 'to say' and *nəy* 'to drive, to mount' mostly remain unchanged; **ănḇəy* 'to see' was lost in many varieties, and

[4] Little children are considered to be very vulnerable to attacks by evil spirits, cf. Westermarck 1926/I:273ff.

otherwise the Imperfective form was generalized (e.g. Tashelhiyt *anni* 'to see', see Kossmann 1999:78, nr. 117; 99, nr. 203). Finally, **ynəy* has been substituted by a loan from Arabic.

It should be stressed that the avoidance of homonymy is by no means a general process. Thus, the great majority of Berber languages retain two homonymous verbs (at least in the Aorist), both describing basic actions typically performed by the women of the household: *ẓḍ* 'to weave' and *ẓḍ* 'to grind'. Morphologically these two verbs belong to different classes, even though the distinction has become blurred in quite a number of varieties. Moreover, languages which have *ṭ* instead of *ḍ* show that the pharyngealization of *ḍ* in 'to weave' is a feature of the root (thus we get forms of the type *ẓṭ*), while the pharyngealization in 'to grind' is due to assimilation to the underlyingly pharyngealized *ẓ*, and does not correspond to *ṭ*. A reconstruction of the two verbs would be something like **ăzḍəʔ* 'to weave' vs. **ăẓəd* 'to grind'.[5] The point made here is that these two verbs, which have no etymological relation to each other, have become largely homophonous, but that they are still maintained in most languages.

Another type of therapeutic borrowing occurs when phonological rules render a form so weak that it becomes less acceptable as a full word. This may have happened in the case of **aʔḇu* 'smoke'. Northern Berber phonology makes the glottal stop disappear and changes **ḇ*. In a number of varieties, the result of **ḇ* in the position *VḇV is *gg*(ʷ) or *bb*(ʷ) (Kossmann 1999:100); in such varieties, the item is typically preserved, e.g. Tashelhiyt *aggu*, Kabyle *abbu* 'smoke'. In other varieties, the regular correspondence is *w*(*w*) (cf. Tarifiyt *ṯawwuaṯ* 'door'< **taḇurt*). Here, ***aw*(*w*)*u* 'smoke' has been substituted by an Arabic word.

Therapeutic borrowing explains a number of basic items that are frequently borrowed in Berber languages. For many other items, such an explanation cannot be given. Thus I see no clear reason why the Berber verb represented by Tashelhiyt *aggug* 'to be far', and attested in a number of other varieties (Tuareg *ugag, aǧəǧ*, Tarifiyt *aggʷəž*, Zenaga *uḥḥug* ~ *aḥḥug*), has been supplanted by an Arabic form in more than half of the languages studied here. Similarly, there is no obvious reason for the substitution of common Berber *tisənt* ~ *tesəmt* 'salt' by an Arabic word in varieties of northern Morocco and northern Algeria.

[5] Or: **ăẓʔəd*, cf. among others Prasse 1972–74, Louali & Philippson 2004b.

4.1.3 *Substitutive Borrowing*

While a large number of borrowings can be understood as additive borrowings, whose take-over is motivated by their earlier absence (temporarily or not) in the recipient language, there are many borrowings for which such an analysis does not make sense. Thus, Taïfi remarks upon the borrowing of terms related to dairy products in Ayt Mguild (Central Moroccan Berber): "en ce qui concerne les produits laitiers, les mots arabes empruntés ne répondent à aucun besoin linguistique. La langue d'accueil est dotée déjà d'un lexique adéquat, ne présentant aucune case vide qui nécessiterait l'emploi d'un signifiant étranger" (Taïfi 1979:338–339, cited in Ameur 2011:570).

This type of borrowing is called here substitutive borrowing, i.e., the borrowings take the place of (or are used in variation with) native words. The reason behind such substitutions is difficult to grasp, and fundamentally ununderstood. Explanations do rarely go beyond the following statement by Haspelmath (2009:48): "Here it seems that all we can say is that speakers adopt such new words in order to be associated with the prestige of the donor language". As the author himself admits, this is close to circular argumentation: only the fact of the borrowing shows the wish to be associated with the prestige. This is clearly shown in our Berber sample. Ghadames Berber uses considerably less substitutive borrowing than other northern Berber languages. Does this mean that the inhabitants of Ghadames felt less need to associate with the prestige of Arabic? There is no reason to assume that Ghadames is basically different in its cultural association to Arabic from, for example, Siwa, another Islamic oasis. Still, Ghadames is by far the lowest borrower in our corpus, while Siwa is a very high borrower, even on a global scale. The prestige argument is also problematic for another reason. In largely bilingual communities there is always the option of language shift, i.e., if the speakers felt such a need to associate with Arabic culture that they took over words for head and nose (like in Ghomara), why didn't they shift to Arabic alltogether? Finally, the central problem of the prestige argument is that it does not explain why certain words are borrowed and others not. Why is there no Berber language that borrowed 'to forget', but has 'to remember' be borrowed in a quite a few varieties of Berber?

4.1.4 *Diglossic Insertion*

In addition to additive and substitutive borrowing, it is important to distinguish a third category, which I shall baptize diglossic insertion. The

distinction between the two borrowing types on the one hand and diglossic insertion on the other is related to the sociolinguistic status and usages of northern Berber languages (the same is true for Maghribian Arabic). Northern Africa is characterized by multiglossia, i.e. different languages are used in different communicative situations (see 2.5). This concerns in the first place different types of communication: Berber and Maghribian Arabic are used in face-to-face conversations and derived forms of this (e.g. telephone calls, internet chatting). Standard Arabic is typical for the realm of writing and reading aloud.[6] Standard Arabic is rarely used for face-to-face conversation, although some users may be relatively proficient when the need appears, e.g., in conversations between speakers from different countries with whom they only have Standard Arabic in common. This difference in communicative context leads to an association of one or the other language with certain topics. Topics which are strongly associated with the spoken domain (e.g., emotions or traditional life) are associated with Berber and spoken Arabic, while topics associated with newspapers, school books or Islamic learning, have an association with Standard Arabic. While there exists some terminology belonging to these fields in Berber (e.g., Figuig *ažəllid* 'king'), most of the technical terms have no traditional equivalent, and one could say that a lot of lexicon is simply lacking in the language. In order to talk about such topics, one takes recourse to a pool of Standard Arabic and French terms, which can freely be inserted into the Berber (or Maghribian Arabic) discourse. The following excerpt from a Tarifiyt television interview with a Berber activist about the detention of another Berber activist, Chakib Al Khiyari, illustrates this type of discourse; Standard Arabic insertions are in capitals; names and "genuine" borrowings are in italics. Etymologically Berber words are in normal font type. Because of the insertions, the text is only understandable to a speaker of Tarifiyt if he also knows Standard Arabic.

> *yəɛni* tuɣa=ṯ ḏ ižž L-FƎṬṚA ṢAƐBA, g umәzwaru=nni, əhhh, ttuɣa=nəɣ nəššin XARIŽ L-ʔAṢWAṚ, ttuɣa ɣānəɣ MAƐARAKA a nəssən *šakib lxiyaṛi* mani iğğa, *mənbəɛd* TḤARRUKAT *yəɛni* n MUNḌAMMAT DƎWLIYA ḏ WAṬANIYA ḏ L-ʔIƐLAM L-WAṬANI U D-DƎWLI, nufa ʔANNA-HU əhhh, yəffəɣ BALAɣ n N-ƎWZIR D-DAXILI ʔANNA [ḏak] yəssiwəř BI-ʔANNA *šakib lxiyaṛi* aq=ṯ MUŽUD di *ḍḍar-lbiḍa* U aq=ṯ ḍi *řəḥbəs* n *ɛuqaša*.

[6] All this is of course grossly simplified, and does not take into account, for instance, the existence of poetic genres in Berber and in Maghribian Arabic.

> *well*, it was a DIFFICULT TIME, in the beginning, ehh, and we were OUTSIDE THE WALLS, we had a BATTLE to know where *Chakib El Khiyari* was, *after* PRESSURE *well* of INTERNATIONAL and NATIONAL ASSOCIATIONS and NATIONAL AND INTERNATIONAL MEDIATIZATION, we found out THAT HE, ehhh, a MESSAGE came out from THE MINISTER OF INTERIOR THAT [xxx] it spoke THAT *Chakib El Khiyari* was PRESENT in *Casablanca* AND was (held) in the *prison* of *Okacha*.[7]

In this short fragment all complementizers and almost all nominals are Standard Arabic: disregarding names, only the temporal phrase *g umǝzwar=nni* 'in that beginning' and the "genuine" loan *řǝḥbǝs* 'prison' represent normal Tarifiyt nouns. On the other hand all verbs and verb-like forms (the "pseudo-verbs" *ttuɣa* and *aq*, cf. Kossmann 2000a) are Berber.

The Standard Arabic insertions[8] are to a large degree similar to the diglossic code-switching described by Boussofara-Omar (2006) and Bassiouny (2009) for the mixed discourse of vernacular Arabic and Standard Arabic. In such discourse, insertion draws relatively freely from the pool of Standard Arabic lexicon and phraseology. There is considerable variation as to the degree of phonological integration of the insertions. This variation is also found in our Berber/Arabic text, which stretches from pure (Moroccan-type) Standard Arabic pronunciation such as *xarič l-ʔaṣwaṛ* 'outside the walls' to less standard pronunciations, such as *tḥarrukat* (instead of *taḥarrukat*) and *dǝwli* (instead of *duwali*). The less standard pronunciations are more similar to Moroccan Arabic than to Tarifiyt Berber: thus one has *tḥarrukat* rather than Tarifiyt-like *ṯḥārrukaṯ*.

On the other hand, Standard Arabic insertions in this type of texts also have features typical of conventional borrowings: they are mostly the only way to express certain concepts, and they can occur repeatedly.

They are different from other words (borrowings or not) in the sense that they are felt by the speaker to belong to the standard language, and in the sense that they are often part of expressions that would not be used by speakers without knowledge of the standard. On the structural level,

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[7] *Amsawal ag Amin El Khiyari 1/2*. AmazighTV, May 5, 2011. Retrieved November 17, 2011 from http://www.martv.net/uitzending/2845_amsawal-ag-amin-el-khiyari-1-2*.html. I wish to thank Khalid Mourigh for his help in the transcription and interpretation of the fragment.

[8] It should be noted that Berber language planners have put much effort into the development of a Berber lexicon that could be used in stead of such diglossic insertions from Arabic, as well as for "genuine" borrowings. This standard Berber language stands so far from actually spoken Berber varieties that it is close to presenting a diglossic High variety. Usage of standard Berber words can therefore be considered as another instance of diglossic insertion.

one remarks that diglossic insertions are often noun phrases including genitival or adjectival modifiers, rather than bare nouns.

Therefore, I propose to consider them insertions of a special kind, which will be called here diglossic insertions ("conventional code-switches" would be an alternative). One may look at this in the following way. In diglossia-bound languages, parts of the lexicon have not been developed in the same way as in languages that cover the full range of communicative functions. In order to be able to communicate about subjects that are not covered by the conventional lexicon, one may freely take elements from the other language(s) in the diglossia. Such insertions are therefore very similar to code-switches, but are different in that they are necessary for the communication of the intended content. Archetypical code-switching, as it is normally described, is not governed by needs for the content, but rather by other factors, including bilingual processing and expression of identity (Gardner-Chloros 2009). Distinctions between code-switching and borrowing are blurry, and definitions are highly arbitrary. This is even more so the case where the distinction of diglossic insertion *vis-à-vis* "genuine" (i.e. fully conventionalized) borrowing and "genuine" code-switching is concerned.

4.2 Quantitative Approaches

The overview of borrowing types given above is basically qualitative, asking why a certain term has been borrowed. One can also ask quantitative questions: how many borrowings are used in a language? To what extent are percentages different among Berber varieties? What is the amount of borrowing in comparison with other languages of the world?

The quantitative study of lexical borrowing can take two axes. In the first place, one can look at the relative frequency of borrowings in running texts, a type of study undertaken, for example, for Standard Arabic in Issawi (1967). In the second place, one can look at the frequency of borrowings in the lexicon. The emphasis in this investigation lies on core borrowings, i.e., borrowings that concern objects and actions that were already part of the speakers' environment before the coming of Arabic to northern Africa. This includes terminology for items universally present, such as body parts, but also cultural terms referring to the traditional environment of the speakers, such as domestic animals and crops.

4.3 Text Frequency of Arabic Borrowings

There exist hardly any studies of Arabic influence on Berber quantifying the occurrence of Arabic loanwords in texts.[9] A methodologically sound approach to this problem would be based on a large text corpus incorporating different genres (oral narrative, spoken interaction, religious discourse, etc.). Moreover, one would like to have an idea about the dialectal variation in this respect, demanding thus for a replication of the same procedure for several varieties. In the framework of the present study, such a research has not been undertaken, due to lack of data and time. However, in order to gain some insight into the question, a small-scale pilot study was carried out, featuring only a small number of languages and texts.

To achieve this, a specific genre was chosen, traditional fictional oral narratives (also known as fairy tales). This is a genre relatively immune to diglossic insertions, as it basically refers to traditional life. It is therefore considered to be indicative to some degree of the impact of borrowing on old-fashioned speech about traditional subjects.

The first text studied is from Figuig. It is a traditional oral narrative about the hero *Nnayəṛ Bugṛəm*, told in 1990 by a middle-aged blind woman from the village of Zenaga, well-known as a story-teller. There is no reason to believe that she used more Arabic loans than other speakers would do. The story consists of exactly 1900 words;[10] due to certain stylistic features of Figuig-Berber story telling, part of the fixed phrases in the story are in Moroccan Arabic (cf. Kossmann 2000b:81–87); these phrases were not counted, nor were personal names, leaving a total of somewhat less than 1750 words of running Berber text.

Among these 1750 attestations in the text, 385 are from Arabic, i.e., 22% of the tokens.[11] When looking at the different words represented by these

[9] The main exception are works by Rabah Kahlouche and Fadila Brahimi on Kabyle. Kahlouche counted that 46% of the lexemes were Arabic loans, using a corpus a five-hour recording of a monolingual Kabyle speaker (Kahlouche 2001, 2005:208); Brahimi (2000:373) found 22.7% loanwords (tokens) in a 6,000 words corpus. One remarks that these percentages are almost identical to those found in Figuig.

[10] Pronominal and deictic clitics were not counted as separate words, thus forms like *inna=yas=t=id* 'he said it to him' and *argaz=u* 'this man' are counted as single words.

[11] I did not take into account to what degree these words were integrated into the Berber system. For instance, causative derivations from Arabic roots were counted as Arabic loans.

attestations[12]—366 types in total—, Arabic loans constitute slightly under 45% of the corpus. Among verbs, about 40% are borrowings, while among nouns, about 55% are borrowings.

There is a clear frequency effect here: the more frequent a word, the less chances that it is a borrowing. Among the 25 most frequent words, which account for over 50% of the text, only two are borrowings (*iwa* 'well', *ṛaḥ* 'to go'). Disregard the first 5 most frequent words, (all from Berber: *n* 'of', *ini* 'to say',[13] *d* 'predicative particle', *i* 'to, when' and *ili* 'to be; auxiliary'), and about 30% of the tokens in the text are loans from Arabic; if one disregards the 25 most frequent words, 40% of the tokens in the text are loans from Arabic.

A count based on three stories in nearby Beni Iznasen (Bezzazi & Kossmann 1997, stories 5, 6, 7) yielded similar percentages: among 1710 tokens, about 24% have an Arabic background. Among 338 different words represented in the corpus, 42% are loans from Arabic.

A similar procedure was undertaken for a Tashelhiyt text collected by Hans Stumme and reedited by Harry Stroomer in Stroomer (2002b) as text nr. 16.[14] Using the same word boundary definitions as for the other texts (but different from the one used in the edition), this text has well over 3600 words. Among these, 17% have an Arabic background. When counting different words (469 in total), about 36% are from Arabic. A similar difference between nouns and verbs was found as in Figuig: 31% of the verbs are from Arabic, while 45% of the nouns have this background.[15]

As a fourth corpus, Ghadames was chosen. Two traditional stories about heroes dealing with ogresses (text 17 and 18 in Lanfry 1968) were taken as a basis. Disregarding names and the occasional Arabic formula, these texts count 1635 words in total. Among these 1635 attestations, 112 are words of Arabic or sub-Saharan origin,[16] i.e. 7%. When looking at the different types attested in the sample, there are 355 words, among which 61 have an Arabic origin, while 2 have a sub-Saharan background. This

[12] Counting inflectional forms as variants of one single word, but derivational variants as different words.

[13] The narrative character of the studied text is responsible for the high frequency of this word.

[14] I wish to thank Harry Stroomer, who kindly gave me access to a digital version of this text.

[15] These counts were made excluding a number of words whose Arabic background was not established beyond doubt. Including these, they would be 18% for the total words in the text; 38% for the different words in the text, and among these 34% of the verbs and 46% of the nouns.

[16] Disregarding 26 attestations, representing four words, whose Arabic origin is doubtful.

represents 18% of the total. Again, among verbs percentages are lower than with nouns: 17% and 25%, respectively.

From the preceding, one sees a clear difference in impact of borrowings in texts between Ghadames on the one hand and the eastern Moroccan varieties of Beni Iznasen and Figuig on the other. Tashelhiyt takes a place somewhat in between, but is closer to the Moroccan varieties than to Ghadames. Note that a similar result is reached when using a completely different count, that of the impact of Arabic on basic lexicon, as shown by the percentages of borrowings in a list of basic basic lexicon, the Leipzig-Jakarta-100 list (see 4.5.2):

	Ghadames	Tashelhiyt	Iznasen	Figuig
% of all words in text	7	17	24	22
% of different words in text	18	36	42	44
% in LJ-100	1	6	11	9

It is difficult to compare the percentages obtained from the analysis of the Berber texts with languages outside the Maghrib, esp. when considering the percentage of the total of the words in a text. Linguistic systems differ to such an extent that the amount of information provided by a single word is highly variable. For example, in the above data, pronominal clitics were not counted as separate words, and a form like Ghadames *t-ăxəbbăr=az=d* (3SF-tell:PV=3S:DO=VENT) 'she told him (hither)' was considered to be one single word, borrowed from Arabic, as the verb *ăxəbbăr* has an Arabic background. In languages that treat pronominal reference differently, the equivalent of this single word would be three words, as in the English translation.[17] As personal pronouns are hardly ever borrowed (see 9.1), this skews the percentages to a large extent. The problem is less acute when counting different lexemes used in the text. In this case, the central question is how to find a text that is representative of the same genre as the Berber texts that were analyzed. In order to solve this, Harry Stroomer's English translation of the Tashelhiyt story was taken. This text

[17] For example, in the faithful English translation of the Tashelhiyt text about 2000 more words are used than in Tashelhiyt, mainly because of the frequency of words such as *a, the, he, him*.

aims at a faithful representation of the Berber text and uses a narrative style similar to the original.

In the English text, among 656 different words used (note that this is a considerably higher number than in the Berber corpora), 183 have a Romance origin, i.e., 28%.[18] Thereby, English has a score of Romance borrowings which is clearly lower than the score of Arabic borrowings in Tashelhiyt, but which lies above the Ghadames percentage. The scores in the Figuig and Beni Iznasen texts are about 50% higher than the English score.

4.4 Borrowing Frequency in the Lexicon: The LWT Sample

Hardly any study has been made about rates of borrowings in any Berber language (cf. however Chaker 1984).

There is only one study that deals with Arabic loans in a Berber variety in a quantitative fashion, and which studies a large part of the lexicon, Kossmann (2009a) on Tarifiyt (Q) Berber. This was carried out in the framework of the Loanword Typology Project at the Max-Planck-Institut für evolutionäre Anthropologie in Leipzig, and organized by Martin Haspelmath and Uri Tadmor. In this project, borrowing rates were established on the basis of a list of 1460 "meanings", defined in English, but not always meant to cover the full semantics of the English term. Collaborators could add "meanings" where they thought this was appropriate, and choose to fill in blanks where the language had no appropriate expression for the concept, mostly because it did not belong to the cultural repertoire of the language speakers. Of course, several translations for the same "meaning" could be given. This list was filled in and analyzed as to borrowing histories for 41 languages, one among which was Tarifiyt (Q). The Tarifiyt data base was completed with the help of one single speaker, Mr Khalid Mourigh, who uses the urban variety of Nador.

For Tarifiyt, among 1526 meanings in the data base, 789 were represented by loanwords (51,7%), which puts the language at second position in the LWT sample (only the Romani language of Selice has a higher

[18] There are also 6 words that come from Arabic, due to the type of the text. I did not count Scandinavian loans.

percentage).[19] The loanwords were divided up among donor languages as follows (slightly adapted from Kossmann 2009a:198):

Dialectal Arabic	41.7%
Classical/Standard Arabic	3.2%
Spanish and French	6.3%
total:	51.7%

Differentiating according to the semantically defined word categories established by LWT (which do not necessarily follow the categorization of the language) the following figures for borrowings appear:

	total of borrowings	borrowings from dialectal Arabic
"nouns"	56.1%	41.9%
"verbs"	44.1%	40.9%
"adjectives"	52.7%	48.5%
"adverbs"	40.0%	40.0%
"function words"	39.5%	35.4%

While there is clearly some difference according to word category, this difference is relatively small in the dialectal Arabic part of the loanwords. Thus "nouns" and "verbs" have almost the same percentages. There is an interesting difference here with the situation in European and Standard Arabic loans. Among these groups, "nouns" are strongly dominant: 13.2% of the "nouns" belong to these languages, while only 2.7% of the "verbs" goes back to them.

LWT divided the sample into 24 fields associated with semantics and context of usage. Percentages of loans differ greatly as to these fields, cf. the percentages in the following table (adapted from Kossmann 2009a:198):

[19] It is questionable whether all language samples are comparable. Thus it seems that for many languages borrowings related to wider knowledge of the world, which are often expressed by internationalisms in European languages, have been filled in by a blank. For example, the Ceq Wong data base only contains 862 "meanings", slightly more than half of the meanings filled in for Tarifiyt. Of course, this is the type of lexicon where borrowing occurs frequently, and the percentages in the two languages may therefore not be comparable.

	Dialectal Arabic	Spanish and French	Standard and Classical Arabic	Unidentified	Total loanwords
Miscellaneous function words	21.7	–	–	–	21.7
The body	28.9	0.5	–	–	29.5
Kinship	28.0	1.2	1.2	–	30.5
Spatial relations	29.7	1.3	1.3	2.5	34.8
Animals	27.2	7.0	4.4	0.9	39.5
Sense perception	36.7	4.2	–	–	40.9
The physical world	38.1	–	3.7	–	41.8
Motion	37.8	6.1	2.4	–	46.3
Food and drink	40.4	7.5	1.1	–	49.0
Basic actions and technology	42.6	4.7	2.4	–	49.7
Agriculture and vegetation	38.7	6.3	4.7	1.6	51.3
Emotions and values	55.0	3.7	1.8	–	60.6
Speech and language	52.0	4.8	4.8	–	61.7
Law	48.2	4.7	9.4	–	62.4
Possession	55.0	6.0	2.0	–	63.0
Social and political relations	59.1	–	5.2	–	64.3
Time	62.0	3.7	–	–	65.7
Quantity	55.0	6.9	4.6	–	66.4
Cognition	51.8	8.1	8.6	–	68.5
The house	51.3	15.3	2.2	2.2	70.9
Warfare and hunting	56.4	10.3	5.1	–	71.8
Clothing and grooming	60.5	12.5	1.8	–	74.8
Modern world	40.6	41.4	8.0	3.2	93.1
Religion and belief	66.2	3.9	22.1	3.9	96.1
all words	41.7	6.3	3.2	0.5	51.7

These percentages are not always easy to interpret, as the choice into which semantic field a certain term is included is often quite arbitrary; their main value is to offer a basis for comparison with other languages (for which, see Haspelmath & Tadmor 2009). One remarks that Tarifiyt is the only language in the sample that has over 20% loanwords in all semantic fields defined by LWT.

It would be interesting to fill in the same sample for other Berber languages. This has not been done yet, so it remains unclear to what extent Tarifiyt is representative for Berber as a whole.

4.5 Borrowing Frequency in the Lexicon: Core Vocabulary

In the following, borrowing in "core vocabulary" will be studied in detail, using different lists and selected semantic fields. In order to do so, fifteen Berber varieties are studied in some detail. The study was based on the sources given in parentheses:

Morocco:	Tashelhiyt (Destaing 1938), Ghomara (Mourigh p.c.), Senhadja (Ibáñez 1959, Lafkioui 2007), Tarifiyt (Kossmann 2009b),[20] Beni Iznasen (Kossmann field notes), Figuig (Kossmann 1997).
Algeria:	Beni Snous (Destaing 1914), Kabyle (Chaker 1984; Dallet 1982), Mzab (Delheure 1984), Ouargla (Delheure 1987).
Libya:	Ghadames (Lanfry 1973), Djebel Nefusa (Beguinot ^{2}1942, Provasi 1973), El-Fogaha (Paradisi 1963), Awdjila (Paradisi 1960a).
Egypt:	Siwa (Laoust 1932, Naumann 2009, Souag 2010).

The choice was determined by the availability and accessibility of the lexical data. For most of the chosen varieties there exist dictionaries translating a term from a European language (French, Italian or Spanish) into Berber, or I had a searchable digital file at my disposal. This does not only facilitate the job of finding the words, but has the great advantage that the words given represent the most basic translations of the European terms. As "universal" word lists always have the format "how is concept X expressed in language Y", this is very practical. In a number of cases, I had to rely on French-Berber indexes to Berber-French dictionaries (Lanfry 1983, Delheure 1984, Delheure 1987; Dallet 1985). Of course the words found in these indexes were checked in the dictionaries, and irrelevant entries were not taken into account. Still, it is often difficult or impossible to make out from the dictionary entries which Berber term is the least marked translation of the French term. This was less of a problem in smaller dictionaries, such as those for Ghadames, Mzab and Ouargla, but constitutes a huge problem in the case of Kabyle, which is blessed by a very extensive dictionary, and in which a single French term is normally translated by numerous Berber terms. In order to circumvene this problem to some extent, I took the 200–word list of Chaker (1984:219–225) as a first basis, and supplemented it by terms from Dallet (1982). For a number of important Berber varieties no easily searchable material was available. This is the case, for instance of Chaouia, for which only the hand-written

[20] Unfortunately, I did not have access to Serhoual (2002).

Berber-French dictionary by Huyghe (1971) is available.[21] The same is true for the Middle Atlas. Unfortunately, the elaborate dictionaries by Taïfi (1991) and Azdoud (2011) lack a French-Berber index, and the online dictionary by Amaniss (2009) avoids citing Arabic loans. Therefore I keep these languages out of the corpus, and focus on the fifteen languages for which data are more easily accessible.

The choice of varieties being determined by the availability of source materials, the sample is biased towards certain regions. Thus the northern Moroccan and northwestern Algerian dialects are represented by five varieties (Ghomara, Senhadja, Tarifiyt, Beni Iznasen and Beni Snous). As this is a region with a high incidence of borrowing, this bias may be an advantage rather than a disadvantage. It means, however, that any general statistics on the basis of our sample should be treated with the utmost caution.

4.5.1 *Borrowing Lists of Basic Vocabulary*

In comparative linguistics, pre-determined lists words constitute an important research tool. A major function of such lists is that they allow the user to make a quantitative analysis of lexical similarity between languages.

Most of such lists use "basic" words, i.e., items that refer to concepts which are considered to be relevant to all human communities in the same degree;[22] thus, for example, 'dog' is more "basic" than 'camel', because dogs are prominent among domesticated animals in most parts of the world, while camels are only relevant to inhabitants of arid regions in Africa and Asia. Of course camels are also known outside these areas, but their role in human society is entirely different.

Mostly, "basic word" lists are used for establishing and fine-tuning genetic relationships between languages. The best-known specimina of this type are the lists established by Morris Swadesh for glottochronological purposes. Glottochronology takes as its basic assumption that lexical change (i.e. the substitution of one lexical item by another for referring to a certain concept) takes place at a regular pace in time, as long as the substitution does not have cultural reasons. In order to quantify this, Swadesh

[21] The copy I have of Ounissi (2003) lacks the letters K-Q, which seems to be a basic error in the printing the manuscript rather than a binding problem (the section R starts after section J and is headed by K). Especially the lack of the letter L, which contains many Arabic loans, makes it useless for the purpose of this study.

[22] "Basicness" could be and has been defined differently, looking for example at which words are first acquired by children.

established two lists, first a list of 200 words, later an improved list of 100 words, which he considered to have a regular pace of substitution—i.e. to be uninfluenced by cultural change. These word lists do not necessarily only include items that are immune to change, but rather items that—according to Swadesh' thoughts and findings—are independent of cultural innovation in their pace of change.

A number of other "basic" word lists have been proposed, mostly with important overlap with the Swadesh lists. Different from Swadesh, they explicitly focus on stable material, i.e. words that tend to remain the same over a long span of time. Such lists are used to establish deep relationships between languages and language families, which are less visible to the naive observer. One important list of this type is the Yakhontov-35 list, which provides a subset of words in the Swadesh 200 and 100 lists that are considered to be especially stable. Another list of this type is the 40-word list used by the Automated Similarity Judgment Program (ASJP) project, aiming at the automatic establishment of genetic relationships, using a list of particularly stable items (Brown e.a. 2008).

The Swadesh list has been challenged and altered at many reprisals. Haspelmath & Tadmor (2009) present a new list, based on the cross-linguistic investigation of borrowings in basic and non-basic lexicon in the Loanword Typology Project (LWT). This list, baptized the "Leipzig-Jakarta list" (hence LJ-100), presents the words they found to be most stable in their corpus, focusing on borrowability, universal presence, and anciennity of the concepts and words. The list is different from the Swadesh lists, and includes 38 items which were not included by Swadesh. Moreover, different from Swadesh, the words are presented in a hierarchical order, number 1 on the list being considerably more stable than number 100.

In the framework of the present study, lexical stability among languages is only relevant in that it should counter-act borrowing. Put otherwise, the prediction is that borrowing is less likely among stable (or stable-rate changing) words. In order to assess the impact of borrowing on a global scale, establishing borrowing rates in lists of stable words may be revealing.

Lexical stability in word lists has never been studied in detail for Berber. A few studies include the Swadesh list (e.g. Penchoen 1973b), but none of them undertakes a comparative study. The only effort at providing a comparative study of rates of borrowing in Berber is provided by Salem Chaker (1984:216–229). Chaker established a list of 200 items, including both concepts which have a high probability of borrowing, such as religious terminology, and such that are considered to be less easily borrowed, such as body part terms. His main goal is to quantify the general impression

that borrowing is less substantial in some Berber languages than in others, taking Kabyle, Tashelhiyt and Tuareg as comparees. His figures are as follows:

Kabyle	38% borrowings from Arabic
Tashelhiyt	25% borrowings from Arabic
Tuareg	5% borrowings from Arabic

As remarked above, the Chaker-200 list is not a "basic" word list in the sense that it focuses on stable lexicon, even though it focuses on less specialized meanings.

In the following, I shall first present a comparison of borrowing rates in a number of univerally defined "basic word" lists, using a restricted sample of Berber languages. After this, I shall take the Leipzig-Jakarta list—the only list which explicitly includes the study of borrowing—and look in more detail at rates of and reasons for borrowing among the items on this list.

4.5.2 *Borrowing Rates in a Number of Standard Lists*

Among the standard basic word lists, the following were chosen for comparison:

Swadesh-100	(Swadesh 1971)
Leipzig-Jakarta-100	(Haspelmath & Tadmor 2009)
AJSP-40	(Brown e.a. 2008)
Yakhontov-35[23]	
Dolgopolsky-15[24]	

In the following table, borrowing rates are presented for a number of Moroccan Berber lects. Only words that are clearly borrowings have been counted. This excludes:

1. Items both represented by a non-borrowing and by a borrowing
2. Words which look like a borrowing (e.g. because of phonological characteristics), for which no clear basis in Arabic could be found
3. Words which could be borrowings or retentions from proto-Afroasiatic (see the discussion on *isəm* 'name' below).
4. Words that are Berber borrowings in Maghribian Arabic, and which could be original or reborrowed.

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[23] From http://en.wikipedia.org/wiki/Swadesh=list. Retrieved March 2012.
[24] From http://en.wikipedia.org/wiki/Dolgopolsky=list. Retrieved March 2012.

On the other hand, loans that have undergone important semantic developments during the borrowing process (or afterwards?) have been counted as borrowings, as long as their Arabic origin stands beyond doubt.

Translations are given on a semantic basis; for example, in cases where the translated language has a verb while the language of the list has a noun or an adjective, the verb was chosen.[25]

	Swadesh-100	LJ-100	AJSP-40	Yakhontov-35	Dolg-15
Tashelhiyt	8%	6%	10%	9%	0%
Figuig	16%	9%	10%	11%	7%
Iznasen	16%	11%	15%	11%	7%
Tarifiyt (Q)	9%	10%	10%	9%	7%
Ghomara	34%	37%	28%	29%	20%

Swadesh-100 has in most cases a similar or higher percentage of borrowings than the Leipzig-Jakarta list, which seems to enhance the latter's claim that it is more sophisticated in this matter. Except for Ghomara, the two medium-sized lists (AJSP-40 and Yakhontov-35) have similar or even higher rates than the Leipzig-Jakarta list.

Compared to other languages, the Berber scores are certainly on the high side: a well-known borrower such as English has only five Romance borrowings in the LJ-100 list—less than any of the Moroccan Berber varieties; moreover, one remarks that Ghomara Berber outscores any of the LJ-100 borrowing percentages in the sample of 41 languages in Haspelmath & Tadmor (2009).

4.5.3 *Borrowing in the Leipzig-Jakarta List: Quantitative Results*

In the following, the Leipzig-Jakarta list will be taken as a basis for a more general assessment of borrowing in the basic lexicon in Berber and in comparison with other languages. The Leipzig-Jakarta list was established on the basis of a sample of over 1500 semantically defined items (the LWT list). These items were studied in a sample of 41 languages, including one Berber language, Tarifiyt. On the basis of these data, scores were established taking into account four different factors (Tadmor 2009):

[25] In a few cases, meanings have been taken together where the intended meaning of the list was unclear. Thus my countings of LJ-100 'to suck' includes the verb used for babies drinking from their mothers' breast.

1. Borrowability: to what extent is the meaning expressed by borrowings in the languages of the sample?
2. Monomorphemacity: Is the concept expressed by a single morpheme or by a compound word or an (idiomatic) expression?
3. Representation in the corpus: to what extent has the semantic category been attested in the languages under consideration (thus excluding culturally or linguistically less universal meanings)?
4. Age: how long has the word been in the language?

The ideal stable meaning/word would never be borrowed, always be morphophonematic, be represented in all languages of the corpus and be as old as can be traced. These factors were weighed identically,[26] and the composite score leading to the Leipzig-Jakarta ranking is the score of these four factors multiplied. The identical weighing is not unproblematic; this may have serious implications for the list.[27]

In the end, any list of "basic" words is to some extent arbitrary, because of the definitions of the semantic elements, and because one is bound to make a choice of languages. In any case, the Leipzig-Jakarta list presents 100 words which clearly belong to the set of concepts which are reasonably universal and reasonably resistant to change. Taken as such, comparing borrowing in this set can be considered indicative of borrowing in basic vocabulary.

In this section, first the quantitative borrowing data in LJ-100 in Berber will be presented. After this, the individual borrowed concepts will be studied in more detail.

The quantification of borrowing only makes sense with relatively complete sets of lexical data. The establishment of such sets is not without caveats, however. In the first place, there are quite a number of Berber varieties for which only part of the LJ-100 list was recorded. Where only a few items are missing, this hardly represents a problem. However in the case of Libyan dialects, which are quite important in the study of Arabic influence on Berber, the data sets comprise less than 95% of the LJ-100 list. Moreover, at least in the case of Awdjila, the word list is biased towards

[26] Note that the weighing of the borrowing score was different from the simpler method used above and elsewhere in this study in establishing the borrowing scores for Berber, as it includes meanings for which both borrowed and un-borrowed words exist.

[27] When, for example, "monomorphematicity" and "representation" are taken together (i.e. the average of the two scores), an item like 'not' rises from the 56th place on the list (composite score 0.726) to the 12th place (composite score 0.786). Similar changes in computation may make words now not represented enter the list.

non-borrowed lexicon, as explicitly stated in Paradisi (1960a:157);[28] a similar bias may have played a role in the establishment of the El-Fogaha vocabulary by the same author (Paradisi 1963). In these cases the percentage obtained for the attested part of the list may be considerably lower than what we would have had with a complete list.

The following scores were obtained for different Berber languages, using the criteria outlined in 4.5.2:

country	language	percentage of borrowings	attestation *n* =
Morocco	Tashelhiyt	6%	99
	Ghomara	37%	100
	Senhadja	17%	100
	Tarifiyt (Q)	10%	100
	Figuig	9%	98
	Iznasen	11%	100
Algeria	Beni Snous	12%	100
	Greater Kabylia	7%	99
	Mzab	7%	99
	Ouargla	10%	99
Libya	Ghadames	1% (1 item)	94
	Djebel Nefusa	13% (12 items)	92
	El-Fogaha	9% (7 items)	82
	Awdjila	3% (3 items)	92
Egypt	Siwa	26%	100

Studying these scores, one may define three groups of borrowing percentages:

> Low percentage: 0–5%.
> In the northern Berber corpus this concerns two languages: Ghadames (1%) and Awdjila (3%). Six meanings in the LJ-100 list are not known for Ghadames, while 13 meanings are unknown for Awdjila. The Awdjila list is biased against Arabic loanwords, and the percentage is possibly higher.
>
> Medium percentage (6–15%).
> This is found in the majority of northern Berber languages. There is no major difference between Tashelhiyt on the one hand, and Tarifiyt and Kabyle on the other. Apparently, while borrowing in non-basic vocabulary is stronger

[28] "Il materiale lessicale qui riportato è limitato alle sole voci di orgine berbera". In practice, Paradisi sometimes cites loanwords which he considered interesting for some reason. Moreover, I profited from Marijn van Putten's painstaking effort in adding all words attested in the texts (van Putten fc.).

in Tarifiyt and in Kabyle than in Tashelhiyt (cf. the text counts in section 4.3), the situation is similar in the three languages as far as basic vocabulary is concerned.

High percentage (over 15%).
This concerns in the first place Ghomara (37%) and Siwa (26%). Senhadja de Sraïr, spoken in the vicinity of Ghomara, has 17%. Moreover, in Senhadja, there are no less than 13 items that are translated in the source by both an original Berber word and an Arabic loan; according to the principles outlined above, these were not counted as borrowings. As Ibáñez (1959) is based on two different dialects (Zarkat and Beni Ahmed), without distinguishing them in the dictionary, some of this variation may be due to dialectal preferences. If this is true, the percentage would be higher if the borrowings were counted on the dialectal level.

Some of the Libyan varieties may belong to the high percentage borrowers too: Djebel Nefusa has 13 loans and eight unattested items, while El-Fogaha has seven loans and 18 unattested items. Thus maximum scores could be up to 21 (Djebel Nefusa) and 25 (El-Fogaha) if the unattested items were all loans. As mentioned above, some of these publications are probably biased towards unborrowed words.

There are not many comparative studies of loanwords in the basic lexicon. In order to get some impression of this, the LJ-100 precentages in the 40 non-Berber languages covered in Haspelmath & Tadmor (2009) were calculated following the same criteria as given above for Berber. Those items that were considered to be "clearly borrowed" or "probably borrowed" by the authors of the chapters in Haspelmath & Tadmor (2009), and for which no alternative non-borrowed items were provided, count as borrowings. Note that the language data in Haspelmath & Tadmor were the basis of the LJ-100 list, even though the reflection of the borrowing percentages in this list is rather complicated.

Among these 40 languages, 31 have percentages of 5% or lower. Thus, even the medium percentages found in Tashelhiyt and Tarifiyt are higher than those found in over three quarters of the languages in the LWT corpus. Four languages have percentages that put them on a par with the medium borrowers within Berber, such as Tashelhiyt, Kabyle and Tarifiyt:

Vietnamese	7%	
White Hmong	7%	(a language of China)
Archi:	9%	(an eastern Caucausian language of Russia)
Ceq Wong:	13%	(an Austroasiatic language of Malaysia)

Five languages have percentages that put them in the category of high borrowers, even though none of them reaches the level of Ghomara:

Malagasy:	19%	(an Austronesian language of Madagascar)
Selice Romani:	20%	(an Indo-Arian language of Slovakia)
Kildin Saami:	21%	(a Finno-Ugric language of Russia)
Gurindji:	27%	(a language of Australia)
Saramaccan:	33%	(an English-based creole of Suriname)

These percentages are not necessarily comparable. The historical reconstructions in some of the languages studied in LWT cover a much longer time-span than the recoverable time-span in Berber. In Berber languages, only Arabic, Latin, and Punic borrowings can be identified. One may assume that at a certain moment in time—possibly up to the Roman period—there were more indigenous languages present in northern Africa than Berber alone. As we do not know anything about these languages, it is impossible to identify possible loans from them.

This difference is important in comparing two of the high borrowers in the LWT sample with Berber. For Selice Romani of Slovakia, one can make a reasonable temporal differentiation between loans from the time before the ancestors of the speakers came into contact with European languages, and later loans. The first contact with European languages (Greek) may have happened around the tenth century CE (Elšík 2009:269), which gives us a time-span of 1000 years, (very) roughly corresponding to the time-span of Berber-Arabic contacts. Among the 20% borrowings in the Selice Romani LJ-100 list, 13% are borrowings from the European period.[29]

Similarly, due to the high quality of historical linguistic studies on Saami and its main contact languages, the Kildin Saami database (Rießler 2009) covers a loanword history of about 5000 years. Only 8 out of 21 loans in the LJ-100 list date from after the proto-Saami period.

The situation is different in the other languages. In Malagasy (Adelaar 2009) only one out of 19 loans in the LJ-100 list seems to post-date the Austronesian expansion from present-day Indonesia to Madagascar, which happened from the 8th century onwards. The 18 other loans are from languages of Indonesia, mainly Malay. This suggests that the time frame of the borrowing was similar to that for Arabic loans in Berber, even though it lies in a different, earlier, period.

The two highest borrowers in the LWT corpus are Gurindji and Saramaccan. Both have a specific history, which explains their unusual behavior

[29] The situation may be different in Domari, another "Gypsy" language, which has 43% to 47% of borrowings in the Swadesh-200 list, according to Matras "primarily from its contemporary contact language, Arabic" (Matras 2009:166).

as to borrowing to some extent. Among Australian languages, Gurindji is one of the highest borrowers (Bowern e.a. 2011). Gurindji, as an Australian language, is subject to the well-known Australian taboo-substitution of (basic) words. In societies such as Gurindji, there was a taboo on the pronunciation of the name of a deceased person (Dixon 1980:28). In addition, words similar to these names were ousted from the spoken language. Instead, often loans from neighboring languages were taken. Although the effect may have been less spectacular than sometimes assumed (McConvell 2009:797), it certainy affected basic vocabulary to some degree. In addition, there are indications that Gurindji has undergone important substratum effects (Bowern e.a. 2011).

Saramaccan is a Maroon creole language which was formed in the course of the late 17th, early 18th century. Different from other creole languages, in its formation two European languages played a role, English, the main lexifier, and Portuguese. The exact way this formation took place is difficult to make out.

Concluding, among the five high borrowers in the LWT database, two have very different histories from Berber, leading to a distinctive increase in loanwords. The high percentages found among two other languages are partly due to the historical depth of the analysis provided in LWT, which covers a much larger time span than is possible for Berber. Only one language, Malagasy, with 18 out of 19 loanwords from the same pre-Madagascar period, can be considered a high borrower in the same category as Siwa and Ghomara Berber.[30]

In order to provide insight into the two highest borrowers in the Berber corpus, all LJ-100 items that were borrowed in one of them are listed below. The numbers in the left-most clumn indicate the ranking on the JL-list. Ghomara data all come from Khalid Mourigh (fc.), while the Siwa data come from a number of sources, mainly Naumann (2012) [N] and Souag (2010) [S]; to a lesser extent also from Laoust (1932) [La] and Vycichl (2005) [Vy]. Like elsewhere, only meanings for which no Berber alternative was found are listed.

[30] Of course, one expects more high borrowing percentages to come up when the data base is extended to languages outside the LWT sample. Tadaksahak (Christiansen 2010), a northern Songhay language, has 20% borrowings (n=95) in LJ-100.

	Ghomara	Siwa	Siwa source[31]
1. fire	*lɛafya*		
2. nose	*əlxnafəṛ*		
9. root		*əlɛərq*	N/La
12. breast	*bəzzuna*		
13. rain	*ləḥwa*		
15. name		*ssmiyyət*	S
18. flesh/meat	*llḥəm*		
21. night	*llil*	*llelət*	S (p.c.)
24. far	*bɛiḏ*	*abɛid*	S
25. to do/make		*ɛəmmər*	La
28. bitter	*mmər*		
31. hair	*šššɛaṛ*	*ššɛar*	N
34. who?	*škun*		
36. to hit/beat		*duqq*	N/Vy
38. fish	*amaləḥ*	*tisəmkát*	N
42. black	*kḥəl*		
46. back	*ṭṭhaṛ*		
46. to bite	*ɛəṭ*		
48. wind	*ləɛwan*	*laḥwá*	N
49. smoke	*dduxxan*	*duxan*	N/La
50. what?	*šwa*		
51. child (kin)	*aɛəyyal*		
52. egg		*tabṭə́wt*	N
53. new	*ždiḏ*		
53. to burn (intr)		*ənḥraq*	S
56. not	*ma*	*la*	S
56. good	*məzyan*	*akwayyəs*	N
59. sand	*ṛṛməl*	*ṛṛmʷəl*	S
64. leaf		*twərqət*	S
64. red	*ḥməṛ*		
66. liver	*lkəbda*		
67. to hide	*xəbbəɛ*		
67. skin/hide	*žžəld*		
70. to carry	*ṛəwwəḥ*		
71. heavy	*ṭqil*	*atqíl*	N
74. old	*qḏim*	*aqdim, šarəf* (man)	S
76. thick	*ɣliṭ*	*atxin*	S

[31] As Naumann (2012) is phonologically the most sophisticated source, his notations have been cited where available. The other sources are used when Naumann does not give the word. In such a case, precedence was given to Souag (2010) over Laoust and Vycichl. Notations like "N/Vy" indicate that the word is attested in a different form (e.g. plural instead of singular) in Naumann (2012), and that the form given here corresponds to the one provided by the second source.

Table (*cont.*)

	Ghomara	Siwa	Siwa source
78. long	*ṭwil*	*aṭwíl*	N
79. to blow		*ánfax*	N
81. to fall	*ḥṣəl*		
84. tail		*aṃəɛḅúṣ*	N
89. sweet	*ḥlu*	*aḥlu*	S
91. shade/shadow	*ḍḍəll*		
91. salt	*mmlaḥ*		
91. small		*aḥkík, aḥákkik*	N
96. wide	*wasəɛ*	*aɛriṭ*	S
97. star	*nnžəm*		
99. hard	*qasəḥ*	*gaṣáy*	N

A number of forms look Arabic but have no clear etymology. This is the case of Ghomara *taṛḥəḅt* 'soil' and, with an unexpected semantic shift, Ghomara *ḥṣəl* 'to fall' (cf. Arabic *ḥṣəl* 'to get stuck'), *ɾəwwəḥ* 'to carry' (in Arabic, among others, 'to come back' or 'to take home (esp. a bride)') and *amaləḥ* 'fish' (cf. Arabic *maləḥ* 'salted').[32] In one case, the Arabic etymology is contested, and different explanations have been adduced, Ghomara *axyam* 'house' (see 4.5.4). Finally, some forms could be Berber loans in Arabic that were re-borrowed in Ghomara, e.g. *ṣuṭ* 'to blow' and *aẓənniṭ* 'tail', but could also be ancient in the language. The forms with a special semantic development were included in the count, the other cases not.

In comparing these two sets from the two opposite ends of the Berber-speaking territory, one remarks a relatively strong overlap. Siwa Berber shares 16 out of 26 borrowed meanings with Ghomara; only 10 meanings are represented by a borrowing in Siwa and by a Berber word in Ghomara. As 37% percent of the basic words are taken over from Arabic in Ghomaran, one would have expected about ten percent shared borrowings between Siwa and Ghomara if the distribution were entirely arbitrary.

4.5.4 *Borrowing in the Leipzig-Jakarta List: Detailed Lexical Study*

Most northern Berber languages are medium borrowers of basic lexicon, i.e. they have in between 6% and 15% of borrowings in the LJ-100 list. In

[32] Apparently the meaning 'fish' derives from the commerce in salted fish in the mountain regions. This shows that the word did not originate in the coastal region whence our data come, as the typical fish there is not salted. *maləḥ* is not used in local Arabic in the meaning 'fish' (Mourigh, p.c.).

the following, the borrowed meanings will be presented one by one. Ghomara and Siwa, for which the borrowings have been listed above, are only mentioned when the meaning is also borrowed in other Berber languages, or when there are reasons for a more elaborate discussion.

Where possible, Standard Arabic equivalents of the borrowed items are given in order to indicate the wider use of the form in Arabic, thereby excluding inverse influence.

fire [JL rank: 1]; borrowed 3x
The noun 'fire' is borrowed in a number of Moroccan Berber languages: Tashelhiyt *lɛafit*, Ghomara *lɛafya*, Senhadja *lɛafya*, Figuig *lɛafəyt*. The reason is euphemism. In Berber, like in Arabic, 'fire' is the same term as 'Hell'. Therefore, borrowing may be used as a way to avoid a loaden term. In Moroccan Arabic, normally the euphemism *ɛafya* (basically: 'good health') is used. This euphemism was taken over by a number of Berber languages.
StAr: *ɛāfiya* '(good) health, well-being, vigor, vitality'

nose [JL rank: 2]; borrowed 2x
A loan from Arabic is only found in two languages. In Ghomara the local Arabic term *əlxnafəṛ* has been introduced. In the Tashelhiyt of the Ida Usemlal, the basis of Destaing's vocabulary (1938), *tinxrt* is found. which looks like a blend of Berber *tinzrt* (attested elsewhere in Tashelhiyt) and Arabic *mənxar*.
StAr: *manxar* 'nostril, nose'; *xanfara* 'to snuffle, snort'. Cf. Bahrayn Arabic *xanfūṛ* 'nose' (Behnstedt & Woidich 2011:111).

to go [JL rank: 3] borrowed 6x
The meaning 'to go' is often expressed by a loan from Arabic. Less telic, or more specifically telic meanings, such as those corresponding to English 'to walk' and 'to enter', are normally not borrowed. Attestations: Tarifiyt (Q) *ruḥ*, Figuig *ṛaḥ*, Iznasen *ṛuḥ*, Beni Snous *ṛuḥ*, Ouargla *aḥ, raḥ*, Siwa *ḥḥ, ṛuḥ*. Awdjila *ɛədd* correponds to *ɛəddī* in Eastern Libyan Arabic (Benkato fc.).
StAr: *rāḥ* 'to go away'

blood [JL rank: 7] borrowed 1x
Senhadja *əddəm*. Other Berber languages normally have the plural form *idammən*, which is a common Afroasiatic heritage rather than a loan from

Arabic *dəmm*. The Senhadja form, which is also found in some neighboring western Tarifiyt varieties is clearly a loan in view of the inclusion of the Arabic article. Ghomara *adəm* could be a (berberized) form of Arabic *dəmm* or a rare attestation of a singular of the old Berber form *idammən*.
StAr: *dam* 'blood'

root [JL rank: 9] borrowed 2x
This borrowing only appears in the eastern varieties: Djebel Nefusa *ləɛárq*, Siwa *əlɛərq* [La], P *ləɛrúq* [N]. The meaning 'root' is not attested in El-Fogaha; in Awdjila a Berber word is used (*twəržit*).
StAr: *ɛirq* 'root'

rain [JL rank: 13] borrowed 2x
A borrowing is attested in Ghomara *ləhwa* and El-Fogaha *əlmṭár* (next to the descriptive *aman s innž* 'water from above').
StAr: *hawāʔ* 'air', *maṭar* 'rain'

name [JL rank: 15] borrowed 3x
The most generally used Berber word is *isəm*. The similarity to Arabic *ism* 'name' is mostly considered to be due to an ancient Afroasiatic heritage. However, *isəm* could also be an early loan from Arabic, which has to do with the change of proper names which typically takes place when people convert to Islam. In that case, it could belong to the first stratum of Islamic loans (see 3.4). If so, all Berber languages have borrowed the word. In a number of languages, ancient *isəm* (whether a loan or not) has been substituted by forms that are conspicuously Arabic: Figuig *lasəm, ttəsməyyət*, Beni Snous *lisəm*, Siwa *ssmiyyət* [S].
StAr: *ism* 'name', *tasmiya* 'naming, appelation'

fly [JL rank: 20] borrowed 1x
Only one attestation: Awdjila *dəbbán*. Other Libyan varieties have Berber forms.
StAr: *ḏibbān* 'flies'

night [JL rank: 21] borrowed 5x
Loans for the meaning 'night' are concentrated in northern Morocco: Ghomara *llil*, Senhadja *əllil*, Tarifiyt (Q) *ǧǧiřəṯ* (< **llilət*), Beni Iznasen *lililəṯ*. Siwa *llelət* (Souag p.c.) is the only borrowing outside this region.
StAr: *layla* 'night'

far [JL rank: 24] borrowed 9x (mostly 'be far')
The Arabic verb *bɛəd* or the adjective *bɛid* have been taken over in most northern Berber languages:
Ghomara *bɛiḍ* 'far', Senhadja *bɛəḍ*, Figuig *bɛəd*, Beni Snous *bɛəḍ*, Kabyle *əbḇɛəḍ*, Mzab *əbɛəd*, Ouargla *əbɛəd*, Nefusa *əbɛəd* 'to be far', Siwa *abɛid* 'far' [S]. Old Berber forms are Tashelhiyt *aggug*, Tarifiyt (Q), Beni Iznasen *aggʷəž*. The term is not attested in the other Libyan languages.
StAr: *baɛīd* 'far'

house [JL rank: 26] unclear
There are several words commonly used for 'house' in Berber. One of them is *taddart, tiddart* which has a similar shape to Arabic *daṛ* 'house' (cf. A. Basset 1959:159). This is a chance resemblance, as *taddart* is a derivation from the Berber verb *ddər ~ idir* 'to live'. Another word commonly used is *axxam, axyam*. This is similar to Arabic *xima* (< *xayma*) 'tent'. The meaning 'tent' rather than 'house' is attested in a number of Berber languages, e.g., Central Moroccan Berber *axam* 'tent'. In other languages, it is specialized in the meaning 'room', and it seems that the meaning 'house' is an extension of this. The Arabic background of *axxam* is strongly contested (Laoust 1920:21), both for semantic and for phonetic reasons. Semantically, the spread from 'tent' to 'room, house' is problematic, especially when dealing with populations which have been sedentary as long as history remembers. Phonetically, the development *xy* > *xx* is not attested with other words, and seems to be odd. An alternative explanation connects *axxam* (and maybe also *axyam*) to the Berber root GhYM 'to sit, to stay' (Laoust 1920:21),[33] as attested among others in Tarifiyt *qqim*. The main problem with a Berber derivation is that *x* does not appear in widely attested words of Berber origin except in some specific contexts (consonant clusters with a following voiceless consonant and in final position with monosyllabic words, Kossmann 1999a:236–242). Otherwise, *x* is a loan phoneme from Arabic (see 5.3.2.4). For the counting, *axxam, axyam* was disregarded; however for the sake of completeness its attestations in the meaning 'house' will be given here: Ghomara *axyam*, Senhadja *axxyam*, Beni Iznasen *axxam*, Beni Snous *axxam*, Kabyle *axxam*.
StAr: *xayma* 'tent'

[33] Laoust (l.c.) also mentions Tuareg *ehăn* and Zenaga *īn* 'tent' as cognates, which is highly improbable.

hair [JL rank 31] borrowed 3x
Ghomara *šš*ɛ*ar*, Senhadja *əššaɛr*, Siwa *šš*ɛ*ár* [N].
Senhadja uses the Berber term *anzəḏ* for a single hair; for the collective designating all the hair of the head, the Arabic term is also attested elsewhere in Berber.
St Ar: *šaɛr* 'hair'

who? [JL rank: 34] borrowed 3x
Ghomara *škun*, Senhadja *əškun*, Kabyle *ašu*. See for a discussion, section 9.2.1.

horn [JL rank: 38] borrowed 1x
El-Fogaha *əlqúrn*. Somewhat surprising form, as El-Fogaha Berber is only in contact with forms of dialectal Arabic where one would expect *g* < *q*. All other Libyan varieties have a Berber form. Most Berber languages have a form corresponding to Tuareg *ısək*. Figuig has the odd form *aqəlluɛ*, whose etymology is unclear. One imaginative derivation would be from the Arabic verb *qləɛ* 'to uproot'.
StAr: *qarn* 'horn'

fish [JL rank: 38] borrowed 5x
Ghomara *amaləḥ*, Mzab *lḥut, lḥəwt*, Ouargla *lḥut*, Nefusa *əlḥút*, Siwa *tisəmkát* [N]. Not attested in Ghadames, El-Fogaha and Awdjila. The use of a loan in the dialects of the oases Mzab, Ouargla and Siwa is hardly remarkable. While small fish occur in Saharan oases, edible fish mainly come from outside. This is one concept for which the universality claim of LJ-100 is problematic. The use of a loan in Ghomara and Djebel Nefusa is less expected.
StAr: *ḥūt* 'fish', *samak* 'fish', *māliḥ* 'salty'

yesterday [JL rank: 41] borrowed 1x
Awdjila *ṣábəṭ*. Paradisi (1960a:167) marks this as a loan from Libyan Arabic. I have not been able to track the etymology, but follow Paradisi.

navel [JL rank: 42] borrowed 1x
Only borrowed once: El-Fogaha *ṣúrra*.
StAr: *ṣurra* 'bag, purse, bundle'

to bite [JL rank: 46] borrowed 4x
Ghomara *ɛəṭ*, Senhadja *ɛəṭṭəš, bərrəm*, Beni Iznasen *zɛəf*, Beni Snous *zɛəf*. *zɛəf* is also used in Tarifiyt (Q), where is has a Berber alternative, *mmāməš*.

In Moroccan Arabic, *zɛəf* normally means 'be angry', but it seems to have taken a more restricted meaning in the Berber varieties of the Algerian-Moroccan borderland (possibly based on angry biting dogs).
StAr: *ɛaḍḍ* 'to bite', *zaɛaf* 'to kill instantly'

back (*body part*) [JL rank: 46] borrowed 2x
Ghomara *ṭṭhar*, Figuig *ddhəṛ*.
StAr: *ḍahr* 'back'

wind [JL rank: 48] borrowed 4x
Tashelhiyt *ṛṛiḥ*, Ghomara *ləɛwan*, El-Fogaha *ɔ́rwaḥ*, Siwa *lahwá* [N]. In Tashelhiyt, the common Berber form *aḍu* has become specialized in the meaning 'breeze'. The Ghomaran form *ləɛwan* takes up the well-attested Maghribian Arabic and Berber form *ɛwin* 'breeze which helps the winnowers, lit. the helper'.
StAr: *rīḥ* 'wind', *hawāʔ* 'air, wind'

smoke [JL rank: 49] borrowed 9x
This meaning is represented in many northern Berber languages by a loan from Arabic: Ghomara *dduxxan*, Senhadja *əddуxxan*, Tarifiyt *ddəxxan*, Beni Iznasen *ddəxxan*, Beni Snous *dduxan*, Figuig *ddəxxan*, Mzab *dduxxan*, Ouargla *dduxxan*, Siwa *duxan* [La], P *ddxaxín* [N]. The original form was something like *aʔḇu (Kossmann 1999:No 206, Taine-Cheikh 2008:5, Kossmann 2012c). The problems involved in the two weak consonants */ʔ/ and */ḇ/ (leading to forms such as *awwu*) may have constituted a reason for its substitution by the Arabic form.
StAr: *duxān* 'smoke'

what? [JL rank: 50] borrowed 2x
Ghomara *šwa*, Kabyle *ašu*. See section 9.2.1.

egg [JL rank 52] borrowed 1x
There are many different Berber terms for 'egg', most of them of a descriptive nature: *taməllalt* 'the white one', *taglayt* 'the round one', *tazdəlt* 'the ponded one'. One northern Berber term is underived: Ghomara *tawfalt*. Only one cognate of this term was found, *tofəlt* in Tetserrét, a language of Niger with strong ties to Zenaga (Lux 2011).[34] In view of its geographical

[34] As a loan from Berber, the term also appears in the Northern Songhay language Tadaksahak: *taafult* (Christiansen 2010:291).

distribution and underived form, this is most probably the original word in Berber. In Arabic, the term *biḍa* is also related to the meaning 'white', and it is conceivable that the Berber forms of the type *taməllalt* are calques on Arabic usage. The only attestation of a direct loan is Siwa *tabṭə́wt* [N].
StAr: *bayḍa* 'egg'

new [JL rank: 53] borrowed 11x
This term is taken over from Arabic in all northern Berber languages of Morocco and Algeria: Tashelhiyt *lždid*, Ghomara *ždiḍ*, Senhadja *əǧǧiḍ*, Tarifiyt *žžḍiḍ*, Beni Iznasen *ǧḍiḍ*, Beni Snous *ləždiḍ*, Figuig *ažd*id, Mzab *ažd*id, Ouargla *ažd*id, Kabyle *ažḍiḍ*, Nefusa *aždíd*. Only in the east a Berber term is used: El-Fogaha *trar*, Awdjila *atrár*, Siwa *atrar*. The term is not attested in Ghadames.
Tuareg and Zenaga have forms which point to a root *yny~*ynt (e.g. Mali Tuareg *ɨynay* 'to be new', Zenaga *äynäh* 'to be new'). It also occurs in medieval Djebel Nefusa Berber (Brugnatelli 2011:33). Possibly, the substitution by an Arabic loan was triggered by the near-merger of this form with other high-frequency words, such as *ini* 'to say' and **ănḇəy* 'to see' (cf. 4.1.2).
StAr: *ǧadīd* 'new'

to burn (*intransitive*) [JL ranking: 53] borrowed 2x
Senhadja *əḥrəq*, Siwa *ənḥraq* [S]. Awdjila *əlḥəm* looks very much like a loan from Arabic, but I have not been able to determine its etymology.
StAr: *ḥaraq* 'to burn'

good [JL ranking: 56] borrowed 8x
The meaning 'good' is often represented by loans from Arabic, in many cases alongside Berber forms. As there are many shades of meaning to 'good', it is not always easy to establish which forms in the individual languages are equivalent. In the following languages all common translations for '(be) good' are Arabic loans: Ghomara *məzyan* (adjective), Senhadja *əṣbəḥ* (verb), Beni Iznasen *uṣbiḥ* (adj.), Beni Snous *awaḥdi* (adj.), Mzab *əṣləḥ* (verb), *əbha* (verb), *awəḥdi* (noun), Ouargla *wata* (verb), *uṣliḥ* (adj.), *awəḥdi* (adj.), Ghadames *samaḥ* (verb), *ɛažib* (verb), Siwa *akwayyəs* [N] (adj.). Kabyle has the verbs *lhu* and *šbəḥ*, which Chaker (1984) counts as loans from Arabic, even though the exact basis of *lhu* is unclear.
StAr: *ṣabīḥ* 'pretty, beautiful', *ṣalaḥ* 'to be good', *bahā* 'to be beautiful', *samaḥ* 'to be generous', *waḥīd* 'alone, exclusive', *ɛaǧīb* 'wonderful', *watā* 'to be favorable', *kuwayyis* 'nice', *zayān* 'beautiful'.

sand [JL ranking: 59] borrowed 5x
Especially in desert regions, the meaning 'sand' can be represented by several lexemes, differentiating between different types of sand; often one of them is a loan from Arabic. In establishing borrowings, where possible the most general term was chosen; however not all languages seem to have a general term for 'sand'. Loans are: Ghomara *ṛṛməl*, Senhadja *ərrməl*, Beni Snous *ərrəmləṯ*, Nefusa: *ərrəmə́l*, Siwa *ṛṛmʷəl* [S].
StAr: *raml* 'sand'

to laugh [JL ranking: 61] borrowed 3x
This item has only been taken over in north-eastern Moroccan varieties and their immediate neighbor on the other side of the border: Tarifiyt *ḍḥəš*, Beni Iznasen *ḍḥəḵ*, Beni Snous *əḍḥəš*.
StAr: *ḍaḥik* 'to laugh'

leaf [JL ranking: 64] borrowed 3x
The meaning 'leaf of a tree' is represented by a borrowing in a number of languages: Beni Snous *əlwərq*, Nefusa *əlwə́rq*, Siwa *twərqət* [S]. Berber languages often differentiate between 'leaf of a tree', 'leaf of a vegetable (e.g. cabbage)', and 'very small leaves, e.g. for tea'.
StAr: *waraqa* 'leaf'

to hide (*transitive*) [JL ranking: 67] borrowed 3x
In the following languages a loanword is used: Tashelhiyt *ḥḍu*, Ghomara *xəbbəɛ*, Mzab *əḥba, əstər*. *ḥḍa* and *xəbbəɛ* are well-attested Maghribian Arabic verbs meaning 'to hide'. Mzab *əḥba* seems to take up *xəbba* 'to hide', with irregular substitution of *x* by *ḥ*.
StAr: *satara* 'to hide'

skin, hide [JL ranking: 67] borrowed 2x
Only in the northwestern Moroccan varieties a loan is found: Ghomara *žžəld*, Senhadja *əžžəld*. In Siwa, *əǧǧəld* refers to a sheep skin, while *iləm* is a human skin.[35]
StAr: *ǧild* 'skin, hide, leather'

[35] Lameen Souag in http://lughat.blogspot.nl/2012_05_01_archive.html.

to carry [JL ranking: 70] borrowed 2x
This is one more JL-100 meaning which corresponds to scores of Berber verbs. In many cases these are much more restricted than the English verb 'to carry'. It is doubtful whether all Berber languages have a general verb 'to carry'. Languages in which only borrowings were translated as general 'carry' verbs are: Ghomara *ṛəwwəḥ*, Mzab *šəmməṛ*. Possibly Ouargla should be added to this list; Delheure translates both Arabic *šəmməṛ* and Berber *awi* by 'to carry'; in most languages, *awi* rather means 'to bring'.
StAr: *šammar* 'to gather up, to lift'

heavy [JL ranking: 71] borrowed 6x
This meaning is represented by a borrowing in a number of languages from all over northern Berber: Ghomara *ṭqil* (adjective), Senhadja *əḏqəl* (v.), Tarifiyt *ḍqəř* (v.), Beni Iznasen *ḍqəl* (v.), Nefusa *ətqəl* (v.), Siwa *atqíl* (n.) [N].
StAr: *ṯaqīl* 'heavy'

old [JL ranking: 74] borrowed 2x
Most Berber languages make a difference between 'old' in describing people and 'old' in describing things or usages. The latter term is more often borrowed than the former, e.g. Figuig *aqdim, aqbur* 'old (mainly of things, usages . . .)' from Arabic (*qdim, kbir*) vs. *awəssar* 'old person'. Only in Ghomara and Siwa a borrowing is used in both meanings: Ghomara *qḏim*, Siwa *aqdim, šarəf* (man) [S].
StAr: *qadīm* 'ancient', *šārif* 'old (camel mare)'

thigh [Jl ranking: 76] borrowed 1x
Borrowed once: El-Fogaha: *əlfáxd*.
StAr: *faxiḏ* 'leg (of mutton)'

thick [JL ranking: 76] borrowed 5x
Ghomara *ɣliṭ* (adjective), Senhadja *əṣḥa* (v.), Tarifiyt *ḡḏā* (v.), Beni Iznasen *qḏər* (v.), Siwa *atxin* (n.) [S]
StAr: *ɣalīḍ* 'thick', *ṣaḥā* 'to regain consciousness, to recover' and *ṣiḥḥa* 'health', *qadar* 'to possess strength', *ṯaxīn* 'thick'

long [JL ranking: 78] borrowed 4x
Ghomara *ṭwil*, Senhadja *ṭwil*, El-Fogaha *ṭawíl*, Siwa *aṭwil* [S]
StAr: *ṭawīl*

to blow [JL ranking: 79] borrowed 1x
The normal Berber word is *ssuḍ*, a denominal derivation from *aḍu* 'wind'. As this verb was taken over in many Maghribian Arabic varieties, it is not always possible to decide whether it was retained in Berber or re-borrowed; such cases were not counted as borrowings. The only variety which has an unequivocal Arabic loan is Siwa: *ənfax* [N].
StAr: *nafax* 'to blow'

to fall [JL ranking: 83] borrowed 3x
Ghomara *ḥṣəl*, Beni Iznasen *ḥuf*, Beni Snous *ḥuf*. The form *ḥuf* is derived from Maghribian Arabic *ḥaf* 'to descend'.
StAr: *ḥaṣal* 'to happen'

tail [JL ranking: 84] borrowed 4x
The meaning 'tail' is represented by a large number of etyma, some of which are borrowings from Arabic. It is quite possible that euphemistic substitution has played a role. One noun, *zənṭiṭa*, is well-attested in Moroccan Arabic and in Moroccan Berber; its origin is not clear. However, in Berber languages which have no *ṭ* in inherited words (see 4.3.2.2), forms such as *ṯaẓənṭiṭ* (Tarifiyt) point to a borrowing. The following languages have borrowings: Tarifiyt *ṯanəwwāṯ, ṯaẓənṭiṭ, akənnas*, Nefusa *afəttál*, El-Fogaha *əddél*, Siwa *aṃəɛḇúṣ* [N]. Forms such as *fəttāla* and *baɛbūṣ* are attested in local Arabic varieties, and do not seem to have a Berber background. Tarifiyt *ṯanəwwāṯ* seems to take up Arabic *nəwwār* 'flowers', but may in fact be an alteration of *nəwwaša* 'tail', a term found in Arabic of Mauritania and the western Sahara. Cf. also the discussion in Behnstedt & Woidich (2011:331ff.).
StAr: *nuwwār* 'flowers', *kannās* 'sweeper', *ḏayl* 'tail'

dog [JL ranking:84] borrowed 1x?
The only variety which uses a term for 'dog' based on Arabic is Senhadja, which has *ahərḏan* 'dog'. The noun is probably derived from dialectal Arabic *hrəd* 'to chew noisily, to devour, to beat, to rip violently'. The nominal formation and the meaning 'dog' have not been attested in dialectal Arabic, and are probably Berber-internal developments. Lafkioui (2007:260–261) reports a variation between *ahərḏan* and Berber *ayḏi*, in which the latter term is restricted to generic, expressive or literary contexts. Ibáñez (1959) only gives *aharḏan*.

to see [JL ranking: 89] borrowed 1x
Only in Nefusa the normal equivalent of 'to see' is a loanword: *əšbəḥ* (well-known in Libyan Arabic).

sweet [JL ranking: 89] borrowed 6x
Ghomara *ḥlu* (v.), Figuig *ḥla* (v.), Mzab *miḥlaw* (adj.), Ouargla *əḥlu* (v.), Nefusa *əḥlaw* (v.), Siwa *aḥlu* (adj.) [S].
StAr: *ḥalū* 'to be sweet'

shade, shadow [JL ranking: 91] borrowed 3x
Ghomara *ḍḍəll*, Figuig *ṭṭəll*, Nefusa *əṭṭəll*
StAr: *ḍill* 'shadow, shade'

bird [JL ranking: 91] borrowed 4x
Senhadja *afrux*, Figuig *abərḍal*, Kabyle *afrux*, Nefusa *əṭṭír*. *abərḍal* is originally the word for 'sparrow', which has been extended semantically to designate any bird. The wide-spread Maghribian Arabic form *bərṭal* goes back to Spanish *pardal*.
StAr: *farx* 'young bird', *ṭayr* 'bird'

salt [JL ranking: 91] borrowed 5x
Ghomara *mmlaḥ*, Tarifiyt *ṯamәğğaḥṯ*, Beni Iznasen *lməlḥ*, Beni Snous *lməlḥ*, Kabyle *lməlḥ*
StAr: *milḥ* 'salt'

wide [JL ranking: 96] borrowed 5x
Tashelhiyt *usɛu* (v.), Ghomara *wasəɛ* (v.), Mzab *awəssaɛ* (adj.), Ouargla *usəɛ* (v.), Siwa *aɛríṭ* (adj.) [S]. Not attested in Figuig, Ghadames, Nefusa and El-Fogaha.
StAr: *wasuɛa* 'to be wide'

star [JL ranking: 97] borrowed 2x
Ghomara *nnžəm*, Awdjila *nğum* (P) (Paradisi 1960b:82/VIII-5).

hard [JL ranking: 99] borrowed 5x
Ghomara *qasəḥ* (adjective), Senhadja *əqsəḥ* (v.), Tarifiyt *qsəḥ* (v.), Beni Iznasen *qsəḥ* (v.), Siwa *gasáy* (n.) [N]. The term is not attested in any of the Libyan varieties. Most other Berber languages use the verb *qqar* (etc.) 'to be dry' also in the meaning of 'to be hard'; for the more specific meaning loanwords are used.
StAr: *qasaḥa* 'to be hard', *qasā* 'to be dry and hardened'

4.6 Borrowings in Core Vocabulary: A Sample Survey in Nouns[36]

In order to gain more insight in the matter of core borrowings, a number of semantic fields were chosen which denote relatively concrete concepts that were already available to speakers of languages in northern Africa before the coming of Islam. The assumption is that Proto-Berber had ways of expressing these concepts, and that any borrowings in these sets substitute for earlier expressions. In the following, first three sets of nouns are studied that concern culture-independent items: body parts, basic natural phenomena, and insects and other small non-vertebrates. After this, four more sets of nouns will be studied, which concern culture-specific semantic fields: metals, crops and fruits, domestic animals, and kinship terminology.

The survey takes the same fifteen-language sample as used above as its basis; where this was deemed interesting, data from other northern Berber languages are adduced.

4.6.1 *Body Parts*

Body parts are generally considered to be highly resistant to borrowing. An exception must be made for body parts that are subjected to taboos, such as, in a European or northern African context, terms referring to genitalia, to the anus, and to buttocks.

From the semantic field of non-tabooized body parts, 37 terms were chosen,[37] and compared for fifteen languages. Among these, 16 were not borrowed anywhere: 'mouth', 'tongue', 'tooth', 'ear', 'eye', 'neck', 'shoulder', 'hand', 'finger', 'fingernail', 'belly', 'knee', 'foot', 'toe', 'heart', 'bone'. A loanword for 'knee', *rrəkbəṯ*, has been attested in some Kabyle varieties (A. Basset 1929a:91).

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[36] As no full-scale reconstruction of proto-Berber vocabulary is available, I normally refrain from presenting reconstructions. Instead, typical instances are presented, not unlike what would be considered "pan-Berber" forms in another discourse (on pan-Berber and proto-Berber, see Kossmann 1999a:15ff.).

[37] This comprises 19 body part terms included in the LJ-100 list, plus four terms which are part of the Swadesh-100 list, but not of LJ-100, as well as a more or less arbitrary choice from other body-part words that are commonly expressed by underived forms in Berber languages, and which are reasonably attested. The term 'lung' (mostly *taṛut* or the like) was left out as it is quite close to Maghribian Arabic forms such as *riyya* (Classical Arabic *riʔah*). This similarity is certainly accidental or due to common Afroasiatic inheritance. In practice it is not always easy to distinguish native Berber forms from loans in this specific case. For a dialectological overview of a number of these terms, see Brugnatelli 1982.

Looking at the other body part terms, nineteen out of the other twenty body part terms investigated were only occasionally represented by borrowings in the corpus (for comments on the elements included in the LJ-100 list, see 4.5.4):

'blood' Senhadja *əddəm*

'skin' Ghomara *žžəld*, Senhadja *əžžəld*

'hair' Ghomara *ššɛaṛ*, Senhadja *əššaɛr*, Siwa *ššɛar* [N]

'head' Ghomara *ḍḍmaɣ*

'forehead' Nefusa *əžžábhət*. Ghomara has non-Arabic *aṭəlliḥ* next to *aṣəndil*, which seems to be somehow related to Arabic forms such as *ṣənṭiḥa* (cf. Behnstedt & Woidich 2011:96). Senhadja has taken over this Arabic form as *aṣənduḥ* and *ṣəntiḥ* (Lafkioui 2007:251).

'eyebrow' Ghomara *lḥažəḅ*, Nefusa *əlḥážəb*. The same loan in Beni Messaoud (W. Algeria) *lḥawažəb*. In a number of languages, the Arabic loan is used alongside a Berber term: Iznasen *lḥažəb ~ ṯimmi*, Siwa *lḥaǧəb* [N] ~ *təmmawin* (P) [La]; in parts of Kabylia the Arabic terms *ššfər* and *lɛyun* are used (A. Basset 1929a); Senhadja has *ləɛyun* and *ləšfaṛ* (Lafkioui 2007:249).

'eyelash' Beni Snous *ləšfar*, Siwa *ləhdúb, rrmúš* (both P) [N]. Arabic loans are also used in Kabyle alongside the Berber term: *əššfəṛ ~ irgəl*. Senhadja has *ləšfaṛ* (Lafkioui 2007:249).

'nose' Tashelhiyt *tinxrt*, Ghomara *əlxnafəṛ*. The Tashelhiyt form is highly dialectal and seems to be a blend of Arabic *mənxaṛ* and Berber *tinzrt*.

'cheek' Ghomara *taṛummant*, Beni Snous *lḥənk, lədɣan*, Kabyle *lḥənk*,[38] Siwa *alxadd* [N], *šdux* [La].

'lip' El-Fogaha *əššárəb*, Siwa *ššaráb* [N, La]. Beni Menacer (W. Algeria) also has an Arabic loan, *šširəb*, while in Beni Snous *əšširəb* is used alongside non-Arabic *ṯašnafṯ* and *anšuš*. Ghomara has *ašəlgum* and *ššəffa*, both of which have an Arabic background (Behnstedt & Woidich 2011:136), alongside *afənṭuṭ*, which has no obvious link to Arabic. Senhadja *ašəndur* has no Arabic etymology, but is not obviously Berber either.

'beard' El-Fogaha *lə́ḥyət*. In Senhadja, Arabic loans are attested alongside Berber *ṯamarṯ*: *aləḥyan* and (probably expressively derived from Arabic *ləḥya*) *ṯalḥiḥṯ*.

'arm' Ghomara *ddraɛ*, Senhadja *əddraɛ*. In a number of languages, the Arabic loan is used alongside a Berber term: Kabyle *ddrəɛ ~ iɣil*, Siwa *ddruɛá* (P) [N], *əddraɛ* [La] ~ *aɣil* [La].

'thumb' Kabyle *aḏəbbuz*. In Kabylia, variants such as *ddəbbuɛ, ddəbbuz, ttəbbuz* are also attested; the general Berber form *iḵməz* is attested in some southern varieties of Kabyle (Basset 1929a).

[38] Note however non-Arabic *amayəḡ* 'half of the face, incl. the jaw'.

'(female) breast'	Ghomara *bəzzuna*.
'navel'	El-Fogaha *ṣúrra*.
'back'	Ghomara *ṭṭhər*, Figuig *ddhəṛ*. Mzab uses *əḍḍəhər* alongside Berber *tičərmin*.
'thigh'	El-Fogaha *əlfáxd*.
'heel'	Beni Snous *ləqḍəm*, Siwa *lɛarqúb* [N], *lɛargub* [La].
'liver'	Ghomara *lkəbda*.
'kidney'	Ghomara *lkəlwa*.[39]
'intestines'	El-Fogaha < ělmuṣ″ˆn >. Kabyle has the Arabic loan *ləfwaḍ* alongside native *aẓrəm*, while Senhadja has non-Arabic *ṯaməswaḍat* alongside *ṯamfwaḍat*. The latter form seems to be a blend of *ṯaməswaḍat* and Arabic *fwad*.

A number of the studied languages stand out because of a relatively large amount of borrowings in this domain:

Ghomara	11 borrowings (36 attested meanings):	30%
Senhadja	7 borrowings (36 attested meaning):	19%
El-Fogaha	5 borrowings (28 attested meanings):	18%
Siwa	5 borrowings (37 attested meanings):	14%

No borrowings were found in the following languages of the set: Tarifiyt (Q), Iznasen, Ouargla, Mzab, Ghadames and Awdjila.

As for the permeability of body part lexicon, there is a clear difference between the terms that are part of LJ-100 and Swadesh 100 and those that are not. Among the 23 items that are part of the basic word lists, only 10 had a borrowing in one (or more) of the languages of the corpus. Among the 14 additional meanings, 11 had a borrowing in one (or more) of the languages of the corpus ('shoulder', 'toe' and 'finger' being the meanings without borrowing). This strengthens the claims of impermeability of the lexicon included in basic word lists (as opposed to those not included).

Borrowed forms do not seem to cluster strongly with certain meanings. Only for one item, 'cheek', more than three languages in the corpus use a borrowing. Borrowing does not seem to correlate strongly with variability within the Berber lexeme. Thus, on the one hand, 'heel' and 'eyebrow' have relatively stable forms in Berber (*inərz* ~ *awərz* and *timmi*, resp.), but have been borrowed in a number of languages. On the other hand, a term like 'neck' is represented by many different etyma in Berber, but never by a loan.

[39] This is the term for the human body part. For animals the original Berber term is used: *ṯağẓəlt*.

4.6.2 *Natural Phenomena*

In order to study the semantic field of natural phenomena, twelve meanings were chosen from the LWT list: 'sun', 'moon' (where relevant 'full moon' as opposed to 'crescent moon'), 'star', 'thunder', 'lightning' (mostly including 'bolt of lightning'), 'wind', 'rain', 'snow', 'ice', 'mud', 'dust', and 'sand'. The relative stability of elements in this semantic field is shown by the inclusion of four of them in the LJ-100 list: 'star', 'wind', 'rain' and 'sand'. Five of them are part of the Swadesh-100 list: 'sun', 'moon', 'star', 'rain', 'sand'.

From this list, only a few nouns prove to be immune to borrowing. There are no borrowings attested for the meanings 'sun', 'moon' and 'ice'. With the exception of Ghomara *nnəžma*, Awdjila *nǧum* (P) 'star', the names for the main celestial bodies are not borrowed. Note however the borrowed forms Ghomara *lhilal* and Siwa *lahlal* [La] 'crescent moon', which are opposed to the general terms *aywər* (Ghomara) and *tazirí* (Siwa) 'moon'. The item 'ice' is not attested in any of the Libyan varieties, nor in Siwa and Ghomara. The semantically closely related item 'snow' has a similar low attestation, especially in the dialects of the oases, where snowfall is rare. For this meaning, Arabic loans are attested twice: Mzab *əttəlž* and Siwa *əttəlž* [La]. In Ghomara, this category is highly influenced by Arabic with borrowings for 'crescent moon', 'star', 'thunder', 'lightning', 'wind', 'rain', 'mud', 'dust', 'sand', and only three Berber items: 'sun', 'moon', and 'snow'. The same is true for Siwa, which has borrowings for 'crescent moon', 'thunder', 'lightning', 'wind', 'snow', 'dust', 'sand', and only four Berber items: 'sun', 'moon', 'star', and 'rain'. For the following meanings, borrowings are not that rare:

'thunder'	Ghomara *ɣrəḍ*, Beni Snous *rräɛaḍ*, Kabyle *əɣrɛuḍ*,[40] Mzab *ərrəɛd*, Ouargla *rrəɛd*, Siwa *rraɛd* [N]. In Figuig, normally *ɣrəɛd* is used; an archaic form is Berber *adžaž*. Also Beni Menacer (W. Algeria) *ləɣrɛuḍ*.
'lightning, bolt of lightning'	Ghomara *bbṛaq, ləbbṛaq*, Senhadja *lbarq, lbəraq*, Tarifiyt *řəḇṛuq* (~ *assam* < Berber), Iznasen *ləbṛuq*, Beni Snous *lbərq*, Kabyle *ləbṛaq*,[41] Figuig *lbərg* (~ *usman* < Berber), Mzab *əlbərg*, Ouargla *ləbrəg*, Siwa *əlbəɛq* [La]. Also Metmata (W. Algeria) *lbərq*.
'wind'	Ghomara *ləɛwan*, Senhadja *ərriḥ* (~ *asəmmiḍ* < Berber) Tashelhiyt *ɣɣiḥ*, Iznasen *rriḥ* (~ *aṣəmmiḍ* < Berber), El-Fogaha *árwaḥ*, Siwa *laḥwá* [N]

[40] Brosselard (1844) has both Arabic-derived *rəɛd* and non-Arabic *tanzilt*.
[41] Brosselard (1844) already has Arabic-derived *bəruq*.

'rain' Ghomara *ləhwa*, Beni Salah *ənnuwəṯ*, Kabyle *ləhwa*[42] (~ *aqqfur* < Berber), El-Fogaha *əlmṭər*. Also Beni Messaoud (W. Algeria) *ləmṭər, nnəbwəṯ*, Beni Menacer (W. Algeria) *nnuwəṯ*.

'mud' Tashelhiyt *lɣis*, Ghomara *əlɣays*.

'dust' Ghomara *lɣəḇṛa*, Senhadja *lɣəbira*, *laɛžaž*, Tarifiyt *ṯaɛəžžašṯ, ṯaɣəbbāṯ*, Beni Iznasen *lɣəbrəṯ, laɛžaž* (~ *imərɣəḍ* < Berber), Beni Snous *lɣəbrəṯ, ṯaɣəbbarṯ*, Kabyle *aɣʷəbbaṛ*,[43] Mzab *lɣubṛət*, Ouargla *ləɣbərt*, Siwa *ləɣḅáṛ* [N].[44] Also Beni Salah (W. Algeria) *ləɣbar*, Beni Messaoud (W. Algeria) *ləɣbar*, Metmata (W. Algeria) *ləɣbar*.

'sand' Ghomara *ṛṛməl*, Senhadja *ərrməl*, Iznasen *rrəmləṯ* (~ *iždi* < Berber), Beni Snous *ərrəmləṯ*, Figuig *ṛṛəmlət* (~ *abərda* < Berber), Nefusa *ərrəmál*, Siwa *ṛṛmʷəl* [S]. Also Beni Menacer (W. Algeria) *ərrəməl*, Beni Messaoud (W. Algeria) *ərrəməl*, Metmata (W. Algeria) *ərrəməl*.

4.6.3 *Insects and other Small Non-Vertebrates*

The semantic field of insects and small non-vertebrates is a category where substratum influence is expected. Many small animals are mostly spoken of in informal, domestic conversation (e.g. mothers speaking to their children about ticks and lice); as a consequence, even speakers with a good command of the lexicon of a foreign language may be at a loss when this type of terms is called for. In cases of language shift, it is thus no wonder that words for insects and small animals are transferred from the original language of the shifting speakers to their new tongue. Indeed, small animals constitute a part of the lexicon where important influence from Berber on north-African Arabic is found, e.g. Jijel *aṛəẓẓ* 'wasp', *azərdi* 'weasel', *tagərfa* 'crow' (Ph. Marçais 1956:302ff.), Moroccan and Algerian Arabic *tata* 'chameleon' (Behnstedt & Woidich 1911:372).

On the other hand, following the same argumentation, one does not expect much interference from Arabic in the Berber lexicon in this semantic field, except with recently introduced species, such as the cockroach (originally from the Americas).

This expectation is, to some degree, borne out. Words such as 'louse', 'nit', 'tick', 'wasp', 'scorpion', have not been borrowed in any Berber language, and several among them can be reconstructed for proto-Berber with confidence. A number of species are almost always Berber, but show a few cases of borrowing from Arabic, e.g. Siwa *əssús* 'worm', Awdjila

[42] Already in Brosselard (1844).
[43] Already in Brosselard (1844).
[44] Naumann (2012) also has Berber-based *iğdi* 'dust, powder'.

dəbbán 'fly', Beni Snous *ṯaqʷrat*, Metmata *tagʷrat* (~ *gūrməl* < Berber) 'sheep louse'.

On the other hand, with some other species one remarks the presence of an important number of loans. These do not seem to be less salient in daily life than those that hardly ever get borrowed. Thus, several Berber languages have loans for 'flea' (incidentally, a badly attested item in Berber lexicography), '(bed) bug', 'spider' and 'mosquito'. This is shown in the following:

'flea' Mzab *əlbərɣutət*, Siwa *lḍarɣút* [N].

'bug' Iznasen *lbəqq*, Beni Snous *lbəqq*, Kabyle *lḏəqq*,[45] Nefusa *əlbə́qq*, Siwa *əlbəqq* [La]. Also, in Western Algeria, Beni Menacer *lbəqq*, Metmata *lbəqq*. Berber terms are rare, and have unexpected nominal shapes: Tashelhiyt *fuqs*, Ghadames *bəzbiz* (?).

'spider' Ghomara *rṭila*, Iznasen *rrtila*, Beni Salah *rrtila*, Nefusa *ərrtílət* (~ *uləlli* < Berber). Cf. also the Senhadja forms *saɛiḍ lbənnay* (< Arabic, lit. 'Saïd the builder') and the enigmatic *nanafufu*.

'mosquito' Ghomara *nnamus*, Tarifiyt *nnamus*,[46] Beni Snous *nnamus*, Siwa *nnamús* [N]. In Western Algeria: Beni Salah *nnamus*, Beni Messaoud *nnamus*, Metmata *nnamus*.

Loans also abound in names for 'cricket', 'grasshopper' and 'locust'; the data are more difficult to evaluate, as there are many types of these animals, and local categories may not overlap with European ones, nor may every lexicographer be equally precise in his identification. As a result it is basically impossible to make out whether certain terms given in word lists represent general terms (if there are any), or only concern more specific types. In the word lists the following loans were encountered:

'grasshopper, cricket, locust'

Beni Snous *ṯažratt* 'grasshopper (unity noun)' (~ *abəṛṛu* 'grasshopper (collective)'; *amrəḏ* 'criquet' < Berber).

Western Algeria: Beni Salah *ləzraḏ* 'grasshopper(s)', Beni Messaoud *ləzraḏ* 'grasshopper(s)', Metmata *ṯağrat* (coll: *ləğraḏ*) 'grasshopper' (~ Arabicized *lmərraḏ* 'cricket(s)' < Berber).[47]

Kabyle *ažṛaḏ*[48] 'criquets, grasshoppers', *iməqʷṛəš* 'type of grasshoppper' (cf. *aḏəṛṛəɛqu* 'common type of grasshopper', which does not seem to have an Arabic etymology).

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[45] Cf. already in Brosselard (1844:480): *baqq*.

[46] *ṯiziṯ* (lit. 'small fly') refers to the sandfly or gnat.

[47] This is a case where a Berber noun has been introduced into the collective-unity noun opposition and therefore gets the Arabic article in the collective, see 6.3.2.

[48] Already attested in Brosselard (1844:535).

Figuig *šškur iẓẓayən* 'small thick type of grasshopper',[49] *ṭṭayəṛ aḍəṛḍuṛ* 'young (*sic*?) cricket'[50] (cf. *tmuṛɣətt* 'grasshopper', *buṛəxs* 'large grasshopper', *amərd* 'young (*sic*?) grasshopper'; *tibəẓbəṣṣ* 'cricket' < Berber).

Ouargla *ləqḥiz* 'locust' (cf. *akəbb, tmuryi* 'grasshopper'; *akrad, tmaɛya* 'cricket' < Berber).

Siwa *əlxanğərá* [N] 'grasshopper' (also *təmərɣi* [La] 'grasshopper'; *tṃaṛɣí* 'large criquet' [N]; *ikəbbán* 'small criquets' [N] < Berber).

Different from what might be expected, borrowings occur among unproductive insects and other small non-vertebrates. Clearly, some of these are easier borrowed than others. Thus, for some unknown reason, loanwords abound in the denomination of the bed bug. The erratic attestation of some of the relevant terms makes it difficult to give a dialectally informed overview. There are hardly any loans in this domain in Ghadames and Tashelhiyt (except for specific species or types), and numbers are quite low in the Moroccan/Algerian oasis dialects. More important Arabic influence is found in northeastern Morocco and northwestern Algeria, e.g. Beni Snous *ṯaqʷrat* 'sheep louse', *lbəqq* 'bug', *nnamus* 'mosquito', *ṯažratt* 'grasshopper'. Siwa also displays many loans: *lḥaṛɣút* 'flea', *əlbəqq* 'bug', *nnamús* 'mosquito', *lfəšfáš* 'sandfly', *əlxanɣərá* 'grasshopper'.

4.6.4 *Metals*

Metals are on the one hand basic goods, as people are surrounded by metal objects. On the other hand, they have a clear commercial association, as only very few metals are produced locally in northern Africa, so the materials have to be acquired through trade. As anywhere in the world, metal demands for skilled labor, and most metal work was (and is) produced by specialists.

The main metals must have been known to speakers of Berber before the coming of Islam. A number of ancient Berber metal names (cf. also R. Basset 1896) are *Wanderwörter*, with possible cognates all over Europe and the Middle East, apparently deriving from shared unknown sources (see 3.2). Probable cases of this are *aldun* 'lead' (Boutkan & Kossmann 1999) and *aẓrəf* 'silver' (Boutkan & Kossmann 2001).

There are not many indications for Punic influence on metal names. An often-mentioned case is *uzzal* 'iron', which is compared to Hebrew *barzil*. While there is good reason to believe that the forms are somehow

[49] Identification uncertain. *iẓẓayən* means 'thick'.

[50] Lit. 'deaf bird', using an Arabic word for bird.

related, there is no reason to assume that Punic was the direct imput for the Berber form. They rather derive from the same unknown source that would be responsible for the irregularity of its reflexes in Semitic. This would explain why the word in Berber deviates so strongly from the Semitic form. Another metal name which has been traced back to Punic (Vycichl 1952) is Tashelhiyt *anas* 'copper', Sokna *nas*, Awdjila *nis* 'nickel'.[51] This form is quite similar to Classical Arabic *nuḥās* 'copper', but lacks the pharyngeal fricative. This suggests an earlier loan from Semitic; the main problem is that Hebrew *nəḥōšeṯ*, probably close to the Punic form, has *ō*, which should have been represented by *u* in modern Berber (i.e., ***anus* rather than *anas*). Therefore, a direct borrowing from Punic is improbable, and one has to reckon either with an irregular loan from Arabic, or with a different Semitic source. Only one metal name has a Berber derivation: *urəɣ* 'gold' is clearly related to the verb root *wrɣ* 'to be yellow'. No loans from Latin are found in this set.

In spite of the existence of earlier terms, Arabic loans abound. This will be shown on the basis of six current metals: iron, copper, lead (important for bullet-making), tin, gold and silver. Two of the studied languages have taken over the full set from Arabic: Ghomara and Siwa. All other languages have preserved one or more terms of the ancient set.

'iron'

Most languages preserve the Berber form *uzzal*.[52] Arabic *ḥdid* appears in Ghomara *əlḥdid*, Senhadja *ləḥḍiḍ*, Figuig *ləḥdid*, Siwa *ləḥdíd* [N]; Iznasen uses *ləḥdid* alongside *uzzal*.

'copper'

Almost everywhere the Arabic word *nḥas* appears: Ghomara *nnḥas*, Senhadja *ənnəḥas*, Tarifiyt *nnḥas*, Iznasen *nnḥas*, Kabyle *ənnḥas* (already in Brosselard 1844), Figuig *nnḥas*, Ouargla *nnḥas*, Nefusa *ənnəḥás*, Siwa *nnḥás* [N]. Also in western Algeria, *nnəḥas* (Beni Salah, Beni Messaoud, Metmata). As mentioned above, Tashelhiyt *anas* and Sokna *nas* lack the pharyngeal fricative; no doubt there is a link to Awdjila *nis* 'nickel'. Beni

[51] Marijn van Putten (p.c.) convincingly suggests that one well-attested Berber terms for 'key' is related to *anas*, e.g. Figuig *tnast*, Ghadames *tonest*.

[52] This is the basic form of most Berber varieties. Exceptions are Ghadames *wăzzal*, Awdjila *zzil* (with frequent **a* > *i* and loss of the initial vowel); Tuareg has *tăẓole*, which is probably not cognate with the northern Berber form.

Snous uses a derivation from 'lead': *aldun awraɣ*, lit. 'yellow lead'. Note however that in this variety, the noun *aldun* is no more used for 'lead'.

'lead'
In a number of languages, ancient forms of this word are preserved: Senhadja *andun* (also: *ləxfif* < Ar.), Kabyle *alḏun*, Mzab *buldun*, Ouargla *buldun*. Also in western Algeria: Metmata *alḏun*; cf. Beni Salah (Western Algeria) *aldun* 'tin', Awdjila *tildúnt* 'tin'. The Arabic term *rṣaṣ* is attested in Tashelhiyt *ɾɾṣaṣ*, Beni Snous *ərrṣaṣ*, Kabyle *əṛṣṣaṣ, aṛṣaṣ* (~ *alḏun*) (Arabic loan already in Brosselard 1844), Siwa *arṣaṣ* [La]. In northern Morocco, a euphemism is used, based on the Arabic adjective *xfif* 'light (of weight)': Ghomara *əlxfif*, Senhadja *ləxfif* (~ *andun*), Tarifiyt *řəxfif*, Iznasen *ləxfif*.

'tin'
In a number of languages, the term used elsewhere for 'lead' has been attested in the meaning 'tin': Beni Salah (Western Algeria) *aldun*, Awdjila *tildúnt*. Ouargla has an otherwise unattested, highly enigmatic form: *wiẓ*. Elsewhere, 'tin' is a loan from Arabic: Senhadja *əlqasdir*, Tashelhiyt *lqzdir*, Beni Snous *lqəzdir*, Metmata (Western Algeria) *lqəzdir*, Siwa *əlqəzdir* [La].

'gold'
The majority of Berber languages preserve ancient *urəɣ* 'gold'. In a number of languages an Arabic loan is used: Ghomara *ddhəḇ*, Senhadja *ḏhəb*, Beni Snous *əḏḏəhəb* (~ *urəɣ*), Kabyle *ddhəḇ* (already Brosselard 1844), Nefusa *əddəhə́b*, Siwa *təbər* [La]; in Western Algeria also *əḏḏəhəb* (Beni Salah, Beni Messaoud, Metmata).

'silver'
The ancient term *aẓrəf* is attested in Beni Snous and Metmata (Western Algeria); it used to have a broader distribution (van den Boogert p.c.). Most modern northern Berber languages have a derivation from Arabic *fəḍḍa* or *nŭqra*: Tashelhiyt *nqqṛt*, Ghomara *nnuqra, lfiḏḏa*, Senhadja *ənnuqra*, Tarifiyt *nnuqāṭ*, Iznasen *nnuqrəṭ*, Figuig *lfəḍḍa*, Mzab *lfəḍḍət*, Ouargla *lfəḍḍət*, Kabyle *lfəṭṭa* (already Brosselard 1844), Ghadames *ălfiṭṭăt*, Sokna *əlfəddət*, Siwa *əlfaṭṭát* [N]. Nefusa *əlfə̆žrət* is also no doubt a loan from Arabic, but its background is not clear.

4.6.5 *Cultivated Plants*[53]

The agricultural history of the Maghrib is not known very well; as a result, borrowings in the realm of cultivated plants may reflect introductions from the east (i.e. additive borrowing of the cultural type), or have come in place of earlier terms. Such substitutions may be unmotivated; however it is in many cases conceivable that the substitution took place with the introduction of new sub-types of the plant, and therefore ultimately constitutes an additive borrowing.

There are a number of plants which were certainly present in the Maghrib before the Arabic conquest, and which are referred to by a borrowing from Arabic in many varieties. A case in point is the onion. In Berber, two ancient terms for onion exist, exemplified by Tashelhiyt *aẓalim* and Ghadames *aflelo*, well-attested in the eastern part of the Berber territory (Ahaggar Tuareg *efăleli*, Ghadames *aflelo*, Sokna *afəlílu*, El-Fogaha *ifalélən*, Siwa *afəllú*). *Aẓalim* is a loan from Punic (see 3.2), and therefore predates the Arabic period with certainty; *aflelo* may be an early *Wanderwort* from the east, cf. Nubian forms such as Nobiin *fil*(*l*)*ee, fille, felii*, Kenzi/Dongolawi *bil*(*l*)*ee, bilee, belee* (Jakobi & Kossmann fc.). Both terms may be borrowings, and undoubtledly antedate the Islamic period. Still, a majority of northern Berber varieties uses a loan from Arabic, e.g. Tarifiyt *řəḇṣəř* (< Ar. *l=əbṣəl*).

In the following, a number of cultivated plants will be presented. The presentation is far from exhaustive.

Cereals

There are four terms for cereals that go back to Proto-Berber. Tashelhiyt may reflect the original situation (cf. Laoust 1920:263ff.):

tumẓin	'barley'
irdn	'(durum) wheat'
imndi	'cereals (general term referring to both barley and wheat)'
illan	'pearl millet'

The system as found in Tashelhiyt seems to be the basis of most other attested systems; however, some uncertainty as to the exact referents of the different terms sometimes remains, as lexicographers are not always

[53] For clarity of reference, sometimes Latin plant names are given in addition to their English equivalents. These names are not given by the sources, and therefore constitute a (re)construction of the meaning by the present author.

specific in their definitions. In the following I will first focus on the terms *tumẓin, irdn* and *imndi*, and treat the 'millet' terms later.

Systems with three different terms for barley and wheat are also attested in a number of other Berber languages:

Central Mor.	*timẓin* 'barley', *irdən* 'wheat', *iməndi* 'cereals'
Beni Snous	*ṯimẓin* 'barley', *irḏən* 'wheat', *iməndi* 'cereals'
Djebel Nefusa	*təmẓín* 'barley', *yárdən* 'wheat', *məndí* 'cereals' [Provasi 1973:525]
El-Fogaha	*túmẓin* 'barley', *yárdən* 'wheat', *mándi, myándi* 'cereals'

The same is probably true for Figuig, where there are also three terms, *timẓin* 'barley', *irdən* 'wheat', *iməndi* 'wheat'. The source (Kossmann 1997) is unreliable in botanic identifications and *iməndi* has probably broader reference than wheat only.

For other Berber languages only two terms out of three are attested. In some cases this may be a mere omission by the lexicographer, but in other cases it constitutes a genuine simplification of the system. The following systems are attested:

a. *tumẓin* 'barley' / *irdən* 'wheat'[54]

Senhadja	*ṯimẓin* 'barley', *irḏən* 'wheat'
Kabyle	*ṯimẓin* 'barley', *irḏən* 'wheat'
Mzab	*timẓin* 'barley', *irdən* 'wheat'
Ghadames	*təmẓén* 'barley', *yărdăn* 'wheat'
Awdjila	*təmẓín* 'barley', *írdən, yárdən* 'wheat'
Siwa	*tumẓen* 'barley', *irdən* 'wheat' [La, partially based on René Basset]

b. *tumẓin* 'barley' / *iməndi* 'wheat'

Ouargla	*timẓin* 'barley', *iməndi* 'wheat'

c. *iməndi* 'barley' / *irdən* 'wheat'

Senhadja	*iməndi* 'barley', *irḏən* 'wheat'[55]
Tarifiyt	*iməndi* 'barley', *iaḏən* 'wheat'
Iznasen	*iməndi* 'barley', *irḏən* 'wheat'[56]

Arabic influence on terms for wheat and barley is only found in Ghomara Berber. In this variety, the ancient Berber tripartite structure is preserved, but with introduction of borrowed terms:

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[54] For a number of other varieties, these two terms are the only attested, but the type of source makes it possible that the third term, corresponding to Tashelhiyt *imndi* was simply omitted. This is the case of Sokna and the western Algerian varieties Beni Menacer and Metmata.

[55] Ibáñez (1959:100) has both *iməndi* and *ṯimẓin* for 'barley'. This may reflect a dialectal difference within Senhadja.

[56] Renisio (1932:386) gives Iznasen *ṯiməṣṯ*, pl. *ṯimẓin* 'grain of an ear'.

Ghomara	*lḥəbb* 'barley' (< Ar.)
	irdən 'wheat'
	lflaḥa, ẓẓṛaɛ (both < Ar.) 'cereals'

The study of 'pearl millet' is complicated, as sources do not always make a clear distinction between (pearl) millet and sorghum (*sorghum bicolor*), which in French can both be referred to by *mil, millet* and *sorgho*. It seems, however, that northern Africa languages make the difference almost everywhere. While there is a well-attested ancient Berber term for pearl millet, there is no clearly reconstructible term for sorghum. The Berber term for pearl millet is based on a consonant sequence NL or LN, which can be assimilated. It is attested in the following languages:

Tashelhiyt	*anili, aynli* (Laoust 1920:268, not in Destaing 1938)
Ntifa	*illan* (Laoust 1920:268)
Kabyle	*ilni*
Ouargla	*inəlli*
Ghadames	*alele*
El-Fogaha	*anə́li, elli*
Awdjila	*ílli, élli*
Tuareg	*enăle*
Zenaga	*iʔllän*

The term is already mentioned in the 14th century by Ibn Battouta,[57] who cites it as a crop in the Sahel. His use of a Berber word, rather than Arabic, suggests that he did not know it from his own (Arabic) Tangier background, but this may be overinterpretation.

Some authors have related the term to Latin *milium* 'millet' (e.g. Laoust 1920:268 "sans doute pas sans analogie avec le latin *mĭlium*"). A place assimilation of *m* to a following *l* is very unusual in Berber, and there is no trace of the last syllable of the Latin word; therefore this resemblance is probably accidental. Moreover, *milium* refers to sorghum rather than to pearl millet (Cancik & Schneider eds. 1996–2003, *sub* Getreide).

I have not encountered any Berber language in which the term for pearl millet has been borrowed from Arabic; one notes however that our documentation on this term is less complete than for other cereals, and it is, for example, not attested in Ghomara, Senhadja, or in Siwa.

Sorghum and pearl millet are hardly ever referred to by the same term in Berber. An exception is Ida Usemlal Tashelhiyt (Destaing 1938), which has *asngar abldi* (lit. 'native millet') for 'pearl millet' and *asngar amaṣri*

[57] I wish to thank Harry Stroomer who pointed out this attestation.

(lit. 'Egyptian millet') for 'sorghum'. As elsewhere in Tashelhiyt, *asngar* also refers to maize.

Native terms for sorghum are not very common, and some of them may refer to wild plants rather than to cultivated sorghum. This is the case of *tafsut* (which also has a wider meaning 'grass, springtime'), which refers to a wild species in Ida Usemlal Tashelhiyt, while *tafsut, afsu* in Central Moroccan Berber and *ṯafsawkṯ* in Beni Iznasen (Renisio 1932:298) refer to cultivated species; locally the Berber term is also used in Moroccan Arabic (Prémare 1993–1999).

Another native term that may originally have designated sorghum is Tashelhiyt *asngar*. In modern Tashelhiyt, this mostly refers to maize, a crop introduced from the Americas. However, the term is ancient in the language, as shown by the mention of fields of *āsangār* in the memoirs of Al-Bayḍaq in 12th century (Lévy-Provençal 1928:232). As mentioned above, according to Destaing (1938), in Ida Usemlal Tashelhiyt the term is used both for sorghum and for pearl millet. Elsewhere in Tashelhiyt pearl millet is referred to by forms such as *anili, illi*, which suggests that the earliest meaning of *asngar* was sorghum.[58] A little bit more to the north, maize is referred to as *amzgur* (Ntifa, Laoust 1920:266), and, as a Berber loan, *məzgur* in the Arabic variety of Marrakech (Prémare 1993–1999). This term also appears in the memoirs of Al Bayḍaq (Lévy-Provençal 1928:232: *āmazzigūr*), which proves that it originally referred to something different than maize. Lévy-Provençal translates the term as 'sorgho' (which may refer to sorghum or pearl millet), and suggests that it is "sans doute pas la même variété" as *asngar*. An alternative explanation is that in Al Bayḍaq's times *asəngar* and *aməz(zə)gur* were regional terms for the same plant,[59] similar to their present-day use for maize. In that case, we would have two alternative Berber terms for sorghum. Tuareg uses an entirely different term for sorghum, *ăbora*. Other attestations of the term are derived from dialectal Arabic: Kabyle *lbəšna*, Ouargla *lbəšna*.

Terms for other cereals are much less well-attested. One may mention 'rye', which is *išnti* in Tashelhiyt and *ṯišəntiṯ* in Senhadja and in Western Tarifiyt (Ibáñez 1959:102, Renisio 1932:349), which comes from Romance (e.g. Spanish *centeno*, Colin 1926:70), possibly through the intermediary of Andalusian Arabic *š.ntiyya* (Corriente 1997:292).

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[58] The use of the term for sorghum to designate maize is well-known elsewhere, e.g. Maghribian Arabic *ḍra* 'maize, sorghum'. Cf. also Blench, Williamson & Connell 1994 on similar origins for maize terms in Nigeria.

[59] Conceivably based on the same root with metathesis and assimilations, e.g. *a-s-mga/ur > *a-msga/ur. There could be a relation with the verb MGR 'to harvest'.

Vegetables

There are four types of beans and peas for which Berber terms are attested. Among these, one is almost consistently Berber, 'faba bean'. Most languages in Morocco and Algeria use the form *abaw* and its phonetic correlates: Tashelhiyt *abaw*, Ghomara *aḇaw*, Senhadja *abaw*, Tarifiyt *ḇaw*, Iznasen *baw*, Snous *baw*, Kabyle *aḇaw*, Figuig *baw*, Mzab *abaw*. More to the east, the first consonant is sometimes lost, or corresponds to Proto-Berber *b̲ (different from the spirantization of *b, as found in Tarifiyt and Kabyle): Ouargla *aw*, Awdjila *ḇiw, ḇḇiw*, Siwa *awáw* [N]. Ghadames and Tuareg have reduplicated forms: Ghadames *abăbba* and Ahaggar Tuareg *ăbawbaw*. The reconstruction of the term is problematic, but it is clearly not a recent loan. Some scholars have pointed to the similarity of the term to Latin *faba*, but already Schuchardt (1918:24) did not consider it a loan from Latin. There may indeed be some relation to Indo-European forms, but as these may be substrate items in the respective languages, the direction of the loan remains unclear (Berber influence on Indo-European? shared substrate?). Arabic loans are not used for faba bean, except for Nefusa *əlfúl* and El-Fogaha *əlfúl*.

For cowpea (Ar. *lubya*), black-eyed pea (Ar. *žəlbana*), lentil (Ar. *ɛəds*) and chick-pea, loanwords abound, even though some older terms also appear:

'cowpea (*pisum sativum*, *dolichos*)'

	< Arabic	< Berber or earlier loan
Tashelhiyt	*llubya*	
Senhadja	*žubya*	
Tarifiyt	*llubəyyəṯ* (Q), *ǧǧubəyyəṯ*	
Iznasen	*llubyəṯ*	
Snous	*llubyəṯ*	
Kabyle	*llubya, llubyan*	
Ouargla	*llubya*	*tadlaxt*
Ghadames		*tadăllăxt*
Sokna		*tadəlláxt*
El-Fogaha		*dəlláɣin* (probably a plural)
Zenaga		*ăḏyagi*
Tuareg[60]		*tadəllaq* (< *ta-dəllaɣ-t*), *tadăllaq*

[60] Ahaggar and Mali. The term is identified as from Tuat Berber (Zenatic sedentary oasis dialect) in Foucauld (1951:I–197). The identification with cowpea follows Heath (2006:79).

‘black-eyed pea’ (*lathyrus*)

	< Arabic	< Berber or earlier loan
Tashelhiyt		*tinift, ikikr* (*lathyrus cicera*)
Senhadja		*ṯinifit*
Tarifiyt		*ṯinifətt*
Iznasen		*ṯinifətt*
Snous	*ṯažəlbant*	*ṯinifin* (P)
Kabyle	*ǧǧəlban*	
Figuig	*žžəlban*	
Ouargla	*žžəlbana*[61]	

‘lentil’ (*lens*)

	< Arabic	< Berber or earlier loan
Tashelhiyt		*tilintit, tiniltit*
Senhadja	*lɛaḍəs*	
Iznasen	*ləɛḍəs*	
Snous	*lɛaḍəs*	
Kabyle	*lɛəḍs*	
Figuig	*ləɛdəs*	
Ouargla	*lɛəds*	
Ghadames		*tanifet*
Tuareg	*əlɣədəs*	

‘chick-pea’ (*cicer*)

	< Arabic
Tashelhiyt	*lḥimẓ*
Senhadja	*lḥiməs*
Tarifiyt	*řḥiməẓ*
Iznasen	*lḥiməẓ*
Snous	*ṯaḥmiṣṯ*
Kabyle	*lḥəmməẓ*
Figuig	*lḥiməẓ*
Ouargla	*lḥəmmʷəẓ*
Ghadames	*ălḥimməẓ*
Siwa	*əlḥaməẓ* [La]

Arabic terms abound, but a number of non-Arabic terms also appear. Among these, one is clearly Berber in origin: *tinift* ‘black-eyed pea’. The Ghadames meaning ‘edible lentil’ may be a semantic extension or an erroneous identification. One other term, *tadlaxt, tadəllaxt* (< *tad*(*əl*)*layt*) is more problematic. Where attested, it refers to ‘cowpea’ and other bean-like plants. Only in Mzab Berber, it has a somewhat different reference: *tadəlləxt* ‘fresh faba bean sprout, cowpea sprout’. The form is similar to Greek *dólichos*, which refers to the same plant. The identification is diffi-

[61] *tinifin* here refers to a wild species.

cult for a number of reasons. In the first place, Greek loanwords in Berber are extremely rare, apart from those mediated by Arabic. In the second place, the stem *-d(əl)laɣ-* has a different vowel from Greek; moreover, there is no trace of the Greek nominal ending. If the term had been taken over in a similar way as Latin loans, one would have expected something like ***ta-dəlxu*(*s*)*-t* or ***ta-dulxu*(*s*)*-t*. In this case, there is no reason to assume that *dólichos* is a shared substratum word, as the Greek word has a good etymology (Beekes 2010). So the question of the relation to *dólichos* remains unsolved. Another problem with this term is the relation to Zenaga *äḏyägi*, which derives from an earlier form **adlagəʔ* (cf. also Hassaniya *ādlägān*, Taine-Cheikh 2008:121). The presence in this word of *g* in Zenaga instead of *ʔ* < *ɣ* makes it difficult to put the two terms together.

'Lentil' and 'chick-pea' are almost entirely covered by Arabic terms (on the phonology of *lḥimẓ*, see 5.3.2.1). However, one remarks the existence of two Latin loans in Tashelhiyt, *tilintit* (metathesized also *tiniltit*) 'lentil' from Latin *lens* and *ikikr* 'red pea' from Latin *cicer* 'chick-pea'. The presence of these Latin terms outside the *limes* of the Roman empire strongly suggests that Latin terms existed earlier also in other Berber varieties, but were substituted by the Arabic terms.

Finally, the term for carob (tree) is represented by a loan from Arabic or by an earlier loan from Latin *siliqua* 'carob'; only Tashelhiyt *takiḍa* has no obviously foreign origin.

'carob'

	< Arabic	< Berber or earlier loan
Tashelhiyt		*takiḍa*
Ghomara	*ṯaxərṛuḇt*	
Senhadja	*lxarrub*	
Iznasen		*ṯasliwɣa, ṯisliwɣa*
Snous	*lxərṛub*	
Kabyle	*axərṛub*	
Figuig		*tasliwɣa*

Some other Vegetables

As noted above, the term for onion has both Arabic and non-Arabic forms:

'onion'

	< Arabic	< Berber or earlier loan
Tashelhiyt		*aẓalim*
Senhadja	*ləbṣəl*	
Tarifiyt	*řəḇṣəř*	
Iznasen	*ləbṣəl*	

Snous	*ləbṣəl*	
Kabyle	*ləḇṣəl*[62]	
Figuig	*ləbṣəl*	
Mzab		*ẓalim*
Ouargla		*ẓalim*
Ghadames		*aflélo*
Nefusa	*bṣəl*	
Sokna		*afəlílu*
El-Fogaha		*ifəlélən* (probably a plural)
Awdjila		*bẓalím*
Siwa		*afəllú* [N]
Tuareg (H)		*efăleli*

In addition to the Arabic forms, a loan from Punic appears: *aẓalim*, based on *bəṣalim* or something similar. The absence of the initial *b* is not unexpected, as *b* is an instable consonant in early Berber (cf. Kossmann 1999). Its presence in Awdjila (with *b* rather than *ḇ*) is unexpected, though. One might consider the (re)introduction of *b* a blend with Arabic, which has *bṣəl* (a cognate of the Punic term). The other term is found in Libyan and Egyptian Berber as well as in adjacent northern Tuareg varieties. Nobiin (Nile Nubian) *fillee* fits the Berber forms quite well, and the resemblance may be linked to caravans that went from the Nile westward. The wide distribution of non-Arabic terms strongly suggests that the take-over of the Arabic term in the northern Moroccan and Algerian regions was a matter of substitution, and not related to the introduction of a new plant.

The history of the term for carrot is highly complicated. It seems that the spread of domesticated carrots from Iran happened during the Islamic period. However, there is no doubt that terms for other plants or plant parts may have been used to refer to the new species. This is clearly what happened in the case of Ouargla *tafəsnaxt* which derives from Latin *pastināca* 'parsnip' (cf. Colin 1927:94). There are many regional terms for carrot in Arabic, most of which do not seem to have a Berber background. One term, however, is generally assumed to be a Berber loan in Moroccan Arabic, *xizzu* (e.g. Behnstedt & Woidich 2011:467). While it is evident that the word has no etymology in Arabic, the Berber side is problematic. In many Berber languages, *xizzu* is a noun without the nominal prefix, which makes it quite different from other nouns. Moreover, *x* is not a reconstructible phoneme in Berber (Kossmann 1999), and therefore a term with

[62] Brosselard (1844) gives two forms, the Arabic loan and something transcribed *ezlim*, possibly *aẓlim*.

initial *x* can hardly be old in the language. One remarks that the distribution of *xizzu* in Berber and in Arabic is more or less the same (Morocco), which means that it could have spread either way. The attested terms in Berber are the following (for Maghribian Arabic, see Heath 2002:98, 438ff., Behnstedt & Woidich 2011:467ff.):

'carrot'

	< Arabic	< Berber or earlier loan	< ?
Tashelhiyt			*xizzu*
Ghomara	*ǧəɛda*		
Senhadja			*xizzu*
Tarifiyt			*xizzu*
Iznasen			*xizzu*
Snous			*xizzu*
Kabyle	*zzṛudəyya, zzṛudəgga*		
Figuig	*zzṛudəyya*		
Mzab		*tifəsnəxt*	
Ouargla		*tafəsnaxt*	
Ghadames	*əssínaka*		
Nefusa		*tfisnáɣt* [Provasi 1973:527]	

Finally, the terms for cabbage and egg plant are always loans from Arabic. In the case of the egg plant, this is to be expected, as it spread during Islamic times. In the case of cabbage, such a reason is less clearly present. The Berber terms reflect the many slightly different Arabic terms in use:

'egg plant' (cf. Behnstedt & Woidich 2011:461ff.; Heath 2002:436ff.)

Tashelhiyt *bitlžan*, *budənžal*, Iznasen *dənžal*, Snous *ddənžal*, Metmata *badənžal*, Kabyle *batənǧal*, Mzab *badənža*, Ouargla *badənža*, Siwa *ləbǧənža, ləbǧənǧa* (Laoust).

Senhadja *lbaranya*, Iznasen (*l*)*bṛaniya* (Oomen p.c.) < dialectal Arabic *bṛaniya, baṛaniya* (Behnstedt & Woidich 2011:463).

'cabbage' (cf. Behnstedt & Woidich 2011:482ff.)

Tashelhiyt *lkrumb*, Senhadja *ləkrumb*, Snous *ləkrum*, Metmata *lkrumb*, Kabyle *ləkʷṛəmb, ləqʷṛəmb*,[63] Figuig *ləkṛuṛəb*, Mzab *ačrəmba*, Ouargla *akrəmba*, *tizizwət* (lit.: green stuff), Tarifiyt *qulis* < Spanish *col*(*es*).

Fruits

Berber horticulture revolves around two trees, the fig tree and the date palm. Both trees and their fruits have specific Berber names of great anciennity.

[63] Brosselard 1844:109 has forms that point to *akrəmbiṭ* with unexplained final *ṭ* (cf. the plural *ikrənbiṭən*).

The basic term for date, *tiyni* < **te-ḇăyne* is a loan from Ancient Egyptian or Coptic and was probably introduced together with date cultivation (Kossmann 2002b). The basic term for fig, *tazart*, is an original Berber term, obviously related to terms for wild berries (Chaker 2006:241), e.g. Central Moroccan Berber *tazart* 'figs, fig trees', *azar* 'berry of the wild jujube tree'. More to the east, a different term is used, based on a form reconstructible as **a-məḍkʸ* or something similar:[64] Mzab *amәššәi*, Ouargla *amәššәi*, Ghadames *ălmăṭk*,[65] Nefusa < motk >, Sokna *amáčč*, El-Fogaha *mәkkín* (< **mәččin*?), Siwa *imәṭšan* (P).[66]

Loanwords are relatively rare in basic terms for these fruits: Senhadja *әttәmar*, Metmata *ttmәr*, Kabyle *әṯṯmәr* (already in Brosselard 1844) 'date' come from regions where dates are not grown. Awdjila *lḥabb* 'date' is a specialization of the more general Arabic term *ḥәbb* 'grain, fruit'. Loanwords for 'fig' are based on the term *bakur*, basically the (Arabic) name of a type of fig, the first figs of the season, which was generalized to refer to figs in general: Figuig (dialectal) *bakur*, Iznasen *lbaḵur* (also *ṯazarṯ*) Snous *lbaḵur*. While there are few loans for the basic terms, fig and date cultivars often bear Arabic names.

All Berber languages studied in the corpus use a Berber term for grape. There are two basic terms: *aḍil* (and phonetic variants), used in Morocco and in the Algerian oases, and a form going back to *tiẓwәrt* or something similar, attested more to the east: Snous *ṯiẓurin* (simlarly the other western Algerian varieties), Nefusa *dzurín* (Provasi 1973:530), Siwa *tәzrin* (Laoust). Kabyle has both terms: *aḍil* and *ṯiẓwәrṯ*. The latter noun has a similar form as the term for root (or vein), e.g. Kabyle *aẓar*, Figuig *aẓwәr*. The semantic link between 'root' and 'grape' is not obvious, however.

The term for melon is more complicated. In many varieties, the Arabic term *bәṭṭix* ~ *bәṭṭiḥ* has been taken over (cf. Behnstedt & Woidich 2011:514ff.): Tashelhiyt *lbṭṭiḥ*, Senhadja *lbәṭṭix*, Tarifiyt *abәṭṭix*, Iznasen *lbәṭṭix*, Snous *lbәṭṭix*, Kabyle *aḇәṭṭix*, Nefusa *abәṭṭíx*. Laoust (1932) gives *tabәṭṭuxt* for Siwa, but this probably refers to the watermelon. In Egypt, *baṭṭix* is a watermelon and Souag (2010:81) has a form *tamuksa* referring

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[64] In view of the Ghadames and Nefusa forms, Chaker's derivation of *amәššәi* from the verb *әčč* 'to eat' cannot be maintained (Chaker 2006:241).

[65] The Arabic article *ăl-* is here a marker of the collective, applied to a Berber etymon, cf. 6.3.2.

[66] Brugnatelli (1994) argues that another term for 'fig', Kabyle *ṯanәqʷlәṯṯ*, could go back to a Mediterranean substratum term. Although he is right in pointing to the problems of an Arabic etymology of this word, the presence of single *q*—not a proto-Berber sound—seems to contradict his cautious proposal.

to melon.[67] There are a number of non-Arabic terms referring to melon, it seems. The first term is represented by Ghadames *tamăksa*, Siwa *tamuksa*, possibly also Awdjila *təkšáymt* ('watermelon'). In Ouargla the cognate term *tamisa* refers to a type of squash. Another term is Tuareg *telăğăẓt, elăğăẓ*, 'melon'. This is probably related to Ghadames *ălgəzez* 'watermelon' (see below). A further term is represented by Ntifa *lmnun*, Figuig *amlul*, Mzab *amlun*, Ouargla *amlul*. This may be a direct French loan into Berber, but one would have expected to find the term in Maghribian Arabic too. It could also be a much earlier loan, from Latin *mēlo* (Acc. *mēlonem*). Finally, there is a possible link with the common Berber root MLL 'to be white'.

The study of melon terms is complicated by lack of precision in the botanic identification. Thus the French term 'melon vert' ('green melon') apparently refers sometimes to a cucumber-like plant; similarly it is very well possible that some of the terms refer to squash-type of plants rather than to melons.

In Berber, watermelons are normally differentiated from (honey) melons—there is some confusion in the cognates for Awdjila (on Siwa see above) which has *təkšáymt* for watermelon rather than for melon. In Ghadames a term *ălgəzez* (probably connected to Tuareg *elăğăẓ* 'melon') is found, which looks like a loan from Arabic,[68] although I could not establish its source. All other varieties use a variant of Arabic *dəllaḥ* ~ *dəllaɛ* (cf. Heath 2002:106, 439; Behnstedt & Woidich 2011:511ff.): Tashelhiyt *ddllaḥ*, Senhadja *əddəllaḥ*, Tarifiyt *ddəlliɛ*, Iznasen *ddəlliɛ*, Snous *ddəlliɛa*, Kabyle *ddəllaɛ*, Ouargla *taḍəllaɛt*, Nefusa *əddullάɛ*. The vocalisation with /i/ in some varieties could be influenced by *lbəṭṭix* 'melon'.

A number of fruit terms alternate between Punic and Latin loans on the one hand and loans from Arabic on the other. Here we can be sure that the introduction of the fruit predated the Islamic period; however, it is very well possible that locally the introduction of the fruit was later. In such cases, the introduction of the Arabic term could still be a case of additional borrowing.

The fruits in question are apple, pomegranate, quince and pear. Most languages use a loan from Arabic for apple: Tashelhiyt *ttffaḥ*, Senhadja

[67] Laoust gives *taməksa* in the meaning 'watermelon'. Laoust did most of his research in Morocco and Algeria, so it is understandable that he made an error in interpreting the Egyptian terms, which are the inverse of those in Algeria and Morocco, especially if he did so by eliciting a word list.

[68] Not only the Arabic article points to this, but, more convincingly, the presence of /g/ rather than /ğ/. In Ghadames, the phoneme /g/ seems to be restricted to loans from Arabic (Kossmann fc.-d).

ttəffaḥ, Tarifiyt *ttəffaḥ*, Iznasen *ttəffaḥ*, Snous *təffaḥ*, Kabyle *ṯṯəffaḥ*, Figuig *ttfaḥ*, Ghadames *əttuffaḥ*, Nefusa *ttəfféḥ*, Siwa *təffáḥ* [N]. The Punic form—ultimately from the same Semitic root—has /d/ instead of /t/ and /u/ instead of /aḥ/: Chaouia *aḏfu*, Djerba *aḏfu* (Vycichl 2005:11). Moreover, in a number of languages there seems to be a blend of the two forms, which has *d* instead of *t* (like in the Punic loan), but ends in *aḥ* (like in Arabic). This is mainly found in the unity nouns, while the collectives have *tt-*: Tarifiyt *ṯaḏəffaḥṯ*, Kabyle *ṯaḏəffaḥṯ*, Ouargla *tadəffaḥt*.

A similar story can be told about the ancient Punic loan *armun* 'pomegranate'. The Punic term is found in Chaouia *armun* (Huyghe 1907:69), Mzab *armun*, Ouargla *aṛmun*, Nefusa *armún*, Ghadames *armun* and Siwa *armun* (Souag 2010:65). Arabic *ṛəmmʷan* is used elsewhere: Tashelhiyt *ṛṛmman*, Senhadja *ərrəman*, Tarifiyt *aṛṛəmman*, Iznasen *ṛṛəmman*, Snous *əṛṛəmmʷan*, Kabyle *ṛṛəmman*, Figuig *ṛṛəmman*.

The term for pear has a similar variation between a term based on Latin and loans from Arabic (cf. Behnstedt & Woidich 2011, Heath 2002:102ff., 435). The Latin term is still used in Tashelhiyt *tafirast*, Central Moroccan Berber *tafirast* 'pear(-tree)', Senhadja *ṯafirast* (collective: arabicized *lfiras*), Tarifiyt *ṯafirasṯ*, Menacer *tfirast*, Kabyle *ifirəs* 'pear', Chaouia *ṯafirasṯ* 'pear tree' (A. Basset 1961:315). Arabic terms are Snous *langʸas, buɛăwidət, buɛăwiḏa*, Figuig *nnžaž*, Mzab *lanǧaṣ*, Siwa *əlɛanžaš* (Laoust, *sic*?).

In a number of varieties we find a term for quince derived from Latin *cydōnium*: Central Moroccan Berber *taktuṇiyt*, Kabyle *ṯaḳṯunya*, Chaouia *taktunya* (Huyghe 1907:510). Other languages have a loan from Arabic (itself originating in Greek): Tashelhiyt *sfṛžl*, Senhadja *sfəržəl*, Figuig *ssfəṛžəl*, Mzab *əssəfəržəlt*.

The almond is almost invariably referred to by the Arabic term *lluz* (cf. Heath 2002:97) or a phonetic alteration of it, such as Tarifiyt *ǧǧuz* (Lafkioui 2007:74).[69] Ghadames has a completely different term, *ašašid*. Vycichl (2005:10) derives this from Punic *šqd* 'almond'. As shown in Vycichl (1990), Ghadames *š* may correspond to *ɣ* elsewhere in Berber (e.g. *tomarše* 'locust' as compared to *tamuryi* elsewhere), and in Berber *ɣ* may represent voiceless consonants of contact languages (see 3.2, 3.3).

The term for olive is highly interesting. On the one hand there exists a native term, *azəmmur*, which in a number of varieties is the designation of

[69] Note the unexpected Ouargla form *lžužət*, which seems to be cognate to Standard Arabic *ǧawz* 'walnut'. Maybe this is due to the tendency in Ouargli to pronounce *z* as *ž*, thus creating confusion between *lluz* [luž] and *lžuž*, cf. Biarnay (1908:8–9).

the cultivated olive tree and its fruit: Kabyle, Ghadames, Nefusa and Siwa. The same term also exists elsewhere in north-African Berber (Tashelhiyt, Central Moroccan Berber, Tarifiyt, Iznasen, Snous and other western Algerian varieties), but there it refers to the wild olive (French: *oléastre*), a species indigenous to Northern Africa.[70] Dictionary entries suggest that it can be used to designate any wild-growing olive tree. In these varieties, an Arabic loan is used for the domesticated species: Tashelhiy *zzit*, Central Moroccan Berber *zzitun*, Ghomara *zzaytun*, Senhadja *əzziṯun*, Tarifiyt *ṯazitunt*, Iznasen *zzəḵ̱tun*, Snous *zziṯun*, Figuig *zzitun*, Mzab *zzitun*, Ouargla *zzitun* El-Fogaha *zzetún*. The story is complicated by the Ahaggar Tuareg term *ăhatim* 'olive', which is a reflex of Punic *zētīm* (*h* < **z*).[71] One way of understanding the history of the term is the following. *Azəmmur* first simply referred to the wild north-African species. When olive cultivation was introduced (by the Phoenicians?), either the Phoenician term was taken over (as still attested in northern Tuareg), or the name of the wild species was extended to the domesticated one. Finally, the Arabic term spread over a large number of varieties, substituting the Phoenician form.

Finally, there are a number of fruits, which are always referred to by a loan from Arabic. This is the case of apricot, prune and peach. It is possible that they were introduced during the Islamic period; however as shown by terms such as 'almond', where only one single variety maintains a non-Arabic form, this argument is not entirely compelling.

Conclusion

The *in extenso* study of terms for cultivated plants shows that there is a major difference between the main crops on the one hand—cereals, dates and figs—, that are only rarely borrowed from Arabic, and other cultivated plants, where Arabic loans are frequently found. In many cases it is evident that the Arabic term constitutes a substitution of a pre-existing Berber term (sometimes itself a loan from Punic or Latin).

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[70] An alternative term for this tree is *azibur*, attested in Beni Menacer (Western Algeria).

[71] Cf. also the Tuareg term *alew* 'type of wild olive tree', which has been unconvincingly linked to Latin *oleo* (Laoust 1920:446). The botanic background of the Saharan species is not entirely clear, but it is not necessarily an importation from the north. The fruits of *alew* have no nutritional value, cf. Benchelah, Bouziane & Maka 2006:216–217.

4.6.6 *Domestic Animals*

Berber languages have a rich array of reconstructible terms for different types of domestic animals (cf. Blench 2001, Louali & Philippson 2004). There is no doubt that early Berber had terms for donkeys (cf. Blench 2000), horses, mules, (woolly) sheep, goats, cows, camels (Kossmann 2005:27–50), and dogs. Arabic influence on the major terms in this domain (i.e., excluding specific races) therefore implies the introduction of a term for a referent already present in the environment of the Berber speakers.

Like in English, domestic animals may have several basic terms, one for the male animal, one for the female animal. To this, one for the child can be added—with some species several age-groups are distinguished by means of underived nouns. Berber has regular gender derivation, so gender can be indicated without changing the lexeme, e.g. Iznasen *aɣyul* 'male donkey' vs. *ṯaɣyult* 'female donkey'. Still, many terms have suppletive forms for the male and the female. In the following, when speaking of different terms for male and female, this suppletion is meant; the regular gender derivation is considered to concern one and the same term.

Arabic influence is found in all three basic uses (male/female/child), sometimes in a rather complicated way. A case in point are terms for the horse in Chaouia, as documented in the Algerian Berber dialect atlas by André Basset (1936). Concerning horses, one has to distinguish four terms: 'stallion/horse', 'mare', 'mares (suppletive plural)' and 'foal'. In a few varieties, male and female foals are differentiated. For these terms, Arabic loans occur widely in Chaouia, but there is not a single variety where all terms are loans. The distribution Arabic loan/non-Arabic term is different according to the subdialect, e.g.:

point 425[72]	stallion	mare	mares	foal	
term	*yis*	*lɛawḍa*	(*t*)*iɣallin*	*amharun*	
origin	Berber	Arabic	Berber	Arabic	
point 371	stallion	mare	mares	foal (M)	foal (F)
term	*zziməl*	*lɛawḍa*	(*t*)*iɣallin*	*aɣəḍwi*	(*t*)*ažḍɛunt*
origin	Arabic	Arabic	Berber	Berber	Arabic
point 362b	stallion	mare	mares	foal	
term	*zziməl*	*lɛawḍa*	(*t*)*iɣallin*	*ažḍɛun*	
origin	Arabic	Arabic	Berber	Arabic	

[72] Point 425: Gosbat (Bariha, western Chaouia); point 371: Tlidjen (Tébessa, south-eastern Chaouia); point 362b: B. Barbar, Ras el Oued (Souk Ahras, north-eastern Chaouia).

In the following, some of the main terms for domestic animals will be studied, and the influence of Arabic in the system will be laid out.

Donkey

There are two basic terms for donkey in Berber, *aɣyul* and *eyzeḍ* ~ *ezyəḍ* (cf. Kossmann 1999a:230ff. for forms and reconstruction).[73] They have different geographical distribution, and there seems to be no semantic difference involved originally. Both stems refer both to male and female donkeys. Blench (2000) suggests that the terms ultimately go back to local terms for the wild ass, a species indigenous to northern Africa. The only case of an Arabic term designating adult donkeys is Figuig *taḥmaṛt* 'female donkey'. In this language, the Berber term *aɣyul* is restricted to the male donkey.

The term for donkey foal is more often than not a derivation from Arabic *ǧaḥš*. Donkey foals apparently give rise to expressive terms, and both the Arabic and the Berber denominations have often undergone expressive changes (on which see 5.4). The following terms are attested:

< Arabic *žəḥš*	Kabyle *ažḥiḥ, ažḥiš, ažḥuḍ* and variants (A. Basset 1936), Chaouia *ažḥiḥ* (A. Basset 1936), Figuig *ažəḥḥuš, žžḥəš*, Ouargla *ilžəḥš*, Ghadames *əžžăḥš*
< non-Arabic	Tashelhiyt *asnus*, Central Moroccan Berber *asnus*, Senhadja *asnus*, Tarifiyt *asnus* Nefusa *akəršún*, Sokna *akəršún*, Siwa *akərčun* Metmata *aqərzuḍ* (probably an expressive formation related to *ezyəḍ* 'adult donkey') Central Moroccan Berber *ašniḍ* Iznasen *azɛuq*, Snous *azɛuq*

The most widely attested non-Arabic forms are *asnus* (Morocco) and *akəršun* (Libya and Siwa). The term *asnus* comes from Latin *asinus* (see 3.3); the etymology of *akəršun* is unclear; the presence of *š*, *č* is not suggestive of a very old Berber term (cf. Kossmann 1999).

Horse

Terms for the horse are more often borrowed from Arabic than terms for donkeys. The original Berber system probably consisted of three or four

[73] Preliminary reconstructions. In addition, there is the term *aməktár* (Sokna), *məktár* (El-Fogaha), which is geographically restricted to central Libya. I am not aware of an Arabic etymology for this term.

terms: *ayis* 'stallion, horse', *tagmart* 'mare', *tiɣallin* 'mares'[74] and possibly *aɣədwi* 'foal'.[75] Analogical reformations have changed this system in many languages, e.g. by introducing a regular singular—plural pair in the feminine, e.g. Figuig sg. *taymart*, P *tiymarin* with generalization of the singular stem vs. Mzab sg. *tɣallət*, P *tiɣallin* with generalization of the plural stem. More rarely the system has evened out male and female as in Ghadames *aǧmar—taǧmart*, or Central Moroccan Berber *tagmart* 'mare', *agmar* 'male horse (for working)' as opposed to *iyyis* 'horse for riding'.

Arabic influence is found in all four meanings. Only very few varieties have lost the Berber terminology alltogether; cf. however Ghomara, which has *aḵayḍar* 'stallion, horse', *lɛawḏa* 'stallion' (regular plural: *lɛawḏaṯ*) and *ddḥiša* 'foal', all from Arabic.

Arabic terms for adult horses come from different Arabic bases, most important of which are *ɛəwd*(*a*) (cf. Schuchardt 1908:360) and *kiṭar* (on the etymology, see Colin 1930:126):

< *ɛəwd*(*a*)	Ghomara *lɛawḏa* 'mare'; Senhadja *lɛawḏa* 'mare', Iznasen *lɛəwḏa* 'mare' (P *lɛəwḏaṯ*); Kabyle *aɛawḏiw* 'stallion, horse'; Chaoui *lɛawḏa* 'mare'; Ouargla *lɛawəd* 'stallion, horse'
< *kiṭar, kidar*	Tashelhiyt *akiṭar* 'stallion', Rif *aḵiḍā* (= *yis* < Berber) 'stallion, horse'; *ṯaḵiḍāṯ* 'mare'; Ghomara *aḵayḍar* 'stallion, horse'. The term is known elsewhere in a depreciative meaning, e.g. Central Moroccan Berber *akidar* 'nag', Senhadja *akidar* 'pack horse', Snous *ašidar* 'low quality horse', cf. for a similar situation in Moroccan Arabic, Heath 2002:101.
others	Snous *lfəḥəl* 'stallion, horse'; Chaouia (dialectally) *zziməl*, Ouargla *ləḥṣan* 'stallion, horse'

Terms for foals are less consistent over the Berber territory. One Berber term is attested in quite distant regions and may therefore represent a proto-Berber form: Chaouia *aɣəḏwi*, Sokna *aɣḍwí*. It is not impossible that Zenaga *oʔdʸi* (< *aɣdiʔ ?) 'horse' reflects the same term. Some other non-Arabic terms are restricted to a few Algerian varieties. Interestingly, these varieties have suppletive masculine and feminine forms, e.g. Metmata *arus* 'male foal', *ṯbuḡḏi*, 'female foal'. The latter term is also found as *ṯbuyḏi, tbuḡyi, tbuḏyi* and others (cf. A. Basset 1936 for more precise information). The terms are restricted to western Algeria, except for Ouargla

[74] Tuareg has an entirely different stem, *ebăge*, which is used for both male and female horses, and which is used both in the singular and in the plural. In addition to this, the masculine-only term *ayəs, ayis* is used.

[75] Schuchardt's derivations of *ayis* from Arabic *ḥiṣān* (1908:371), of *aɣədwi* from Arabic *ǧaḍaɛ* (1908:366) and of *tagmart* from Latin *sagmaria* (1918:41) cannot be maintained.

tbudit ‘female foal’. Siwa has another term, which does not seem to be Arabic in origin either: *aflaw* [La].

All other varieties have Arabic loans, mostly based on *žəḥš* (originally ‘donkey foal’) and *ždəɛ*.

< *žəḥš*	Ghomara *ddḥiša*, Kabyle *ažḥiḥ*, Ouargla *ilžəḥš*
< *ždəɛ*	Tashelhiyt *aždaɛ*, Senhadja *iždaɛ*, Tarifiyt *ažɛuḏ* (~ *afḏxan*), Iznasen *iždəɛ*, Snous *aždaɛ*
Other forms:	Tarifiyt *afḏxan*, Chaouia *aməhrun*

Mule

The fruit of breeding a horse and a donkey is referred to by the Berber term *asərdun* in the western part of the Berber-speaking territory (Tashelhiyt, Central Moroccan Berber, Ghomara, Senhadja, Tarifiyt, Iznasen, Snous, Kabyle, Figuig). Arabic terms are used elsewhere: Mzab *ləbɣəl*, Ouargla *ləbɣəl*, Nefusa *əlbəɣál*, Siwa *labɣəl* [La]. Ghomara makes a difference between *asərdun* ‘male mule’ and Arabic-based *bbhima* ‘female mule’.

Cow

There are many Berber terms for bovines. In this section, only three terms will be studied, ‘cow’, ‘ox’, and ‘bull’. The general term for ‘cow’ or ‘female bovine’ is only rarely borrowed. El-Fogaha has *əlbúgra*, while Beni Messaoud (Western Algeria) has a form *ṯaɛəṛṛumt* (in other varieties a heifer, cf. A. Basset 1939). Otherwise, two Berber terms are found. The most common term is *tafunast* (and phonetic variants), which is the feminine counterpart to widely attested *afunas* ‘ox, male bovine’. This is found all over northern Berber with the exception of Ghomara. A different term is only sparsely documented, but has a wide distribution which attests to its anciennity: Ghomara *tasa*, P *tisəḵṯan*, Kabyle P *ṯisiṯa* ~ *ṯisṯan* ‘cows’ (sg. *ṯafunasṯ*), Tuareg *tesut*, P *tisita* (Ahaggar), *tăss*, P *čitan* (< *titan*) (Ayer), *tăss*, P *iwan* (Mali), Zenaga *täššɨ*, pl *ətšiʔḏaʔn*. The term apparently consists of a singular **tasəʔ* and an irregular plural[76] **tisəʔtan* or something similar, and may have cognates elsewhere in Afroasiatic (Louali & Philippson 2004a). Finally, Senhadja and some western Tarifiyt dialects have *ṯamwa* alongside *ṯafunasṯ*.

[76] One would have expected the feminine plural marker **-en* (> *-in*) instead of *-an*, which is otherwise restricted to masculine nouns. Moreover the presence of stem-final (or suffix-initial) /t/ in the plural is unexpected.

The general term for 'male bovine (castrated or not)' has not been borrowed from Arabic in any of the studied languages. Commonly, *afunas* (and phonetic variants) is found: *afunas* (Central Moroccan Berber, Senhadja, Rif, Iznasen, Snous, Figuig, Mzab, Ouargla, Ghadames, Awdjila), *funás* (Nefusa, Siwa [N]). Another well-attested term is Tashelhiyt *azgr*, Central Moroccan Berber *azgər*, Ghomara *azgər*, Senhadja *azgar*, Kabyle *azgər*, Tuareg *azgăr* (Ayer), Zenaga *äzgər*. In Central Moroccan Berber, the latter term refers to both oxen and bulls, while *afunas* is restricted to oxen. Other terms are Senhadja (rare) *amwa* and Western Algerian *ayyuḡ* (Beni Salah, Beni Menacer), *yuḡ* (Metmata), which goes back to Latin *iugum* 'yoke, oxes attached to the yoke'.

More specific terms for 'bull (uncastrated adult male bovine)' are mostly from Arabic: Ghomara *əlfḥəl*, Senhadja *aɛažmi* (elsewhere: 'calf'), Iznasen *ləfḥəl, aɛəžmi* (elsewhere: 'calf') Kabyle *aṛamul, aɛərrum*. Tashelhiyt uses a euphemism: *aɛlluš n zzawit* or *azgr n zzawit*, i.e. 'calf/ox of the zawiya'.

I shall not go into the different terms for young bovines. As shown in A. Basset (1939), there are many systems for bovine ages, which are quite different from dialect to dialect, both in the number of age gradings that are distinguished and in the meaning of the specific terms. Thus, for example, in part of Chaouia, *aɛəžmi* designates the youngest category of calves, while in other varieties of the same language the term is used for calves over one year old. Except for the discussion of northern Algerian terms in A. Basset (1939), sources tend to be vague about different age groups, which makes the study of this terminology quite hazardous. Moreover, there is much overlap between Berber terms and (some) locally attested Arabic terminology. In some cases, Berber is clearly the donor language, as in (localized) Moroccan Arabic *gənduz* 'calf', which comes from a well-attested northern Berber term *agənduz* (and phonetic variants) 'calf (in most varieties: less than one year old)' (Central Moroccan Berber *agənduz*, Iznasen *ayənduz*, Snous *ayənduz*, Beni Menacer *aḡənduz*, Kabyle *aḡənduz*). The etymological background is more difficult to establish for shared terms which in Arabic are restricted to (some) Maghribian varieties, but which on the other hand show clearly un-Berber phonological features. This is the case, it seems, of forms such as *aɛəžmi* 'bullcalf' and *taɛəžmit* 'heifer' (also used for calf or bull more in general, see above). Finally, there are terms which look quite Arabic, but have no clear etymology, such as Ghomara *aɛəbbiz*, Senhadja *abaɛuz* (Renisio 1932).

Goat

In goat terminology, Arabic influence terminology is rather restricted. The term for the female is almost never borrowed from Arabic. One mainly finds the singular term *taɣaṭṭ* (< *ta-ɣaḍ-t*), which tends to have an irregular plural *tiɣăṭṭăn*. This plural is exceptional because it has a masculine plural suffix (**-ăn*) with a feminine noun (one would have expected **-en*), e.g. Tashelhiyt *tiɣiṭṭn ~ tiɣaṭṭn*, Central Moroccan Berber *tiɣəṭṭən*. In a number of languages, the regular plural suffix has been introduced, e.g. Mzab *tiɣaṭṭin*, Figuig *tiɣəṭṭin ~ tiɣiḍaḍ*. In Ghadames, the term *wŭlli*, normally used as a collective for goats and sheep together (see below), has become specialized as a plural of *teɛaṭ* 'goat'. Siwa *iɣed* (M), *ətɣatt* (F) seems to take up the term *iɣăyd* for the young goat (see below). Finally, Zenaga has a suppletive plural: S *taʔḍḍ* (< **taɣaḍt*) P *tūlläḏən*.[77] The terminology is quite consistent in northern Berber. The main exceptions are languages in which the term *tiɣsi* 'sheep/goat' has become specialized (or is reported so) in the meaning 'goat' (Ouargla *tixsi*, Sokna *tíxsi*, El-Fogaha *tíxsi*, Ahaggar Tuareg *teɣse*). Borrowing of this term is only found in the plural in Senhadja de Srair, which uses the Arabic term *ləksiba* (elsewhere in the Rif: sheep and goats) (Lafkioui 2007:105–106) and *ləbhaym* (Ibáñez 1959:84).

Terms for the male goat are more diverse. Most generally attested is *azalaɣ ~ azulaɣ*, which is probably the original term: Tashelhiyt *azalaɣ* 'young male goat with horns that are about three inches long', Nefusa *zaláɣ* (Provasi 1973:529), Sokna *zálaɣ* 'young male goat', Awdjila *azálaq*, Siwa *zaláq* [N], Tuareg *ăholaɣ* (Ahaggar), *əzolaɣ* (Ayer), Zenaga *ažayi* (< **azaləɣ*). Other non-Arabic terms are Central Moroccan Berber *abərriḍ*, Ghadames *aǧur* (cf. Mali Tuareg *ăǧorh* 'castrated goat'), Kabyle *aqəlwaš*. In several varieties 'kid' and 'he-goat' have become mixed up: Ouargla *iɣid, iɣəyd*, El-Fogaha *aɣíd*. One well-attested term probably has an Arabic background, even though the Arabic term is only attested in the Maghrib (Heath 2002:100): Central Moroccan Berber *aɛətrus*, Senhadja *aɛtərus*, Rif *aɛəṯrus*, Iznasen *aɛəṯrus*, Snous *aɛəṯrus*, Figuig *aɛətrus*, Mzab *aɛətrus*. Other Arabic terms—sometimes with expressive reformations—are Iznasen *aɛənzuq* 'male goat' (cf. Arabic *ɛənzi*, Heath 2002:100–101), Kabyle *aḥuli* 'young male goat', Beni Salah, Beni Messaoud (Western Algeria) *aždaɛ* (cf. Arabic *ždi* 'kid' and *ždəɛ* 'foal', cf. Heath 2002:100).

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[77] This could come from **tiḇəlla/ăten* or **tiwəlla/ăten*. If the second reconstruction is right, there is obviously a relationship to northern Berber *wəlli ~ ulli* 'ovines'; in the first case, a relationship with **teḇăle* 'ewe' is possible.

The young goat is almost invariably referred to by the Berber term *iɣăyd*, which is similar to, but still different from, the adult term *taɣaḍt*. The main exceptions are Zenaga, which has *äygaḍ* 'young kid' (possibly < **alkaḍ* or **aykaḍ*), *aɣăyăr* (< **agalar* or **agayar*) '6 months old kid' and Senhadja *imzi* (probably /imẓi/ from the root MẒY 'to be small'), and *ṯamiyant* (next to *iɣəyḍ* and *iɣəžḏ*). The only Arabic term attested for 'kid' is Siwa *rəbɛí*.

Sheep

Sheep terminology has a similar system as used with horses: a male term, a female term with a suppletive plural, and a term for the young animal.

The female term can be reconstructed as **teḇăle* (> *tili* in most of Northern Berber), P **tiḇăt*(*t*)*ăn* (> *tattən* in most of Northern Berber). The plural is special not only because it is suppletive, but also because it seems to include the masculine plural marker **-ăn* rather than the expected feminine plural marker **-en*. Some languages have regularized the plural, e.g. Figuig *tili*, P *tiliwin*. A few languages have different terms, mainly due to semantic change: thus El-Fogaha *dzamárət* and Siwa *tizmərt* (m. *izmər*) correspond to a term meaning 'lamb' elsewhere, and the Tarifiyt, Iznasen, Kabyle word *ṯixsi* 'sheep' is used as a more general term for 'female sheep or goat' elsewhere. Senhadja uses, among others, *ṯiḵərrit*, which is a female derivation from *iḵərri* 'ram'. Tashelhiyt *tahruytt* is interesting because of its similarity to Tuareg terms such as Iwellemmeden *ehăre* 'flock, herd', Zenaga *īri* 'herd of camels'. Note however that Tashelhiyt *h* normally does not correspond to Tuareg *h*. One also remarks a number of terms with initial *b* used in north-western Morocco: Ghomara *tabərrəḵṯ* (corresponding to male *abərrəy*), Senhadja *abəɛɛaš* (P *ṯattən*, Lafkioui 2007:111) and *ṯabɛažṯ* (P *ṯibɛažin, ṯattən*, Ibáñez 1959:263). At least the Senhadja term could be based on an onomatopoea (*bəɛɛ* is a well-attested Maghribian way of imitating the sound of a sheep). In a number of languages, the term *tixsi* (P *ulli*), referring elsewhere to both goats and sheep has become specialized in the meaning 'sheep', e.g. Central Moroccan Berber *tixsi* (P *ulli*—with the same specialization from sheep/goat to sheep only), Tarifiyt *ṯixsi*, Iznasen *ṯixsi*, Snous *ṯixsi*, Kabyle *ṯixsi* (P *ulli*).

Arabic influence is found in only two varietes: Mzab *ənnəɛžət* and Awdjila *taḥólit* (according to Paradisi more used than the Berber term *təḇál*, P *tḇittín*).

There are several Berber terms for the male sheep. Best-attested is the following: Senhadja *iḵərri*, Tarifiyt *išarri*, Iznasen *iḵərri*, Snous *išərri*,

Kabyle *ikərri*, Ouargla *ikəṛṛi*, Nefusa *akrár*, Tuareg *ekrăr* (Ahaggar), *əkər* (Ayer), Zenaga *əgrär*. More restricted is the distribution of Figuig *ufriš*, Mzab *ufrič*, Kabyle (unusual) *ufriḳ*. In eastern Berber, a different term is attested: Sokna *alə́ğği*, Awdjila *alə́žži*.

In a number of varieties, the word for 'lamb' has semantically changed to 'adult male sheep'; its masculine form then refers to the male sheep: Tashelhiyt *izimr*, Central Moroccan Berber *izimr ~ izimmər*, Ghadames *aẓomăr*, El-Fogaha *zamár*, Siwa *izmər*. The same is true for a possible loan from Arabic Beni Menacer *aɛəlluš* (fem. *aɛəlluš̲t ~ t̲ixsi*). Arabic loans occur alongside Berber terms: Central Moroccan Berber *aḥuli* (~ *izimər*), Tarifiyt *aḥuři* (~ *t̲ixsi*), Iznasen *aḥuli* (~ *t̲ixsi*), Kabyle *axəṛfi, afəxli* (cf. *iḵərri* 'castrated ram').

The most common Berber terms for 'lamb' is represented by Central Moroccan Berber *izimr ~ izimmər* ('ram, lamb'), Senhadja *izimmar*, Tarifiyt *izmā*, Iznasen *izmər*, Snous *izmər*, Kabyle *izimər*, Figuig *izmər*, Nefusa *zumár*, Tuareg (Ayer) *əžemər*, Zenaga *iži?mär*. The same term is used for 'ram' in other languages (Tashelhiyt, Ghadames, El-Fogaha, Siwa), and it is difficult to make out the original meaning of the word. Other non-Arabic terms are Tashelhiyt *alqqaɣ* (probably related to the verb *ilwiɣ* 'to be soft'), *taɣla* 'young ewe', Beni Salah, Beni Messaoud, Beni Menacer (Western Algeria) *abzim*, Kabyle *aḇəɛṛaṛaš* (~ *izimər*). Arabic loans are Central Moroccan Berber *aɛlluš* (~ *izimər*, *izimmər*), Mzab *aɛəlluš*, Ouargla *aɛəlluš* (cf. Tashelhiyt *aɛlluš* 'calf'); Tashelhiyt *aḥuli* 'one year old sheep', Siwa *ḥulí* 'lamb' [N]; Sokna *afḍím* (cf. Classical Arabic *faṭam* 'to wean').

General Terms for Sheep and Goat

In addition to specialized terms for goats and sheep, most Berber languages also have terms that can refer to both species. The most common Berber pair is singular *tixsi* vs. collective *wəlli ~ ulli*, which are both well-attested all over Berber. The singular element became specialized for either goats or sheep in a number of languages (see above). The collective has sometimes been replaced by Arabic terms: Tarifiyt *řmař* (< Ar. *l=mal* 'property'), Ouargla *ləɣləm* (~ *ulli, wəlli*), Nefusa *əlḥeywán*. Lanfry (1973) gives only 'sheep (collective)' for *ălɣanăm* for Ghadames.

Camel

The Berber term for camel is very well-attested and goes back to something like **alɣəm* or **aləɣəm* (for attestations and etymology, see Kossmann 2005:27–55). Only very few languages use another term, most prominently

Tashelhiyt *aram ~ arɛam*, which has no clear etymology. Northern Berber languages have a single term for male and female camels, using gender derivation to mark the difference. This is different from Tuareg, where different terms are used (cf. Ritter 2009:II-397–400 for more information). Ghadames has taken over the words for camel and female camel from Tuareg: *aḷăm* 'male camel', *amali* 'camel stallion', *taḷămt* 'female camel'. Only one language adopted the Arabic word for camel: Ghomara *əlǧməl*. There are no camels in the region where Ghomara is spoken.

The term for 'young camel' is not very well attested in northern Berber, which may be due to a lack of special terminology, esp. in regions where camels are not that frequent. Most common is the Arabic loan *agɛud* (Figuig, Ghadames), *əlgɛud* (Siwa [La]). Other terms are Tashelhiyt *abžaw* and Ouargla *akəɛluš*, both of unclear origin. The Tuareg/Zenaga term *awăṛa* (Ayer Tuareg), *äwaʔräh* (Zenaga) is not attested in the north.

Dog

The terms for 'dog' are almost consistently of Berber origin. The ancient term was something like *aydi*, P *iyḍan*, with an irregular change of /d/ into /ḍ/. The feminine is based on the same word by means of regular gender derivation. In a number of varieties a term which probably originally meant 'young dog' now designates the adult dog, often in competition with the *aydi* etymon: Tarifiyt *aqzin*, Beni Messaoud (Western Algeria) *aqžaw*, Awdjila *gzin*; cf. also the pejorative term *aqžun* in Kabyle. This term has undergone considerable expressive reformations, cf. section 5.4. Only one variety has a different non-Arabic term: Siwa *agʷəṛzní* [N]. An Arabic background may be assumed for Ghomara *arəkkal* (~ *ayḍa*), which could be based on the verb *rkəl* 'to kick', itself a loan from Arabic. Senhadja has *ahərḍan*, which may be related to a dialectal Arabic verb *hrəd* 'to chew noisily, to devour, to beat, to rip violently'. Terms for puppies mostly use the form *ikzin* (> *a/igzin*) or an expressive derivation from this (e.g. Beni Snous *aqzin*, Beni Messaoud *aqužan*). Other terms are rare, cf. however onomatopeic Ouargla *aḥəbḥab*. Only Kabyle *akəlbun* 'puppy' is a loan from Arabic.

Chicken

There are a number of terms for adult chicken in Berber. Most common is *ayaziḍ ~ agaziḍ ~ awaziḍ ~ aziḍ*, which in most languages has regular gender derivation. Other terms are Awdjila *təkažít* 'chicken' (cf. Ayer Tuareg *tekəžit*), which is opposed to male *aqažíṭ* (< *agaziḍ*?) 'rooster'. In a number

of varieties, a loan from Latin *pullus* is used: Tashelhiyt *afullus*, Central Moroccan Berber *afullus*, Ghomara *afulus*. This may originally have meant 'chick' rather than adult 'chicken' (see below). While the female chicken is always referred to by a non-Arabic term, roosters are sometimes referred to by a loan from Arabic: Ghomara *afəṛṛuž, aḇəddiḵ* (cf. Arabic *dik*) (~ *afulus*), Snous *ḥaqul* (~ *yaẓiḍ*). In a number of varieties, 'rooster' is an onomatopoea: Iznasen *aɛəlɛul* (~ *yaẓiḍ*), Beni Salah, Beni Messaoud (Western Algeria) *aɛəqquq*. The etymology of Metmata (Western Algeria) *ǧiɛḏər* 'rooster' and Senhadja *abərrug* 'rooster' is not clear.

The chick is referred to by several terms. In the first place, the Latin term *pullus* is often used referring to the young animal: Senhadja (localized) *afullus, afillus* (Lafkioui 2007:262), Tarifiyt *fiǧǧus, fuǧǧus* (Lafkioui 2007:262), Iznasen *afəllus*, Beni Menacer, Metmata (Western Algeria) *fullus*, Figuig *fullus*, Mzab *fullus*, Ouargla *fullus*. Other terms are Tashelhiyt *akiyaw*, Nefusa *bibályu* (Provasi 1973:524), Awdjila *taktátt*, Siwa *attiṭaw* [La]. Quite commonly a reduplicative term is found, which imitates the sound of young chicken: Senhadja *išəwšəw* (Lafkioui 2007:262), Iznasen *išəwšəw*, Snous *šišu*, Kabyle *ičəwčəw*, El-Fogaha *šwəšíwat*, Awdjila *ažižíw, ašišíw*. Outside our realm of investigation, note Tuareg *ekărt* (Ahaggar), *akərət* (Iwellemmeden), *akrew* (Mali).

Arabic loans are also found for the young of the chicken: Ghomara *afrux*, Senhadja *afarruž, aɛttuq* (f. *ṯaɛttuqṯ*) (~ *afullus*), Iznasen *afəṛṛuž* (~ *išəwšəw, afəllus*), Kabyle *afṛux*, *afəṛṛuž* (both apparently somewhat broader than the chicken-only term *ičəwčəw*).

Conclusions

Arabic loans are relatively rare in the denomination of adult domestic animals, especially for the females. The only animals for which one regularly finds borrowings in the adult terminology are the horse and the mule. Adult male terms are occasionally taken over, esp. with 'rooster', 'male goat', 'male sheep', and terms referring explicitly to the uncastrated bull. The situation with young animals is somewhat different. In spite of the existence of Berber terms in other varieties, one often finds Arabic loanwords for the youngs of the donkey, the horse, the sheep, the camel and, to a lesser extent, the chicken. Arabic loanwords for young dogs and young goats are rare. The greater propensity to borrowing in terms for young animals is also visible in the take-over of Latin *asinus* 'donkey' as *asnus* 'donkey foal'; a similar case is Latin *pullus* 'chicken' which is at the basis of Berber *afullus* 'chick (in some varieties: chicken)'.

4.7 Verbs

Verbs are borrowed on a regular basis. The LWT database for Tarifiyt has 40.9% Maghribian Arabic loanwords among what LWT identifies as verbal concepts (Kossmann 2009a:198). This is almost the same percentage as with nouns (41.9%).

On the basis of a set of 129 verbal concepts[78] that are relevant to traditional rural life in Northern Africa and that I consider impressionistically as relatively unspecialized, percentages of borrowing-only verbs were calculated for a number of languages. While the percentages themselves are not that revealing (the set of verbs being arbitrary), the differences in borrowing rates between varieties are interesting. In the following table, the borrowing rates in verbs are compared to those in the LJ-100 word list; note that there is an overlap of 25 items between the two lists. The languages are put in ascending order relative to borrowings in the LJ-100 list.

language	LJ-100	129-verbs	number of attested forms (129-verbs list)
Ghadames	1%	6%	*n*=114
Awdjila	3% (*n*=92)	15%[79]	*n*=91
Tashelhiyt	6%	18%	*n*=128
Greater Kabylia	7%	21%	*n*=128
Mzab	7%	25%	*n*=129
Figuig	9%	21%	*n*=126
El-Fogaha	9% (*n*=82)	12%	*n*=81
Tarifiyt (Q)	10%	24%	*n*=124
Ouargla	10%	25%	*n*=128
Iznasen	11%	23%	*n*=120
Beni Snous	12%	23%	*n*=123

[78] The following concepts were included: accompany; ask; be afraid, fear; be cured; be hungry; be ill; be jealous; be thirsty; beg/ask f. sth; begin; bend; betray; bite; blow; borrow; break; build; burn (intr); bury; buy; carry; choose; churn; close; comb; come; cook; count; crush/grind; cry/weep; cut; dance; die; dig; do/make; draw water; dream; drink; eat; fall; find; flee; fly; fold; follow; forget; fry; give; go; go down; go in; go out; go up; grill; hang; harvest; hate; hear; help; herd; hide; hire; hit/beat; hunt; invite; kill; kiss; knead; know; laugh; learn; lick; lie; measure; milk; open; plait; plant; play; plow; pound; pour; pull; read; remember; rise; roast; rub; run; say; scratch; see; sell; sew; show; sit; skin; slaughter; sleep; sneeze; sow; spin; spit; split; stand; suck; swear; sweep; swim; take; tear; think; thresh; throw; tie; turn around; understand; untie; wake up; walk; want; wash; wear (clothes); weave; weigh; winnow; wipe; work; write.

[79] Must use was made of the analysis and wordlist in van Putten (fc.), which also accounts for attestations in Paradisi's text corpus.

Table (*cont.*)

language	LJ-100	129-verbs	number of attested forms (129-verbs list)
Djebel Nefusa	13%	32%	*n*=98
Senhadja	17%	32%	*n*=120
Siwa	26%	35%	*n*=110
Ghomara	37%	49%	*n*=112

Overall, the ordering is similar between the two lists: Ghadames is on the lower end of the lexical borrowers. Tashelhiyt is the lowest in a long row of similar percentages (between 6% and 12% in LJ-100 and between 18% and 25% in the verb list). Siwa, Senhadja and Ghomara are the biggest borrowers in both lists. The only major discrepancy between the LJ-100 ranking and the 129-verbs ranking is found with El-Fogaha. In this case, our lacunary documentation is unevenly distributed among the two lists: while 82% of the LJ-100 items are attested, only 63% of the 129 verbs are known to us. As the source (Paradisi 1963) is biased towards native Berber lexicon, this may account for the discrepancy in ranking.

The percentages in the 129-verb list show a number of things. In the first place, borrowing of (relatively basic) verbs is unproblematic in Berber. In the second place, the high percentages of borrowings in the LJ-100 list for Ghomara and Siwa correspond to high percentages in a different database too. This suggests that Ghomara and Siwa are indeed high borrowers, not only with "ultra-basic" words, but also within a larger sample.

4.7.1 *Verbs in Basic Word Lists*

Both the LJ-100 and the Swadesh-100 list contain verbs. Twenty-five verbs are part of LJ-100. About half of these are not represented by a borrowing in any of the languages studied, even though the presence of Arabic alternatives is sometimes to be noted: 'come', 'say', 'drink', 'stand', 'give', 'know', 'hear', 'suck', 'take', 'eat', 'cry/weep', 'tie', 'crush/grind'. The other meanings, for which some borrowings are attested, have been treated in section 4.5.4 and will not be repeated here.

There are eight verbs that occur in the Swadesh-100 list and do not occur in LJ-100. Among these, five are not represented by borrowings in our corpus: 'sleep', 'die', 'kill', 'fly', 'walk'. The other three are:

to swim 10x in Berber
This term is almost consistently a loan from Arabic, mostly *ɛum* (Tashelhiyt, Ghomara, Tarifiyt, Iznasen, Snous, Kabyle, Figuig, Mzab, Ouargla),

also *ɛəwwəm* (Kabyle). Awdjila has *səbbəḥ* (attested in Paradisi's texts, van Putten fc.), which is also a loan from Arabic. Figuig uses, next to *ɛum*, also *ẓẓall* 'to pray'. As swimming is a common way of performing the full ablution (known as *ɣusl* in Islam), this semantic shift is less problematic than it might seem on first sight. Senhadja has *əfṯaḥ* (= /əfṯəḥ/), which probably comes from the Arabic verb *fṯəḥ* 'to pronounce the first sura of the Qur'ân', with a similar semantic path as in the case of *ẓẓall*. The only language which has a form which is not from Arabic is Siwa, where *syəf* [N] is found. We have no attestations from Libyan dialects for this term.

to lie 1x in Berber
While there are quite a number of different terms in use in Berber, only once a borrowing is found: Ghomara *wərrəḵ, mədd*.

to sit 1x in Berber
This term is mostly represented by the Berber verb *qqim*. Only in Djebel Nefusa Berber we find a loan from (Tripolitanian) Arabic, *gəɛməz*.

4.7.2 *Verbs according to Activity Types and Contexts*

In the following, a number of activity types and contexts are defined, and verbs from the 129-list belonging to these contexts are studied. This study does not concern all verbs in the list. The activity types and contexts have been defined on basis of intuition and are arbitrary to a certain degree. Contexts could have been defined differently, and some verbs could have been assigned to another category.

4.7.3 *Verbs of the Household Context*

The verbs of this activity context denote frequent tasks in the household, typically concerning the preparation of food and the making of clothes. Among the verbs concerning food preparation, a number are not borrowed at all: 'draw water (from a well, a river)', 'milk', 'pound (in a mortar)', 'grind, crush'; others are only rarely borrowed: 'churn' (only Mzab *əmxəḍ*), 'cook' (only Nefusa *ṭəyyəb*). More substantive borrowing is found in the following terms:

knead: The best attested Berber term is *gg*^{w} (Senhadja, Tarifiyt, Iznasen, Snous, Kabyle, Figuig (Saa 2010), Mzab, Siwa; Awdjila: *ww*, Ahaggar Tuareg *ăgg*). In addition to this there is Tuareg (W) *ərbəẓ* 'to massage, to knead', Ghadames *ssədḏu* 'to knead'. Arabic loans are found in a number of lan-

guages: Tashelhiyt *ɛžn*, Ghomara *rfəs*, Kabyle *əɛžən, əɛrəḵ, ɛəṭṭṣəl*, Figuig *ɛžən* (Saa 2010; ~ *kkʷ*), Mzab *əɛǧən* (~ *əggʷ*), Ouargla *əɛžən, ədləs, ədlək*.

roast/grill/fry: Proto-Berber probably had a single term for preparing meat by means of fire: *ăknəf*. The reflexes of this etymon are found all over Berber, translated as 'roast' or 'grill'; it never occurs in the meaning 'fry'.

There are a number of Arabic loanwords that appear in this semantic field, basically *šwa* (Arabic: 'roast'), *šəwwəṭ* (Arabic: 'burn meat by overcooking, roast'), *qla* (Arabic: 'fry'). While the Arabic meanings clearly differentiate between preparing meat over a fire and preparing it in fat or oil, the Berber loans are sometimes less specific. Thus Mzab uses *əqla* (also *əgla*) for 'roast', 'grill' and 'fry', while Ouargla and Ghomara use the same verb for both 'roast' and 'fry': Ouargla *əqla* (also more specifically *əšwa* 'roast'), Ghomara *šəwwəṭ*. Something similar may be the case in Awdjila *əqəl*.

The study of these terms is hindered by lack of precision in the dictionaries. For instance, many Berber languages make a difference between roasting meat and roasting other things (mainly grains, but also coffee beans and the like). There is a well-attested Berber term for the latter activity, *arf, arəf* (e.g. Tashelhiyt, Tarifiyt, Iznasen, Snous, Figuig, Mzab, Nefusa). I have only encountered one loan which seems to regard this type of roasting specifically, Ghadames *ḥəmməs*. The only other Berber term I found is Senhadja *əggəz* 'fry'.

Among the verbs concerning household-bound fabrication, there is a similar dearth of loans. All languages under consideration (as far as attestations go) have native terms for 'plait' and 'weave'. The term 'spin' is only borrowed in Ghomara (*ftəl, ləwwi, bəṛṛəm*—the Arabic background of *ftəl* is not certain) and Siwa (*əɣzəl* [La]). Among the terms studied here, only one was regularly borrowed: 'sew'. For this concept, there exist two Berber terms, *ăgnəḇ* and *ăẓməḵ* ~ *ăẓməy*, the latter being attested mainly in the eastern part of the Berber territory. Many Berber languages have taken over the Arabic term: Ghomara *xəyyəṭ*, Senhadja *xiyəḍ*, Tarifiyt *xəyyəḍ*, Snous *xəyyəḍ*, Kabyle *xiḍ*.

Generally speaking, Arabic influence in basic verbs of the household context is not very strong. It mainly occurs with verbs involving the preparation of meat. Roasting and grilling are of another type than other culinary activities, as they take place relatively rarely. In the first place, in traditional Berber society (esp. when sedentary), meat is not eaten on a daily basis; moreover, in many north-African recipes, meat is cooked rather than roasted or (only) fried. There are also verbs that concern

standard activities in the household, and still show a certain propensity for being borrowed. These are 'knead' and 'sew'. I have no explanation why these terms, for which good Berber words exist, should be more borrowable than terms like 'grind' and 'weave'.

4.7.4 *Verbs of Agriculture*

There are quite a number of verbs that denote basic activities in agriculture. Among these the following are denoted everywhere by a native word: 'harvest', 'thresh', 'winnow'. The verb 'to plow' is normally a native Berber word, but is represented by Arabic loans in Ouargla (*əḥrət*) and Mzab (*əḥrət, səkk*). Plowing is not very common in oasis agriculture, which may render this verb less basic in these varieties. The verb 'to plant' is also mostly expressed by a Berber word (almost everywhere *əẓẓu*), but in a few languages an Arabic loan is found: Ouargla *əštəl, əršək, əšrək*, Mzab *ənkəl*, Siwa *ɣərrəs*. Although all these cases are from an oasis context, this hardly explains the loan, as planting is as common there as elsewhere.

One single verb in this field is almost consistently represented by a borrowing: 'to sow': Ghomara *əẓṛəɛ*, Senhadja *zaraɛ*, Tarifiyt *zāɛ*, Snous *əzrəɛ*, Bayle *əzrəɛ*, Figuig *zrəɛ*, Mzab *əzrəɛ*, Ouargla *əzrəɛ*, Siwa *əzzrəɛ* [La]. Tashelhiyt uses an idiom *gr amud*, lit. 'throw seed', while Ghadames and El-Fogaha allow the use of *ăkrəz* (elsewhere: 'to plow') in the meaning of 'to sow'. As remarked above (4.1.2), one can explain the strong influence of Arabic in this specific item by assuming that originally Berber used a compound expression, and that bilingualism with Arabic led to a wish for expressing the concept by a single verb. Otherwise the preponderance of Arabic, as opposed to other agricultural terms, has not explanation.

4.7.5 *Verbs of the Market Context*

The following verbs were studied as occurring typically (though of course not exclusively) in a market context: 'buy', 'sell', 'measure', 'weigh', 'count'. Among these, the two basic terms for commercial transaction, 'buy' and 'sell' are never borrowed. Somewhat unexpectedly, 'sell' is basically intransitive, i.e. 'be sold', the action being expressed by the causative derivation, e.g. Tarifiyt *ənz* 'be sold', *zzənz* 'sell'. The verb 'buy' appears in two forms: on the one hand *aɣ* (e.g. parts of Central Moroccan Berber and Kabyle), a verb with lots of other meanings ('take', 'take fire', and others). On the other hand, most Berber languages use *səɣ* 'buy', which is synchronically underived, but historically probably a causative derivation from *aɣ*. One

wonders whether originally this was a underived—causative pair like *ənz* and *zzənz*, which was shaped in different ways in different languages.

The other three verbs are borrowed on a regular basis. There are several verbs translated by 'to measure' in English. Measuring of length and distance (e.g. cloth) is mostly represented by the Arabic verb *ɛbəṛ* (and phonetic variants): Tashelhiyt, Ghomara, Senhadja, Tarifiyt, Iznasen, Snous, Figuig. Other borrowed verbs are Kabyle *qiss, ɛəbbəṛ*, Mzab *qas*, and Ghadames *ăqəs, qas* (also meaning 'compare'). Measuring content (esp. of cereals) is more often represented by a Berber word. Two Berber terms are found: Tarifiyt *ažžu*, Iznasen *aǧǧəw*, Snous *aǧǧu* and Metmata *iẓəḍ*, Ghadames *ăžḇəḍ*. The latter term is also attested in Ouargla (*iẓəḍ*), Mzab (*iẓəḍ*) and Awdjila (*žḇət*). For Ouargla and Awdjila, it is not clear whether the term only refers to cereals, or also to measuring of length and distance. Only for Mzab Berber, the examples in the dictionary clearly show that *iẓəḍ* can be used for non-content measuring. Arabic terms for the measuring of cereals are found, for instance, in Ghomara (*kəyyəl*), Senhadja (*kiyəl*), Kabyle (*kil, kəyyəl, əkṯil*) and Siwa *kiyəl* [La]). Measuring of cereals is not necessarily a typical market term, as it is part of the division of the harvest between owners and workers (cf. the description of the ritual in Ghadames by Lanfry, 1973:410–413).

The verb 'to weigh' is borrowed from Arabic *wzən* in all varieties for which it is attested, incl. Ghadames, e.g. Tashelhiyt *uzn*, Tarifiyt *wzən*, Kabyle *əwzən*, Ghadames *ozən*. The verb 'to count' is also everywhere a borrowing from Arabic, mainly from the verb *ḥasab*, e.g. Tashelhiyt *ḥasb*, Tarifiyt *ḥsəb*, Kabyle *əḥsəḇ*, Ghadames *ăḥsəb*. In the east, a different Arabic loan is sometimes found: Nefusa *ɛudd*, Siwa *ɛadd* [N].

4.7.6 *Movement Verbs*

Verbs of movement are well-represented in the LJ-100 and the Swadesh-100 word lists. The following verb meanings are always reprented by native words: 'come', 'fly', 'walk', 'go out', 'go in', 'go up'. Verbs meanings in this group which have borrowings include a number of verbs in the LJ-100 and Swadesh-100 lists: 'go', 'fall', 'run', 'swim', which have been studied above. The verb 'go down' is problematic. In a number of languages, Maghribian Arabic *həwwəd* appears (Senhadja, Ouargla, Snous) as an alternative to a Berber verb. The Berber alternative is *arəs*, *ərs*, in Senhadja and Ouargla, respectively, which has the more general meaning of 'being put on something'. Maybe the translation 'go down' in these varieties represents a dialectal development, but it could also be the effect of translation:

in other languages, a bird landing on a branch will be depicted as *ərs*, but the use of the verb refers rather to the landing and the resultant position than to the downward direction of the movement. The etymology of Arabic *həwwəd* is unclear. In a number of Berber languages, there is a verb *hwa* 'go down', and one way to explain *həwwəd* would be to consider it Berber *hwa* + the deictic element *dd* 'hither', interpreted in an Arabic verbal frame, i.e. *hwa=dd* interpreted as a triliteral stem HWD. The main problem with this interpretation is that the origin of the Berber term *hwa* is unclear. The presence of *h* suggests a non-Berber (or at least a relatively recent) origin. The inverse reinterpretation of triliteral *h*(*əw*)*wəd* as a clitic-final form *hwa=dd* is conceivable, although unusual, but leaves the Arabic original unexplained.

4.7.7 *Verbs of Cognition and Emotion*

Among verbs of cognition and emotion, some meanings are never represented only by a borrowing: 'forget', 'know', 'cry, weep'. Most verbs have some borrowings, some of them on a massive scale.

think. The verb 'think' is only rarely attested in a Berber shape: Figuig *swangəm*, Ghadames *snəsǧəm*. This seems to be an old derived form, cf. also Zenaga *ažnazgam* 'think'. Mzab *kaka* stands alone in Berber, and has no etymology. Other languages use one or more Arabic loans, mainly *xəmməm* (Senhadja, Tarifiyt, Kabyle, Ouargla, Mzab, Nefusa, Awdjila) and *əfkəṛ, fəkkəṛ* (Ghomara, Ouargla). Destaing (1938) gives Tashelhiyt *ini d ugayyu* (lit. 'say with the head') as the translation of 'think'.

remember. There is a well-attested Berber verb for 'remember', basically *əktəy*, but often with the medial derivation: Tashelhiyt *kti*, Figuig *mmitəy* (< *mm-əktəy*), Iznasen *məkṯəy* (Destaing 1914), Snous *mməšṯəy*, Kabyle *mməkṯi*, Ghadames *ăktət*, Awdjila *əmməkt, mməkti*. Quite a number of varieties use a loan from Arabic: Senhadja *fakkar*, Tarifiyt *εqəř*, Iznasen *fəkkər* (~ *mməkṯəy*) Figuig *dəkkəṛ, εqəl* (~ *mmitəy*), Ouargla *əḥqəl* (< *əεqəl*), *εəggəl*, Mzab *əfkər, əḥkəl, əšfi, əεqəl*, Nefusa *əftəkər*, Siwa *y-əffəkkər* (3sm; Souag 2010).

understand. Like in many Islamic societies, the verb 'understand' is a loan from Arabic everywhere: *əfhəm*. No doubt, the fact that questions about understanding are very frequent in school contexts ("do you understand?") plays a major role in this borrowing.

learn. The most common form for 'learn' is *lməd*, which is probably of Semitic origin (Punic or Hebrew, see 3.2). The verb is not attested in Arabic; Arabic *tilmīḏ* 'pupil' is a loan from Aramaic using the same stem. In a number of languages, the term has been substituted by an Arabic word: Ghomara *tɛəlləm*, Senhadja *ɛalləm*, Kabyle *əḥfəḍ*, Nefusa *əḥfəṭ*. In view of the strong associations with school setting, the preservation of the earlier term in the majority of the Berber varieties is more remarkable than the borrowing of the term in others.

laugh. See section 4.5.4.

be afraid. The verb 'to fear' is almost always represented by a Berber word. Only Awdjila *ərwəɛ* is reported to be of Arabic origin (Paradisi 1960a).

be jealous. The Berber verb *asəm* 'be jealous' is well-attested: Tarifiyt *asəm*, Iznasen *asəm*, Snous *asəm*, Kabyle *asəm*, Mzab *asəm*, Ouargla *aməs*. In addition there is Siwa *nẓay* [Souag 2010]. In most of these languages the Berber term is doubled by one or more Arabic terms. In a number of languages, only Arabic terms are used: Tashelhiyt *ḥsad, ḥsid*, Ghomara *əbɣəḍ*, Senhadja *əḥsəd*, Figuig *ɣar, ḥsəd*, Nefusa *əḥsəd*. The etymological background of Ghadames *ăɛnəd* is not clear.

hate. Berber terms for 'hate' are rare. Within our corpus only Ghadames has a Berber form: *ăksən*. The same term is known from Zenaga *ăkšən* and Tuareg *əksən*. Maybe the term also appears in Kabyle *iḵsin* 'be responsible, do something against one's liking'. Arabic terms are used everywhere else: Tashelhiyt *krh*, Senhadja *əḵrəh*, Ghomara *kṛəh*, Tarifiyt *šāh*, Iznasen *ḵrəh*, Snous *šərh*, Kabyle *əḵṛu* (with irregular loss of final *h*), Figuig *nkər*, Mzab *əḥgəd*, Ouargla *əbɣəḍ*, Siwa *kárh-ax=t* 'I hate him' [N]. The preponderance of Arabic terms may be due to the importance of the concept *karah* in Islam.

4.7.8 *Transitive Actions with (Normally) Inanimate Objects*

A final group of activities that will be studied here are verbs pertaining to actions on inanimate objects. Only three of these verbs do not have any borrowings: 'break', 'take' and 'tie'. Among the others, two are part of the LJ-100 list: 'do/make' and 'carry'. As shown in section 4.5.4, there is only one language in which 'do/make' is exclusively expressed by means of a loanword: Siwa *ɛəmməṛ* [La]. The other verb, 'carry', is also only rarely

expressed by a loanword: Mzab, Ouargla *šəmməṛ* (Mzab also has *awi*, which in most languages means 'bring') and Ghomara *ṛəwwəḥ*, whose Arabic background is not certain.

cut: In a number of languages, 'cut' is only expressed by a loanword: Ghomara *qəṣṣəṣ, šəqqa*, Senhadja *qəṣṣ, qəddər*, Iznasen *qəṣṣ*, Nefusa *quṣṣ*, Siwa *qṭəm* [N]. The Berber terms for this concept vary widely, and in many languages an Arabic term exists side by side with a Berber term.

dig: The most widely attested Berber term is *ɣəz*. One also remarks Ghadames *ăḇrək*. Quite a number of languages only use an Arabic loan: Ghomara *əḥfəṛ*, Senhadja *əḥfar*, Mzab *əḥfər*, Nefusa *əḥfər*, Siwa *əbḥət* [N].

fold: Two different Berber terms occur for this meaning: *ăḍfəṣ*: Senhadja *əḍfəs*, Rif *əḍfəṣ*, Snous *əḍfəs*, Kabyle *snəfḍaṣ* (S-M derivation with metathesis), Figuig *ḍfəṣ*, Mzab *əḍfəṣ, əḍfəz*, Ouargla *əḍfəṣ*, Ghadames *ătfəs*; **adəḇ* (or **ă?dəḇ*) (Kossmann 1999:No 152): Tashelhiyt *snuḍu* (S-M derivation), Mzab *aḍi*, Ghadames *odəḇ*. In a few languages, a loan from Arabic appears: Ghomara *əṭṭu*, Iznasen *ṭwa*; Arabic loans are used alongside Berber forms in more languages, e.g. Snous *əṭna*, Figuig *ṭwa*.

hang: Most Berber languages use *ayəl* (either underived or as a causative derivation). In northwestern Morocco, Arabic loans appear instead: Ghomara, Senhadja *ɛəlləq*. Arabic loans are not unusual elsewhere, used alongside to the Berber form, e.g. Tarifiyt *āšəg*, Snous *ɛəlləq*, Kabyle *ɛəlləq*.

pour: There are quite a number of Berber words used for 'pour': *ănɣəl* (Tarifiyt *ənɣəř*, Kabyle, Figuig, Mzab, Ouargla, Nefusa *ənɣəl*, Ghadames *ăllən* < *ănnəl* < *ănɣəl*, cf. the Imperfective form *ənăqqăl*), *ăffəɣ* (Tashelhiyt *ffi*, Iznasen *ffəɣ*, Snous *ffəɣ*, Awdjila *əffək*), as well as other verbs (Iznasen *ar*, Kabyle *smir, ssurəg̃*, Mzab, Ouargla *əfsa*, Mzab *ənfəs*, El-Fogaha *suti*). In a number of languages, a loan from Arabic is used: Ghomara *kəbb, fərrəɣ*, Siwa (Action Nouns) *afəṛṛáɣ, asəlláq* [N]. In many other languages, Arabic terms are used in variation with Berber verbs: Tarifiyt *faṛṛəɣ, kəbb*, Iznasen *fəṛṛəɣ*, Kabyle *fəṛṛəɣ*, Ouargla *kubb*.

pull: The basic action 'pull' is expressed by means of a loan from Arabic in most languages in Morocco and Algeria: Senhadja *əžbəḍ*, Tarifiyt *əžḇəḍ*, Iznasen *žbəḍ*, Snous *əžbəḍ, əštəf*, Kabyle *əžḇəḍ*, Figuig *žbəd*, Mzab *əžbəd, kkəṛkəṛ, kkəṛ, əntər*, Ouargla *əžbəd*. In the far east, Siwa has borrowed the same verb *əǧbəd* [La]. Berber terms are attested in Tashelhiyt *ldi* and in

the Libyan varieties: Ghadames *ănzəɣ*, Nefusa *ənzəɣ*, El-Fogaha *ənzəɣ*, Awdjila *ənžəɣ*. While the general action is often expressed by a loan, most languages have a special Berber verb for 'drag over the ground', *zzuɣər*. In Ghomara, the verb *zzuɣʷər* is described as meaning 'pull'; probably the more specialized meaning 'to drag' is meant.

tear: The meaning 'tear' is represented by a borrowing in a number of languages: Ghomara *čərrəg*, Senhadja *šarrəg*, Tarifiyt *šarrəg* (also Berber *ɣāṣ*), Iznasen *šərrəg* (also Berber *ssəɣṛəṣ, əbzəl*), Kabyle *šərrəḡ, xəṛṛəq, xəzzəq* (also Berber *əfri, ssəqṛəṣ, ssəɣṛəs*), Figuig *xəṛṛəq*, Mzab *šərrəg*, Ouargla *məẓẓəg, šərrək, əxrək*. The background of Tashelhiyt *sxirri, skirri* is unclear. Other non-Arabic forms are Beni Snous *šərwəḍ*, Nefusa *əkkəs*, El-Fogaha *əkkəs*. One common Berber word seems to have been (*ss-*)*əɣrəs*. This is the same verb as the most common form for 'slaughter', *ăɣrəs* (+ dative complement). It is very well possible that 'slaughter (i.e. cut the throat)' and 'tear' are basically the same term, slaughtering being described as 'tearing (the throat with regard) to an animal'. One can imagine that the polysemy was considered unfortunate, and that the wide-spread borrowing of the term 'tear' is a way of annulating the ambiguity.

throw: Arabic loans for 'throw' are found in northwestern Morocco: Ghomara *səyyəḇ*, Senhadja *siyyəb, ərmi*. Elsewhere Berber terms are preferred, although Arabic forms often coexist with the Berber forms. In Awdjila, only the loan *əḥdəf* is attested.

untie: The meaning 'untie' is often expressed by verbs with the more general meaning 'open', such as Senhadja, Snous *əṛẓəm*, Ouargla *aṛ*, Nefusa *ar*. A more specialized Berber verb seems to be *ăfsəy* ~ *ăfsəw*, as found in Tashelhiyt *fsi*, Tarifiyt *fsi*, Kabyle *əfsi, əfsu*, Mzab *əfsu*, Ouargla *əfsu*. There is sometimes homonymy (or polysemy?) with the verb 'to melt', e.g. Tarifiyt *fsi*. This may be the reason that some Berber languages prefer loans from Arabic: Ghomara *fsəx*, Senhadja *əfsəx*, Snous *əfsəx*, Figuig *fəkk*, Mzab also *fəčč*.

Borrowings occur in all domains that were studied. In-group contexts, such as household activities and agriculture, however, show less influence from Arabic than an out-group context such as the market place. Regarding less context-bound verbs, such as verbs of cognition, movement verbs and transitive actions, movement verbs (except 'go') seem to be less affected by borrowing than the other categories. I would not know an explanation for this.

CHAPTER FIVE

PHONOLOGY

Berber phonology has been influenced in several ways by Arabic phonology. This is especially visible in the consonantal system, where Berber has taken over a number of foreign phonemes, while in other cases ancient Berber phonemes with low frequency have become enhanced into high frequency consonants due to the influx of Arabic loanwords. The introduction of new phonemes is mostly a side-effect of lexical borrowing. However, one also remarks the use of foreign phonemes in certain forms of word creation, especially in adding expressive value to pre-existing word stems. The influence of Arabic on other parts of phonology is less easily studied, as Berber and Maghribian Arabic have undergone a number of parallel developments in vocalic and syllabic systems, for which it is impossible to determine the starting point,

The chapter starts with a short overview of the phonlogical systems of Berber and Maghribian Arabic, and with the main internal developments these have undergone. After this, the strategies of phonological integration and non-integration of Arabic borrowings are studied, followed by a section about Arabic phonological influence upon the Berber part of thelexicon.

5.1 Phonological Systems of Berber and Arabic

The phonological systems of ancient forms of Arabic (as attested in Classical Arabic) and Berber (according to reconstructions by Prasse and Kossmann) have many similarities, due to common heritage.

Vowels

In the vocalic system, Classical Arabic has a three-vowel system with length opposition:

i	u	ī	ū
a		ā	

In addition to this, Classical Arabic has two diphthongs, *ay* and *aw*. It is very well possible that other pre-Islamic Arabic varieties had monophthongs instead, i.e. *ē* and *ō* (Drewes 1985), similar to many modern forms of Arabic.

The vocalic system of proto-Berber (Prasse 2003) consisted of two or three short vowels[1] and at least four long (also called: plain) vowels:

(ĭ)	ŭ	i	u
		e	
ă		a	

The evidence for a ternary contrast in the short vowel system is not very strong. Those languages that preserve a qualitative contrast in the short vowel system (Tuareg, Ghadames and Zenaga) only provide compelling evidence for a binary contrast (*ə vs. *ă). The evidence for a ternary contrast comes from the presence of labialization of velar consonants as found in a number of northern Berber varieties (Tashelhiyt, Central Moroccan Berber, Ghomara and Kabyle). There are good reasons to believe that this labialization is the historical residue of an ancient rounded short vowel (Kossmann 1999a:42–59). However, is cannot be excluded that rounding of the high short vowel was automatic in the vicinity of velars, and therefore not opposed to an unrounded variant.

The evidence for *e is stronger. It is found in a number of languages—Tuareg, Ghadames and Siwa (Naumann 2012).[2] As shown by Prasse (1984), many of the Tuareg cases of /e/ and /o/ are due to vowel harmony. However, as argued by the same author in 1990 (Prasse 1990), this does not explain all instances of /e/, nor do the vowel harmony processes explain /e/ and /o/ in Ghadames and Siwa. In all languages that preserve /e/, it appears in a number of well-attested morphemes, viz. the nominal feminine plural morpheme *-*en*, the marker of the negative perfective -*e*- (as in **wăr yəkrez* 'he did not plough), the plural form of the participle *-*nen* (in some varieties of Tuareg also -*nin*), and the non-low-vowel prefix of

[1] Possibly the difference was qualitative rather than quantitative, as claimed for modern Tuareg by Louali (2000). Note however that Tuareg metrics put CvC syllables on a par with Cv̄ syllables, while treating Cv as a category on its own, suggesting that quantity is as much a feature of the opposition as quality (Prasse 1972–1974:I, 126ff.).

[2] It also appears in Tetserret (Lux 2011), but here it corresponds in most cases to *ă, while the reflex of *e appears to be *i*.

the singular noun **e-* (as in **e-ɣăf* 'head').[3] Finally, one set of direct object pronouns have *e* in Tuareg.

There is no compelling evidence for reconstructing **o*. Tuareg *o* is mainly the result of vowel harmony. Ghadames *o*, which appears under entirely different circumstances, seems to be due either to a phonetic rule **ăw* > *o*, or it is the regular outcome of stressed **ă?* (see Kossmann 2001 for details).

In the course of time, both Maghribian Arabic and northern Berber have changed their vocalic systems considerably. These changes are to some degree parallel, and have the following characteristics:

1. Reduction of the short vowel system

In all northern Berber varieties except Ghadames, the short vowels have merged into one single element, schwa. Because of some of the developments sketched below, the oppositional value of schwa is low, and it is in most cases (in Tashelhiyt always) predictible from the structure of the word.

In Maghribian Arabic west of Tunisia, different mergers have occurred:

a. Merger of *ă* and *ĭ* into *ə*. The vowel *ŭ* is preserved in a number of cases, especially, but in many dialects not exclusively, in the vicinity of velar and uvular consonants (see below). This situation is found in most Moroccan and Algerian dialects.
b. Merger of *ĭ* and *ŭ* into a single vowel *ə*; retention of the opposition *ə*—*ă*. This situation is typical for dialects spoken by Bedouins in Algeria and, to a lesser degree, Morocco. Large-scale merger of the short high vowels is attested in Bedouin dialects elsewhere in the Arab world (e.g. Sinai, de Jong 2000:70–74), and the situation reflects more general patterns in Arabic dialectology.
c. In a few dialects, all short vowels have merged into one single short vowel; this has been shown convincingly for Jijel in Algeria (Ph. Marçais 1956:35).

2. Transfer of rounding to adjacent velars and uvulars

According to the analysis by Kossmann (1999a), who follows the same lines as other authors, labialization of velars and uvulars in Berber would

[3] In Tuareg, this *e* could be the result of vowel harmony. This is not the case of the Ghadames forms.

be the historical consequence of the transfer of vocalic rounding to an adjacent consonantal element, i.e. a form such as *y-akʷər* 'that he steal' would come from an ancient form **y-akŭr*.

A similar development is attested in Maghribian Arabic, where a short rounded vowel in an open syllable is deleted (see below), but transfers its rounding to an adjacent velar or uvular consonant. Thus forms such as **ɣŭrāf* 'raven' become *ɣʷṛaf* (Tlemcen, cf. W. Marçais 1902). Many researchers extend this analysis to all cases of *ŭ* in Maghribian Arabic, pointing to the strong correlation between the presence of velar and uvular consonants and the maintenance of **ŭ* (e.g. Voigt 1996, Heath 2002:192ff., Chtatou 1997, Elmedlaoui 2000). This is problematic in many dialects, where *ŭ* also appears in contexts not adjacent to a velar or a uvular consonant, e.g. *ɛŭnq* 'neck' and *fŭṃṃ* 'mouth' (Heath 2002:194; cf. also the discussion in Behnstedt & Benabbou 2002, n. 30).

3. Loss of short vowels in open syllables and consequent resyllabification

As shown by the evidence from Tuareg, Ghadames and Zenaga, proto-Berber allowed for short vowels in open syllables, as long as they were not word-final, e.g. Iwellemmeden Tuareg *təkəbənkəbət* 'may she cover entirely'. In northern Berber of Morocco and Algeria, schwa is not allowed in open syllables; the situation in eastern Berber is less clear. Siwa Berber does not allow for schwa in open syllables (cf. Naumann 2012), while Awdjila certainly does (van Putten fc.). Notations for El-Fogaha and Djebel Nefusa Berber are difficult to interpret at this point, but suggest that a short vowel is possible in open syllables in these languages too. In Zuwara, short vowels are allowed in open syllables when they carry the accent, otherwise they cannot appear, e.g. *ə́fəl* 'go! (IPT:S)' vs. *áflət* 'go! (IPT:P)' (Mitchell 2009:37). The deletion of short vowels in open syllables sometimes leads to clusters with three consonants, that are considered unfortunate in the language. In such situations, schwas are inserted in order to simplify the cluster. Because of these processes, the position of schwa is to a large degree predictable in Berber, and according to most researchers, it is not phonemic in northern Berber (Galand 2010:76, Chaker 1983:43, etc.). Kossmann (1995) points to difficulties with this analysis in all languages except Tashelhiyt (which has an entirely different way of making syllables, cf. Dell & Elmedlaoui 1985), and proposes phonemic status.

A different question, both relevant to Berber and Maghribian Arabic, is whether it is fortunate to speak of a "vowel" schwa. More often than not, in natural speech (but also in slower variants), the majority of schwas in a sentence are not pronounced as a vowel (A. Basset 1952:8, Durand 1995,

etc.). Still, speakers have a strong feeling for where a schwa should be, and tend to note it with the vowel sign *fatḥa* in Arabic transcriptions. I have observed consequent writings of *fatḥa* for schwa with speakers who had never written Berber before. Thus, what is called schwa here is probably best understood as a place in the word where schwa is possible (or, in a different formulation, where the consonant is syllabic). Scientific and naive native transcriptions tend to write this position by means of a vowel sign; it it feasible to use other transcriptions, which may lead to a more sophisticated analysis (e.g. Maas 2001, 2011:31–46). Still, the basic lack of predictability of the place of these potential schwas remains the same, and whatever the analysis that is used to describe the phenomenon, it should account for this fact.

In Maghribian Arabic, similar constraints appear, which forbid the presence of short vowels in open syllables. Different from Berber, however, there is little reason to doubt the phonemic status of schwa (or consonantal syllabicity, Durand 1995), as its placement is a highly productive way of distinguishing perfect verb forms from nominal forms (cf. Maas 2001:68ff.), e.g. *fṛəq* 'he separated' vs. *fəṛq* 'difference'. The deletion of short vowels in open syllables leads to long clusters of consonants. Such clusters are treated in different ways in different dialects. While in some dialects they seem to be kept as such, other dialects have insertion of schwa, thus giving the impression of a metathesis of the short vowel.

The main aim of this somewhat lengthy discussion is to show on the one hand the degree of similarity between the Berber and the Arabic systems, and on the other hand to show that in both language groups the present state is the result of innovation. It has often been claimed that the developments in Maghribian Arabic are due to Berber substratum (Elmedlaoui 2000, Chtatou 1997, cautiously Diem 1979:55). This is a vacuous claim as long as we have no idea about the chronology of the developments in Berber. It seems equally possible to consider the developments sketched above as parallel developments, due to the close connections between speakers of the two language groups (Maas 2002). In such a scenario, it is impossible to determine in which language the development started.

In the long vowel system, both Arabic and Berber have undergone only minor reshufflements. In most Maghribian Arabic dialects, the Classical diphthongs are represented by monophthongs, *ay* by *ī* and *aw* by *ū*. Dialects with a strong Bedouin flavor have *əy* (or *ăy*) and *əw* (or *ăw*), respectively. Northern Berber, except Siwa and Ghadames, has merged ancient *e* with *i*, leading to a tripartite system *a, i, u*. In Ghomara, ancient *e* seems to have merged with *a* rather than with *i*, as witnessed by forms such as the

nominal feminine plural suffix *-an* < **-en* and *asan* 'tooth' < **esen* (Tuareg *esen*) (Mourigh fc.).

The development towards a three-vowel system in the long/plain series may be considered parallel between Maghribian Arabic and northern Berber: as other Arabic dialects which have monophtongs instead of diphthongs rather use mid vowels (*e, o*), the Maghribian situation stands out as unusual. Northern Berber has merged ancient *e* and *i*, and one can speculate that an early variety of Maghribian Arabic had *e* and *o*, and that the raising happened in connection with the Berber development.

Phonetically, the vowel systems of Maghribian Arabic and Berber are similar. Thus the strong backing of full vowels in the vicinity of a pharyngealized consonant is shared by both language groups, and the highly flexible pronunciation of schwa, depending on phonetic context, is also found in Berber and Arabic. Phonetic length is also a point of convergence. At least in Morocco, full vowels are pronounced with similar length in Berber and Arabic, with long to half-long variants in word-internal position and shorter variants in word-final and/or utterance-final position.

When it comes to central (or short) vowels, the main difference lies in the presence of *ŭ* in Maghribian Arabic, which is not found in any Berber language. It seems that this phoneme is normally taken over as schwa in loanwords, and, in the vicinity of velars and uvulars, possibly also as consonantal labialization. In some verbal types (see 7.3.1.2), Arabic short *ŭ* is sometimes represented by plain *u* in Berber. In most Maghribian Arabic and Berber varieties, the place of schwa is only to a certain extent predictable from syllable structure. Berber varieties of this type have no problem with the take-over of unpredictable schwa in Arabic words. Only in Tashelhiyt, the place of schwa (or rather consonantal syllabicity) is entirely predictable. In this variety, Arabic loans undergo exactly the same syllabification processes as Berber nouns, and consonantal syllabicity is as predicable in Arabic loans as in Berber.

Consonants

While the vocalic systems of ancient Arabic and proto-Berber were quite similar, there were important differences in the consonantal system. One should note, however, important similarities too. Both systems oppose long consonants (in other terminologies geminate or tense consonants) to short consonants (in other terminologies simple or lax consonants).[4]

[4] There exist important debates as to the status of these oppositions. As phonetically the opposition seems to be carried mainly (but not exclusively) by consonant length, the term long consonant will be used here. Cf. Galand 2002a [1997]:147–164.

Another parallel is found in the existence of pharyngealized (also described as uvularized or emphatic) consonants in both language groups. This fact poses some thorny historical questions. It is widely assumed that Semitic originally had ejective consonants, and that these developed into pharyngealized consonants in Arabic. In Berber, some arguments (albeit not very strong) have been brought forward for an ancient ejective pronunciation (cf. Kossmann 1999a:218, fn. 57). Whatever the solution to this question, language contact does not seem to provide the key. In Arabic, the pharyngealized pronunciation is found in all regions, and is therefore geographically and chronologically independent from contact with Berber. In Berber, pharyngealization is also found everywhere, including Tuareg, which has undergone only slight influence from Arabic. Moreover, the inherited Berber set of pharyngealized consonants (*ḍ* and *ẓ*) is different from the Arabic set, which makes a contact scenario highly improbable.

The ancient Arabic system had the following consonants (based on Classical Arabic):

	lab	dent	alv	pal	vel	uvu	phar	glottal[5]
stop +v –ph	*b*		*d*	*ǧ*				*ʔ*
-v –ph			*t*		*k*	*q*		
+v +ph			*ḍ*					
-v +ph			*ṭ*					
fric +v –ph		*ḏ*	*z*			*ɣ*	*ʕ*	*h*
-v –ph	*f*	*ṯ*	*s*	*š*		*x*	*ḥ*	
+v +ph		*ḏ̣*						
-v +ph			*ṣ*					
nasal		*m*		*n*				
rhotic				*r*				
lateral				*l*				
semivowel				*y*	*w*			

The Classical pronunciation given here may not represent (every) pronunciation practice in the ancient Arabic world. Thus, *ḍ* may have been a lateral fricative [ɮˤ] (Steiner 1977). This pronunciation may have existed in Andalusian Arabic (as witnessed by its reflexes in Spanish), but there are no indications that it also occurred in northern Africa.

The proto-Berber system has been reconstructed as follows (basically Kossmann 1999a with additions). Phonemes between brackets only had restricted incidence:

[5] The abbreviations used in this and the following table are as follows: alv = alveolar, dent = dental, lab = labial/labiodental, pal = palatal, ph = pharyngealized, phar = pharyngeal, v = voiced, vel = velar.

	lab	dent	alv	pal	vel	uvu	phar	glottal
stop +v –ph	*(b)*		*d*	g^y	*g*			*ʔ*
-v –ph			*t*	k^y	*k*			
+v +ph			*ḍ*					
-v +ph								
fric +v –ph	*ḇ*		*z*	*(ž)*		*ɣ*		
-v –ph	*f*		*s*	*(š)*				
+v +ph			*ẓ*					
-v +ph								
nasal								
rhotic				*r*				
lateral				*l*				
semivowel				*y*	*w*			

There is little evidence for the phonemes *b, ž* and *š* ; it is very well possible that they should be discarded from the proto-Berber inventory. The opposition g^y/k^y < > *g/k* is neutralized in pre-consonantal position. Possibly a deeper analysis would show them to be derived from one and the same phoneme; the palatalization might have come from an ancient adjacent *ǐ* (if such existed in the proto-language). The reconstruction of the glottal stop is assured by Zenaga evidence (Taine-Cheikh 2004, Kossmann 2001). The evidence from Berber in pre-Islamic sources (esp. Latin transcriptions of names) suggests that originally *f* was pronounced [p], *ɣ* was pronounced [q] (transcribed *c*), and *w* was pronounced [g] ([g^w]?) (cf. the data in Múrcia Sànchez 2011). The long counterparts of *ɣ* and *w* are stops in most varieties, *qq* and gg^w, respectively. From the transcription of Berber names in Arabic it is clear that the pronunciations *f, ɣ* and *w* were already current at the time of the Islamic invasion. The element reconstructed here as *ḇ* has the reflex *h* in Tuareg and *ḇ* in Ghadames. On this consonant, see section 5.3.2.4.

Phonetically, the pronunciation of /t/ as assibilated [t^s] is common to many Berber and Arabic varieties; it is impossible to decide in which language this pronunciation originates.

5.2 The Earliest Stratum of Loanwords

The earliest stratum of Arabic loanwords consists of terms related to Islam. They belong to a set of terms which were apparently forged by Berber missionaries at an early moment in the diffusion of the new creed (see 3.4). These loanwords show much stronger adaptation to Berber phonology than other strata, and may reflect different pronunciation traditions

of Arabic than common later on. The following three loanwords belong to this stratum:

uẓum	'to fast'	< Arabic *ṣām*
ẓẓall	'to pray'	< Arabic *ṣallā*
tamǝzgida	'mosque'	< Arabic *masǧid*

Few as they are, they show a number of remarkable correspondences. In the first place, Arabic *ṣ* is represented by *ẓ*, something quite rare in other words (see 5.3.2.1). In the second place, in *tamǝzgida* Arabic *ǧ* is represented by *g*. This is different from what happens otherwise, where **ǧ* is taken over as *ž* or *ǧ*, reflecting the common Maghribian Arabic pronunciation. The pronunciation *g* of Arabic *ǧ* is well-known from Egyptian Arabic, as well as from some Yemenite dialects (Behnstedt 1985, map 2), and seems to be old in the language (Woidich & Zack 2009). Its appearance in this early loanword may therefore either reflect the pronunciation used by the early missionaries in northern Africa or a Berber interpretation of the unknown or uncommon sound [ǧ].

5.3 Later Loanwords

There are no convincing arguments for determining further chronological strata in Arabic loanwords. As argued in section 2.6, degree of morphological integration is not directly linked to anciennity of the loans. The case for phonological arguments is somewhat stronger. One might assume that loanwords that have undergone certain phonetic changes that were also undergone by the Berber part of the lexicon would represent an older stratum than those that have not. Thus, the Figuig Berber development *g* > *y* is found in the loanword *yəzzər* 'to slaughter' (< Moroccan Arabic *gəzzər*), which would represent an older stage than a loanword such as *lgafəlt* 'caravan' (< Moroccan Arabic *l=gafla*), where *g* is retained. While basically plausible, there are some complications. In the first place, bilingualism with Arabic is wide-spread in Berber societies. As a consequence, Arabic loanwords in Berber may remain associated with their source, and therefore be excepted from the Berber development (or swiftly replaced by the original). The contrary is also possible: when a certain Berber development has been applied in a consequent manner to Arabic loanwords, new loans can be taken over according to similar patterns. I.e., even after the completion of the sound shift, speakers are able to establish correspondences between Arabic loans in their language

and the original form of these forms. When an Arabic word is taken over, it is easily "berberized" according to these conventional correspondences, and recent loanwords may be subjected to ancient sound laws without phonological necessity. Thus, as shown by Chaker (1984) and others, in those Berber varieties where short stops have become fricatives (so-called spirantization), there is an exceptional group of non-spirantized short stops. For example, in addition to the regular contrast *ḏ – dd* in Kabyle there also exist words which have single *d*. The historical background of such forms is diverse—a major source are ancient long consonants which have lost their length. As a consequence, the phonemic system has a triple contrast *ḏ – d – dd*. When an Arabic word with *d* is taken over in such a language, it would be easy to keep the original form, as *d* is already a phoneme of the language. This opportunity is normally not seized, and most Arabic loanwords have their *d* being taken over as *ḏ* in Kabyle.

The phonological criterium is therefore less strong than one might expect. In the following there will be no attempt at a general stratification of Arabic loanwords.

The presentation in the following is divided in two parts. First, the way Arabic elements undergo Berber-internal innovations will be shown. In the second part, the fate of those Arabic consonants that did not occur in proto-Berber will be sketched.

5.3.1 *Arabic Loans and Berber-Internal Innovations*

The road from the proto-Berber system to modern varieties has been long, and in the meanwhile many local phonological innovations have occurred. Some of these are probably pre-Islamic in nature, e.g. the development **ḇ > b /_C*, a development from which only Zenaga, Ghadames and Djebel Nefusa are exempted (Kossmann 1999a:114). Others are very local. The application of Berber-internal innovations to Arabic loans may hide the Arabic origin to a certain degree. Thus, it may not be immediately clear to a superficial observer that Tarifiyt *ǧǧiřəṯ* 'night' has to do with Arabic *layla* (Moroccan Arabic *lila*), nor that *ṯāḇifṯ* 'stepdaughter' represents Arabic *rabība* (Moroccan Arabic *rbiba*).

Spirantization

The most conspicuous of all localized Berber sound shifts is the change of short stops to (flat) fricatives, accompanied, where possible, by advancing the place of articulation. This development is known as spirantization in Berber linguistics. It is found in a large area ranging from Morocco to

Tunisia, in dialects spoken north of the 33rd parallel, as well as, to some degree, in Mauritanian Zenaga. It is absent from Tashelhiyt (except for some Anti-Atlas varieties, which may constitute independent innovations), Tuareg and Libyan Berber, as well as in most Algerian oasis dialects. Its geographical spread, in addition to some questions pertaining to the interpretation of ancient inscriptions, have led some scholars to suggest a very ancient history for this phenomenon (Vycichl 1975). As the extension of the phenomenon cuts across any reasonable dialect groupings (Kossmann 1999a), I prefer to consider it a post-proto-Berber innovation. Still, its spread over such a large territory suggests an early development, and it is probably a pre-Islamic feature of northern Berber.[6] The main developments in spirantization are as follows:

*b	>	b̲	(thereby reverting, a.o. the earlier development *b̲ > b /_C)
*d	>	d̲	
*ṭ	>	ṭ̲	
*ḍ	>	ḍ̲	
*k	>	k̲	
*g	>	ḡ	

Some later developments locally lead to merger with other phonemes:

ṭ̲	>	h	
k̲	>	š	
ḡ	>	y	(locally also ž)

Spirantization does not apply to all consonants everywhere. It broadly follows an implicational hierarchy: VELARS > ALVEOLARS > BILABIALS, i.e. a language which has spirantization of bilabials, also has spirantization of alveolars and velars, etc. In parts of Morocco and western Algeria, velars are spirantized, but the other consonants are not. This is the case of Figuig, as well as of southern Central Moroccan Berber. Spirantization of *b* is least common, but still widespread over the Middle Atlas, the Rif and Kabylia.

In Arabic loans, there is a remarkable difference between the treatment of bilabial and alveolar stops on the one hand, and velar stops on the other. In the relevant Berber varieties, alveolars and bilabials are regularly spirantized in Arabic loans. Exceptions are rare, and mainly concern very recent loans, it seems, although this is often difficult to prove. Examples:

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[6] One remarks the gross overlap between the extent of spirantization in Berber and the realm of the Roman Empire in northern Africa. As the weakening of stops (esp. voiced stops) is a well-known feature of vulgar Latin, this may not be coincidental.

Kabyle	*ḏəwwəx*	< *dəwwəx*	‘to faint’
	əṯḇəɛ	< *tbəɛ*	‘to follow’
	əḏḥu	< *ḍḥa*	‘to turn out’
	ləḇṛaq	< *l=əbṛaq*	‘lightning’
Tarifiyt	*ř̌gəɛḏəṯ*	< *l=gəɛda*	‘plateau’
	ř̌ḇiṯ	< *l=bit*	‘room’
	ḍɛəf	< *ḍɛəf*	‘to be weak’
	ḇnaḏəm	< *bnadəm*	‘human being’

With velars, the plosive pronunciation is retained in many cases. In Kabyle and in Tarifiyt, about half of the velar stops in borrowings undergo spirantization, while the other half keep their original pronunciation, e.g.

Kabyle	*əḵšəf*	< *kšəf*	‘to uncover’
	aḵəddaḇ	< *kəddab*	‘liar’
	əḵru	< *kra*	‘to hire’
	aḡəddᶻar	< *gəzzar*	‘butcher’
	amkan	< *mkan*	‘place’
	kəssəl	< *kəssəl*	‘give a massage’
	lkas	< *l=kas*	‘glass’
Tarifiyt	*mř̌əš*	< *mlək*	‘to marry’
	ṯašɛəfṯ	< *kəɛba*	‘ankle’
	šra	< *kra*	‘to hire’
	amšan	< *mkan*	‘place’
	ṯayəzzāṯ	< *gzira*	‘island’
	ř̌kəttan	< *kəttan*	‘cloth’
	kəyyəf	< *kəyyəf*	‘to smoke tobacco’
	kṯā	< *ktər*	‘more’
	kəmmař̌	< *kəmməl*	‘to finish’

In Figuig, which only has spirantization of velars, spirantization of Arabic loans is proportionally even weaker than in Kabyle or in Tarifiyt. Only seven cases have been identified where Arabic *k* is taken over as *š*; in all other cases, *k* is maintained (on *g*, see 5.3.2.3):

Figuig	*tašurt*	< *kura*	‘ball’
	tašṛaṛt		‘carded wool not yet put in a spool’[7]
	ḥarrəš	< *ḥarrək*	‘to stir’ (cf. Figuig *ḥarrək* ‘to gallop’)
	amšan	< *mkan*	‘place’
	lməšwaš	< *məswak*	‘tooth cleaner’
	ssbarəš	< *barək*	‘to go on a gratulating visit’

[7] Cf. Egyptian Standard Arabic *kurrāṛiyya* ‘spool, bobbin, reel’ (Wehr ³1976:818).

The seventh term has a more complicated history: Figuig *ašḍif* 'rug'. Without the application of spirantization, the form would have been **-kḍif*. This form, in turn, shows the common Berber substitution of Arabic *ṭ* by *ḍ* (see 5.3.2.2), and derives from an Arabic form *kṭīfa*, which, in turn, comes from *gṭīfa* with voice assimilation. The nomadic Arabic form *gṭīfa* is cognate with Classical Arabic *qaṭīfa* 'velvet'. Note that the Figuig spirantization was applied to a loan from a nomadic dialect (otherwise *q* would have been preserved), putting the loan after the advent of nomadic Arabic in the region.

In addition to these seven terms with spirantization, Figuig Berber has dozens of Arabic loanwords in which *k* is maintained.

Local innovations

There are many phonological changes in Berber, which are more or less strictly localized. In general, Arabic loanwords are subjected to the same changes as Berber words. To some degree this may be due to the fact that the loanwords were already present at the time the phonological change occurred. This is not the only possibility. After the completion of a sound shift, a bilingual speaker establishes correspondences between the shape of Arabic loanwords in Berber and the shape of the corresponding items in genuine Arabic. Such a correspondence may lead to the conventional application of the sound change with new borrowings.

In order to illustrate this, one example will be given, Tarifiyt, which has undergone major sound changes concerning *l and *r. In their most complete form (cf. Lafkioui 2007 and Kossmann 1999b for dialectal details), the following has taken place:

*l >	ř[8]
*lt >	č
*ll >	ǧǧ
*r >	r ([ɾ]) when followed by a plain vowel
*r >	vowel lengthening/lowering when not followed by a plain vowel
*rr >	ř ([r]) + changes in the quality and/or quantity of adjacent vowels

[8] <ř> is an abstract notation of a consonant with many phonetic realizations in Tarifiyt. In a number of dialects it is a rhotic approximant or fricative, in others it is a palatalized tap, while in still others it is a rolled consonant, opposed to the tap which corresponds to *r in pre-vocalic position. In still other dialects, the difference between *r and *l in pre-vocalic position is realized in the quality of the adjacent vowel rather than in the consonant itself, cf. Lafkioui (2007), Louali (2002), Kossmann (1999b).

exx.*ʟum	>	řum	‘straw’
*aɣyul	>	aɣyuř	‘donkey’
*allun	>	aǧǧun	‘tambourine’
*ultma	>	učma	‘my sister’
*ali	>	ařі	‘go up!’ (pronounced, a.o. [ɛri])
*ru	>	ru	‘weep!’
*ari	>	ari	‘esparto grass’ (pronounced [aɾi])
*frəḍ	>	fāḍ	‘sweep!’
*šurḍu	>	šǯḍu ~šuᵃḍu	‘flea’
*išərri	>	išāri	‘ram’

The dating of these changes is unknown. There are good reasons to assume that at least part of them had already taken place by the mid-18th century. They occur in the now-extinct Tarifiyt dialect spoken in the ancient city of Arzew (Algeria), which probably represents an immigration in the mid-18th century (Biarnay 1911:6). This is a good *terminus ante quem*, but no *terminus post quem* has been established yet.

Arabic loanwords are regularly subjected to the rules above, e.g.

l=flus	>	řəfřus	‘money’
xalt-i	>	xači	‘my maternal aunt’
fəllaḥ	>	afəǧǧaḥ	‘farmer’
l=luz	>	ǧǧuz	‘almonds’
ḥṛəq	>	ḥāq	‘to burn’
l=əbḥər	>	řəḇḥā	‘sea’
l=kursi	>	řkǯsi, řkuᵃsi	‘chair’

This is also the case of many loanwords which post-date the 18th century, such as loans that stem from the colonial period, e.g.

l=kuri	>	řkuri	‘stable’ (< French *curée*)
l=muyyi	>	řmuyyi	‘port’ (< Spanish *muelle*)
məṛmiṭa	>	māmiṭa	‘pot’ (< French *marmite*)
tambər	>	tambā	‘postage stamp’ (< French *timbre*)

However, in other cases, the original pronunciation is maintained, giving *l, ll* in the case of the laterals, and *ř* [r] in the case of Arabic and European *r*, e.g.

ɣəllay	>	ṯaɣəllašṯ	‘kettle’
l=baḷa	>	lḇaḷa	‘shovel’ (< Spanish *pala*)
		plaṯanu	‘banana’ (< Spanish *plátana*)
l=xaṯar	>	lxaṯař	‘danger’
		sařḇisa	‘beer’ (< Spanish *cerveza*)
		puřki	‘because’ (< Spanish *porque*)
l=kaṛ	>	lkař	‘long-distance bus’ (< French *car*)

Sometimes doublets occur, in which the forms that preserve *l* and *r* are best interpreted as recent secondary borrowings as compared to the older form, e.g. *lkitaḇ* and *řəšṯaḇ* 'book', in which the first one represents a faithful borrowing from Standard Arabic, while the second shows a number of Berber changes. Similarly, in Driouch, I was told that the word 'panther' could be pronounced *nnmə̄ř* (the same pronunciation as Moroccan Arabic *n=nmər*) or *nnmā*—the last one was considered typical for older people.[9] In some cases, this has led to semantic specialization, as in the Arabic word *l=mal* 'possessions', which occurs in two forms: *lmal* 'possessions' and *řmař* 'cattle'.

Biarnay (1917:506ff.) provides evidence for the existence of loanwords which preserve *l* in pre-colonial Tarifiyt. Many of his examples contain *ll̥ah* 'God', a term which is only reluctantly altered in Islamic societies. Among the other examples he gives, *lla* 'no!', *mliḥ* 'good' and *ṯaxlašṯ* 'tea pot' (corresponding to modern *ṯaɣəllašṯ* [Q]) are still in use. It seems from his presentation, however, that the number of loanwords containing *l* has increased over the last century. In fact, many of the loanwords which nowadays have *l* in urban Nador Berber (Kossmann 2009b), derive from Standard Arabic, and may have entered the language through formal education.

This is only one example of a local sound change affecting loanwords. Many others could be adduced, showing similar processes and problems.

5.3.2 *The Integration of Foreign Phonemes*

As shown above, Arabic has a number of phonemes that were foreign to Berber when the languages first came into contact: *ṣ, ṭ, x, q, ḥ* and *ε*. In addition to this, *š* and *ž* were (at best) rare in Berber, while *b* was restricted mainly to pre-consonantal contexts in some dialects, and very rare in other dialects (cf. Kossmann 1999a for details). In addition, Arabic also has a number of long consonants that do not exist in Berber, viz. *ṣṣ*, *ḍḍ* (or, in some dialects, *ḍ̣ḍ̣*), *xx, ɣɣ, ḥḥ* and *εε*. Most of these phonemes have been taken over as such, and have thus been added to the Berber phonemic systems.

[9] It was added that the word was well-known in the region as it is also the name of a type of matches.

5.3.2.1 *The Fate of* ṣ *and* ṣṣ

Proto-Berber only had one pharyngealized sibilant, *ẓ* (long: *ẓẓ*).[10] In reconstructible Berber words, *ṣ* only appears in a few words as a voice-assimilated version of *ẓ*, e.g. Tashelhiyt *uṣkay* (next to the rare form *uẓkay*) 'greyhound' (cf. Kossmann 1999a:182, N° 516).

In the earliest stratum of loanwords, Arabic *ṣ* is taken over as *ẓ: ẓẓall* < *ṣalā* and *uẓum* < *ṣām*. These two (very salient) loanwords have induced many comments as to the "regular" substitution of *ṣ* by *ẓ*, e.g. Laoust (1932:26): "[ẓ] correspond ordinairement en Siwi, comme dans la plupart des dialectes, au ص des mots arabes passés au berbère". In reality, the number of other examples with *ṣ* > *ẓ* is extremely small.

Beyond the first-stratum loanwords, the main example is the word 'chick peas', which has *ẓ* for *ṣ* in a great number of Berber varieties: Central Moroccan Berber *lḥimẓ*, Tarifiyt *řḥimẓ*, Iznasen *lḥiməẓ*, Figuig *lḥiməẓ*, Kabyle *lḥəmməẓ*, Ouargla *lḥəmmʷəẓ*, Ghadames *ălḥimməẓ*, Siwa *lhămәẓ*. In Maghribian Arabic the word appears in a large number of forms, which all have *ṣ*. Corresponding to Classical Arabic *ḥimmiṣ* and *ḥimmaṣ* (Lane 1863–1893:I/2–643) there are forms with short vowels and gemination, such as Marrakech *ḥəmməṣ* and Sidi Bel-Abbès *ḥŭmmŭṣ* (Madouni-La Peyre 2003). These forms, which are most similar to those found in Egyptian and Levantine Arabic, are typical of dialects belonging to the second (Hilalian) stratum, cf. also Hassaniyya *ḥəmməṣ* (Taine-Cheikh 1989–:III, 467). In first-stratum (pre-Hilalian) Arabic dialects, there are two types: first, forms which have gemination and a full vowel, such as Fes *ḥəmmūṣ*, Chefchaouen *ḥəmmūṣ* ~ *ḥəmmīṣ* ~ *ḥŭmmīṣ* (Moscoso 2003:314) and Tangier *ḥŭmmīṣ*, and, second, forms with a short vowel and no gemination, e.g. Rabat *ḥəmṣ*, Tlemcen *ḥŭmṣ*, Algiers (Jewish) *ḥămṣ*, Jijel *ḥəmṣ* (Ph. Marçais 1956:78), Tunis *ḥŭmˀṣ* (Singer 1984:509), and Takrouna *ḥŭmṣ* (W. Marçais & Guîga 1925–1961:II–936).[11] The Berber forms basically reflect the Hilalian type in Algerian and Libyan Berber, while they have a pre-Hilalian shape in Morocco. The Moroccan Berber forms have the vowel *i* (*ḥimẓ*). At this place of the word, the vowel is not attested in any Maghribian Arabic

[10] In view of the pronunciations in Zenaga ([θˤ]) and Tetserret ([sˤ]) it may have been voiceless in proto-Berber. In the region that concerns us, only the voiced pronunciation is found. As Arabic *ṣ* is normally not changed to *ẓ*, this sound change (if it happened at all) must have taken place before the intensivation of Arabic-Berber contact.

[11] If not noted otherwise, examples are from Prémare 1993–1999:II–225 or from W. Marçais 1911:268.

variety, but, assuming that Arabic short *i* was interpreted as a full vowel in Berber, it corresponds to Andalusian Arabic *ḥimṣ* (Corriente 1997:66, 138). The Andalusian link does not help us in understanding Berber *ẓ:* Although occasional voicing of *ṣ* is attested in Andalusian Arabic (Corriente 1977:50), there is no reason to posit it for this word. Moreover, *ẓ* also appears in Berber forms with *ẓ* that do not go back to **ḥimṣ*, such as Kabyle *lḥəmməẓ* and Siwa *lḥaməẓ*. Thus the origin of *ẓ* in this word remains unexplained. It is not possible to attach the word to the earliest stratum of Arabic borrowings (let alone that chick-peas have no obvious relationship to spreading the Islamic creed), as it retains the Arabic consonant *ḥ*. However, as *ṣ* is only taken over in Berber as *ẓ* in a few words, its presence over a large territory must be the result of diffusion rather than of independent borrowing. One may assume that at a certain stage Andalusian-type Arabic *ḥimṣ* was taken over as *lḥimẓ* (with irregular voice assimilation?), and spread all over northern Berber. Eventually, in Algeria and Libya, the word shape was partially adapted to the local Arabic varieties, yielding *lḥəmməẓ* and the like, while the original, non-Maghribian form was retained in Morocco.

Other examples of *ẓ* < *ṣ* are rare and, at least in some words, Arabic dialects show the same change, as is the case of Siwa *ẓəffəṛ* 'to whistle', adduced by Laoust (1932:26), which appears in Jijel Arabic as *ẓəffəṛ* (Ph. Marçais 1956:10).

Normally, *ṣ* is taken over as such in Berber.[12] As a result, it has become a full-fledged phoneme in all northern Berber varieties. Examples:

Kabyle	*fəṣṣəl*	'to cut into pieces'
	ṣubb	'to go down'
	aṣəggaḏ	'hunter, fisherman'
	əṣḥu	'to be clear (sky)'
	ṣəffəṛ	'to whistle'
Tarifiyt	*ṣəḥḥ*	'to be healthy'
	ṣṣḇəḥ	'morning'
	ṣəffā	'to whistle'
	xṣā	'to rot'
	xəǧǧəṣ	'to pay'

[12] It may be clear, therefore, that there is little use in blaming Berber influence for the voiced rendering of Arabic ص in a number of loanwords from Andalusian Arabic in Iberian Romance, as proposed by Corriente (2002:108).

5.3.2.2 *The Fate of* ḍ *and* ṭ *and Their Long Counterparts*

In their native part, most Berber languages have a single voiced phoneme *ḍ* (or *ḏ* in spriantizing languages), which has a voiceless long counterpart *ṭṭ*, e.g.:

Kabyle *əẓḍ* (Aorist)—*ẓəṭṭ* (Imperfective) 'to weave, to plait'

In reconstructible native words, voiceless single *ṭ* only occurs as the result of voice assimilation, e.g. Ghadames *əṭkur* (Aorist)—*ḍəkkur* (Imperfective) 'to fill'. This is different from most Maghribian Arabic varieties, which have an opposition *ḍ* – *ḍḍ* (or *ḏ* – *ḏḏ* according to the dialect)[13] vs. *ṭ* – *ṭṭ*, e.g.:

Mor. Ar.	*fḍəḥ*	'he revealed'	*fəḍḍaḥ* 'one who cannot keep a secret'
	fṭəṛ	'he took breakfast'	*fəṭṭəṛ* 'he gave s.o. breakfast'

The situation is complicated by the fact that a number of Berber varieties have *ṭ* rather than *ḍ* in their native lexicon. This is found in a wide scattering of dialects, without much geographical concentration: the dialects of the Dades (Central Moroccan Berber), Ghomara, some Eastern Middle Atlas dialects, Lesser Kabylia, Djebel Nefusa, Awdjila and Siwa. The distribution cuts across all major dialect divisions in northern Berber, which suggests that the variation predates the formation of the dialectal blocks as found these days. Whatever the deeper historical background, it is quite probable that the dialectal distribution of *ḍ* and *ṭ* has changed in the course of time, and *ṭ* may have been more common than it is nowadays. This is suggested by Arabic renderings of Berber tribal names, which have *ṭ* instead of the *ḍ* found in the modern Berber pronunciation, e.g. Arabic *Bni Mṭir* corresponds to Berber *Ayṭ Nḍir* (a tribe in the Middle Atlas). One also remarks the use of the Arabic letter *ṭā'* to write words which nowadays have *ḍ* in the medieval orthography of Berber. Van den Boogert (2000:363) explains that this is because, at that time, in the Maghreb Arabic *ḍ* was pronounced as an interdental or lateral fricative. This is very well possible—Spanish loans from Arabic suggest that *ḍ* had a lateral element in Iberian Arabic too, e.g. *alcalde* < *al-qāḍī*—but it could also be that the variety of Berber represented by the medieval texts simply had *ṭ*.

In a number of Maghribian Arabic dialects, *ḍ* (< *ḍ and *ḏ) and *ṭ* have merged. This is found in first-stratum (pre-Hilalian) dialects: in Jijel

[13] The ancient opposition *ḍ* – *ḏ* (i.e. ض vs. ظ) has not been preserved in any Maghribian Arabic variety.

(Algeria) and its surroundings, in a less than regular fashion in northwestern Moroccan dialects (Tangier, Tetuan, Branes, Mtioua . . .) and in the Jewish dialects of Sefrou (south of Fes) and Tafilalt (in the southeast) (Heath 2002:159). The dialects in question are adjacent to Berber languages which also have *ṭ*: Jijel borders on Eastern Kabylia, and northwestern Moroccan Arabic on Ghomaran Berber. The Tafilalt dialect is not far away from the Dades valley. There is no doubt that the phenomena are connected; however, the nature of this connection is far from clear. Did the Maghribian Arabic dialects take over the phenomenon from their Berber neighbors (but why this pronunciation in particular?) or do we have Arabic influence on the Berber sound system here? In Andalusian Arabic, there "are proofs of a pronunciation (. . .) as an unvoiced stop (. . .), at least sometimes" (Corriente 1977:47). In addition, Corriente also points to "hints of an alternative voiced pronunciation of /ṭ/ within Sp[anish]Ar[abic]" (Corriente 1977:39). In view of the philological difficulties involved, it is impossible to assess the relevance of these phenomena to the northern African situation.

An interesting, but difficult to interpret, piece of evidence is provided by the pan-Moroccan Arabic loanword *ṣifəṭ* 'to send'. There exists no doubt that this is a loan from Berber (Pellat 1950), cf. Central Moroccan Berber *ssifḍ* 'to send'. Heath (2000a) shows that in Muslim Arabic dialects of Morocco the verb always has *ṭ*. Jewish Moroccan Arabic dialects, on the other hand, mostly have *ḍ*, the exceptions being the northeastern varieties (which are at many points closer to their Muslim neighbors than elsewhere in Morocco) and the Jewish dialects of the Tafilalt, where *ṭ* is the regular reflex of Arabic *ḍ*. In the present state of affairs in Berber and Arabic, this is highly remarkable. Why should *ṭ* be found in a loan from a language which normally has *ḍ* into a language which has an opposition between *ṭ* and *ḍ*? One may construct several scenarios. The first is that the pronunciation *ṭ* was formerly much more wide-spread in Berber than nowadays, and that this Berber pronunciation was simply taken over by dialectal Arabic (but why differently in Jewish dialects?). In another scenario the merger of *ṭ* and *ḍ* was formerly much more wide-spread in Arabic, and Berber *ḍ* was subjected to this merger in the same way as *ḍ* in Arabic words. Later, the influence of Arabic varieties with an opposition between *ḍ* and *ṭ* pushed back the merged pronunciation to a few regions. However, as *ṣifəṭ* had no Arabic form with *ḍ* to compete with, *ṭ* was retained. The Jewish Arabic variants with *ḍ* then would represent dialects that never underwent the merger *ḍ* > *ṭ*, or that were so intimately linked

to Berber speakers that they undid the merger in this word according to the same process that took place in the Arabic part of the lexicon.[14]

In the Berber languages that have *ḍ* (or *ḍ̣*) in their native part, there exists a strong tendency to replace Arabic single *ṭ* by *ḍ* (or *ḍ̣*), e.g. in Tarifiyt:

Tarifiyt	*axəyyaḍ̣*	< *xəyyaṭ*	'tailor'
	ǧǧəqqaḍ̣	< *l=ləqqaṭ*	'pincers'
	ɛḍ̣əṣ	< *ɛṭəṣ*	'to sneeze'
	ṯaqiḍ̣unt	< *qiṭun*	'tent'
	ḍ̣ṛ̌əq	< *ṭləq*	'to let go'
	xḍ̣a	< *xṭa*	'to miss'
	ṛ̌əfḍ̣ua	< *l=əfṭur*	'lunch' (MAr: 'breakfast, lunch')

There are also loans which maintain *ṭ*. In Tarifiyt, most of these seem to be fairly recent, as shown by their lack of phonological integration elsewhere in the word, e.g. *lxaṭař* < *l=xaṭaṛ* 'danger' (instead of ***ṛ̌xaḍ̣ā*). As a result there are a number of doublets, some with and some without semantic differentiation, e.g.

Tarifiyt	*ɣləṭ ~ ɣṛ̌əḍ̣*	< *ɣləṭ*	'to make an error'
	xṭəḅ	< *xṭəb*	'to preach the Friday sermon'
	xḍ̣əḅ	< *xṭəb*	'to ask the hand (of a girl)'

A similar situation is found in most other languages, e.g. in Kabyle which has *ḍ̣* as the normal rendering of Arabic *ṭ*, even though a minority of forms preserve *ṭ*, e.g.

Kabyle	*aḍ̣əbbal*	< *ṭəbbal*	'tambourine player'
	qəḍ̣rani	< *qəṭṛan*	'tar'
	amṛaḅəḍ̣	< *mṛabəṭ*	'marabout'
	ḍ̣uɛ	< *ṭaɛ*	'to obey'

The relative numbers of one or the other rendering differ from language to language. For example, in Ouargla, *ṭ* seems to be more frequent than *ḍ* as a reflex of Arabic *ṭ*, e.g.

Ouargla	*ḍəwwəf*	< *ṭəwwəf*	'make s.o. go around'
	ṭabəs	< *ṭabəs*	'to bend (the head)'
	ṭəhhəṛ	< *ṭəhhəṛ*	'to perform the ritual ablutions'
	ṭɣa	< *ṭɣa*	'to be arrogant'
	ṭṛəš	< *ṭṛəš*	'to be deaf'

[14] According to some authors, the majority of Jewish dialects would originally stem from communities in the High Atlas, which took refuge there during the Almohad persecutions, v. Chetrit 2007, Lévy 2009.

The Arabic long consonant *ḍḍ* can become *ṭṭ* in loans, e.g.

Tarifiyt	*ṭṭřam*	< *ḍ=ḍlam*	'darkness'
Kabyle	*lfəṭṭa*	< *l=fəḍḍa*	'silver'
	ṭṭaləm	< *ḍ=ḍaləm*	'wrong-doer'
	ṭṭmana	< *ḍ=ḍ(a)mana*	'security'

However, *ḍḍ* is not unknown, e.g. Kabyle *ḍḍiq* (~ *ṭṭiq*) 'melancholy'.

In Berber languages that have *ṭ* in their native words, Arabic *ḍ* (or *ḏ̣*) is often taken over as *ṭ*. In the following examples from Nefusa (Beguinot ²1942:20), which is not spoken in the vicinity of an Arabic *ṭ*–dialect, one must assume a process of substitution of Arabic *ḍ* (or rather *ḏ̣* in view of its pronunciation in local Arabic) by *ṭ*:

Nefusa	*əlbáɛəṭ*	< *l=bəɛḏ̣*	'some'
	yənṭíf	< *nḍif*	'it is clean'
	əḥfəṭ	< *ḥfəḍ*	'to preserve'

As noted by Beguinot, Nefusa also has many loans which preserve *ḍ*, e.g.

Nefusa	*əḥḍər*	< *ḥḍəṛ*	'to be present'
	ḍəyyəf	< *ḍəyyəf*	'to receive as a guest'

5.3.2.3 *The Fate of Arabic* q

In pre-Islamic Berber, *q* did not exist as a short consonant. Long *qq*, on the other hand, was (and is) the regular long counterpart of short *ɣ*. In Classical Arabic, *q* and *qq* are full-fledged phonemes, different from *ɣ* and *ɣɣ*. In Maghribian Arabic dialects, *q* may undergo several changes. In dialects of the first stratum (pre-Hilalian), its reflex is mostly *q*. In a number of these dialects *ʔ* is found instead: Tlemcen, the Muslim city dialects of Tangier, Tetuan, Fes, Meknes and Taza, as well as some rural northwestern Moroccan varieties (Heath 2002:142, Behnstedt & Woidich 2005:65 with map). It is also typical of many Moroccan Jewish dialects. As shown by Behnstedt & Benabbou (2002:55), the glottal stop variety is loosing ground to *q* in Morocco and may have been more common formerly. East of Tunisia and west of the Nile, *q* is only regularly found in some of the Egyptian oases, esp. in Farafra (Behnstedt & Woidich 2005:41). The second wave of Arabic immigrants (the Hilalian stratum) spoke a dialect which had mainly *g* as its reflex of *q*. Most present-day dialects of the Maghrib have lexically-determined variation between *q* and *g* corresponding to Classical Arabic *q*. Depending on the dialect, one of the two is more or less predominant, cf. the discussion in Heath (2002:141ff.). Following Heath (2002), the abstract

notion "cognate of Classical Arabic *q*" will be represented by *Q*, while *q* stands for the pronunciation [q].

As in Berber *qq* is the long counterpart to *ɣ*, one might have expected that Arabic *Q* was taken over as *ɣ*. There is hardly any evidence for this, however. The only well-attested word that would be a candidate is *ɣər* 'to shout, to read', which is similar to Classical Arabic *qara?* 'to read aloud, to read'. This verb is attested in virtually all Berber varieties, including Tuareg. There is in fact little evidence that the word is a loan from Arabic. In the first place, it belongs to a verb class which integrates only very few Arabic words. In the second place, the basic meaning 'to shout, to call' does not correspond to the most general Arabic semantics, and does not look like an extension of 'to read (aloud)' either. Therefore it is appropriate to consider *ɣər* either an Afroasiatic heritage (i.e. a distant relative of *qara?* rather than its offspring) or a loan from Punic or Hebrew (see 3.2). If it is a loan from Arabic, it is best categorized under the early Islamic loans.

Other cases of *ɣ* < *q* are probably due to analogical reformation. E.g. in Kabyle, the verb *ənɣəḇ* (also *ənqəḇ*) 'to peck at' comes from Arabic *ənqəb*. Apparently, *ɣ* has been constructed on the basis of the Berber Imperfective form *nəqqəḇ*, and the regular Berber pattern Perfective *ɣ*—Imperfective *qq* has been implemented. The fact that the semantics of 'to peck at' entail usage in imperfective contexts rather than in perfective contexts makes this analogical reformation understandable.

In (varieties of?) Tashelhiyt, the voiceless reflex of Arabic *Q* is merged with the long consonant *qq*, which is part of the inherited phonemic system. In this language, there is one phoneme which is normally pronounced [q:], it seems (see however Galand 1988:215, who has *q* and *qq* as different phonemes in Tashelhiyt). This ambiguity is revealed in poetic metres, e.g. in 18th century Tashelhiyt: while with all other consonants, short and long consonants are treated differently in the metre, the phoneme *q* ~ *qq* can be counted both as a short and as a long consonant (van den Boogert 1997:245–246).

All other Berber varieties oppose *q* to *qq*, and thus have introduced the foreign phoneme *q* into the language.[15]

The different pronunciations of *Q* in Arabic have led to different reflexes in Berber, although the pronunciation *ʔ* is never found in borrowings. At this point there exists a remarkable inconsistency between

[15] The situation in Awdjila may be different, as *q* also appears regularly in some native words.

the pronunciation prevalent in surrounding Arabic dialects and the forms of the borrowing in Berber. With a number of exceptions,[16] Berber varieties are spoken in regions surrounded by second-layer Arabic dialects (i.e. dialects which basically have *g*). In spite of this, in most Berber varieties the reflex *q* is quite common in Arabic loanwords, cf. the following loans in Ouargla Berber, a variety entirely surrounded by nomadic Arabic dialects:

	reflex *g*		reflex *q*	
Ouargla	*gəddəd*	'to cut in pieces'	*əqbəl*	'to accept'
	əgləb	'to turn over'	*əqḍa*	'to finish'
	lgur	'circle of people'	*əqla*	'to roast'
	ləgrab	'wallet'	*lqum*	'children'

To some degree, the presence of *q* instead of *g* can be understood as influence from citadine or classical Arabic, due to long-distance contact and education, e.g. in words like Ouargla *lqahwət* 'café', *lqənḍərt* 'bridge', *lqarṣ* 'lemon', *lqayəd* 'caïd'. However, in most cases, there is no independent clue to consider a certain term with *q* a borrowing from a citadine dialect.

The use of *q* where one would have expected *g* is found in a large number of Berber varieties. The following examples illustrate the fate of the related verbs *Qləb* 'to turn over' and *Qəlləb* 'to turn over', which normally have *g* in Arabic second-layer dialects (cf. Oranais *gləb* and *gəlləb*; Madouni-La Peyre 2003:420):[17]

Central Mor.	*qləb*	'to turn over, to plough'
Tarifiyt	*qřəḇ*	'to turn'
Iznasen	*qləb*	'to turn over'
Beni Snous	*qləb*	'to plough'
Kabyle	*qləḇ*	'to turn oneself over, to return'
Figuig	*qləb*	'to turn over, to till the soil'
Gourara	*qləb*	'to turn over' (Boudot-Lamotte 1964:542)
Siwa	*aqlab*	'the fact of turning' (Souag 2010:432)
Tashelhiyt	*gllb*	'to turn over'
Mzab	*gəlləb*	'to turn over'
Ouargla	*əgləb*	'to turn over'

For Siwa, Souag (2009a) has shown that the regular correspondent of Arabic *Q* is *q*. This is unexpected for two reasons. In the first place, the

[16] The main exceptions are Ghomara and Senhadja Berber, some western Tarifiyt varieties, and Kabyle.

[17] In the meaning 'to search for', *qəlləb* with *q* is common in all dialects, cf. Madouni-La Peyre 2003:421; Heath 2002:143.

surrounding Bedouin Arabic varieties all have *g* in a rather consequent manner. In the second place, in urban varieties of Egypt, such as Alexandrian and Cairene Arabic, *q* is not found as a reflex of *Q*. Instead, *ʔ* is found in Cairene Arabic, while in old-fashioned Alexandrian speech there is variation between *ʔ* and *g* (Behnstedt & Woidich 2005:49). This leads Souag to posit the former existence of a local Siwan Arabic dialect which was characterized, among others, by the reflex *q* for *Q*. He points to the existence of *q* in the Arabic dialects of the other Egyptian oases (esp. Farafra and, to a lesser extent, Dakhla, Behnstedt & Woidich 2005:41).

The former presence of Arabic *q*–dialects in regions where *g*–dialects are spoken nowadays could very well explain the frequency of *q* as a reflex of Arabic *Q* in other Berber varieties as well. However, different from Siwa, there is little additional evidence for this, neither as regards the history of the region, nor in the language. Historically, one may assume (with Lévy 1998) that Arabic was spoken in several places along the major trade routes where it has now been replaced by Berber or by nomadic Arabic dialects. The introduction of *q* in loanwords could be linked to this former presence of first-stratum dialects.

Linguistically, there is one important additional piece of evidence: the fate of the word 'time' (Ar. *wəQt*) in Berber dialects of Morocco and Western Algeria. In Maghribian Arabic, the cognate of Classical Arabic *waqt* is normally *wəqt* or *wəkt* (< *wəgt*). The *q*-variant is clearly dominant with this word, irrespective of the further profile of the dialect. In north-western Morocco, however, a variant with *x* instead of *q* is found, e.g. Tangier *waxt* 'time', *fūyāx* (< *fī ʔayy waQt*) 'when' (W. Marçais 1911:419, 492; Heath 2002:481; Prémare 1993–1999:XII-242). In Berber, *(l=)wəQt* has been borrowed as a noun, but also appears in adverbs expressing time, such as 'now' and 'then' (combined with deictic clitics), and conjunctions such as 'until the moment that', e.g. Iznasen *iləqq=u* 'now (moment=PROX)'; *iləqq=ənni* 'at that time' (moment=ANP); Figuig *al.axt=ənn* 'until (until. time=ANP)'.

As expected, in many varieties the *Q* of *lwəQt* has been taken over as *q* or *g*, e.g. Figuig, Ouargla *lwəqt* 'time'. However, in a number of Berber varieties one finds forms with *x*:

Tarifiyt (War)	*řux=*	'moment'
Tarifiyt (Q)	*řəxx=*	'moment'
Figuig	*al.axt=ənn*	'until'
Gourara	*uxt=inni*	'when' (Boudot-Lamotte 1964:539)
Mzab	*lləxt, lwəxt*	'time, moment' (~ *lwəqt*)
Nefusa	*lwəxt*	'time, moment' (~ *lwəqt*)

In present-day northern Africa, Arabic forms with *x* are confined to the first-stratum dialects of northwestern Morocco. Outside the Maghrib they are attested in Anatolian Arabic (Jastrow 1978:40). This suggests that they represent a dialectal feature brought from the east, and not a Maghribian innovation. The Berber forms occupy a much larger territory than the Arabic forms, in a broad line stretching from the Rif towards the southeast until reaching Gourara and the Mzab, as well as some dialects in Tunisia and western Libya. *x*-forms are absent in the Tashelhiyt–Central Moroccan continuum, and in the dialects of northern Algeria (including Beni Iznasen, which has *ilәqq=* 'moment'). The presence of this form in Berber varieties that are spoken thousands of kilometers away from the present-day Arabic dialects which have it, strongly suggests that the type of Arabic it represents used to be more wide-spread formerly. The *wəxt* forms occur in some of the most strictly first-stratum Arabic dialects in northern Africa. Thus the presence of *(l)wəxt* in Berber confirms the presence of first-stratum Arabic dialects in regions where they are no more spoken today, especially in the Sahara. The preservation of the irregular outcome of *Q* in *wəxt* thus provides a link to the pronunciation of *Q* as *q* in Berber varieties that are no more in contact with pre-Hilalian Arabic.

The former presence of first-stratum Arabic dialects does not explain all instances of Berber *q* for Arabic *Q*. This is shown by the loanword *gaɛ* 'totally'. In many Berber varieties, this term has *q*:

C. Moroccan	*qqaḥ*	'all, totally'
Tarifiyt (Q)	*qaɛ*	'totally'
Iznasen	*qaɛ*	'all, totally'
Figuig	*qaɛ, qa*	'all, totally'
Gourara	*gaɛ*	'entirely'
Mzab	*gaɛ*	'all'
Ouargla	*gaɛ*	'entirely'

This is remarkable, as in dialectal Arabic the word *gaɛ* 'entirely' is typical of second-stratum dialects. It only appears in first-stratum dialects when borrowed from a second-stratum variety, e.g., *gaɛ* in Tlemcen. As a consequence, in dialectal Arabic, the word only occurs with *g* and Arabic ***qaɛ* 'entirely' with *q* is unattested. The explanation for the Berber forms with *q* mirrors the change in the type of Arabic surrounding the Berber varieties. At a certain moment in time, Berber was in contact with first-stratum Arabic, and took over words with *q*. When in the course of the Middle Ages nomadic (second-stratum) Arabic came in and the relevant first-stratum Arabic dialects were abandoned, Berber speakers noted that

dialectal Arabic *g* was equivalent to *q* in borrowings in their language. In view of the association of the *q*–pronunciation with Qur'ānic reading, this may have constituted a reason for pride among speakers of Berber. When new Arabic words were taken over in the language, this equivalence was extended to them, and Arabic *g* was substituted by *q*. A a result, in most cases, it is not possible to distinguish genuine first-stratum loanwords (where the source language had *q*) from later loans with substitution of *g* by *q*, but in a case like *gaɛ* the process shows up very clearly.

In addition to forms with *q*, there are also forms which show *g*. In most languages these seem to be late, and often they have a strong nomadic flavor about them, e.g. Figuig *lgafəlt* 'caravan', *gəwwəd* 'to guide'. The late insertion of these terms is also shown by the fact that Berber *g* < *Q* rarely undergoes the same phonetic changes as native *g*. This is especially clear in Mzab and Ghadames. In these varieties, Berber *g* has mostly been palatalized, e.g. Mzab *əǧni* 'to sew' (< *əgni*), *iǧuṛ* 'to walk' (< *iguṛ*). In Arabic loans, *ǧ* is often found representing Arabic *ǧ* (*ǧīm*), but never representing Arabic *Q*. In this case, the pronunciation is always *g*, e.g. Mzab *gərrəb* 'to approach', *əgla* 'to roast'.

Similar arguments can be adduced for dialects more to the west, such as Tarifiyt (Q) and Figuig, where Berber *g* has become *y*. With few exceptions (see below), Arabic *g* < *Q* is maintained, e.g. Tarifiyt *ɣgəɛḍəṯ* 'plain', *ɣgiḥḥ* 'pus', *āšəg* 'to hang up' (cf. Classical Arabic *rašaqa*), *ngəz* 'to jump'.

There is an important difference between the fate of *g* < *Q* and another type of *g*, which is found in Moroccan Arabic. In this dialect, *ž* (maybe at that stage still pronounced as *ǧ*) was changed to *g* when followed by a sibilant later in the word (cf. W. Marçais 1911:xiv), e.g. Classical Arabic *ǧayš* 'army', Moroccan Arabic *gīš*, Classical Arabic *ǧazzār* 'butcher', Moroccan Arabic *gəzzār*, Classical Arabic *ǧalasa*, Moroccan Arabic *gləs* (cf. Heath 2002:136ff.). In Tarifiyt and Figuig, borrowed words with *g* < *ǧ* may undergo spirantization, e.g. Figuig *ayəzzar* 'butcher' (< *gəzzār* < *ǧazzār*), Tarifiyt (Q) *ṯayəzzāṯ* 'island' (< **tagəzzirt* < *gzīra* < *ǧazīra*).

On the other hand, the great bulk of borrowings with *g* < *Q* in these dialects do not undergo spirantization. There are a few terms that go against this tendency. Above, the special case of Figuig *ašḍif* 'rug' < *kṭīfa* < *gṭīfa* < *qṭīfa* was already studied. Another case is *Qədra* 'earthenware pot' (cf. Classical Arabic *qidra*), which gave Tarifiyt (Q) *ṯayḏuaṯ* 'milk jug' (Mourigh p.c.), Beni Snous *ṯayḏurṯ* 'pot' and Figuig *taydurt* 'earthenware pot'. There are similar forms in dialects without merger of *g* and *y*, e.g. Central Moroccan Berber *tagdurt* and Kabyle *ṯaḡḏurṯ*. The presence of *ḡ* in the Kabyle form is unexpected, as Arabic *Q* is represented in a very consequent

manner by *q* in this language. In some other varieties, forms with *q* are attested, e.g. southern Central Moroccan Berber *aqduḥ* (Azdoud 2011:78), Gourara *taqdiḥt* (< **taqdirt*) 'pot' (Boudot-Lamotte 1964:543; the vowel *i* may come from the Arabic diminutive). The Berber form of the word is unusual from another perspective too. In Arabic, the corresponding noun is *Qədra* without a plain vowel. The plain vowel *u* only comes in in the plural of the noun, i.e. *Qdur*. As a consequence, the history of this noun is unclear—it seems to represent an early introduction of an Arabic word on the basis of a variety with *g* for *Q*.

Both *ašḍif* and *taydurt* allow for an alternative explanation. In some first-stratum Jewish Maghribian Arabic dialects *Q* regularly becomes *k* (Lévy 2009:314ff., Heath 2002:142). The Figuig form *ašḍif* could come immediately from such as form (i.e. *ašḍif* < Ar. **kṭīfa*), while *taydurt* would represent regressive voice assimilation (i.e. *taydurt* < *tagdurt* < *takdurt* < Ar. **kədra*). The main problem with these derivations is that there is no further evidence for influence of Arabic dialects with *q* > *k* on Berber.

In some nomadic Arabic dialects in Algeria and southern Morocco, *Q* becomes *g* and *ɣ* becomes *q*, e.g. in nomadic dialects of the Mzab region *bga* 'to stay' (Classical Arabic: *baqiya*), *bqa* 'to want' (Classical Arabic: *baɣā*) (Grand'henry 1976:16, 100). In the Berber varieties spoken in the same regions, the pronunciation *q* of *ɣ never occurs in loanwords, i.e. Arabic *ɣ* always appears as *ɣ*, e.g. Mzab Berber *ɫyanim* 'sheep herd', Mzab nomadic Arabic *qlăm* 'sheep' (Grand'henry 1976:16), Mzab Berber *ləbyəl* 'mule', Mzab nomadic Arabic *b^{a}qăl* 'mule' (Grand'henry 1976:101).

In Tarifiyt and in Figuig one sometimes finds *q* representing Arabic *x*. This is probably an instance of the use of *q* in expressive substitution of consonants (see section 5.4). Examples:

Tarifiyt	*aqənnin*	'snot'	< Mor. Ar.	*xnuna* 'snot'
Figuig	*qbəš*	'to claw'	< Mor. Ar.	*xbəš* 'to claw'
Figuig	*tiqəšba*	'plates of the palm tree'	< Mor. Ar.	*xəšba* 'piece of wood'

A similar history may lie behind Figuig *aqbur* 'old', no doubt representing the Arabic root KBR 'to be big', cf. also Mzab *akbur* 'old'.

Due to the native Berber correspondence between short *ɣ* and long *qq*, the long segment *ɣɣ* is not reconstructible for proto-Berber. It is difficult to trace the fate of Arabic *ɣɣ* in the Berber languages, as it only rarely occurs in borrowed vocabulary. In these few cases, it seems that *ɣɣ* remains *ɣɣ*, e.g. Kabyle *tməɣɣ^{w}əl* 'have a certain illness because of lust or jealousy (donkey, horse)'.

5.3.2.4 *The Fate of Arabic* x, ḥ *and* ε

There was no phonemic correspondent in Proto-Berber to the Arabic consonants *x, ḥ* and *ε*, nor to their long counterparts. The pronunciation *x* probably existed in Berber before the advent of Arabic as an allophone of *ɣ* before voiceless consonants (mainly *s* it seems) and in final position (Kossmann 1999a:236–242); cf. the following assimilated native forms in Beni Iznasen Berber:

Iznasen	*aḏəxs*	'colostrum'	(cf. Ayer Tuareg *edăɣăs*)
	t̲ixsi	'ewe'	(cf. Ayer Tuareg *teɣse*)
	əxs	'to want'	(cf. Imperfective *qqas*)

The three Arabic consonants in question are always taken over as such in the northern Berber varieties, as illustrated by the following loans in Beni Iznasen:

Iznasen	*lbəṭṭix*	'melons'	*fuḥ*	'to smell'	*iždəɛ*	'foal'
	ddəxxan	'smoke'	*ləbḥər*	'sea'	*ašəɛɛal*	'big fire'
	xḏəm	'to work'	*ḥəff*	'to shave'	*ɛum*	'to swim'

Only in one widespread borrowing *ε* has been lost. From Arabic *barḏaɛa* ~ *bardaɛa*, which is the normal term for 'donkey's saddle' (orginally it meant 'cloth of a certain kind which is put beneath a certain type of camel's saddle', Lane 1863–1893:I, 186), northern Berber varieties have: Central Moroccan Berber *tabarda*; Tarifiyt (Q); Beni Iznasen *t̲barḏa*; Beni Snous *t̲barḏa* (also: *t̲ibərḏaɛt̲*); Kabyle *t̲aḇarḏa*; Figuig *tbarda*; Ouargla *tbarda*; Djebel Nefusa *təbardá*. Tuareg—normally not a great borrower from Arabic—has a similar form: *tăbarde* 'quilt' (note that donkey's saddles often consist of quilt-like blankets). Ritter (2009:II, 147) cites Rössler with a derivation from Latin *tabardum*. As far I can see, this word only occurs in post-antique Latin in the meaning 'tabard'. Both the meaning and the late attestation of the term point against the Latin derivation.

5.3.2.5 *Some Rare Berber Consonants Strengthened by Arabic*

In addition to Arabic consonants which probably had no direct counterpart in Berber, there are several consonant phonemes, which had a marginal existence in Berber, but were strengthened by the introduction of Arabic loanwords. This concerns two sets of consonants, *ḇ* and *ḥ* on the one hand, and *š* and *ž* on the other.

Proto-Berber had a consonant *ḇ or *h, which in northern Berber has been lost, but survives as *ḥ* in Tuareg and as *ḇ* in a number of Libyan

varieties (Ghadames and Awdjila). According to the analysis in Kossmann (1999a:131), the consonant would have been pronounced [β] (or something similar)[18] originally. When immediately followed by a consonant, it developed into *b* in most varieties (incl. Tuareg). Only in Ghadames and Awdjila the original pronunciation *b̲* (or *v*) was retained, while in Zenaga and Djebel Nefusa, **b̲* became *w* before a consonant (for further details, see Kossmann 1999a). In other positions, **b̲* was lost or altered in northern Berber, except Ghadames and Awdjila, even though different effects on vowels according to the dialect sometimes betray its former presence. The original pronunciation of the consonant is a matter of debate. While Kossmann (1999a:131), following earlier analyses by Otto Rössler and Francesco Beguinot, argues that it must have been labial in nature, Karl-G. Prasse (1969) reconstructs **h* in the contexts where Tuareg has *h*. Rössler (1964) and others have pointed to the apparent complementary distribution of Tuareg *h* and *b*. In fact, there are only few cases of pan-Berber *b* in other than pre-consonantal contexts—i.e. the contexts where *b̲ would have become [b] according to Kossmann (1999a). This puts a strain on the reconstructibility of *b as a phoneme different from *b̲ in Proto-Berber. Kossmann (1999a:126–130) provides a number of exceptional *b*'s, which shows that there are at least some words that reconstruct as *b rather than *b̲.

b must have been rare in non-pre-consonantic position in Berber when Arabic came in. As a result of large-scale borrowing from Arabic, *b* is nowadays found in all positions.

The question of *h* is related to that of *b̲. As mentioned above, according to Prasse (1969), the proto-phoneme in question would be reconstructible as a glottalic rather than as a labial consonant. As *h* is currently found in Tuareg, whatever its reconstruction in Proto-Berber, it is very well possible that the pronunciation *h* also existed earlier in (parts of ?) northern Berber. There are a few arguments in favor of this. In the first place, *h* appears in a few words of Berber origin, especially in northwestern Moroccan varieties, e.g. Senhadja de Sraïr *t̲ahala* 'well'.[19] In the second place, Arabic transcriptions of Berber words, as well as Arabic loans from Berber, often have the consonant *h*. When this happens in initial position (e.g. Moroccan Arabic

[18] Louali & Philippson (cited in Lux 2011) reconstruct a voiceless bilabial fricative [ɸ]. There seems to be no reason to reconstruct a voiceless fricative, as Tuareg *h* is voiced [ɦ] phonetically.

[19] Cf. also the north-eastern Middle Atlas toponym *t̲ahla* ('Tahala'), which probably contains the same etymon.

hərkus for *arkas* '(old) shoe'), one may argue that *h* represents the softer vocalic onset typical of Berber in comparison to Arabic *ʔ* (cf. also van den Boogert 1997:127). In other positions, this argument does not hold. Thus one finds forms such as *səlhām* 'trousers', *ṣənhāža* 'tribal name' (modern Berber *iẓnagən* and similar), which suggest that, at a certain moment in time, or at certain localities, Northern Berber had *h* in post-consonantal position. This feature may have been lost quite early. Ibn Khaldûn points out the difference between the Arabic and the Berber form of the tribal name *ṣanhāža*, and considers the presence of *h* a way of adapting the word to the Arabic structure.[20] As there seems to be no structural need in Arabic for such an adaptation, it looks more promising to assume that the form *ṣanhāža* reflects an earlier form of the Berber word. By the time of Ibn Khaldūn, *h* had been lost in the Berber form, and only survived in the conventional Arabic rendering of the name. It is impossible to prove that these medieval *h*'s represent *ḇ. Most do not have a cognate in the varieties where *ḇ is still visible; where they do, the evidence is ambiguous. *hərkūs* corresponds to Zenaga *tārkäss* 'sandal', with a long vowel, which regularly corresponds to *ḇ. However, in the same language, there is no trace of *ḇ in *aẓnug* (/aẓnəg/) 'Zenaga person' which is the same etymon as Arabic *ṣanhāža*. Finally, Senhadja *ṯahala*, in a language where *ḇ is normally not preserved intervocalically, corresponds to *tala* 'type of well' in Ghadames, a language which preserves *ḇ otherwise.

The phoneme *h* also exists in Arabic, although it is not very frequent. Berber languages take over this phoneme without much problems.

The problem of *š* and *ž* is somewhat less complicated.[21] As shown in Kossmann (1999a:219–235), reconstructible words with *š* and *ž* are rare. Moreover, only few of these words are generally attested in Berber, and most are shared by only a small number of varieties. Cases of *šš* and *žž* may be analyzed as resulting from *sy and *zy, respectively, clusters otherwise not found in proto-Berber. It is therefore doubtful that *š* and *ž* existed as phonemes when Berber came first into contact with Arabic. The massive influx of Arabic words with *š* and *ž* (= ج) established he phonemic character of these sounds in modern Berber beyond any doubt.

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[20] In de Slane's translation: "Les Sanhadja sont les enfants de Sanhadj, nom dont la première lettre doit recevoir dans la prononciation un léger mélange du son du *z*, et dont la dernière lettre [le *dj*] est un *k* se rapprochant du *g*. Entre l'*n* et l'*a* du même mot, les Arabes ont inséré un *h*, afin de l'adapter au génie de leur langue" (Ibn Khaldoun 1852–1856:II, 2).

[21] The situation in Awdjila is different, as in this language native *s* and *z* are often represented by *š* and *ž*.

5.4 The Use of Arabic Sounds in Non-Arabic Words

The introduction of Arabic lexicon constitutes the main source of Arabic sounds in northern Berber. In addition to this, numerous non-Arabic words in northern Berber also contain Arabic sounds. This is connected to expressive formations.[22] In Berber, new expressive forms of words, or new words with expressive connotations, often emerge on the basis of existing vocabulary by the addition of consonants, or by the substitution of a consonant by a more "expressive" consonant. Expressive elements are mostly put in front of the non-expressive stem. Naït-Zerrad (2002) provides a useful overview of the types of expressive prefixes attested. Such prefixes mostly consist of a single consonant, or of a consonant followed by *l, r, n* or *ɛ*. Expressive prefixes are found everywhere in the Berber world. One feature of these prefixes is that they frequently contain consonants that are either borrowed from Arabic (*q, x, ḥ, ɛ*), or that were rare in Berber before the beginning of Arabic-Berber contacts (*b, š, ž*). It is difficult to say whether this is an effect of articulation place (*f* and *g* are also well-attested in expressive formations), or whether the foreignness of the sound contributed to the intended expressive effect. The following examples illustrate the use of the loan phoneme *ḥ* (alone or together with other elements) in expressive formations in Kabyle:

Kabyle	*ḥəḇruraš*	'little hail'	cf. *aḇruri* 'hail'
	aḥəšraruf	'high rock'	cf. *ašṛuf* 'big rock'
	sḥiržḏəl	'to limp'	cf. *rrəžḏəl* 'to limp'
	iḥənṭəḏ	'plants with sticking fruits'	cf. *ənṭəḏ* 'to stick to'
	ḥḥizwər	'to rivalize (in play)'	cf. *zwir* 'to precede'
	t̲iḥəḏmərt̲	'breast of small animal'	cf. *iḏmarən* 'breast'

Different varieties may use different expressive consonants, as illustrated by the noun *aCVḍar* 'somebody who limps', derived from *aḍar* 'foot' (Naït-Zerrad 2002:367): Tashelhiyt *abiḍar*; southern Central Moroccan Berber *abəšṭar, aɛuṭar* (Amaniss 2009); Central Moroccan Berber *ažiḍar* 'person with one or two amputated legs'; Tarifiyt *aḥiḍā*, Kabyle *aquḍar, aquḍar*.

By nature, expressive formations are not expected to occur in basic lexicon. However, historical loss of expressive saliency sometimes leads to the presence of expressive forms in non-expressive lexicon. This has happened on a large scale with nouns denoting the body parts 'head', 'mouth',

[22] The term expressive is deliberately left vague.

and those related to the trunk of the body, e.g. (mainly from Kossmann 1999a:247):

'head'	< *iri* 'neck? Kabyle *aqərruy*
'mouth'	< *imi* 'mouth' (e.g. Tashelhiyt *imi* 'mouth') Tashelhiyt *axmum* 'face', Central Moroccan *aqmu* 'mouth, snout', *aqəmmum* 'snout', Senhadja *aqəmmum* 'mouth', Tarifiyt *aqəmmum* 'mouth', Iznasen *aqəmmum* 'mouth, throat', Snous *aqəmmum* 'mouth', Figuig *aqəmmum* 'face', Metmata *aqəmmum* 'mouth', Kabyle *aqumum* 'snout', Cf. also Moroccan Arabic *qəmmuma*, *qəmmuna* 'muzzle', which is a loan from Berber.
'back'	< *arur(V)* 'back' (e.g. Central Mor. *aruru*, Ayer Tuareg *ărori*) Central Moroccan *aɛrur*, Senhadja *aɛrur*, Tarifiyt *aɛrua*, Iznasen *aɛrur*, Snous *aɛrur*, Kabyle *aɛrur*.
'belly'	< *adis* 'belly' (e.g. Kabyle *ṯaḍisṯ* 'pregnancy', Tashelhiyt *adis*, Figuig *tadist*) Tashelhiyt *aḥddassay* (pej.), Central Mor. *aɛddas, aɛddis*, Senhadja *aɛaddis*, Rif *aɛəddis*, Iznasen *aɛəddis*, Snous *aɛəddis*, Beni Menacer *aɛəddis*, Metmata *aɛəddis*, Chaouia *aɛddis*, Mzab *aɛəddis*, Ouargla *aɛəddis*.
'navel, stomach'	< *abuḍ* 'navel' (e.g. Tashelhiyt *abuḍ* 'navel'. Iznasen *buḍ* 'lower part of a plant, bottom part', Djebel Nefusa *buṭ* 'basis') Tashelhiyt *aḥbbuḍ* 'stomach', Central Mor. *aɛəbbuḍ* 'stomach', *tašəɛbuṭṭ* 'navel', Senhadja *taḥəbbut* 'navel', Tarifiyt *ṯaɛəbbuṭṭ* 'navel', Iznasen *ṯaɛəbbuṭṭ* 'navel', Beni Snous *ṯaɛəbbuṭ* 'belly beneath the navel', Beni Menacer *haɛabuṭ, hažɛabuṭ* 'navel', Metmata *ṯaɛɛbuṭ* 'navel'.
'hips'	< *iməqqi* (e.g. Medieval Tashelhiyt *imqi, iməqqi* 'hipbone') Figuig *taməqqɛəyt* 'hip'.

Many non-borrowed words with borrowed consonants (e.g. *ḥ*) do not have a clear non-expressive counterpart in the language or in other varieties, but still seem to convey expressive semantics, e.g.

Kabyle	*ḥḥəšluləḍ*,[23] *əḥluššəḍ, əḥluššəḡ, əḥnuššəḍ, əḥniššəḡ* 'to be glibbery, to slip' *əḥḍiqər, ḥḍibbʷəs, əḥṛiṛət, əḥṛiṭṭəw* 'to be agitated'

The use of borrowed consonants in expressive formations sometimes leads to morpheme-like properties of the expressive consonant (Galand-Pernet 1987). This is illustrated by the following forms from Figuig (Kossmann 1997:121), where the preformative *š-* expresses '-ish':

[23] One may compare non-expressive forms such as Figuig *luḍ* 'mud'.

Figuig	*aməllal*	'white'	*šamlal*	'whitish'
	adal	'green'	*šadal*	'greenish'
	awṛaɣ	'yellow'	*šawṛaɣ*	'yellowish'
	(cf. *aẓəkkʷaɣ*	'red'	*lazwaɣ*	'reddish')

The addition of a consonant is one way of achieving expressive effects. Another way is the substitution of a consonant by another, more "expressive" consonant. This involves especially the well-attested use of *q* instead of various other consonants, e.g. (exx. from Kossmann 1999a:243ff.):

Kabyle	*nquqəl* 'to sway', cf. *ngūgəl* 'id.', *ṯažgagalt* 'swing (for playing)', *šššəngəl* 'to hang down'; Tashelhiyt *agʷl* 'to hang'.
Iznasen	*qžižəw* 'to shiver (from cold)', cf. *ržiž* 'to tremble'.
Kabyle	*aqžun* 'dog' (gross word), Senhadja, Tarifiyt, Metmata: *aqzin* 'dog'; Seghrushen, Iznasen, Snous, Chenoua, Menacer *aqzin* 'puppy'. Elsewhere this word is attested with *g* or *k*, e.g. Ghadames *əgzen*, Tashelhiyt (Lakhsasi) *igzin*, Figuig *agzin* 'puppy'.
Kabyle	*aqəššaḍ, aqəššuḍ* 'firewood', Iznasen *aqəššuḍ* 'stick, firewood', Snous *aqššuḍ* 'firewood', Chenoua *aqšuḍ* 'wood', Menacer *iqššuḍən* 'wood', Metmata *aqššuḍ* 'wood', Figuig *aqəššuḍ* 'wood', Gourara *aqəššuḍ* 'wood', Siwa *aqšit, aqəṭṭuš* 'firewood'. Other languages have *g* or *k*, e.g. Tashelhiyt *akššuḍ* 'stick, firewood', Kebdana (Eastern Tarifiyt) *akəššuḍ* 'wood', Chaouia *agəššuḍ* 'small piece of wood'.

CHAPTER SIX

NOMINAL MORPHOLOGY

This chapter deals with the way Arabic nouns appear in Berber. It is shown that they are partly integrated into pre-existing Berber patterns, and partly form their own morphological class. This means that there exist to a large degree parallel systems in nominal morphology, with Berber-morphology nouns being treated differently from Arabic-morphology nouns. Much of the chapter revolves around the question to what extent the parallel morphologies interact. In the second part, elements of the semantic distribution of integrated and non-integrated nouns are studied, and the (marginal) presence of Berber nouns in the class of non-integrated Arabic borrowings is indicated. The rather spectacular way that Ghomara Berber borrowed Arabic diminutive patterns is treated elsewhere (section 8.4).

6.1 General Overview of the Two Systems

The basic systems of nouns in Berber and Arabic present some isomorphism, which may be due to a common Afroasiatic heritage. In addition to their lexical content. Maghribian Arabic nouns mark or contain the following categories:

Gender
Like all varieties of Arabic, Maghribian Arabic has a binary opposition between masculine and feminine nouns. The gender of a word can be deduced from agreement in adjectives, pronouns, and verbs. Most feminine nouns are marked by means of a suffix *-a* ~ *-(ə)t* in the singular.

State
Classical Arabic has an opposition of state, distinguishing between a Free State (FR) and a Construct State (CS). The CS is basically a device on the head which signals that it is modified by a genitival suffix or phrase. In Maghribian Arabic, FR and CS are morphologically different in feminine nouns with the suffix *-a* (FR) ~ *-(ə)t* (CS) and in ancient duals in *-in* (FR) ~ *-i* (CS). The CS construction has become infrequent in many Maghribian Arabic varieties, which prefer constructions with a genitival preposition.

Number

Maghribian Arabic has a basic distinction between singular and plural. This is partly expressed by means of suffixes, but mainly by means of changes in the vocalic patterns of the noun. Plural formation is highly irregular. A small number of nouns also have a dual form.

Definiteness

Maghribian Arabic nouns distinguish definite from non-definite nouns[1] by means of the pre-cliticized article *l=*, which undergoes full assimilation to following coronal consonants. Non-definite nouns are either unmarked, or receive the indefinite element *waḥd əl=* (historically 'one of the').

The morphological structure of a Maghribian Arabic noun is as follows:

1. nouns with suffixal plurals:

(article)	=	Stem	—	(suffix)
DEFINITENESS		LEXICAL		GENDER
				NUMBER
				STATE (mostly singular)

2. nouns with apophonic plurals:

(article)	=	Stem	—	(suffix)
DEFINITENESS		LEXICAL		GENDER (only singular)
		NUMBER		STATE (only singular)

Examples:

kəlb	'male dog'	(STEM; FR=CS)	*kəlb-a*	'bitch'	(STEM-F:FR)
			kəlb-ət	'bitch'	(STEM-FR:CS)
l=kəlb	'the dog'	(DEF=STEM)	*l=kəlb-a*	'bitch'	(DEF=STEM-F:FS)
klab	'dogs'	(STEM:P; FR=CS)	*kəlb-at*	'bitches'	(STEM-F:P; FR=CS)
l=əklab	'the dogs'	(DEF=STEM:P)	*l=kəlb-at*	'the bitches'	(DEF=STEM-F:P)

In Berber, the following categories are distinguished:

Gender

All Berber languages have a distinction between masculine and feminine nouns. Feminine gender is expressed by means of initial *t-* in the obligatory nominal prefix, and in many words by means of a suffix *-t* (singular), *-in* (plural). Gender is derivational: most nouns have a masculine and a feminine form. For humans and higher animals, grammatical gender

[1] For a thorough discussion, see Maas 2011:153ff.

reflects natural gender, e.g. Iznasen *aɣyul* 'male donkey' *ṯaɣyult* 'donkey ass'; in other cases it mainly reflects a difference in size. This is basically a relationship between neutral (masculine or feminine) forms and diminutives (feminine) and augmentatives (masculine), e.g. Figuig masculine *fus* 'hand', feminine *tfussətt* 'baby hand', feminine *tmart* 'beard', masculine *mar* 'enormous beard'. The gender of the neutral meaning is lexically determined, and only the size meaning associated to the opposite gender can be expressed; thus it is not possible to use gender derivation for expressing 'little beard', as the neutral term is feminine, while one cannot speak of an 'enormous hand' by means of gender derivation either, as the neutral term is masculine. In many cases, it is vacuous to decide which pole of a size difference would be neutral, as in the case of small and large pots, and the two forms seem to be lexicalized to a certain extent.

"State"

Most Berber languages have a distinction between two forms. One is used with non-topicalized subjects, after prepositions, and after a few pre-nominal elements. This is called the Annexed State (état d'annexion, EA). The other is called the Free State (état libre, EL), and used in all other contexts, including citation. Some Berber languages, e.g. Kabyle, use the Annexed State also with right-dislocated elements. In Ouargla and Ghomara, it is only used after prepositions and numerals. There exists major debate on the exact analysis of this opposition. Some scholars consider it an opposition of case, while others have a different analysis (cf. the overview in Kossmann 2012a:67–71). The opposition of "state" does not exist in Zenaga and Awdjila, and is not segmentally expressed in most Libyan varieties and in Siwa. In several languages in the east, however, something similar to the EA is expressed by accent shift (Brugnatelli 1986).

Number

Berber languages distinguish singular from plural. The opposition is marked by two independent processes. First, many nouns have a change in the vowel of the obligatory nominal prefix. Second, the rest of the noun undergoes either vocalic changes, or suffixation, or a combination of vocalic changes and suffixation.

The morphology of Berber nouns with the "state" opposition is basically as follows. The situation is different in those dialects that do not have the opposition, as well as in nouns lacking the opposition in dialects that have it elsewhere.

1. nouns with suffixal plurals:

Prefix	— Stem	— (suffix)
GENDER	LEXICAL	GENDER
"STATE"		NUMBER
NUMBER		

2. nouns with internal plurals:

Prefix	— Stem	— (suffix)
GENDER	LEXICAL	GENDER (only singular)
"STATE"	NUMBER	
NUMBER		

Typical of Berber nouns is the presence of an obligatory nominal prefix, that (ideally) encodes gender, "state" and number, e.g. Kabyle:

a-qḇayli	'Kabyle' (M; S; EL)	*ṯa-qḇayli-ṯ*	'Kabyle' (F; S; EL)
w-əqḇayli	'Kabyle' (M; S; EA)	*ṯ-əqḇayli-ṯ*	'Kabyle' (F; S; EA)
i-qḇayliy-ən	'Kabyles' (M; P; EL)	*ṯi-qḇayliy-in*	'Kabyles' (F; P; EL)
y-əqḇayliy-ən	'Kabyles' (M; P; EA)	*ṯ-əqḇayliy-in*	'Kabyles' (F; P; EA)
a-yaẓiḍ	'rooster' (M:S:EL)	*i-yuẓaḍ*	'roosters' (M:P; EL=EA)
u-yaẓiḍ	'rooster' (M:S:EA)	*i-yuẓaḍ*	'roosters' (M:P; EL=EA)
ṯa-yaẓiṭ-ṭ	'hen' (F:S:EL)	*ṯi-yuẓaḍ*	'hens' (F:P:EL)
ṯ-yaẓiṭ-ṭ	'hen' (F:S:EA)	*ṯ-yuẓaḍ*	'hens' (F:P:EA)

A special group of prefixed nouns is constituted by nouns which have a zero-prefix (M) or simple *t-* (F) in the singular of the Free State, but elsewhere have vowels where expected. Nouns of this type always start in a single consonant followed by a plain vowel. They occur in Berber varieties belonging to the Zenatic block, e.g. Figuig:

yaẓiḍ	'rooster' (M; S; EL)	*t-yaẓiṭ-ṭ*	'hen' (F; S; EL=EA)
u-yaẓiḍ	'rooster' (M; S; EA)		
i-yaẓiḍ-ən	'roosters' (M; P; EL=EA)	*ti-yaẓiḍ-in*	'hens' (F; P; EL)
		t-yaẓiḍ-in	'hens' (F; P; EA)

Such nouns are different from those which have no prefix at all (see below).

Some elements in the prefix have a clearcut meaning, esp. *t-* 'feminine', and a finer morpheme analysis of the prefix is possible (Kossmann 1997:71–75). Such analyses have to admit portmanteau elements (e.g. *w-* 'masculine, annexed state, singular'), and their value is restricted in small morphological units such as the Berber prefix. Therefore we shall remain

here with an analysis in which the prefix is taken as a whole, and not divide it into smaller components.

In addition to nouns with a (C)V- prefix with vowel changes according to "state" and number, there exist nouns where the vocalic part does not change. Penchoen (1973b:13) convincingly explains these cases as nouns with initial stem vowels, e.g. Kabyle:

aggur	'moon' (M; S; EL)	*aggur-ən*	'moons' (M; P; EL)
w-aggur	'moon' (M; S; EA)	*w-aggur-ən*	'moons' (M; P; EA)
ṯ-asa	'liver' (F; S; EL=EA)	*ṯ-asw-in*	'livers' (F; P; EL=EA)

Most varieties in Libya and Siwa do not have "state" differentiation in the prefix. In these varieties, ø-forms of the prefix are quite frequent—in more phonetic contexts than more to the west—, with dialect-specific lexical and grammatical conditionings, e.g. in Djebel Nefusa, the prefix vowel is usually absent in the feminine plural; however, the masculine plural usually has a prefix vowel (exx. from Beguinot ²1942):

a-zuggáɣ	'the red one' (M; S)	*i-zuggáɣ-ən*	'the red ones' (M; P)
u-fəd	'knee' (M; S)	*i-fədd-ən*	'knees' (M; P)
ta-zuggáɣ-t	'the red one' (F; S)	*t-zuggáɣ-in*	'the red ones' (F; P)
tu-nís-t	'key' (F; S)	*t-nas*	'keys' (F; P)
ɣaním	'reed' (M; S)	*i-ɣunám*	'reeds' (M; P)
ɣəss	'bone' (M; S)	*i-ɣáss-ən*	'bones' (M; P)
t-məǧǧi-t	'ear' (F; S)	*t-məǧǧ-in*	'ears' (F; P)

Elsewhere in the east, other conditions for the absence of the prefix vowel apply; e.g. in Awdjila, the vowel is also regularly absent in the M:P:

a-fús	'hand' (M; S)	*físs-ən*	'hands' (M; P)

Berber nominal suffixes are portmanteau morphemes marking gender and number. The main suffixes are: *-t ~ -tt* (F:S), *-ən* (M:P), *-in* (F:P) and the less frequent *-an* (M:P), e.g. Kabyle:

a-məllal	'white' (M; S; EL)	*i-məllal-ən*	'white' (M; P; EL=EA)
ṯa-məllal-t	'egg' (F; S; EL)	*ṯi-məllal-in*	'eggs' (F; P; EL)
a-lyʷəm	'camel' (M; S; EL)	*i-ləɣʷm-an*	'camels' (M; P; EL=EA)

6.2 Integrated Borrowings

Berber languages have introduced lots of Arabic nouns. Morphologically, borrowed nouns fall into two major classes: integrated borrowings, and non-integrated borrowings (cf. already R. Basset 1906).

Integrated borrowings have Berber prefixes and suffixes, and function like any other Berber noun. Normally, only the Arabic stem is taken over. The Arabic feminine suffix *-a* is substituted by the Berber feminine suffix *-t ~ -tt*. The Berber prefix is attached to the stem and plural formation follows Berber patterns, as in the following Kabyle examples, deriving from Arabic *məḥbus* (M:S), *məḥbus-a* (F:S), *məḥbus-in* (P) 'imprisoned' and Arabic S *qadus* (masculine) 'tube', P *qwadəs*:

	Masculine	Feminine	Masculine	Feminine
S:EL	*a-məḥḇus*	*ṯa-məḥḇus-ṯ*	*a-qaḍus*	*ṯa-qaḍus-ṯ*
S:EA	*u-məḥḇus*	*ṯ-məḥḇus-ṯ*	*u-qaḍus*	*ṯ-qaḍus-ṯ*
P:EL	*i-məḥḇas*	*ṯi-məḥḇas*	*i-quḍas*	*ṯi-quḍas*
P:EA	*i-məḥḇas*	*ṯ-məḥḇas*	*i-quḍas*	*ṯ-quḍas*
	'male prisoner'	'female prisoner'	'tube'	'little tube'

Integrated borrowings function like normal Berber nouns. They differentiate between Free State and Annexed State and they have derivational gender, i.e. most masculine nouns have a feminine counterpart expressing natural gender or size, e.g. Figuig *a-ḥbib* 'beloved (male)'—*ta-ḥbib-t* 'beloved (female)' (< Ar. *ḥbib, ḥbib-a*); *a-qḍiɛ* 'piece of meat'—*ta-qḍiɛ-t* 'small piece of meat' (Ar. *qṭiɛ-a* 'small piece'); *a-qlil* 'big type of can'—*ta-qlil-t* 'smaller type of can' (Ar. *qlil-a* 'little can').

6.2.1 *Non-Integrated Borrowings: General Features*

The second major category of borrowings from Arabic was called "non-integrated" above. They do not receive Berber affixes (on the F:S suffix see below), and keep their original plural formation. As in many Berber languages borrowings of this type do not faithfully reflect Arabic patterns, they have been coined "quasi-Arabic" in Kossmann (2009a). In the following I shall remain with "non-integrated", which also includes cases where Arabic patterns have been taken over without major modifications.

The large majority of non-integrated borrowings include the Arabic article *l=*. The forms of the article follow Arabic patterns, with assimilation to a following coronal consonant, e.g.

Kabyle	*ləfɛəl*	'fact, action'
	lmal	'cattle, riches'
	ddheḇ	'gold'
	ṭṭmana	'security'
	ssuq	'market'
	ššiḍ	'burned food'

There is considerable variation in the treatment of *ž* and *ǧ*, which may or may not cause assimilation of the article, even within the same variety, e.g.

Central Mor.	*žžib*	'pocket'
	žžud	'generosity'
	lžid	'generous (person)'
	lžift	'carrion'
Figuig	*lžib*	'pocket'
	lžaṛ	'neighbor'
	lžəmmaṛ	'palm heart'
	žžḥəš	'donkey foal'
	žžəṛda	'(public) garden'

In Arabic, the status of *ž* is ambiguous. In Classical Arabic the article does not assimilate to /ǧ/. In many Maghribian varieties, /ǧ/ has become coronal /ž/, and, as a consequence, assimilation occurs in many dialects. The exact background of the Berber vaccillation between assimilated and unassimilated variants is difficult to explain.

In Siwa, assimilation also occurs with *m*, which may reflect a different Arabic contact variety than the one spoken around Siwa nowadays (Souag 2009a),[2] e.g.:

Siwa	*əmməɣrəb*	'Maghrib prayer
	əmməsṛəḅ	'path'
	əmmərḅəṭ	'rectangular bed in garden'

The Arabic article has no function in the Berber word and is best considered part of the word stem (see however below, section 6.7): Berber loans of this type can have both definite and indefinite interpretation, e.g.

Central Mor. *lbab* 'a door, the door' < Moroccan Arabic *l=bab* 'the door'

In Maghribian Arabic, the majority of feminine nouns have the ending *-a* (Free State), *-(ə)t* (Construct State). Berber varieties have different ways of dealing with this ending in non-integrated borrowings.

In Kabyle and Ghomara, feminine nouns of this type simply have the ending *-a*. The non-integrated borrowing is identical with a definite Arabic noun in the Free State, e.g.

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[2] Note that sporadic cases of assimilation to *m* and other non-coronal consonants are attested eslewhere in Maghribian Arabic (Ph. Marçais 1977:162, Heath 2002:169).

Kabyle	*lɣʷəlṭa*	'error'
	ssəḇɣa	'dark dye for hair, gall nut'
	lxʷəḏma	'work'

The other varieties regularly substitute the Arabic ending by a form *-ət ~ -t*, e.g.

Tashelhiyt	*lbhimt*	'pack animal'	(Ar. *l=bhima*)[3]
	lxdmt	'work'	(Ar. *l=xədma*)
	lžiht	'side'	(Ar. *l=žiha*)
Central Mor.	*lɛafit*	'fire'	(Ar. *l=ɛafya*)
	ləxdəmt	'work'	(Ar. *l=xədma*)
	ṣṣaḥt	'health'	(Ar. *ṣ=ṣəḥḥa*)
Tarifiyt	*ř̌gəɛḏəṯ*	'plain'	(Ar. *l=gəɛda*)
	ř̌xəḏməṯ	'work'	(Ar. *l=xədma*)
	ř̌ɣaḇəṯ	'woods'	(Ar. *l=ɣaba*)
Figuig	*ləksəwt*	'clothes'	(Ar. *l=kəswa*)
	lxədmət	'work'	(Ar. *l=xədma*)
	lɛənqṛət	'neck'	(Ar. *l=ɛŭnqṛa*)
Ouargla	*lmuṣibət*	'accident'	(Ar. *l=muṣiba*)
	lxədmət	'work'	(Ar. *l=xədma*)
	ləqbəlt	'prayer direction'	(Ar. *l=qibla*)
Nefusa	*əssəlsələt*	'chain'	(Ar. *s=səlsla*)
	əlɣillət	'harvest'	(Ar. *l=ɣəlla*)
	əžžəmaɛət	'assembly'	(Ar. *ž=žmaɛa*)
Ghadames	*ălɛadăt*	'custom'	(Ar. *l=ɛăda*)
	ălḥaǧăt	'necessity'	(Ar. *l=ḥaža*)
	əzzawyăt	'Coranic school'	(Ar. *z=zawya*)
Siwa	*əmmaržunə́t*	'marriage basket'	
	šš̌rafət	'old age'	

The ending *-ăt* is also found in Tuareg loanwords from Arabic, although *-a* is as least as common, e.g.

Ayer Tuareg	*lăqqăblăt*	'prayer direction'	(Cl. Ar. *al=qibla*)
	əlqudrăt	'Omnipotence'	(Cl. Ar. *al=qudra*)
	əlqissăt	'story, account'	(Cl. Ar. *al=qiṣṣa*)

The choice of *-(ə)t* in place of the Arabic suffix *-a* (FR) ~ *-ət* (CS) also applies to some grammatically masculine nouns, e.g.

[3] All Arabic forms cited according to Moroccan pronunciation.

Figuig	*ləɛwərt*	'boy'	(Ar. *ɛəwṛa*)[4]
Central Mor.	*ləxlift*	'substitute'	(Ar. *xlifa*)

The substitution of *-a* by *-(ə)t* is sometimes found where the Arabic final *a* is not the feminine suffix, e.g.

Tashelhiyt	*ddunit*	'world' (cf. Classical Arabic *ad=dunyā*)

In spite of the preponderance of the ending *-(ə)t* outside Kabyle and Ghomara, most variaties also have a minor category of loanwords where the Arabic suffix is taken over as *a*. In Tarifiyt (Q), for example, loanwords which can be proven to stem from the colonial period or later almost always have *-a*. This is easiest shown in the case of European loanwords which entered Tarifiyt through the medium of Arabic (Kossmann 2009a:204). Examples:

Tarifiyt	*řḇumba*	'bomb'
	žžařḍa	'garden'

In other languages, it is more difficult to make such a historical stratification, and the distribution of *-a* and *-(ə)t* remains basically unclear.

The use of *-ət* in combination with the Arabic article must be quite old in Berber. This is shown by the wide distribution of the pattern, which is found from the Atlantic coast to Siwa, and with Sunnite Muslims as well as with Ibadhi groups. One cannot rule out that the pattern as such was established during the early waves of islamization in the Maghrib. Of course, this does not mean that every word with the pattern was borrowed early; once a borrowing pattern is established, it can easily be applied to new loanwords.

Early Berber sources suggest that the *-ət* + article pattern is indeed very old. The unpublished 14th century Leiden fragment, from Morocco, has *(ə)ṭṭaɛət ən* 'obedience to' (Recto l. 3). In the manuscript, the final *tāʔ marbūṭa* is accompanied by a *sukūn*, proving it was realized with final [t]. The translation of the *Mudawwana* from Tunisia or western Libya (probably pre-dating the 16th century by several centuries) apparently writes the Arabic ending as *tāʔ* or *ṯāʔ*, as shown in Brugnatelli's interpretation *lɛurəṯ* 'wife', *lɛurt=is* 'his wife' (Brugnatelli 2011a:31), deriving from Arabic *al=ɛawra* 'the shame'. The most ancient source for Medieval Tashelhiyt, the vocabulary by Ibn Tunart (also known as al-Qaysi, van den Boogert

[4] The word takes up Arabic *ɛəwṛ-a* 'that part of the (human) body which in all modesty should be covered (usually genitalia)' (Harrell 1966:266). On the use of terms related to shame for children, see p. 92.

1997:103ff.), which dates from 1146 CE, is less clear. It has only few words in non-integrated morphology—not unexpectedly, as the vocabulary was geared towards the explanation of Arabic terms to a Berber audience. The few relevant cases are ambiguous in their interpretation. Thus the term which is *lfṣṣt* 'lucerne' in modern Tashelhiyt, and which has a dialectal Arabic background, is written with normal Arabic *tāʔ* in some manuscripts (LA f. 14v.), but with *tāʔ marbūṭa* in other manuscripts (LQ f.24v.) (van den Boogert p.c.). While plain *tāʔ* unequivocally transcribes *t*, *tāʔ marbūṭa* may stand for *-a* or *-(a)t*. Both manuscripts postdate their source by several hundreds of years, and even though they generally represent medieval Berber orthography rather faithfully, one cannot rule out that the plain *tāʔ* spelling represents a spelling change by the copyist. In any case, one can be sure that the *-ət* + article pattern dates back to at least the 14th century CE.

The etymological analysis of the element *-(ə)t* in non-integrated loans is difficult. There are two candidates. In the first place, the Berber F:S suffix *-t* comes to mind (Souag 2010:62). The problem with this identification is its behavior in syllabification. The Berber suffix *-t* normally has no schwa before it, and syllabification of the noun takes place as if the suffix were not there, e.g. Figuig *alɣəm* 'camel (male)'—*talɣəmt* 'camel (female)', not ˣˣ*taləɣmət*. In non-integrated loans, the suffix almost always has the shape *-ət*, and *-t* only occurs after specific consonants, e.g. Figuig *lḥəṣbət* 'pebbles'—not ˣˣ*ləḥṣəbt*. The element *-ət* in non-integrated loans cannot be identified with the alternative Berber F:S suffix *-ətt*, as is clearly shown by languages with spirantization. In such languages, the Berber suffix *-ətt* is not spirantized (i.e. it remains *-ətt* or is irregulary shortened to *-ət*), while the suffix *-ət* in non-integrated borrowings is spirantized (i.e., it becomes *-ə<u>t</u>*). The difference in behavior between *-t* and *-ət* with respect to syllabification is clearly shown by the presence or absence of certain consonantal assimilations. For instance, in many Tarifiyt varieties, *ř<u>t</u>* (< *lt*) becomes *č*, but no assimilation takes place when the two consonants are separated by schwa (which is not always audible). As a result, feminine nouns with Berber morphology show assimilation, while feminine nouns with non-integrated morphology with *-ə<u>t</u>*, have unassimilated forms, e.g.

Tarifiyt	*<u>t</u>aməǧǧač*	(< *<u>t</u>a-məǧǧař-<u>t</u>*)	'egg'	(Berber morphology)
	<u>t</u>iẓẓəč	(< *<u>t</u>-iẓẓəř-<u>t</u>*)	'kidney'	(Berber morphology)
	ssənsřə<u>t</u>		'spine'	(non-integrated)
	ǧǧiřə<u>t</u>		'night'	(non-integrated)

The alternative etymology is the Arabic Construct State allomorph *-t ~ -ət*.[5] As far as syllable structure is concerned, the Arabic Construct State fits the Berber forms quite well. The basic form is *-ət*, and forms without schwa only appear under the influence of preceding consonants (e.g. *r* in the case of Eastern Moroccan Arabic FR *mra* CS *mərt* 'woman', FR *məṭmura* CS *məṭmurt* 'pit'), or, because of regular syncope, when the element following the suffix starts in a vowel (as, for example, with the 1S possessive suffix *-i*).

This etymology suffers from a number of drawbacks. In the first place, most Maghribian Arabic dialects only sparsely use constructions with the Construct State, and prefer constructions with a genitival particle, in which the Construct State does not appear. As we do not know what the situation was in Maghribian Arabic at the time that this morphological pattern was introduced in Berber, this may not constitute a major problem. The second problem is more serious. As shown above, non-integrated loans from Arabic virtually always have the Arabic article. However, in Arabic, the head of a Construct State genitival construction never takes the article. Thus, Construct State and the article are in complementary distribution, and there is no basis to the borrowing of a Construct State form together with the article. One way to solve this problem is to assume that in the Arabic variety from which Berber first took over this pattern, final *-t* in feminine forms was still pronounced, similar to what is found in Classical Arabic in non-pausal forms such as Classical Arabic *as=silsila-t-u* 'the chain (nominative)'. The main problem with this solution is that preservation of *-t* in non-CS conditions is extremely uncommon in modern Arabic varieties: only in the region of Saʿda in Yemen one finds forms such as *ib=bagar-it* 'the cow', *an=sayyār-at* 'the car', where the feminine suffix is *-t* when combined with the article (Behnstedt 1987:54–55). There is no trace of such behavior in the Maghrib, and reconstructing it on the basis of Berber raises as many problems as it solves.

Therefore, one is tempted to consider the morphology of non-integrated loans a blend of several Arabic forms (hence the term "quasi-Arabic" in Kossmann 2009a). The choice for the Construct State form *-ət* of the F:S suffix, rather than the expected Free State form *-a* may have been strengthened by the existence in Berber of a F:S suffix *-t*. However, syllabification

[5] This seems to be the analysis preferred by Galand (2010:144).

clearly shows that it is not the Berber suffix which is simply added to the Arabic stem, but that the suffix itself stems from Arabic.

Non-integrated loanwords keep their Arabic plurals in all Northern Berber varieties. This way, a true parallel system (Kossmann 2010a) has evolved: words with Berber morphology have Berber plural patterns, and words with non-integrated morphology have Arabic plural patterns. Some examples:

	Singular	Plural	
Tashelhiyt	*lbhimt*	*lbhaym*	'pack animal'
	lktab	*lktub*	'book'
	ssuq	*laswaq*	'market'
Kabyle	*lḥənk*	*ləḥnak*	'cheek'
	lǧəḏra	*ləǧḏari*	'stem'
	ssuq	*ləswaq*	'market'
Ouargla	*lḥəqq*	*ləḥquq*	'right'
	ṣṣərṭ	*ṣṣṛuṭ*	'line'
	ssuk	*ləswak*	'market'
Siwa	*əlmišár*	*ləmwašír*	'saw'
	əžžíld	*ləžlúd*	'hide'
	əmmaxzán	*ləmxazín*	'granary'

Plurals of this type are of a different kind than the inherited Berber plural patterns. Still, sometimes the plurals used in Berber are different from those found with the same lexeme in neighboring Arabic dialects. Some of these plurals may be Berber innovations using Arabic morphological material. One remarks for example forms like:

Ouargla	*ləḥṣab*	*ləḥṣubat*	'kind of necklace'
	ləḥṣan	*ləḥṣunat*	'horse'
	lḥərz	*ləḥruzat*	'amulet'

The combination of an Arabic broken plural with the suffix *-at* is not unattested in Arabic dialects (Ph. Marçais 1977:135), e.g. Jijel *qəmḥ* 'wheat'—*qmuḥat* 'lots of wheat' (Ph. Marçais 1956:368). However, Philippe Marçais (1977) suggests that this type is less used in Beduin dialects (the most probable basis for Arabic loans in Ouargla), and the plural formation is not attested with the same lexemes in Arabic as in Ouargla. Thus the Ouargla predilection for this type could be a Berber innovation—one wonders in how far the Berber pluralic apohonic plural pattern *u – a* played a role in this development.

The retention of Arabic plurals is general all over Northern Berber. In Tuareg, where Arabic loans of any type are much less frequent than elsewhere, these loans receive the ending *-(t)ăn* (M:P), *-(t)en* (F:P), just like other nouns which have no nominal prefix (cf. Kossmann 2011a:40–41), e.g.

Ayer Tuareg	S *ălɣădab*	P *ălɣădabăn*	'suffering'
	S *ălwărdi*	P *ălwărditănt*	'rose water'

The use of Arabic plurals is already attested in Medieval Berber sources. Ibn Tunart (11th century CE) has a phrase *angaẓ ən ləmfaṣəl* 'pain of the joints' (LQ f.14v., LA f.15v., van den Boogert p.c.), with the Arabic plural form *ləmfaṣəl* 'joints'.

The Arabic dual, which is only used with a closed set of items in Maghribian Arabic, has been taken over in Berber together with these items. In Berber, the dual only appears in adverbial expressions (see 9.3.1), e.g.

Figuig	*ɛamayən*	'(during) two years'
	šəḥṛayən	'(during) two months'

The use of the Arabic dual in such adverbial expressions has led to a rare blend of a Berber lexeme with Arabic morphology in Kabylia, based on the Berber lexeme *aḇriḏ* 'road, time' (exx. from Rabdi 2006:61–62, cf. also Dallet 1982:42, Kahlouche 2005:213):

Lesser Kab.	*aḇriḏ*	'once'
	ḇərḏayən	'twice'
	ṯlaṯa iḇərḏan	'thrice'

These Kabyle forms function as normal nouns, and are not restricted to adverbial usage.

6.2.2 *Paradigmatic Gender Relationship in Non-Integrated Borrowings*

As a rule of thumb, there is no paradigmatic relationship between integrated and non-integrated borrowings in Berber. That is to say, if a lexical item belongs to the integrated set, all its forms will be according to Berber morphology, and if a lexical item belongs to the non-integrated set, all its forms will be according to non-integrated morphology. There exists, however, a major difference between Berber morphology and non-integrated morphology, which causes friction in this respect. Berber morphology (whether with native words or with borrowings) has derivational gender: most words occur both in masculine and feminine forms, marking differences in natural gender or size. Maghribian Arabic only has derivational gender with adjectives (where it marks agreement) and for natural gender

(as far as this not achieved by means of suppletion). Therefore, with most substantives, gender is lexically determined.

Pairs in which both masculine and feminne have non-integrated Berber morphology are extremely rare, even with nouns referring to humans and higher animals. More commonly, there is a split in gender, in which a masculine non-integrated form corresponds to a feminine integrated form, e.g.

Kabyle	*lǧaṛ*	'neighbor' (M)	*ṭažařəṭ*	'neighbor (F)'
	lḥağ	'pilgrim' (M)	*ṭalḥağṭ*	'pilgrim (F)'
Mzab	*əlžar*	'neighbor' (M)	*əlžarət*	'neighbor (F)'[6]

Elsewhere this is systematic in:

– masculine non-integrated collectives vs. feminine integrated and/or non-integrated unity nouns
– masculine non-integrated neutral forms vs. feminine integrated diminutives
– masculine non-integrated adjectives vs. feminine integrated and/or non-integrated adjectives

While the first case is found in many Berber languages (cf. also Kossmann 2009c), the second case has only been documented for Figuig, Central Moroccan Berber (e.g. Ayt Seghrushen) and Iqəřɛiyən Tarifiyt (Khalid Mourigh p.c.), while the last case is found in north-western Morocco, in oasis dialects of Algeria and in western Libya.

Collectives vs. unity nouns

The difference between collectives and unity nouns (i.e. one or several individuated entities) is basically expressed by a difference in gender, both in Arabic and in Berber (which may have calqued the Arabic system, see 8.2). Using inherited Berber morphology, this is found in a regular fashion in Tashelhiyt and in Central Moroccan Berber, as well as in Siwa, it seems. It also occurs in other languages, such as Kabyle and Figuig, even though examples are sometimes difficult to find.

[6] For unknown reasons, this is found in quite some varieties with the Arabic loan *žar* 'neighbor': Figuig, Ghadames, Mzab, Ouargla, Kabyle.

	Collective		Unity noun	
Tashelhiyt	*aẓalim*	'onions'	*taẓalimt*	'one onion'
	iflfl	'peppers'	*tiflflt*	'one pepper' (< Ar.)
Siwa	*armún*	'pomegranates'	*tarmúnt*	'one pomegranate'
	azəmmúr	'olives'	*tazəmmúrt*	'one olive'
Figuig	*umlil*	'white stones'	*tumlilt*	'one white stone'
	uṭṭub	'bricks'	*tuṭṭubt*	'one brick' (< Ar.)
Kabyle	*aḇəṭṭix*	'melons'	*ṯaḇəṭṭixṯ*	'one melon' (< Ar.)
	ifəlfəl	'peppers'	*ṯifəlfəlt*	'one pepper' (< Ar.)

Collective—unity noun oppositions occur especially in terms for vegetables and fruits; as this is a semantic field in which lexical influence from Arabic is very strong, the opposition is concentrated in loanwords (see also sections 4.6.5, 8.2). This facilitated the development of a different morphological pattern, which plays with the two types of loanwords. In this pattern, collectives have non-integrated morphology, while unity nouns have Berber morphology. This pattern is well-attested in many languages, including Tashelhiyt, Central Moroccan Berber, Beni Iznasen, Figuig and Siwa. It is the dominant pattern in Kabyle. In Tashelhiyt and in part of Central Moroccan Berber, the Arabic article is retained in the (Berber-morphology) unity nouns. Elsewhere the Arabic article is absent when the noun changes to Berber morphology (see 6.7), e.g.

Tashelhiyt	*lmšmaš*	'apricots'	*talmšmašt*	'one apricot'
	lxux	'peaches'	*talxuxt*	'one peach'
Central Mor.[7]	*lluz*	'almonds'	*(t)alluz(t)*	'one almond'
	lxux	'peaches'	*talxuxt*	'one peach'
Figuig	*lbəṭbuṭ*	'kind of fritters'	*tabəṭbuṭṭ*	'one fritter'
	lməlwi	'kind of pancake'	*taməlwit*	'one piece of *məlwi*'
Kabyle	*lxux*	'peaches'	*ṯaxuxəṯṯ*	'one peach'
	lxʷəḇz	'baker's bread'	*ṯaxʷḇizṯ*	'one piece of baker's bread'
Nefusa	*əlfúl*	'broad beans'	*tafulít*	'one broad bean'

Mostly—but not always—the unity nouns are feminine in gender; cf. however Kabyle cases such as:

[7] The Central Moroccan Berber forms are based on Azdoud's 2011 dictionary of the Ayt Hdiddou variety of south-eastern Morocco, which is more consistent in citing derived forms of nouns than other sources, such as Taïfi (1991).

Kabyle	*lḥəmməẓ*	'chickpeas	*aḥemmuẓ*	'one chickpea'
	lqəṛmuḏ	'tiles'	*aqəṛmuḏ*	'one tile'

Sometimes both masculine and feminine unity nouns are possible. When referring to animates, the gender of the unity noun reflects natural gender, e.g.

Figuig	*ləgnayən*	'rabbits'	*agnin*	'one male rabbit'
			tagnint	'one female rabbit'
	ləḥbab 'people close to sb.'		*aḥbib*	'beloved (man)'
			taḥbibt	'beloved (woman)'

When referring to objects, the gender of the unity noun can reflect its size, the masculine form normally being an augmentative, e.g.

Kabyle	*lǧuz*	'nuts'	*ṯažužəṯ*	'one nut'
			ažuž	'one very big nut'

Finally, in a number of varieties, collectives with non-integrated morphology can correspond to unity nouns with non-integrated morphology. This is found regularly in Figuig, especially with fruits and vegetables, and seems to be the only option in Mzab Berber, where the opposition does not seem to be very productive, however, e.g.

Figuig	*ləfdam*	'palm fibres'	*ləfdamət*	'one palm fibre'
	ṛṛəmman	'pomegranates'	*ṛṛəmmanət*	'one pomegranate'
Mzab	*əzzitun*	'olives'	*əzzitunət*	'one olive'
	ənnɛam	'ostriches'	*ənnɛamət*	'one ostrich'

In Figuig, there is one case where the F:S suffix appears a *-a* in the collective, and as *-ət* in the unity noun:

Figuig	*zzṛudəyya*	'carrots'	*zzṛudəyyət*	'one carrot'

Diminutives

In nouns with Berber morphology referring to non-gendered entities, feminine gender refers to entities which are smaller than their masculine counterparts. Depending on the gender of the neutral form, feminine may have diminutive interpretation, or masculine may have augmentative interpretation. This use of gender for marking size differences does not exist in Arabic, which has a special diminutive formation. Therefore, non-integrated loans normally do not distinguish size by changing grammatical gender. There are a number of varieties in Morocco in which a non-integrated masculine form may correspond to an integrated feminine form, marking smaller size. Plurals follow the morphological type of the

singular. The phenomenon has not been studied in depth for most Berber languages and may be more wide-spread than the examples below suggest. The pattern is attested in Figuig:

	masculine			feminine		
	S	P		S	P	
Figuig	*lbidu*	*ləbyada*	'jerry-can'	*tabidutt*	*tibida*	'bucket'
	lməndif	*ləmnadəf*	'trap'	*taməndift*	*timəndaf*	'mousetrap'
	ṣṣqaq	*ṣṣqayəq*	'street'	*taṣqaqt*	*tiṣuqaq*	'alley'

A similar situation is found in Tarifiyt (Q; Khalid Mourigh p.c.), where it especially applies to household ustensiles:

	masculine		feminine	
Tarifiyt	*řmaqřa*	'frying pan'	*ṯmaqrat*	'small frying pan'
	řkas	'glass'	*ṯkasəšṯ*[8]	'small glass'
	ṭṭəḇṣi	'dish'	*ṯaṣəḇṣəšṯ*	'saucer'

In some Central Moroccan varieties the pattern is productive. Different from what was found in Figuig and Tarifiyt, it is also possible to have masculine forms as augmentatives. This leads in some words to the triple expression of size, the non-integrated form expressing neutral size, the feminine and the masculine expressing marked size, e.g. Ayt Seghrushen and Ayt Hdiddou (Azdoud 2011):

Seghrushen[9]	*lkursi*	'chair' (M) (neutral)	[non-integrated morphology]
	ṯakursitt	'small chair' (F)	[integrated morphology]
	akursi	'very big chair'(M)	[integrated morphology]
	ssnslṯ	'chain' (F) (neutral)	[non-integrated morphology]
	ṯasnslṯ	'small chain' (F)	[integrated morphology]
	asnsl	'big chain' (M)	[integrated morphology]
Ayt Hdiddou	*lḵis*	'glass' (M) (neutral)	[non-integrated morphology]
	ṯalḵistt	'glass' (F)	[integrated morphology]
	alḵis	'big glass' (M)	[integrated morphology]
	ṭṭəbla	'table' (F) (neutral)	[non-integrated morphology]
	taṭṭəblatt	'small table' (F)	[integrated morphology]

[8] From *ṯ-kasəy-ṯ*, *ṯa-ṣəḇṣəy-ṯ*. In Tarifiyt (Q), **yṯ* > *šṯ*, cf. *zzəšṯ* 'olive oil' < *zzəyṯ*.

[9] Data from the variety of the province of Taza, courtesy Abderrahmane Assini (Graz).

Adjectives

In most Berber languages, borrowed adjectives and nouns of (human) quality[10] almost invariably have Berber morphology (see 6.6). In a few varieties, there are also non-integrated adjectives and nouns of (human) quality. As adjectives have gender-agreement, and nouns implying (human) qualities can apply to both men and women, the problem of gender-marking is obvious.

In Ouargla, one finds a curious blend of Arabic and Berber morphology with a large number of adjectives and nouns of human quality. Masculine nouns have non-integrated morphology. Feminine nouns have Berber gender marking, but retain their Arabic plural, e.g.

	masculine		feminine		
	S	P	S	P	
Ouargla	*lfaləs*	*lfullas*	*təlfaləst*	*təlfullas*	'ruined'
	lxadəɛ	*lxuddaɛ*	*təlxadəɛt*	*təlxuddaɛ*	'traitor'
	lfarəs	*ləfwarəs*	*təlfarəst*	*təlfwarəs*	'skilful'

A derivational relationship between masculine and feminine adjectives and nouns of (human) quality is found in a number of regions. In Mzab Berber, it is mainly found with Arabic passive participles. The non-integrated adjectival morphology is parallel to fully integrated adjectival morphology in other words:

	masculine		feminine		
	S	P	S	P	
Mzab	*mətluf*	*mətlufin*	*mətlufiyət*	*mətlufiyat*	'lost'
	mənɛul	*mənɛulin*	*mənɛuliyət*	*mənɛuliyat*	'damned'
	məstur	*məsturin*	*məsturiyət*	*məsturiyat*	'hidden'

The feminine ending *-iyət* does not seem to reflect Arabic; one would rather have expected xx*mətluf-ət* from *mətluf-a*. It may be a vestige of the ancient Berber stative conjugation (see Kossmann 2009d for the *-yət* form). It was apparently put on a par with the Arabic adjectival ending *-i(y)*, and therefore was able to survive in borrowed adjectives. It served as a basis for the feminine plural, which has the Arabic ending *-at* combined with *-iy-*.

The second region where full Arabic gender and number derivation is found in adjectives is Ghomara. Here we have a strict etymological split

[10] E.g. 'one-eyed'—which may be used as an attribute, but is mostly used as a substantive meaning 'one-eyed person'. There is major debate about the word category status of what are called adjectives here, see section 8.1.

between adjectives of Berber origin, which are historically derived from stative participles,[11] and adjectives of Arabic origin, which retain their Arabic morphology. Contrast, for example, Berber *məllul* 'white' with non-integrated *ɣliṭ* 'fat' and *rqiq* 'slim' (El Hannouche 2008:66ff.)

	masculine		feminine		
	S	P	S	P	
Ghomara	*məllul*	*məlluləṭ*	*məlluləṭ*	*məlluləṭ*	'white' (Berber)
	ɣliṭ	*ɣliṭin*	*ɣliṭa*	*ɣliṭin*	'fat'
	rqiq	*rqiqin*	*rqiqa*	*rqiqin*	'slim'

A similar situation exists in neighboring Senhadje de Sraïr; thus Lafkioui (2007:225–6) gives the following Arabic-type forms for the ordinal number 'fifth':

Senhadja	*lxaməs*	*lxaməs*	*lxamsa*	*lxaməs*	'fifth'

A third region where this pattern is found is Zuwara in Libya. Mitchell (2009:82) cites Arabic participles (on which see section 8.3) with full Arabic morphology such as:

Zuwara	*nákəẓ*	*nakẓín*	*nákẓa*	*nakẓát*	'diminished'

Other adjectives have similar patterns, e.g. S:M *fəṛḥán* 'happy' (Mitchell 2009:250) P:M *fəṛḥanín* (Mitchell 2009:208). Something similar seems to be the case in Djebel Nefusa Berber, as suggested by Beguinot's remark: "Vi sono infine aggettivi derivati dall'arabo che si usano in berbero con le terminazioni arabe del femminile e del plurale" (Beguinot ²1942:126). Unfortunately, Beguinot does not provide any examples. Djebel Nefusa ordinal numbers, which are all taken over from Arabic (see 9.3.3), have Arabic gender-number agreement (examples from Beguinot ²1942:129):

Nefusa	*əttáni*	'second (M)'	*əttánya*	'second (F)'
	əttálət	'third (M)'	*əttálta*	'third (F)'
	əlḥádəš	'eleventh (M)'	*əlḥádša*	'eleventh (F)'

While in these languages adjectives preserve their Arabic form and are inflected according to Arabic patterns, in other varieties there are a few cases where the Arabic shape is preserved, but which are not inflected for gender or number. This way, they are different from both Arabic and

[11] Kossmann 2009d points to the etymological origin. As shown by El Hannouche (2008) and Mourigh (fc.), the ancient verbal stative forms are now adjectives, which function syntactically in the same way as borrowed adjectives. Similar forms in Senhaja seem to have remained verbal in nature, Lafkioui (2009b:111).

Berber. Instances of this are Tashelhiyt *lžd*i*d* 'new', Tarifiyt *žžḏiḏ* 'new' and Beni Iznasen *žžḏiḏ* 'new', *ləmliḥ* 'good'. These adjectives have special syntax. Normal attributive adjectives are simply put after the head, e.g.

Tashelhiyt	*afullus umlil*	'the / a white chicken' (Aspinion 1953:198)
Tarifiyt	*ṭṭumuḇin ṯazəggʷaxṯ*	'the red car' (El Hannouche p.c.)

With non-integrated adjectives, the adjective is linked to the head by means of the genitival preposition *n*, e.g.

Tashelhiyt	*tigmmi l lžd*i*d* (< *n lžd*i*d*)	'the / a new house' (Aspinion 1953:200)
Tarifiyt	*ṭṭumuḇin n žžḏiḏ*	'the new car' (El Hannouche p.c.)

The lack of person-number morphology and the use of a genitival construction make non-integrated adjectives similar to nouns, and one could try to interpret *žžḏiḏ* and *ləmliḥ* as 'the new(ness)' and 'the good(ness)', respectively, i.e., Tarifiyt *ṭṭumuḇin n žžḏiḏ* would literally be 'the car of good(ness)'. There are a number of reasons not to follow this lead. First — in any case in Tarifiyt—, *žžḏiḏ* and *ləmliḥ* are not used in an abstract meaning elsewhere in the language; neither is there any basis for such an interpetation in Arabic. Second, Tarifiyt has different adjectival constructions with definite and indefinite heads (cf. Kossmann 2000a:156). When the noun phrase is indefinite, predicative constructions with the particle *ḏ* appear, e.g.

Tarifiyt	*ižž*	*n*	*wāyaz*	*ḏ*	*aməqqṛan*	'a big man'
	one	of	EA:man	PRED	EL:big	

The same construction is found with *žžḏiḏ*:

Tarifiyt	*ižž*	*n*	*ṭṭumuḇin*	*ḏ*	*žžḏiḏ*	'a new car' (El Hannouche p.c.)
	one	of	car	PRED	new	

If *ṭṭumuḇin n žžḏiḏ* had been a normal genitival construction, one expects it to occur in indefinite noun phrases too, cf.

Tarifiyt	*ižž*	*n*	*təqḍuḥṯ*	*(n)*	*uɣi*	'a receptacle of (= with) milk'
	one	of	EA:receptacle	(of)	EA:milk	

However, ˣˣ*ižž n ṭṭumuḇin n žžḏiḏ* is ungrammatical, which confirms the different status of *žžḏiḏ*.

6.3 Integrated Borrowings with Retention of the Arabic Article

As described above, most integrated borrowings do not take over the Arabic article. In a number of varieties, the loanword is sometimes integrated with its article, e.g. Tashelhiyt (Aspinion 1953:66, Galand 2010:143):

Tashelhiyt	*alkas*	'a/the pot' (EA: *walkas*)
		cf. Moroccan Arabic *l=kas* 'the glass'
	talmšmašt	'a/the single apricot',
		cf. Moroccan Arabic *l=məšmaša* 'the (single) apricot'

Integrated borrowings which include the article fall into a number of categories. In Tashelhiyt and in Central Moroccan Berber, as well as in Siwa, the article appears mainly in unity nouns corresponding to non-integrated collectives (see above). Examples:

	collective	unity noun	
Tashelhiyt	*lmšmaš*	*talmšmašt*	'apricot'
	luqid	*taluqitt*	'match'
	ddllaḥ	*taddllaḥt*	'watermelon'
Central Mor.[12]	*lxyar*	*talxyart*	'cucumber'
	lxux	*talxuxt*	'peach'
	llimun	*tallimunn*	'orange'
Siwa	*əmmišmíš*[13]	*tammišmíšt*	'apricot'

In Central Moroccan Berber, plurals of such unity nouns have a morphological oddity: the prefix is *ta-* in the plural (instead of *ti-*), but in the Annexed State, the *a* behaves like a prefix vowel, i.e. it is lost, both in the singular and in the plural, e.g. 'a specific cucumber':

Central Mor.	S:EL	*talxyart*	S:EA	*tlxyart*
	P:EL	*talxyarin*	P:EA	*tlxyarin*

In Siwa there are cases where both the collective and the unity noun have integrated morphology, and still the Arabic article is retained, e.g. (Vycichl 2005:200):

Siwa	*alxóx*	*talxóxt*	'peach'
	allóz	*tallózt*	'almond'

[12] Examples from Taïfi (1991).

[13] In Arabic loans in Siwa, the article *l-* regularly assimilates to following *m* (Vycichl 2005:194–5, Souag 2009a).

Retention of the article is also found in a more or less regular fashion in other nouns with a derivational relationship between integrated and non-integrated forms, e.g.:

Central Mor.	*lbab*	'door'	*talbabt*	'little door'
	lqamiža	'shirt'	*talqamižat*	'small shirt'
Siwa	*labɣál*	'he-mule'	*tlabɣəlt*	'she-mule'
	laɛžúz	'old man'	*tlaɛžuzt*	'old woman'
Kabyle	*lḥağ*	'pilgrim (man)'	*ṯalḥağṯ*	'pilgrim (woman)'

At least in some varieties of Central Moroccan Berber (Ayt Hdiddou, Azdoud 2011), this seems to be regular.

A second group of nouns with retention of the article in integrated borrowings are adjectives. In Ouargla, there are many cases where an Arabic adjective has been taken over in non-integrated morphology in the masculine, and in a more or less integrated form in the masculine plural and in the feminine singular and plural (see above):

	masculine		feminine	
Ouargla	*lkafəṛ*	'infidel (man)'	*təlkafərt*	'infidel (woman)'[14]
	lɛaqel	'intelligent (man)'	*tlɛaqelt*	'intelligent (woman)'

Similar forms occur in Djebel Nefusa, e.g.:

Nefusa	S.	*laɛmá*	*tlaɛmáyt*	'blind' [Provasi 1973:525]
	P.	*ilaɛmáyən*	*tlaɛmayín*	

In a number of forms, both the masculine and the feminine adjective have integrated morphology with retention of the article, e.g.

Ouargla	*iləsmər*	*tiləsmərt*	'brown'
	iləɛwəṛ	*tiləɛwəṛt*	'one-eyed'
	iləfḥəl	*tiləfḥəlt*	'manly, audacious'
Mzab	*iləbrəẓ*	*tiləbrəẓt*	'leper'
	iləɛwər	*tiləɛwərt*	'one-eyed'

There is a clear connection to Ghadamsi qualitative verbs (Ghadames has no adjectives) based on Arabic adjectives, which also retain the article, e.g.

Ghadames	*ləḍhəs*	'to be blind'
	ləṣfər	'to be yellow'
	ləzrəg	'to be blue'

[14] On the treatment of plurals in this type of noun in Ouargla, see below.

In addition to these two major categories, there are sporadic cases of retention that fit neither category, e.g.

Tashelhiyt	*alkas*	'pot'		
Central Mor.	*albriq*	'coffee can'	*talbriqt*	'small coffee can'[15]
	albuš	'big bottle'	*talbušt*	'bottle'
			talfəttašt	'oil lamp'
Ouargla			*təlməḥḍərt*	'dancing session'
			təlməkḥəlt	'gun'
			tilməṣqəlt	'trowel'
	ilžəḥš	'foal (male)'	*tilžəḥšət*	'foal (female)'
Mzab			*təlməṣqəlt*	'trowel'

In most languages that sometimes retain the article in integrated borrowings, these words behave morphologically like other Berber words, getting Berber-type plurals, and allowing for "state" opposition. As already shown above, Ouargla is unusual in that it retains Arabic plural morphology in otherwise integrated feminine adjectives (and a few other nouns) derived from non-integrated borrowings, e.g.

	M:S	M:P	F:S	F:P	
Ouargla	*ddəkər*	*ddəkur*	*təddəkərt*	*təddəkur*	'energetic'
	lfarəs	*ləfwarəs*	*təlfarəst*	*təlfwarəs*	'skilful'
	lmərxuf	*ləmxarif*	*təlmərxuft*	*tləmxarif*	'relaxed'
	lžar	*lžiran*	*təlžart*	*təlžiran*	'neighbor'

This use of Arabic plural patterns in forms with Berber prefixes constitutes a major break in the separation between Berber morphology (with Berber affixes and plural patterns) and non-integrated morphology (with different affixes and Arabic plural patterns). This break is not without functional adavantages, though. Retention of the Arabic plural in the masculine and imposition of the Berber plural in the feminine cause a strong element of irregularity in the morphology of single lexemes. While in most words the feminine plural has the same pattern as the masculine plural, in this category two different plural patterns would be found with the same singular stem. The choice for the Arabic plural pattern was facilitated by the fact that many of the affected Arabic adjectives are of the the type $C_1aC_2əC_3$, which in Arabic may have the plural pattern $C_1ŭC_2C_2aC_3$. This plural type, taken over in Ouargla as $C_1uC_2C_2aC_3$, has the same vowels as the common

[15] In *albriq/talbriqt* and in *albuš*, the *a* functions as part of the stem, also in the Annexed State. The behavior of *talbušt* and *talfəttašt* in the Annexed State is not given in the source (Taïfi 1991); both have a plural in *ta-*.

Berber apohonic plural pattern *u – a* (e.g. Ouargla *anəggaru*, P *inəggura* 'last'); moreover, the Arabic plural ending *-in*, found in many adjectives, is homophonous with the Berber F:P ending *-in*, e.g.

	M:S	M:P	F:S	F:P	
Ouargla	*lkafəṛ*	*lkuffaṛ*	*təlkafərt*	*təlkuffar*	'infidel'
	lfaxər	*lfuxxar*	*təlfaxərt*	*təlfuxxar*	'glorious'
	lfahəm	*lfuhham*	*təlfahəmt*	*təlfuhham*	'intelligent'
	ššahəd	*ššuhhad*	*təššahədt*	*təššuhhad*	'witness'
	lməḍlum	*lməḍlumin*	*təlməḍlumt*	*təlməḍlumin*	'oppressed'
	lmumən	*lmumnin*	*təlmumənt*	*təlmumnin*	'believer'

6.4 Non-integrated Borrowings Lacking the Arabic Article

While the vast majority of non-integrated Arabic loans incorporates the Arabic article, a small group do not start in *l* or its allomorphs. Some lack it without any clear reason, such as Figuig *ḥərṭiṭa* 'kind of pancake'. I have no explanation for such forms; remark however that in some regions European loanwords are also taken over without an article, e.g. Tarifiyt (Q) *ɣaƀyuṭa* 'sea-gull' < Spanish *gaviota*.

Others are unintegrated adjectival forms without the article, see the situation in Mzab and Ghomara treated above.

Finally there are borrowings which include an Arabic synthetic genitival construction. In Arabic, the head of a synthetic genitival construction has the Construct State and does not allow for the article. This is found in loans such as Tarifiyt *sṛaqəzzit* 'cockroach' < Ar. *ṣərṛaq əz=zit* 'thief of (the) oil' and general Northern Berber *bnadəm* 'human being', based on the Classical Arabic construction *ibn ʔAdām* 'son of Adam', which is reflected in Maghribian Arabic as *bnadəm*, where it is probably only marginally understood as a compositum.

Kinship terms

Arabic genitival constructions are also found in borrowed kinship terms. In Berber, most basic kinship terms are inherently possessed. The basic form of the term is automatically understood as having a first person singular possessor, e.g. Tarifiyt *uma* 'my brother'. When possession is by another person, pronominal elements immediately follow the basic form, e.g. Tarifiyt *uma-š* 'your (M) brother', *uma-s* 'his/her brother'. When the possessor is expressed by a noun, the third person pronoun is used in combination with a genitival phrase containing the noun, e.g. Tarifiyt *uma-s n Mimun*

'the brother of Mimoun, lit. his brother of Mimoun'. This construction is not possible with head nouns of a different type.

When kinship terms are taken over from Arabic, the form reflects the Arabic noun with the 1S possessive pronoun. In Arabic, such forms have the construct state and no article, e.g.

Figuig	*xali*	'my maternal uncle'	< Ar. *xal-i*	(uncle-1S)
	xalti	'my maternal aunt'	< Ar. *xal-t-i*	(uncle-F:S-1S)

The Arabic 1S pronoun has become part of the stem, as shown by forms such as *xali-s* 'his maternal uncle' and *xalti-s* 'his maternal aunt'.

This is the pattern found in the majority of Berber languages (e.g. Tashelhiyt, Central Moroccan Berber, Figuig, some Tarifiyt dialects, Ouargla, Nefusa, Sokna, Awdjila). In some Tarifiyt varieties (e.g. Ayt Oulichek, as documented in Kossmann 2003b), the Arabic 1S suffix functions as a suffix, however. The fact that the Berber 1S suffix is identical (as shown in forms with prepositions such as *ḏay-i* 'in me', *ḏay-əs* 'in him') facilitated this analysis, e.g.

Tarifiyt	*ɛziz-i*	'my paternal uncle'	< Ar. *ɛziz-i*	(beloved-1S)
	ɛziz-əs	'his paternal uncle'		

This is different from Berber-based etyma ending in *i*, e.g.

Tarifiyt	*yəǧǧi*	'my daughter'	< Berber
	yəǧǧi-s	'my daughter'	

In Kabyle (at least At Manguellat), there also seems to be a difference between the treatment of originally Berber kinship terms and of terms with an Arabic background. Berber kinship terms have direct affixation all over their pronominal paradigm, very similar to the forms found elsewhere in Northern Berber (Dallet 1982:1026). From Dallet's examples, one gets the impression that the situation is different with borrowed Arabic kinship terms (the literature is deceivingly unexplicit at this point). It seems that they have the regular Kabyle possessive construction (initial *i* with singular pronouns, the preposition *n* with plural pronouns),[16] except

[16] Note that both Dallet (e.g. *xalti-m*, 1982:913) and Naït-Zerrad (2001:47, *xalti-k*) put hyphens after the *i*. In view of the plural, this seems to be incorrect, at least for At Manguellat Kabyle. Chaker (1983:153) does not include Arabic borrowings in his list of kinship terms taking possessive suffixes, which suggests that the At Manguellat situation is more widespread.

for the 1S, which is *-i* rather than expected *-iw* (exx. from Dallet 1982:913, 988):

Kabyle	*xal-i*	'my maternal uncle' (not: xx*xal-iw*)
	xalt-i	'my maternal aunt' (not: xx*xalt-iw*)
	ɛəmm-i	'my paternal uncle' (not xx*ɛəmm-iw*)
	xalt-im	'your (S:F) maternal aunt'
	ɛəmm ən-sən	'their (P:M) paternal uncle'
	xwal ən-kʷənt	'your (P:F) maternal uncles'

In Siwa (Vycichl 2005:218–9), masculine kinship terms are taken over together with the Arabic 1S suffix, which has become part of the stem. Possessive suffixes are as with Berber kinship terms, e.g.

Siwa	*sídi*	'my master'
	sidí-tsən	'their master'

However, feminine kinship terms are taken over with a final *a*, i.e. like the Free State of the noun in Arabic. When possessed, the construction with the preposition *n* is used, which is normal with all common nouns; the only difference being that the kinship terms do not need a possessive construction for the first person singular, e.g.

Siwa	*ɛámma*	'my paternal aunt'
	ɛammá nn-ək	'your (S:M) paternal aunt'

In some Berber languages (among others: Tarifiyt, Figuig, Beni Snous, Western Algerian varieties, Kabyle), borrowed kinship terms have corresponding Arabic plurals, e.g.

Beni Snous	*xali*	'my maternal uncle'	P: *xwali*
	ɛəmmi	'my paternal uncle'	P: *ɛmumi*
	xali	'my maternal aunt'	P: *xwalati*
	ɛəmti	'my paternal aunt'	P: *ɛəmmati*

In other varieties, the plural is formed by means of a Berber prenominal clitic, which is used to pluralize nouns that pose problems to pluralization.

Central Mor.	*xali*	'my maternal uncle'	P: *id=xali*
	xalti	'my maternal aunt'	P: *ist=xalti*
Mzab	*xali*	'my maternal uncle'	P: *id=xali*
	xalti	'my maternal aunt'	P: *id=xalti*
*G*hadames	*xal*	'my maternal uncle'	P: *ənd=xali*
	xalăt	'my maternal aunt'	P: *ənd=xalăt*

Adverbs

Another category of nominal elements which are taken over without the article are adverbial nouns. Both in Arabic and in Berber, there are many

nouns which can be used as adverbs. Outside of prepositional phrases, adverbial expressions come in two types: dedicated adverbs and nominals used adverbially, e.g. in Arabic:

Moroccan Ar.	*ža bəkri*	'he has come early' (dedicated adverb)
	ža l=yum	'he has come today' (lit. 'the day') (adverbial noun)
	bqa yumayən	'he stayed two days' (adverbial noun)

Berber has the same distinction, e.g. Central Moroccan Berber *zik* 'early' vs. *ass=a* 'today', lit. 'this day'.

In some borrowings, Arabic nouns that are regularly used adverbially have become specifically adverbial in Berber. This is often the case in temporal expressions. Faithful reflexes of their form in Arabic adverbial usage, some of these items are borrowed without the Arabic article. Such adverbial nouns often preserve different shapes for different numbers, including the dual—a category otherwise absent in Berber. In many Berber languages, adverbial nouns from Arabic are doubled by a normal noun in Berber, which may also occur in adverbial contexts, but mainly functions as a normal noun, e.g.

Figuig	*asəgg^{w}as*	'year' (normal noun, Berber origin)
	isəgg^{w}asən	'years' (normal noun, Berber origin)
	ɛam	'during a year' (adverb, < Arabic)
	ɛamayən	'during two years' (adverb, Arabic dual)
	təlt snin	'during three years' (adverbial construction, < Ar.)
	tlatin ɛam	'during thirty years' (adverbial construction, < Ar.)

Sometimes the Arabic noun has been taken over both as a normal noun and as an adverb. In such cases, the normal noun has the Arabic article, while the adverb has not, e.g.

Tarifiyt	*nnhạ̄*	'day' (normal noun)
	nnhuṛa	'days' (normal noun)
	nhạ̄	'during a day' (adverb)

A more intricate possible case of an Arabic adverbial pattern implemented in Berber without the article, is found in Ouargla. Here numerous manner adverbs exist which are derived from nouns or adjectives. This is found with nouns of Berber and of Arabic origin. When they have an Arabic origin, they lack the article. When they have a Berber origin, they omit the Berber prefix. In both cases, a suffix *-i* is added to the form, e.g.

Ouargla *bəkkuši* 'in a dumb way, silently' < *abəkkuš* 'deaf-mute' < Arabic
məhbuli 'in a foolish way' < *amehbul* 'fool' < Arabic
məɛduri 'like a pregnant woman; < *taməɛdurt* 'pregnant' < Arabic
məɛzi 'like a goat' < Ar. *məɛza* 'goat'

ɣəddari 'in a treacherous manner' < *aɣeddar* 'traitor' < Arabic
ɛarbi 'like an Arab' < *aɛrab* 'Arab' < Arabic

dərɣali 'blindly' < *adərɣal* 'blind'
kukmi 'silently' < *kukəm* 'silence'
məṭṭuti 'like a woman' < *tamәṭṭut* 'woman'
ɣiwli 'like a donkey' < *aɣyul* 'donkey'
ɣṛuṛi 'like a beam' < *aɣṛuṛ* 'beam'

On a smaller scale, the same pattern is found in Mzab:

Mzab *gəllubi* 'turned over' < *gəlləb* 'to turn over' < Ar.
limi 'like an orange, of a bright orange color' < *llimət* 'orange' < Ar.
zəğrati 'in length' < *zzəğrət* 'to be long'

As shown by Brugnatelli (2006:59), similar forms occur in Kabyle and Central Moroccan Berber. The Arabic background of this construction is not certain, as there is no immediate counterpart of it in Arabic. However, Arabic does have a special adjectival formation (the so-called *nisba*), which consists, in Maghribian Arabic, of a suffix *-i*, e.g. *wəžda* 'Oujda'—*wəždi* 'somebody from Oujda'. Maybe this affix was reinterpreted as an adverbial marker in Ouargla and elsewhere. As such it became productive, and was attached also to Arabic nouns which never have *nisba*-formations (such as the past participles *məhbul* and *məɛdur*) and to words of Berber origin. This seems to be the stance taken by Chaker (1995:36). On the other hand, Brugnatelli (2006) argues that the absence of the prefixal vowel in these forms is a remnant of a more ancient stage of the language; therefore the suffix itself would not be a loan from Arabic. However, the absence of the prefix vowel could also be accounted for as due to the absence of the Arabic article in Arabic-based adverbs (reflecting Arabic syntax). Elsewhere in the language the Arabic article seems to be equated with the Berber prefix (see 6.7), so its absence could have led in Berber words to analogical forms without the prefix.

6.5 The Distribution of Integrated and Non-Integrated Borrowings over the Lexicon

As was shown above, Arabic words can either be integrated into Berber morphology or have their own non-integrated morphology. Thus one may ask what governs their distribution.

Only a small part of the answer lies in chronology. The stratum of very early Arabic loans, which were probably introduced during the first wave of islamization (R. Basset 1906:440, van den Boogert & Kossmann 1997, see

section 3.4), consists of heavily berberized forms, both in phonology and morphology, e.g. *taẓallit* 'prayer' < *ṣalā, taməzgida* < *masǧid*.

For later periods, there is no indication that integrated loans are older than non-integrated loans (cf. already Schuchardt 1908:358). Both integrated and non-integrated borrowings take over Arabic loan phonemes, e.g. Beni Iznasen *aḥfir* 'hole', a morphologically integrated borrowing displaying the Arabic sound *ḥ*. Already in the 11th century CE Berber glossary by Ibn Tunart, non-integrated loans appear. Moreover, loanwords from European languages sometimes receive integrated morphology,[17] e.g. Tarifiyt:

Tarifiyt	S:EL	*šapu*	P:EL	*išupa*	'straw hat'
	S:EA	*ušapu*	P:EA	*išupa*	

For similar reasons, there is no reason to believe that non-integrated morphology is a stage in the borrowing process, which precedes full integration. The sheer numbers of non-integrated borrowings, already in precolonial sources, make such a hypothesis extremely problematic—over half of the Arabic borrowings in Tarifiyt in Kossmann (2009) have non-integrated morphology; moreover, comparing data from around 1900 with those collected nowadays, does not reveal any clear tendency towards integration of borrowings which were already present in the early data.

An alternative axis to look at is semantics. From the outset, it is clear that such an endeavor can only reveal tendencies; there are many semantic fields where both integrated and non-integrated nouns appear, cf.

Figuig	*taḥmaṛt*	'donkey (fem.)'	< Ar. *ḥmaṛa*	(Berber morphology)
Iznasen	*lɛəwḍa*	'mare'	< Ar. *l=ɛəwda*	(non-integrated)
Tarifiyt	*ṯšašəšṯ*	'skull cap'	< Ar. *šašiya*	(Berber morphology)
	ṭṭāḇus	'fez (k.o. cap)'	< Ar, *ṭ=ṭərbus*	(non-integrated)
Tarifiyt	*aɛəššši*	'afternoon'	< Ar. *ɛšiya*	(Berber morphology)
	ṣṣḇəḥ	'morning'	< Ar. *ṣ=ṣbəḥ*	(non-integrated)
Tarifiyt	*ṯandint*	'town'	< Ar. *mdina*	(Berber morphology)
	ddšḍ	'village'	< Ar. *ḍ=ḍəšṛa*	(non-integrated)

To my knowledge, there exist no studies of the semantic relationship between integrated and non-integrated loanwords. An important factor seems to be countability. A rough analysis of 332 borrowed nouns

[17] This clearly shows René Basset (1906) was wrong when he suggested that integrated loans date from before the Hilalian immigrations in the XIth–XIIth century CE, while unintegrated loans would be later.

in Tarifiyt (Q, data from Kossmann 2009b),[18] gives the following picture. Among countable concepts, there is an even distribution of the two types of borrowing. Among concepts which cannot be counted, or which are very unlikely to be counted (in total about 120 words), 90% has non-integrated morphology.[19]

On a more detailed level, some interesting correlations are found. In nouns expressing adjectival concepts, or (human) qualities and categories, there is a strong preference for integrated morphology, e.g.

Tarifiyt	*aɛəffan*	'bad'
	aḇuhaři	'madman'
	ameḥḍḍ̣	'pupil'
	amxazni	'soldier'
	aḥḍiḍ̣	'baby'
	aɛəzri	'young man'
	aḍ̣biḇ	'physician'

The difference between adjectival nouns and nouns of (human) qualities and categories is vague (if relevant at all). Adjectival nouns can be used both as a noun modifier and as the head of a Noun Phrase; nouns of (human) qualities and categories are normally used as heads ('the pupil'), but—like any noun—are not necessarily disallowed in attributive position. These are typically nouns which need both masculine and feminine forms, as gender morphology is the only way to express natural gender (except, of course, suppletion) and adjectival agreement. In Tarifiyt, the few nouns in these semantic categories which have non-integrated morphology express categories to which, traditionally, only men or only women belong,[20] e.g.

řqəḥḇa	'(female) prostitute' (also integrated *ṯaqəḥḇəšṯ*)
řwazir	'minister'
řqaḍ̣i	'judge'
ššahəḍ̣	'witness'

[18] A second count excluded adjectives and nouns of (human) quality, which almost always have integrated morphology, as well as collectives/unity nouns—which, in Tarifiyt, tend to have oppositional pairs of the different morphologies (see p. 217 ff.)—, and kinship terms which have been integrated into the Berber paradigm of kinship terms. The results were roughly the same as with the count including these items.

[19] The alternative with size difference is the use of an adjective 'big' or 'small'. This alternative is regularly used with nouns referring to humans and higher animals, where gender morphology expressed natural gender, both with nouns of Berber and of Arabic origin. This use is easily extended to other nouns.

[20] In addition, there are a few recent loans from Standard Arabic in this category, which have non-integrated phonology and morphology. Such nouns have Standard Arabic gender derivation, e.g. *lmuɛəllim* 'school master'—*lmuɛəllima* 'school mistress'.

On the syntax of non-integrated adjectival concepts, see p. 222.

The preference for non-integrated morphology with non-countable nouns has led to interesting developments in the realm of verbal nouns. In Berber, like in Arabic, the great majority of verbs have a verbal noun for action nominalization, i.e. 'the fact of VERB-ing' (Galand 2002b). Different from many other languages in the world, Berber and Arabic verbal nouns are not used in complementation of auxiliary verbs, and therefore strictly nominal in character. Their morphology is quite irregular, and there exist important differences between Berber varieties in their formation. Verbal nouns are not inherently non-countable (cf. English *deed—deeds*), but their abstract nature makes them less prone to counting than concrete nouns.

In spite of their association to the realm of the non-countable, in some Berber languages action nominalizations of Arabic loan verbs mostly have Berber morphology. Apparently, the derivational relationship to the verb presents a pressure towards paradigmatic homogenization, irrespective of the etymological origin of the word, e.g. in Figuig we finds the same Berber Verbal Noun pattern *a*-CC*a*C with CCC verbs of Berber origin and of Arabic origin, e.g.

Figuig	*fṛəḍ*	'to sweep'	*afṛaḍ*	'the fact of sweeping'
	dbəɛ	'to follow'	*adbaɛ*	'the fact of following' (< Ar.)
	ṣbəṛ	'to be patient'	*aṣbaṛ*	'patience' (< Ar.)

Similarly, the verbal noun pattern *ta*-CCC*i* is found with CCC verbs of adjectival quality, both with a Berber and an Arabic background, e.g.

Figuig	*mɣəṛ*	'to be big'	*taməɣṛi*	'the fact of being big'
	qṣəḥ	'to be active'	*taqəṣḥi*	'the fact of being active' (< Ar.)

In addition to this, there are a few loan verbs in Figuig which have non-integrated morphology in the verbal noun, e.g.

Figuig	*ḥla*	'to be sweet'	*ləḥlawət*	'the fact of being sweet' (< Ar.)
	waləf	'to get used'	*lwəlf*	'habituation' (< Ar.)

Other languages are somewhat more open to non-integrated verbal nouns; in Kabyle, many Arabic loan verbs allow for both an integrated and a non-integrated action noun, e.g.

Kabyle	*iɛṛiḍ*	'to be large'	action noun:	*ṯəɛṛəḍ*	(integrated)
				lɛəṛḍ	(non-integrated)
	ɛanəḍ	'to imitate'		*aɛanəḍ*	(integrated)
				ləmɛanda	(non-integrated)

There may be subtle semantic differences between the two types of verbal noun, cf. Mitchell (2009:141) for Zuwara.

The situation is radically different in Tashelhiyt. In this variety, there is a strict divide between verbal nouns of Berber verbs, and verbal nouns of verbs with an Arabic background. Verbs with an Arabic background consistently have non-integrated morphology, e.g.

Tashelhiyt	*kru*	'to rent'	*lkri*	'rent'	(non-integrated)
	šɣl	'to wok'	*ššɣʷl*	'work'	(non-integrated)
	bdu	'to start'	*libtida*	'start'	(non-integrated)

Another interesting case is found in Siwa with de-adjectival nouns, i.e. abstract nouns corresponding to adjectives. Such nouns have a regularized non-integrated form *lə*-CC*a*C-*ət*, e.g. (all examples from Souag 2010:162):

Siwa	*ašmal*	'bad'	*šššmalət*	'badness'
	akwayyis	'good'	*ləkwasət*	'goodness'
	anṭif	'clear'	*nnṭafət*	'cleanness'

This pattern also applies to Berber adjectives:

Siwa	*awṛaɣ*	'green'	*ləwṛaɣət*	'greenness'
	aməllal	'white'	*ləmlalət*	'whiteness'
	azəṭṭaf	'black'	*zzṭafət*	'blackness'

6.6 Comparing Berber Morphology and Non-Integrated Morphology

The system of Arabic loan nouns in Berber has led to parallel morphological systems in the sense of Kossmann (2010a): there are two sets of morphological markers, the choice of which depends on the etymology of the word. The first system—integrated morphology—includes words of Berber and Arabic origin; the second set—non-integrated morphology—contains words of Arabic origin only. Compartmentalization according to etymological origin is only partial. Many Arabic loanwords are integrated into Berber, and have the same morphological forms and behavior as native Berber words; at this point there is no etymological divide. Non-integrated morphology on the other hand is restricted to words with an Arabic background. This is not without exceptions and there exist words with non-integrated morphology for which an Arabic etymology is problematic. Most of these are limited to one single variety of Berber and seem to be lexical innovations (i.e., new words). Apparently such new words

can be assigned to the class of non-integrated borrowings. Supra-dialectal words with a mismatch between etymology and morphological class are rare; one example is Figuig *rršəl* 'wedding', Beni Iznasen *rršil* 'wedding', which has no basis in Arabic. Even in this example, the geographical distribution not very wide (eastern Morocco) and no clear Berber etymology for the word has been found.

Sometimes non-integrated morphology is no more a lexically determined choice (the loan could also have integrated morphology), but assignment to the non-integrated class is obligatory. In such cases, Berber nouns may get attracted into the realm of non-integrated morphology. This is found, for instance, with the formation of collectives. In languages where there is a regular paradigmatic opposition between non-integrated collectives and integrated unity nouns (see 6.3.2), Berber etyma also get non-integrated morphology when used as collectives, e.g.

Beni Iznasen *lkəṭṭuf*[21] 'ants (collective)' (unity noun: *akəṭṭuf, ṯakəṭṭuft*)

While these are all isolated cases, and otherwise the etymological compartmentalization is strict, Siwa Berber has two morphological processes, both related to adjectives, in which non-integrated morphology surfaces with all members of the class, whether of Arabic or of Berber origin. This is found in abstract nouns derived from adjectives (see 6.5), and in degree adjectives (see 8.5). At this point, Siwa is unique in Berber.

A different question pertains to the equation of the two morphological systems. Formally, the structures of integrated and non-integrated nouns are quite similar:

Berber:	PREFIX-STEM-(SUFFIX)
Non-integrated:	ARTICLE.STEM-(SUFFIX)

There is no reason not to equate the suffix position of non-integrated loans with the suffixes of Berber words; even though the gender opposition itself is not entirely equivalent in the two systems. The status of the Arabic article is a different question. Like the Berber prefix, the article is an inseparable part of the noun. However, unlike it, it does not express any oppositional values—i.e. it does not add anything to the meaning

[21] Note, however, that *kəṭṭuf* also exists as a Berber loan into eastern Moroccan Arabic, and that the collective may therefore be considered a re-loan from Arabic (Yamina Elkirat, p.c.). Similar forms are found in Beni Snous and probably also in Kabyle (Dallet 1982:853).

of the word. The Berber prefix, on the other hand, has different forms according to the gender, number and "state" of the noun. Morphologically the two systems sometimes interact, i.e., the same lexical item sometimes occurs in both systems. This provides us with a clue to what extent Berber prefix and Arabic article are equated in practice. Good examples are found in the collective—unity noun opposition. Here we find different relations in different varieties. In a number of varieties, e.g. Tashelhiyt, the Arabic article of the collective reappears in the unity noun, e.g.

Tashelhiyt	Coll: *lmšmaš*	Unity noun:	*talmšmašt*	'apricot'

In such a system, the Arabic article is clearly treated as part of the stem, and no equation between the article and the Berber prefix has been made.

In many other Berber languages, the Arabic article is absent in the Berber unity noun, e.g.

Kabyle	Coll: *lməšmas*	Unity noun:	*ṯaməšmašṯ*	'apricot'

In such languages, one can argue that the article is equated with the Berber prefix and assume a similar morphological interpretation, e.g., *l-məšmaš*. The value of the prefix *l-* could be defined as marking noun-ness, a meaning which is also central to the Berber prefix.

Difficulties to such an analysis are posed by languages where both unity nouns with retention of the article and without it are attested, e.g.

Central Mor.	Coll: *lḥimẓ*	Unity noun:	*talḥimẓt*	'chick pea'
	Coll: *lbṣəl*	Unity noun:	*tabṣəlt*	'onion'

An analysis in which *lḥimẓ* has *l* as part of its stem, while it is a prefix in *l-bṣəl* does the job, but is hardly insightful, Moreover, there is no way to decide what structure one has to assume in nouns which happen to have no collective-unity noun opposition.

CHAPTER SEVEN

VERBAL MORPHOLOGY

This chapter provides an overview of the way Arabic verbs are integrated into northern Berber. In the large majority of northern Berber languages, Arabic verb stems are inflected according to Berber morphology. Only one language, Ghomara, also has a parallel morphological system, in which part of the Arabic verbs are inflected according to Arabic morphology. Light verb constructions, using an Arabic nominalized form and a Berber light verb—according to a strategy well-known from other contact situations (Wichmann & Wohlgemuth 2008)—do not seem to occur.[1] The chapter studies the way this integration into Berber patterns is achieved, and the ways the different apophonic patterns of Arabic are treated in borrowing. It also tackles the intricate question of syntactic integration—to what extent does the borrowing copy the argument structure of the original Arabic verb, and to what extent does it follow non-Arabic patterns.

7.1 General Morphological Facts

Different from many other languages (Tadmor 2009:61ff.), Northern Berber languages have taken over scores of verbs, almost all from dialectal Arabic. For example, in the over 1500 word corpus of Tarifiyt in Kossmann (2009), 44% of the verbs in the data-base are loanwords. There is no reason to assume that the borrowing of the Arabic verbs took place through an intermediate stage of nominalization, a universal path suggested by Moravcsik (1978).[2] In fact, both Arabic and Berber display highly irregular nominalization strategies, and nominalized Arabic forms are often taken over as such (see 6.5). There is nothing that suggests that the Berber form would be a verb based on a nominal form—rather, it corresponds fairly well to its Arabic verbal counterparts.

[1] They are, however, very common in code-switching among Maghribian immigrants in Europe, in order to insert European verbs in Berber or dialectal Arabic discourse, cf., among others, Boumans 1998.

[2] As an absolute universal, this claim has been proven wrong for many languages, cf. Wichmann & Wohlgemuth 2008. It may still stand as a universal tendency.

The integration of Arabic loan verbs in Berber was undoubtedly facilitated by similarities in word structure, which are partly an inheritance of proto-Berbero-Semitic (the consonantal root system), and partly due to similar developments in Northern Berber and (Maghribian) Arabic, such as reductions in the short vowel system (see 5.1).

Both Maghribian Arabic and Berber verbs are based on roots consisting of a number of consonants and sometimes one position (rarely two) filled by a plain vowel.[3] Most verbs with three or more consonants have no vocalic position, and can therefore be considered as lexically vowel-less, as the short vowels do not play a role in the morphological structure of the verb. In Berber, the number of verbs with lexical vowel positions and three or more consonants is larger than in Arabic. Many verbs with two consonants also have a plain vowel position, which may occur in initial, medial, or final position. While the vowel position itself is lexically determined, the quality of the vowel is in many cases subject to apophonic alternations. In Arabic and in the Berber languages that have maintained a qualitative contrast in the short vowel system (for Berber Ghadames, Tuareg and Zenaga), aspectual apophony also applies to short vowels. In such languages, the position of the short apophonic vowels is, with few exceptions, predictable in verb forms.

The broad similarities between the two systems are illustrated in the following table, which features some basic structures in Arabic and Berber, together with the apophony between Imperfect and Perfect (Maghribian Arabic) and Aorist and Perfective (Berber). The examples come from Moroccan Arabic and Kabyle.

Stem structure	Moroccan Arabic Perfect	Moroccan Arabic Imperfect	Meaning	Kabyle Aorist	Kabyle Perfective	
CCC	*qṣəm*	*qṣəm*	to cut (up)	*mḡər*	*mḡər*	to harvest
VCC	*(ʔ)amәṛ*	*(ʔ)amәṛ*	to order	*aḏər*	*uḏər*	to descend
CVC	*faq*	*fiq*	to wake up	*ḵaḏ*	*ḵaḏ*	to worry
CCV	*bna*	*bni*	to build	*b̲ḍu*	*b̲ḍa*	to divide

Arabic has a basic distinction between two aspectual stems, the Perfect and the Imperfect. Northern Berber has more aspectual stems, ranging

[3] The theoretical discussion whether in Arabic or in Berber these plain vowels should underlyingly (or historically) be analyzed as consonants does not concern us here.

from barely three in Siwa[4] to six in Ghadames. The Figuig system is representative for many Berber languages and may be reconstructible to proto-Berber: Aorist, Perfective and Imperfective, as well as two negative stems (always used in combination with the pre-verbal negation marker): Negative Perfective and Negative Imperfective,[5] e.g.:

	Positive stem	Negative stem	
Aorist	*ašər*	–	(Figuig)
Perfective	*ušər*	*ušir*	
Imperfective	*ttašər*	*ttišər*	
	'to steal'		

In Northern Berber, a large proportion of the verbs have no formal difference between the Aorist and the Perfective; only very few verbs show no difference between Aorist/Perfective and Imperfective.

Arabic verb stems are initially inserted in Berber as Aorist or Perfective forms rather than in the Imperfective. This can be shown from the way Arabic (underived) first and (derived) second stem CCC verbs are treated in Berber. In Arabic, the underived stem (stem I) of the CCC verb has the shape $C_1C_2C_3$, while the derived second stem (basically an argument-adding device) has a geminated second consonant: $C_1C_2C_2C_3$. In many Berber languages, CCC-verbs have the form $C_1C_2C_3$ in the Aorist and the Perfective, while the Imperfective has $C_1C_2C_2C_3$. This is to say that the gemination of the second consonant, which marks a derivational difference in Arabic, is part of aspectual apophony in Berber, e.g.

Moroccan Ar.	*lṣəq*	'it is glued' (stem I)	Kabyle:	*y-əmḡər*	'he harvested'
	ləṣṣəq	'he glued (sth.)' (stem II)		*i-məggər*	'he harvests'

In borrowed Arabic first and second stem verbs, the Berber Aorist/Perfective is the form corresponding to the Arabic form. This is clearly shown by cases where both the Arabic first stem and the Arabic second stem have been taken over in Berber, e.g. Kabyle:

	Arabic stem I		Arabic stem II	
Aorist/Perf.:	*y-əḥṛəm*	'it is prohibited'	*i-ḥərṛəm*	'he prohibited'
Imperfective:	*i-ḥəṛṛəm*	'it is always prohibited'	*y-əʇḥəṛṛim*	'he prohibits'

[4] Only in one verbal type the distinction between Aorist and Perfective is preserved, Souag 2010:374ff.

[5] While the Negative Perfective is found in the majority of Berber languages, the Negative Imperfective is much less common.

The integration of the Arabic first-stem form as a Berber Aorist/Perfective is expected, as CCC is not a possible shape for Imperfectives in Berber. However, the insertion of the Arabic second stem as an Aorist/Perfective is not that simple, as $C_1C_2C_2C_3$ is extremely rare as a basic stem shape in originally Berber verbs. In order to achieve the integration, the Imperfective formation dedicated to four-radical verbs, with a prefix *t-* and (depending on the dialect), insertion of a full vowel, is applied to the Arabic stem-II verbs (see 7.3.1.1).

In Berber, the Arabic stems are conjugated by means of Berber Person-Number-Gender affixes, and there is nothing in their conjugation which differentiates them from verbs with a genuine Berber background. Only in Ghomara, a large group of Arabic loan verbs have retained their Arabic Person-Number-Gender affixes; this will be treated in more detail in section 7.4.

As already shown by the above examples, Arabic verbs are inserted into Berber as stem forms, which then are subject to the apophonic patterns of Berber Mood-Aspect-Negation marking. Thus, providing another Kabyle example, the Arabic verb *ʔamaḍ* 'to order', once taken over as *amaḍ*, receives exactly the same morphological treatment as the Berber verb *aḏaḍ* 'to descend' (Kabyle examples):

	VCC verb of Berber origin	VCC verb of Arabic origin
Aorist	*aḏaḍ*	*amaḍ*
Perfective	*uḏaḍ*	*umaḍ*
Negative Perfective	*uḏiḍ*	*umiḍ*
Imperfective	*ṭṭaḏaḍ*	*ṭṭamaḍ*
	'to descend'	'to order'

7.2 Arabic Derived Forms in Berber

Arabic stems are regularly combined with Berber derivational morphology, which consists of prefixes, e.g. in the following Arabic loan:

Kabyle	basic form:	*ḥṛaq*	'to burn (sth), to be burnt'
	S (causative):	*ss-əḥṛəq*	'to burn (sth)'
	MS (medial causative)	*m-s-əḥṛaq*	'to burn each other'

There seem to be no more impediments to the application of Berber derivational devices to Arabic loanwords than to verbs of Berber origin.

Except for Ghomara (see below), Arabic derivations are not taken over as a system.[6] However, there exist many cases where verbs from different derivational stems of the same Arabic root have been taken over, thereby reflecting to some degree Arabic derivation, e.g.

Kabyle	I	*ḥṛəm*	'be prohibited'	II	*ḥəṛṛəm*	'to prohibit'
	I	*ḥsəḇ*	'to count'	III	*ḥasəḇ*	'to account for sth.'

Cf. also the fate of the Arabic verb root RYḤ, which has been taken over in a large number of forms; from the translations by Dallet (1982) not much difference in meaning can be detected:

Kabyle	II	*rəyyəḥ*	'se reposer'
	VIII	*ṛṯiḥ*	'se reposer, être tranquille, être soulagé'
	X+VIII	*sṯərṯiḥ*	'reposer'
	VI	*tṛaḥa*	'se reposer, être en paix'

Taking over several Arabic stem forms of one single Arabic root is by no means rare. Thus, for example, in Kabyle, among 108 borrowings of stem III (CaCC) Arabic verbs, 50 are also attested in another Arabic stem (mostly I and/or II); 16 are attested in several other Arabic stem forms (figures based on Dallet 1953). Still, there is no reason to assume that Arabic derivation is taken over as a system. In fact, in Maghribian Arabic, the meaning of the derivations is by no means uniform, and the relationships which can be established on morphological grounds are often difficult to define semantically. Put otherwise, in many cases the derived stem functions as an entirely different lexeme from the non-derived basis. Thus, regarding the Kabyle stem III loans (and especially those with an underived counterpart in Kabyle), one has the impression that in most cases stem I and stem III meaning are either equivalent (although the dictionary translation probably hides details of meaning difference), or very wide apart from each other. In Berber, therefore, it is best to consider loans of different derivational forms of the same Arabic stem as morphologically independent lexemes, and not as a system of synchronically interconnected derivational forms.

Even when three different stem forms from the same Arabic root have been taken over, there is no impediment to applying Berber derivational

[6] Cf. Mitchell (2009:5), whose position is not entirely clear, however. While on the one hand treating forms such as *əxláṣ* 'be repaid (debt), die' and *xálləṣ* 'repay (debt)' as "in principle semantically separate", he continues, saying: "Such differences are perhaps reflected in some form of spoken Arabic but do not necessarily belong to Arabic generally and must be regarded as distinctively part of Zuaran Berber".

devices to these words. This is illustrated by the following loan in Kabyle, one of the unusual cases of loanwords where the Arabic derivational meanings are relatively transparent:

I	*bɛəḍ*	'be away'	S (causative):	*ss-əbɛəḍ*	'move sth. away'
	ibɛiḍ	'be away'	M (medial):	*my-əbɛaḍ*	'remain at a distance from e.o.'
II	*bəɛɛəḍ*	'move sth. away'	M (medial):	*m-baɛɛaḍ*	'remain at a distance from e.o.'
III	*baɛəḍ*	'go away from'	SM (causative medial):	*ss-əm-baɛəḍ*	'move two things away from e.o.'

Arabic derivation have hardly exercized analogical influence on verbs of Berber origin. Thus in Kabyle, the verb shape CaCC is almost exclusively found with Arabic loans (108 out of 111); in only two or three cases, a Berber verb has taken an Arabic derivational shape, as in the Berber root *ḍfər* 'to follow'—*ḍafəṛ* (quasi-III) 'to frequent, to approach' and in *nəggəs* (quasi-II) 'to jostle'—*nagəs* (quasi-III) 'to bump into, to jostle', which, according to Dallet (1982:556) could be related to Tuareg *ənǧəs* 'to beat with the head'.[7] Similarly, the shape of the Arabic second stem is sometimes used to make a denominal verb on the basis of a Berber stem, similar to Maghribian Arabic (Ph. Marçais 1977:58). Thus Figuig has a verb *məddəd* (quasi-II) 'take a meal in the afternoon' derived from the noun *tamədditt* (*ta-məddid-t*) 'afternoon'. This is probably inspired by Arabic pairs (not borrowed in Figuig) such as *ɛša* 'evening' - *ɛəššа* 'take the evening meal', but the fact that the original noun also contains a geminate may have been another factor in the choice of the verb shape.

In Ghomara the situation is different (all data from Mourigh p.c.). In this variety, only one Berber derivation survives, the causative S-derivation. In addition to this, the Maghribian Arabic passive with the prefix *t(t)-* is used. This morpheme is only used with verbs of Arabic origin, and the verbs have Arabic inflection (see 7.4), e.g.

əfləḥ	'cultivate'	*ttəfləḥ*	'be cultivated'
ban	'appear'	*tban*	'be appeared'
fəkkʷ	'rescue'	*ttfakk*	'be rescued'

[7] Or should one rather compare Moroccan Arabic *məngus* 'jerk, slob' (Harrell 1966:101)?

When a passive of a verb with Berber etymology is needed, a suppletive form is used, in which the passive is based on the Arabic equivalent of the Berber verb, e.g.

ḵrəz	'plough' (< Berber)	*ttəḥrəṯ*	'be ploughed' (< Arabic)
znəz	'sell' (< Berber)	*tḇaɛ*	'be sold' (< Arabic)
səɣʷ	'buy' (< Berber)	*təšra*	'be bought' (< Arabic)

In Ghomara, the correspondence of a Berber underived verb to an Arabic passive is systematic, and there is little doubt that they function within a paradigmatic opposition.

7.3 The Insertion of Arabic Verb Shapes into Berber Morphology

Arabic verbs have different formal shapes (i.e. C/V templates), especially due to the presence of "weak" radicals (leading to vowel positions in the template), and to the presence of derivational devices.

Studying the way verbs of these shapes are integrated into Berber morphology (i.e. in the Aorist/Perfective basis of the Berber verb) involves two sub-questions:

a. To what extent are the Arabic shapes integrated into pre-existing Berber patterns, and to what extent do they receive special treatment
b. As in some Arabic verbs Imperfect and Perfect have different vowels, the question is, which form is the one inserted into Berber

In the following the treatment of a number of frequent Arabic stem shapes will be studied. This will be done on the basis of a number of Berber languages, for which enough lexical documentation is available to provide more than anecdotal information. The languages in question are Tashelhiyt (based on El Mountassir 2003), Central Moroccan Berber (Taïfi 1991), Tarifiyt (Ibáñez 1944, 1949, p.n.),[8] Figuig (Kossmann 1997), Mzab (Delheure 1984), Ouargla (Delheure 1987), Kabyle (Dallet 1982), Djebel Nefusa (Beguinot ²1942), Siwa (Souag 2010), and Zuwara (Mitchell 2009).

[8] I did not have access to the most important dictionary of Tarifiyt, Serhoual (2002).

7.3.1 *The Treatment of Verbs without a Plain Vowel in Arabic*

The so-called "sound" verbs of Arabic, i.e., verbs with three or four surface consonants, have no plain vowel as part of their stem structure. The most common original shapes in Arabic loans into Berber are the following:

$C_1C_2C_3$	(sound 3-radical verb, stem I)
$C_1C_2C_3C_4$	(sound 4-radical verb, stem I; sound 3-radical verb, stem VII, VIII)
$C_1C_2C_2$	(verb with identical second and third radical)
$C_1C_2C_2C_3$	(sound 3-radical verb, stem II)

In Maghribian Arabic, verbs of these types occur in the following shapes, depending on the aspect and on the lexical type (exx. from Moroccan Arabic):

	Perfect		Imperfect		
$C_1C_2C_3$	CCəC	*skəf*	CCəC	*skəf*	sip blood
		skət	CCŭC	*skŭt*	shut up
$C_1C_2C_3C_4$	CəCCəC	*bəntər*	CəCCəC	*bəntər*	paint
$C_1C_2C_2$	CəCC	*šəkk*	CəCC	*šəkk*	suspect
		kəbb	CŭCC	*kŭbb*	pour out
$C_1C_2C_2C_3$	CəCCəC	*fəkkəṛ*	CəCCəC	*fəkkəṛ*	think

First stem (underived) Arabic verbs allow for two vocalizations in the Imperfect. The vocalization is either schwa, or short *ŭ*. The short-*ŭ* verbs mostly correspond to Classical Arabic verbs with the vowel *u* in the Imperfect, but many Classical *u*-verbs have been transmitted to the schwa-class in Maghribian Arabic. There is a clear east-west cline as to the number of verbs remaining in the short-*ŭ* class; while quite numerous in eastern Algeria, they are relatively rare in western Morocco.[9]

7.3.1.1 *CCC Verbs and Longer Stems*

Among these four stem shapes, one stem shape corresponds exactly to unproblematic Berber stem shapes: CCC. In verbs of Berber origin, this stem shape is highly frequent. It seems that in all variants of Berber the Arabic CCC verbs have been integrated into this group without further adjustments.

[9] The situation is different in the Arabic dialects of Tunisia and Libya, where more vowel qualities are preserved than more to the west.

Like with Berber verbs, the Arabic loans of this type have no differentiation between the Aorist and the Perfective. The Imperfective of Arabic-based CCC-verbs follows the Berber pattern in most varieties; thus in Tarifiyt, Figuig, Mzab, Ouargla, Djebel Nefusa, one finds almost exclusively the Imperfective with gemination of the second consonant (e.g. Aorist *fhəm*, Imperfective *fəhhəm* 'to understand' < Arabic *fhəm*). In Kabyle and in Central Moroccan Berber, both the Berber and the Arabic classes of CCC-verbs display a lexical variation between an Imperfective with *tt*-CC*a*C and an Imperfective with gemination of the second root consonant, e.g. Kabyle Aorist *ḵrəs*, Imperfective *ṭṭəḵras* ~ *ḵərrəs* 'to tie, to knot' < Berber; Aorist *lsəq*, Imperfective *ɣɣəlsaq* ~ *ləssəq* 'to glue' < Arabic *lṣəq*. Tashelhiyt has a different and highly interesting distribution of these two allomorphs: Berber-based verbs normally have an Imperfective with gemination of the first or second radical (for the conditions governing this choice, see Dell & Elmedlaoui 1988, Lahrouchi 2009), while Imperfectives of loans from Arabic have the shape *tt*CC*a*C.[10] The etymological compartmentalization found with Tashelhiyt CCC-verb Imperfective structures is also found in the formation of the verbal noun, which always has non-integrated morphology with verbs of Arabic origin (see 6.5).

The stem shape $C_1C_2C_3C_4$ closely resembles the common Berber stem shapes $C_1C_1C_2C_3C_4$ and $C_1C_2C_3C_4$. Arabic loans mostly have no initial gemination (note however exceptions such as Figuig *nnəxləɛ* 'be afraid' < *nəxləɛ* 'id.'), but further follow Berber morphology of four-radical verbs closely.

The stem shape $C_1C_2C_2C_3$ does not seem to have a long history in Berber; in spite of a few verbs of this shape with a Berber background (mostly denominal verbs from nouns with a geminate), one may assume that it did not exist in Berber before the introduction of Arabic verb patterns. As $C_1C_2C_2C_3$ is the shape of the Arabic second stem, which is highly productive in Maghribian Arabic, it is now very frequent in Northern Berber (over 600 verbs in Kabyle, Dallet 1953).[11] Like four-consonant verbs, $C_1C_2C_2C_3$ verbs are taken over as such, and do not undergo further modifications. Aspectual morphology follows the patterns of Berber four-consonant verbs.

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[10] A few verbs with a Berber background also have this structure (see the list in Lahrouchi 2009:199). They all have roots without a sonorant. As shown by Lahrouchi (2009), triconsonantal verbal roots of Berber origin without a sonorant are extremely rare.

[11] It is interesting to contrast this figure to only 28 verbs of this stem type (mostly Arabic loans) found in Ahaggar Tuareg, which has undergone much less lexical influence from Arabic than Northern Berber (Tressan 1982:44–45).

7.3.1.2 *$C_1C_2C_2$ Verbs*

In the group of verbs that have no plain vowel in Arabic, the $C_1C_2C_2$ class has led to most complications in the process of borrowing.

In Classical Arabic, depending on the aspect and the person, verbs of this type appear with a geminate (when followed by a vowel) and with two identical consonants, dislocated by a vowel (when followed by a consonant), e.g.

Classical Ar.	*fakk-a*	'he untied'	*fakak-tu*	'I untied'

Maghribian Arabic (like most other Arabic dialects—Andalusian Arabic constitutes a rare exception, Corriente 1977:112) has generalized the forms with gemination. When the verb is followed by a consonant-initial suffix, the vowel *i* appears between the geminate and the suffix, probably by analogy with verbs with a plain final vowel, e.g.

Moroccan Ar.	*fəkk*	'he untied	*fəkki-t*	'I untied'

When introducing verbs of this type into Berber, only little support was to be found in Berber morphology. Many Berber languages have a small group of original verbs with a final geminate. These verbs come from verbs with two identical last consonants, which originally were dislocated by a vocalic element. This situation is still found in many varieties, a.o. Zenaga, Tuareg, Ghomara, Kabyle (as a variant) and all eastern Berber languages. Among the varieties that retain the original situation, many allow for short vowels in open syllables, e.g.:

Ayer Tuareg	*y-əbdăd*	'he stood'	*əbdăd-ăn*	'they stood'

In those languages where a short vowel is lost in open syllables, there is variation between dislocated and geminated consonants according to syllable structure, as attested in Igli (Sud oranais, Kossmann 2010b:71):

Igli	*i-bdəd*	'he stands'	*bədd-ən*	'they stand'

In most Northern Berber varieties, however, the form with gemination was generalized, e.g. Figuig:

Figuig	*i-bədd*	'he stands'	*bədd-ən*	'they stand'

At a later stage, in some sedentary Saharan languages (Figuig, Mzab, Ouargla), new $C_1C_2əC_2$ verbs emerged, as a consequence of a reshuffling of the morphology of stative verbs; thus Figuig nowadays has *i-bədd* 'he is standing' (< **y-əbdəd*), but also *i-mləl* 'he is white' (an analogical formation based on earlier forms such as the Aorist stem *imlul*).

The number of original Berber $C_1C_2C_2$ verbs is quite small, and they constituted a relatively weak analogical target for the integration of Arabic verbs. As a consequence, the treatment of Arabic $C_1C_2C_2$ verbs is far from unitary in Berber. One can distinguish the following types:

a. $C_1C_2C_2$, similar to the Arabic Perfect, and to the treatment of original Berber $C_1C_2C_2$ verbs in most dialects.
b. Insertion of a plain vowel (mostly *u*) between the first consonant and the geminate. This leads to some similarity to the *ŭ*-Imperfect of some Arabic $C_1C_2C_2$ verbs.
c. Suffixation of a vowel after the geminate. This is similar (but not identical) to the presence of a vowel between the geminate and a consonant-initial suffix in Arabic $C_1C_2C_2$ verbs.
d. Insertion of a plain vowel (mostly *u*) before the geminate combined with suffixation of a vowel after the geminate, i.e., a combination of device b and c.

a. The first type, which leads to most similarity with the Arabic shape, is the regular solution in Tarifiyt, Figuig, Mzab, Ouargla and Siwa. In these languages, it concerns the great majority of Arabic $C_1C_2C_2$ verbs; in Figuig only one verb is treated differently (*ḥuss* 'to feel'), while in Mzab two $C_1C_2C_2$ loan verbs with a different shape are attested (*ḥussa* 'to feel', *ḍall* 'to look from above'). In Ouargla and Tarifiyt, numbers of other shapes are somewhat higher (at about one third in Ouargla), but the majority of $C_1C_2C_2$ verbs are integrated according to the Arabic Perfect without further modifications.

On the other hand, in Kabyle—by far the best documented variety of northern Berber, lexicographically speaking—, only 11 cases of the first type are attested. Most of these verbs are in variation with similar verbs with different shapes, either $C_1uC_2C_2$ or $C_1C_2C_2C_2$ (i.e. the Arabic second stem forms of $C_1C_2C_2$ verbs). It seems that at least some of the Kabyle $C_1C_2C_2$ verbs are best considered variants of $C_1C_2C_2C_2$ verbs. Their origin lies in forms with a vowel-initial suffix in the verbal conjugation, which causes the disappearance of the second schwa of the $C_1C_2C_2C_2$ verbs. As a result the geminate coalesces with the identical following consonant. Thus, while there is an opposition between $C_1C_2C_2$ verbs and $C_1C_2C_2C_2$ verbs in the third person singular, the two forms are identical in the third plural, e.g.

Kabyle	3SG:M	*i-ḥəšš*	vs.	*i-ḥəššəš*
	3PL:M	*ḥəšš-ən*	=	*ḥəšš-ən*

The $C_1C_2C_2$ shape in this context paves the way for a reinterpretation in terms of $C_1C_2C_2$ in all contexts.

Elsewhere, the device is even more unusual. Taïfi's Central Moroccan Berber dictionary has only one example (*ɛəzz* 'to be loved'),[12] just like Beguinot's vocabulary of Djebel Nefusa Berber (*ḥəžž* 'to go on pilgrimage'). No attestations of this way of integration were found in Tashelhiyt.

b. The second type is characterized by the insertion of a plain vowel between the first consonant and the geminate. Without adjunction of a post-root vowel (device d), this is the regular device in Djebel Nefusa, where, with one exception, all Arabic $C_1C_2C_2$ verbs are taken over as $C_1uC_2C_2$, e.g. *ḥuṭṭ* 'to put'; *kubb* 'to kiss' *kurr* 'to drag'; *quṣṣ* 'to cut'; *sunn* 'to sharpen'; *ṣudd* 'be enough'; *šuqq* 'to cleave'; *šumm* 'to smell'; *tumm* 'to be counted, to be finished'; *zuzz* 'to shear'; *ḍumm* 'to sweep' (Provasi 1973: 524). The same situation applies in Zuwara, where, according to Mitchell (2009:22) there are 46 examples with the shape $C_1uC_2C_2$, and two examples with the shape $C_1iC_2C_2$, not necessarily all from Arabic.[13] In Awdjila, the most common device seems to be insertion of the vowel *u* in combination with gemination of the first consonant, e.g. *əddugg* 'to knock', *əmmudd* 'to extend'(van Putten fc.).

In Kabyle, vowel insertion is also by far the most generally attested device. In this variety, several vowel patterns appear, some of which have aspectual apophony (verbs of Berber origin are of course not counted). For the sake of completeness, the forms without a plain vowel treated above are also presented:

AO *u* – PV *u*	the most common, e.g. *ɛuzz* – *ɛuzz* 'to cherish' (over 45 cases)
AO *a* – PV *a*	2 attestations: *ḥall* – *ḥall* 'to be suitable for'; *qadd* – *qadd* 'to be enough' (~ *qidd* – *qadd*)
AO *a* – PV *u*	5 attestations: *mass* – *muss* 'to touch'; *qass* – *quss* 'to bear a grudge'; *qaššˇ* – *qaššˇ* 'to swipe' (~ *quššˇ* – *quššˇ*); *xaṣṣ* – *xuṣṣ* 'to lack'; *ɛass* – *ɛuss* 'to guard'. Cf. also *fakk* – *fukk* 'to stop' whose Arabic background is questionable (cf. Dallet 1982:199).
AO *i* – PV *a*	5 attestations: *ḏill* – *ḏall* 'to look at'; *ḥibb* – *ḥabb* (~ *ḥibb* – *ḥubb*) 'to love'; *qidd* – *qadd* 'to be enough' (~ *qadd* – *qadd*); *qiṛṛ* – *qaṛṛ* 'to admit'; *sibb* – *sabb* 'to injure'

[12] This form is in variation with the stative verb shape *ɛziz*, which itself is derived from the Arabic adjective *ɛziz*. This suggests that *ɛəzz* could be a Berber-internal reformation on the basis of the verb *ɛziz* rather than a direct borrowing of the Arabic verb *ɛəzz*.

[13] Mitchell's examples of $C_1C_2C_2$ structures without a vowel suggest that this is the more common way of treating Berber-based verbs, e.g. *bə̂dd* 'stand up' (Mitchell 2009:20).

AO *i* – PV *u*	1 attestation: *ḥibb – ḥubb* (~ *ḥibb – ḥabb*) 'to love'
AO ø – PV ø	11 attestations: *ḇəšš – ḇəšš* 'to urinate'; *ḏəṛṛ – ḏəṛṛ* 'to harm' (~ *ḏuṛṛ – ḏuṛṛ*); *ḥədd – ḥədd* 'to limit' (~ *ḥudd – ḥudd, ḥəddəd*); *ḥəšš – ḥəšš* 'to cut grass' (~ *ḥušš – ḥušš)*; *ḥəll – ḥəll* (~ *ḥəlləl*) 'to implore'; *ḥəss – ḥəss* 'to listen' (~ *ḥəssəs*); *ḥəṛṛ – ḥəṛṛ* 'to hold back'; *mədd – mədd* 'to hand over' (~ *mudd – mudd*); *šəqq – šəqq* 'to split (wood)' (~ *šuqq – šuqq, šəqqəq)*; *žədd – žədd* 'to be a grandfather'; *ɛəṛṛ – ɛəṛṛ* 'to be of low status'

Many verbs of these types show lexical variation between different vowel schemes. Still, there are cases where the use of a different vowel corresponds to different semantic content, e.g. *ḥəll - ḥəll* 'to implore' vs. *ḥall - ḥall* 'to be suitable for' vs. *ḥull - ḥull* 'to mix (with liquid)'.

Outside Djebel Nefusa and Kabyle, the shape $C_1VC_2C_2$ is much less used for integrating Arabic $C_1C_2C_2$ verbs. In Central Moroccan Berber it only appears once (*ḥiǧǧ* 'to go on pilgrimage', dialectally also other shapes), and in El Mountassir's verb list of Tashelhiyt (2003), it is also limited to one occurrence: *dukk* 'to drink while smoking'. In the Zenatic dialects, which prefer the shape $C_1C_2C_2$, some examples of $C_1VC_2C_2$ appear:

Figuig	*ḥuss* 'to feel'
Mzab	*ḍall* 'to look from above'
Ouargla	*huzz* 'to be shaken'; *ḥuss* 'to feel'; *kubb* 'to pour'; *kurr* 'to drag'; *ɣuṛṛ* 'to deceive'; *rušš* 'to water'; *ṣukk* (~ *ṣuk*) 'to kick out'; *šugg* 'to make a hole'; *šull* 'to have an acute diarrhoea'; *šuqq* 'to split (wood)'; *sarr* 'to be in good health' ; *ḥižž* 'to go on a pilgrimage'
Tarifiyt[14]	*bukk* 'to fester'; *hudd* 'to threaten'; *ḥukk* 'to rub oneself'; *rušš* 'to sprinkle'; *šukk* 'to prick'; *ɛuqq* 'to vomit'; *ḥibb* 'to love'; *ḥižž* 'to go on pilgrimage'; *qidd* 'to be enough'

c. The third device for integrating Arabic $C_1C_2C_2$ verbs consists of the suffixation of a vowel after the geminate. By means of this method, the verbs are integrated into one of the classes of vowel-final verbs. This device may have been inspired by the use of vowel-final stem forms in dialectal Arabic when a consonant-initial suffix is present (e.g. *fəkki-t* 'I untied', see p. 246).

Device (c) is mainly found in Central Moroccan Berber and in Tashelhiyt. In Central Moroccan Berber, the verbs are integrated into the class with final *-a* (see below for more details on vowel-final verbs), e.g. *ḥəlla* 'to be licit', *qəlla* 'to be rare', *šəkka* 'to doubt'. Only one verb of this type

[14] Forms according to Ibáñez (1944). Q often has forms without a full vowel where more western varieties have a full vowel.

has been introduced into the class with final *u* in the Aorist: *ɛəddu* (PV *ɛəddi/a*) 'to be numerous'.

In Tashelhiyt, on the other hand, all verbs of this type are integrated into the class with final *u* in the Aorist, e.g. *ḥllu* (PV *ḥlli/a*) 'to be licit', *qllu* (PV *qlli/a*) 'to be rare', *škku* (PV *škki/a*) 'to doubt'.

d. The fourth device is a combination of the preceding two, i.e. the addition of a vowel before the geminate and suffixation of a vowel after the geminate. Like device (c), this seems to be mainly a feature of Central Moroccan Berber and Tashelhiyt, the only attestation outside this area being Mzab *ḥussa* 'to feel'.

In Central Moroccan Berber, the structure $C_1uC_2C_2a$ exists as a minor pattern next to the forms without an internal vowel. There are five attestations in Taïfi's dictionary: *ḍunna* 'to suppose'; *fukka* 'to save'; *ḥubba* 'to love'; *kubba* 'to pour' (Zayan), and *rušša* 'to sprinkle'. In the southern Central Moroccan dialect of the Ayt Izdeg, a number of verbs with the shape $C_1uC_2C_2u$ (apparently with AO=PV *-u*) are attested. This may be the dedicated dialectal form: *dullu* (PV *dullu*) 'to be humiliated', *ḍunnu* 'to suppose', *ḥuǧǧu* 'to go on pilgrimage'.[15]

In Tashelhiyt, the minority pattern $C_1VC_2C_2u$ seems to be somewhat more frequent than in Central Moroccan Berber. The final vowel is almost always *u* (PV *i/a*); the internal vowel is mostly *u: fukku* 'to deliver', *ḥukku* 'to scratch', *ḥussu* 'to feel', *ḥužžu* 'to go on pilgrimage', *ruššu* 'to sprinkle'. Once *a* is found: *ḥarru* 'to hurry', and once *a* is combined with the final vowel *a*: *qqadda* 'to be enough'.

The different devices for inserting Arabic $C_1C_2C_2$ verbs into Berber patterns are recapitulated in the following table. In the table, only those devices accounting for over 10% of the attested verbs in the dialect are presented. The + sign refers to the most frequent pattern in the dialect, ± to minority patterns (excluding hapaxes).

7.3.1.3 *Arabic Aspectual Apophony in Borrowed Arabic Verbs without a Plain Vowel*

One major question is to what extent the shape of the verbs as taken over in Berber corresponds to the Arabic Imperfect verb form rather than to

[15] However, in the nearby Ayt Hdiddou variety, the scheme $C_1C_2C_2a$ (AO=PV) prevails, like elsewhere in Central Moroccan Berber (Azdoud 2011).

The integration of Arabic $C_1C_2C_2$ *verbs*

	a. $C_1C_2C_2$	b. $C_1VC_2C_2$	c. $C_1C_2C_2V$	d. $C_1VC_2C_2V$
Siwa	+			
Djebel Nefusa		+		
Zuwara		+		
Kabyle	±	+		
Ouargla	+	±		
Mzab	+			
Figuig	+			
Tarifiyt	+	±		
Central Morocco			+	±
Tashelhiyt			+	±

the Perfect. In the case of CCC verbs and of the derived stems treated above, this question cannot be answered, as the Arabic forms have been integrated entirely into Berber patterns without plain vowels. However, with $C_1C_2C_2$ verbs Berber adaptations with plain vowels exist, which allow us to study this question.

In Classical Arabic, the Perfect almost always has the vowel *a*, while the Imperfect occurs with three vocalizations, *a, i* and *u*. This suggests that the frequency of *u* in Berber adaptations of Arabic $C_1C_2C_2$ verbs is due to the take-over of the Arabic Imperfect form.

While alluring, this explanation is littered with problems. Even if one would take Classical Arabic as the basis of borrowing (a highly improbable option), the vocalization of many verbs in Berber would not correspond to Arabic. Thus, for example, Djebel Nefusa *tumm* 'to be counted, to be finished' corresponds to a verb that has *i* vocalization in Classical Arabic, and *ə* in local dialects of Arabic.[16]

On the basis of Maghribian Arabic, the explanation is even less attractive. In most Maghribian Arabic varieties the short vowel system has collapsed into a two-term system consisting of *ə* and *ŭ*. The vowel *ŭ* is also found as an Imperfect vowel in underived verbs, but there is great dialectal variation as to its frequency. Many (in some dialects most) verbs which have the Imperfect vowel *u* in Classical Arabic, have *ə* instead of expected *ŭ*. The tendency to restrict the vocalization *ŭ* to a small number of verbs is especially strong in Morocco, but also appears in pre-Hilalian Algerian dialects. Therefore, it is unexpected that in most Berber varieties—and

[16] E.g. Tunis (Singer 1984:352); Tripoli (Griffini 1913:119); and Fezzan (Marçais 2001:160 e.a.).

especially so in Morocco—$C_1uC_2C_2(V)$ is the most frequent type of integrated Arabic $C_1C_2C_2$verbs.

In many nomadic Maghribian dialects the short vowel opposition has been reduced to a two-way opposition *ă* vs. *ə*. One remarks that some of the Berber varieties spoken in the Sahara (Figuig, Mzab, Siwa) only rarely use the device in which a vowel is inserted. This could be considered a result of the absence of short *ŭ* in the surrounding Arabic dialects. This does not, however, explain the similar outcome in Tarifiyt, which has different Arabic dialects as its neighbors.

This is not to say that the Imperfect vocalization has had no influence on the Berber shape with some individual verbs. One remarks that the Arabic verb *ṛəšš* 'to sprinkle', which has Imperfects with *ŭ* attested as far west as Morocco (Premare 1993–1999; Harrell 1966 gives *ə*), is taken over with *u* in most Berber varieties: Tashelhiyt *ruššu*, Central Moroccan Berber *rušša*, Tarifiyt *ṛušš*, Ouargla *rušš*, the only exception being Figuig *ṛəšš*. Similarly one wonders whether the fact that Kabyle *ḥall* 'to be suitable' corresponds to a Classical Arabic form with Imperfect *i*, while Kabyle *ḥull* 'to mix' corresponds to a verb with Imperfect *u* in Classical Arabic is coincidental. The choice of individual vocalizations may also stem from other word forms, such as corresponding nouns. For example the Ouargli form *ḥižž* 'to go on a pilgrimage', used with a verb which has *u* vocalization in Classical Arabic, is no doubt derived from the Classical Arabic noun *ḥiǧǧa* 'pilgrimage to Mekka', appearing in Ouargli as *lḥižž*.[17]

In spite of such individual cases, the Arabic Imperfect vocalization has only been a minor factor in the choice of the Berber form. The choice of the vowel is not dictated by the phonetic nature of the stem consonants either. Thus in Kabyle, similar percentages of *u* and non-*u* vocalizations are found with stems which contain a back consonant[18] and stems which do not. Only with stems that contain a labial consonant, *u*-vocalization is more frequent than in other contexts; but even in this context, a series of exceptions occur.

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[17] Dialectal Arabic normally has forms with a short vowel, such as *ḥəžž* or *ḥăžž*. Direct influence from Classical Arabic is of course not unexpected with this religious term.

[18] I.e. a velar, a uvular or a pharyngeal. In Kabyle, as well as in a number of other Berber languages, these consonants can be labialized.

7.3.2 *The Integration of Arabic Verbs with a Final Vowel*

7.3.2.1 *First Stem Verbs*

In Arabic, there exists an important group of verbs which have a vowel in final position. Verbs of this type belong to roots which contain a final *y* or *w*. In Maghribian Arabic, first stem verbs of these types can be classified in a number of groups:

a. Perfect *a* Imperfect *a*, e.g. *bda – bda* 'to begin'
b. Perfect *a* Imperfect *i*, e.g. *bna – bni* 'to build'
c. Perfect *a* Imperfect *u*, e.g. *ḥba - ḥbu* 'to crawl (child)'

The third category, with Imperfect *u*, only appears in a few verbs. Like in most other Arabic dialects, the great majority of verbs which in Classical Arabic belong to the III *w* group with *u*-vocalization in the Imperfect have been inserted into the scheme of the *i*-verbs. The number of *u*-verbs in Maghribian Arabic does not exceed five in any dialect (Jijel, Ph. Marçais 1956:171, cf. also Heath 2000). Some of these verbs may be classicisms. Thus Jijel *ɛfa – ɛfu* 'to forgive' may be based on the fixed classical formula *ll̩ahu yəɛfu* 'God forgive!' (currently used in Eastern Morocco when somebody lights a cigarette). For other verbs this kind of explanation does not seem to hold. Philippe Marçais (1956:171) signals that most verbs have a labial consonant, and suggests a phonetic background to the preservation of *u* vocalization. Semantic factors may also have played a role: with the exception of *ɛfa – ɛfu*, treated above, all verbs Marçais cites refer to less controlled actions, or to actions typical of little children: Jijel: *ḥba – ḥbu* 'to crawl', *kba – kbu* 'to lower one's head, to doze', *fsa – fsu* 'to fart', *žɣa – žɣu* 'to cry, wail (little child)' (no clear Arabic etymology), elsewhere in Algeria also: *dba – dbu* 'to patter along' and *kɛa – kɛu* 'to march with difficulty' (Ph. Marçais 1956:171, n. 2). One wonders whether *u*-vocalization is somehow associated to the expressive domain, and thereby hindered the analogical integration of these verbs into the major *i* verb class.

Andalusian Arabic, it seems, allowed for more *u*-verbs than any other western Arabic dialect; in many cases, Corriente (1977; 1997) lists alternating forms with both *i* and *u* (e.g. *afsū* vs. *afsī* 'to break wind without noise', Corriente 1997:399).

Berber languages have a verbal type of a similar structure as the Arabic defective verbs, with a pattern CCV in the Aorist and the Perfective. There exists an important dialectal divide between varieties in which Aorist and

Perfective have different vocalizations in this verb type (among others Tashelhiyt, Central Moroccan Berber, Kabyle, Ghadames) and those which have the same vocalization in both aspects (among others Tarifiyt, Figuig, Mzab, Ouargla, Djebel Nefusa, Siwa). The most common type has AO *u* and PV *i/a* in Tashelhiyt (etc.) and *i/a* both in the Aorist and the Perfective in varieties with merger of the two (except Siwa, which has unchanging *u* in both aspects, Souag 2010:377). The alternating vowel is *i* in the 1st and 2nd person singular, and *a* elsewhere (further details in Kossmann 1994), e.g. with the verb *bḍu* 'to divide':

	Tashelhiyt Aorist	Tashelhiyt Perfective	Figuig Aorist	Figuig Perfective
1S	*bḍu-ḥ*	*bḍi-ḥ*	*bḍi-x*	*bḍi-x*
2S	*t-bḍu-t*	*t-bḍi-t*	*t-əbḍi-d*	*t-əbḍi-d*
3SM	*i-bḍu*	*i-bḍa*	*i-bḍa*	*i-bḍa*
3PM	*bḍu-n*	*bḍa-n*	*bḍa-n*	*bḍa-n*

Even though this pattern is well-established in Berber, the number of original Berber verbs which have it is relatively small.

In addition to this pattern, some Berber languages have further minor patterns of vowel-final verbs, which will be presented where relevant. It is important to note that Berber also has verbs with a final *w* or *y*. Arabic vowel-final verbs are never integrated into these semivowel-final classes (with the exception of some ambiguous cases which will be pointed to where relevant), even in languages (such as Tashelhiyt), where the underlying final glide normally appears as a vowel.

Arabic stem I CCV verbs are almost invariably put into the Berber CCu/a class. Compare the fate of the Arabic verb *bda* – *bda* 'to start' in a number of languages:

Tashelhiyt	AO *bdu*	PV *bdi/a*
Central Mor.	AO *bdu*	PV *bdi/a*
Ghomara[19]	AO *b̲du*	PV *b̲da*
Kabyle	AO *b̲ḍu*	PV *b̲ḍi/a*
Ghadames	AO *əbdu*	PV *əbde/a*
Tarifiyt	AO *b̲ḍi/a*	PV *b̲ḍi/a*
Figuig	AO *bdi/a*	PV *bdi/a*
Mzab	AO *bdi/a*	PV *bdi/a*
Ouargla	AO *bdi/a*	PV *bdi/a*

[19] Only loan verbs with Berber inflection are taken into account.

Nefusa	AO *bdi/a*	PV *bdi/a*
Zuwara	AO *bdi/a*	PV *bdi/a*
Siwa	AO *bdu*	PV *bdu*

Exceptions to this way of integration are quite rare. They fall into three types:

a. Use of an Aorist form with final *i* :
Kabyle is the only language with more than one attestation of this type. In this variety, some of the *i*-final loan verbs have AO *i* PV *i/a*, others have AO *i* PV *a* (i.e. also *a* before the 1st and 2nd singular):

Kabyle	AO *ḥši*	PV *ḥši/a*	'to deceive'
	AO *ɣni*	PV *ɣni/a*	'to be enriched' ~ AO *ɣnu* PV *ɣni/a* 'enrich, be enriched'
	AO *ɛri*	PV *ɛri/a*	'to be naked' ~ AO *ɛru* PV *ɛri/a*
	AO *rḥi*	PV *rḥi/a*	'to be unhappy' ~ AO *rḥu* PV *rḥi/a*
	AO *rḇi*	PV *rḇa*	'to ask too high a price' ≠ AO *rbu* PV *rbi/a* 'take on knee'
	AO *ɛṣi*	PV *ɛṣa*	'to be strong'; cf AO *ɛṣu* PV *ɛṣi/a* 'confront'
	AO *bhi*	PV *bha*	'to be well-clothed'
	AO *ɛṯi*	PV *ɛṯa*	'to be vigourous' ~ AO *ɛṯu* PV *ɛṯi/a*
	AO *xfi*	PV *xfa*	'to disappear'
	AO *lhi*	PV *lha*	'to be busy with'

The relatively large number of cases in Kabyle may be simply due to the high quality of Kabyle lexicography; thus against eleven verbs of the shape CCi,[20] there are 107 verbs with have CCu (mainly of Arabic origin). On the other hand, different from other varieties, in Kabyle the vocalization *i* is common in longer vowel-final verb types (see below), and this may have exercized influence on the CCV verbs.

In the other languages, only single attestations of integration into this type were found:

Tashelhiyt	AO=PV *šwi*	'to grill'
Tarifiyt	AO=PV *šwi*	'to pinch'
Figuig	AO=PV *kri*	'to rent'
Mzab	AO=PV *čri*	'to rent'
Ouargla	AO=PV *lwi*	'to get twirled'
Nefusa	AO=PV *əkri*	'to rent'
Ghomara	AO=PV *qli*	'to fry'

In some of these languages, CCi could synchronically represent underlying **CCy. This is not the case, however, in Figuig, where CCi and CCy are

[20] I.e. the above ten loans and one original Berber verb, *ḡʷri – ḡʷra* 'to remain, to be last'. Verbs with vocalization of final *y* and *w* are not included in the figures.

kept well apart. The frequency of the Arabic verb *kra – kri* 'to rent' in this list is remarkable. I have no explanation for this; Arabic nominal forms have *a* (*l=əkra* 'the rent'), so there does not seem to be influence from a non-verbal form.

b. Use of an Aorist form with final *a* in Berber varieties which normally have *u* :

Tashelhiyt	AO=PV *ḥna*	'to serve' (the Arabic basis is not certain)
Central Mor.	AO=PV *qra*	'to read'
	AO=PV *swa*	'to be worth, have a value'
	AO=PV *sɛa*	'to obtain loot'

This implies introduction of the verb in the very minor class of verbs which have *a* (without vowel change) both in the Aorist and in the Perfective. The three Central Moroccan Berber verbs all belong to the Arabic *a*-type, but one should note that other Arabic *a*-verbs have been integrated into the Berber *u-i/a* class.

c. Use of forms with *u* in Berber varieties which normally have *i/a* both in the Aorist and the Perfective:

Figuig	AO=PV *ɛfu*	'to forgive (subject: God)'
Mzab	AO=PV *dɛu*	'to wish for, to curse'
	AO=PV *ḥlu*	'to be sweet'
	AO=PV *ɛfu*	'to forgive'
Ouargla	AO=PV *sfu*	'to be clear (color)'
	AO=PV *dɛu*	'to invoke God'
	AO=PV *ḥšu*	'to introduce, to stuff'
Tarifiyt (Q)	AO=PV *ɛfu*	'to forgive'
	AO=PV *aṛxu*	'to let go'
	AO=PV *ɛḏu*	'to pass'

In these verbs, *u* is invariable between Aorist and Perfective. These are varieties where original Berber verbs only rarely have final *u*. The Arabic verbs in question all correspond to Classical forms which have Imperfects with *u*. As the local Arabic dialects have all done away with the *u*-type of the Imperfect in this verb class, the Berber forms seem to be connected with Classical Arabic rather than with dialectal Arabic. This is hardly problematic in the case of *ɛfu* 'to forgive (subject: God)' and *dɛu* 'to invoke God', which belong to the religious vocabulary; different from the others, they have *u* correspondents in some western Arabic varieties: *ɛfu*, rather well-spread in Algeria, Morocco and Andalusia, *dɛu* (varying with *dɛi*) in

Andalusian Arabic (Corriente 1997). The reason behind the choice of *u* with the other verbs is unclear: nothing in the semantics of the verbs suggests that they have a Classical cachet, and they are not attested with *u* in any western Arabic dialect.

7.3.2.2 *Other Stem Forms*

The Arabic verbs with a final vowel position also occur in derived stem types. In the types that are most important to our discussion, stem II and III, Maghribian Arabic always has the same vowel apophony Perfective *a*, Imperfective *i*, e.g. Moroccan Arabic (stem II) *wəlla* 'he became'—*i-wəlli* 'may he become'.

There are no well-established Berber verb types with a final vowel that would correspond to these longer stem types. Therefore, one might expect that the Arabic verbs of these types are simply inserted into the same mould as the shorter vowel-final stem I CCV verbs.

This is in fact what happens in the Berber languages which have the same final vowel in the Aorist and in the Perfective, such as Ouargla. In these varieties, the Arabic final vowel is taken over as *i/a* in Arabic stem II and stem III verbs. Stem III verbs do not undergo further modifications, e.g.:

Ouargla	*dawa*	'to heal'
	ḍawa	'to give light'
Mzab	*wala*	'to be favorable'
	wata	'to be good, fitting'
	ɛada	'to consider somebody an enemy'
Nefusa	*dawa*	'to heal'
	laqa	'to meet'

Stem II verbs also get final *a*. In the Saharan oasis varieties, most defective stem II verbs are integrated in the form $C_1aC_2C_2a$, with insertion of a full *a* before the second root consonant, e.g.

Ouargla	*darra*	'to sprinkle'
	manna	'to desire'
	naqqa	'to cleanse'
	samma	'to name'
Mzab	*waṣṣa*	'to recommend'
	zakka	'to give the legal alms'
	ɛabba	'to fill oneself with'
Figuig	*ɣazza*	'to do bad things intentionally'
	ṛayya	'to propose'
	ɛazza	'to offer one's condolences'

At this point, vowel-final stem II verbs function differently from sound stem II verbs, which do not get an additional plain vowel.

Forms without a plain vowel are not attested in Figuig, with the exception of *ɣənni* 'to sing'. In Mzab only one verb lacks the internal *a* : *ɛəzza* 'to offer one's condolences'. The number of verbs without internal *a* is somewhat larger in Ouargla, but still constitutes a minority pattern, e.g. *həyya* 'to be ready', *wəṣṣa* 'to recommend' and *ɛəzza* 'to offer one's condolences'.

Djebel Nefusa and Zuwara, on the other hand, have forms without an internal plain vowel throughout, it seems,[21] e.g. Nefusa *ɣənna* 'to sing' and *nəžža* 'to save', Zuwara *zákka* 'give alms' (Mitchell 2009:15). In the varieties under consideration, only one derived defective Arabic verb does not have final *a*, Figuig *ɣənni* 'to sing'.

Among the Berber varieties which have different vowels in the Aorist and the Perfective of the CCV verbs, only in Tashelhiyt derived defective Arabic verbs get the same vocalic pattern as the CCV verbs. This treatment is found with stem II verbs:

Tashelhiyt	AO *ɣššu*	PV *ɣšši/a*	'to deceive'
	AO *nwwu*	PV *nwwi/a*	'to intend'
	AO *rbbu*	PV *rbbi/a*	'to educate' éduquer
	AO *smmu*	PV *smmi/a*	'to name'
	AO *šqqu*	PV *šqqi/a*	'to be difficult'
	AO *uṣṣu*	PV *uṣṣi/a*	'to advise'
	AO *zkku*	PV *zkki/a*	'to give the legal alms'

A few stem II verbs are treated differently, and are integrated into verb types with an invariable final vowel: *nžža* 'to be save', *ɣnni* 'to sing'.

Defective stem III verbs, on the other hand, are all inserted into the class of invariable *a*-final verbs, e.g. *dawa* 'to heal', *qaḍa* 'to terminate' and *žaza* 'to give recompensation (God)'. With other verb stems, both *u-i/a* and *a-a* occur, without clear distribution, e.g. *thllu – thlli/a* 'to care for' (stem V), *tthnnu – tthnni/a* 'to be quiet' (stem V) but *tmnna* 'to wish' (stem V) and *ttuḍḍa* 'to wash oneself ritually' (stem V).

In Central Moroccan Berber, the treatment of derived defective Arabic verbs is entirely regular: all such verbs are put into the class with invariable final *a*, e.g.

[21] From the transcriptions in Beguinot (²1942) it is not always clear whether schwa or *a* is meant.

Central Mor.	stem II:	AO=PV *mənna*	'to wish'
		AO=PV *qəššа*	'to burglarize'
		AO=PV *səmma*	'to name'
		AO=PV *šətta*	'to spend the winter'
	stem III:	AO=PV *šafa*	'to heal (subject : God)'
		AO=PV *wata*	'to convene'

Kabyle is as regular as Central Moroccan Berber, but uses a different device. In this variety, derived defective Arabic verbs are put into a special apophonic class, which, as far as applied to final vowels, further only appears in a few CCV verbs (see above), the class with the apophony Aorist *i* – Perfective (stable) *a*. In stem III, non-final Aorist *a* is *u* in the Perfective. Examples:

Kabyle	stem II:	AO *ɣəzzi*	PV *ɣəzza*	'to punish'
		AO *ḇərri*	PV *ḇərra*	'to be interested in'
	stem III:	AO *baṣi*	PV *buṣa*	'to be sentenced'[22]
		AO *laqi*	PV *luqa*	'to punish (subject: God)'

A similar situation as in Kabyle is found in Ghomara[23] (Mourigh fc.), e.g.

Ghomara	stem II:	AO *ɛəlli*	PV *ɛəlla*	'to make rise'
		AO *nəqqi*	PV *nəqqa*	'to make clean'
	stem III:	AO *laqi*	PV *laqa*	'to make meat'
		AO *ḥaḏi*	PV *ḥaḏa*	'to touch'

In addition to this, there are a few verbs which have *i* throughout: *dənni* 'blow on the fire', *ləwwi* 'to roll'.

7.3.2.3 *Vowel-final Arabic Verbs and the Question of Imperfect Vocalization*

As with other forms with a plain vowel, studying the integration of vowel-final Arabic verbs one has to deal with the question which Arabic aspectual form is the basis of the borrowing.

In the case of CCV verbs, this question is a difficult one. As Berber already had an original verb shape with CCV as its basis, albeit a relatively small group, one can assume that the CCV template was simply filled in in the Berber way. Otherwise stated, the whole Arabic verb class was integrated into the structure of Berber and thereby received Berber

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[22] The verb probably goes back to French *passer (en justice)* (Brugnatelli 1999:326). It also occurs, as a IIId stem, in Algerian Arabic.

[23] Borrowings from Arabic stem II and III verbs always have Berber inflection in Ghomara (Mourigh fc.).

apophony, regardless of the vowel in the original Arabic form. Another, less abstract, account would be that the Perfect form of Arabic was taken as a basis. In Berber varieties with a differentiation between Aorist *u* and Perfective *i/a*, this meant the equation of the Arabic Perfect form with the Berber Perfective, and then adding the Aorist form by analogy.[24] Note that the Aorist *u* in these verbs cannot stem directly from the Arabic Imperfect vowel *u*, as the class includes both verbs with Classical Arabic Imperfect *u* and verbs with the Imperfect vowel *i* or *a*. Moreover, in dialectal Arabic, the Imperfect vowel *u* is almost absent in the CCV class of verbs.

In the derived forms of the Arabic defective verbs, one finds a more complicated picture. The Berber Aorist=Perfective languages treat these verbs the same way as their stem I counterparts. Tashelhiyt also does so, but only for stem II verbs. For these forms, the same questions and solutions are applicable as with stem I defective verbs.

Tashelhiyt (mainly stem III) and Central Moroccan Berber (all derived verbs) put the derived verbs into a different apophonic class, viz. the class with stable *a*. If one considers the Arabic vocalization relevant, this means that the Arabic Perfect form is at the basis of the borrowing. In Kabyle, finally, one finds a fine match between the Arabic vocalization pattern Imperfect *i* – Perfect *a* and the Kabyle pattern Aorist *i* – Perfective *a*. As the apophony *i-a* also appears elsewhere in Kabyle morphology (but not with vowel-final verbs), there is no reason to consider the pattern with derived Arabic verbs a simple borrowing from Arabic. However, the Arabic pattern may very well have helped in the choice of this solution in Kabyle. Ghomara has the same forms; in this case it is reasonable to assume direct influence from Arabic, as this is also found elsewhere in verb stem morphology (see below).

The integration of vowel-final Arabic verbs has led to great changes in the frequency of stem types in Berber. Vowel-final stems must have been relatively rare before the introduction of Arabic loanwords. Thus the robust, but small, class of CCV verbs was greatly strengthened by the introduction of the much more important group of Arabic defective verbs. Similarly, in Tashelhiyt and Central Moroccan Berber, the marginal type of verbs with final *a* both in the Aorist and in the Perfective became a vigorous verb class because of the introduction of Arabic derived stems. The Kabyle verb type with final *i-a* alternation seems to be confined to Arabic derived stem borrowings. Nowadays it is a well-established verb

[24] Later on, in Siwa the final *u* of the Aorist was extended to the Perfective, Souag 2010:377.

class with about 50 members of a stem II type, and about 30 members of the stem III type.

7.3.3 *Integrating Arabic Verbs with an Initial or Internal Plain Vowel*

Maghribian Arabic has a number of verb shapes with an initial or internal plain vowel. Some of these are due to vocalization of *w* (e.g. *uṣṣa* ~ *wəṣṣa* 'to order'), and will not be treated here. Three major types appear:

a. Verbs which, in Maghribian Arabic, start with *(ʔ)a*. In Classical Arabic, these are verbs with an initial glottal stop.
b. CVC verbs. These verbs derive from the Classical type of Mediae Infirmae, i.e. stem I forms of verbs with *w* or *y* as the middle radical. A few verbs with a medial glottal stop in the classical language also belong to this group.
c. Other verb types with a medial vowel. This mainly concerns derived verb forms, esp. stem III (structure: $C_1aC_2C_3$) and stem XI (structure $C_1C_2aC_3(C_3)$), which is relatively frequent in dialectal western Arabic.

7.3.3.1 *Verbs with Initial* ʔa

The small group of Arabic original I ʔ verbs which have initial *ʔa* (with plain *a*) in Maghribian Arabic is always integrated into the robust Berber class of verbs with initial Aorist *a*, Perfective *u*. Arabic verbs of this type are integrated into the Berber apophonic patterns, and also contrast Aorist *a* to Perfective *u*, e.g.

Arabic *ʔadən* 'to allow'
: Central Moroccan AO *adən,* PV *udən*, Kabyle AO *aḏən*, PV *uḏən* (infrequent form)

Arabic *ʔamən* 'to believe'
: Tashelhiyt AO *amn*, PV *umn*, Central Moroccan AO *amən,* PV *umən*, Kabyle AO *amən*, PV *umən*, Rif AO *amən*, PV *umən*, Figuig AO *amən*, PV *umən*, Mzab AO *amən*, PV *umən*, Ouargla AO *amən*, PV *umən*, Nefusa AO *amən*.

Arabic *ʔamәṛ* 'to order'
: Tashelhiyt AO *amr*, PV *umr*, Central Moroccan AO *amәṛ*, PV *umәṛ*, Kabyle AO *amәṛ*, PV *umәṛ*, Rif AO *amā*, PV *umā*, Mzab AO *amər*, PV *umər*, Ouargla AO *amər*, PV *umər*. Nefusa AO *amər*, PV *umər*

The verbs in question all have initial glottal stop in Maghribian Arabic, e.g. *tʔamən* 'may you believe'. This is a strong indication that they are loans from Classical Arabic—something which is not unexpected in view of the semantics of the verbs. Some other I *ʔ* verbs (Classical *ʔaxaḏa* 'to take' and *ʔakala* 'to eat') have developed differently in Moroccan Arabic

(cf. Heath 2002:379–386). As stem I forms of these verbs have not been borrowed in any Berber language, they are irrelevant to our discussion.

One cannot exclude that *adən* 'to allow', *amən* 'to believe' and *amər* 'to order' were taken directly from Classical Arabic into Berber; however, the presence of the initial full *a* (instead of short *a* in Classical Arabic) suggests dialectal mediation. The verb *amən* could in fact belong to the group of early Islamic loans (see 3.4), as it is a central term in Islam. There is nothing to prove or to disprove this, as the consonants *m* and *n* are shared by Berber and Arabic, and would not be expected to change during the borrowing process. There is one verb which has initial *w* in Arabic (often vocalized into *u*), which has been integrated into the Berber *a-u* class:[25]

Arabic *wḥəl* 'to be entangled, to be in an embarrassing situation'; *wəḥḥəl* 'to get stuck, to put in an embarrassing situation'

Tashelhiyt AO *aḥl* PV *uḥl* 'to be disturbed', Tarifiyt AO *aḥəř*, PV *uḥəř* 'to be tired', Figuig AO *aḥəl*, PV *uḥəl* 'to be tired', Mzab AO *aḥəl*, PV *uḥəl* 'to be embarrassed', Ouargla AO *aḥəl*, PV *uḥəl* 'to be embarrassed', Nefusa AO *aḥḥəl*, PV *uḥḥəl* 'to be tired'

Ghadames is different, because it has two well-established types of VCC-verbs, one with Aorist-Perfective apophony *a-u*, one with a constant vowel *o* (for the historical background of this distinction, see Kossmann 2001). The Arabic verb *wḥəl* has been integrated into the type with constant *o*: AO *oḥəl* PV *oḥăl* 'to be tired'. The verbal noun *atiḥəl* follows the common pattern of this verb class and shows that the initial *w* of Arabic *wḥəl* has been reinterpreted as a plain vowel, which is subject to apophony. None of the other Arabic I *ʔ* verbs is attested as a borrowing in Ghadames.

7.3.3.2 *Verbs with an Internal Vowel, Excepting CVC Verbs*

The major group of verbs with an internal vowel, other than CVC, are constituted by stem III sound verbs, which have the structure CaCC in dialectal Arabic. In addition to this, Maghribian Arabic has a robust stem XI group (structure: $C_1C_2aC_3(C_3)$). Moreover stem VII, VIII and IX forms of mediae *w* and *y* also belong to this group.

In Berber, the most frequently encountered borrowings of these types are originally stem III verbs. Stem XI does not seem to be borrowed as such: all these verbs are of stative-inchoative nature, and are inserted into

[25] An exception is Central Moroccan Berber *uḥl ~ wḥəl* 'to be tired', which has kept the original Arabic shape of the verb.

different patterns (see 7.6). The number of examples of other stems is relatively small. Therefore we shall focus in this presentation on stem III verbs.

Berber verbs with an internal vowel often have aspectual apophony. Thus, for example, in Kabyle one finds the following patterns:

Kabyle	AO *a*	PV *u*	AO *ggall*	PV *ggull*	'to swear'
	AO *i*	PV *a*	AO *ḡrirəḇ*	PV *ḡrarəḇ*	'to roll'
	AO *u*	PV *u*	AO *bbuzən*	PV *bbuzən*	'to be mixed, to be cooked as *tabazint*'

In Ghomara, Central Moroccan Berber, as well as in the Zenatic dialects, only the *a-u* apophony is regularly attested; internal *i* and *u* in the Aorist remain the same in the Perfective.

In the integration of Arabic verbs with an internal vowel (except type CVC), Kabyle behaves different from the other languages (on Tashelhiyt see below). In Central Moroccan Berber, as well as in the other languages, Arabic verbs with an internal vowel are taken over with the vowel *a*. This vowel is not subject to Aorist-Perfective apophony, and therefore remains the same, e.g.

Central Mor.	AO=PV *kabr*	'to make an effort'
	AO=PV *xtaṛ*	'to choose'
Figuig	AO=PV *ɛanəd*	'to imitate'
	AO=PV *xtar*	'to choose'
Mzab	AO=PV *xaṣəm*	'to be involved in a lawsuit'
	AO=PV *xtar*	'to choose'
Ouargla	AO=PV *qarəb*	'to get near'
	AO=PV *rtaḥ*	'to rest'

In Kabyle, on the other hand, such verbs undergo aspectual apophony between Aorist and Perfective, just like similar Berber verbs. Not unlike their Berber counterparts, the great majority of these verbs have an apophony *a-u*. This mainly concerns the sound stem III verbs, e.g.

Kabyle	AO *ḇarəḵ*	PV *ḇurəḵ*	'to benedict'
	AO *ɛaɣyən*	PV *ɛuɣyən*	'to try'

In Kabyle, stem III verbs with *w* as a second radical have been introduced into the apophonic pattern *i-a*, e.g.

Kabyle	AO *ɛiwən*	PV *ɛawən*	'to help'

With CCaC verbs borrowed from Arabic (mainly stem VIII), *i-a* apophony is normally found, e.g.

Kabyle	AO *xṯir*	PV *xṯar*	'to choose'
	AO *šṯiq*	PV *šṯaq*	'to desire'

The situation in Tashelhiyt is less clear, and there seems to be considerable dialectal variation. Aspinion (1953:142ff.) describes a situation quite similar to Kabyle, with Aorist-Perfective apophony both in the (some?) Berber and in the (some?) Arabic members of these groups of verbs, e.g.

Tashelhiyt	AO *ggall*	PV *ggulli/a*	'to swear'
	AO *skirks*	PV *skarks*	'to lie (tell a lie)'
	AO *ktur*	PV *ktar*	'to be full'
	AO *zayd*	PV *zuyd*	'to go on' (< Arabic)
	AO *xtir*	PV *xtar*	'to choose' (< Arabic)

It seems that the number of Arabic-based verbs belonging to these classes depends on the variety of Tashelhiyt. Stumme (1899:74) remarks that the pattern AO CaCC PV CuCC is very rare; similarly, Destaing (1938) gives apophonic variation in some loan verbs (AO *zayd* PV *zuyd* 'to augment'), stable *a* in other verbs (AO=PV *ɛawn* 'to help') and variation for still other verbs (AO *xtar* ~ *xtir* PV *xtar* 'to choose'). El Mountassir (2003) gives only very few verbs in this class where the Aorist and the Perfective are different. Even the verb *zayd* 'to augment', which has PV *zuyd* in all other sources, is marked as vaccillating between PV *zuyd* and PV *zayd*.

In Ntifa (southwestern Central Moroccan Berber), the situation resembles to some degree Aspinion's description of the state of affairs in Tashelhiyt. In this variety, Arabic stem III verbs either have *a-u* apophony, or have *a* throughout, depending on the verb (Laoust 1918:138), e.g.

Ntifa	AO *zayd*	PV *zuyd*	'to be born'
	AO *ḍalb*	PV *ḍulb*	'to beg'
	AO *ḥasb*	PV *ḥusb*	'to count'
	AO *ḥaḍr*	PV *ḥuḍr*	'to present oneself'
	AO *važb*	PV *važb*	'to answer'

CCaC verbs normally have AO=PV forms both with Berber and with Arabic words, e.g. AO=PV *rwas* 'to resemble' and AO=PV *xtar* 'to choose' (< Ar).

Summarizing, most Berber languages take over Arabic CaCC and CCaC verbs (and correlated minor patterns) as such and do not apply Aorist/Perfective apophony to them. This is related to the fact that such apophony is also infrequent in Berber verbs of similar types. Kabyle and some southern Moroccan varieties apply Aorist/Perfective apophony. Arabic models of most of these verbs have no apophony between Perfect and Imperfect: this is the case of all stem III verbs, as well as a number of CCaC verbs, a.o. the widely borrowed term *xtar* 'to choose'. The equation of the

Arabic *a*-form with a Berber aspectual form follows the general tendency in aspectual apophony in Kabyle, which has *a* as a marker of the Aorist with CV- and C_1C_1V-initial verbs, but as a marker of the Perfective in C_1C_2V-initial verbs; therefore Arabic *barək* 'to benedict' is interpreted as an Aorist (with PV *ḇurəḵ*), while Arabic *xtar* is a Perfective (with AO *xṯir*).

7·3·3·3 *CVC Verbs*

In Maghribian Arabic, CVC verbs (verba mediae infirmae) belong to three different apophonic classes:

Perfect *a*	Imperfect *a*	e.g. *ban – ban*	'to appear'
Perfect *a*	Imperfect *i*	e.g. *faq – fiq*	'to wake up'
Perfect *a*	Imperfect *u*	e.g. *gal – gul*	'to say'

The first group is rather small, the two other groups are of roughly similar sizes.

In Berber, CVC verbs (without gemination of the first radical) are rather rare. Original Berber CVC verbs may have internal apophony, e.g. Tashelhiyt AO *lal* PV *lul* 'to be born', but others have a vowel which does not alternate between Aorist and Perfective, e.g. Tashelhiyt AO=PV *las* 'to shear'.

Arabic CVC verbs have been introduced in great numbers. Two basic questions appear in the treatment of these verbs. The first question pertains to whether the integrated Arabic verbs undergo apophony or not. The second question concerns which vowel has been chosen, the Arabic Perfect or the Imperfect vowel.

In most Berber languages, borrowed CVC verbs do not show vowel alternations between the Aorist and the Perfective. The internal vowel remains stable. There are two main exceptions to this, Ghomara and Kabyle.

In Ghomara Berber CVC verbs[26] have basically the same aspectual apophony as their Arabic models. The Ghomaran Aorist form corresponds to the Arabic Imperfect and the Ghomaran Perfective form corresponds to the Arabic Perfect. The lexical distribution of Aorist CiC and CuC is the same as in Arabic. The main difference with Arabic is that CuC verbs have a variation between CuC and CaC in the Perfective in Ghomaran Berber. There are no relevant examples of CaC loan verbs. Examples (Mourigh fc.):

[26] Only those verbs which have Berber inflection are studied here; Verbs with Arabic inflection are identical to Arabic morphology in all its facets.

Ghomara	AO *u*	PV *u~a*	AO *ɛum*	PV *ɛam ~ ɛum*	'to swim'
			AO *ṣum*	PV *ṣam ~ ṣum*	'to fast'
	AO *i*	PV *a*	AO *ɛiš*	PV *ɛaš*	'to live'
			AO *fiq*	PV *faq*	'wake up'

In Kabyle the situation is different. Like elsewhere in the apophonic patterns in Kabyle, verbs which have internal *u* in the Perfective also have this vowel in the Aorist. Verbs with internal *a* normally do so too, but there are a number of exceptions (AO *faṭ* PV *fuṭ* 'to pass', AO *han* PV *han ~ hun* 'to mistreat', AO *ḥaz* PV *ḥuz* 'to attain, touch'). Finally, verbs with Aorist *i* substitute this vowel by *a* in the Perfective (among doubtless borrowed forms, the only exception is AO=PV *kil* 'to measure'). Thus the basic patterns are as follows:

Kabyle	AO *a*	PV *a*	AO *xan*	PV *xan*	'to conceal one's opinion'
	AO *u*	PV *u*	AO *ɛum*	PV *ɛum*	'to swim'
	AO *i*	PV *a*	AO *ɣiṭ*	PV *ɣaṭ*	'to inflict, gratify'

However, most CiC verbs alternate with CaC verbs, i.e. the internal vowel of the Aorist vaccillates between *i* and *a*, while the Perfective is *a*, e.g.

Kabyle	AO *ṛiq ~ ṛaq*	PV *ṛaq*	'to be touched (emotionally)'
	AO *mil ~ mal*	PV *mal*	'to bow'
	AO *ɛiḇ ~ ɛaḇ*	PV *ɛaḇ*	'to be mutilated'

This state of affairs can be interpreted historically in two ways. In the first place, in Kabyle CVC verbs apophony may be receding, and the variants with AO *a* rather than *i* represent an innovation. In that case, the ultimate outcome of the process would be the abolition of the CiC class. One can also construct a scenario taking the opposite direction. In such a scenario, Arabic CVC verbs were borrowed originally as CaC (a similar state of affairs is found in Mzab and Ouargla, see below). Due to pressure from Arabic apophony (which has Imperfect *i* Perfect *a*), which matches the common Kabyle apophonic pattern AO *i* PV *a* closely, verbs of this type would have introduced an apophonic pattern. Pressure would have been less (or contrary) in the case of the CaC pattern with *u*-verbs. While Berber apophonic patterns have AO *a* PV *u*, the Arabic pattern is the inverse: Imperfect *u*, Perfect *a*.[27]

[27] Of course the functions of the different aspects are not the same in Berber and Arabic, but an equation of the Berber Aorist with the Arabic Imperfect (both used in imperatives and in contexts of modality and futureness) on the one hand, and Berber Perfective and Arabic Perfect (both used to refer to past dynamic events) seems to be logical, and in any case more logical than the inverse equation.

Outside Ghomara and Kabyle, apophony is extremely rare in borrowed CVC verbs; one may note however Figuig, which has AO=PV *ṛaḥ* 'to go', but an Imperative *ṛuḥ* 'go!'. Similar forms are attested in some Tarifiyt varieties, e.g. Q: AO=PV *raḥ* 'to go'; Imperative: *ruḥ* ; AO=PV *ṣar* 'to be located'; Imperative: *ṣur* (Chami 1979:216).

The second question pertaining to the insertion of CVC verbs is the choice of the vowel. There is a clear correlation between the Arabic Imperfect vocalization and the choice of the vowel.[28] Generalizing, one can say that in borrowings Berber CuC verbs correspond to Arabic *u* verbs, while CiC verbs correspond to Arabic *i* verbs. However, verbs of both classes may also be represented by *a* in Berber.

The few Arabic verbs with *a* vocalization in the Imperfect are always taken over as CaC verbs in Berber, e.g.

Moroccan Arabic Perfect *ban* Imperfect *ban* 'to look, to appear, to seem'
Ouargla AO=PV *ban* 'to appear', Figuig AO=PV *ban* 'to appear', Kabyle AO=PV *ban* 'to seem, be evident'

Moroccan Arabic Perfect *sal* Imperfect *sal* (Classical *saʔal*) 'to reclaim, owe'
Central Moroccan Berber AO=PV *sal* 'to question' Ouargla AO=PV *sal* 'to demand, reclaim', Mzab AO=PV *sal* 'to demand, reclaim', Kabyle AO=PV *sal* 'to ask, interrogate'

Verbs which have the vocalization *u* in Arabic are either taken over as CuC verbs or as CaC verbs. In most varieties there is a strong preference for CuC (e.g. in Central Moroccan Berber only one out of 13 Arabic *u* verbs has been taken over as CaC, and in Mzab only one out of 12). In Ouargla, however, half of these verbs fall into the CaC class (8 out of 16), and in Figuig over a third (4 out of 11).

There are quite a number of Arabic *u* verbs that have been taken over as CuC in more than one Berber variety:

Moroccan Arabic Perfect *ɛam* Imperfect *ɛum* 'to swim'
Tashelhiyt, Central Moroccan Berber, Ouargla, Mzab, Figuig, Kabyle: AO=PV *ɛum* 'to swim'

Moroccan Arabic Perfect *bar* Imperfect *bur* 'to be left over'
Central Moroccan Berber, Ouargla, Kabyle: AO=PV *bur* 'to lie fallow'

Moroccan Arabic Perfect *ḍaṛ* Imperfect *ḍuṛ* 'to turn'
Central Moroccan Berber, Ouargla, Mzab, Figuig: AO=PV *ḍuṛ* 'to turn, surround'

[28] From the presentation in Mitchell (2009), it seems that in Zuwara all such verbs have *a* vocalization.

Moroccan Arabic Perfect *dab* Imperfect *dub* 'to melt'
Tashelhiyt, Ouargla, Figuig: AO=PV *dub* 'to melt'
Moroccan Arabic Perfect *faḥ* Imperfect *fuḥ* 'to diffuse a smell'
Central Moroccan Berber, Ouargla, Mzab, Figuig, Kabyle: AO=PV *fuḥ* 'to diffuse a (bad) smell'
Moroccan Arabic Perfect *saq* Imperfect *suq* 'to drive'
Tashelhiyt, Ouargla, Mzab: AO=PV *sug, ṣug* 'to drive'
Moroccan Arabic Perfect *ẓaṛ* Imperfect *ẓuṛ* 'to visit'
Tashelhiyt, Central Moroccan Berber, Ouargla, Mzab, Figuig, Kabyle: AO=PV *ẓuṛ* 'to visit (esp. a saint's tomb)'

One Arabic *u* verbs has been taken over as CaC in all Berber varieties where it is attested:

Moroccan Arabic Perfect *fat* Imperfect *fut* 'to pass'
Tashelhiyt, Ouargla, Figuig: AO=PV *fat*
Kabyle AO *faṯ* PV *fuṯ* 'to pass'

With Arabic *i* verbs, the situation is different. In all varieties which were studied, CiC presents a minority pattern, while mostly CaC is found. In Ouargla and Mzab, there are no Arabic loan verbs in the CiC class. In Kabyle, there is variation between forms with Aorist *i* and forms with Aorist *a*. The Perfective always has *a*. Arabic borrowings with which CiC is well-attested in Berber are the following:

Moroccan Arabic Perfect *ɛaš* Imperfect *ɛiš* 'to live'
Tashelhiyt, Central Moroccan Berber, Figuig AO=PV *ɛiš*; Kabyle: AO *ɛiš* PV *ɛaš* 'to live'
Ouargla, Mzab: AO=PV *ɛaš* 'to live'
Moroccan Arabic Perfect *šab* Imperfect *šib* 'to grey, get old'
Tashelhiyt, Central Moroccan Berber, Figuig: AO=PV *šib* 'to grey'
Kabyle: AO *šib* PV *šab* ~ AO=PV *šab* 'to grey'
Ouargla, Mzab: AO=PV *šab* 'to grey'

Borrowings with CaC everywhere include:

Moroccan Arabic Perfect *ḍaɛ* Imperfect *ḍiɛ* 'to be lost, to be wasted'
Central Moroccan Berber, Ouargla, Mzab, Figuig: AO=PV *ḍaɛ* 'to be lost, to be wasted'
Kabyle: AO=PV *ḍaɛ* ~ AO *ḍiɛ* PV *ḍaɛ* 'to be lost, to be wasted'
Moroccan Arabic Perfect *faq* Imperfect *fiq* 'to wake up, to become aware of'
Tashelhiyt, Ouargla, Mzab, Figuig, AO=PV *faq* 'to become aware of'
Kabyle: AO=PV *faq* ~ AO *fiq* PV *faq* 'to become aware of'

Moroccan Arabic Perfect *ɣab* Imperfect *ɣib* 'to be absent'
Central Moroccan Berber, Ouargla, Mzab: AO=PV *ɣab* 'to be absent'
Kabyle AO=PV *ɣaḇ* ~ AO *ɣiḇ* PV *ɣaḇ* 'to be absent'
Moroccan Arabic Perfect *ṣar* Imperfect *ṣir* 'to become, start'
Ouargla, Mzab, Figuig: AO=PV *ṣar* 'to happen'
Kabyle: AO=PV *ṣar* ~ AO *ṣir* PV *ṣar* 'to happen'

CVC verbs are amongst the most interesting cases for the study of the impact of Perfect and Imperfect vocalization in borrowings. Berber vocalization is reasonably faithful to the original vocalization: verbs which have CuC are almost invariably Arabic *u* verbs, and verbs with CiC are almost invariably Arabic *i* verbs. This proves—more than any of the arguments adduced for other verb types—that the Imperfect vocalization of Arabic plays a role in the form of the borrowing.

However, the choice between CaC and CuC/CiC vocalization is difficult to understand. In the first place, there is a discrepancy between *u* verbs and *i* verbs, as the former are much more often taken over in their Imperfect vocalization than the latter. It is difficult to see how Berber patterns should have played a role here: the Berber class of CVC verbs is rather small, and CuC does not seem to be significantly more frequent than CiC. An explanation could be that Northern Berber originally took over the *i* verbs as CiC in similar percentages as they did with the *u* verbs as CuC, but that they applied Aorist/Perfective apophony to it (like attested in Kabyle). By this apophony, CaC (the Perfective vocalization) came to vary regularly with CiC (the Aorist vocalization). Finally, the apophony was abolished, and most CiC verbs shifted to the AO=PV CaC class. This would match one scenario for the general Kabyle variation between CiC and CaC (see above).

Still, even if one assumes this scenario, it remains unclear why in some cases the Imperfect form is chosen and not in others. In specific cases, one may assume that other forms of the root played a role in the choice. Thus, the relatively strong presence of the CiC form in the verb *ɛiš* 'to live' may be because of the existence of the cognate Arabic noun *ɛiša* 'life', and similarly *šib* 'to grey' can be understood from nouns such as *šib* 'grey hair' and *šibani* 'old man'. Notwithstanding this, it is difficult to see why this influence would not have been excerted by forms such as *ɣiba* 'absence' on the verb *ɣab* 'to be absent'; and why—contrary to the tendancy to have *u* verbs borrowed as CuC—*fat* 'to pass' was taken over as *fat* in all Berber varieties where it is attested.

7.4 Taking over Arabic Inflection

In Ghomara Berber, a large number of Arabic verbs are taken over together with their verbal inflection. These include items referring to basic actions, such as 'to fish' and 'to meet', and they often constitute the only way to express a certain concept. Speakers have clear opinions about which verbs should have native morphology and which should not, and such opinions are stable when asked again and within the speech community (Khalid Mourigh, p.c.). Arabic-inflected verbs are already found in the Ghomara texts published by Colin (1929), and have been observed by several researchers since then (El Hannouche 2008; Mourigh fc.; Abdelaziz Allati, p.c.). All this shows that Arabic-inflected verbs are a stable part of the language system of Ghomaran Berber, and not instances of free code-switching. Arabic-inflected verbs in Ghomara distinguish the same categories as their Arabic originals. There is a binary formal opposition between the Perfect and the Imperfect form, which have different stem forms in some cases, and which have different suffix affixes. Compare the forms of a native verb with native inflection with those of a borrowed verb with Arabic inflection (Mourigh fc.):

	Berber inflection	Arabic inflection: Perfect	Arabic inflection: Imperfect
1S	*nəṭḡ-ax*	*ṣṣaḍi-ṯ*	*n-əṣṣaḍ*
2S	*t-nəṭḡ-ət*	*ṣṣaḍi-ṯ / ṣṣaḍi-ṯi*	*d-əṣṣaḍ*
3SM	*i-nṭəḡ*	*ṣṣaḍ*	*y-əṣṣaḍ*
3SF	*t-ənṭəḡ*	*ṣṣaḍ-əṯ*	*d-əṣṣaḍ*
1P	*n-ənṭəḡ*	*ṣṣaḍ-na / ṣṣaḍi-na*	*n-əṣṣaḍ-u*
2P	*t-nəṭḡ-əm*	*ṣṣaḍ-tu(m) / ṣṣaḍi-ṯu(m)*	*d-əṣṣaḍ-u*
3P	*nəṭḡ-ən*	*ṣṣaḍ-u*	*y-əṣṣaḍ-u*
IPT:S	*(ə)nṭəḡ*	*(ə)ṣṣaḍ*	
IPT:P	*nəṭḡ-awəṯ*	*ṣṣaḍ-u*	
	'fly'	'hunt, fish'	

The Arabic forms are taken over from the local Jbala variant of Arabic; thence the absence of gender distinction in 2S and in the imperative, and the unusual variant of the 2P suffix *-ṯum*. Arabic verbs maintain their original apophony, e.g. Perfect *sar* Imperfect *sir* 'to continue', Perfect *dam* Imperfect *dum* 'to last'.

The insertion of Arabic verbal paradigms provokes questions of integration. How are the equivalences made between the Berber verbal system, which has a ternary opposition between Aorist, Perfective and Imperfective, and the Arabic system, which is morphologically a binary system, opposing Perfect and Imperfect. The research into this question has not yet been completed (Mourigh fc.), and any conclusions must be preliminary. It seems that the Arabic bare Imperfect (type *n-əṣṣaḍ*) is used as the equivalent to the Berber Aorist, while the Arabic Perfect (type *ṣṣaḍi-t*) is used as the equivalent to the Berber Perfective. The Berber Imperfective is matched to Arabic Imperfect forms with the additional prefix *ka-* (type *ka-n-əṣṣaḍ*). The large degree of overlap between the Berber and the Arabic systems facilitates these equations.

The take-over of Arabic inflections also involves the Arabic direct object and indirect object clitics. They are taken over in the same form as they have in Arabic, thus leading to a parallel system with equivalent native Berber clitics as used with native-inflection Berber and borrowed verbs, e.g.

i-ṭlaqa=ni	*dar*	*uxəyyam*
3SM-meet:PF=1S:ARA	at	EA:house

'he will meet me near the house' [El Hannouche 2008:116]

a	*n-fukk-u=kum*	*lmuškil*
AD	1:ARA-solve-P:ARA=2P:ARA	problem

'we will solve the problem for you' [El Hannouche 2008:116]

In these sentences, the direct object clitics are Arabic: *=ni* instead of Berber *=ay* and *=kum* instead of Berber *=awən*.

The distribution of Arabic-inflection and Berber-inflection loan verbs is partly governed by the Arabic derivation they belong to. With verbs that are underived in Arabic, both Arabic-inflection and Berber-inflection is found, and there are no clear conditions for this choice. With derived forms, one finds a strict distribution. Arabic stem II and stem III verbs always receive Berber morphology. Arabic passives with the prefix *tt-* (i.e. the stems t-I, V, VI) or *n-* (i.e. stem VII) always have Arabic morphology. The reasons behind this distribution are not clear. One could assume that transitivity plays a role (stem II and III are normally transitives, while the passives are not), but this is not the case for underived verbs, where the two morphologies are found both with transitives and intransitives (Mourigh fc.).

7.5 Labile Valency in Borrowed Verbs

Verbal valency in Berber is characterized by the presence of a large group of labile verbs, i.e. verbs that both function as a transitive verb, and as an intransitive, where the subject of the intransitive construction corresponds to the direct object of the transitive construction—similar to English constructions such as 'he broke the glass' vs. 'the glass broke' (for a principled overview see among others Chaker 1995:63–82). In Berber, the intransitive construction has a stative or resultative meaning; as these meanings are expressed by the Perfective, the intransitive reading is also restricted to the Perfective. Not all verbs are labile; there exist numerous inherently transitive (e.g. *ənɣ* 'to kill') and intransitive verbs (e.g. *ənz* 'to be sold'). The semantic grouping of transitive vs. labile verbs has not been studied in detail; the important discussion in Berberology about lability focuses on syntax rather than on lexical semantics.

In Maghribian Arabic, labile verbs are much less common than in Berber; most verbs are inherently transitive or intransitive.[29] Valency changes can be perpetrated by means of derivation, typically stem II (gemination of the second stem consonant) for transitivization, and adjunction of *tt-* (also *n-*) for passivization and intransitivization. Neither of these devices is exclusively used for causation or passivization, and especially with stem II, many other meanings are expressed, depending on the lexeme.

Berber languages have taken over verbs in great numbers, and many loan verbs which have stable valency in Arabic are labile in Berber (cf. Chaker 1995:65). One of the main questions here is, what valency frame in Arabic corresponds to Berber labile verbs. As Berber labile verbs have both a transitive and an intransitive reading, one could imagine Arabic intransitives as well as transitives being inserted into the labile verb class. In spite of some cursory remarks, this question has never been studied on a more than anecdotal level. In order to gain some more insight, I have taken a sample of over 100 items from Dallet's dictionary of Kabyle, all Arabic loan verbs with stable transitivity which are labile in Kabyle.[30] The picture

[29] The attested transitive/intransitive alternations may partly be due to different ancient Arabic inputs; in most cases, there is no way to distinguish between an ancient stem I verb and an ancient stem IV verb. In those verb types where this difference is still to be seen we do indeed find attestations of both forms, e.g. Moroccan Arabic PT *xfa* IPFT *xfa* 'to disappear' (ancient stem I) vs. PT *xfa* IPFT *xfi* 'to hide, to conceal' (ancient stem IV), cf. Aguadé 2012.

[30] The sample—which aims to be complete—contains only verbs attested both in Kabyle and in Algerian Arabic (Beaussier 1931), and only those where the semantic correspon-

presented by this survey is particularly clear: the overwhelming majority of Arabic verbs with a Berber labile counterpart is transitive, e.g.

Kabyle	*əḏḇəɣ*	'to tan, to be tanned'
Algerian Ar.	*ədbəɣ*	'to tan'
Kabyle	*əḥḍəm*	'to demolish, to be demolished'
Algerian Ar.	*əhdəm*	'to demolish'
Kabyle	*ḇəddəl*	'to change, to be changed'
Algerian Ar.	*bəddəl*	'to change'
Kabyle	*šəkkəm*	'to muzzle, to be muzzled'
Algerian Ar.	*šəkkəm*	'to muzzle'

Only a few labile verbs come from an Arabic intransitive, e.g.[31]

Kabyle	*əlsəq*	'to glue sth., to be glued'
Algerian Ar.	*əlṣəq*	'to be glued'

There are several ways to explain the predominance of Arabic transitives in the Berber labile class. One may simply stipulate that the semantic domains which constitute the Berber labile class are mainly covered by Arabic transitives; the fact that no intransitive derivations have been taken as a basis may be related to a more general reluctancy to take over Arabic derived stems other than stem II and III. As long as we have no clear idea about which semantics are related to the Berber labile class, nor to those related to the Arabic transitive class, this remains difficult to prove. Galand (2002a [1987]:318ff.) has suggested a different analysis. In his view of the labile verb class, these are basically transitives, which get a resultative interpretation in their intransitive usage. One argument in favor of this interpretation, according to Galand, is the fact that Arabic transitive verbs get introduced into this frame. This is especially a strong argument in cases where Arabic has both an underived intransitive and a derived intransitive verb of the same root—in such cases, Berber had a choice between an intransitive and a transitive verb.

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dence is unproblematic. With two exceptions, all verbs belong to the Arabic stems I and II. In establishing the basic correspondent in Arabic, semantics were a major argument; in many cases, Arabic stem I verbs have radically different meanings from their stem II correspondents. Cases where Arabic has verbal lability according to Beaussier have been excluded from the sample.

[31] The others are *əɣrməl* 'to put / be put under earth'; *əsləm* 'to be / keep unharmed'; *əzhu* 'to amuse (somebody), to amuse oneself'.

Kabyle labile verbs do not provide strong evidence for Galand's hypothesis, however. Only in a few labile verbs, Arabic provided a choice, i.e. there were both an underived form (stem I) and a derived form (stem II) at disposal, and the forms differed in their transitivity only, not in additional semantic values. These were the only unequivocous examples I found:

Kabyle	*həddən*	'to be calmed down, to calm (somebody) down'
Algerian Ar.	*hdən*	'to become calm'
	həddən	'to calm (somebody) down'
Kabyle	*ɛəlləq*	'to hang something, to be hung'
Algerian Ar.	*ɛləq*	'to be hung'
	ɛəlləq	'to hang something'

In addition there were some cases, where Kabyle took over both stem I and stem II, but where the stem II form is labile, rather than transitive-only:

Kabyle	*ḍux*	'to be dizzy'
	ḍəwwəx	'to be dizzy, to make dizzy'
Algerian Ar.	*dax*	'to be dizzy'
	dəwwəx	'to make dizzy'

Finally, among the few labile verbs based on an intransitive Arabic verb one also finds:

Kabyle	*əlsəq*	'to glue (something), to be glued'
Algerian Ar.	*lṣəq*	'to be glued'
	ləṣṣəq	'to glue something'

More often, Arabic verbs which have intransitive stem I and transitive stem II are taken over in both stems as intransitive-only and transitive-only verbs. All in all, the evidence is inconclusive. There is a strong tendency for Kabyle labile verbs to correspond to Arabic transitives, but the cases where the language would have had a choice are conspicuously rare, and the little material available does not point strongly into either direction. Only a deeper study of the lexical semantics of Kabyle labile verbs—both those of Berber and of Arabic origin—could provide more insight into this question.

Of course, there is no reason to assume that Kabyle is representative for all Berber languages in this matter. Again, only more, and more elaborate, empirical study of large corpora of etyma could provide insight into this.

7.6 Stative Verbs and Adjectives

In Berber, state can be expressed in several ways. In the first place, many—but not all (see 8.1)—Berber languages have adjectives, which are a sub-class of the noun.[32] In the second place, in all Berber languages the Perfective can be used to express state.

In most Berber languages, a lexically defined group of verbs which are typically used for the expression of permanent state have special morphology. In many languages, they have a dedicated set of Person-Number-Gender subject markers when used as statives, which is different from other PNG-marking (cf. Kossmann 2009d for an overview). Moreover, the aspectual apophony is often different from that found in other verbs, compare for example a typical Kabyle dynamic triradical verb with a stative verb with the same number of consonants:

Kabyle	Aorist:	*əḵššəm*	*imɣuṛ*
	Perfective	*əḵššəm*	*məqqʷəṛ*
	Imperfective	*ḵəššəm*	*ṭṭimɣuṛ*
		'to go in'	'to be big'

In such verbs, which one could consider inherently stative, the Perfective expresses a state (which may or may not be resultant), while the other aspects have an inchoative reading.

In Maghribian Arabic, a somewhat different situation is found. Few verbs are inherently stative; instead, participles and adjectives are used to express state. There exists a dedicated verbal derivation, CCaC, which is used to make inchoatives, correponding to Classical Arabic stem XI, e.g.

Moroccan Ar.	*ḥmaṛ*	'to become red'
	ḥməṛ	'red' (adjective)
	bɛad	'to be become further (away)'
	bɛid	'far away' (adjective)
	qṣaḥ	'to becomes hard/difficult (physically or mentally)'
	qaṣəḥ	'hard/difficult (physically or mentally)' (present participle)

Berber languages have introduced many Arabic qualitatives. When introducing them into the Berber verbal system (on adjectives, see 8.1), they are always integrated morphologically into this system. This means that they receive Berber apophonical and inflectional devices, cf.

[32] Or, in a different interpretation, have property-indicating nouns that are frequently used as an apposition to an other noun, see section 8.1.

Kabyle	Aorist:	*iqsiḥ*	'to be hard, rough'
	Perfective	*qəssiḥ* (stative PNG markers)	
	Imperfective	*ɣɣiqsiḥ*	

They may be introduced into stative patterns, but also into regular non-stative patterns, e.g., with the same verb:

Kabyle	Aorist:	*qsəḥ*	'to be hard, rough'
	Perfective	*qəssəḥ* ("normal" PNG markers)	
	Imperfective	*ɣɣəqsaḥ*	

As the membership of the morphological class of stative verbs is lexically determined, and not all inherently stative verbs of Berber origin are part of it, this vaccillation in allocation of the Arabic loan verbs is not astonishing.

In the introduction of qualitative verbs and adjectives in Berber, both Arabic verbs and adjectives have played a role. In many cases, it is impossible to decide which Arabic form was at the basis of the introduction. This is the case when both the verb and the adjective have native Berber shapes. Take for example the Figuig Berber forms:

Figuig	*qṣəḥ*	'to be very active'
	uqṣiḥ	'very active (adjective)'

These forms have shapes, which correspond to normal Berber verbal and adjectival morphology, respectively, cf.:

Figuig	*lyəš*	'to be bad'[33]
	ulyiš	'bad'

There is no way to determine whether the Arabic word entered Figuig Berber as a verb or as an adjective (or maybe both entered at the same time), as both the borrowed verb and the adjective have been invested with a Berber shape.

Sometimes, morphological oddities suggest one origin rather than the other. Cf. the Kabyle pair:

Kabyle	*iḏyiq*	'to be narrow'
	uḏyiq	'narrow'

[33] For its Berber etymology, cf. Ghadames *əlkuk* 'to be bad', Ayer Tuareg *əlkəy* 'to regress, to be incapable'; the Figuig form has apparently undergone metathesis.

The Maghribian Arabic forms are *ḍaq* 'to be narrow' or *ḍəyyəq* 'narrow'. In spite of the adaptation to the Berber pattern *u*CC*i*C, the presence of the semivowel *y* suggests a background in the adjective.[34]

Adjectives are a closed (sub-)class in Berber (see 8.1), and there are many qualitative concepts which have only a verbal expression. It is therefore no wonder that there are many Arabic qualitatives which only occur as a verb in Berber. A very interesting case is constituted by Arabic past participles in Kabyle. In this language, Arabic past participles are regularly inserted into the paradigm of the stative verb. Chaker (1983:117–118) cites 12 cases: *məḍ̲ṛuṛ* 'to be embarrassed', *məḥṛum* 'to be forbidden', *məḵ̲ṛuh* 'to be hated', *məqb̲ul* 'to be accepted', *mərḥum* 'to be elected (by God)', *məɣyub* 'to be abominable' (not in Dallet 1982), *məšhur* 'to be well-known', *məšṭuḥ* 'to be small' (not in Dallet 1982), *məɛḍ̲uṛ* 'to be right', *məɛfun* 'to be disgusting', *məɛzul* 'to be put aside', *mušaɛ* 'to be well-known'. These verbs function in the same way as the perfectives of other stative verbs, and take the same person-gender-number suffixes. Moreover, they are negated by means of the verbal negation *ur* rather than by the nominal negation *maccči*. There is one important difference with normal stative verbs, though. The Arabic passive participles only exist in the Perfective, which is the aspect used to express a state. They have no Aorist or Imperfective forms, which would express dynamic interpretations of quality (mainly inchoative). Thus, while incontestably verbal in nature, they still do not function fully in the verbal system of Kabyle.

In Ghadames, it seems that there are no genuine adjectives, attributive and predicative functions being assumed by (stative) verbs. In some cases, the basis of a borrowed qualitative verb can be shown to be the adjective, as it was borrowed together with the Arabic article:

Ghadames	AO	*əlləṣfər*	'to be yellow'	< Ar. *l=əṣfər* 'the yellow one'
	PV	*əlləṣfăr*		
	IPV	*əttələṣfər*		

Similarly Ghadames *əlləzrəg* 'to be blue' (< Ar. *l=əzṛəg* 'the blue one'). Interestingly, in spite of their basic qualitative meaning, these verbs do not receive stative morphology in Ghadames.

[34] Another possibility would be factitive *ḍəyyəq* 'to make narrow'. This seems less probable, though, because of the semantics.

CHAPTER EIGHT

BORROWING OF MORPHOLOGICAL CATEGORIES

Berber and Maghribian Arabic are typologically quite close, and share many categories. This is without a doubt one reason why Arabic morphological materials are so easily integrated into Berber patterns. At a number of points, however, Arabic and Berber originally had different categories. In this chapter, a number of possible cases where Arabic categories have been introduced into Berber will be treated. The first two categories under investigation, adjective and collective, are found in virtually all northern Berber varieties. They function (at least partly) by means of Berber morphological devices, and their Arabic background is therefore debatable. The other categories, participles, diminutives and adjectival grading, use Arabic morphological matter, and are much less widely attested.

8.1 Adjectives

In Arabic and in most varieties of Berber, adjectives are a sub-class of the noun.[1] They function as an attribute to a head, or as the head itself, e.g.

Moroccan Ar. *l=wəld ṣ=ṣɣiṛ*
DEF=son DEF=little
'the little son'

had ṣ=ṣɣiṛ, huwa wəld-i
this DEF=little he son-1S
'this little one (he) is my son'

wəld-i baqi ṣɣiṛ
son-1S still little
'my son is still little'

[1] There exist important differences in the synchronic analysis of the adjectival class in Berber. Some researchers consider them simple nouns which, because of their semantics, tend to be used in direct apposition to a head; others, pointing to the difference between adjectives on the one hand—which are very often used in attributive construction—and other nouns—which only rarely occur in apposition—consider them a defineable sub-class of the noun (cf. the discussion in Oomen fc., Chaker 1995:22-30, Galand 2002a [1969]:199, Galand 2010:146). I follow here the opinion that their syntactic behavior is a reason to consider them a sub-group of nouns, which I call adjectives.

Tarifiyt *mmi aməẓẓyan*
son little
'my little son'

aməẓẓyan=a, ḏ mmi
little=PROX PRED son
'this little one is my son'

mmi εaḏ ḏ aməẓẓyan
son still PRED little
'my son is still little'

In addition to adjectives, Berber also uses verbs to express qualities. Thus, for example, in Tarifiyt, there is no adjective corresponding to the verb *ḥma* 'to be warm',[2] and verbal constructions are used for attributes and predicates, e.g.

Tarifiyt *ataγ y-əḥma-n*
tea PTC-be.warm:PV-PTC
'the warm tea (lit. the tea that is warm)'

ataγ=a y-əḥma
tea=PROX 3SM-be.warm:PV
'this tea is warm'

As a counterpart to the adjective as a simple noun ('the young one'), such verbally expressed concepts have to use a pronominal element with a qualifying relative clause, e.g.

Tarifiyt *w=ənni y-əḥma-n*
DEM:SM=ANP PTC-be.warm:PV-PTC
'the warm one (lit. the one that is warm)'

In fact, almost every concept for which there is an adjective available also has a corresponding qualitative verb. The difference between the adjective and the corresponding verb is basically one between inherent state (adjective) and resultant state (Oomen fc.), but in many situations both can apply to the same situation, e.g.

Tarifiyt *aryaz=ənni aṣəbḥan*
man=ANP good
'this good man' (adjectival construction)

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[2] This is, of course, well-known cross-linguistically, cf. Dixon 1982. The divide between adjectives and qualitative verbs is not entirely semantic in nature, thus in Tarifiyt 'warm' is always expressed by a verbal construction, while there is an adjective for 'cold'. See for more information, Oomen (fc.).

aryaz=ənni *i-ṣəḇḥ-ən*
man=ANP PTC-be.good:PV-PTC
'this good man' (verbal construction)

While in Berber adjectives form a closed class, in Arabic it is possible to derive an adjective from any verb. These adjectives, the present and the past participle, can be used in the same functions as the other adjectives, e.g.

Moroccan Ar. *atay l=ḥami* 'the warm tea' (present participle)

Different from other adjectives, the present participle also plays a role in the aspectual system of the language (Caubet 1993: II-221ff.).

In a number of varieties—in any case Tuareg and Ghadames—there is no class of adjectives, and attributive constructions always use a verbal form. Corresponding qualitative nouns—as far as they exist—cannot be used in attributive constructions.

Historically the question is whether adjectives—as a type of nouns which are prone to be used as attributes—are ancient in Berber. There is no doubt about the anciennity of the form of some adjectives, e.g., *aməqqṛan* 'big, old' has a wide-enough attestation to be reconstructed into proto-Berber (Chaker 1995:30); however, their use in an attributive construction may be an innovation, i.e. they may originally have been nouns of quality ('the old one'), which could only marginally be used in a qualifying construction (Prasse 2002:378).

The question of the origin of the attributive adjectival construction is impossible to answer. One may envisage two scenario's (cf. Chaker 1995:30, Galand 2009:146). In the first scenario, the situation found nowadays in Tarifiyt (and elsewhere) is original: attribution of qualificatives can occur in two ways—either by means of a nominal form (the adjective), or by means of a relative clause (i.e. a verbal construction). In Tuareg, as well as in some other languages, the relative clause construction would have been generalized, and the attributive use of the qualifying noun was lost. In the second scenario, the Tuareg situation is old, and the attributive use of the quality noun constitutes an innovation. In this scenario, the reasons behind the extension of the use of the quality noun may be internal and external. The internal explanation is the generalization of an originally marginal pattern of apposition, esp. with quality nouns, in order to attain qualitative attribution. The external explanation, suggested by Prasse (2002:378), is a calque on Arabic, which has a very alive system of adjectives.[3] A combination of the two factors is probably the most likely

[3] In principle, influence from Latin or African Romance could also do the job.

explanation under this scenario: under influence of Arabic constructions, a marginal appositional construction became generalized.

All in all, the reconstruction of the ancient situation in Berber is problematic. However, if one assumes, with Prasse, that the northern Berber adjective is an innovation, it is logical to consider Arabic a major factor in its development.

An interesting development is found in Ghomara. In this variety, almost all adjectives have been borrowed from Arabic; only three Berber adjectives remain. These Berber-based adjectives bear traces of the ancient stative conjugation (Kossmann 2009d), and must have been verbal in nature originally, e.g. (all exx. from Mourigh fc.)[4]

M:S	*nətta*	*ma*	*məqqʷəṛ*	*ši*
	he	NEG	big:MS	NEG2
	'he is not big'			
F:S	*ẓṛ-ax*	*məḍṛaṣa*	*məqqʷṛ-aṯ*	
	see:PV-1S	school	big-FS	
	'I saw a big school'			
P	*irgazən*	*məqqʷṛ-aṯ*	*a*	*d=i-da-n*
	men	big:P	FOC	VENT=PTC-come:PV-PTC
	'it is the big men who have come'			

Nowadays, they function syntactically in exactly the same way as adjectives borrowed from Arabic and have lost all verbal properties. The Arabic-based group of adjectives retains Arabic inflections (see 6.4). Different from most other Berber languages, Arabic active and passive participles are generally used in Ghomara (see 8.3).

8.2 Collective Nouns Versus Unit Nouns

As shown in section 6.2.2, many northern Berber languages use gender morphology in order to oppose a collective noun (i.e. referring to different entities presented as a whole) to a unit noun (i.e. referring to individual entities). Collective nouns are typically masculine, while unit nouns are typically feminine, e.g.

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[4] Some neighboring Senhadja de Sraïr varieties also have stative(-based) forms. Their syntactic behavior has not been studied in detail, see Lafkioui 2007:165.

Tashelhiyt	*aẓalim* (M:S)	'onions'	*taẓalimt* (F:S)	'onion'
			tiẓalimin (F:P)	'(individual) onions'

The opposition is found in a number of semantic categories, such as fruits and small insects. The same category is found in Maghribian Arabic, where masculine collective nouns contrast with feminine unit nouns, e.g.

Moroccan Ar.	*bṣəl* (M:S)	'onions'	*bəṣla* (F:S)	'onion'
			bəṣlat (F:P)	'(individual) onions'

In Arabic, there is no doubt about the anciennity of this feature, which is well-attested in the modern dialects, and also appears in Classical Arabic. In Berber, the contrast is well-attested, but absent in Tuareg, while the situation in Zenaga and Ghadames is unknown. In Mzab and Ouargla the opposition is only scarcely present. This opens the road for an analysis in which the present opposition is an innovation in Berber, inspired by Arabic (Prasse 1972-74: IV-41, note 20; Kossmann 2008). In addition to its absence in Tuareg, there are a number of other indications for this. In the first place, with a number of very common and ancient fruits expressed by Berber etyma, the opposition is lacking, or it is formally different. Thus Figuig has no opposition for *aḍil* 'grape(s)', while with 'date' the opposition has the inverse use of gender: feminine in the collective (*tiyni*) and masculine in the unit noun (*ayniw*). Similarly in Central Moroccan Berber, feminine *tazart* 'figs' is used only as a collective; the corresponding masculine form *azar* refers to another fruit (the berry of the wild jujube tree). In the second place, especially in the case of fruits, Arabic lexical influence is very important (see 4.6.5). Arabic lexicon could have been a mediator for the opposition to be introduced in Berber. Finally, in a number of languages, the collective noun always has Arabic morphology (see 6.2.2). This could be a later reformation, but in fact, there is nothing to show that these languages ever used Berber morphology for both parts of the opposition.

An Arabic background of the collective–unit noun opposition is quite probable, at least regarding its regular gender-based expression. Its wide geographical distribution in Berber, and the fact that in many languages Berber morphological devices are used to express the opposition make that one cannot be fully certain, however. As the Arabic opposition reflects proto-Semitic usage, the presence of the opposition in Berber could also be due to common Afroasiatic inheritance. As argued above, a calque on Arabic seems to be the better solution, though.

8.3 Arabic Participles

Arabic has two participles, the active and the passive, which can be used in attributive and predicative constructions. Originally, they were close to (maybe rather a type of) adjectives, and this is still the case of passive participles. In addition to this, the active participle has gained a more verby status in most Arabic dialects, being used as a progressive with movement verbs and as a resultative with other verbs (Caubet 1993). As such, the active participle has become part of the verbal system, even though its morphology remains nominal in structure and form. The use of the active participle as a resultative is one of the main differences between the Arabic verbal system and systems used in Berber.

In Berber, there is no equivalent to the active and passive participle of Arabic. The so-called Berber participle is a verbal form, used in relative clauses when the head functions as the subject in the relative (see 12.1). When used with stative verbs, the Berber relative clause can be similar to an Arabic modification with a participle (hence the terminology), but in general the two constructions should be kept apart.

Arabic participles have been integrated in different ways into Berber. As shown above (section 7.6), Kabyle has made passive participles into stative verbs, thereby inserting them into the Berber system.

In Zuwara, one of the languages with Arabic inflection of participles (see 6.2.2), participial syntax seems to be borrowed together with the form. This surfaces in two constructions. When Berber or berberized adjectival nouns are used as predicates they are preceded by the ubiquitous predicative particle *d*, e.g.

lḥalt=ik	*d*	*táṣbiḥt*	*əbzáyəd*
state=2SM	PRED	good	very

'you look very well, lit. your state is very beautiful' [Mitchell 2009:154]

However, when the predicate is an Arabic active participle, the particle *d* is not needed, e.g.

d	*udm=ik*	*nayəṛ*
and	face=2SM	shine:PRTA:MS

'and your face is shining' [Mitchell 2009:154]

In the second place, in Arabic the active participle of motion verbs is regularly used for expressing progressive aspect. In Zuwara, this use is attested with at least two participles: *žay* 'coming' and *mášəy* 'going'. Cf. the following examples:

d *kúll* *yum* *ind=buṭíyaṛ* *mašy-ín* *žayy-ín.*
and every day P=airplane go:PRTA-P come:PRTA-P
'and planes are going and coming daily' [Mitchell 2009:157]

aitu *áfṛux* *žay* *s* *əlžarídət* *n* *wáss=u*
look boy come:PRTA:MS with newspaper of day=PROX
'here comes the boy with today's paper' [Mitchell 2009:159]

ḥəttá *(a)ləmmi* *mášəy,* *t-əlla* *t-ətšúṛ*
even if go:PRTA:MS 3SF-be:PV 3SF-be.full:PV
'since even if he's going, it (i.e. his car) will be full.' [Mitchell 2009:165]

lə́mmi *mašəy* *ṣaləḥ?*
when go:PRTA:MS PN
'when is Salih going?' [Mitchell 2009:104]

These two participles do not stand in a paradigmatic relationship to a borrowed Arabic verb; their relationship is rather to the Berber verbs *fəl* 'to go' and *asəd* 'to come'. It is not clear to what extent *žay* and *mášəy* are in complementary distribution with *fəl* and *asəd*. One remarks however that in Mitchell's texts, the Imperfective *ffal* 'go' is only used in habitual and negative contexts; progressive uses of *ffal* do not occur.

These two constructions show that they have found a niche in the Zuwaran verbal system. Both the absence of *d* in predicative uses, and the possibility of a progressive use show that they have verbal properties, i.e. are part of the verbal system.

Ghomara is another language that has introduced Arabic participles in large numbers, both passive and active. Research on their function is in progress (Mourigh fc.), and it will be interesting to see to what extent their introduction (esp. that of the active participle) implies the introduction of a new aspectual category into the language. In Mourigh's materials, only very few verbs have both an active and a passive participle (note that with derived verbs the difference does not show). In how far this is systematic in the language is not yet known.

Morphologically, the introduction of participles has had great impact on Ghomara Berber. With verbs borrowed from Arabic, the Arabic forms are taken over as such, e.g.

	Active Participle	Passive Participle	
qṛa	*qaṛi*		'to read'
kṛəh	*kaṛəh*		'to hate'
qli		*məqli*	'to bake'
ftəl		*məftul*	'to spin'
ɣəlləḇ	*ɣəllaḇ*	*mɣəlləḇ*	'to win'

As the participle is foreign to the Berber system, etymologically Berber verbs have no equivalent to them. In order to provide such verbs with the necessary forms, suppletion takes place: the Arabic participle of a verb with the same meaning as the Berber verb is used. In most of these cases, using the Arabic lexeme as a normal verb would be considered wrong (or a code-switch). Examples (Mourigh fc.):

	Active Participle	Passive Participle	
ffəɣʷ	*xarəž*		'to go out'
əšš	*wakəl*		'to eat'
qqim	*galəs*		'to sit'
ḵrəz		*məḥruṯ*	'to plough'
ẓẓəḡ		*məḥluḇ*	'to milk'
ssirəḏ		*məɣsul*	'to wash'
ttu	*nasi*	*mənsi*	'to forget'

Arabic participles keep their original morphology (see 6.2.2), e.g. MS *nasi*, FS *nasya*, P *nasyin* 'having forgotten'.

8.4 Diminutives

Maghribian Arabic has a regular derivation of diminutives, which allows it to derive a diminutive from virtually any noun where it is semantically appropriate. This is different from Berber, where diminutives appear as the result of size-related gender derivation—with objects and lower animals, a masculine noun refers to something larger than its feminine counterpart. When the neutral form is masculine, this means that the feminine is diminutive in meaning. In all other contexts—with humans and higher animals, and with forms where the feminine is the neutral form—there is no morphological device for making a diminutive, and recourse is taken to adjectives such as 'big' and 'small'. Thus, while in Arabic, it is easy to make a diminutive of 'man', this is impossible in Berber:

Moroccan Ar.	*ṛažəl*	'man'
	ṛwižəl	'little man' (diminutive)
Figuig	*argaz*	'man'
	argaz amәẓẓyan	'little man' (adjectival construction)

Similarly, Maghribian Arabic allows for diminutives of adjectives, while no such derivation is possible in Berber (nor is there any clear translation equivalent for it), e.g.

Moroccan Ar.	*sxun*	'warm'
	sxixən	'somewhat warm'

Berber languages do not take over Arabic diminutive formation. The only exception is Ghomara Berber, which has a regular diminutive derivation based on Arabic apophony. This applies both to nouns of Arabic and of Berber origin. Compare the following pairs of etymologically Arabic and Berber nouns (all from Mourigh fc.):

Ghomara	*əlqiṛṭaṣ*	'bullet'	DIM *əlqṛiṭəṣ*	(< Arabic)
	aḡəlzim	'pick-axe'	DIM *aḡlizəm*	(< Berber)
	lməqqaṣ	'scissors'	DIM *mqiqəṣ*	(< Arabic)
	tasammərt	'sunny open space'	DIM *tasmimərt*	(< Berber)
	nnəṣṣ	'half'	DIM *nṣiyyəṣ*	(< Arabic)
	aɣəṣṣ	'bone'	DIM *aɣṣiyyəṣ*	(< Berber)
	lmus	'knife'	DIM *ləmwiyyəs*	(< Arabic)
	aẓaṛ	'root'	DIM *aẓwiyyəṛ*	(< Berber)

8.5 Adjectival Grading

In Berber, grading of adjectives (comparative, superlative) is not expressed by morphological means. Prepositional phrases and degree verbs are used to this effect, e.g.

Figuig	*y-if*	*w=u*	*nn-əš*
	3SM-be.better:PV	DEM:MS=PROX	of-2SM
	'it is better than yours'		

Tarifiyt	*uma*	*ḍ*	*aməqqṛan*	*zzay-i*
	brother	PRED	EL-big	from-1S
	'my brother is older than I'			

Arabic has degree morphology on the adjective, which expresses normal degree as opposed to a comparative/superlative form, called elative in the Arabist tradition. The difference between a comparative and an superlative reading of the elative is inferrable from the syntactic construction, e.g.

Moroccan Ar.	*huwa*	*kbir*
	he	big
	'he is big'	

huwa	*kbəṛ*	*mənn-i*
he	big:ELAT	from-1S
'he is bigger than I'		

huwa *kbəṛ-hum*
he big:ELAT-3P
'he is the biggest of them'

Arabic elatives have sometimes been taken over in Berber languages as particles used in comparative constructions, e.g. Tarifiyt *ḥsən* 'better':

Tarifiyt *y-ufa* *ləḥwayəžž=ənni* *ḥsən* *zi* *ṯi=nni* *ɣar-s*
3SM-find:PV things=ANP better from DEM:FP=ANP with-3S
'he found that these things were better than those he had' [Kossmann 2003:70]

In Djebel Nefusa, *áktar* 'more' has become a general marker of elative, e.g.

Nefusa *nəč* *məqqár* *áktar* *n* *atərrás=uh*
I big:MS more of man=PROX
'I am bigger than this man' [Beguinot ²1942:126]

In Djebel Nefusa, Arabic elatives can also be used as such (Beguinot ²1942:126), e.g.

Nefusa *a* *t-áf-əd* *díma* *úğun* *aqwá* *nn-ək*
AD 2-find:AO-2S always one:M stronger of-2SM
'you will always find somebody stronger than you' [Beguinot ²1942:144]

This leads to a situation in which (etymologically and formally) Arabic elatives can correspond to etymologically Berber adjectives, e.g.

Nefusa *aməqrán* 'big' (< Berber)
kábr=as 'bigger than he' (< Arabic *ákbar* 'bigger')

Something similar may be the case in Sened (Tunisia), cf. the following example:

Sened *təmmurt* *ən-naɣ* *akbar* *n* *ətmurt* *ən-kum*
EL:village of-1P bigger of EA:village of-2PM
'our village is bigger than your village' [Provotelle 1911:44]

Siwa is the only Berber language which has taken over the full elative system of Arabic (Vycichl 2005:212; Souag 2010). Comparatives are formed according to the Arabic pattern, which is regularly CCəC, while superlatives have CCəC-*hum* with the Arabic 3PM pronoun *-hum*, e.g. (all data from Souag 2010:158):

Siwa *ašmal* 'bad'
šməl 'worse' (comparative)
šməl-hum 'worse' (superlative)

	akwayyis	'good'
	kwəs	'better'
	kwəs-hum	'best'

This pattern also applies to adjectives with a Berber background, e.g.

Siwa	*azəwwar*	'big'
	zwər	'bigger'
	zwər-hum	'biggest'

According to the presentation in Souag (2010), the pattern is regular, both with Arabic and Berber adjectives.

The situation in Zuwara may be similar, although little is known about it. Mitchell (1954:416) points to the existence of elative forms with Arabic loans, but also provides an example with the Berber adjective *asəṭṭaf* 'black':

Zuwara	*w-uhanit*	*d*	*asəṭṭaf*	*lakən*	*w-uhanit*	*əsḍ(ə)f-is*
	DEM:M:S-PROX	PRED	black	but	DEM:M:S-PROX	blacker-3S

'this one is black, but this one is blacker' [Mitchell 1954:416]

CHAPTER NINE

OTHER CATEGORIES: PRONOUNS AND QUANTIFIERS

In this chapter, contact influence in the realm of pronouns and quantifiers is studied. While the Berber system of personal pronouns does not seem to have undergone major influence from Arabic, in a number of varieties there exists a parallel system of Arabic pronominal elements, mainly occurring in combination with other borrowed elements. The system of interrogatives is studied from two perspectives. In the first place, the interrogative system is studied, especially the possible influence of Arabic on the development of a scission between 'who' and 'what' interrogatives. In the second place the important lexical influence of Arabic on interrogatives is treated.

The second part of the chapter is concerned with the expression of quantification. It focuses on two subjects: the influence of Arabic on numerals, and the influence of Arabic on universal quantifiers. In both cases, the focus lies on the lexical impact of Arabic. In many Berber varieties, this impact is very high: in some of them, all numerals above 'one' are loans. Similarly, the lexical impact of Arabic on universal quantification is treated in some detail, and Gil's (1996) universal borrowing scale on this matter is tested and falsified.

9.1 Personal Pronouns

The system of personal pronouns in Berber is maintained everywhere. Systemic Arabic influence is very difficult to detect; occasional innovations in Berber which match Arabic structures can easily be explained as simplifications for which no Arabic model is needed.

For instance, many Berber languages distinguish a masculine and a feminine form in the independent form of the first person plural, e.g.

Kabyle	1PM	*nəkʷni*	1PF	*nəkkʷənti*
Iznasen	1PM	*nəčči̯n*	1PF	*nəčči̯nti*
Tashelhiyt	1PM	*nukkʷni*	1PF	*nukkʷnti*
Nefusa	1PM	*náččən*	1PF	*náččənt*

In other languages, this difference is not made, e.g.

Figuig *nəšni* 1P (masculine and feminine)

As Maghribian Arabic only has a single gender-neutral form for 'we', one could hold Arabic influence responsible for the loss of the distinction in Figuig and elsewhere. However, there is no reason why this should not have been an internal development in these Berber varieties, all the more since the distinction is not found anywhere in Berber in bound pronominal forms.

Influence of Arabic pronouns is found in a number of languages in the sense of a parallel system: Arabic pronominal forms are used in specific contexts, whereas Berber pronominal forms are used elsewhere. There are three types of this:

– Arabic pronominal forms appear with (some) borrowed particles
– Arabic pronominal forms are used together with non-integrated Arabic verbs (only Ghomara)
– Arabic pronominal forms are used in certain syntactic contexts

In the first two cases the pronominal elements are part of a larger borrowed structure, i.e. particle+pronoun or verb form+pronoun.

9.1.1 *Arabic Pronominal Forms with Borrowed Particles*

The take-over of Arabic particles together with a paradigm of borrowed particles is attested in quite a number of Berber varieties. A well-documented case is Figuig (Kossmann 1997:186–7), where this is found with the particles *ɛəmməṛ-* 'never', *wəḥd-* 'alone' and *maššab- ~ waššab-* 'don't mind'. These particles are always followed by a bound pronoun, and this pronoun always belongs to the Arabic series, cf. the difference between the forms used with *ɛəmməṛ-* and those used with the Berber preposition *l* 'towards'[1] (before pronominal suffixes: *ɣər-*):

		'never' (Arabic pronouns)	'towards' (Berber pronouns)
Figuig	1S	*ɛəmmṛ-i*	*ɣr-i*
	2SM	*ɛəmmṛ-ək*	*ɣr-əš*
	2SF	*ɛəmmṛ-ək*	*ɣr-əm*
	3SM	*ɛəmmṛ-u ~ ɛəmmṛ-əh*	*ɣr-əs*
	3SF	*ɛəmməṛ-ha*	*ɣr-əs*

[1] The prenominal form *l* is similar to Arabic *l* 'to'. This is accidental; Figuig *l* is probably an abbreviation of earlier *ɣəl* (cf. forms such as *ɣəl-da* 'towards here'); with *l~r* variation, this is the same as the form before pronouns, *ɣər-*.

1P	*ɛəmməṛ-na*	*ɣər-nəx*
2PM	*ɛəmməṛ-kum*	*ɣər-wəm ~ ɣər-wət*
2PF	*ɛəmməṛ-kum*	*ɣər-šəmt*
3PM	*ɛəmməṛ-hum*	*ɣər-sən*
3PF	*ɛəmməṛ-hum*	*ɣər-sənt*

Not only the forms are different in the two rows, there are also important systemic differences. While the Berber system makes a gender difference in the 2nd person singular and plural, as well as in the 3rd person plural, the Arabic system has gender-neutral forms. On the other hand, in the 3rd person singular, where the Berber pronouns are neutral to gender, the Arabic pronouns distinguish masculine and feminine. There does not seem to be any convergence between the systems. The following examples illustrate the use of Arabic pronouns in Figuig (the gloss ARA means: pronoun of the Arabic series):

Figuig *ɛəmmṛ-ək* *didd=t-ənni-d*
never-2S:ARA 1S:DO=2-say:NPV-2S
'you have never told me' [Kossmann p.n.]

ɛəmməṛ-ha *t-əffiɣ*
never-3SF:ARA 3SF-go.out:NPV
'she has never gone out' [Kossmann 1997:186]

Arabic pronouns are also found in some other Sud oranais dialects. They are well-attested in Igli (notes by André Basset, Kossmann 2010b), with the particles *mənɣir-* 'except' and *ɛamr-* 'never': 1S *mənɣir-i*, 3SM *mənɣir-u*, 3PM *mənɣir-hum*.

For Ghomara, El Hannouche (2010:126ff.) gives the following particles which are always followed by Arabic pronouns: *fḥal-* '(his) way', *baɛṭ-* 'another', *buḥd-* 'alone', *kulla-* 'all', e.g. (exx. from El Hannouche 2010:115)

Ghomara *aɡʸdi* *i-dda* *fḥal-u*
EL:dog 3SM-go:PV way-3SM:ARA
'the dog went on his way'

ša *wən=qqn-əx* *g* *baɛṭ-kum*
FUT 2P:DO=tie:AO-1S on another-2P:ARA
'I will tie you (plural) to one another'

ləḥšam *nn* *ɛammi* *kulla-hum*
children of uncle all-3P:ARA
'all the children of my uncle'

A similar situation is found with a few borrowed prepositions, e.g. *bin* 'between' (El Hannouche 2010:126). In spite of the high flight of parallel

system borrowing in this variety, it is impossible in Ghomara to have Arabic pronominal suffixes with borrowed nouns.

Central Moroccan Berber provides some more examples, e.g.:

Ayt Seghrushen (Taza Province variety, Eastern Middle Atlas)[2]

	ɛəmmr-u	*i-raḥ*
	never-3SM:ARA	3SM-go:NPV
	'he never went' [Kossmann fc-e]	
	ɛəmmər-hum	*raḥ-ən*
	never-3P:ARA	go:NPV-3PM
	'they never went' [Kossmann fc-e]	
Zemmour	*waḥd-u*	'he alone'
	waḥḏ-kum	'you (plural) alone'
	waḥḏ-hum	'they alone' [Laoust ^{3}1939:210]

Similarly in Libyan varieties:

Nefusa	*baɛáṭ-kum báɛaṭ*	'each other (2PM)' [Beguinot ^{2}1942:122]
	baɛáṭ-hum báɛaṭ	'each other (3PM)'
Awdjila	*məɛá bəɛáḍ-kum*	'with each other (2P)' [Paradisi 1960b:79/I-6]

The use of Arabic pronouns is found in Ouargla with the particle *madabi-* which translates as 'like to, feel at ease' (Delheure 1987:184), e.g.

Ouargla	*madabi-h*	*y-əxs*	*ad*	*y-əẓwa*
	easy-3SM:ARA	3SM-want:PV	AD	3SM-go:AO
	'he should like to go' [Delheure 1987:184]			

In Ouargla, there is not always a formal difference between Berber and Arabic pronouns; thus *madabi-k* (2SM) and *madabi-kum* (2PM) cannot be assigned with certainty to one or the other background. This facilitated the introduction of Berber forms in the corresponding feminine forms of the second persons: *madabi-m* (2SF) and *madabi-kumt* (2PF). The resulting paradigm blends forms from both languages:

		Arabic	both	Berber
Ouargla	1S	*madabi-ya*		
	2SM		*madabi-k*	
	2SF			*madabi-m*
	3SG	*madabi-h*		
	3SF	*madabi-ha*		

[2] In other Ayt Seghrushen varieties *ɛəmmṛu* is invariable (Kossmann fc–e).

1P		*madabi-na*	
2PM		*madabi-kum*	
2PF			*madabi-kumt*
3PM	*madabi-hum*		
3PF	*madabi-humt* (!)		

The Berber morphological relation 2PM *-kum* 2PF *-kumt* has been transferred to the Arabic pronoun *-hum*. While in many Maghribian Arabic dialects *-hum* is neutral as to gender, in Ouargla the distinction is made by adjoining the Berber feminine marker *t* to Arabic *-hum: madabi-humt*.

A similar solution is found in Zuwara with the particles *madɛil-* '(I) think' and *madabi-* '(I) prefer' (Mitchell 2009:110). All suffixes, except 2PF and 3PF are of Arabic shape and there is no gender differentiation in the 2nd person singular. In the plural, blended forms are used:

Zuwara	2PM	*madɛíl-kəm*	2PF	*madɛíl-kmət*
	3PM	*madɛíl-həm*	3PF	*madɛíl-hmət*

While *-kmət* has a clear Berber counterpart, *-hmət* is a blend of Arabic *-həm* (Berber has *-sən* instead) and the Berber feminine marker *-t*.

The same is found in the Mzab expression 'each other', *bɛaḍ-*. Unfortunately, Delheure did not include this word in his dictionary (Delheure 1984); the texts published by Delheure only have attestations of the 3rd person (e.g. Delheure 1986:49, l. 1 and 58, l. 41):

Mzab	3PM	*bɛaḍ-hum*	3PF	*bɛaḍ-humət*

Arabic pronouns are also attested in Djerba Berber. Brugnatelli (2002:173) provides forms with the particle *ṛa-* 'there it/he is', followed by an independent Arabic pronoun:

Djerba	3SM	*ṛa-hu*	3SF	*ṛa-hi*

It is unknown whether this paradigm also extends to other persons and to other particles.

Finally, Siwa uses Arabic pronouns with the particle *msabb-* 'for X's sake, because of X' (Souag 2010:43ff.), e.g.

Siwa	*uɣi-x*	*lxátəm*	*dá-wok*		*msabb-há*
	buy:PV-1S	ring	DEM:MS-DEM:MS-2SM:ADDR		because-SF:ARA
	'I bought that ring for her sake' [Souag 2010:44]				

	msabb-ǎk	*slə̃md-ɣ=asən*	*i*	*təṛwáwen*	*láḥsab*
	because-2SM	teach:PV-1S=3P:IO	to	children	arithmetic
	'for your sake I taught the children arithmetic' [Souag 2010:43]				

Moreover, as shown in section 8.5, Siwa has taken over the Arabic superlative construction using the elative of the adjective (whether of Berber or of Arabic origin), followed by an Arabic pronoun, e.g. *kwəs-hum* 'the best (lit. the best of them)'. Neither Vycichl (2005), nor Souag (2010) inform us about the status of this element *-hum*: is it invariable or does it allow for differentiation according to person (e.g. *kwəs-kum* 'the best of you')? In view of the precision typical of Souag's work, we may safely assume that there is no differentiation.

9.1.2 *Arabic Pronouns Bound to Borrowed Verbs*

Ghomara Berber has maintained Arabic verbal morphology with many loan verbs from Arabic. Object pronouns bound to such verbs also take an Arabic shape. Examples were given in section 7.4.

9.1.3 *Arabic Independent Pronouns after the Presentative Particle* ha

In the Ayt Seghrushen dialect of the province of Taza (Kossmann fc–e), Arabic third person independent pronouns appear after the presentative particle *ha*. They are followed by the Berber direct object pronominal clitics. With first and second person forms, only Berber pronouns are allowed:

	Berber origin	Arabic origin
1S	*ha nč ~ ha=yyi*	
2SM	*ha škk(int̲)*	
2SF	*ha šm*	
3SM		*ha həwwa=t̲*
3SF		*ha hiyya=tt*
1P	*ha nčnin*	
2PM	*ha šnnim*	
2PF	*ha šnniwənt̲i*	
3PM[3]		*ha huma=t̲ən*

9.1.4 *Arabic Reciprocal Pronouns*

In Berber, reciprocity is normally expressed in the verb by means of verbal derivations. Some Berber languages have developed reciprocal pronouns on a Berber basis, e.g. Ayt Wariaghel (Tarifiyt) *aya ɯya* 'each other, lit.

[3] The 3PF form was not elicited.

this to this'. In Mzab, the Arabic expression with *bɛaḍ-* has been taken over, e.g.

Mzab	*tḥəbba-n*	*tibənžiwin*	*mbaɛḍ-hum*	*baɛḍ*
	kiss:IPV-3PM	heads	each.other-3PM:ARA	each.other
	'they kiss each other's on the head' [Delheure 1986:49]			

ad	*ẓur-ənt*	*bɛaḍ-humət*
AD	visit:AO-3PF	each.other-3PF:ARA
'they visit each other' [Delheure 1986:58]		

The same is found in Djebel Nefusa and Awdjila:

Nefusa	*trafq-ən*	*d*	*baɛáṭ-hum*	*báɛaṭ*
	befriend:PV-3PM	with	each.other-3PM:ARA	each.other
	'they became befriended with each other' [Beguinot ²1942:122]			

Awdjila	*úndu*	*t-əllumá-m*	*iman*	*n-əkím*	*maɛá* *baɛáḍ-kum*
	if	2-be.together:PV-2P	self	of-2P	with each.other-2P:ARA
	'if you keep together with each other' [Paradisi 1960b:79; I, l. 6]				

9.2 Interrogatives

9.2.1 *Interrogatives 'who' and 'what'*

Many Berber languages make no difference between person interrogatives ('who') and object interrogatives ('what'), e.g. Tashelhiyt has a pronoun *ma(d)* used in both contexts:

ma	*i-krz-n*	*iɣr=ad*
who/what	PTC:S-plough:PV-PTC:S	field=PROX
'who has ploughed this field?' [Aspinion 1953:180]		

ma	*i-skr*
who/what	3SM-do:PV
'what has he done?' [Aspinion 1953:182]	

The same situation is found in Central Moroccan Berber (e.g. Ayt Ndhir *mi* 'who/what') and in Niger Tuareg (*ma* 'who/what'). The basic construction is an interrogative element *m*, also found in other interrogatives, followed by a pronominal element *a(y)* or *i*. The element *a(y)* is originally a pronominal form neutral to definiteness, while *i* refers to indefinites (Galand 1974). One may note the case of Ayt Seghrushen (Bentolila 1981), which has an interrogative *may* 'who, what', parallel to more restricted *wi* 'who'.

Other Berber languages differentiate between 'who' and 'what', but do so in many very different ways. Therefore, it is reasonable to assume that

the Tashelhiyt situation with only one interrogative is original, while the differentiation is a dialectal innovation.

Idiatov (2007:579) has shown that the absence of differentiation between 'who' and 'what' is typologically uncommon, but not really marginal in languages of the world: in a sample of about 1850 languages, he found 7–9% "that (may) allow a lack of differentiation between 'who?' and 'what?' ".

In Arabic—both Classical and dialectal—the difference between 'who' and 'what' is consistently made (Singer 1958). Even though Maghribian Arabic has innovated the forms of the interrogatives, all varieties maintain the difference.

One may therefore assume that the introduction of a differentiation in Berber is inspired by Arabic. This is, of course, not necessary: according to Idiatov (2007), many languages show an internally motivated development from non-differentiation to differentiation. In the realm of Berber, this is the case of some Tuareg varieties, which have specialized *ma* for 'what' and *mi* for 'who' (Mali, Heath 2005:650–652; northern Ayer, Kossmann 2011a:135, Ahaggar, Prasse 1972–74:I-216), playing on the different pronominal constituents. While the path of specialization is relatively transparent in the case of Tuareg,[4] in the other languages it is much less clear, and some elements have become specialized as a 'who' interrogative in one language, and as a 'what' interrogative in the other, e.g.

Figuig	*manay-*	'what'
Chenoua	*manay-*	'who'

Northern Berber languages have innovated their interrogatives according to different paths (Idiatov 2007:171–180). In the first place, pronominal elements with non-interrogative function may become specialized as interrogatives. This seems to be the case of 'who'-interrogatives originating in an indefinite pronominal element *wi* 'whoever', e.g. Chaouia (Ayt Frah):

wi	*ṭṭf-ən*	*ig-ən=as*	*ləxḍəggət*
who	take:PV-3PM	do:AO-3PM=3S:IO	fine

'who(ever) they take they give him a fine' [Penchoen 1973a:91]

wi	*ha*	*ny-ruḥ*	*id-nəɣ*
who	AD	PTC-go:AO	with-1P

'who will go with us' [Penchoen 1973a:206]

[4] According to Prasse, Ghabdouane & Mohamed 2003:516, Ayer Tuareg has a difference between *ma* 'collective interrogative' and *mi* 'singulative interrogative'; from such a situation, a specialization of *ma* for 'what' and *mi* for 'who' is quite natural.

The element *wi* has become the dedicated 'who' interrogative in Tarifiyt, Ayt Seghrushen, Figuig, Mzab, Chaouia, as well as some Kabyle varieties (At Manguellat, Vincennes & Dallet 1960:99).

A second path is a change of function from an attributive pre-nominal interrogative ('which'), into an interrogative pronoun. The original pre-nominal interrogative was probably **man*. It is reasonable to assume that it is a composite of interrogative *m* followed by pronominal *a*, followed by *n* of unclear origin.[5] In most languages, it is followed by a noun in the Free State, which is remarkable, as pre-nominal elements mostly govern a following Annexed State. As suggested by Idiatov, this may be an indication of an appositional origin of the construction (Idiatov 2007:172). In some languages, *man* has become the normal interrogative, e.g. *man* 'what' (Senhadja, Lafkioui 2007:238). It is often followed by a second element, mostly a short pronominal *a(y)* or *i* (Iznasen *mani* 'what', Awdjila *mani* 'who', Djebel Bissa *mana* 'who'); such forms can sometimes be analyzed as *man* followed by a cleft marker *i* or *a(y)*. More complex forms have *man* followed by a pronominal element, which receives deictic clitics, e.g., Figuig *manay=ənn* 'what', Chenoua *manay=a* 'who', Harawat (Western Algeria) *manw=a* 'who' (Destaing 1914:295), probably also Ouargla, Nefusa *mammó*, Zuwara *ṃaṃṃu* (< *man w=u*) 'who'. More complicated are forms such as Iznasen *manis w=u* 'who' and Beni Snous *magəs* 'who', Zekkara (Eastern Morocco) *mayməs* 'who', which incorporate the obsolete verb *umas* 'to be' (cf. Akouaou 1978). Elsewhere *mayməs* is used for the question 'what kind of' (e.g. Figuig) or 'which' (Sened). In addition to *man*, Tarifiyt dialects have *min* 'what' and *mayən* 'what' (for their distribution, see Lafkioui 2007:238). They look like an amalgam of interrogative *m*, pronominal *i* or *ay*, and *n*, and would therefore represent basically the same construction as **man*, with different pronominal elements.

A third group of languages has the element *matta*, which represents the ancient interrogative *ma* followed by an element *tta*. On the basis of Central Moroccan Berber evidence, Idiatov (2007:190) concludes that *matta* originated in non-verbal clauses, mainly with pronouns of the type

[5] Idiatov (2007:171) suggests the genitival marker *n*. However, as he rightly observes, the preposition *n* is always followed by a noun in the Annexed State, while in many Berber languages *man* is followed by a Free State noun. He solves this problem by assuming that *man* originally had the Annexed State, but that the final *n* had become "so integrated that it cannot be construed as the equivalent of the genitive n 'of' anymore" (Idiatov l.c.). As pre-nominal elements are often followed by an Annexed State, it is unclear why the syntax should have changed after the *n* had lost its genitival connotation. An alternative is to link *n* in *man* to deictic elements such as *-ənn* in some Berber languages.

matta nətta 'who is he' (Ayt Ndhir; Penchoen 1973b:81). Because of this, he proposes an etymology *ma* 'interrogative' + *ta* 'presentative'. This etymology does not explain the fact that in most languages, *matta* has a geminate *t*. An alternative explanation derives *matta* from *ma nətta* 'what (is) he', quite similar to Maghribian Arabic phrases such as *mən-hu* 'who', lit. 'who (is) he'.

In most languages which have *matta*, it is used for 'what': in this use it is found in a large number of non-Kabyle northern Algerian varieties, among others: Chaouia (Ayt Frah), Chenoua, Djebel Bissa, Beni Snous. It is also found in Ouargla, Zuwara and El-Fogaha and, with loss of the nasal articulation, in Mzab (*batta* ~ *matta*) and Sened (*bata*). In Siwa, *bətta* is found after prepositions, meaning 'what', while an enlarged form *bəttin* is used for 'who' (Souag 2010:452–3). In Ayt Ndhir (Penchoen 1973b:81), *matta* is used for both 'who' and 'what'.[6]

A different construction with *(t)ta* is found in Siwa *tanta* ~ *ta* 'what' (Souag 2010:453). Probably, this construction consists of presentative *ta* followed by the personal pronoun.

A few languages have forms without the element *ma*. This is mainly found in Kabyle, e.g. At Iraten *anwa* (= *an w=a*) 'who' (Chaker 1983); other examples are Ghadames *anno* (< *an w=o*) 'who' and possibly El-Fogaha, Sokna *ummi* (< *an wi* ?) 'who'. Idiatov (2007:195) suggests these *m*-less forms could have originated "as conventionalization of independently used headless relative clauses, when accompanied by an interrogative intonation".

Two Eastern Berber forms defy analysis: Ghadames *ke* 'what' and Awdjila *di* (also followed by a pronoun: *di w=a*) 'what'.

The last way of developing a differentiation between 'who' and 'what' is by the borrowing of Arabic forms. This is found in two regions: in northwestern Morocco and in Kabylia. In Northwestern Morocco, Senhadja de Sraïr has Arabic *škun, šku, ašku* 'who' alongside Berber *mi* 'who' (Lafkioui 2007:238); 'what' is expressed by Berber *man*. In Ghomara, only *škun* (in some situations abbreviated to *šk*) is used for 'who'. 'What' is *šwa*, which combines the Arabic interrogative element *(a)š* and an element *wa*, which can be interpreted as a shortening of Arabic *huwa* 'he' or as (Ghomaran)

[6] A similar situation is suggested by Edmond Destaing's notations for Beni Rached in Western Algeria: *matta k̲=y-uɣa-n* 'what happened to you' (Destaing 1914:293) and *matta i k̲=id=i-wi-n da* 'who brought you here?' (Destaing 1914:295). One suspects, however, that the last phrase was wrongly translated, and should be interepreted as 'what brought you here?'.

Berber *w=a* 'the one that'. The Arabic etymology is strengthened by the fact that in many Maghribian Arabic dialects, 'what' normally consists of the interrogative element followed by an independent pronoun or a shortened form of it. However, it seems that all Moroccan dialects which have this, use an enlarged form *(a)šn-* rather than *(a)š* in this construction (Heath 2002:477–81).

In most Kabyle dialects, the interrogative 'what' is *(ḏ)ašu*. This is a direct loan from Algerian Arabic *aš-u* 'what'.[7] The initial *ḏ* in some varieties is the Berber predicative particle, which, amongst others, is used in the first part of clefts where the noun is the clefted element. Its presence can be explained as an effect of the similarity in construction between interrogative clefts and noun clefts.

In Lesser Kabylia, in addition to *ašu* 'what', Arabic also provided the interrogative 'who', *mənhu*. As a result, both meanings are covered by loanwords, e.g. Aokas:

mənhu	*i-ṛuḥ-ən*	*i*	*dd=i-ɛrəṭ*
who	PTC-go:PV-PTC	AD	VENT=3SM-invite:AO

'who has gone to invite (people)?' [Rabhi 1994:116]

ḏašu	*awən=xəḏm-əɣ*
what	2PM:IO=do:PV-1S

'what have I done to you?' [Rabhi 1994:116]

Igli (Sud oranais) has borrowed *mənhu* 'who', but retained Berber *ma (i)* 'what' (Kossmann 2010b).

Most often, the restructuring of the interrogative system has affected the form in both meanings. Only in a few Northern Berber languages with differentiation between 'who and 'what', original *ma(y) ~ mi* occurs in one of the meanings. If so, it has the meaning 'what' (Tahala, Sened, Nefusa, Ouargla, Igli). One remarks that *man*-based forms occur both in the meanings 'who' and 'what', depending on the variety, while *wi* only occurs in the meaning 'who', and *matta* mainly occurs in the meaning 'what'.

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[7] *aš-u* consists of the interrogative element *aš* followed by the 3SM Arabic pronoun *-u*. Reesink (1973:327) mentions an alternative analysis which considers *-u* a demonstrative element of Berber origin. There are two demonstrative bases which come to mind. First, *-u* is found in a large number of Berber varieties as the proximal demonstrative; as it does not occur in Kabyle, it is hardly a candidate. Second, *u* is found as a pronominal basis in Kabyle in forms such as *u-kuḏ* 'with whom' (Basset & Picard 1948:179). The main problem with this analysis is that in *ašu* the element *u* follows *aš*.

9.2.2 *Adverbial Interrogatives*

Berber adverbial interrogatives are of different kinds. There are two basic adverbial interrogatives, which have an opaque structure: *məlmi* (and variants) 'when' and *mani* 'where'. While both clearly contain the interrogative element *m*, the origin of the second part is unknown. A number of adverbial interrogatives basically consist of the 'which' interrogative, followed by a noun, e.g. Tuareg *man əmmək* 'how, lit. which manner', *man əket* 'how much, lit. which quantity'. Because of phonetic changes and the loss of the second element as an independent word, forms have become opaque in most languages, cf. Siwa *mamək*, Figuig *manəš* 'how' and Siwa *mnet*, Ouargla *mənnəšt* 'how many'. Many adverbial interrogations are constructed with a 'what' interrogative or some special pronominal form, followed by a prepositional relative clause (see below).

Arabic influence is especially strong in the form of the 'how much' interrogative. In a large number of varieties, a dialectal Arabic form has been taken over:

kəmm, kəmma, s-kəm[8]	Chaouia (Ait Frah), Nefusa, Sened
šḥal, ašḥal	Greater Kabylia, Lesser Kabylia, Western Algeria, Tarifiyt (*~məšḥař*), Beni Snous, Figuig, CMB: Ayt Ayache (*~ mšta ~ məšḥal*), Ayt Seghrushen (*~ mšta ~ məšḥal*)
məšḥal, mašḥal	Beni Menacer, Tarifiyt (*~ šḥař*) CMB: Zemmour, Ayt Ayache (*~ mšta ~ šḥal*), Ayt Seghrushen (*~ mšta ~ šḥal*)

One remarks the forms with initial *m-*, which is not part of the original Arabic form. The introduction of *m-* may be a way to conform to the general Berber pattern with *m*-initial interrogatives. However, prosthetic *m* is also found with some other borrowed function words, e.g. Tarifiyt *ḇřa ~ məḇřa* 'without'.

The interrogative 'when' has been borrowed in Tunisia, western Libya, Lesser Kabylia and in northwestern Morocco. West of Tunisia, the Arabic interrogatives are mostly compounds of an interrogative element (*a*, *ay* 'which') and the noun *wəqt ~ wəxt* 'time', in northwestern Morocco preceded by the preposition *f* 'in':

ləmmi	Tamezret [http://atmazret.com/], Zuwara, Nefusa
awqət	Ihbachen (Lesser Kabylia) [Rabdi 2004:132]
aywəq	Aokas (Lesser Kabylia) [Rabhi 1994:165]
axš	Senhadja [Lafkioui 2007:240]

[8] With the instrumental preposition *s*, probably meaning 'for how much' (Sened, Provotelle 1911:80).

faxš	Senhadja [Lafkioui 2007:240]
faywax	Ayt Bchir (Senhadja) [Lafkioui 2007:240]
fhaywəḵ	Ghomara [El Hannouche 2010:124]

Northwestern Moroccan Berber also has taken over Arabic *layn* 'whither':

lay	Senhadja 'what along' [Lafkioui 2007:239]
layn	Ghomara 'whither' [El Hannouche 2010:124]

Further borrowing of adverbial interrogatives is found in Ghomara *liyaš* 'why'. In this variety, only two adverbial interrogative lexemes of Berber origin remain: *amḵa* 'how' and *ani* 'where'. In El-Fogaha, finally, the adverbial interrogative *kif* 'how' has been borrowed from Arabic, e.g.

kíf	*nk*	*t-əssə́n-ət?*
how	NEG	2-know:PV-2S

'how don't you know?' [Paradisi 1963:95, l. 19]

Prepositional interrogatives in Berber are normally constructions with an interrogative element, followed by a preposition. As interrogatives are cleft-like constructions, which always have a relative clause following them, and as in prepositional relative clauses the bare preposition is fronted, they can be considered regular prepositional relative clauses, similar to English phrases such as *what is he talking about*, e.g. Tashelhiyt

ma	*f*	*i-srs*	*tarikt*
who/what	on	3SM-put:PV	EL:saddle

'on what has he put the saddle, lit. what (is it) on which he put the saddle' [Aspinion 1953:184]

The main difference with a normal relative construction is a high incidence of ellipsis, leading to sentences consisting of only the interrogative and the preposition:

ma	*f*
who/what	on

'on what?' [Aspinion 1953:184]

In a number of varieties, a construction appears which has the preposition preceding the interrogative element, similar to English phrases such as *about what is he talking*. This could be considered a calque on Maghribian Arabic, which has identical constructions, but could also easily constitute an internal development, e.g.

Lesser Kab.:	*ḏ wašu*	'with what' [Rabhi 1994:117]
	g ašu	'in what' [Rabhi 1994:117]

In Ghomara, Berber prepositions are followed by the Arabic pronominal element *mən* (after a vowel) ~ *mmən* (after a consonant). This construction is partly a calque on and a blend with Maghribian Arabic, e.g.

Moroccan Ar.	*l-əmmən*	'to whom' [Caubet 1993:173]
Ghomara	*i mən*	'to whom' [El Hannouche 2010:114]

However, different from Moroccan Arabic, Ghomara *(m)mən* can also be used for questions about things, e.g.

Moroccan Ar.	*mɛa-yaš*	'with what' [Caubet 1993:172]
Ghomara	*s əmmən*	'with what' [El Hannouche 2010:124]

i *mən* *lmakla=yaṯ*
to who/what food=PROX
'for whom is this food?' [El Hannouche 2010:125]

s *əmmən* *a* *h-qəṭɛ-ət* *llḥəm*
with who/what FOC 2-cut:PV-2S meat
'what did you cut the meat with?' [El Hannouche 2010:114]

This intriguing mismatch between the original and the calque can only be understood from an earlier stage of the Ghomaran language, where 'who' and 'what' were still expressed by a single interrogative (see 9.2.1). At this stage the Arabic word *mən* was inserted in this construction, but received similar interpretation as the single interrogative, i.e. both 'who' and 'what'. Only afterwards, Ghomara introduced a difference between 'who' and 'what' in subject and direct object function, by borrowing the Arabic forms. This was not carried over to the prepositional relatives, maybe because the nature of the preposition largely predicts the interpretation of *(m)mən* as referring to a person or to a thing—for example, a comitative preposition normally selects a person, while an instrumental selects an object. As a result, the original lack of differentiation between 'who' and 'what' is only maintained in a construction which is to a large degree a calque on Arabic, and which uses Arabic lexical material.

9.2.3 *'which'*

Adjectival 'which' or its independent counterpart 'which one' have only been borrowed in Senhadja de Sraïr and Ghomara. Two Arabic bases appear: *ašmən*, the most commonly used form in Moroccan Arabic, and *škun*, the normal Arabic (and Ghomaran) expression for 'who':

Senhadja	*ašmən, škun* (Lafkioui 2007:161–3)
Ghomara	*škun* (El Hannouche 2010:113)

Senhadja
ašmən ṯəmɣarṯ
which EA:woman
'which woman' [Renisio 1932:103]

Ghomara
škun *argʸaz* *ara* *yṯ=i-fk* *ləflus*
who/which EL:man AD 1S:IO=3SM-give:AO money
'which man will give me money?' [El Hannouche 2010:113]

9.2.4 *Yes/No Questions*

Both Berber and Maghribian Arabic have dedicated markers of yes/no questions. In Arabic, there is a major dialectal divide between languages with phrase-initial markers, mainly west of Tunisia, and those with phrase-final markers, as found in Tunisia and Libya (Singer 1984:722; Owens 1984:102). Berber languages west of Tunisia mostly have a phrase-initial marker, often *is* (Tashelhiyt, Central Moroccan Berber) or *ma* (Tarifiyt, Lesser Kabylia), but other variants exist. Senhadja *ka* (Lafkioui 2007:240) and Ghomara *ka* (Mourigh p.c.) are remarkable, as they clearly come from the term *k(a)ra* 'thing'. Tarifiyt and Lesser Kabylia *ma* have the same form as one of the reconstructible shapes of the ancient 'who/what' interrogative. This makes *ka* and *ma* similar to Moroccan and Algerian Arabic *waš*, which originally (and in many dialects up till the present day) means 'what' (corresponding to Classical *(wa) ʔayyu šayʔin*), but which is widely used as a yes/no question marker. The Arabic use does not seem to be due to Berber influence, as it also occurs in Levantine dialects (Singer 1958). On the other hand, the use of *ma* and *ka* in Berber could be a calque from Arabic.

Phrase-initial Arabic forms have been borrowed in Sud oranais (Figuig, Igli *waš*) and in some Kabyle varieties (Irjen *əɛni*). Probably all Berber languages allow to some extent for yes/no questions without a lexical interrogation marker, the job being done by intonation only. Some languages have no yes/no marker at all (At Iraten Kabyle, Chaker 1983:244).

In Berber east of Algeria, phrase-initial markers seem to be absent. Published texts from Djebel Nefusa, El-Fogaha, Sokna and Awdjila suggest that these languages have no dedicated interrogation marker, while Siwa has final vowel lengthening (Souag 2010:452). Zuwara and Ghadames have phrase-final markers, *a* (Zuwara), *na* (Ghadames), whose etymologies are unclear. Their phrase-final position corresponds to the phrase-

final position of the markers in the regional varieties of Arabic. Tamezret (Tunisia) has a post-verbal (or phrase-final?) interrogative marker *=š*, e.g.

i-qam=ak=š
3SM-lift:PV=2SM:DO=Q
'has he lifted you up?' [http://atmazret.com/]

A similar use appears in the following sentence from Sened (Tunisia):

šək,	*a*	*ḥməd,*	*t-əs(s)ən-ət=š*	*manət*	*i-nγa*
you:M	VOC	NP	2-know:PV-2S=Q	who	3SM-kill:PV

'you, Ahmad, do you know who has killed?' [Provotelle 1911:88]

This *š* corresponds to Tunisian Arabic *ši* (Singer 1984:722); however, it could also have a Berber source (< *šra* 'thing')—in that case, one should consider the construction a calque on Tunisian Arabic rather than a lexical borrowing.

9.3 Numerals

Northern Berber has undergone massive Arabic influence in its numeral system. As shown by Souag (2009b), numeral systems that exclusively use Berber materials are restricted to Tuareg and Zenaga. Other systems have substituted some terms by Arabic, or use Arabic numerals as alternatives to Berber forms.

9.3.1 *Cardinal Numbers*

High numerals (100, 1000) have been borrowed from Arabic everywhere in northern Berber with a couple of exceptions. The first exception is pre-modern Tashelhiyt, which occasionally used Berber forms (van den Boogert 1997:286–287):

18th C. Tashelhiyt	*timiḍi* (P *timaḍ*)	'hundred'
	ifḍ (P *afḍan*)	'thousand'

They function as nouns, e.g. *timiḍi w wafḍan* 'hundred of thousands' = 100.000), *sḍist tmaḍ n lbit* 'six hundreds (= 600) of verses'. In pre-modern Tashelhiyt they are used in variation with Arabic numerals, e.g. *tsɛu-myya n lbit* 'nine hundred verses', and can even be used together with Arabic numerals, e.g. *xmsin n wafḍan* 'fitfy of thousands = 50.000), which has Arabic *xmsin* 'fifty' in combination with Berber *afḍan* 'thousands' (van den Boogert 1997:287). The medieval Ibadhi manuscript of Ibn Ghanim's *Mudawwana* also provides examples of these two numerals, e.g.

Medieval Ibadhi *ifəḍ ən wulli* '1000 sheep' [Brugnatelli 2011:38]

sənt ən tmaḍ ən yəḍrimən
two of EA:hundreds of EA:dirhams
'200 dirhams' [Brugnatelli 2011:38]

A further exception is El-Fogaha in Libya, which has a numeral *tamíṭ* 'hundred' (Paradisi 1963:103). This is remarkable, because in the rest of its system, El-Fogaha seems to retain only the Berber numerals 1–3. Finally, the Tunisian variety of Tamezrett has *amiḏ* 'humdred' and *žim* 'thousand' (Paesano 2000:35).

These forms have good cognates in Tuareg and Zenaga: Mali Tuareg *temeḍe* (P *timaḍ*) 'hundred', *efăḏ* (P *afăḏăn*) 'thousand'; Zenaga *tmaḍih* (P *tmaḍa?n*) 'hundred', *əffaḍ* (P *əffaḍan, avḍan*) 'thousand'.

While the Berber numerals 100 and 1000 have now been abandoned in most northern Berber varieties, the situation with numbers between 11 and 99 is different. Tashelhiyt and Mzab have systems for the decades that do not replicate Arabic forms immediately. Mzab and Ouargla form the decades by means of an arythmetric (x * 10) description, e.g. Mzab *sənnət tmərwin* 'two tens = 20; *sat tmərwin* 'six tens = 60'. Digits in between the decades are added by means of the preposition *d* 'and', e.g. *mraw d yiggən* 'ten and one = 11' (Delheure 1984:122). The basis of this system, *timərwin* 'tens', is a plural form of the noun *tamrəwt* (Mzab), *tamrawt* (Ouargla) 'ten (French: dixaine)', which is related to the numeral *mraw* 'ten (French: dix)'. This system is the same as in Tuareg (Heath 2005:251). In Ouargla, the Berber system is under strong competition from Arabic forms, which seems to go partly along lines of gender and confession (Souag 2009b:241). A similar system is attested in Ghadames. The main difference with Mzab and Tuareg is that the numeral *maraw* 'ten (dix)' is used, rather than a noun 'dixaine': e.g. *sən m maraw* 'two of ten = 20'; *kárəḍ m maraw* 'three of ten = 30'. Note however *kárəḍ ənd-maraw əd yón* 'three tens and one', which has the plural prefix *ənd-* and Motylinski's notation <sinnet temraouin> (Motylinski 1904:40) with a plural noun similar to that in Mzab and Ouargla. The description by Lanfry suggests that the Berber numerals are only rarely used, and that Arabic forms are more common (Lanfry 1968:378).

In Tashelhiyt the situation is different. The numbers 11–19 consist of the digit followed by the preposition *d* 'with, and', followed by *mraw* (F *mrawt*) 'ten (dix)', e.g. *ttam d mrawt n tmɣart* 'eight and ten of woman = eight women'. For numbers above 19, the Arabic numeral *ɛašrin* (F *ɛašrint*, MP *id-ɛašrin*; FP *id-ɛašrint*) '20' functions as the basis. Digits and impair decades are added by means of the preposition *d* 'with, and' (Aspinion

1953:254ff.; Galand 1988:230), e.g. *ɛašrin d mraw* 'twenty and ten = 30'; *ɛašrin d yan d mraw* 'twenty and one and ten = 31'; *sin id-ɛašrin* 'two twenties = 40', *kkuẓ id-ɛašrin d mraw* 'four twenties and ten = 90' (exx. from Aspinion 1953:254). This vigesimal system is fundamentally different from the decimal system found in Arabic.

As noted by most sources on Tashelhiyt, the Berber number system is used alongside more Arabic-like systems. Thus, instead of *ɛašrin d mraw* 'twenty and ten = 30', it is possible to use the Arabic loan *tlatin* 'thirty'. This concerns not only the decimal numbers, but may also implicate the entire numeral (Galand 1988:230).

The other northern Berber languages consistently use the Arabic numerals for numbers above ten.

Even in the first decade (1–10), Arabic influence is pervasive in most Berber varieties. There is a remarkable lack of geographical and numerical continuity in the number of Berber numerals preserved. On the one hand there are languages that preserve the full decade (Ghadames, Ouargla, Mzab, Tashelhiyt); Arabic numerals are not unknown in these languages, but where they are used, Arabic and Berber forms coexist side by side. The other languages only have systems with three Berber numerals or less. There are no systems with 1–5 in Berber and >5 in Arabic or the like. There may be cognitive explanations for this (Souag 2009b:240), but is remains a remarkable distribution, especially when dialects which have the full Berber decade and such that have only 1–3 form a linguistic continuum otherwise, e.g. in the case of Tashelhiyt and Central Moroccan Berber.

Berber languages that do not retain the full decade have gender differentiation with Berber numerals, but no gender differentiation with Arabic numerals.[9] Languages that do not retain the full Berber decade fall into three groups. The first group has retained the Berber numerals 1–3, and uses Arabic numerals for numbers above 3. This is found in most Central Moroccan dialects, e.g. Ayt Ndhir (Bisson 1940:166ff.):

Central Mor.	1.	M *yun*	F *yuṯ*
	2.	M *sin*	F *snaṯ*
	3.	M *šraḍ*	F *šraṯ*
	4.	*rbɛa*	(< Ar.)
	5.	*xəmsa*	(< Ar.)
	6.	*sətta*	(< Ar.)
	7.	*səbɛa*	(< Ar.)

[9] In Ayt Seghrushen (Eastern Middle Atlas), only the numeral 'one' has gender differentiation. The Berber numeral 'two' is invariable for gender, *snat* (Bentolila 1981:63).

8.	*ṯmanya*	(< Ar.) (Taïfi 1991: *tmənya*)
9.	*tsaɛa*	(< Ar.) (Taïfi 1991: *ttəsɛa*)
10.	*ɛəšra*	(< Ar.)

Not surprisingly, all numerals above ten are also direct loans from Arabic, e.g.

Central Mor.	11.	*ḥaḍɛaš*	(< Ar.)
	22.	*ṯnayn-u-ɛəšrin*	(< Ar.)
	30.	*ṯlaṯin*	(< Ar.)

Outside Central Morocco, this system is attested in Gourara and in the Libyan oases of Sokna and El-Fogaha. Boudot-Lamotte (1964), Provotelle (1924–25) and Paradisi (1963) only provide the numerals 1–3 (and 100 in the case of El-Fogaha) in their wordlists; in the Italian publications, other numerals, when given, are marked "gergo" (argot), and do not belong to the normal numerical system. The silence of these authors on numerals >3 strongly suggest that they are borrowings from Arabic, which were not considered interesting enough to be included in the publication.

The second group retains the Berber numerals 'one' and 'two', and uses Arabic numerals for 'three' and higher. This is found in a large territory stretching from Figuig and the Sud oranais to Metmata (western Algeria), Kabyle, Chaouia, Djebel Nefusa and Siwa.

Finally, a group restricted to northern Morocco and some adjacent Algerian varieties has only retained the numeral 'one'. This is found in Ghomara, Senhadja, Tarifiyt, Iznasen and Beni Snous. The same system is probably present in Awdjila, where Paradisi remains silent on this numeral in his word list (1960a), and where the Arabic form *itnen* is attested in the texts, e.g.

Awdjila	*uša-n=íz=d*	*itnén*	*ən*	*qəṭṭáɛən*
	come:PV=3S:IO=come	two	of	thieves
	'two thieves came to him' [Paradisi 1960b:82, text VII, l. 2]			

As remarked by Souag (2009b), the retention of 'one' in all Berber varieties was facilitated by its corrolary use as a marker of indefiniteness (similar to Maghribian Arabic and French); as such it is less of a dedicated numeral than the others.

The forms of the borrowed numerals do not always correspond exactly to those used in neighboring Maghribian Arabic varieties. For Siwa, Souag (2009a) has pointed to the form *sətti* 'six' instead of general Maghribian and Egyptian Arabic *sətta*. The form with raising of final *a* corresponds to forms found in Arabic oasis dialects of the region and belongs to the

first Arabic stratum in Siwa (Souag 2009a). In some Tarifiyt varieties, 'eleven' is *ḥiṭaš* rather than surrounding Arabic *ḥəḍɛaš* ~ *ḥḍaš*. This may well represent a borrowing from an Arabic variety with *ḍ* > *ṭ* (see 5.3.2.2). Arabic varieties of this type are found to the west of the Rif, in the Jbala region of northwestern Morocco. The geographical distribution of *ḥiṭaš* in Tarifiyt greatly surpasses the region where such Arabic influence would be expected, and one may assume that the form spread from one Berber variety to the other.

More problematic than these phonetic irregularities is the form *ṯnayən* of the numeral 'two', found in Tarifiyt, Iznasen and Beni Snous. This form corresponds to eastern Arabic forms such as Cairo *itnēn*, Classical Arabic *iṯnāni* (oblique case: *iṯnayni*). However, it hardly occurs in Maghribian Arabic, which has forms related to Classical Arabic *zawǧ* 'one of a pair', such as Moroccan Arabic *žuž*. The correspondent of Classical *iṯnayni* occurs in compounds such as Moroccan Arabic *ṭnaš* 'twelve', *tnayən-u-tlatin* 'two and thirty = 32' and in the ordinal *tani* 'second'. As a normal numeral, correspondents of *iṯnayni* are restricted to Hassaniya Arabic (cf. Heath 2002:464) and varieties east of Tunisia. Thus there is a discrepancy between the use of the ancient Arabic form in northern Moroccan Berber, and its substitution by another form in local Arabic. The solution of the problem may lie in Andalusian Arabic, which had *iṯnayn* (Corriente 1977:88; Corriente 1997:86). Apparently, Tarifiyt took over the term from Andalusian immigrants, or the Andalusian form once also existed as a variant in some of the northern Moroccan cities, but was gradually ousted by the common Moroccan variant *žuž*. The Andalusian connection is irrelevant to the Awdjila form *itnén*. In this case, it is simply a loan from eastern Libyan Arabic *iṯnēn* (Owens 1984:52).

A number of Berber languages have a difference between non-borrowed numerals used in a syntactic context, and borrowed numerals used in listing, e.g. when one counts 'one, two, three, four . . . '. Cf. (Kossmann 1997:210; Kossmann 2000a:160–161; Dallet 1982):

Figuig	1.	normal:	*idžən*	in counting:	*waḥəd*
	2.		*sənn*		*zuž*
Kabyle	1.	normal:	*yiwən*		*waḥəḏ, waḥəd*
	2.		*sin*		*žuǧ, zuǧ*
Iznasen	1.	normal:	*iǧǧən*		*waḥəḏ*

Borrowed Arabic numerals normally have their "feminine" form, i.e. with numerals below 11 the form ending in *-a*. In certain fixed borrowed phrases,

"masculine" forms appear, which constitute a second series of numeral forms. Such borrowed phrases mainly concern indications of time and numeral expressions with 'hundred' and 'thousand'. It is typical for these expressions that '2 x's' uses the Arabic dual form.

The forms of this second series are the same as their Arabic models. They mostly consist of simply the "feminine" form without the suffix *-a*. In some cases, however, concomitant changes take place, e.g. Iznasen *ṯmənya* 'eight' but *ṯmən šhuṛ* 'eight months'.

This doubling of the numeral series may exist in all northern Berber languages. It is attested, among others, in Medieval Tashelhiyt (van den Boogert 1997:286), in Central Moroccan Berber (Bisson 1940:170), in Tarifiyt, in Iznasen, in Figuig, in Kabyle, in Djebel Nefusa and in Siwa (Souag 2010:182). Examples (Kossmann 1997:210):

Figuig	2.	normal:	*sənn*	with 'day'	*yumayən*	(Arabic dual form)
	3.		*tlata*		*təlt əyyam*	
	4.		*ṛəbɛa*		*ṛəbɛ əyyam*	
	5.		*xəmsa*		*xəms əyyam*	
	6.		*sətta*		*sətt əyyam*	
	7.		*səbɛa*		*səbɛ əyyam*	
	8.		*tmənya*		*tmən əyyam*	
	9.		*təsɛa*		*tsəɛ əyyam*	
	10.		*ɛəšṛa*		*ɛšəṛ əyyam*	

9.3.2 *Fractions*

Fractions are taken over from Arabic together with the Arabic article. Only for 'half', there are often Berber terms. This is also true for varieties with intact Berber number systems, such as Tashelhiyt (Aspinion 1953:257):

Tashelhiyt	1/2	*nnṣṣ*
	1/3	*ttlt*
	1/4	*rrba*
	1/5	*lxʷms*
	1/6	*ssudus*

There exist alternative constructions, e.g. in Kabyle by means of the noun *amur* 'part, portion' followed by an ordinal construction, e.g. *amur wis rḇɛa* 'quarter'. Alongside, Arabic fractions are also used (cf. Basset & Picard 1948:54). Unfortunately, fractions are only reported for a small number of Berber varieties, so the extent of this phenomenon is difficult to establish.

9.3.3 *Ordinal Numbers*

In most northern Berber languages, ordinal numbers are formed by means of a regular Berber-based derivation with a pronominal element, e.g.

Kabyle	M	*wis sin*	F	*ṯis sin*	'second'
	M	*wis ṯlaṭa*	F	*ṯis ṯlaṭa*	'third'

In eastern Berber varieties, ordinal numbers are taken from Arabic together with the Arabic article (see p. 221 for questions of morphology). This is found in Djebel Nefusa (Beguinot ²1942:129):

Nefusa	*əttáni*	'second'
	əttálət	'third'
	ərrábəɛ	'fourth'
	əlxáməs	'fifth'

In Siwa the same is found; however sources differ as to the presence of the Arabic article. Vycichl (2005:215) cites forms without the article (e.g. *xámsa* 'five'), while Souag (2010) provides an example with the article:

Siwa	*lxamsa*	*t-əswa,*	*ssatta*	*g*	*aqəsri*
	fifth:F	3SF-drink:PV	sixth:F	in	container
	'the fifth drank, the sixth is in the container.'				[Souag 2010:148]

Because of the lack of documentation on other eastern Berber varieties it is impossible to assess the extent of this phenomenon.

9.4 Universal Quantifiers

In the following, two types of universal quantifier will be distinguished. The first type is called general quantifier or collective quantifier; it marks the entirety of an entity or a group of entities; English "all" is an instance of this. The second type is distributive; it marks each single instance within a group of entities. As argued by Gil (1994), collective quantifiers tend to be used in a broader sense, sometimes overlapping with distributive quantifiers; therefore the term "general universal quantifier" may be more fitting.

Within Maghribian Arabic, there are important differences in the expression of these two relations. On the one hand, the distributive quantifier is expressed in the same way all over the Maghrib, using an element *kŭll* preceding a non-definite element (mostly a noun), e.g.

ka=i-ži *l=əhna* *kŭll* *žəmɛa*
IPFV=3SM:IPFT-come to=here all week
'he comes here every week' [Harrell 1966:66]

ɛṭi *l=kŭll* *dərri* *waḥəd*
give:IPFT:IPT:S to=all child one:M
'give every child one' [Harrell 1966:66]

On the other hand, the collective quantifier has many variants. In a large part of the Maghrib, it is based on the same element as the distributive, *kŭll*, but has different syntax. There are various syntactic constructions with this element, often more than one in a single variety:

	X *kŭll*-PRON	*kŭll l*-X	*l*-X *l-kŭll*	*l-kŭll l*-X
citadine Moroccan	+	–	–	–
Tlemcen	+	–	+	+
Jijel	+	+	+	–
Marazig	+	–	+	–
Eastern Libyan	–	+	–	–

Examples (Jijel):

kan *myəššəš* *əɛl* *əd=drari* *kəll-hum*
be:3S:PT angry on DEF=children all-3P
'he was angry at all the children' [Jijel; Ph. Marçais 1956:473]

ḥəwwəs-t *fi* *kəll* *əb=blad*
walk-1S:PT in all DEF=country
'I have walked through the entire town' [Jijel; Ph. Marçais 1956:472]

əd-drari *l=kəll* *i-xaf-u* *mn* *əl=lil*
DEF-children DEF-all 3:PT-be.afraid-P:PT from DEF-night
'all children are afraid of the night' [Jijel; Ph. Marçais 1956:473]

Tlemcen:

ən-nas *kŭll-hum*
DEF=people all-3P
'all the people' [W. Marçais 1902:172]

əl=bladat *əl=kŭll*
DEF=countries DEF=all
'all countries' [W. Marçais 1902:172]

əl=kŭll *ən=nas*
DEF=all DEF=people
'all (the) people' [W. Marçais 1902:172]

In many other Arabic varieties, including rural varieties of western Morocco (and derived varieties such as Casablancan), the collective quantifier has a different base, *gaɛ*, e.g. Eastern Moroccan Arabic:

gaɛ *ṣ=ṣaḥaba* *bqa-w* *sakt-in*
all DEF=Companions remain-3P:PT be.silent:PTCA-P
'all the Companions remained silent' [Eastern Morocco; Bezzazi 1993:110]

Historically, *gaɛ* derives from the noun *qāɛ* 'bottom, plain'—apparently an expression such as "(until) the bottom (of the matter)" was reinterpreted as a quantifier. Like elsewhere, prenominal *kŭll* is used for expressing distributive meaning, e.g.

w *ddawi* *ɛla* *kŭll* *mərḍ*
and cure:PTCA:SM on all illness
'and it cures every illness' [Eastern Morocco; Bezzazi 1993:242]

The collective universal quantifiers, and *gaɛ* in particular, are fundamentally adverbial, and take many places in the sentence; in negative sentences they are best translated as "at all"; probably in general a translation "entirely" fits the syntactic status of these elements better than "all". The distributive quantifier, on the other hand, always precedes the element it quantifies. There are some highly frequent collocations with distributive *kŭll*, such as *kŭll waḥəd* "everybody, lit. every one", *kŭll (š=)ši* "everything, lit. every thing", as well as temporal expressions such as *kŭll yum* "every day".

Berber languages all make a difference between collective and distributive quantification, either syntactically or lexically. There is only one reconstructible universal quantifier morpheme in Berber, *akkʷ*. This functions as a collective universal quantifier in Kabyle and in Central Moroccan Berber (*akʷ*),[10] where it can precede or follow the quantified element, e.g.

dda-n=d *akʷ* *s* *iɛggadin*
come:PV-3PM=VENT all with clubs
'they all came with clubs' [Middle Atlas; Taïfi 1991:321]

[10] An element *akʷ* is also attested in Tashelhiyt (e.g. Stumme 1899:100); however its exact uses are not clear.

lakin	*ismɑwn=agi*	*yakʷ*	*ʈʈuḇəddəl-ən*	*si*	*laṣəl*	*ən-sən*
but	names=PROX	all	be.changed:PV-3PM	from	origin	of-3PM

'but all these names have been changed with respect to their origin' [Kabyle, Irjen; Basset & Picard 1948:274]

In other Berber languages, *akkʷ* is a distributive universal quantifier, which always stands in front of the quantified element: Chaouia Ait Frah *akk*, Ouargla *makk*, Tuareg *akk*, Zenaga *äkki*, e.g.

akk	*isəmš*	*ttas-ən=dd*	*waman*	*dag-s*
all	turn	come:IPV-3PM=VENT	EA:water	in-3S

'at every turn (for irrigation) the water comes into it' [Chaouia; Penchoen 1973a:21]

akkʷ is nowhere used for both collective and distributive quantification; there is always a different lexeme expressing the other quantifier of the pair.

Apart from *akkʷ*, there exists another Berber-based expression for distributive universal quantification. The basic construction is the element "something" followed by a copular construction. This is found in Figuig *š(r)a d*

šṛa	*d*	*lfəlqət*	*tuɣ*	*t-əɛləm*	*din*	*tḥanətt*	*nn-əs*
some	PRED	clan	PAST	3SF-have:PV	there	shop	of-3S

'every clan had its shop there' [Figuig; Kossmann 1997:197]

Using a different choice of copula construction, the same is found in Tashelhiyt *kraygatt*, from *kra i-ga=tt* "something is it",[11] e.g. *kraygatt ass* 'every day' (Stumme 1899:100). Neighboring Ntifa has the construction *ka iga=t*, which follows the same pattern (note however that "something" is normally *kra* in this variety), e.g. *ka iga=t tamɣart* 'every woman'. In Ntifa, instead of *ka*, also *ma* 'what' can be used, e.g. *g ma igga=t tigmmi* 'in every house' (Laoust 1918:247).

It is possible that in an earlier stage Berber (or part of it) opposed collective *akkʷ* to distributive "something is X". However, in view of the well-attested use of *akkʷ* as a distributive quantifier, this is far from certain.

Otherwise, universal quantifiers are borrowed from Arabic. As should be expected, depending on the local variety of Arabic, the collective universal quantifier can be taken over as *gaɛ* or in a form with *kull*. Quantifiers based on *gaɛ* are found in the eastern varieties of Tarifiyt (*qaɛ*),[12] Beni

[11] An alternative interpretation is suggested by Stumme (1899:100), involving the predicative particle *d*, now obsolete in Tashelhiyt: *kra i-ga=t d X*.

[12] As to the corresponence Arabic *g*, Berber *q*, see 5.3.2.3.

Iznasen (*qaɛ*), Figuig (*qaɛ*), Ayt Seghrushen (*qaḥ ~ kulši*, see below), Chaouia (*qəɛɛ*), Mzab (*gaɛ*) and Ouargla (*gaɛ*). In these varieties, the reflex of *gaɛ* occurs before or after the quantified element, like in Arabic. In a number of varieties with *q/gaɛ*, the Arabic distributive quantifier *kull* also appears, among others in Iznasen and Mzab. In Tarifiyt a universal quantifier *marra* is found (cf. Lafkioui 2007:223). This is a loan from Moroccan Arabic (mainly north-western Morocco, it seems), where *məṛṛa* 'time (French: fois)' can be used in the sense of 'all together', while *b-məṛṛa* 'at a time' can be used for 'entirely' (Prémare 1993–1999/11: 168–169).[13]

Collective universal quantifiers borrowed from Arabic constructions with *kŭll* pose some more complications to integration, as they are obligatorily followed by a pronominal element in Arabic. Berber languages have different solutions to this problem. In the first place, some languages generalize a frozen pronominalized form, e.g. Tashelhiyt *kullu* (< Ar. *kŭll=u* all=3SM). In Tashelhiyt it is possible to have *kullu* followed by a Berber pronominal element, e.g. *kullu=tn* 'they all', showing the disappearance of all pronominal functions in the form *kullu* itself. Tashelhiyt *kullu* 'all' is opposed to distributive *ku(l)* 'every'. Very similar constructions appear in Ntifa (southwestern Central Moroccan Berber):

kullu	*irgazn*	=	*irgazn*	*kullu=tn*
all	men	=	men	all=3PM:DO

'all the men' [Ntifa; Laoust 1918:250]

ku (y)	*argaz*
every	EL:man

'every man' [Ntifa; Laoust 1918:247]

In Djebel Nefusa, the element *kŭll* lacks its Arabic pronouns, but there is an opposition between collective [ókkul] (/əkkul/ ?) and distributive *kull*. [ókkul] derives from the Arabic form with the article (**ăl-kŭll* > *ăk-kŭll*) and *kull* from the form without the article. Moroever, there is a difference in position, collectives being possible in post-head and pre-head position, distributives being only pre-head. The absence of any traces of Arabic pronouns in the Berber forms is expected, as Libyan Arabic does not use the pronominal strategy, e.g.

kull	*tərmúnt*	*di-s*	*əttəmán*	*n*	*əlyaqút*
all	pomegranate	in-3S	eighth	of	rubin

'in each pomegranate there is an eighth of a rubin' [Beguinot ^{2}1942:169]

[13] A less probable derivation would be from the verb *rru* 'to be many', still used in neighboring Beni Iznasen as a defective verb only appearing in the Perfective.

də *ɣásru* *ókkul* *wí* *nn-ək* *šək*
and castle all DEM:SM of-2SM you:M
'and all the castle is yours' [Beguinot ²1942:166]

ókkul *iwəssárən=úha* *iləɛmáyən*
all old.men=PROX blind
'all these blind old men' [Beguinot ²1942:180]

i-kkár *i-ssíwəl* *əlḥəywanát* *ókkul*
3SM-rise:PV 3SM-speak:PV animals all
'he stood up and called all the animals [Provasi 1973:508]

In Awdjila, the same is found. The distributive quantifier is always *kull*; Paradisi's notations of the collective quantifier vaccillate between *kkull* and *kull* (possibly due to a certain lack of precision in the notations), e.g.

u *y-uɣ=ítət* *kull* *iwinán* *s-ɣar-sín*
and 3SM-take:PV=3SF:DO all one:M from-at-3PM
'and every one of them took it' [Paradisi 1960b:79/I-2]

u *y-əqqím* *i-ddəhwár* *ašál-i* *kkúll*
and 3SM-stay:PV 3SM-tour:IPV country-LOC all
'and he started to tour in the entire country' [Paradisi 1960b:82/VIII-1]

ufá-n *ámẓa* *id* *amẓíwən* *ərwil-ín=a* *kkull*
find:PV ogre and ogres flee-3PM=RESULT all
'they found that the ogre and the ogres had all fled' [Paradisi 1960b:85/XV-49]

Middle Atlas varieties use two variants based on *kŭll* in different meanings. The examples provided by Taïfi (1991:329–330, cf. also Laoust ³1939) suggest that (pre-nominal) *ḵu* is used for distributive meanings, and floating *ḵul* for collective meanings, cf.

ku *tigəmmi* *s* *təmzgida* *n-s*
every EL:camp with EA:mosque of-3S
'every camp has its mosque' [Taïfi 1991:329]

kul *tiɛyyalin*
all EL:women
'all the women' [Taïfi 1991:330]

ixamn *kul* = *ixamn* *kul* *n-sən*
tents all = tents all of-3PM
'all the tents' [Taïfi 1991:330]

Only the element *kulši* 'everything' falls outside this order; it is best considered a direct loan from Arabic *kŭll-ši*.

In Ayt Seghrushen, the element *kulši* 'everything' functions as a collective universal quantifier, e.g.

lla	*ttqn-n=as*	*x*	*kulši*	*lžwayh*
IPFV	close:IPV-3PM=3S:IO	on	everything	sides

'they close it from all sides' [Bentolila 1981:60]

kks-n=ax	*kulši*	*azzar*
take.away:PV-3PM=1P:IO	everything	EL:hair

'they have shaved off all our hair' [Bentolila 1981:60]

In a number of varieties, Arabic distributive complexes with *kŭll*, meaning 'everybody' and 'everyone', have been taken over as a whole, e.g. Mzab *mkull-ḥədd* 'everyone'. 'Everything' has been taken over as a whole in many languages, e.g. Tashelhiyt (*kullši*), Ouargla (*kulləš, kullši*), Beni Iznasen (*kulši*), and, as shown above, Middle Atlas Berber (*kullši*).

In Figuig, which normally has distributives with the "something is X" construction, 'everybody', 'everyone' and 'everything' are expressed by Arabic forms: *kul-ha* (lit. 'all of her'), *kul-ḥədd* and *kul-ši*, respectively. Moreover, there is a series of distributive expressions with *kul* followed by an Arabic noun, e.g. *kul məṛṛa* 'every time' and *kul yum* 'every day' (Kossmann 1997:295–296). While *kul-ha* and *kul-ši* represent the only way of expressing these concepts, Berber alternatives exist for other collocations, such as *š(ṛ)a d ass* 'every day' and *š(ṛ)a d idžən* 'everyone'.

Gil (1996) proposes a number of universal relations as to borrowing of quantifiers:

> Universal 2 states that simple universal quantifiers are more likely to be native, while their distributive-key counterparts are more likely to be loan. In doing so, it allows for three types of languages: with native simple and distributive-key universal quantifiers (…); with native simple universal quantifiers but loan distributive-key universal quantifiers (…); and with loan simple and distributive-key universal quantifiers (hitherto unattested) [Gil 1996:109].

It is interesting to set these expectations against the Berber sample. Among the three expected systems, the system with only native elements is relatively rare. This is the case in some Kabyle varieties: Irjen *akʷ* 'all', *ḵra n* 'every' (~ borrowed *kul* etc., Basset & Picard 1948:271). Similarly southwestern Central Moroccan varieties (Ntifa): *akʷ* 'all', *ka iga=t* 'every', and maybe also Tashelhiyt.

The opposite situation, where both the general and the distributive quantifier are loans is widely attested, among others in Beni Iznasen (*qaɛ* 'all', *kull* 'every'),[14] Zemmour (*ḵul* 'all', *ku* 'every'), Mzab (*qaɛ* 'all', *kull*

[14] Gil (1996:109, note 5) is wrong in considering *qaɛ* a native word.

'every'), Djebel Nefusa (<ókkul> 'all', *kull* 'every') and Awdjila (*kkull* 'all', *kull* 'every').

The situation with a native element for the general (collective) universal quantifier and a loan for the distributive quantifier is only found in Ayt Seghrushen: *akk* 'all' (also the loans *kulši* and *qaḥ*) vs. *kull* 'every'.

The fourth logical possibility, which is excluded according to Gil's prediction, is that the general (collective) universal quantifier is a loan, while the distributive quantifier is native. In fact, Berber provides quite a number of examples of this situation, thus counter to Gil's expectation, which will be enumerated below:

	general (collective) universal	distributive universal
Zenaga	*kull* (< Ar.)	*äkki*
Tuareg	*kəllu* (< Ar.)	*akk*
Ouargla	*gaɛ* (< Ar.)	*makk* (~ *kull* < Ar.)
Chaouia	*qəɛɛ* (< Ar.)	*akk*
Figuig	*qaɛ* (< Ar.)	*šṛa d*

Thus Gil's prediction is invalidated; in Berber, one of the predicted distributions is not very well attested, while its logical counterpart, which is excluded by Gil, is quite common.

CHAPTER TEN

SYNTAX: SIMPLE CLAUSE

Arabic influence on Berber syntax is more difficult to point down than phonological, morphological, and lexical influence. Generally speaking, syntactic patterns are less arbitrary than morphological and lexical forms; the number of possible forms is far smaller than, for instance for lexemes. Especially in the case of languages that share many basic syntactic patterns, one can easily have independent syntactic innovations leading to similar structures. Another problem in establishing syntactic influence, which is much less acute in morphology or lexicon, is the Berber influence on Maghribian Arabic, and the possibility of related innovations. In the case of Berber influence, the resulting similarity in structure is not due to Arabic, and thus falls outside the scope of this study. In the case of related parallel innovations, it is mostly impossible to determine the language where the innovation originated.

Therefore, Arabic influence on Berber syntax can only be identified when (1) the original Arabic and Berber structures were quite different and (2) the existing Maghribian Arabic structures have not too much evolved from the original. Even then, the possibility of an independent innovation in Berber remains, and has to be studied for each case individually.

As a result, the following chapter is a patchwork of different elements of syntax, which happen to lend themselves to our purposes.

10.1 Deixis

Berber and Arabic have different ways of constructing nominal deixis. In Maghribian Arabic, nominal deixis is achieved by means of preposed determiners, which distinguish between proximal and distal. These determiners are similar in shape to pronominal deictic elements:

		Proximal	Distal	Proximal Pronoun	Distal Pronoun
Moroccan Ar.	SM	*had*	*dak*	*hada*	*hadak*
	SF	*had*	*dik*	*hadi*	*hadik*
	P	*had*	*duk*	*hadu*	*haduk*

The determiner is always followed by a definite noun, which bears the article, e.g.

Moroccan Ar.	*had l=ktab*	'this book (lit. this the book)'
	duk l=ktub	'those books (lit. those the books)'

Northern Berber, on the other hand, uses post-nominal clitics for deixis.[1] The number of deictic categories expressed by such clitics differs from language to language, but most have a system with at least three categories: proximal, distal, and anaphoric (referring to something already mentioned, or inferrable from context), e.g.

Tarifiyt	*ṯamәṭṭuṯ=a*	'this woman (here)'
	ṯamәṭṭuṯ=in	'that woman (over there)'
	ṯamәṭṭuṯ=әnni	'the woman (just mentioned)'

Figuig and Zuwara[2] have only two degrees, one for proximal deixis (*=u*) and one for distal and anaphoric reference (*=әnn* in Figuig, *=din* in Zuwara). This reduction of the system may be due to Arabic influence, especially since these two varieties have also undergone changes in their deictic syntax (see below).

A number of Berber varieties use an innovative construction (cf. already Loubignac 1924:118–119; Galand 2005:191), which consists of a neutral pronoun *a(y)* followed by a deictic clitic, followed by a genitival phrase, e.g.

Zayan[3]	*ay=a usәlʸham*	'this gown, lit. this (of) gown' [Loubignac 1924:118]
	ay=n uřyaz	'that man, lit. that (of) man' [Loubignac 1924:118]
Figuig	*ay=u n urgaz*	'this man, lit. this of man'
	ay=әnn n urgaz	'the man, lit. that of man'
Zuwara	*ay=u n tәfṛuxt*	'this girl, lit. this of girl' [Mitchell 2009:200]
	a=din n tbuširin	'the girls, lit. that of girls' [Mitchell 2009:202]

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[1] Lionel Galand (e.g. 2010:155–6) considers these clitics pronominal forms ("supports de détermination") followed by a deictic element, e.g. Tashelhiyt *a=d* 'PROX' and *a=nn* ('DIST'). It is not clear how this should explain synchronically or diachronically cases such as Figuig *=u* 'PROX' and *=әnn* 'ANP'.

[2] In Zuwara, there are different forms according to gender and number: PROX:S *=uh* (~ *=u*), PROX:P *=ih*; DIST:SM *=әddin*, DIST:SF *=әddint*, DIST:PM *=idin* DIST:PF *=idinat* (Mitchell 1953:376–7).

[3] A variety of Central Moroccan Berber spoken on the western slopes of the Middle Atlas range. A similar usage is attested in the neighboring Zemmour dialect, where it expresses an explicitly positive attitude to the referent of the noun, while the post-posed deictics are more neutral (Fatima Boukhris, p.c.).

Gourara and Mzab Berber have similar constructions which lack the deictic element:[4]

Mzab	*ay n əssəğrət*	'the (aforementioned) tree' [Delheure 1986:309]
Gourara	*ay ən uɣam*	'the (aforementioned) village' [Bellil 2000:107]

The construction is also attested in Djerba (A. Basset 1952:35). In Zayan and Figuig the construction is used alongside the old construction; in Figuig the two constructions can be combined, e.g.

Figuig	*argaz=u*	'this man'
Figuig	*ay=u n urgaz=u*	'this man (lit. this one of this man)'

The construction with only *ay=u n* X or *ay=ənn n* X is far more frequent than the other constructions in this variety. In Mzab post-nominal deixis also exists and appears with and without pre-nominal deixis, e.g.

Mzab	*arğaz=ən*	'that man' [Delheure 1984:129]
	arğaz=ənni	'this particular man' [Delheure 1984:129]
	ay n wərğaz=ənni	'this particular man' [Delheure 1984:241]

In Gourara, *ay n* is also attested in combination with post-nominal deixis, e.g.

Gourara *ay ən šṛaɛ=u=ihit* 'this very judgement here' [Bellil 2000:103]

It is not clear which construction is most used in Mzab. In Zuwara, the construction with *ay=u* or *a=din* is the only one allowed.

The construction under consideration is similar to the Maghribian Arabic *had* / *dak* construction. Like in Arabic, a pronominal, or at least pronoun-like, element bears the deictic load. This pronoun is linked to the main noun in a construction which, at least formally, can be interpreted as a genitival construction. This is evident in the case of Berber, which uses the genitival preposition *n*, but only one out of several possible analyses for the Arabic construction. In Arabic, one could also reasonably interpret *had* (etc.) as an inherently definite element, which cannot bear the article; however, formally an interpretation as a genitive is equally possible, and, whatever the preferred analysis may be in the framework of Arabic, one

[4] Alternatively, one could consider *ay n* as *ay* followed by the anaphoric deictic clitic *=ən*. The absence of a genitival marker between *ay=ən* and the following noun is unexpected, but may have phonetic grounds. I here follow the analysis underlying Delheure's notations, where *n* is the genitival preposition. The Gourara examples with a proximal deictic in combination with *ay n* (see below) clearly show that *n* is not deictic here.

can very well understand an equation with a genitival construction from the side of Berber speakers.

Put otherwise, the Zayan/Figuig/Zuwara construction *ay=ənn n urgaz* looks like a calque on Arabic *dak ṛ=ṛažəl*. In fact, there is not much reason to assume it is not. The occasional presence of similar constructions in other Berber varieties does not invalidate such an analysis—in the first place, they could have a similar background; in the second place, they are much more marginal than in Figuig or Zuwara.[5] In his short paragraph on this construction in Zuwara, Galand (2005:191) remarks: "il n'y a pas lieu de chercher là une influence étrangère. Par ce moyen sont associés un élément grammatical et un élément lexical *qui ont tous deux le même référent extra-linguistique* (…): on reconnaît là un type de relation syntaxique dont le complément explicatif (ou pseudo-sujet placé après le verbe et développant le contenu lexical de ce dernier) n'est qu'un cas particulier". I do not see Galand's point here: the fact that the construction is syntactically understandable in languages, and maybe has a (quite abstract) parallel in other constructions in Berber, does not prove its anciennity. If it is an innovation, it is strange to exclude influence from Arabic, which has a very similar construction, and which has heavily influenced both Figuig and Zuwara Berber. If it is not an innovation, one must explain its quasi-absence elsewhere. One may add to this that—as remarked above—Figuig and Zuwara are the only Berber languages which have reduced the number of deictic categories to two; the resulting situation is therefore very close to Arabic.

In Siwa, a construction with post-nominal demonstratives is found, e.g.

uš=i	*akbər*	*ənnəw*	*aməllal*	*da-w-ók*
give:AO:IPT:S=1S:IO	robe	of:1S	white	DEM:SM-DEM:SM-2SM:ADDR

'give me that white robe of mine' [Souag 2010:262]

This construction resembles (Nile) Egyptian post-nominal demonstratives to a large degree. This is probably accidental, and Souag (2010:261–267) presents a convincing argumentation in favor of an internal development.

10.2 Negation

Arabic and Berber have similar ways of expressing negation. Both language families use preposed negators with verbs, strengthened dialectally

[5] In fact, the Ahaggar Tuareg construction *wa n áləs* 'this man', cited in Galand (2005:191) seems to be very marginal and does not feature in Prasse's Ahaggar syntax (2008).

by means of post-verbal elements. Both language families use various ways of non-verbal negation, vaccillating between more and less verbal structures. In this chapter, the various means of negation in Berber will be contrasted with that of local Arabic, in order to pin down borrowings and parallel developments.

10.2.1 *Verbal Negation*

Verbal negation in Maghribian Arabic has the structure NEG1 Verb (NEG2). The first negative element is *ma*, irrespective of the aspect of the verb e.g.

ma *ža* *š* *ɛla* *qăbl-ək*
NEG come:3SM:PT NEG2 at before-2S
'he has not come for you' [Casablanca, Adila 1996:103]

ma *n-kdəb* *š* *ɛli-k*
NEG 1S:IPFT-lie NEG2 at-2S
'I don't lie to you' [Casablanca, Adila 1996:103]

ma *ta=n-gabəl* *š* *mɛa-h* *ət=tlivisio*
NEG IPFV=1S:IPFT-guard NEG2 with-3SM DEF=television
'I don't watch television with him' [Casablanca, Adila 1996:103]

An alternative element, *la*, is found in prohibitive contexts, as well as in some other strongly injunctive contexts, such as oaths and warnings (Caubet 1996:88–90). In addition to this it is regularly employed in coordinated negations of the type 'neither . . . nor'. In prohibitives, both *la* and *ma* appear, e.g.

la *t-gul=li-h* *(š)* *aš* *dər-ti*
PROH 2SM:IPFT-say=TO-3SM:O (NEG2) what do-2S:PT
'don't tell him what you did!' [Casablanca, Adila 1996:102]

ma *t-əhḍər* *š* *mɛa* *əd=ḍraṛi*
NEG 2SM:IPFT-speak NEG2 with DEF=children
'don't speak with the children!' [Casablanca, Adila 1996:103]

The use of a second element of the negation is typical for all Maghribian dialects, with the notable exception of Hassaniyya (Caubet 1996:85). The default element is, depending on the dialect, *š, ši* or *šay*, derived from the word *ši* ~ *šay* 'thing, some'. Other elements also appear in order to convey specific meanings, such as *ḥədd* 'anybody', *ɣiṛ* 'just', *walu* 'anything' (Caubet 1996:90) and other quantifiers (cf. the analysis of the situation in Tunisian Arabic in Chaâbane 1996:128ff.). Depending on the variety, the second element of the negation must or may be absent in cases with objects of

indetermined quantity and when the negation is followed by a relative clause introduced by an interrogative element, as well as in a number of other contexts (cf. Caubet 1996:86–88), e.g.

ma *ža* *ɣiṛ* *huwa*
NEG come:3SM:PT just he
'only he came' (cf. French 'il n'est venu que lui') [Casablanca, Adila 1996:107]

ma *ɛănd-i* *b=aš* *n-əktəb*
NEG with-1S with=what 1S:IPFT-write
'I don't have (anything) to write with' [Casablanca, Adila 1996:107]

ma *šri-t* *xŭbz,* *šri-t* *əl=gaṭu*
NEG buy:1S:PT bread buy:1S:PT DEF-pastry
'I did not buy bread, I bought pastry' [Morocco, Caubet 1996:87]

Berber languages have a similar structure as Maghribian Arabic: NEG1 VERB:NEG (NEG2) (cf. Mettouchi 2009).[6] Under the influence of the first negator, the verb takes a negative verb stem. The first element of the negation is in most languages a form derived from something reconstructible as **wăr* or **wər*. According to some analyses, this element is originally a verbal form meaning 'not to be' (A. Basset 1940, Prasse 1972–74:III:11–12, for different views, Brugnatelli 2011b, Galand 2010:280), which grammaticalized into a pre-verbal particle. Traces of this verbal nature would still be visible in some variants of the subject-relative form ("participle", e.g. Kossmann 2003a). This grammaticalization of **wăr* is found in all Berber languages, and no doubt pre-dates Arabic influence.

The element *wăr* / *wər* appears in many shapes in the different Berber languages: *ur, ud, ul, un*, etc. In many languages, the final consonant is lost before clitics, and in some languages before any consonant-initial following element.

In a few languages which make ample use of the second part of the negation, *wəl* is not obligatory. This is the case in some Senhadja dialects, where forms without preverbal negator are found next to forms with *ud* and *la*, e.g.

Senhadja *ud i-ffəɣ š* 'he has not gone out'
= la i-ffəɣ š
= i-ffəɣ š [Lafkioui 2007:234]

[6] This section is not meant to provide a full overview of all the intricacies of Berber negation and their deeper analysis. Recent publications elaborating on this include Lafkioui (1996); Lafkioui (2011:62ff.) for Tarifiyt and numerous works by Amina Mettouchi on Kabyle.

Similarly in Awdjila, *(w)ur ~ (w)ul* is no more obligatory in verbal negation, and the main marker of the negation has become *ka*, the second part, e.g.

Awdjila *ur* *n=ák=a* *ká?*
NEG say:1S=2SM:IO=RESULT NEG2
'didn't I say to you?' [Paradisi 1960a:170]

i-ɣəlli *ká*
3SM-want:PV NEG2
'he does not want' [Paradisi 1960a:170]

t-áni-t *ká*
2-enter:AO-2S NEG2
'do not enter!' [Paradisi 1960a:170]

In Sened (Tunisia), the preverbal negation seems to be absent alltogether, and only *š* appears (note that it can also function as a marker of yes/no interrogatives, see 9.2.4) (Provotelle 1911:73). The best studied case is Zuwara, where both negations with and without the negative element *w* are found. Mitchell (2009:100–103) provides some remarks about the distribution of these constructions, but his account is, in his own words, "somewhat inconclusive", cf.

Zuwara *ama* *xir* *a* *y-səɣ* *iziɣ* *w* *y-ssaɣ* *š ?*
Q better AD 3SM-buy:AO or NEG 3SM-buy:IPV NEG2
'is it better for him that he buys or that he doesn't buy?' [Mitchell 2009:100]

ama *xir* *a* *sɣ-əɣ* *iziɣ* *ssaɣ-əɣ* *š ?*
Q better AD buy:AO-1S or buy:IPV-1S NEG2
'is it better for him that I buy or that I don't buy?' [Mitchell 2009:100]

Interestingly, although the postverbal negative marker *š* is very frequent in Zuwara discourse (see Mitchell 2009:103–110), it can be omitted. It is even possible to omit both the preverbal and the postverbal negation marker; in such cases only the use of the negative Perfective and the preverbal position of the pronominal clitics mark negation. It is not clear from Mitchell's account whether the omission of both markers is possible in situations where no other marking of negation is available. Examples:

Zuwara *wṣíl-əɣ* *dəhánit* *almmi* *mmút-əɣ*
arrive:NPV-1S here until die:PV-1S
'I nearly died getting here (lit. I didn't get here until I died)' [Mitchell 2009:105]

ífla *flí-ɣ* *lakən* *tt=ufí-ɣ*
going go:PV-1S but SM:DO=find:NPV[7]-1S
'I certainly went but did not find him' [Mitchell 2009:104]

A number of Berber languages have special forms for the prohibitive. Most of these seem to be derived from *wər*. In Mzab, in addition to general *wəl, wal* is used in prohibitives, e.g.:

Mzab *wəl ɣiss-əɣ* 'I don't want'
wal qqar 'don't say!' [Delheure 1984:226]

In some Zenatic dialects of the eastern Middle Atlas, there exists an opposition between a generally empoyed form *ur* and a prohibitive form *il* (Ighezran, Marmoucha) or *ul* (Ayt Alaham), e.g.

Ighezran *ur tuṭa-n* 'they will not fall'
il tuṭṭa 'don't fall!' [Roux 1935:61]

Something similar is found in Northwestern Algeria, e.g.:

Metmata *ul i-ffiɣ əš* 'he has not gone out'
i tətt əš 'don't eat' [Destaing 1914:240]

In Central Tarifiyt the general negator *wa* (< *wər*) is distinguished from the prohibitive *wiř* (< **wil*), as in

Tarifiyt *wiř ggua, wiř ẓəkkwa* 'don't go, don't cross (the sea)' [Amazigh 2009:36]

Similarly, in Chaouia, the general negator *uḏ* is opposed to *la* (see the next section), which is, amongst others, the only accepted negator in prohibitives (Penchoen 1973a:56). Finally, outside the realm of our investigation, a dedicated prohibitive particle *ma* or *bo* is used in Ayer Tuareg (Kossmann 2011a:98).

In Arabic, the difference between general and prohibitive negators goes back to an old (but different) pattern, while it is quite erratic in Berber. Therefore, one cannot exclude Arabic as a factor in the development of special prohibitive particles in Berber. As the history of the Berber particles is obscure, this suggestion should be taken with caution.

In some eastern languages, the situation in negation is still more complicated, and does not need to be treated here in detail; cf. for Ghadames Lanfry (1968:340ff., Kossmann fc.-d).

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[7] Note that formally *ufi-ɣ* can be both Perfective and Negative Perfective. In this example only the preverbal position of *tt* marks it as negative.

10.2.1.1 *The Use of Arabic Pre-Verbal Negators in Berber*

In a number of varieties, Arabic pre-verbal negators have been introduced. The clearest case is Ghomara, which has introduced the Moroccan Arabic preverbal particle *ma*. Verbal clitics remain in post-verbal position, e.g.

tamәṭṭut	*illa*	*ma*	*h-әfk=ay*	*ši*	*flus*
EL:woman	REL	NEG	3SF-give:PV=1S:IO	NEG2	money

'the woman who didn't give me the money' [El Hannouche 2008:139]

The introduction of *ma* may have been facilitated by a period in which no preverbal negator was used, similar to the current situation in neighboring Senhadja. Thus, one can reconstruct the following history:

stage 0.	*wər* X	[reconstructible ancient Berber construction]
stage 1.	*wər* X *ši*	[general northern Moroccan Berber structure]
stage 2.	X *ši*	[situation found as a variant of stage 1 in Senhadja]
stage 3.	*ma* X *ši*	[introduction of the Arabic particle *ma*]

In this scenario, the introduction of *ma* was facilitated by the identity of the post-verbal negator *ši* with the post-verbal negator of Moroccan Arabic.

Ma was also introduced in Chaouia, where it constitutes an expressive alternative to *uḏ* (Penchoen 1973a:56ff.), e.g.

si	*lli-ɣ*	*ma*	*ẓṛi-ɣ*	*ṯaššiṛṯ*	*ṯ-ləqqəm*
since	be:PV-1S	NEG	see:PV-1S	EL:tree	3SF-be.grafted:PV

'since I was born, I haven't seen a grafted tree' [Penchoen 1973a:57]

In Djebel Nefusa, a similar form, *mo* (from Arabic *ma-hu*?)[8] sometimes occurs in interrogative negatives, e.g.

mo	*mli-ɣ=ák?*
Q:NEG	say:PV-1S=2SM:IO

'didn't I tell you?' [Beguinot ^{2}1942:305]

In a number of Berber varieties, a preverbal particle *la* is found. This resembles Classical Arabic *lā*, which is the default negator with the Imperfect (cf. Souag fc.). In Maghribian Arabic, *la* is restricted to prohibitive and injunctive contexts. In Siwa, *la* is the default negator in verbal sentences, e.g.

[8] An alternative explanation is a amalgam of *ma* (yes/no interrogative) + *wəl* (negation) with loss of the final *l*. However, interrogative *ma*, which is well-known elsewhere, is not used in Djebel Nefusa. More importantly, as the example shows, *mo* does not trigger clitic fronting, while *wəl* does.

la *ẓ̣ri-x* *ḥədd* *ssih*
NEG see:PV-1S anyone there
'I didn't see anyone there' [Souag 2009a]

la *ga* *n-usd=ak*
NEG FUT 1P-come:AO=2S:IO
'we won't come to you' [Souag 2009a]

la *xəbbaṛ=asən*
NEG tell:IPV=3P:IO
'don't tell them' [Souag 2010:438]

In Sokna, it occurs once in Sarnelli's texts instead of more common *ingi*:

lálla-s *la* *t-ənăžžăm* *a* *t-əssə́mbi* *sən*
mother-3S NEG 3SF-be.able:IPV AD 3SF-give.milk:AO two
'his mother cannot give milk to two' [Sarnelli 1924–5:34/IV:11]

In Chaouia, *la* regularly occurs in several different contexts. In the first place, it is the only accepted preverbal element in prohibitives (A. Basset 1952:37):

la *hən=dd=ttuɛa-ṯ*
NEG 2PM:DO=VENT=take.back:IPV-IPT:P
'do not take them back here' [Penchoen 1973a:56]

La also occurs in other contexts, alongside *uḏ* and *ma*. Like *ma*, it is mainly attested in sentences with a general (rather than a punctual) negation, which explicitly or implicitly denote such concepts as 'never' or 'nobody', cf. the following parallel examples:

ḥədd *u* *ɣən=i-səll*
somebody NEG 1P:IO=3SM-hear:NPV
'nobody heard us' (negation: *uḏ*) [Penchoen 1973a:51]

ḥədd *ma* *i-ssən* *ma=ɣəf*
somebody NEG 3SM-know:PV what=on
'nobody knows why' (negation *ma*) [Penchoen 1973a:56]

ḥədd *la* *i-xəggḇ=iṯ*
somebody NEG 3SM-send.away:PV=3SM:DO
'he did not send away anybody' (negation *la*) [Penchoen 1973a:56]

A similar general scope of the negation is found in the following examples:

la *ṯ-furrm=as* *akt* *tišṯ*
NEG 3SF-be.chipped.off:PV=3S:IO with one:F
'not even one (of his teeth) was broken away' [Penchoen 1973a:57]

amnay=aya,	*si*	*lli-ɣ*	*lah*	*zri-ɣ=ṯ*
EL:horseman=PROX	since	be:PV-1S	NEG	see:PV-1S=3SM:DO

'this horseman, as long as I exist, I have not seen him' [Lafkioui & Merolla 2002:22]

In part of the Senhadja de Srair dialects of Northern Morocco (Taghzut), an element *la* or *lah* is used (Lafkioui 2007:234–235), alongside constructions with the Berber negator *u(d)* or the absence of a preverbal negator. Lafkioui's examples show that *la(h)* is possible in simple affirmative sentences, e.g.

la	*(y)i-ffəɣ*	*š(ay)*
NEG	3SM-go.out:PV	NEG2

'he has not gone out' [Lafkioui 2007:234]

Another variant, *ula*, is attested in another Senhadja dialect, Ayt Seddat. Lafkioui (2007:234) suggests that this variant represents a fusion of Berber *u(d)* and *la*.

In the take-over of *la*, there is an important difference between Chaouia on the one hand and Siwa and (probably) Senhadja on the other. In Chaouia, *la* is mainly used in prohibitive contexts and in contexts with general negation. At this point it is not unlike the use of Maghribian Arabic *la*; the extension to general contexts (where it is not the only possible variant) could be due to a stronger element of expressivity.

In Siwa and Senhadja, *la* is generally used, and does not imply any special expressivity. Souag (2009a), speaking about the situation in Siwa, points to the general problem that *la* has a much wider range of functions than it has in Maghribian Arabic. In fact, Siwa *la* is much more similar in its distribution to Classical Arabic than it is to any modern Arabic dialect. Therefore he suggests that Siwan *la* is a borrowing from a now-extinct Arabic dialect. This fits in well with his otherwise convincing argument that Siwa Berber has undergone important influence from a first-stratum Arabic dialect of a kind that is no more used around Siwa. However, while the other features which he adduces are attested elsewhere in first-stratum Arabic, the use of *la* as a general negator is not. This casts some doubt on the analysis, the more because the take-over of *la* as a general negator is not restricted to Siwa, but also occurs—clearly independent of it—in Senhadja.

This opens the way to a gradual scenario, in which *la* was initially taken over as a strong, categorical negation, which constituted an expressive variant of the Berber negation. This would be the stage found nowadays in Chaouia. Later on, the borrowed negator lost its expressive character and

became a general negator, eventually ousting the Berber form in Siwa and Senhadja. It is not impossible that in Siwa the phonetic similarity between Berber *wəl*[9] and Arabic *la* facilitated the take-over.

10.2.1.2 *The Second Part of the Negation*

All Berber languages allow for negative expressions in which the negated verb is followed by a quantifier which falls under the scope of the negation. This is comparable to forms like English 'anybody' in sentences such as 'I did not see anybody'. This is illustrated for Tashelhiyt below:

ur	*i-skir*	*yat*
NEG	3SM-DO:NPV	one:F

'he hasn't done a thing' [Aspinion 1953:234]

nkki	*ur*	*ssin-ɣ*	*walu*
I	NEG	know:NPV-1S	nothing

'I don't know anything' [Aspinion 1953:234]

In many Berber languages, a second element of the negation has become common in contexts without quantification, or even where there is a direct object. This seems to be the case in all Berber varieties under consideration in this study with the exception of Tashelhiyt, Mzab, Ouargla, Ghadames, El-Fogaha and Siwa. Like in Maghribian Arabic, the second part of the negation is absent when the object is a quantifier under the scope of the negation, or in similar constructions. On more subtle grounds, it may also be absent in other contexts. The exact conditions for its presence or absence have only be studied in detail for a few languages (Lafkioui 1996 for Tarifiyt and Penchoen 1973a for Chaouia), and may well be different from variety to variety.

Like in Maghribian Arabic, the second part of the negation may have several forms. In the following, only those forms which have an unmarked meaning (similar to French *pas*) will be treated.

There exist quite a number of different elements. Among the elements of Berber origin, most are abbreviation of the proto-Berber forms **kʸăra ~ (h)ăra(t)* 'thing'. In part of Lesser Kabylia, *ani* is used as a second part of the negation, which is derived from *ani* 'where' (Rabhi 1992).

[9] It is probable that earlier Siwan had an *l*-final form of the pre-verbal negation, *ul* or *wəl*. Siwa still has *al* 'until', instead of *ar*. Most varieties which have *l*-final forms in *al* 'until' also have *l*-final forms in *wəl*. Negators with final *l* are found in other eastern Berber varieties, such as Djebel Nefusa and—in variation with *wur*—in Awdjila.

	< Berber	< Ar. *šay?*	ambiguous
Central Moroccan	*ša*		
Central Moroccan: Ayt Youssi [Galand 1988:222]	*ḵa*		
Ghomara		*ši*	
Senhadja		*šay, š*	
Tarifiyt (Boqqoya)		*ši, šiy, šay*	
Tarifiyt (Waryaghel)		*ši*	
Tarifiyt (Q)	*ša*		
Tarifiyt (Metalsa)		*šay*	*š*
Beni Iznasen		*šay*	*š*
Figuig		*šay*	
Sud oranais: Tiout[10]		*šay*	*iš*
Sud oranais: Bousemghoun			*iš*
Sud oranais: Igli	*ša*		
Western Algeria: Beni Snous			*š*
Western Algeria: Chenoua			*š*
Western Algeria: Beni Salah	*ḵ*		
Western Algeria: Metmata			*š*
Western Algeria: Beni Menacer			*š*
Western Algeria: Beni Messaoud	*ḵ*		
Greater Kabylia	*ara*		
Lesser Kabylia (general)	*ani*		
Lesser Kabylia: Aokas			*ula*
Lesser Kabylia: Ziana	*əḵ, ḵra*		
Chaouia	*ša*		*š*
Douiret / Tamezret / Guellala			*š*
Nefusa			*š*
Zuwara			*š*
Awdjila	*ka*[11]		

In addition to this, quite a number of languages have a negator which is derived from Arabic *šay?* 'thing', which dialectally becomes *šay, ši* or *š*. The following table lists the different second negators attested and their etymology. As in many Berber varieties single *š* could go back to Berber **kʸăra* (> *šra* > *ša* > *š*) but also to Arabic *šay?* (> *šay* > *ši* > *š*), the origin of these forms can often not be established.

[10] Tiout, Bousemghoun and Igli according to the manuscript notes by André Basset presented in Kossmann (2010b:94–95). In Tiout, *iš* is used after consonant-final verb forms, and *šay* after vowel-final verb forms.

[11] In older sources, also *kra* or *kíra* (Brugnatelli 1987:54).

Unambiguous Arabic loans (such *ši* and *šay*)[12] are restricted to Northern Moroccan and Sud oranais dialects. All other dialects either have unambiguously Berber forms, or have *(i)š*, which is ambiguous to its origin.

While in many cases the etymology of the second element of the negation is clear, the origin of the construction is more difficult to determine. The geographical distribution of the unmarked use of a second part of the negation in Berber—a large continuous block stretching from central Morocco to eastern Libya, but not attaining more southerly dialects (Tashelhiyt, Mzab, Tuareg, Zenaga) and Siwa—strongly suggests an innovation within Berber. As the same construction is found in Maghribian Arabic—where it has a wider geographical distribution—the Berber construction could very well constitute a calque on the dialectal Arabic construction. On the other hand, the double negation is an innovation in Maghribian Arabic too, and therefore the inverse direction of borrowing could also be defended (Brugnatelli 1987). Lucas (2009) is to date the most extensive discussion of the problem. He argues that the double negation in northern African Arabic was introduced from Coptic, and that it spread from Arabic into Berber. His work provides good evidence placing the introduction of the second part of the negation in Arabic between the 8th and the 11th century CE (Lucas 2009:56). His argumentation that Berber did not have this type of negation around this time is less compelling. It mainly comes from Medieval materials, which show negative forms without the second part of the negation (Lucas 2009:63). This shows that, in the 12th century, in some Berber varieties the second part of the negation was not that common. As there are still Berber varieties that do not have bipartite negation, this is hardly a convincing argument. The best argument for an Arabic origin is that in Arabic bipartite negation is found in a continuous region stretching from the Atlantic Ocean into Egypt and parts of Levantine Arabic. While all Berber varieties with bipartite negation are in immediate contact with Arabic, many Arabic varieties with bipartite negation are not in contact with Berber. Thus, Berber influence on Arabic could very well explain bipartite negation in Algerian Arabic, but cannot be adduced for the same construction in Egyptian Arabic.

[12] One anonymous reviewer suggests that forms such as *ši* and *šay* do not necessarily betray an Arabic origin. It is not clear to me how the final *i* and *ay* should be interpreted in a Berber fashion, however.

10.2.2 *Negation of Non-Verbal Predicates*

In addition to verbal predicates, Berber languages, as well as Arabic, have non-verbal predicates, i.e. predicates consisting of nouns, adjectives (cf. 8.1), prepositional phrases, or adverbs. Positive non-verbal predicates with a nominal head have a particle *d* preceding this head in many languages, e.g.

Tarifiyt	*nəšš*	*ḏ*	*āyaz*	*nn-əm*
	I	PRED	EL:man	of-2SF
	'I am your husband'			

In some languages, such as Tashelhiyt and Tuareg, *d* is absent (cf. Galand 2009). In addition, all Berber languages have at least one copular verb, *ili* 'to be'. In some languages, there is a second copular verb, *g* 'make, do, be' (Galand 1965). The difference is often one between qualitative and locative sentences, *g* being used with qualitatives and *ili* with locatives, but there is important dialectal variation at this point.

In Maghribian Arabic, non-verbal predicates are found in the same types of sentences as in Berber. There is no specific marker of nominal predication such as *d* in Berber. There is a copular verb, *kan*, which is used in non-present contexts—a present state is always expressed without a copular verb.

In most Berber languages, the negation of non-verbal predicates basically makes use of similar negation markers as found with verbal predicates, although syntax is not the same. In some languages the marker *wər* (etc.) can be combined with the predicative particle (sometimes even in languages that have lost the particle in most positive contexts), e.g. Figuig *u d šay*, Tashelhiyt *ur d*. In other languages, and in other constructions, the negation triggers a verbal sentence with a form of the verb *ili* 'to be'.

In turn, this verbal construction often loses its verbal characteristics—especially subject agreement—and functions as an invariable particle, e.g. Tarifiyt *uddži ša* (< **ulli ša* < *ur illi ša* 'he is not').

In Maghribian Arabic, negation of a non-verbal sentence is also achieved using similar negative elements as with verbal predicates, but, again, with different syntax. In Moroccan and Algerian Arabic varieties, predicates with a noun (whether the head, or as part of a prepositional phrase) are negated by a particle *ma=ši*, consisting of the first and the second element of the negation without anything in between. Predicates with pronouns allow for two structures: either the same particle *ma=ši* is put before the pronominal element, or the pronoun (or the complex

preposition+pronoun) is put between the two elements of the negation, e.g. Moroccan Arabic:

ṛ=ṛažəl	*ma=ši*	*fi-h*
DEF=man	NEG=NEG2	in-3SM

ṛ=ṛažəl	*ma*	*fi-h=š*
DEF=man	NEG	in-3SM=NEG2

'the man is not in it'

In pragmatically marked contexts, *ma=ši* is also possible with verbal predicates, while on the other hand the bracketing *ma-… =š* also occurs with adjectives in polemic situations (Caubet 1996).

In Algeria, Tunisia and in Libya, non-verbal predicates with nouns are most often negated using an element *ma*=PRONOUN=*š*, e.g. Tunisian *m=ū=š*.

In a number of Berber languages, the Arabic negative elements have been taken over *tel quel*, especially in contexts with nouns, and are used alongside with or instead of Berber-based expressions. This is the case of Beni Iznasen *maši* (Lafkioui 2007:236), Senhadja *maši* (Lafkioui 2007:236), Djebel Nefusa *muš* (Beguinot ²1942:65) and Siwa *qačči* ~ *ʔačči* (Souag 2009, 2010:436).

Beni Iznasen

nətš	*maši*	*ḏ*	*aməẓẓyan*
1S	NEG	PRED	EL:small

'I am not small' [Kossmann 2000a:172]

Nefusa

nəč	*muš*	*məmnún*
1S	NEG	happy

'I am not happy' [Beguinot ²1942:65]

A special case is presented by Kabyle *mačči*. The form does not have a clear basis in Berber, but is quite similar to Arabic *ma=ši*. However, the geminate *čč* cannot derive immediately from Arabic *š*. A possible etymology of this element is a blend of Arabic and Berber lexical material: *ma ḏ ši* > *mačči*. In Algerian Arabic dialects, the basic structure of non-verbal negation is *ma* + PRONOUN + *š(i)*—apparently in Kabyle the Arabic forms were taken over, but the Berber element *ḏ* was inserted in the position of the pronoun.

CHAPTER ELEVEN

SYNTAX: COMPLEX SENTENCES

In the study of complex sentences, one has evidently to focus on constructions where the original Arabic and Berber systems were clearly different. Therefore a number of subjects were chosen. In the first place, coordination strategies are contrasted. While Arabic has a western European-type of coordination, putting NP coordination and sentence coordination on a par, and distinguishing it from comitative functions, most Berber languages have a different system, in which NP coordination and comitatives are expressed in the same way, while sentence coordination is achieved without segmental marking. In a number of languages, Arabic-inspired innovations have changed the system, even though only rarely the Berber system is a full calque on Arabic. The introduction of lexical borrowings to mark additive, disjunctive and adversative coordination is studied and compared to the cross-linguistic generalizations made by Matras (1998).

The second part of the chapter deals with subordination. It is shown that the basic system of subordination in Berber is different from Arabic, and that Arabic influence on the system is extremely rare. On the other hand, lexical substitution of Berber conjunctions is shown to be quite common.

11.1 Coordination

Unmarked, or additive, conjunction ('and'), is different in Berber and in dialectal Maghribian Arabic. Dialectal Maghribian Arabic has inherited the ancient Arabic conjunction *w* ~ *u* (< **wa*), which is used both in NP coordination and in clausal coordination, e.g.

ɛănd-u	*wŭld*	*u*	*bənt*
with-3SM	boy	and	girl

'he has a son and a daughter' [Morocco; Caubet 1993: I/223]

hiya	*ṭalɛ-a*	*f=əl=bir*	*u*	*hiya*	*ka=t-šuf*
she	go.up:PTCA-SF	in=DEF=well	and	she	IPFV-3SF:IPFT-see
waḥəd	*əd=daṛ*				
one	DEF=house				

'(while) she was going up in the well she saw a house' [Morocco; Caubet 1993:I/223]

u *hiya* *ka=t-rfəd* *dik* *əl=beḍa*
and she IPFV=3SF:IPFT-take.up this:F DEF=egg
u *ka=t-ḍṛəb* *bi-ha* *dak* *ə . . .*
and IPFV=3SF:IPFT-beat with-3SF this:M
'and she takes up this egg and beats with it this ehhh' [Morocco; Caubet 1993:I/223]

Maghribian Arabic also has a comitative preposition, *mɛa* 'with', e.g.

ža *mɛa* *mrat-u*
come:3SM:PT with wife:CS-3SM
'he has come with his wife' [Morocco; Caubet 1993:I/209]

11.1.1 *NP Coordination*

Most Berber languages only allow for one type of unmarked conjunction, which is used for NP coordination. To this end, the comitative preposition *d* (followed by the Etat d'Annexion) is used, e.g.

Tashelhiyt	*atay d uɣrum*	'tea and bread'	[Galand 1988:219]
Mali Tuareg	*năkk d əmidi nin*	'me and my friend'	[Heath 2005:702]

The use of the comitative preposition *d* for NP coordination exists in the great majority of Berber languages (A. Basset 1952:40). NP *d* NP constructions may have singular as well as plural agreement. Kossmann (1997:339) takes this as a test for differentiating comitative from coordinating constructions, but it may be better to consider it a difference between formal (singular) and semantic (plural) agreement.

A few languages have a difference between the comitative and the NP coordination. In Ouargla and Mzab, the Arabic preposition *mɛa* has been introduced as a marker of the comitative, while *d* only functions as a coordinator, e.g. Ouargla:

bbi-n *illi-tsən* *mɛa-sən*
take:PV-3PM daughter-3PM with-3PM
'they took their daughter with them' [Delheure 1989a:158]

t-əssərs=as *i* *ukšiš=u* *taxriṭ* *n* *təmẓin*
3SF-put:PV=3S:IO to EA:boy=PROX bag of EA:barley
d *ṭṭəbsi* *n* *tḥəmzin* *d* *užḍu* *n* *tlustu*
and plate of EA:couscous and EA:jar of cream
'she presented this boy with a bag of barley, a plate of couscous, a jar of cream . . .' [Delheure 1989a:160]

More subtly, Beni Iznasen, as well as some Tarifiyt varieties, have a differentiation between *akəḏ* 'comitative' and *ḏ* 'coordinator' (Kossmann

2000a:103, 104). Elsewhere in the region, *akəd* (also *agəd, aɣəd*) functions as a more emphatic variant of *d* in both functions, cf. Figuig:

Comitative use
t-əlha *day* *d* *uwəzwəz* *nn-əs*
3SF-be.occupied:PV only with EA:pain of-3SM
'she was only occupied with her pain' [Kossmann 2000b: 119]

i-mmlaqa *agəd* *u=nn* *n* *tḥərḍant*
3SM-meet:PV with EA.DEM=DIST of EA:slave.girl
'he met the slave girl' [Kossmann n.p.]

NP-Coordination
tuɣ *t-isi* *agid-əs* *lkurdət* *aɣəd* *uxədmi*
PAST 3SF-take:PV with-3S rope with EA:knife
'she had taken with her a rope as well as a knife' [Kossmann n.p.]

In Beni Iznasen, the two forms are functionally different, and can no more be used in the same contexts, e.g.

aɛəlɛul *ḏ* *wəqzin* *qqim-ən* *tlaɣa-n*
EL:rooster and EA:dog stay:PV-3PM cry:IPV-3PM
'the rooster and the dog kept on shouting' [Bezzazi & Kossmann 1997:14]

ləɣzal=ənni *i-ṭarəḥ* *akəḏ* *wəlma-s*
gazelle=ANP 3SM-stay:PV with sister-3S
'the gazelle stayed with his sister' [Bezzazi & Kossmann 1997:32]

The specialization of *d* as a coordinator clearly represents an innovation. It is reasonable to posit Arabic influence here. In the case of Ouargla and Mzab, this analysis is strengthened by the fact that the innovated comitative preposition is a loan from Arabic. The Beni Iznasen case is less obviously calqued on Arabic. It can also be understood as a specialization of an emphatic form to comitative function, while the semantically less salient coordinative function is expressed by the non-emphatic form.

11.1.2 *Clause Coordination*

In most Berber varieties, there is no special marker for the coordination of parallel and consecutive clauses like Arabic *w* or English *and*. Instead, parataxis is the rule, and coherence is expressed by intonation and the use of special sequential verb aspects (Galand 2002a [1987]:259–272). This is stated emphatically in the literature: "le chleuh n'a pas de conjonction de coordination « et » (. . .). Le moyen le plus simple d'établir un lien entre des propositions est de les énoncer à la suite, en les séparant par des pauses devant lesquelles l'intonation ne tombe pas" (Galand 1988:224); "There is

no clausal 'and' conjunction" (Heath 2005:706), "(*d*) ne relie jamais deux propositions" (Laoust 1918:296); "l'absence totale de la marque de conjonction" (Sadiqi 1997:207), etc.

There is no reason to doubt that the absence of a clausal conjunction marker is a very old phenomenon in Berber. According to Galand (2002a [1996]:18), the restriction of *d* to NP coordination, and the absence of a clause coordinator would have been present already in Libyco-Berber. It is still in vigor in many Berber varieties, including Tuareg, Tashelhiyt and Kabyle. In a number of varieties, some means of additive clausal conjunction are found, however. These can be classified in three types:

1. The conjunction *w* ~ *u* has been borrowed from Arabic.
2. Clause coordination is achieved by means of the element *d*, irrespective of the structure of the second clause.
3. Clause coordination is achieved by means of the preposition *d*, but only so when the first element of the second clause is an NP

11.1.2.1 *Borrowing of the Arabic Conjunction* w ~ u

Borrowing of the Arabic conjunction is attested in Awdjila and in Sokna, as well as in Tunisian dialects and Ghomara, cf.

Awdjila
marra gan amádən aməqqərán u qəríb a y-əmmút
time there man big and near AD 3SM-die:FT
w iwín n išf i-llúm amə̀z̧z̧í nn-əs
and one:M of day 3SM-gather:PV offspring of-3S
w ifk=ísin əlḥázmət n təɣariwín w i-n=isín . . .
and give:PV=3PM:IO faggot of sticks and 3SM-say:PV=3PM:IO
'once upon a time there was an old man and he was on the verge of dying and one day he gathered his children and gave them a faggot of sticks and said to them . . .' [Paradisi 1960b:79/I-1]

Sokna
y-əssəḥəḍər=t əṣṣ̣ə́lṭan wu y-əstáɛdr=as
3SM-make.appear:PV=3SM:DO Sultan and 3SM-apologize:PV=3S:IO
wu y-ĕnn=âs
and 3SM-say:PV=3S:IO
'the Sultan made him come and he apologized and he said to him' [Sarnelli 1924–25:31/I-8]

In these languages, *w* 'clause coordinator' is opposed to *(i)d* 'NP coordinator / comitative', e.g.

Awdjila
a fk-á=k aẓíṭ id təlába
AD give:FT-1S=2SM:IO donkey with gown
'I shall give you a donkey and a gown' [Paradisi 1960b:81/V:14]

Sokna
i-ṣár sə ɣúr-sən žəmíɛa əssudán də ləḥbáš
3SM-come:PV from at-3PM all Sudanese with Abyssinians
'and from them stem all the Sudanese and Abyssinians' [Sarnelli 1924–25:35/V-15]

The Arabic conjunction also occurs in the Tunisian dialects of Tamezret and Sened, e.g.

Tamezret
əffəɣ-ən u wəl raḥ-án š
go.out:PV-3PM and NEG get.lost:NPV-3PM NEG2
'they have gone out and have not gone lost' [http://atmazret.com/]

Sened
i-ɣərṣ=as u i-ṭəyyəb=ət[1]
3SM-slaughter:PV=3S:IO and 3SM-cook:PV=3SF:DO
'he slaughtered her and cooked her' [Provotelle 1911:91]

One notes however its absence in the Tamezret texts collected by Hans Stumme in the late 19th century (Stumme 1900). The conjunction *u* is also found in Lesser Kabylia, where it is a less common alternative to juxtaposition (Rabhi 1994:177, Rabdi 2004:121–2), e.g.

i-kər u y-əmməḍhər
3SM-steal:PV and 3SM-be.discovered:PV
'he stole and was discovered' [Aokas; Rabhi 1994:177]

Finally, *u* is frequently used in Ghomara for the expression of clausal coordination. The Berber comitative preposition *i(d)* is used for the coordination of noun phrases and prepositional phrases (Mourigh fc.):

n-ɛəllm=ahən u n-šəḵšm=ahən
1P-teach:PV=3P:DO and 1P-make.enter:PV=3P:DO
'we taught them and got them in' [Mourigh fc.]

ləgrana i ukfer məlḵən
toad with EA:turtle marry:PV-3P
'The toad and the turtle married' [Mourigh fc.]

tsawal-ən s əlɛarbiyya i s šššəlḥa
speak:IPV by Arabic with by Berber
'They speak Arabic and Berber' [Mourigh fc.]

[1] In the original text: <ir'erç-es ou it'ayyeb-et>.

11.1.2.2 *Clause Coordination by Means of* d

Clause coordination by means of the comitative preposition is found in a number of languages. In El-Fogaha,[2] in Zuwara (Galand 2005:190) and in Djebel Nefusa, this is very common, and it is easy to find examples in texts, e.g.

El-Fogaha

əsk=í=ttət	*d*	*a*	*t-úɣ-ət*	*iməllálən*
make:AO:IPT:S=1S:IO=3SF:DO	and	AD	2-get:FT-2S	money

'make it and you will get money' [Paradisi 1963:93/I-5]

y-əslá	*si-s*	*əṣṣəlṭán*	*d*	*y-əlləf=tət*
3SM-hear:PV	from-3S	Sultan	and	3SM-divorce:PV=3SF:DO
d	*y-uɣá*	*íggət*	*t-ayə́ṭ*	
and	3SM-get	one:F	FS-other	

'the Sultan heard about it and divorced her and took another' [Paradisi 1963:94/III-2]

Zuwara

n-əɣs=ak	*a*	*t-qqim-əd*	*dəhanit*		
1P-want:PV=2SM:IO	AD	2-stay:AO-2S	here		
d	*a*	*t-ərr-əd*	*məmmi-k*	*l*	*tməzgida*
and	AD	2-bring.back:AO-2S	son-2SM	to	school

'we want that you to stay here and bring your son back to school' [Galand 2005:190, citing Mitchell]

y-əffəɣ	*aḍbib*	*d*	*y-əfla*
3SM-go.out:PV	doctor	and	3SM-go:PV

'the doctor went out and went' [Galand 2005:190, citing Mitchell]

Djebel Nefusa

ssənz-ə́ɣ=tənt	*dəd*	*kəsb-ə́ɣ*	*sí-sənt*
sell:PV-1S=3PF:DO	and	gain:PV-1S	from-3PF

'I sold them and gained from them' [Beguinot [2]1942:174]

žəččá	*úgur*	*si-s*	*in*	*əssúq*	*dəd*
tomorrow	go:AO:IPT:S	with-3S	to	market	and
ṣərrə́f=tət					
change.money:AO:IPT:S=3SF:DO					
d	*áwi=d*	*si-s*	*in*	*ará*	*nn-əm*
and	bring=VENT	with-3S	to	children	of-2SF

'tomorrow, go to the market and change it (for money) and bring by that to your children (something to eat)' [Beguinot [2]1942:176]

[2] There is one case of *u* 'and' in the small El-Fogaha corpus: *taqqîm zämân u teffǫ́ġ már-rat tayâḍ* 'she stayed some time and went out an other time' [Paradisi 1963:95/V-7]

ləḥkáyət n təbušílt dəd bušíl, dəd níyət ism ánn-əs Bíha
story of girl and boy and she name of-3S PN
'the story of a girl and a girl, and she, her name was Biha' [Beguinot ²1942:186]

di-s atərrás ism ánn-əs Šišíw d ayr-ás tməṭṭút ism ánn-əs Taffá
in-3S man name of-3S PN and with-3S woman name of-3S PN
'there was a man whose name was Shishiu, and he had a wife whose name was Taffa' [Beguinot ²1942:197]

In Siwa, clause coordination with *d* is a marked option, often implying strong contrast (Souag 2010:468). Outside these eastern dialects, *d* sometimes occurs as a coordinator, but only in a very marginal way. It is possible to have long stretches of text without additive coordinator at all. Some examples:

Ouargla
biha nətta day drus d u t-əttəṭṭəf akkat-əs
because he only few and NEG 3SF-take:NIPV EL:place-3S
'because it is only little and it does not take its place (i.e. it does not occur regularly)' [Delheure 1988:188]

Figuig
sat t-əlqi-d aydi (…). akidd sat t-əlqi-d idžən n urgaz (…)
FUT 2-meet:AO-2S EL:dog (…) and FUT 2-meet:AO-2S one:M of EA:man
'you will meet a dog (…) and you will meet a man (…)' [Kossmann 1997:340]

Zayan
i-qim=as suḍan uř ɣif-sən i-ḥḵim
3S-stay:PV=3S:IO Sudan NEG on-3PM 3SM-reign:NPV
ḍ uř i-ḥḵim xəf əlʶḥabaš
and NEG 3S-reign:NPV on Abyssinia
'remained for him only Sudan over which he did not reign and he did not reign over Abyssinia' [Loubignac 1924:254]

No doubt we are dealing in these cases with an extension of the comitative preposition. The prepositional nature of the element *d* is shown when the second clause starts with a noun, as in such cases the Etat d'Annexion appears.

11.1.2.3 d *as a Clause Coordinator Only before NPs*

A more restricted use of *d* is found in some other languages. Galand (2005:190) remarks that in Berber (but maybe his remark is best interpreted as describing Tashelhiyt) "la préposition ne peut relier deux propositions, bien qu'à l'occasion (c'est relativement peu courant) on puisse la trouver devant un nominal appartenant à la seconde proposition", e.g.

ar ssflad-ɣ i zzhrat d taqqurt, d ugḍṛuṛ i-kka ignna
ipfv hear:ipv-1s to growling and noise, with ea.dust 3sg-pass:pv sky
'I heared growling and noise, and dust went to the sky' [Galand 2002a [1972]:365]

He adds that similar constructions are possible before morphemes with a nominal background, such as the particle *ad* 'non-real' (Galand 2005:190). The same is described for southwestern Central Moroccan Berber by Ennaji (1985:261), who also points to the (marginal) possibility of clause linking by *ḍ* provided the second clause starts with a noun. He notes that this seems to be easiest in clauses with elision of the verb in the second clause, e.g.

ar i-tsxir Karim ttinis d Samira lvuli
IPFV 3SM-play:IPV PN tennis with PN volleyball
'Karim plays tennis and Samira volleyball' [Demnat region, Sadiqi 1997:209 following Ennaji 1985:259]

In most dialects, this is marginal, and very infrequent in texts. In the northern borderland of Algeria and Morocco, it seems to have gained importance. In Beni Snous, *ḍ* is regularly attested as a coordinator. The second clause normally starts with a noun, which has the Etat d'Annexion, but a few examples with verb phrases are found too, e.g.

i-susəm aɣyul i-qqim i-ggur;
3SM-be.silent:PV EL(!):donkey 3SM-stay:PV 3SM-go:IPV
ḍ wuššən, si i-səmda g utšu i-nna=yas . . .
and EA:jackal when 3SM-finish:PV in food 3SM-say:PV=3S:IO
'the donkey shut up and walked on; and the jackal, when he had finished the food, said . . .' [Destaing 1907:253]

nəčnin aḍ n-əṛṛuḥ ɣər (t)təmẓin ḍ a n-əmsama
we AD 1P-go:AO to EA:barley and AD 1P-be.together:AO
ḍ a n-asəḍ n-tazzəl
and AD 1P-come:AO 1P-run:IPV
'we shall go to the barley and go together and come running' [Destaing 1907:246]

The construction is regularly found between parallel clauses, as in the following example:

uššən y-əkkal i-sərwat,
EL:jackal 3SM-spend.day:IPV 3SM-thresh:IPV
ḍ yənsi y-əkkal y-əṭṭəṣ
and EA.hedgehog 3SM-spend.day:IPV 3SM-sleep:PV
'jackal spent the day threshing, and hedgehog spent the day sleeping' [Destaing 1907:241]

While not marginal in the language, the use of *ḏ* as a clause-coordinator is far from the default option. It is easy to find long stretches of Beni Snous text in which only paratactic coordination is found.

This is different from neighboring Beni Iznasen, in which the coordinative construction is a fully grammaticalized, frequent option.[3] Two clauses of which the second clause starts with a noun may be linked by means of the NP-linking preposition *ḏ*. The noun following *ḏ* has the Etat d'Annexion. When this construction appears in a sequence of events, the aspect of the second clause is NON-REAL + Aorist;[4] otherwise, the expected aspectual form is used. Examples:

nəttaṯ *ɛaḏ* *ur* *ṯ-kəmməl* *awal*
she still NEG 3SF-finish:NPV EL:word
ḏ *wuššən* *a* *ss-ənni* *y-əkk*
and EA:jackal AD over.there=ANP 3SM-pass:AO
'she had hardly finished her words and a jackal passed' [Bezzazi & Kossmann 1997:12]

qqim-ən *twəqqr-ən=t* *ḏ* *bbʷa-s* *a* *ṯ=y-əgg*
stay:PV-3PM leave.in.peace:IPV-3PM=3SM:DO and father-3S AD 3SM:DO=make:AO
nətta *ḏ* *ləmxiyəṛ* *ḏi* *waṛṛaw* *nn-əs*
he PRED favorite in EA:children of-3S
'they left him in peace and his father made him his favorite among his children' [Bezzazi & Kossmann 1997:98]

nəttaṯ *a* *t-əssiwəl* *ḏ* *wawal* *nn-əs* *y-əḏwəl* *ḏ* *llwiz*
she AD 3SF-speak:AO and EA:word of-3S 3SM-become:PV PRED gold.coin
'she would speak and her words became gold pieces' [Bezzazi & Kossmann 1997:68]

Of course, Berber being basically a Verb-initial language, the presence of a preverbal noun is not without meaning. In fact, the *ḏ* + Clause construction is mainly used in cases where the subject of the second clause is different from the subject of the first clause. The informational content of this preverbal element may be old or new. Thus, one may argue that *ḏ* is used as an explicit marker of coherence in constructions where there is syntactic discontinuity. In cases with subject continuity, coherence is pragmatically inferred (in the sense of a communicative implicature) and no explicit marking of coherence is needed.

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[3] The usage described below is also found in the texts in Renisio (1932). It is not attested in texts I recorded from the neighboring dialect to the northwest, Kebdana. Cf. Kossmann 2000a:104.

[4] One wonders whether this is a remnant of the sequential use of the Aorist (without non-real particle), which has been lost in Beni Iznasen.

11.1.3 *Conjunction of Subordinate Clauses*

In the conjunction of two subordinate clauses, some languages tend to be more explicit than in the conjunction of two main clauses. Thus Penchoen (1973a:191) notes the exceptional use of *d* in Chaouia in this context, while the coordination of two main clauses is not allowed (cf. also Kossmann 2000:192 for Beni Iznasen), e.g.

xəddəm-ən	*di*	*tmura*	*ɣirat*	*t-ili*	*ləxdəmt*
work:IPV-3PM	in	EA:countries	while	3SF-be:AO	work
d	*ɣira*	*ud*	*i-ḥli*	*š*	*usugg^{w}as*
and	while	NEG	3SM-be.good:NPV	NEG2	EA:year

'they work in other places when there is work and when the year is not good' [Penchoen 1973a:191]

The conjunction is not always *d*. In Ayt Ndhir, *y* is used in order to coordinate two clauses which are subordinated by the same element, e.g.

adday	*fəḍḍa-nṯ*	*y*	*ra-nṯ*	*aḏ*	*ɛayḏ-ənṯ*
when	be.ready:PV-3PF	and	want:PV-3PF	AD	go.back:AO-3PF

'when they are ready and want to go back' [Bisson 1940:182]

In Figuig, the conjunction is *anna* in this context, a form which has no other uses, e.g.

mikk	*qa*	*i-ttwaṭṭəf*	*kulši*	*anna*	*i-qqim=dd*	*day*	*idžən*
when	all	3SM-be.taken:PV	all	and	3SM-stay:PV=VENT	only	one:M

'when all have been taken and only one remains . . .' [Kossmann 1997:346]

There is no reason to posit Arabic influence in these cases.

11.1.4 *Conclusions on Coordination*

The syntax of coordination is one of the structures where Berber and Arabic present essential differences. While Berber has a comitative preposition that also functions as an NP coordinator, Arabic has a dedicated coordinative particle, which is different from the comitative preposition. In fact, at this point the Arabic and the Berber grammar of text coherence are entirely different. Instead of the overt marking by means of a particle found in Arabic, many Berber varieties use specialized verb forms (the sequential Aorist) for this sake. Still, in a number of Berber languages, mainly in Libya, coordinative constructions are common. The different systems are summarized below:

	comitative	NP coordination	Clause coordination
Mor. Arabic	*mɛa*	*w*	*w*
Tashelhiyt	*d*	*d*	no linker
Awdjila	*d*	*d*	*w*
Djebel Nefusa	*d, dəd*	*d, dəd*	*d, dəd*
Beni Iznasen	*akəḏ*	*ḏ*	*ḏ* (only before NP)

One remarks that, while there are Berber varieties that allow for frequent explicit coordination of clauses, none of them is an exact copy of the Maghribian Arabic system. The Awdjila/Sokna type has introduced a difference between NP and Clause coordination, which is quite unlike the Arabic system. In Djebel Nefusa, El-Fogaha and Zuwara, comitative and coordinator are the same. Finally, while Beni Iznasen has the same distinction between comitative and coordinator as Arabic, the clause coordinator is restricted to NP-initial clauses.

The most common Berber pattern—the same element for the comitative and NP coordination, and no neutral additive clause coordinator—is clearly the old pattern. Arabic influence is obvious in the Awdjila/Sokna type, where the Arabic form has been introduced together with the Arabic construction. The role of Arabic is less obvious in the Djebel Nefusa/El-Fogaha/Zuwara system and in Beni Iznasen. Galand (2005:190) considers the Zuwara system an internal development in Berber. Based on the marginal use of *d* as a coordinator with NP-initial second clauses, this structure would have spread to include eventually coordination of any type of clause. While this is not an unreasonable reconstruction in itself, influence of Arabic—which is very prominent in other areas of the syntax of these varieties too—must have been at least a strengthening factor. In the region, there are no varieties that would constitute the intermediate stage in Galand's scenario, with a bipartite clause coordination system, in which one has robust use of *d* in coordination with an NP-initial clause and no coordinator when the clause is verb-initial. A simple calque from Arabic seems to be a much simpler solution.

The case of Beni Iznasen and Beni Snous is different. In these varieties, the NP–initial constraint of Galand seems to hold to a large extent. Thus, while the scope of its coordinative function has widened, *ḏ* remains faithful to its prepositional nature. While inspiration by Arabic structures may have been a factor, the new structure clearly continues earlier Berber structures. Moreover, due to its restriction to coordinating preverbal NP's, there is an essential difference with Arabic in the effect on text coherence.

While Arabic has a general marker of text coherence, in Beni Iznasen it is only used in cases where coherence is syntactically disrupted because of a change in grammatical subject.

11.1.5 *Disjunction*

Almost all Berber language express disjunction ('or') mainly by a marker of Berber origin. With few exceptions (e.g. Zuwara *iziɣ*), this marker has the basic shape *nəɣ ~ (i)niɣ*, which may undergo local reformations and phonetic changes. It is clearly related to Tuareg *meɣ*, although the origin of initial *m* in Tuareg is not clear. This marker is used in all kinds of disjunction, such as NP disjunction, PP disjunction and clause disjunction (for an exhaustive overview of the syntactic possibilities in Chaouia, see Penchoen 1973a:175ff.). Central Moroccan varieties allow for other forms, which occur more or less parallel to *nəɣ* (or a cognate form).[5] Thus in Ayt Hassan (Demnat region), *mad* is used instead of *nɣd* in questions and other circumstances of doubt (Sadiqi 1997:211), e.g.

Faṭima	*nɣd*	*Ḥmad*	*Faṭima*	*mad*	*Ḥmad*
PN	or	PN	PN	or	PN
'Fatima or Hmad.'			'Fatima or Hmad?' [Sadiqi 1997:211]		

A similar distribution is found in other Central Moroccan varieties, such as Ayt Ndhir, Zemmour, Ayt Seghrushen *mad*, *mad* (Penchoen 1973b:84, Laoust ^{3}1939:230), Ayt Bouzid *mid* (Ennaji 1985:282) and probably Zayan *ma* (Loubignac 1924:279). The historical origin of the interrogative disjunctive particle is probably the yes/no interrogative *ma* followed (or not) by the predicative marker *d*. In the present languages, however, *mad* and *ma d* are syntactically kept apart (Bentolila 1981:190–1).

With the exception of Ghomara (see below), Arabic influence on clause disjunction is very restricted. In Zayan the Arabic loan *ulʸa* is one more alternative, apparently mainly in questions and dubitatives, e.g.

ur	*əssin-əɣ*	*is*	*i-dda*	*ulʸa*	*uř*	*i-ddi*
NEG	know:NPV-1S	whether	3SM-go:PV	or	NEG	3SM-go:NPV

'I don't know whether he has gone or not gone' [Loubignac 1924:280]

[5] Note the difference with neighboring Tashelhiyt, where *nɣd* is also used in interrogatives, e.g. *izd lḥram=lli illan ɣ uzddar nɣd lḥlal=lli illan ɣ uflla* '(what do you want,) the forbidden (part) that is below or the allowed (part) that is on top?' [Stroomer 2003:26].

In Ayt Seghrushen, the Arabic loan *wala* 'rather than' is used meaning 'or' in interrogative and negative clauses (Bentolila 1981:372).[6] The contexts described by Bentolila have some overlap with *mad*, used in interrogatives (Bentolila 1981:190–2). From Bentolila's examples, it seems that *mad* is mainly found in yes/no interrogatives, while other kinds of interrogation prefer *wala*, e.g.

ma-s ɣa t-isin-d lɛql nn-s wala t-isin wi nn-š?
what-with AD 2-know:AO-2S mind of-3S rather 3SF-know:AO DEM:SM of-2SM
'how will you know her mind, or will she know your mind?' [Bentolila 1981:372]

ulli t-tqdda at t-iẓiṛ lahl nn-s, wala t-iẓiṛ=t ntta
NEG 3SF-can:IPV AD 3SF-see:AO family of-3S rather 3SF-see:AO=3SM:DO he
'she cannot see his family and does not see him either' [Bentolila 1981:372]

ma nna-n=aš ša mad ur aš=t=nni-n?
Q say:PV-3PM=2SM:IO thing or NEG 2SM:IO=3SM:DO=say:NPV-3PM
'did they tell you something or didn't they tell it to you?' [Bentolila 1981:191]

The same situation is found in Figuig, where *wala* (otherwise 'also, even, nor') is used in negative and dubitative contexts,[7] e.g.

ul ssin-əx i-mmut wala i-ddər
NEG know:NPV 3SM-die:PV or 3SM-live:PV
'I don't know whether he has died or is still alive' (Kossmann 1997:345)

Similarly, in Chaouia-Ait Frah, Arabic-derived *la* is used instead of *nəɣ* in sentences depending on the particle *innəss* 'who knows, nobody knows', e.g.

innəss ma ɣar-š ša di ləɛmər nn-əs n ḥdaɛš la tnaɛš
who.knows if with-3S thing in age of-3S of eleven or twelve
'it is unknown whether he was eleven or twelve years old' [Penchoen 1973a:186]

Ghomara Berber stands apart, as all disjunctive conjunctions come from Arabic: *(a)wəlla, aw* (Mourigh fc.), e.g.

i-zzənz=at s tkemmišt n əlḥebb wəlla s əlxuḇza
3SM-sell:PV=3SM:DO with EA:handful of wheat or with bread
'He sold it for a handful of wheat or for one bread' [Mourigh fc.]

ḍḍḇaɛ š a ṯ=i-šš awella aḡḏi
hyena FUT AD 3SM:DO=3SM-eat:AO or EL:jackal
'the hyena will eat me or the jackal' [Mourigh fc.]

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[6] In addition, there is one example of *ula* in this use in Bentolila's corpus (Bentolila 1981:224).

[7] This point was missed in Kossmann (1997:344–5).

11.1.6 *Adversative Conjunctions*

Adversative conjunctions in Maghribian Arabic and Berber are relatively rare in texts; thus in the entire Eastern Moroccan Berber and Arabic corpus of traditional narratives in Bezzazi (1993), only five instances of adversative conjunctions occur (4× *lakin* in Arabic texts, once *ḥaša* in a Berber text). Still, both Arabic and Berber have conjunctions which are mainly or exclusively used as adversatives. The most common adversative conjunctions in Maghribian Arabic are ultimately related to Classical Arabic *lākin(na)* 'but'. This conjunction appears in a number of variants, many of which cooccur in one and the same dialect. Thus William Marçais (1902:194) cites for Tlemcen Arabic *lakənni, laynni, ləmkən, ləmkənni*, and *ləmkaynni*. According to this author, *laynni* "s'explique peut-être par une chute du *k*", while the other forms would be blended with other frequent (but not adversative) particles. The final syllable of *lakənni, laynni* goes back to the 1S pronominal suffix; in some dialects, the conjunction is still conjugated (cf. Ph. Marçais 1977:229).

Most Berber dialects have taken over Arabic forms. More often than not, the Berber variants of *lakənni* and *laynni* start with a syllable *wa*, which reflects the Arabic conjunction *w* 'and'. A few varieties have different adversative markers, most of which seem to derive from (or be instances of) topic markers (e.g. Mzab *amm^{w}a*, Ayt Atta *atta, ntta*, Willms 1972:232). Only one among these—without a clear etymology—has more than a narrow regional distribution: *maša* ~ *maḵa*[8] 'but'. It is attested in the eastern part of Central Moroccan Berber: Ayt Sadden (A. Basset 1963); Ayt Ndhir (Laoust ^{3}1939); Ayt Youssi of Enjil (Galand 2011:89); Ayt Izdeg (Willms 1972:232); Ayt Ayache, (Abdel-Massih 1971:142); Ayt Seghrushen (Abdel-Massih 1971:144); and all over Tarifiyt (Lafkioui 2007:227). Tashelhiyt has *mišš* (Aspinion 1953:193). It is similar to Niger Tuareg *măšan*, *mišan* (also *băšan*) (Prasse, Ghabdouane & Mohamed 2003:562), Mali Tuareg *măššan*, *mušan* (Heath 2006:444), Ahaggar *bəššan*, but a link is difficult to establish, as Tuareg *š(š)* does normally not correspond to *š* in northern Berber, and even less so to *k*. Prasse, Ghabdouane & Mohamed (2003:562) derive the Tuareg form from (Classical) Arabic *bi-šaʔni-hi* / *min šaʔni-hi ʔan* 'but', which, if accepted, would render the comparison with

[8] Taïfi (1991:414) gives *maka*; In most Central Moroccan varieties that have the etymon, the actual form is *maša*. In Ayt Ndhir this can be the regular outcome of **k*, but Ayt Sadden, Ayt Izdeg and Ayt Ayache also have forms with *š*, even though the regular outcome of **k* is *ḵ* in these dialects. The form *maḵa* occurs in Ayt Youssi.

northern Berber invalid (cf. Kossmann 1999:224). There is no reason to assume a similar background for the Moroccan forms, as *min šaʔni-hi ʔan* has not lived on in Maghribian Arabic and as the form *maša* is not very similar to it. One should rater think of a blend of the question marker *ma* with the element *ša* ~ *ḵa* '(some)thing', although the exact path of semantic development remains unclear.

Other adversative conjunctions of Berber origin are not very common. Instances are *imil* (Zemmour, Laoust ³1939:281, Taïfi 1991:416), and *iziɣ* (Zayan, Loubignac 1924:281). The form *imil* is used in neighboring dialects (Ntifa) for 'then' (Laoust 1918:295). Kabyle *wan(n)ag* (Dallet 1982:867, Basset & Picard 1948:307, Chaker 1984:181 etc.) also looks like a Berber form. One remarks however the variant *wamma(g)*, and the form may ultimately go back to Arabic *amma* 'concerning'.

Most Berber languages exclusively use adversative conjunctions of Arabic origin.

11.1.7 *General Assessment on Types of Coordination*

A number of sources have established universal borrowing hierarchies of conjunctions. Most important amongthese are Matras (1998) and Matras (2009:194), which establish a cross-linguistic hierarchy: 'but' > 'or' > 'and', i.e., adversative conjunctions are more easily borrowed than disjunctive conjunctions, which are more easily borrowed than coordinative conjunctions. The Berber materials only partly corroborate this hierarchy. The adversative conjunction 'but' is widely borrowed in Berber, and fits perfectly into the Matras hierarchy. However, in its basic usage, the disjunctive conjunction 'or' is hardly ever borrowed in Berber. This contrasts with the coordinative conjunction 'and', which is borrowed in a number of languages when used for clause coordination. It is never borrowed for NP coordination. All in all, one remarks that the take-over of the Arabic form of the coordinative conjunction is restricted to some eastern Berber varieties and Ghomara. On the other hand the introduction of the syntactic pattern of clause coordination by means of a conjunction is wide-spread, and constitutes one of the most tangible results of contact-induced change in Berber syntax.

11.2 Subordinating Conjunctions

In their basic typological structure, Arabic and Berber have similar constructions for clausal subordination. In both language families, clausal

subordination is either attained by juxtaposition (the so-called Arabic *ḥāl* sentences), or by means of subordinating particles. It depends on the language, and no doubt also on received style, genre, and personal preferences, whether subordinated clauses are frequent in texts, or whether other types of text organization are dominant.

In the framework of Arabic influence on Berber, conjunctions are highly interesting. On the one hand, there is large-scale lexical influence from Arabic in the system of conjunctions. On the other hand, it seems that syntactic influence of Arabic is rather restricted in the system of subordination. In order to show this, Berber and Maghribian Arabic systems will be compared on two levels. In the first part, we shall focus on one subfield of subordination, the organization of temporal and hypothetical subordination. There exist only few adequate descriptions of these systems in Berber, so at points a more detailed analysis based on text evidence will be given. This part is mainly meant to show the lack of impact of Arabic. In the second part, the lexical impact of Arabic on the Berber system of subordination will be studied, an impact which in some varieties concerns the great majority of subordinators.

11.2.1 *The System of Temporal and Conditional Subordination*

In this section we will look at five different meanings associated with temporal and hypothetical subordination: temporal anteriority to the speech act ('when'), temporal posteriority to the speech act ('when'), habituality ('when'), factual conditional ('if') and counterfactual conditional ('if'). The following four examples from English and German illustrate these four types of subordination:

Anteriority:
English: *when he came back, they had already eaten*
German: *als er zurückkam hatten sie schon gegessen*

Posteriority:
English: *when he will come back, they will eat*
German: *wenn er zurückkommt werden sie essen*

Habituality:
English: *when people eat couscous they become happy*
German: *wenn man Kuskus isst wird man glücklich*

Factual conditional:
English: *if you come back, you may eat as much as you like*
German: *wenn Du zurückkommst kannst Du essen soviel Du möchtest*

Counterfactual conditional:

English: *if you would have come back, you could have eaten as much as you like*

German: *wenn Du zurückgekommen wärest, hättest Du soviel essen können, wie Du möchtest*

Of course, this five-term distinction does not cover all possible shades of temporal and hypothetical meaning (one may think of meanings such as 'until'), but the distinction is fitting for our purposes here.

In most Berber varieties, the choice of the subordinating particle determines the interpretation of the clause. Different from many European languages, where such differences are to a large extent expressed in the tense/aspect of the subordinated verb, the aspect of the subordinated verb (mostly the perfective) only plays a minor role in the expression of the major distinctions.

The situation is more complicated in Arabic than in Berber. Classical Arabic had a relatively clear-cut four-member system of conjunctions, making a distinction between two temporal relations: past event versus non-past event, and two hypothetical relations: hypothesis versus counterfactual.[9] The use of the aspects is to a large degree ruled by the subordination marker, although there exists some freedom:

1. 'when' relating to a non-past event — *ʔiḏā* (also *ḥaytu* and *mā*)
2. 'when' relating to a past event — *lammā, ʔiḏ*
3. 'if' factual — *ʔin*
4. 'if' counterfactual — *law*

Arabic dialects have sometimes fundamentally different systems. In the first place, in some dialects there are only two sets of subordinators: temporal subordinators and conditionals. The difference between temporal subordination referring to past events and subordination referring to non-past events is expressed by using different aspectual forms (e.g. the Cairo set *(l)ammā, sāɛit ma, yōm ma*, etc., Woidich 2006:383). In a similar fashion, the difference between factual and counterfactual conditionals

[9] The Modern Standard Arabic system is somewhat different, as *ʔiḏā* is mainly used as a conditional conjunction, but this is a post-Classical development. Temporal subordination with reference to a past event is mainly achieved by means of the conjunctions *ɛinda-mā*, *ḥīna(-mā)* and *waqta ʔan* (cf. Badawi, Carter & Gully 2004:623). The conditional conjunction *ʔin* has become marginal, except in some styles and functions (cf. Badawi, Carter & Gully 2004: 636ff.), while its place has been taken by *ʔiḏā* on the one hand, and *law* on the other. By this extension in meaning, *law* is no more a specialized counterfactual.

is expressed in the verb form, not in the subordinator (e.g. the Cairo set *iza, law, in*, Woidich 2006:374ff.). In Maghribian Arabic, the restructuring of the system has been less pervasive. Most dialects use the same subordinator(s) for temporal conjunctions referring to past and non-past events, expressing the difference by means of the aspectual form of the verb. The difference between factual and counterfactual conditionals is retained, although one remarks the intrusion of the counterfactual conditional into the factual domain; on the other hand, factual conditionals cannot be used as counterfactuals, e.g.

	temporal non-past	temporal past	hypothetical	counterfactual
Eastern Libyan	*wēnma, kēf*	*wēnma, kēf*	*kān, lōkān*	*lōkān*
Tunis	*kīf*	*kīf*	*īḍa, īla, (l)ūkān,*	*(l)ūkān, ūkān*
Jijel	*ɣir, mnayən, ki*	*ɣir, mnayən, ki*	*ida*	*lu, lukan*
Oujda	*mnin*	*mnin*	*ila*	*lukan*
Tangier	*məlli*	*məlli*	*ida, ila*	*ka, lawkan, lukan*
Marrakech	*məlli, mnin, ila*	*məlli, mnin*	*ila*	*kun, lukun*

The most common system in Berber languages of Algeria and Morocco is similar to the Classical Arabic system. Thus, for example, Ayt Ayache (Central Moroccan Berber) has the following forms:

1. 'when' relating to a non-past event *adday*
2. 'when' relating to a past event *lliy*
3. 'if' factual condition *mš*
4. 'if' counterfactual condition *mr*

(1)

adday	*nwi-n*	*waman*	*ad*	*ɛmr-ɣ*	*atay*
when	boil:PV-3PM	EA:water	AD	fill:AO-1S	EL:tea

'when the water boils, I will make tea' [Abdel-Massih 1971:141]

(2)

n-dda	*lliy*	*d=i-dda*
1P-go:PV	when	VENT=3SM-go:PV

'when he came we left' [Abdel-Massih 1971:141]

lliy	*da*	*ssara-ɣ*	*žmɛ-ɣ*	*d*	*ɛli*
when	IPFT	walk:IPV-1S	meet:PV-1S	with	PN

'while I was walking, I met Ali' [Abdel-Massih 1971:141]

(3)
mš *dḥr-r* *isignaw* *ad* *i-wt* *unẓaṛ* [original: *adwit*, sic]
if:HYP appear:PV-3PM clouds AD 3SM-hit:AO EA:rain
'if clouds appear, it rains' [Abdel-Massih 1971:150]

(4)
mr *ɣur-i* *lli-n* *ɣflus* *iḍlli,* *lla=sɣi-ɣ* *igran* *n* *ɛli*
if:COU at-1S be:NPV-3PM money yesterday PFV=buy:PV-1S fields of PN
'if I had had the money yesterday, I would have bought Ali's fields' [Abdel-Massih 1971:150]

Similar systems are found in many other Berber languages, e.g.

	temporal past	temporal non-past	hypothetical	counterfactual
Kabyle (At Abbas)[10]	*mti*	*mi, imi*	*ma*	*(a)mmər, (ll)ufan, lukan*
Figuig	*mi(kk), imi(kk)*	*i(kk), yud-ənn*	*mta(k)*	*aɛlak, aməlli, ammi*
Djebel Nefusa[11]	*ləmmi*	*si*	*li, kan(a), liakan(a)*	*lukan*
Ntifa	*mkan*	*ku*	*iɡ*	*mr*
Tarifiyt (Q)	*umi, wami*	*mi, ami, xmi, řəxmi*	*mařa*	*mři, maɛlək*

The use of the aspects in the subordinated clause is only superficially known. There is a general tendency to use the Perfective aspect in all four cases. This is expected, as most 'when' and 'if' conjunctions imply that the real, potential or imagined event given in the protasis will be completed at the time that the real, potential or imagined event in the apodosis will occur (Galand 1988:226). Most (if not all) Berber languages also allow for other aspects, at least with some of the conjunctions studied here. In Tarifiyt, with the non-past 'when' conjunction, there is a difference between clauses with habitual and with future reference, e.g.

[10] Based on the texts in Allain (1976). Taïfi (1993:216) is wrong when he states that Kabyle has no difference between counterfactual and hypothetical subordination. All Kabyle varieties seem to make this distinction: Irjen HYP *ma, mayəlla*, COU *ləmmər, lukan* (Basset & Picard 1948); Iraten, At Manguellat HYP *ma* COU *ləmmər, limmər, mər, lukan* (Chaker 1983:165; Vincennes & Dallet 1960:128ff.); Aokas HYP *ma, mayəlla*, COU *lukan* (Rabhi 1994:169).

[11] Based on the texts in Beguinot ([2]1942) and Provasi (1973).

xmi *d=i-tas* *a* *n-traḥ* *a* *n-tṣəyyəḍ* *isəřman*
when VENT=3SM-come:IPV AD 1P-go:IPV AD 1P-hunt:IPV fish
'(always) when he comes we go fishing' [Q; K. Mourigh p.c.]

xmi *d* *ɣa* *ṯ-as-əḍ* *a* *n-āḥ* *a* *n-əymā*
when VENT AD 2-come:AO-2S AD 1P-go:AO AD 1P:hunt:AO
'when you come we shall go fishing' [Q; K. Mourigh p.c.]

Somewhat unexpectedly, in Tarifiyt, even the past 'when' conjunction *umi* is regularly combined with *ad* + Aorist,[12] e.g.

umi *nətta* *d* *ɣa* *y-əmɣā* *i-qəss=as* *ifassən*
when he VENT AD 3SM-grow.up:AO 3SM-cut:PV=3S:IO hands
'when he had grown up, he cut off her hands' [Ayt Said, Kossmann 2003b:94]

An interesting situation is found with the counterfactual. In most Kabyle varieties and in Middle Atlas Berber, the counterfactual conjunction *(ləm)mər* is followed by a Negative Perfective rather than a positive form, e.g.

mər *t=y-ufi* *i-nɣa=t*
if:COU 3SM:DO=3SM-find:NPV 3SM-kill:PV=3SM:DO
'if he had found (Negative Perfective) him, he would have killed (Perfective) him' [Middle Atlas; Taïfi 1991:426]

As convincingly argued by Taïfi (1993), the particle *mər* includes the preverbal negation *wər*, which triggers the negative form of the verb.[13] In a number of languages, the counterfactual conjunction is followed by the non-realized *ad* + Aorist construction, e.g. in in Lesser Kabylia (Aokas, Rabhi 1994) with *lukan* 'if' (counterfactual), e.g.:

lukan *d* *i-ɛləm* *da* *ay* *t-əlli-t,* *d* *ikk=əčč*
if:COU AD 3SM-learn:AO here DEM 2-be:PV-2S AD 2SM:DO=[3SM]-eat:AO
'if he would have known that you were here, he would have eaten you' [Aokas; Rabhi 1994:169]

The four-term system with two 'when's and two 'if's is relatively stable in Berber. Occasionally there are unexpected usages in texts; thus, in Figuig texts, *mi* sometimes appears in contexts where it clearly refers to a single past occurrence and where one would have expected to find *i*.

[12] In such contexts, both Perfective and Non-real aspect are allowed; there seems to be a semantic difference, but it is not clear what exactly (K. Mourigh p.c.).

[13] Picard (1957b) has a different explanation, which, in view of the history of *mər*, can be abandoned.

In the Tafoghalt subdialect of Beni Iznasen, *lukan* is used both as a counterfactual and as a hypothetical conjunction (Kossmann 2000a:199). The distinction factual / counterfactual is still maintained, as the hypothetical conjunction *malla* cannot be used for counterfactuals. This is similar to what is found in some Maghribian Arabic dialects.

There are a number of Berber varieties that have different systems. Among the western varieties, Tashelhiyt has a tripartite system, without a difference between habitual 'when' clauses and factual 'if' clauses,[14] i.e.:

1. 'when' relating to a past or future event: *lliɣ*
2. 'when' relating to a habitual event, or hypothetical: *iɣ*
3. counterfactual: *mra*

The Tashelhiyt system deviates in a number of ways from the systems found elsewhere in the western sphere of Northern Berber. In the 'when' conjunctions the scission lies between *(i)lliɣ* 'past/future' vs. *iɣ* 'habitual', rather than 'past' vs. 'non-past' elsewhere.[15] The temporal interpretation of the clause with *(i)lliɣ* is conveyed by the choice of the aspect; with the Perfective the reference is to a past event, in reference to a future event a phrase using the Tashelhiyt-specific future particle *ra(d)* is used. Cf.

'when' (habitual)
iɣ *i-swa* *wakal* *siggl-n* *mddn* *inṭṭafn*
when 3SM-drink:PV EA:earth search:AO-3PM people ploughmen
'(always) when the earth has become humid, people look for ploughmen' [Aspinion 1953:195]

'when' (past)
lliɣ *i-swa* *wakal* *siggl-n* *mddn* *inṭṭafn*
when 3SM-drink:PV EA:earth search:AO-3PM people ploughmen
'when the earth had become humid, people looked for ploughmen' [Aspinion 1953:195]

'when' (future)
lliɣ *ra* *t-ftu-t* *s* *lbiru* *rat* *t-mun-t* *d* *urgaz=ad*
when FUT 2-go:AO-2S to office FUT 2-go.together:AO-2S with EA:man=PROX
'when you go to the office, you will go together with this man' [Aspinion 1953:195]

[14] Note however that Galand (1988:226) gives a non-past 'when' form *kudnna*, which is only translated as 'lorsque' and not as 'si', while *iɣ* has both uses.

[15] The system described by Galand (1988:226) for Ighchan Tashelhiyt suggests the more common non-past vs. past-scission.

'if' (hypothetical)
iɣ i-lla unẓar bahra ɣass-ad rad krz-n azkka
if:HYP 3SM-be:PV EA:rain much today-PROX FUT plough:AO-3PM tomorrow
'if there will be a lot of rain today, they will plough tomorrow' [Aspinion 1953:194]

'if' (counterfactual)
mra ufi-ɣ iqaridn ikun sɣi-ɣ=t
if:COU find:PV-1S money then buy:PV-1S=3SM:DO
'if I had found money, I would have bought it' [Aspinion 1953:303]

In Ghadames, a similar tripartite system is found, where one conjuction, *nkud*, is used both in habitual and in hypothetical clauses, e.g.

nkúd i-ḇro d i-wádəɛ,
when 3SM-want:PV AD 3SM-say.goodbye:FT
asi-năt=ədd taltawén as=ăqrăb-nin
come:AO-3PF=VENT women 3S:IO=be.close:PV-PTC:P
'when he wants to say goodbye, the women that are close(ly related) to him come there' [Lanfry 1968:20; Kossmann fc.-d]

išalla, nkúd əd=y-ăqqim aškar s əṣṣaḥăt ənnúk=in,
God.willing when VENT=3SM-remain:PV nail from health of:1S=LOC
kăm=i-xăyyăr!
2SF:DO=3SM-harm:FT
'God willing, if (only) a nail from my body remains, it will harm you!' [Lanfry 1968:42, Kossmann fc.-d]

Past subordination is expressed by *ǧəd* (also *dəǧ*), which is also the comitative preposition, while counterfactuals have *ilam*, e.g.:

ǧəd as=əsló-n, nna-n=d
when 3S:IO=hear:PV-3PM say:PV-3PM=VENT
'when they heard him, they said ...' [Lanfry 1968:12, Kossmann fc.-d]

ilam da=i-krăz ilam ənteni d i-mžăr
if:COU AD=3SM-SOW:FT if:COU PRED FUT 3SM-harvest:FT
'if he would sow, if it were like that, he would harvest' [Lanfry 1973:181; Kossmann fc.-d]

In Lesser Kabylia (Aokas, Ayt Embarek), the 'when' conjunction *mi* can be used in both past and non-past contexts, e.g.

'when' (future)
mi di wṭ-əɣ i dd=i-kf=iyi=dd
when AD arrive:AO-1S AD VENT=3SM-give:AO=1S:IO=VENT
'when I arrive, he will give me ...' [Aokas; Rabhi 1994:164]

‘when’ (habitual)
mi ḏi lfu-n i wxxam m ḇaḇ əl lɛəṛs, kkaṯ-ən
when AD arrive:AO=3PM to EA:house of master of wedding hit:IPV-3PM *əlbaṛuḏ*
shots
‘when they arrive at the house where the wedding is held, they fire shots’ [Ayt Embarek; Genevois 1955:13]

‘when’ (past)
mi mfaraq-ən i-kkr=ədd urgaz=ənn i-nn=as
when separate:PV-3PM 3SM-stand.up:PV=VENT EA:man=ANP 3SM-say:PV=3S:IO
‘when they separated, the man said to him’ [Aokas; Rabhi 1994:164]

In Aokas it is possible to differentiate the two by using specialized conjunctions: *asmi* (< ‘the day that’) for past reference and *miqal* for future reference.

In some eastern varieties, there seems to be no difference between factual and counterfactual conditionals, at least in the choice of the subordinator. This is the case in Sokna (*kan, inkan*), El-Fogaha (*kan, inkan*), and Siwa:

‘if’ (hypothetical)
inkan a t-átrək əṣṣənaɛat ánn-ək a k=sárrəḥ
if AD 2S-leave:FT job of-2SM AD 2SM:DO=release:FT:1S
‘if you leave your job, I shall free you’ [Sokna; Sarnelli 1924-25:33/III-12]

kan t-ɣáss-ət a t-wéy-t šárṭ ánnu
if 2-want:PV-2S AD 2-take:FT-2S condition of:1S
‘if you want, you must accept my condition’ [El-Fogaha; Paradisi 1963:95/V-5]

kan la xsi-ṭ g usəd did-i ga ḥ-aɣ iman ənnəw
if NEG want:PV-2S FUT come:AO with-1S FUT go:AO-1S self of:1S
‘if you don’t want to come, I shall go by myself’ [Siwa; Laoust 1932:137]

‘if’ (counterfactual)
ḥátta kan ɛázzəm-ən fəllá, a ma dí-x abadán
even if invite:PV-3PM on:1S AD NEG go:AO-1S ever
‘even if they would invite me, I would never go (back)’ [Sokna; Sarnelli 1924-25:33/III-13]

kan tiklí nnəm a ayáḍ
if walking of-2SF like night
əlqáɣəṭ a y-əṭṭáf=šəm lál a t-əmmút-ət
paper AD 3SM-hold:FT=2SF:DO until AD 2-die:FT-2S
‘if your walking would be like (the way you walked during) the night, the paper might hold you (the paper clothes will suffice) until you die’ [El-Fogaha; Paradisi 1963:93/I-7]

kan *ɣur-i* *ləgruš* *g* *uɣ-aɣ* *agmar*
if with-1S money FUT buy:AO-1S horse
'if I had money, I would buy a horse' [Siwa; Laoust 1932:137]

In Siwa, hypothetical condition can also be expressed by the non-past temporal conjuction *mak*:

mak 'when' (non-past)
mak *i-xəlṣ-ən* *g* *ašənšəl* *i-ɛəmmər-ən* *əlmuləd* *n* *Sidi* *Sliman*
when 3-end:PV-3P in threshing 3-do:IPV?-3P birthday of Saint PN
'when they have ended the threshing, they celebrate the birthday of Sidi Sliman' [Siwa; Laoust 1932:153/VII-1]

mak 'hypothetical'
mak *əxsi-ṭ* *talti* *g* *uzən-ṭ=asən* *i* *yarən* *ənn-əs*
when want:PV-1S woman FUT send:AO-2S=3P:IO to parents of-3S
'if you want a woman, you send a message to her parents' [Siwa; Laoust 1932:153/VIII-1]

In Siwa, there is a dedicated past temporal subordinator, *afənni*, e.g.

afənni *i-dwl-ən* *y-if-ən* *agbən* *nn-sən* *i-nhədda*
when 3-come.back:PV-3P 3-find:PV-3P house of-3S 3SM-be.destroyed-PV
'when they came back they found that their house was destroyed' [Siwa; Leguil 1986:28]

In Awdjila, hypothetical *undu* and counterfactual *lukan*, *amur* are kept apart, e.g.

'if' (hypothetical)
undú *y-ənqís=a* *iwínan* *a* *uɣ-áx=tənət* *ká*
if:HYP 3SM-lack=RESULT one:M AD take:FT-1S=3PF:DO NEG2
'if one is lacking, I shall not take them' [Paradisi 1960b:81/V-2]

'if' (counterfactual)
nək *lukán* *wa* *a* *mmudá-n* *dáffər-i* *a* *i-čč=ít*
I if:COU DEM:SM AD pray:FT-PTC behind-1S AD 3SM-eat:FT=3SM:DO
afíw, *ma-ɛád-š* *a* *mmud-áx* *s* *ḥiddan*
fire, NEG-already-NEG2 AD pray:FT-1S with anyone
'Me, if the fire would eat the one who prays behind me, I would no more pray with anybody' [Paradisi 1960b:80/II-11]

amúr *d-žiží-t* *s* *əlúwəl* *axér-l-ək* *ká?*
if 2-sell:PV-2S with first better-to.2S:ARA NEG2
'if you would have sold it first, wouldn't that have been better for you?' [Paradisi 1960b:80/III-12]

As shown above, in Siwa there exists a distinction between past and non-past (+ hypothetical) conjunctions. Unfortunately, the form of non-past temporal subordination is not attested in Sokna, El-Fogaha and Awdjila. Thus, we do

not know if the subordinator is different from that used in past reference (Sokna: *mani* or *lamma*, Awdjila *wenma*), or from the conditionals.

Finally, in Ouargla (Eastern Algeria), a unique system is found. Analysis of Ouargla texts shows that three different groups of 'when' conjunctions are used, distinguishing between past contexts, future contexts and habitual/iterative contexts. The difference between factual and counterfactual conditionals is not expressed in positive clauses; in negative clauses, the opposition is maintained. This is summarized in the table below:

	When (past)	When (habitual)	When (future)	Factual	Counterfactual
Positive	*səgg, sagga, si*	*makk*	*mmi, maka(n)*	*matta*	*(ha) matta*
Negative				*matta*	*(ha) mmi*

Examples:

'when' (past)
sagga *fəṭr-ən,* *sw-ən* *latay,*
when take.lunch:PV-3PM drink:AO-3PM tea
y-ənna=yas *argaz=u* *i* *illi-s*
3SM-say:PV=3S:IO EL:man=PROX to daughter-3S
'when they had taken lunch and tea, the man said to his daughter' [Delheure 1989a:22]

'when' (habitual/iterative)
makk *i* *y-iwəḍ* *imi* *n* *nəḥtubat* *n* *iggət* *təddart,*
whenever REL 3SM-arrive:PV door of threshhold of one:F EA:house
ad *y-əwət* *taylut*
AD 3SM-hit:AO EL:bag
'every time he arrived at the entrance door of a house, he would beat the bag' [Delheure 1989a:334]

'when' (future)
mmi *t-duṛ* *ləbyaṣət=u,* *ad* *ssən-a* *t-ləwr-əd*
when 3SF-turn:PV coin=PROX AD know:AO-1S 2-flee:PV-2S
maka *u* *t-duṛ,* *ad* *ssən-a* *t-əlli-d*
when NEG 3SF-turn:NPV AD know:AO-1S 2-be:PV-2S
'when this coin turns around, I shall know that you have fled, when it does not turn around, I shall know that you are (still there)' [Delheure 1989a:124]

'if' (hypothetical)
matta *šəmmin* *n* *at* *užənna,* *ini=yi*
if you:F of those.of EA:above say:AO:IPT:S=1S:IO
'if you are from the people from above (i.e. humans), tell me (so)' [Delheure 1989a:24]

matta w ayi=t-umin-əd s wawal=iw, at t-əẓr-əd
if NEG 1S:IO=2-believe:NPV-2S with EA:word=1S AD 2-see:AO-2S
'if you don't believe my words, you will see' [Delheure 1989a:22]

'if' (counterfactual)
matta y-əgr=əd ṛəbbi, ad y-əšš ula d nanna-s
if 3SM-throw:PV=VENT Lord AD 3SM-eat:AO even PRED mother-3S
'if the Lord had brought it, he would have eaten even his mother' [Delheure 1989b:98]

ha mmi ul lli-ɣ ɛədl-əɣ ləflukət, ini u t-ttiwiḍə-m
see if NEG be:NPV-1S make:PV-1S boat then NEG 2-arrive:NIPV-2PM
nəɣr-əs
to-3S
'look, if I had not made the boat, you would not have arrived at his place' [Delheure 1989a:198]

Structurally, the habitual element *makk* is different from the other conjunctions, as it is followed by the relative marker *i*. This suggests that it is an innovation based on a nominal construction. In fact, *makk* obviously consists of two elements, the subordinating element *m(i)* and the quantifier *akk* 'all'. The counterfactual shows an unexpected distribution of morphemes also used for other purposes: the morpheme *matta* (counterfactual in positive sentences) is also used to convey factual conditional meanings (both in positive and in negative sentences), while *mmi* (counterfactual in negative sentences) also functions as a temporal subordinator with future clauses.

11.2.2 *The Impact of Arabic*

In spite of the presence of numerous borrowed subordinators (see below), the impact of Arabic on the Berber systems is rather restricted. As shown above, Maghribian Arabic systems typically have a merger of past and non-past temporal subordinators, and often display hypothetical uses of the counterfactual subordinator, but not the other way round. A large number of Berber languages, among others Central Moroccan Berber, Tarifiyt and most dialects of Kabylia, have a four-term system that resembles Classical Arabic more than dialectal Arabic. I assume that this resemblance is not due to borrowing.

The Tashelhiyt system bears some similarities to Maghribian Arabic structures, and may have been inspired by these to some extent. Thus the existence of a temporal subordinator with both past and future reference, temporal reference being expressed by differences in verbal aspect, recalls the Maghribian Arabic system. However, the semantics of *iɣ*, which

expresses both temporal habitual reference as factual conditional, has no match in most Maghribian Arabic dialects. One notes that in some Moroccan Arabic dialects there seems to be a scission between past and non-past uses of the temporal conjunction (Heath 2002:497ff.); in such cases the non-past element is *ila* or *ida*, i.e. the same as the factual conditional; in Muslim dialects this is especially found in the southern half of Morocco, but attestations have a larger geographical distribution in Jewish dialects (Heath 2002:497). The link with Tashelhiyt is obvious. As the phenomenon is found in roughly the same region (the southern half of Morocco) in Berber and in Maghribian Arabic, it is impossible to determine the source of the innovation.

The situation in eastern Berber does not suggest Arabic influence either, although more data, both on Berber and on the surrounding Arabic varieties, may shed a different light on this. In Ghadames, only the counterfactual has a unique subordinator; the other meanings can all be covered by *nkud*, even though there exist alternatives. In El-Fogaha, Sokna and Siwa, there seems to be only one conditional subordinator, which covers both hypothetical and counterfactual contexts. Siwa distinguishes between temporal subordinators with past and with non-past reference (the last one also possible in hypothetic conditionals). This system constitutes almost a mirror image of what is found in Eastern Libyan Arabic, spoken close to Siwa. This variety of Arabic has a scission between hypothetical and counterfactual conditionals, featuring a dedicated hypothetical subordinator *kăn*, as well as a good-for-all conditional *lōkăn*, while its temporal subordinators occur with both past and non-past reference (Owens 1984:175ff.).

Lexical influence of Arabic on Berber subordinating conjunctions, on the other hand, is relatively common. In most languages, at least some subordinating conjunctions have been taken over from Arabic. The status of these conjunctions is not everywhere the same. Some conjunctions are only rarely used—instead other syntactic constructions are preferred, or the relation is normally left unexpressed and established by pragmatic inference. Such conjunctions will be called "marked". Other borrowed subordinating conjunctions constitute the preferred way of expressing a certain relation. Such conjunctions will be called "common".

The difference between "marked" and "common" conjunctions appears very clearly in the temporal domain. "Common" conjunctions are the relatively unspecific 'when' conjunctions treated above, as well as the 'until' conjunction. "Marked" conjunctions express anteriority and posteriority ('before' and 'after'), as well as simultaneity ('while'). There is certainly

dialectal variation as to the markedness of one or another conjunction. Thus a number of varieties have a "common" conjunction for simultaneity (e.g. Figuig *al*), while others prefer constructions without a conjunction. In many cases, our data do not allow us to distinguish "marked" from "common" conjunctions.

In addition to the 'when' and 'until' conjunctions, Maghribian Arabic has temporal conjunctions which allow speakers to express (and stress) anteriority, posteriority and simultaneity. Because of this, one could assume that the "marked" conjunctions in Berber are in fact calques on Maghribian Arabic usage. This is difficult to prove, as it is not at all evident that that Maghribian Arabic makes more use of these conjunctions than Berber.

Lexical influence of Arabic among the "common" temporal conjunctions is relatively low. For the 'when' (past) conjunction, a number of eastern Berber dialect use a loan from Arabic:

Awdjila	*wenma* (as well as unborrowed <mmog>)
Sokna	*lamma* (as well as unborrowed *mani*)
Siwa	*fḥal* (as well as unborrowed *afənni* and *mak*, L32)

For the 'when' (non-past) conjunction, only one possible loanword is found: southwestern Central Moroccan Berber (mainly Ntifa), *mkan*. If this is a loan, it could stem from Moroccan Arabic *kan* 'if' (counterfactual). The semantic path from counterfactual to non-past 'when' is not evident, however, and it would be worthwhile considering a Berber-internal explanation (probably featuring the element *ku*, which in some neighboring dialects can also be used for non-past 'when', e.g. Ayt Hasan, Ennaji 1985). The other "common" temporal conjunction, 'until' is normally expressed by the Berber preposition *ar* ~ *al*, sometimes followed by another particle. Arabic loans are found occasionally:

Beni Salah	*ḥəttˢa* (Laoust 1912)
Senhadja	*ḥta, ḥətta* (Lafkioui 2007:229, also as a variant in western Tarifiyt)
Ghomara	*ḥətta* (Mourigh fc.)

Sometimes a blend of Berber and Arabic is found, as in the western Tarifiyt variant *ḥtařmi*, which is composed of Arabic *ḥta* 'until', Berber *al* 'until' and Berber *mi* 'when' (Lafkioui 2007:229).

In a few cases, the historical background of the conjunction cannot be identified, as in the Lesser Kabyle (Aokas) variant *nɛilma* (unidentified *nɛi* + *(a)l* + *ma*) and El-Fogaha *lál*. Otherwise, the 'until' conjunctions have a Berber background.

Among the "marked" temporal conjunctions, loans from Arabic are frequently found. Most languages that have a conjunction 'before'[16] use the loan *qbəl* (or a variant). Similarly, 'after' is often expressed by Arabic *bəɛd*.

Simultaneity presents different facts. In quite a number of Berber varieties, there is a dedicated Berber marker of simultaneity or durativity, mostly based on *ar* ~ *al* (probably not related to the 'until' preposition/conjunction) or *ku*. In these varieties, one can consider this a "common" rather than a "marked" conjunction. In other varieties, no simultaneity marker is attested. Only a few varieties have a loan from Arabic:

Iznasen: *binəmma* (also *maḥədd* of unclear origin)
Mzab: *madam* (< Arabic *madam* 'still')

In some Moroccan varieties (Tarifiyt, Zayan), a conjunction *maḥədd*, *maḥənd* is attested, which looks Arabic because of the consonant *ḥ*, but which does not seem to have a basis in this language. Its origin remains therefore unclear.

While in temporal subordination Arabic lexical influence is mainly restricted to "marked" conjunctions, much more is found with conditionals, especially counterfactuals:

Ghomara *ka*
Senhadja *luk* (< Arabic *lukan*)
Iznasen *lukan*, *maɛləḳ* (< Arabic *ma ɛli-k* 'don't mind') (also unborrowed *məlli*)
Figuig *aɛlak* (< Arabic *ma ɛli-k* 'don't mind') (also unborrowed *ammi, aməlli*)
Kabyle *lukan* (also unborrowed *ləmmər*)
Nefusa *lukan*
Awdjila *lukan* (also unborrowed *amur*)
Sokna *kan* (also used as a hypothetical conjunction)
Ouargla *matta*[17] (also used as a hypothetical conjunction, see 11.2.1)

Among factual conditionals, the following Arabic loans are attested:

Figuig *mta, mətta*
Ghadames *ilam, lam* (also unborrowed *nkud*, see 11.2.1)
Nefusa *li, lyakana, kan, kana*
El-Fogaha *kan*

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[16] Alternative expressions do not have a genuine conjunction, it seems. Thus Tashelhiyt *ur ta* (Aspinion 1953) means simply 'not yet'; sentences like 'before he came, he washed his hands' should be understood as 'he had not yet come and washed his hands'.

[17] Possibly this is not a loan from Arabic, but composed of the Berber marker *ma* followed by the pronoun *ntta* 'he'.

Sokna	*kan* (also used as a counterfactual conjunction)
Mzab	*batta, awkan, awakan*
Ouargla	*matta* (also used as a counterfactual conjunction, see 11.2.1)

As shown above, there is no reason to assume that the Berber system of conditionals has undergone much restructuring. Therefore we have to do with simple insertion of a lexical element. This is also shown by the aspectual implications of the counterfactual. As mentioned above, in most Kabyle varieties and in Middle Atlas Berber, the counterfactual conjunction *(ləm)mər* is followed by a Negative Perfective, as it historically incorporates the negative particle *wər*. Apparently, the link with *wər* was forgotten, and the Negative Perfective became one of the markers of the counterfactual; as a result, in many Kabyle varieties the borrowing *lukan* is also followed by a Negative Perfective, e.g.

lukan	*y-əlhi*	*lḥal,*	*y-ili*	*ṛuḥ-əɣ*
if	3SM-be.good:NPV	situation,	3SM-be:AO	go:PV-1S

'if the weather had been good (Negative Perfective), I would have gone' [Kabyle, At Manguellat, Dallet 1982:452)

Purposive constructions are easily expressed without a conjunction by the use of the non-realized mode with the pre-verbal particle *ad*. Dedicated conjunctions often stem from a phrase 'like that' (similar to English *so that*), e.g. Figuig *amm-ənn ad*. In a number of cases, loans from Arabic appear in this context:

Ghomara	*baš*
Senhadja	*baš*
Iznasen	*baš* (also *ḥima* of unclear origin)
Seghrushen	*baš* (also native *ttafa*) (Bentolila 1981:315–316)
Djebel Bissa	*baš*
Kabyle	*baš* (also blended *baš-akkən* and native *akkən, iwakkən*, Chaker 1983)
Lesser Kab.	*baš*
Ouargla	*baš, abaš* (also blended *(a)baš-akk* and native *amm-akk*)
Mzab	*baš, maš* (also blended *baš-akk*, *maš-akk*)

A number of languages in Northern Morocco have a conjunction *ḥima*, *ḥuma*. In spite of its featuring a loan consonant (*ḥ*), there is no clear Arabic counterpart to this, and its origin remains unclear.

Causality is mostly pragmatically inferred in actual texts. When overtly expressed, most varieties use a loan from Arabic, either based on *ɛlaḥəqqaš* or on *ɛlaxaṭər*. Berber expressions are rare, but cf. Ayt Seghrushen *ani* (lit. 'where' in variation with *ɛlaḥəqq* and *ɛlaxaṭər*) and Tashelhiyt *ašku* (probably related to Middle Atlas *ku* 'when' or 'while').

Summarizing, the lexical impact of Arabic on the subordinating conjunctions of Berber is quite unbalanced. As might be expected, "marked" conjunctions often stem from Arabic, but Arabic influence is also found with "common" conjunctions. Arabic borrowings are rare among the 'when' conjunctions, and restricted to eastern Berber. They are much more common among conditionals, both counterfactuals and hypotheticals.

CHAPTER TWELVE

SYNTAX: RELATIVE CLAUSES

Arabic and Berber originally had highly different constructions for relative clause (RC) formation. This makes relative clause formation a central topic in studying the Arabic influence on the development of the Berber constructions. The many different questions involved in this issue will be studied here in more depth than was the case with other syntactic structures. I think this focus is defensible for two reasons. In the first place, there are few structures where Arabic and Berber were so different at the outset. In the second place, relative clause formation being highly changeable in Berber, it allows us to define both processes of convergence and processes of divergence. Put otherwise, while the rest of this study automatically focusses on convergence (which elements were taken over from Arabic), this subject can also be used to detect processes that go the other way round, i.e. where Berber has developed in the opposite direction of the Arabic system. This presents highly relevant evidence for the assessment of the Arabic influence on northern Berber in general. Is there a general process of convergence, that one could call a Maghribian "Sprachbund" (Maas 2001, 2002), or do the different languages show individual directions of change, that only converge to a limited extent?

12.1 General Overview of the Systems

In Classical Arabic and in eastern Arabic varieties (e.g. Cairo, Woidich 2006:199), the main characteristics of relative clause formation are as follows:

1. Obligatory resumptive pronominal reference in verbal RCs. With subject relatives, this reference is automatic, as the subject markers constitute an integral part of the verb; in other relative constructions, reference is made by means of bound pronouns.
2. Different constructions for RCs with a definite head and RCs with an indefinite head. Definite RCs are linked to their head by means of a relative marker, which, in Classical Arabic, marks number and gender of the head noun; case is only marked in the dual, and follows the case of the head noun,

irrespective of the function of the head in the RC. In eastern Arabic varieties, the relative pronoun is normally invariable. RCs with indefinite heads have no relative marker, and follow an asyndetic pattern.

The Maghribian Arabic constructions are similar:

1. Resumptive pronouns are obligatory in the RC when the head functions as a prepositional complement; if it functions as a direct object, resumptive pronouns are facultative (Brustad 2000). Subject marking is part of verb morphology, so subjects are always marked.
2. The difference between definite RCs and indefinite RCs as found in Classical Arabic is basically the same in Maghribian dialectal Arabic (for more details and exceptional constructions, see Maas 2011:248). With definite RCs the relative marker is invariable *lli* or *(d)di*.

The "classic" Berber structure, as found in Tashelhiyt, Tuareg and (to some extent) Kabyle, is quite different:

1. Many Berber languages have different constructions for RCs with a definite head and RCs with an indefinite head. RCs with an indefinite head have a kind of paratactic construction, in which the RC is fully identical to a normal clause. This construction has been baptized "relatives adjointes" by Lionel Galand (2002a:332).
2. There is no pronominal reference in the RC. Subject relatives have a special inflection, the so-called participle, which originally marked gender and number of the head, but which in many languages has lost one of these distinctions or both (cf. Drouin 1996, Kossmann 2003a).
3. Clitical pronominal elements precede the verb, instead of following it. In prepositional RCs, the remaining bare prepositions—i.e. prepositional phrases from which the (pro)nominal element has been extracted—are also put in pre-verbal position.
4. There is no dedicated relative marker. Head nouns of RCs are mostly marked by a deictic clitic; in many varieties, this is most frequently the anaphoric clitic (which could be considered a cataphoric in this context); constructions with other deictic clitics are also possible, but less frequent.

In many Berber varieties, RC structure has undergone major changes. In some cases this is most easily explained as an internally driven innovation. In other cases, Arabic influence has probably been a major inspiration.

The following types of change have made Berber structures more akin to (dialectal) Arabic structures:

1. In some languages, resumptive pronouns are used in RCs. This is mainly the case in prepositional relatives; object relatives with resumptive pronouns are only found regularly in the most eastern varieties of Berber.
2. In a few varieties, "normal" inflection has supplanted the participial construction in subject relatives; this is quite rare in fact, and the main tendency in northern Berber is towards invariabily of the participle in gender and number—which is opposite to what is found in dialectal Arabic.
3. In many Berber varieties, a dedicated relative marker has been introduced. The historical background, as well as the syntactic status of these markers vary between varieties.

In the following, the different loci of (possibly contact-induced) change will be studied one by one; after this a more general overview of the types of change as found in the different Berber languages will be provided.

12.2 The Difference between Relative Constructions with Definite Heads and Those with an Indefinite Head

In Arabic, as well as in many Berber languages, relative constructions with definite heads are different from those with indefinite heads.[1] In Arabic, indefinite-head RCs lack the relative marker. As relative clauses are otherwise identical to normal clauses in Arabic, this means that there is no overt difference between a relative clause and simple juxtaposition without subordination. In many Berber varieties, a similar situation is found. While definite-head RCs have very different syntax from normal clauses, indefinite-head RCs are formally just like main clauses, coherence rather being expressed by intonation.

In Berber, this means that there is neither "participial" inflection with indefinite subject RCs, nor is there clitic fronting (except if for reasons unrelated to RC formation), and that there are always resumptive pronouns. The following examples from Beni Iznasen Berber illustrate this

[1] In some languages at least, only specific indefinite heads have the paratactic construction, while general (any . . . that) have the same construction as definite-head RCs, cf. for Ayt Seghrushen Bentolila (1981:286).

(bold font indicates the head of the RC and the pronominal reference to it within the RC):

Subject RC
nətta aḍ i-ḥuf ḍəgg **idž n uwəssar** *[***y***-ətras ifunasən]*
he AD 3SM-fall:AO in one:M of EA:old [3SM-herd:IPV cows]
'and he met (accidentally) an old man that was herding cows' [Bezzazi & Kossmann 1997:50]

Direct Object RC
y-əẓṛa **išt n tɛəžžažṯ** *[y-əḍfər=***tət***ṯ wənẓar ḍ uṣəmmiḍ]*
3SM-see:PV one:F of EA:dust.storm 3SM-follow:PV=3SF:DO EA:rain and EA:wind
'he saw a sand storm, which was followed by rain and wind (lit. whom followed rain and wind)' [Bezzazi & Kossmann 1997:121]

Indirect Object RC
idž umušš *[qqaṛ-ənn=***as** *Məsɛuḍ]*
one:M (of) EA:cat say:IPV-3PM=3S:IO PN
'a cat called Mesâoud (lit. a cat to whom they say Mesâoud)' [Bezzazi & Kossmann 1997:68]

Prepositional RC
ɣr-i **idž n wəzɛuq** *[y-ətnay=əyyi xx-***əs** *yidž n wəḥram]*
at-1S one:M of EA:-donkey.foal 3SM-mount:IPV=1S:IO on-3S one:M of EA:boy
'I have a donkey foal, on which a boy is riding all the time' [Bezzazi & Kossmann 1997:42]

Genitival RC
al mi ḥuf-ənt ḍəgg **idž n ufəddan** *[ibawən nn-***əs** *lqədd*
until when fall:PV-3SF in one:M of EA:field [beans of-3S size (of)
uɛəkkʷaz n wəryaz n-sənt]
EA:stick of EA:man of-3SF]
'until they found a field whose bean(stake)s were the size of their husband's stick' [Bezzazi & Kossmann 1997:10]

Indefinite-head RCs of this type are attested in a large number of Berber languages, among others Tashelhiyt (e.g. Stumme 1899:96, Galand 1988:219, Leguil 1992:78), Demnat (Sadiqi 1997:162), Tarifiyt (n.p.), Beni Iznasen (Kossmann 2000a:156ff.), Figuig (Kossmann 1997:316), Djebel Bissa (Reesink 1979:375), Chaouia-Ain Beida (Reesink 1979:369ff.), Ouargla (Reesink 1979:363), Douiret (Reesink 1979:367), Djebel Nefusa (cf. Beguinot ²1942:136), Ghadames (Kossmann fc.-d), and apparently also in Lesser Kabylia (Rabhi 1994:160; both examples have an indefinite head).

One has to be careful in distinguishing languages where the use of the paratactic construction is obligatory with indefinite-head RCs, such as Beni Iznasen cited above, from those where it is optional (or maybe rather: where its use is not only determined by the indefiniteness of the head). Thus, for example, in Tashelhiyt one may find phrases such as the following, in which an indefinite head is followed by a subordinating construction, in the same way as a definite head (cf. also Galand 2010:174):

i-ḍuwwṛ=as *ufrag* *bahra* *i-mmnɛa-n*
3SM-surround:PV=3S:IO EA:fence very PTC:S-be.strong:PV-PTC:S
'(and found) that an impenetrable fence surrounded it' [Stroomer 2003:134]

i-ṣṛf=d *yan* *uḥuli* *i-fulki-n*
3SM-send:PV=VENT one:M EA:ram PTC:S-be.beautiful:PV-PTC:S
'he sent a nice ram' [Stroomer 2003:142]

Similarly, all Chaouia Ayt Frah examples of paratactic RCs provided by Penchoen (1973a:94–5) have an indefinite head, however the inverse is not true: there are examples of indefinite-head RCs with the participial construction.

In some regions, indefinite-head RCs have the same structure as other RCs. This has been reported for Zemmour (Middle Atlas) by Leguil (1992:78), and may also be the case in other Central Moroccan varieties. It is probably also true for Greater Kabylia, in view of the general silence on this subject in the abundant sources, cf. also phrases such as the following which show a participial construction after an indefinite head:

d *tamɣart* *i-kṛh-n* *tislit*
PRED EL:mother.in.law PTC-hate:PV-PTC EL-bride
'it's a mother-in-law, who hates the daughter-in-law' [At Iraten; Chaker 1983:401]

Paratactic indefinite-head constructions are not entirely absent in Kabyle, however, e.g.

ṯamɛayṯ *ɣəf* *yiwən* *wəmɣaṛ* *y-ənṭəḍ* *f* *ṯəḇlaṭ*
EL:story on one:M EA:old.man 3SM-be.stuck:PV on EA:tile
'the story of an old man who got stuck on the tiles' [At Abbas, Allain 1976:47]

The paratactic construction is entirely absent in Tuareg.[2]

This leads us to the question of the historical background of the constructions. Galand (2002a:332), without making historical claims, suggests

[2] Note that Tuareg constructions with the relativizer *(a)s*—not relating to the definiteness of the head—all have clitic fronting, and therefore cannot be considered paratactic in the Northern Berber sense (Kossmann 2011a:161–163).

that it is a general feature of Berber;[3] however, as we saw above, it is absent from some of the major Berber-speaking areas. One also remarks that the Berber indefinite-head RC construction is very similar to Maghribian Arabic, where it constitutes a feature cognate with Classical and eastern Arabic.

I propose the following scenario explaining this similarity. Following Galand (2002a), one may consider the paratactic construction an old feature in Berber, which, just like similar French structures (Galand 2002a cites *il a un chapeau tu ne trouverais pas un pareil !*), used to be on the border between juxtaposition and subordination. It would have constituted a variant structure rather than a structure with a clear syntactic distribution—similar to the situation found nowadays in Tashelhiyt. However, the specialization of the Berber paratactic RC into the only way of making an indefinite-head RC, i.e. in becoming a marker of the indefinite RC, rather than a corrolary of it, would be due to Arabic influence.

This analysis explains the similarity between the Berber and the Arabic constructions. Moreover, it explains why in Berber definiteness would be obligatorily marked with RC heads, while with nouns (in)definiteness is not obligatorily marked, and otherwise does not play a major role in syntax. This did not evolve because of some internal functional needs, but simply as a calque on the construction in Arabic, a language in which definiteness is obligatorily expressed.

12.3 The Use of Resumptive Pronouns in Non-Paratactic RCs

Resumptive pronouns are obligatory in the paratactic RC-construction described above. In the other relative construction, which is either the general RC construction (e.g. Zemmour), or the construction used with definite heads, resumptive pronouns are not allowed,[4] e.g. Figuig:

Subject
twašunt *[y-iwy-ən* *argaz]*
girl PTC-bring:PV-PTC EL:man
'the girl that married the man' [Kossmann 1997:160]

[3] According to Galand (2010:173), this type of construction has been "généralement ignorée par les grammaires, sauf par Bentolila…". This is not true for some grammars which deal with eastern Moroccan varieties, e.g. Kossmann 1997:315–316, Kossmann 2000a:156.

[4] Relativization of indirect objects ('to whom') and of genitival complements ('whose') pose difficulties in many Berber languages, and different solutions appear according to the

Direct Object

nnwi	*[dd=y-iwəy*	*uməẓẓyan]*
kernels	VENT=3SM-bring:PV	EA:small

'the kernels that the child has brought' [Kossmann 1997:318]

Prepositional Phrase

argaz	*[xəf*	*didd=t-əssiwl-əd]*
EL:man	on	1S:IO=2-speak:PV-2S

'the man about whom you spoke to me' [Kossmann 1997:318]

In this relative construction, the only element with a kind of pronominal reference to the head is the participial form used with subject relatives. This is fully inflected for gender and number in Zenaga, Tuareg, Ghadames and in Medieval Tashelhiyt (Kossmann 2003a), but most modern Northern Berber varieties have more restricted systems. In modern Tashelhiyt, as well as in most Central Moroccan varieties (cf. Laoust ^{3}1939:70), there exists an opposition between singular and plural participles, but no gender distinction is made, e.g. Zemmour:

wa	*i-mmuṯ-ən,*	*ṯa*	*i-mmuṯ-ən*
DEM:SM	PTC:S-die:PV-PTC:S,	DEM:SF	PTC:S-die:PV-PTC:S

'he that died', 'she that died' [Laoust ^{3}1939:70]

wi	*mmuṯ-nin,*	*ṯi*	*mmuṯ-nin*
DEM:PM	die:PV-PTC:P,	DEM:PF	die:PV-PTC:P

'they (M) that died', 'they (F) that died' [Laoust ^{3}1939:70]

In other Northern Berber varieties, the participle is insensitive to gender and number of the head (Chaker 1983:383; this has been called anti-agreement by Ouhalla 1993), e.g. Ayt Alaham (Zenatic block, eastern Middle Atlas):

S:M	*u-nn*	*y-ušr-ən*	DEM:SM-ANP	PTC-steal:PV-PTC
S:F	*ṯ-ənn*	*y-ušr-ən*	DEM:SF-ANP	PTC-steal:PV-PTC
P:M	*i-nn*	*y-ušr-ən*	DEM:PM-ANP	PTC-steal:PV-PTC
P:F	*ṯi-nn*	*y-ušr-ən*	DEM:PF-ANP	PTC-steal:PV-PTC

'he / she / they (M) / they (F) that stole' [Roux 1935:71]

This is the case in the Zenatic eastern Middle Atlas varieties, including Ayt Seghrushen (Roux 1935:70), in the northern and eastern Moroccan varieties (Tarifiyt, Beni Iznasen, Senhadja, Ghomara, Figuig), as well as

variety. As these solutions all constitute clearly internal developments of Berber, and have no relationship with Arabic, they will not be treated here.

in northern Algerian varieties (Djebel Bissa, Greater and Lesser Kabylia, Chaouia Ayt Frah, Penchoen 1973a:87) and Awdjila in Libya.

In a few varieties, a new distinction has been introduced. By analogy with the normal conjugation, where *-ən* marks 3PM and *-ənt* marks 3PF, a special PF form of the participle, *-ənt*, has been introduced in Iche (Sud oranais, Kossmann 2010b), in Ouargla (Delheure 1989c:59), as well as in Beni Iznasen and some Tarifiyt dialects, where it constitutes a free variant (Kossmann 2000a:59; Lafkioui 2007:165). In such varieties, one finds therefore *-ən* 'participle SM, PM, SF' as opposed to *-ənt* 'participle PF'.

Summarizing, the main Berber varieties of Morocco and Algeria (as well as Ghadames) have a system of (definite) RCs, in which non-subject relatives have no pronominal reference to the head, and, except for southern and central Morocco, no pronominal reference in subject relatives either. The historical development of the so-called participle is the inverse of a calque on the Arabic construction: instead of more pronominal reference, one gets less.

The situation is quite different Ghomara and in a number of oriental varieties of Berber, which have one or more of the following features:

1. Resumptive pronouns are used in cases where the head is extracted from a prepositional phrase
2. Resumptive pronouns are used in object-relatives.
3. The participle (i.e. subject-relative form of the verb) is lost, and a fully inflected verb is used instead

The varieties where these features are found will be treated one by one.

Ghomara

Mourigh (fc.) shows that Ghomara[5] has pronominal reference in relative clauses where the head functions as the indirect and prepositional object of the clause. In subject relatives, the ancient participial construction is preserved, while direct object relatives do not have pronominal reference. Examples (RC heads and pronominal reference to the head within the RC are marked in bold font):

[5] The discussion here only concerns RCs with verbs inflected according to Berber morphology. On RCs with verbs infected according to Arabic patterns, see Mourigh (fc.).

Subject relatives:
əlkwaṣət=ihən *a* *y-tḍəwwar-ən* *hamḵa*
tapes=PROX:P REL PTC-go.around:IPV-PTC like.this
'the tapes that go around like this' [Mourigh fc.]

Direct object relatives:
ššḵaṛa *a* *y-uḵər* *aɛəyyal=aḍ*
bag REL 3SM-steal:PV EL:boy=PROX:S
'the bag that this boy stole' [Mourigh fc.]

Indirect object relatives:
argaz *a* **(a)s**=*nna-x* *lkəlma=yahən,* *i-dda* *fḥal-u*
EL:man REL 3S:IO=say:PV-1S word=PROX:S 3SM-go:PV away-3SM:ARA
'the man to whom I said something went away' [Mourigh fc.]

Prepositional relatives:
sstilu *a* *y-əttara* *iḍ-əs*
pen REL 3SM-write:IPV with-3S
'the pen he writes with' [Mourigh fc.]

With the exception of the subject relatives, this structuring reflects local Moroccan Arabic patterns, where direct object reference is not necessary, while resumptive pronouns are obligatory in prepositional relatives.

Siwa

Leguil (1986:100ff.; also Souag 2010:256), shows that in Siwa, all relative clauses have pronominal reference to the head. However, he signals that in Laoust's texts (1932), dating from about 50 years earlier, object relatives did not yet have resumptive pronouns. There is no participial form; instead the normal conjugation is used. Examples (RC heads and pronominal reference to the head within the RC are marked in bold font):

Subject relatives:
nəttatət **talti** **tən** **t**-*usəd*
she woman REL:SF 3SF-come:PV
'she is the woman that came' [Laoust 1932:119]

nəčni **təltawin** **wən** **n**-*əẓṭa* *irdən*
we women REL:SM/P 1P-grind:PV grain
'we are the women that (we) have ground the grain' [Leguil 1986:110]

Direct object relatives:
txuṣət **tən** *t-uš=asən=***tət,** *i-sədwəl-ən=as=tət*
knife REL:SF 3SF-give:PV=3P:IO=3SF:DO 3P-make.return:PV-3P=3S:IO=3SF:DO
'the knife that she had given (it) to them, they have given it back to him' [Leguil 1986:111]

Indirect object relatives:
wən *y-uɣ*=**asən** *tɣətt* *ta-t-ok*[6]
REL:SM/P 3SM-give:PV=3P:IO goat DEM:SF-DEM:SF-2SM:ADDR
l *i-dwəl-ən*
NEG 3P-return:PV-3P
'those to whom he has given (them) the goat have not returned' [Leguil 1986:112]

Prepositional relatives:
gardil **wən** *i-ḥaṭṭ-ən* *əgd*-**əs** *aman* *y-ənfraq=a*
pitcher REL:SM/P 3P-put:PV-3P in-3S water 3SM-be.torn=RESULT
'the pitcher in which they had put water had a leak' [Leguil 1986:112]

Awdjila

In Awdjila, the participle is still used as an invariable form in *-n*. From the texts it appears that a non-participial construction is also possible. In object relatives, constructions with and without resumptive pronouns occur. The few unambiguous examples of prepositional relatives have resumptive pronouns. Examples:

Subject relative with participle:
təmígni **ta** *ušá-n-d=a* *ṣábəṭ* *d* *wártna*
woman REL:SF come-PTC-come=RESULT yesterday PRED sister
'the woman that has come yesterday is my sister' [Paradisi 1960a:162]

Subject relative without participle:
wa **y**-*əfki=dík=a* *lɛálla* *a* *y-əfki=dík* *iwínan*
REL:SM 3SM-give:PV=1S:IO=RESULT lot AD 3SM-give:AO=1S:IO one:M
'who has given me a lot, will give me one single' [Paradisi 1960b:81/V-7]

Direct object relative without resumptive pronoun
amədən **wa** *ššin-ḥ=a* *ṣəbəṭ* *ɣár-əs* *lúda*
person REL:SM know-1S=RESULT yesterday at-3S poverty
'the man that I have learned to know yesterday is poor' [Paradisi 1960a:162.]

u *šummá-n* **ksúm** **wa** *y-ərfíɛ=a*
REL:SM cook:PV-PTC meat REL:SM 3SM-carry=RESULT
'the one that cooked the meat that he had carried' [Paradisi 1960b:79/II-4]

Direct object relative with resumptive pronoun:
u *baɛadén* *y-ərfəɛ* **əlmizán** **n-əs** **wa** *y-əḥməl=**t**=íya*
and afterwards 3SM-carry:PV scales of-3S REL:SM 3SM-carry=3SM:DO=RESULT
'and then he took the scales that he had carried (it)' [Paradisi 1960b:80/III-13.]

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[6] *tatuk* in the original; corrected following Souag (2010:255).

Prepositional relative:
w *i-n=ís* *y* **əttážər** **wa** *y-uɣá=ya* *s-ɣár-əs* *aẓíṭ*
and 3SM-say:PV=3S:IO to merchant REL:MS 3SM-take=RESULT from-at-3S donkey
'and he said to the merchant from whom he had taken the donkey' [Paradisi 1960b:82/VII-5]

Sokna
Materials on Sokna are very limited, and some of the relevant sentences are difficult to interpret. They provide instances of the participial construction, and of object relatives with resumptive pronouns:

ə́lli *ayi*=**t**=*t-uɣí-m,* *báhi*
REL 1S:IO=3SM:DO=2-take:PV-2PM o.k.
'the one that you brought me (him), is all right' [Sarnelli 1924–25:32/II-10]

y-ənn=ás **əllí** *y-ənn=***ít** *dgi-s*
3SM-say:PV=3S:IO REL 3SM-say:PV=3SM:DO on-3S
'he told him what he had said (it) about him' [Sarnelli 1924–25:34/IV-2]

Note that in the two preceding examples, the first one has clitic fronting, while the second does not. The following example has a participial construction with an indefinite head:

əssə́n **imarríwən** *ə́nɣa-n* **iğğən** **n** **əmmar**, *suggar-ə́n=tən* *iy* *ələ́ḥbəs*
two:M men kill:PTC-3PM one:M of man lead:IPV-PTC=3PM:DO to prison
'two men who had killed a man who had (wanted to) bring them to prison' [Sarnelli 1924–25:31/I-4]

El-Fogaha
In El-Fogaha, the participle does not exist. Instead, fully conjugated forms are used in subject relatives. In prepositional relatives resumptive pronouns are used.

Subject:
aɣ **šíra** **ə́lli** **i**-*mátar*
take:AO:IPT:S thing REL 3SM-be.beautiful:PV
'take a beautiful thing' [Paradisi 1963:95/V-26]

ə́lli **y**-*us=ə́d* *s-ɣúr-sən* *a* *t-ənn=ás*
REL 3SM-come=VENT from-at-3PM AD 3SF-say:FT=3S:IO
'and to whoever would come from there she would say' [Paradisi 1963:95/V-15]

d *y-uɣá* **íggət** **t-ayə́ṭ** *nk* **t**-*mátar*
and 3SM-take:PV one:F F-other NEG 3SF-be.beautiful:PV
'and he took another woman that was not beautiful' [Paradisi 1963:94/III-4]

Preposition (only examples with non-verbal sentence)
t-əqqím **tməṭṭúṭ** **əllí** *ɣúr-***əs** *šárəṭ* *n* *amárən*
3SF-stay:PV woman REL at-3S three:M of men
'the woman that had (lit. to whom there were) three husbands remained…' [Paradisi 1963:95/V-32]

əlli *a* *y-ús=əd* *idammán* *n-***əs** *am* *idámmən* *n* *məẓẓáy*
REL AD 3SM-come:FT=VENT blood of-3S like blood of child
'the one whose blood is like the blood of the child (is his father)' [Paradisi 1963:95/V-35]

Djebel Nefusa

In Djebel Nefusa of Fassato, subject-relatives with the participle only occur when the subject is an interrogative pronoun (Beguinot ²1942:63),[7] e.g.

mammó *t=y-əmlú-n*
who 3SM:DO=PTC-say:PV-PTC
'who said it?' [Beguinot ²1942:63]

Otherwise, subject relatives have normal inflection, e.g.

in **atərrás=íha** **ólli** *tt=***y***-əssalí* *s* *əlbír*
to man=ANP REL 3SF:DO=3SM-make.go.up:PV from well
'to the man that had made him exit the well' [Beguinot ²1942:174]

nit **ólli** **y***-əwwí* *arəzg* *ánn-wən*
he REL 3SM-take riches of-2PM
'he is it that took your riches' [Beguinot ²1942:181]

Object relatives have no resumptive pronouns, e.g.

əṣṣíd=íha **ólli** *ssalí-ɣ*
lion=ANP REL make.go.up:PV-1S
'the lion that I made exit (the well)' [Beguinot ²1942:174]

ləktáb **ólli** *di=t-əfkí-d* *i-ráḥ* *sí-yəd*
book REL 1S:IO=2-give:PV-2S 3SM-go:PV from-1S
'I have lost the book that you gave me' [Beguinot ²1942:151]

Prepositional relatives always have resumptive pronouns:

ad *as=n-ág* **ḥáža** **ólli** *a* *y-əɛmá* *si-***s**
AD 3S:IO=1P-do:AO thing REL AD 3SM-become.blind:AO from-3S
'we shall make something from which he will become blind' [Beguinot ²1942:171]

áhwa *in* **əlɣáltət** **ólli** *ttəɛawám-nət* *di-***s**
descend:AO:IPT:S to pond REL swim:IPV-3PF in-3S
'go down into the pond in which they swim' [Beguinot ²1942:166]

[7] The same is the case in the Tunisian dialect of Tamezrett (Paesano 2000:72).

Tunisia

In Douiret, as decribed by Reesink (1979:364ff.), the participle does not exist. Instead fully inflected forms are used. Object relative clauses have resumptive pronouns when no other clitic elements are present in the verb; otherwise they are absent (Reesink 1979:366); in prepositional relatives resumptive pronouns are obligatory. Examples:

Subject:
iḍnaṭ *rədm-ən* **tamәṭṭut** **i** **t**-*əmmət*
yesterday bury:PV-3PM woman REL 3SF-die:PV
'yesterday they buried the woman that had died' [Reesink 1979:364]

Direct Object:
aɣṛum **i** **t**=*ɣəzz-a*
bread REL 3SM:DO=eat:PV-1S
'the bread that I ate (it)' [Reesink 1979:366]

lyagmi **i** *dd=əswi-ɣ* *y-əḥlaw*
palm.milk REL VENT=drink:PV-1S 3SM-be.good:PV
'the palm milk which I drank was good' [Reesink 1979:366]

Preposition:
aɣyul **i** *rəkb-əɣ* *fəlla*-**s**
donkey REL mount:PV-1S on-3S
'the donkey that I rode on (it)' [Reesink 1979:366]

tamurt **i** *t-lul-əd* *dy*-**əss**
country REL 2-be.born:PV-2S in-3S
'the country you were born in' [Reesink 1979:366]

The situation is less clear in other Tunisian dialects, for which our documentation is less abundant. Subject relatives have normally inflected forms:

Subject:
way **argaz** **əlli** **y**-*əskər*
DEM:SM man REL 3SM-do:PV
'here is the man who has done . . .' [Sened; Provotelle 1911:53]

áryaz **əlli** **y**-*əkkár*
man REL 3SM-rise:PV
'the man that has risen' [Tamezret; http://atmazret.com/]

The few examples with Direct Object relatives have a resumptive pronoun in Sened, but lack it in Tamezret:

Direct Object:
aɣi **əlli** *swi-ɣ*=**t** *asənnaṭ*
milk REL drink:PV-1S=3SM:DO yesterday
'the milk I drank yesterday' [Sened; Provotelle 1911:53]

ə́lkurḏ **əlli** *ṯ-qám-əḏ*
stone REL 2-take.up:PV-2S
'the stone that you have taken up' [Tamezret; http://atmazret.com/, typo corrected]

Prepositional relatives (not attested in Sened) have resumptive pronouns:

ə́rqəb **ámkan** **əlli** *i* *y-əqqím* *ḏi-***s**
look:AO:IPT:S place REL ? 3SM-stay:PV in-3S
'look at the place where he sits' [Tamezret; http://atmazret.com/]

Ouargla and Mzab

In Ouargla and Mzab, resumptive pronouns are found when the head of the RC is extracted from a prepositional phrase or an indirect object phrase (Reesink 1979:358ff.). Otherwise, Ouargla follows the normal Moroccan-Algerian model, with participial forms in subject-relatives and absence of pronominal reference in object relatives. Examples:

Subject:
argaz **i** *ul* *xəddəm-ən*
EL:man REL NEG work:IPV-PTC
'the man who will not work' [Ouargla; Reesink 1979:358]

əgg^{w}-aman **n** **təmdint** **i** *ḥəkkəm-ən* *di-s*
that.of:M-water of EA:town REL command:IPV-PTC in-3S
'the European of the town who commands over it' [Mzab; Delheure 1986:23]

Direct Object:
lḥiyat **i** *ttəgg-ən* *day* *Wargrən*
things REL do:IPV in Ouargla
'the things they do in Ouargla' [Ouargla; Reesink 1979:359]

a-n **i** *y-ənna* *ṛəbbi*
DEM-DIST REL 3SM-say:PV Lord
'that what the Lord has said' [Mzab; Delheure 1986:19]

Indirect Object:
argaz **(i)** **as**=*ušǐ-ɣ*
EL:man (REL) 3S:IO=give:PV-1S
'the man to whom I have given' [Ouargla; Reesink 1979:358]

Prepositional Phrase:
aman **i** *n-ətqaṣa* *fəlla-***sən**
water REL 1P-toil:IPV on-3PM
'the water on which we have toiled' [Ouargla; Reesink 1979:359]

i-xəddəm	**id-šṛa**	**i**	*nha-n*	*ɣəf-***sən**	*imsəlmən*
3SM-work:IPV	P-thing	REL	advise:PV-3PM	on-3PM	muslims

'he does the things that Muslims have advised against' [Mzab; Delheure 1986:38]

The situation in the above varieties is summarized in the following table (cf. Reesink 1979: 380):

Resumptive pronouns in eastern Berber varieties

	Subject	Direct Object	PP
Siwa	+	+	+
Awdjila	- (PTC)	+/-	+
Sokna	- (PTC)	+	?
El-Fogaha	+	?	+
Djebel Nefusa	+	-	+
Douiret	+	+/-	+
Ouargla/Mzab	- (PTC)	-	+

12.4 The Use of Special Elements Introducing RCs

Most Berber languages allow for RC constructions which have no dedicated marker that links the RC to the head, cf. the Figuig examples in the beginning of section 12.3. In some languages, the construction without relator constitutes the only possible structure. This is, amongst others, the case in Chaouia Ayt Frah (Penchoen 1973a:87ff.) and Figuig. In Ghadames, relative marking is not allowed in subject and direct object relatives, but obligatory with prepositional relatives.

In a large number of languages, dedicated RC markers appear. There are three types:

1. The use of a pronominal element as a RC marker
2. The specialisation of one specific deictic clitic to the head for only signalling the following RC
3. The extension of interrogative markers to RC contexts.
4. The introduction of a new dedicated relative marker through grammaticalization or otherwise

12.4.1 *Pronominal Elements as RC Markers*

The use of pronominal[8] elements that come in between the head and the RC is a well-known feature in Tuareg (Galand 1974). To a lesser degree, it is also found in Northern Berber languages. In Tuareg there are different pronominal elements according to the definiteness of the head ("supports de détermination" in Galand's terminology; Kossmann 2011a calls them Pre-Modifyer-Pronominal Heads). Most northern Berber varieties have only a single element, mostly *i*. Only Siwa and Awdjila have gender/number marking in the relative element.

In these varieties, the pronoun is either similar to, or identical with certain neutral pronominal forms which are used when the head consists exclusively of the pronoun, e.g. in cleft structures.

Whatever the exact syntactic analysis of these elements—a major issue of debate in Berber linguistics (cf. among others Galand 2010:176), but irrelevant to the issues at stake in this study—their presence in relative constructions is well-attested in many Northern Berber languages. Note that the discussion below only concerns cases where the relative-signalling element is not the (only) head[9] of the relative clause. Therefore, cleft sentences are left out of consideration, as in virtually all Berber varieties[10] they have the structure:

(it is) NP PRONOUN [RELATIVE CLAUSE]

d	*nətta*	*ay*	*daxdd=i-nna-n*
PRED	he	DEM	1P:IO=PTC-say:PV-PTC

'it is he who told us' [Figuig; Kossmann 1997:320]

This sentence could be paraphrased as 'it is he, the one that told us', in which *ay* is the only head of the following relative clause.

In the following the glossing "REL" has been used as a matter of convenience; it does not imply that the element should be considered a "relative pronoun" in the strict sense of the word—rather it should be interpreted as "a pronominal element, which is commonly occurring between the (semantic) head of the relative clause, and the relative clause itself".

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[8] Whether in all adduced cases the elements are really pronominal in a synchronic sense is questionable. In any case, their origin seems to lie in pronominal elements.

[9] The theoretical question whether in constructions with a noun and a pronoun the pronominal element should be considered the "real" head, which would be in a kind of apposition to the noun or pronoun preceding it, need not concern us here.

[10] Ghadames and Siwa are exceptions (Kossmann fc.-d; Souag 2010:457ff.).

For similar practical reasons, the pronominal element that introduces a cleft sentence will be glossed "FOC".

In Kabyle there exists considerable variation as to the possibilities of pronominal RC linking. In many varieties, the element *i* is possible or even obligatory in non-subject relatives. Note that the same element is used in cleft constructions, where is constitutes the (only) head of the RC. This is the case in a number of central and central-eastern Kabyle dialects (a.o. At Manguellat, Reesink 1979:322ff.),[11] cf. the following examples from the dialect of At Abbas:

atan	*irḏən=agi*	*i*	*ṯ-fəşşər-ḍ*	(use of *i*)
look	grain=PROX	REL	2S-spread.out:IPV-2S	

'see, the grain that you are spreading out' [At Abbas; Allain 1976:7]

səksu=yagi	*ṯ-fəttəl-ḍ*	*akk-a*	(no use of *i*)
couscous=PROX	2S-roll:IPV-2S	thus-PROX	

'the couscous that you are rolling this way' [At Abbas; Allain 1976:7]

With prepositional phrases, mostly a construction is used in which *i* follows the clause-initial bare preposition:

ayən	*g*	*i*	*ṯ-əlli-ḍ*	*aḏ*	*ili-ɣ*
DEM	in	REL	2-be:PV-2S	AD	be:AO-1S

'that (situation) in which you are, I will be (in it, too)' [At Abbas; Allain 1976:83]

lwəqṯ	*g*	*i*	*qəddm-ən*	*aḏ*	*čč-ən*
time	in	REL	approach:PV-3PM	AD	eat:AO-3PM

'when (lit. the moment in which) they approached in order to eat' [At Abbas; Allain 1976:77]

In At Manguellat Kabyle, a similar distribution is found, but three types of prepositional relatives are distinguished, one like the At Abbas type (PREPOSITION *i* VERB), one without *i*, (PREPOSITION VERB), and one with *i* both preceding and following the preposition (*i* PREPOSITION *i* VERB):[12]

	axxam	*ḏḡ*	*ṯ-lul*	
	EL:house	in	3SF-be.born:PV	
=	*axxam*	*i*	*ḏəḡ*	*ṯ-lul*
	EL:house	REL	in	3SF-be.born:PV

[11] In Irjen (Basset & Picard 1948:319ff.), the use of pronominal RC linking seems to be absent.

[12] This last type may also exist at At Abbas, cf. *lwəqṯ i g i z=d=y-ənna* 'the time at which he told him' (Allain 1976:59); however, as pre-verbal clitics are always preceded by an element *i* (see below), the analysis of this phrase is not certain.

=	*axxam*	*i*	*ḏəḡ*	*i*	*ṯ-lul*
	EL:house	REL	in	REL	3SF-be.born:PV
	'the house in which she was born' [Reesink 1979:324]				

With subject relatives, on the other hand, *i* is not used in Ayt Abbas and At Manguellat (Vincennes & Dallet 1960:94), e.g.

ṯ-əlla	*ḵra*	*t*	*tməllalṯ*	*y-ənza-n*	*s*	*xəms*	*məyya*
3SF-be:PV	some	of	EA:egg	PTC-be.sold:PV-PTC	with	five	hundred
'is there an egg that would be sold for 500 franc?' [At Abbas; Allain 1976:23]							

When preverbal clitics appear in relative contexts, they are preceded by *i* (except in some specific environments). As this is also the case with subject relatives, it is difficult to decide whether this *i* constitutes a special instance of the relative element *i*, or whether it is part of the preverbal allomorph of the clitic elements.[13] Examples:

	win	*i*	*d=i-ḥuǧ-n*	*akk-ən*
	DEM:SM	REL	VENT=PTC-go.on.pilgrimage:PV-PTC	thus-ANP
or:	*win*	*id=i-ḥuǧ-n*		*akk-ən*
	DEM:SM	VENT=PTC-go.on.pilgrimage:PV-PTC		thus-ANP
	'the one who had gone to pilgrimage (and returned)' [At Abbas; Allain 1976:37]			

	ur	*y-ufi*	*ḥədd*	*i*	*ṯ=i-qəḇl-ən*
	NEG	3SM-find:NPV	anybody	REL	3SM:DO=PTC-accept:PV-PTC
or:	*ur*	*y-ufi*	*ḥədd*	*iṯ=i-qəḇl-ən*	
	NEG	3SM-find:NPV	anybody	3SM:DO=PTC-accept:PV-PTC	
	'he didn't find anybody who accepted him' [At Abbas; Allain 1976:69]				

In other dialects of Greater Kabylia, *i* is also possible with subject relatives, e.g.

	argaz	*i*	*y-nɣa-n*
	EL:man	REL	PTC-kill:PV-PTC
=	*argaz*	*y-nɣa-n*	
	EL:man	PTC-kill:PV-PTC	
	'the man that killed' [At Iraten; Chaker 1983:384]		

According to Laoust-Chantréaux (1957:68), in Ayt Hichem (Greater Kabylia) the use of *i* in relative clauses (in whatever function) is far more frequent than its absence, which is mainly found in formulaic speech. As she includes cleft constructions in her count, where the use of a relator

[13] In Kabyle dialects where *i* is also possible with subject relatives, this problem does not appear. In these dialects, one can simply state that the use of *i* is obligatory before clitics, but facultative in other contexts (Chaker 1983:404ff.).

is obligatory in virtually all Berber languages, her figures may be skewed, however.

The use of *i* as a relative marker does not seem to extend to Lesser Kabylia (Rabhi 1994:156); however, according to Rabhi, the use of *i* before preverbal clitics also occurs in this part of Kabylia, e.g.

tafunast *idd=sɣi-ɣ*
EL:COW VENT=buy:PV-1S
'the cow I bought' [Aokas; Rabhi 1994:156]

While the specific use of *i* in relative clauses with pre-verbal clitics is only found in Kabyle, relative clauses with *i* or *a(y)* are found in a large number of other Berber varieties, e.g. Chenoua, which, like Kabyle, seems to allow both relative clauses with and without *i* (identical to the cleft marker),[14] e.g.

w-a *əlli-ɣ* *ṯəṯṯ-əɣ*
DEM:SM-PROX be:PV-1S eat:IPV-1S
'the one I am eating' [Laoust 1912:93]

iḍammən *i* *ǧi-ɣ*
blood REL let:PV-1S
'the blood I have let' [Laoust 1912:55]

h-ənni *ig* *əlla-n* *žar* *n* *əṯxubay*
DEM:SF-ANP REL (PTC)-be:PV-PTC between of EA:jugs
'the one that is between the jugs' [Laoust 1912:85]

In Chaouia-Ain Beida (Reesink 1979:372), the relator *a* (identical to the cleft marker) is sometimes used in relatives; otherwise there is no relator or, more frequently, the grammaticalized form *illan* is found (see 12.4.4), e.g.

argaz *a* *d=y-usi-n* *yiḍ-i*
EL:man REL VENT=PTC-come:PV-PTC with-1S
'the man who has come with me' [Reesink 1979:372]

ləɛbad *ukkʷəl* *h-əɛžab=asən* *taksi* *a* *d=y-iwi* *si* *fransa*
people all 3SF-please:PV=3PM:IO car REL VENT=3SM-bring:PV from France
'everybody liked the car he had brought from France' [Reesink 1979:372]

A similar situation is found in many Tarifiyt varieties, where subject and object relatives can be constructed either without a relator, or with *i*. In

[14] With prepositional relatives, interrogatives are used, see 12.4.3.

Iqəřɛiyən (Nador), *i* is facultative in subject relatives, but obligatory with other relative types, e.g.[15]

	aryaz	*i*	*d=y-usi-n*	*iḍənnaṭ*
	EL:man	REL	VENT=PTC-come:PV-PTC	yesterday
=	*aryaz*	*d=y-usi-n*	*iḍənnaṭ*	
	EL:man	VENT=PTC-come:PV-PTC	yesterday	

'the man who has come yesterday' [Q; K. Mourigh p.c.]

ttilifun	*i*	*sɣi-ɣ*	*iḍənnaṭ*
telephone	REL	buy:PV-1S	yesterday

'the telephone I bought yesterday' [Q; K. Mourigh p.c.]

missa	*i*	*xəf*	*ssās-əɣ*	*řḥažṯ=a*
table	REL	on	put:PV-1S	thing=PROX

'the table on which I put this thing' [Q; K. Mourigh p.c.]

Similarly in Tarifiyt varieties more to the west, e.g.:

aḇriḍ=a	*i*	*ḍ-əxs-əḍ*	*a*	*t-awi-ḍ*	*šək*
road=PROX	REL	2-want:PV-2S	AD	2-bring:AO-2S	you:M

'this road you want to take' [Ayt Wariaghel; El Ayoubi 2000:38]

In a number of varieties, constructions without a relator have become obsolete, and only constructions with *i* are found. This is the case, for example, in the Sud oranais dialect of Igli, where *i* is obligatory in all relative constructions. Interestingly, in this variety, the relative element *i* is synchronically different from the cleft element *ay*. Examples:

i-wət	*aɛəyyal=din*	*i*	*dak=i-ssəkn-ən*	*tiddart*	*ənn-əs*
3SM-hit:PV	EL:child=ANP	REL	2SM:IO=PTC-show:PV-PTC	house	of-3S

'he has beaten that child who showed you his house' [Kossmann 2010b:99, citing A. Basset]

x	*win*	*i*	*t-əlli-d*	*t-əttru-d*
on	DEM:MS	REL	2-be:PV-2S	2-cry:IPV-2S

'why (lit. on what is it that) are you crying?' [Kossmann 2010b:99, citing A. Basset]

The same situation is found in Ghomara (relator *a*, Mourigh fc.) and in the northeastern varieties of Ayt Seghrushen (province of Taza), where *i* is the obligatory relative marker, while *ay* is the cleft marker (p.n.). The latter contrasts strongly with other Ayt Seghrushen varieties, such as that

[15] As the anaphoric clitic is *nni*, it is in many cases difficult to decide whether *i* is present or not, however.

described by Bentolila (1981), which do not use *i* as a relative marker at all.

More to the east, *i* is obligatory in Douiret (Tunisia), e.g.

aššа	*sa*	*n-ərdəm*	*afrux*	*i*	*y-əmmət*
tomorrow	FUT	1P-bury:AO	child	REL	3SM-die:PV

'tomorrow we shall bury the child that died' [Reesink 1979:364]

yundi	*i*	*t=ḥəṣṣl-a*
rat	REL	3SM:DO=catch:PV-1S

'the sand rat that I caught' [Reesink 1979:366]

aɣyul	*i*	*rəkb-əɣ*	*fəlla-s*
donkey	REL	mount:PV-1S	on-3S

'the donkey on which I ride' [Reesink 1979:366]

In Ouargla and Mzab, the use of *i* (identical with the cleft marker) is also obligatory in all definite-head relatives (see Reesink 1979:358ff.). An interesting feature of these two varieties is that the participle has lost its initial *i*. It is possible that historically *i* (REL) + *i* (PTC) resulted in *i*. As a consequence, the second *i* (PTC) was no more audible, leading to a reanalysis where the participle has no initial *i*, i.e.

	**afruɣ*	*i*	*i-šši-n* [afruɣiššin]
	EL:oven	REL	PTC-eat:PV-PTC
>	*afruɣ*	*i*	*šši-n* [afruɣiššin]
	EL:oven	REL	eat:PV-PTC

'the oven that ate' [Ouargla, cf. Delheure 1989a:299]

As a consequence of this reanalysis participial forms without *i* were introduced in contexts where *i* would otherwise have been preserved phonetically:[16]

	***afruɣ*	*i*	*t=i-šši-n*	[afruɣitiššin]
	EL:oven	REL	3SM:DO=PTC-eat:PV-PTC	
>	*afruɣ*	*i*	*t=əšši-n*	[afruɣitəššin]
	EL:oven	REL	3SM:DO=eat:PV-PTC	

'the oven that ate him' [Ouargla; Delheure 1989a:299]

Examples (for prepositional relatives, see above):

[16] In Mzab, the preverbal element of the participle is preserved in the fixed expression *ma š=y-uɣ-ən* (what 2SM:DO=PTC-attain:PV-PTC) 'what's wrong with you' (Delheure 1986:23).

argaz *i* *ul* *xdim-ən*
EL:man REL NEG work:NPV-PTC
'the man that has not worked' [Ouargla; Reesink 1979:358]

azəɛluk *ən-sən* *a* *n* *əlbəṛğ* *n* *əššix* *Bəlḥağ*
EL:big of-3SM DEM of watchtower of chikh PN
i *dd=usi-n* *ažənna* *n* *uwrir*
REL VENT=come:PV-PTC EL:upper.side of EA:hill
'the largest among them is the watchtower of Shikh Belhadj which is on the top of the hill' [Mzab; Delheure 1986:34]

tayẓiwt *i* *y-əfrən* *baba*
EL:girl REL 3SM-choose:PV father
'the girl the father has chosen' [Ouargla; Delheure 1988:56]

a-n *i* *y-əxs* *baba-s* *ɣər-s*
DEM-DIST REL 3SM-want:PV father-3S at-3S
'the thing her master wants from her' [Mzab; Delheure 1986:22]

The element *i* is absent when the RC starts with the element *ɣa(d)* (Mzab), *ala(d)* (Ouargla),[17] which is an allomorph of the particle *ad*, which marks that an event has not yet been realized. This is the case both with clefts and with normal relatives. Examples:

w-ən *ala* *as=uš-a* *ayniw*
DEM:SM-DIST AD 3S:IO=give:AO-1S EL:date
'the one to whom I will give a date' [Ouargla; Delheure 1987:161]

ay-ən *ɣad* *ini-nt*
DEM-DIST AD say:AO-3PF
'that what they will say' [Mzab; Delheure 1986:40]

All examples adduced until now here concern the "neutral" or "indefinite" pronominal element *i* or *a(y)*, which is also used in cleft constructions, and which has no gender and number marking. In Ghadames, a different pronominal element is used. While subject and direct object relative clauses have no pronominal marker in the relative clause, prepositional relatives are made by means of the invariable pronoun *ke* 'what', preceded by the preposition, e.g.

[17] In Ouargla, one could consider the absence of *i* a result of vowel assimilation *i* + *a* > *a*. This is not possible in Mzab, as the element in question has no initial vowel. The absence of the cleft marker before the allomorph of *ad* is also attested in some varieties of Beni Iznasen (Kossmann 2000a:159; Lafkioui 2007:233).

t-ăkf=ák *ağur* *ɛáf* *ke* *dá* *t-ăne*
3SF-give:AO=2SM:DO goat on what AD 2S-mount:FT
'and she will give you a goat on which you can ride' [Lanfry 1968:46, Kossmann fc.-d]

In its relative use, *ke* is different from other contexts. While it normally only refers to things, as a relative marker, it can also be used to refer to humans, e.g.

aməzwar *n* *was* *i* *ke* *tăt=d=əkfó-n*
first of DEM:REL to what 3SF:DO=VENT=give:PV-3PM
ɛammi-s *n* *tawažett=e*
uncle-3S of girl=ANP:S
'the first of those to whom they gave it was the uncle of the girl' [Lanfry 1968:24, Kossmann fc.-d]

In two eastern varieties, definite pronouns with gender/number marking have developed into relative markers. In Siwa, the elements *wən* (SM), *tən* (SF) and *wiyən* (P) have been signalled by Laoust (1932:119). Leguil (1986:108) and Souag (2010:256) did not find the plural form *wiyən*; instead *wən* is also used to mark the plural. The gender/number of the pronominal element agrees with the head of the RC, e.g.

skən-ɣ=as *agmar* *wən* *sɣi-ɣ* *s* *a* *n* *ɛali*
show:PV-1S=3S:IO horse REL:SM/P buy:PV-1S to DEM of PN
'I showed the horse that I bought to those of Ali' [Laoust 1932:119, Souag 2010:272]

talti *tən* *dəzz-ɣ=as* *žžəwab*
woman REL:SF send:PV-1S=3S:IO letter
'the woman to whom I sent the letter' [Souag 2010:268]

niš *xsi-ɣ* *a* *ẓərr-a* *iləɣman* *wən* *uɣ-əm=tin=a*
I want:PV-1S AD see:AO-1S camels REL:SM/P buy-2P=3P:DO=RESULT
'I want to see the camels that you have bought (them)' [Leguil 1986:111]

The pronominal elements are identical to the elements used as unique pronominal heads of a RC, cf.

wən *šɛaṛ* *ənn-əs* *aṭwil*
REL:SM/P hair of-3S long
'one whose hair is long' [Souag 2010:287]

There is no relation whatsoever with cleft constructions, which, in Siwa, do not have a pronominal marker (Leguil 1986:115ff.; Souag 2010:457ff.).

In Awdjila, the same construction is found as in Siwa, using the pronominal elements *wa* (SM), *ta* (SF), *wi* (PM) and *ti* (PF) (Paradisi 1960a:162), e.g.

u *baɛadén* *y-əxzár* *af* *əlḥəməl* *ánn-əs* *wa* *ẓẓák-ən* *dəx*
and then 3SM-look:PV on load of-3S REL:SM be.heavy:PV-PTC then
a *y-ərfəɛ=t*
AO 3SM-lift:FT=3SM:DO
'and then he looked up on his load, which was heavy to lift' [Paradisi 1960b:80/III-10]

ssuwáni *ta* *ški-ḥ=a* *zgan* *mášk-ət*
garden REL:SF exit-1S=RESULT from be.small:PV-3SF
'the garden which I went out from, is small' [Paradisi 1960a:162]

árrəfaq *ánn-əs* *wi* *ižiná-n=a* *nəttín* *id-sín* *ksúm*
friends of-3S REL:PM share-3PM=RESULT he with-3PM meat
'his friends with whom he had shared the meat' [Paradisi 1960b:79/II-5]

Like in Siwa, the pronouns used in relative clauses also appear as sole heads of relative clauses. It seems that in Awdjila, when heading the RC, *wa* etc. is only used for persons, while with inanimates an element *ala* is used. At this point, the marking of relative clauses with a nominal head is different from sole pronominal heads, as with a nominal head *wa* etc. also refers to inanimates, e.g.

wa *y-əfki=dík=a* *lɛálla* *a* *y-əfki=dík* *iwínan*
REL:SM 3SM-give=1S:IO=RESULT lot AD 3SM-give:FT=1S:IO one:M
'who has given me a lot, will give me one single' [Paradisi 1960b:81/V-7]

i-šərw=íš *ləhúdi* *s* *alá* *ṣará-n=a*
3SM-speak:PV=3S:IO Jew on REL:INANIMATE happen-PTC=RESULT
'the Jew spoke to him about what had happened' [Paradisi 1960b:81/V-15]

12.4.2 *The Specialisation of One Specific Deictic Clitic to the Head for Signalling the Following RC*

Berber nouns can be followed by deictic clitics, which indicate their spatial and anaphoric setting. The same construction is used with pronominal bases, some of which exclusively occur when accompanied by such a deictic clitic. Deictic systems vary considerably among Berber languages (Naumann 2001). Most commonly, they include at least three elements: a distal clitic, a proximal clitic and an anaphoric clitic. Deictic clitics are mostly insensitive to gender, and in the great majority of languages also insensitive to number; one notes however number marking on deictic clitics in Zenaga (Taine-Cheikh 2008), Lesser Kabylia (Rabhi 1994:48ff.), Zuwara (Mitchell 1953), Ghadames (Lanfry 1968:354ff.) and in northwestern Morocco (Senhadja de Sraïr, Lafkioui 2007:154ff.; Ghomara, Mourigh fc.).

In many languages, the anaphoric clitic is also used cataphorically. In this sense, it is highly frequent with heads of RCs. Thus, for example, in Beni Iznasen definite-head RCs the anaphoric clitic *ənni* is more often used on the noun than not, e.g.

abẓiẓ=ənni *ẓri-ɣ*
EL:boy=ANP see:PV-1S
'the boy I saw'

Still there is no reason to consider *ənni* a dedicated relative marker in Beni Iznasen (cf. Galand 2002a:339–340). In the first place, it is also possible to have definite-head RCs without a deictic clitic, or with a different deictic clitic:

ṯ-ətša *alɣəm* *las=ṯ-ənna*
3SM-eat:PV EL:camel 3S:IO=3SF-say:PV
'she ate the camel he had indicated' [Kossmann 2000a:158]

a *t-ɛəṛḍ-əḏ* *ṯawəssarṯ=u* *y-əttili-n* *zzaṯ-nəɣ*
AD 2-invite:AO-2S EL:old.woman=PROX PTC-be:IPV-PTC next-1P
'you should invite this old woman, who lives next to us' [Kossmann 2000a:158]

In the second place, *ənni* is also used with nouns that are not accompanied by a relative clause, in order to convey anaphoric meaning, e.g.:

išt n tməṭṭuṯ ttuɣa ɣr-əs idž n wərba ḏ idž n wərbib.
one:F of EA:woman PAST at-3S one:M of EA:boy and one:M of EA:stepson
arbib=ənni ḏ aməqqʷṛan x məmmi-s
EL:stepson=ANP PRED EL:big on son-3S
'a woman had a son and a stepson. The stepson was older than her son' [Bezzazi & Kossmann 1997]

In this passage, *ənni* in *arbib=ənni* signals that the stepson has already been introduced in the story.

However, in a number of Berber languages, certain deictic clitics are exclusively used for introducing a relative clause. In this function they may be compatible with NPs which they would not be compatible with otherwise. In the following, two examples will be provided, one which has a subtle difference between relative and other uses of the anaphoric clitic (Ayt Seghrushen of Oum Jeniba), the other in which a special "relative" clitic has emerged (Ayt Wariaghel).

Ayt Seghrushen of Oum Jeniba has a clitic *din*, which is used for near-listener and anaphoric deixis. In these functions it is regularly found without a following RC (Bentolila 1981:55ff.), e.g.

mš *d-žu* *ssžṛt=din* *asfar*
if:HYP 3SF-be:PV tree=ANP EL:medicine
'if this tree (just mentioned) is a medicine' [Bentolila 1981:55]

Like *ənni* in Beni Iznasen, *din* is regularly used with heads of RCs. Heads without a deictic element, or with a different clitic are possible but rare. As shown by the profound analysis in Bentolila (1981:354ff.), this is also the case in contexts where normal anaphoric/near-listener deixis is impossible. Thus the following sentence where *din* is cliticized to the head of the RC is fully grammatical:

išt *l* *lḥažt=din* *i-ɛdl-n*
one:F of thing=ANP PTC-be.good:PV-PTC
'a good thing' [Bentolila 1981:354]

Without the RC, a phrase such as *išt l lḥažt=din* 'a certain thing in question' is not acceptable. It is very well possible that similar subtle differences between anaphoric / cataphoric and relative usage exist in other varieties of Berber, but most descriptions are not fine enough to show such a difference.

In the Ayt Wariaghel variety of Tarifiyt, specialization of this type has been carried further. In this variety, like elsewhere, there are three clitics which denote spatial and anaphoric deixis: *a* 'proximal'; *in* 'distal'; *ənni* 'anaphoric'. In addition, there is a fourth element, *ən*, which is used with nouns followed by an RC. It can also be combined with a pronominal base, where it has a slightly wider function, as it can also signal a following genitival or adjectival construction. The element *ən* does not appear without a following modifying phrase. Its use is not obligatory, however, and there are no impediments to RCs which are not introduced by *ən*. Examples:

x *zzman* *isəmɣan* *i-ḏəwř-ən* *t* *tiḥuža=n* *tɛawaḏ-ən*
(i) *isəḡman*
on time slaves PTC-become:PV-PTC PRED EL:stories=REL tell:IPV-3PM
(to) babies
'about the time of the slaves, which has become stories that they tell to children' [Essadki 1997:26]

wā *ḵi-s* *ṯ-əḥḍā* *yəmma-s=n* *das=y-əggi-n* *lahəlla*
NEG with-3S 3SF-be.present:NPV mother-3S=REL 3S:IO=PTC-do:PV-TC lahella
'his mother is not with him, who did Lahella (lullaby) to him' [Essadki 1997:24]

w-ən *y-ənnuffā-n* *iḍənnat*
DEM:SM-REL PTC-hide:PV-PTC yesterday
'the one who hid yesterday' [Essadki 1997:56]

nəš	*ḏ-əssīḏ=ay*	*gi*	*ṯ-ən*	*n*	*ḏsəmɣin*
I	3SF-wash:PV=1S:DO	in	DEM:SF-REL	of	EA:slave.girls

'me, she washed me in the one (i.e. the water hole) of the slave girls' [El Ayoubi 2000:136]

While there is no doubt about the bound status of *ən* in the case of pronominal elements that cannot occur without a deictic element, its status with nominal heads is less clear. In writing, *ən* is often detached from the noun, and in written poetry it may even appear in the initial position of a line (which, probably, is preceded by a pause in recitation), as in the following fragment of a piece of political poetry by the poet Ahmed Essadki, as edited by Roel Otten:

tḥižža-n	*ɣā*	*řḇit*	*aḇarḵan=*
go.on.pilgrimage:IPV-3PM	to	house	EL:black=

n	*d=y-usi-n*	*ḏəggʷ*	*Marikan*
REL	VENT=PTC-come:PV-PTC	in	[EA:]America

'they head their pilgrimage towards the black house
that stands in America' [Essadki 1997:46]

Apparently, what was originally a deictic clitic is in the process of becoming an independent marker of the RC. The origin of *ən* is unknown. It may constitute a reanalysis of the anaphoric deictic *ənni* in pre-RC position as an element *ən(n)* followed by the pronominal relative element *i*, which also exists in Ayt Waryaghel. Due to this reanalysis, *ən* would have become possible in contexts where it is not followed by *i*. The main problem in this derivation is its use with pronominal bases, where *ən* also appears before adjectival and genitival determinations. As these are normally not followed by *i*, the *faux découpage* of *ənni* into *ən(n)* + *i* does not seem to apply to these constructions. This is the more problematic as the use of *ən* after pronominal bases with following relatives and adjectives is attested as far east as Beni Iznasen (Kossmann 2000a:90), while its use with nominal RC heads is much more restricted dialectally.

Specialization of deictic clitics in pre RC-position is typical of many Middle Atlas varieties; thus the anaphoric clitic *nna* is obligatory with relative clauses in Ayt Ndhir (Penchoen 1973b), while Zayan has an element *n*, which is mainly used with nouns and pronouns in pre-RC position (Loubignac 1924:122ff.; *n* is also used, but only rarely, as a variant of the distal marker *in*, p. 112).[18]

[18] In order to show contexts where *n* can be absent, Loubignac (1924:123) contrasts a phrase *ařyaz=aḏ i-zənzi-n axam=in* (man=PROX PTC:S-sell:PV-PTC:S tent=DIST) 'this man who has sold that tent' to a similar phrase with *n*: *ařyaz=aḏ n i-zənzi-n axam=in* (man=PROX

12.4.3 *The Extension of Interrogative Markers to RC Contexts and other Pronominal Solutions*

Another process of RC renewal is the extension of interrogative markers to their use in relative clauses. In many Berber languages, this is commonly found with prepositional relatives: instead of a construction with a bare preposition, an interrogative is used (which may contain the preposition or not). This is quite regular in western varieties of Tarifiyt and in many Kabyle dialects (cf. Reesink 1979:334; Chaker 1983:406ff.).

A different pronominal solution is found in some Central Moroccan Berber varieties. In these dialects, as in most other Berber varieties, relativization of an indirect object demands for a special allomorph of the preposition *i* 'to'. In Zayan, this allomorph is *mi*, e.g.:

aḥuli=n *mi* *ɣərs-əɣ*
EL:ram=REL to:REL cut.throat:PV-1S
'the ram (to) whom I have cut the throat' [Loubignac 1924:124]

In principle, *mi* can be considered a variant of the dative preposition *i* in pre-clausal independent position, on the same level as *g* 'in' in the following sentence:

axḇu=n *əg* *i-ḵšəm*
EL:hole=REL in 3SM-enter:PV
'the hole in which he entered' [Loubignac 1924:124]

However, the element *mi* is quite similar formally to pronominal elements, esp. interrogatives, such as *ma* 'what'. By reanalysis—or as a reminiscence of a possible pronominal origin—*mi* has taken pronominal features, and can also occur in combination with other prepositions, e.g.

axḇu=n *əg* *mi* *i-ḵšəm*
EL:hole=REL in *mi* 3SM-enter:PV
'the hole in which he has entered' [Loubignac 1924:124]

The complex *əg mi* is not identical with the interrogative, which is *ma-g-mi* 'in what'. It is rather a case of pronominalization, and constructions of this type have been considered the *gestation* of a relative pronoun (Leguil 1990).

REL PTC:S-sell:PV-PTC:S tent=DIST). If this second phrase is grammatical (this is not entirely clear from the formulation by Loubignac), this would mean that *n* can be used in combination with spatial deictic clitics such as proximal *=aḏ*, thus showing its independence vis-à-vis the deictic clitic system.

12.4.4 *The Introduction of a Dedicated Relative Marker Through Grammaticalization or Otherwise*

The last type of innovated relative construction that will be treated here has an independent element, which does not seem to have a pronominal background, standing between the head and the RC. The background of these elements is not always clear. Sometimes they are clearly grammaticalizations of a participial construction with *ili* 'to be', in other cases the element may have been borrowed from Arabic.

The first case concerns an element whose etymological background is unclear: *da* in the southern Central Moroccan dialects of the Demnat region. In these dialects, the element *da* (Ayt Hassan; Sadiqi 1997:160ff; Ntifa, Laoust 1918:239ff.) or *ida* (Ayt Bouzid; Ennaji 1985:30ff.) is facultative for connecting the head to a relative clause, e.g.

argaz *da* *y-ara-n* *lktab* *i-ffγ*
EL:man REL PTC:S-write:PV-PTC:S book 3SM-go.out:PV
'the man who has written the book has left' [Ayt Hassan; Sadiqi 1997:164]

lktab *da* *y-ara* *urgaz* *i-γla*
book REL 3SM-write:PV EA:man 3SM-be.expensive:PV
'the book the man wrote is expensive' [Ayt Hassan; Sadiqi 1997:164]

argaz *da* *mi* *i-sγa* *lktab* *i-lla*
EL:man REL to:REL 3SM-buy:PV book 3SM-be:PV
'the man for whom he bought the book is there' [Ayt Hassan; Sadiqi 1997:164]

i-dda *urgaz* *da* *f* *i-sawl*
3SM-go:PV EA:man REL on 3SM-speak:PV
'the man about whom he spoke has gone' [Ayt Hassan; Sadiqi 1997:165]

The same particle occurs in pre-modern Tashelhiyt (van den Boogert 1997:259), cf.

ar *i-ttẓur* *imuslmn* *da* *lla-nin* *γ* *lqbur*
IPFV 3SM-visit:IPV muslims REL be:PV-PTC:P in graves
'he visits the Muslims who are in the graves' [Awzal, van den Boogert 1997:296]

The origin of this particle is not known. Ennaji (1985:34) points to the formal similarity between *(i)da* and deictic clitics of the form *idγ* 'proximal', *idaγ* 'anaphoric', as found in his Ayt Bouzid variety. As these deictic elements are absent in the other varieties which have *da* (cf. Ayt Hassan: Sadiqi 1997:138ff; Ntifa: Laoust 1918 226ff.), this is far from certain.

A second innovation leading to an independent particle has to do with the use of the verb 'to be' as an auxiliary. In many Berber languages, this

auxiliary is found for the expression of certain aspectual distinctions (e.g. Figuig, Kossmann 1997:365ff.). In a number of languages, it has acquired a special function—in addition to its aspectual usage—as a marker of the relative clause. Thus Ouargla and Mzab have two constructions, one with the element *i* followed by a RC, the other with the element *i* followed by the perfective participle *lla-n(t)*, which, then, is followed by the RC. The syntax of the clause following the element *lla-n(t)* is similar to that of a normal, non-relative construction, and normally does not have the participial form (see however Reesink 1979:361) or clitic fronting. One typically finds resumptive pronouns in this construction, e.g.

argaz *(i)* *as=uši-ɣ*
EL:man (REL) 3S:IO=give:PV-1S

= *argaz* *i* *lla-n* *uši-ɣ=as*
EL:man REL be:PV-PTC give:PV-1S=3S:IO
'the man to whom I gave' [Ouargla; Reesink 1979:362]

ɣi ddin n-sən i lla-n təbbəɛ-ən=t d awəḥdi
only religion of-3PM REL be:PV-PTC follow:IPV-3PM=3SM:DO PRED EL:good
'only their religion, which they follow (it) is good' [Mzab; Delheure 1986:24]

A similar construction is found in Chaouia-Aïn Beida, where an element *illan* occurs in relative clauses, followed by a verb without clitic fronting and with resumptive pronouns. Although historically derived from the participle of *ili* 'to be', synchronically this form is different, as the regular participle of 'to be' would be *y-əlla-n*, rather than *illan* (Reesink 1979:369), e.g.

aṣəbḥiṯ=aya, *argaz* *illan* *ẓri-ɣ=iṯ* *iḍəlli,* *y-uṯlay* *yiḍ-i*
EL:morning=PROX EL:man REL see:PV-1S=3SM:DO yesterday 3SM-speak:PV with-1S
'this morning, the man I saw yesterday spoke with me' [Reesink 1979:370]

This construction is very frequent in Douiret (Tunisia), where the element has the form *llan* (also: *nnan*, *nan*) (Reesink 1979:364), which probably originates in the same participial form of *ili* as in the varieties treated above. However, as in Diouret the participle no longer exists, it is clear that the form is now to be considered a relative particle. Examples:

aɣṛum *i* *llan* *y-əddər*
bread REL REL 3SM-live:PV
'bread that lives, i.e. unbaken bread' [Reesink 1979:365]

tyaẓiṭ *i* *llan* *sa* *t-əɣrəs=t* *aššа*
chicken REL REL FUT 3SF-slaughter:AO=3SF:DO tomorrow
'the chicken she is going to slaughter tomorrow' [Reesink 1979:365]

aɣyul *i* *llan* *rəkb-əɣ* *fəlla-s*
donkey REL REL mount:PV-1S on-3S
'the donkey I am riding on' [Reesink 1979:365]

It is very well possible that the (apparently obligatory) relative particle *la*, which is attested in some Zuwara idiolects (others have the Arabic loan *əlli*, Galand 2005:193), has the same background, e.g.

wuh *la* *y-əmmut*
DEM:SM REL 3SM-die:PV
'the one who has died' [Galand 2005:192, citing Mitchell]

aɣ-u *n* *tɣusa* *la* *hakən=tt=əml-əɣ*
DEM-PROX of thing REL 2PM:IO=3SF:DO=say:AO-1S
'this thing that I have told you' [Galand 2005:192, citing Mitchell]

a-din *n* *ləḥyuḍ* *la* *t-nəẓẓm-əd* *a* *t-əẓṛ-əd* *di-sən* *udm-im*
DEM-ANP of walls REL 2-can:IPV-2S AD 2-see:AO-2S in-3PM face-2SF
'these walls, in which you can see your face' [Galand 2005:192, citing Mitchell]

This brings us to the last type of innovations in relative constructions, those which use a particle *əlli*. The use of *əlli* as a relative particle is limited to a number of Libyan and Tunisian dialects: Sened, Tamezret, Zuwara (idiolects, cf. Galand 2005:193), Djebel Nefusa (Beguinot ²1942:136), Sokna and El-Fogaha. In Djebel Nefusa, the use of *əlli* does not prevent other elements of Berber relative syntax to appear: while the participle is mostly absent in this language, relative clauses still have clitic fronting, e.g.

taddárt *álli* *das=t-árwəl* *təbušílt*
house REL 3S:IO=3SF-flee:PV girl
'the house from which the girl has fled' [Beguinot ²1942:136]

It is impossible to decide to what extent relative clause syntax is retained in El-Fogaha and Sened, as these varieties do not have systematic clitic fronting, e.g.

aɣi *əlli* *swi-ɣ=t* *asənnaṭ*
milk REL drink:PV-1S=3SM:DO yesterday
'the milk I drank yesterday' [Sened; Provotelle 1911:53]

imíddən *álli* *usá-n=d* *zz-əɣár* *matár-ən*
people REL come:PV-3PM=VENT from-outside be.good:PV-3PM
'the people that have come from outside are brave' [El-Fogaha; Paradisi 1963:104]

t-əqqím *tməṭṭúṭ* *əllí* *ɣúr-əs* *šárəṭ* *n* *amárən*
3SF-stay:PV woman REL at-3S three:M of men
'the woman that had three husbands remained . . .' [El-Fogaha; Paradisi 1963:95/V-32]

The situation in Tamezret (which has clitic fronting elsewhere) is unclear, because of a lack of examples with pronominal clitics in relative clauses, while it is unclear to what extent clitic fronting exists in Sokna, e.g.

láflus *álli* *ṯ-xámməm-aḍ* *fəllá-sən*
money REL 2-think:PV-2S on-3PM
'the money about which you thought' [Tamezret; http://atmazret.com/]

iɣ *əlḥəbṭén* *n* *tuɣáw* *əllí* *twaráf-nət*
to two.grains of type.of.dish REL be.roasted:PV-3PF
'to two grains of roasted grains that were roasted' [Sokna; Sarnelli 1924–25:32/II-8]

There is one major difference between Djebel Nefusa on the one hand, and Tamezret, Sokna and El-Fogaha on the other hand. In Tunisia and Djebel Nefusa, *əlli* cannot constitute the sole head of an RC; in this position it is necessarily suffixed to a pronominal base, e.g.

wé-lli *a* *í-gg* *lxér*
DEM:SM-REL AD 3SM-do:AO good
'he who does good' [Beguinot ²1942:121]

In Tamezret, Sokna and El-Fogaha, *əlli* alone can constitute the head of a relative clause 'he who', 'that which', e.g.

əṛníyy=as *álli* *y-áxs*
add:AO:IPT:S=3S:IO REL 3SM-want:PV
'add for him what he wants' [http://atmazret.com]

álli *ayi=t=t-uɣí-m,* *báhi*
REL 1S:IO=3SM:DO=2-take:PV-2PM, o.k.
'the one you brought to me, he is excellent' [Sokna; Sarnelli 1924–25: 32/II-10]

álli *y-us=ád* *s-ɣúr-sən* *a* *t-ənn=ás*
REL 3SM-come:PV=VENT from-at-3PM AD 3SF-say:FT=3S:IO
'the one among them who came, she said to him' [El-Fogaha, Paradisi 1963: 95/V-15]

The etymology of *əlli* in these Libyan varieties is problematic. At least three etymologies are possible. In the first place, a deictic *lli* appears in a number of Moroccan Berber languages, among others Tashelhiyt (Aspinion 1953:95), as an anaphoric marker, which has specialized uses in introducing relative clauses (Galand 2002a [1988]:234, 2009:178). It may be cognate with an element *əlli* found in Kabyle *iḍəlli* 'yesterday' (< *night=*əlli*), where

it seems to refer to something past ('the former night'); for a tentative history, see Galand (2010:179). Therefore the Tashelhiyt marker is probably ancient in Berber and not a loan from Arabic.

In none of the eastern Berber varieties, *əlli* can synchronically be regarded a deictic clitic. In Tamezret, Sokna and El-Fogaha, *əlli* can constitute the sole head of an RC, which automatically implies it has no clitic status. In Djebel Nefusa, *əlli* can be combined with a noun which has a clitic itself, e.g.

lɛərqúb	*n*	*úššən=ih*	*álli*	*t-əwwt-ád*	*s*	*ṭár*	*ənn-ək*
shank	of	jackal=ANP	REL	2-hit:PV-2S	with	foot	of-2SM

'the shank of the jackal that you hit with your foot' [Beguinot ²1942:196, l. 12]

According to the second etymology, *əlli* comes from the Perfective participle *(y)əllan* of the verb *ili*, a construction well-attested immediately west of the region where *əlli* is used. This derivation is strengthened by the fact that in Zuwara *la* and *əlli* coexist. The final *i* of *əlli* remains unexplained, however.

The third possible derivation is considering it a direct loan from dialectal Arabic, where *əlli* is the most frequently attested relative marker. The main argument in favor of this solution lies in the fact that in Sokna and El-Fogaha, *əlli* can also function as the sole head of an RC, i.e., it has pronominal features which neither the Berber clitic *lli*, nor the *(y)əllan* relator have. The syntactic distribution of *əlli* in these varieties is identical to that of Maghribian Arabic *əlli*, which can both function as a RC marker standing between the head and the RC, and as the sole head of the RC.

However, the inverse of this argument is true for Djebel Nefusa: as *əlli* cannot function as a RC head by itself, it is less akin to the Arabic structures.

12.5 Conclusions

In comparison with the "classical" Berber structure, the Arabic construction has a number of differences. In studying the possible influence of Arabic on the development of Berber relative constructions, it is useful to define these features, and then look at the way they are represented in the Berber innovations. In the following, I shall not go further into the question of the indefinite-head relatives, which has been treated in section 12.2. In definite-head constructions, the following features distinguish Arabic from Berber structures; some of the features are scaled, others are parallel:

A agreement
1. normal inflection with subject relatives
2. obligatory resumptive pronouns in prepositional relatives
3. (facultative) resumptive pronouns in object relatives

B the linker
1. the presence of a linking element, one of the main functions of which is signalling the relative clause
2. the presence of a linking element, which is only used in relative and relative-like constructions (e.g. clefts)
3. the presence of a linking element which can also function (without any preceding element) as the sole head of a RC in non-cleft relative constructions.

C the linker and RC types
1. the linker is found in non-subject RCs
2. the linker is found both in subject and non-subject RCs
3. the linker is obligatory in non-subject RC
4. the linker is obligatory both in subject and non-subject RCs

In a Berber language which has all these features, the syntactic construction can be considered entirely parallel to the Arabic construction. On the other hand, certain, apparently archaic, types of Berber RCs (e.g. in Figuig) do not have any of these features. In the following table, the results for a number of Berber languages which have undergone innovations will be enumerated:

		Moroccan Arabic	Tarifiyt Iqəřɛiyən	Kabyle-Manguellat
A1	normal infl SJ-RC	+	-	-
A2	resumpt pr PREP-RC	+	-	-
A3	resumpt pr OBJ RC	- / +	-	-
B1	linker present	+	+	+
B2	linker only used with RCs	+	+	+
B3	linker used as pronominal head	+	-	- / +[19]
C1	linker in non-SJ RC	+	+	+
C2	linker in all RCs	+	+	-
C3	linker obligatory in non-SJ RCs	+	+	-
C4	linker obligatory in all RCs	+	-	-

[19] Only in inverted clefts.

		Kabyle-Iraten	Figuig	Igli
A1	normal infl SJ-RC	-	-	-
A2	resumpt pr PREP-RC	-	-	-
A3	resumpt pr OBJ RC	-	-	-
B1	linker present	+	-	+
B2	linker only used with RCs	+	-	+
B3	linker used as pronominal head	- / +[20]	-	-
C1	linker in non-SJ RC	+	-	+
C2	linker in all RCs	-	-	+
C3	linker obligatory in non-SJ RCs	-	-	+
C4	linker obligatory in all RCs	-	-	+

		Ouargla *i* // *illan*	Douiret *i* = *illan*	Ghadames
A1	normal infl SJ-RC	- // +	+	-
A2	resumpt pr PREP-RC	+ // +	+	-
A3	resumpt pr OBJ RC	- // +	+	-
B1	linker present	+ // +	+	+
B2	linker only used with RCs	+ // +	+	+
B3	linker used as pronominal head	- // -	-	+
C1	linker in non-SJ RC	+ // +	+	+ (only prep.)
C2	linker in all RCs	+ // +	+	-
C3	linker obligatory in non-SJ RCs	+ // -	+	+ (only prep.)
C4	linker obligatory in all RCs	+ // -	+	-

		Djebel Nefusa	Awdjila	Siwa
A1	normal infl SJ-RC	+	+	+
A2	resumpt pr PREP-RC	+	+	+
A3	resumpt pr OBJ RC	-	+	+
B1	linker present	+	+	+
B2	linker only used with RCs	+	?	-
B3	linker used as pronominal head	-	+	+
C1	linker in non-SJ RC	+	+	+
C2	linker in all RCs	+	+	+
C3	linker obligatory in non-SJ RCs	+	+	+
C4	linker obligatory in all RCs	+	+	+

[20] Only in inverted clefts.

		El-Fogaha
A1	normal infl SJ-RC	+
A2	resumpt pr PREP-RC	+
A3	resumpt pr OBJ RC	?
B1	linker present	+
B2	linker only used with RCs	+
B3	linker used as pronominal head	+
C1	linker in non-SJ RC	+
C2	linker in all RCs	+
C3	linker obligatory in non-SJ RCs	?
C4	linker obligatory in all RCs	?

From this overview, it appears that Berber varieties differ considerably in the degree to which they have innovated towards a structure more similar to Arabic. The only varieties which have acquired fully Arabic structures are the Libyan oasis dialects of El-Fogaha and Sokna (as far as our limited data allow us to know). Siwa and Awdjila also present strong similarities to the Arabic type—the main difference is that the relative marker *wa* (etc.) also functions as a demonstrative pronoun, which is not necessarily followed by a RC or a RC-like construction. None of the other languages that have a dedicated relative marker uses it as the sole head of a RC; they therefore lack some of the distinctively pronominal features of Arabic *lli*.

To what extent has Arabic influence been a factor in the innovation of the Berber RC structure?

It is reasonable to assume that the introduction of resumptive pronouns in non-Subject RCs is a calque from Arabic; the fact that in most varieties where this is found it is obligatory with prepositional RCs and facultative with object RCs reflects the distribution in Maghribian Arabic. On the other hand, a large group of northern Berber varieties has undergone developments that go counter to the Arabic situation and make Berber more different rather than more similar structurally than Arabic. The Berber subject-relative marker ("participle") originally had gender/number agreement referring to the head of the RC. This is more similar to Arabic (which has regular gender/number inflection on verbs in subject relatives) than later developments, in which this distinction is obliterated, and the participle becomes an invariable marker of the subject relative clause, without any agreement to the head.

Arabic influence in the introduction of a relative clause marker is less easy to prove. The specialization of a deictic clitic into a relative marker probably constitutes an independent innovation: there is an easy path from frequent use of an anaphoric / cataphoric deictic with the head of

a relative clause into a specialized use of this deictic in this position as a signal for an upcoming relative clause (as found in Ayt Seghrushen of Oum Jeniba). The next step in this path is the restriction of the clitic to its relative clause signalling function, obliterating its other anaphoric / cataphoric functions. This is what may have happened in Zayan and in Ayt Waryaghel, and it may constitute the background of southern Middle Atlas *da* and Djebel Nefusa *əlli*. In this path, the only Arabic influence would be a vague sense of needing a segmental marker for an upcoming relative clause. In the same vein, there is no reason to assume contact influence in the introduction of interrogatives in RCs.

The RC construction with the element *i* can also easily be derived from Berber structures. There is no doubt about the anciennity of a pronominal element *ay* or *i* in constructions where it functions as the sole head of an RC, as *i* (or *ay*) are part of the almost pan-Berber cleft construction 'it is NOUN, the one who VERBs'. In this construction, the part translated as 'the one who' is rendered by means of *i* or *ay*. In those languages which allow for inverted clefts ('the one who VERBs is NOUN'), *i* may occur phrase-initially, thus clearly showing its pronominal nature, e.g. Kabyle (Ayt Iraten):

d	*nkk*	*i*	*t=y-uwt-n*
PRED	I	REL	3SM:DO=PTC-hit:PV-PTC

'it is me who hit him' [Chaker 1983:404]

i	*t=y-uwt-n,*	*d*	*nkk*
REL	3SM:DO=PTC-hit:PV-PTC	PRED	I

'who hit him, it is me' [Chaker 1983:404]

In Tuareg, *i* regularly functions as an indefinite unique head of an RC or a genitival phrase (cf. Kossmann 2011a:113ff.). When the head is a noun, *i* sometimes occurs followed by an RC, but it is not allowed before a genitival phrase. While it is therefore clear that the pronominal use of *i* / *ay* as the sole head of a RC is an ancient feature of Berber, its use in the position between a nominal head and the RC (where it could be considered a secondary head) may be an innovation. In Tuareg, the relevant pronouns also appear in the position after a head noun. Some scholars consider this an archaism in Tuareg (Galand 1974). It could also constitute an innovation: the main parallel in northern Berber is the use of *i* as a signal of the relative clause.[21] This indefinite element is quite rare in post-head position in Tuareg, the most common type found between head and modifier

[21] One should note, however, that Galand (1974) considers the possessive pronouns with initial *i*, as found, amongst others, in Kabyle, remnants of a more general use of *i*

being definite elements (Kossmann 2011a:116). With the exception of Siwa and Awdjila, there are no clear out-of-Tuareg parallels to this use of the definite pronouns.[22]

Therefore, I assume that the use of *i* as a marker of a relative clause standing in between the nominal head and the RC itself, is an innovation. One way of accounting for this innovation is considering it an analogy with the cleft constructions. In the "classic" Berber construction, clefts are structurally best interpreted as 'it is X, the one that Ys', i.e. constructions in which the focused element constitutes the main clause, and the following relative construction constitutes a kind of apposition to the focused element, with a pronominal head of its own. However, an alternative interpretation (which may coexist mentally with the basic interpretation) would have the second clause as a direct determination of the focused element, i.e. 'it is X that Ys'. In such an interpretation, *i* is no more be the sole head of the clause in apposition, but simply signals that the following clause is a relative clause.

Languages where *i* has become obligatory in all RC types (e.g. Ouargla) generalized this second interpretation, and in such languages, one can safely analyze the *i* in the cleft construction as the same element as relative *i*. In those languages where *i* is only found in part of the RC types, and is not obligatory, the two functions are still distinct. For example, in Ayt Manguellat Kabyle, *i* is obligatory in cleft constructions, facultative in non-subject RCs, and forbidden in subject RCs. Still, one may assume that the alternative interpretation of the cleft construction provided the model for the introduction of *i* as a signal of a following relative clause. The main problem in this scenario is that, at least in Kabyle, structurally the *i* of the cleft construction still functions as the head of the second clause, as witnessed by the inverted clefts illustrated above.

In this scenario, Arabic influence does not play a role; however, it is very well possible that the extension of the interpretation of the cleft construction as a simple RC construction, rather than as a construction with adposition, is inspired by the situation in Maghribian Arabic, where clefts can be interpreted in both ways, e.g.

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before a determination. In Tuareg, the use of the indefinite pronoun *i* is excluded in this context.

[22] Note however the presence of such syntax in the Ghadames variety on which Motylinski (1904) is based (Kossmann fc.-d), and the isolated expression *tərkáft ti n ərríš* 'the caravan of (ostrich) feathers' in Djebel Nefusa (Beguinot ²1942:121). In the latter case, it is not impossible that we are dealing with a direct loan from Tuareg, ostrich feathers mainly coming from the southern Sahara and the Sahel (Baier 1977).

huwa	*lli*	*ža*
he	REL	come:3SM:PT

'it is he who came'

In Maghribian Arabic *lli* is used both as a relative marker and as the unique pronominal head of a RC, so the cleft construction can be interpreted either as 'it is he, the one who came' and 'it is he who came'. In fact, Arabic influence would explain the generalization of a structural interpretation which is not necessarily the most obvious interpretation from a Berber point of view.

More direct Arabic influence is at stake in the grammaticalization of *i llan* 'that is' as a relative marker in Mzab, Ouargla and Douiret. In these languages it occurs as an alternative to a construction with only *i*. Historically, this is a grammaticalization of a construction where the verb 'to be' appears as an auxiliary. Originally, in the varieties in question subject relatives only had participial inflection on the auxiliary, and not on the following verb (cf. the situation in Figuig, Kossmann 1997:161). In Ouargla, Mzab and Douiret this auxiliary was reinterpreted as a relative marker which announces a clause which does not have the formal characteristics of relative clauses, and which contains resumptive pronouns. The result is a construction that is identical to the Arabic RC, which has a relative marker followed by an otherwise normal clause. Even though based on Berber material, the reinterpretation of *i llan* as a relative marker is clearly inspired by the presence of an Arabic construction of the same type. It is quite conceivable that the formal resemblance between the Arabic relative marker *lli* and the Berber participle *i llan* has been a factor in this equation.

As mentioned above, a stingy problem is posed by Libyan relatives with the relative marker *əlli*, which is formally identical both to the Arabic marker and to certain Berber deictic clitics. In Djebel Nefusa, RCs with *əlli* have many features not found in Arabic RCs, and a derivation from Berber imposes itself. On the other hand, as shown above, El-Fogaha and Sokna have taken over the entire Arabic RC structure, and it is reasonable to assume that the form of the particle *əlli* has also been borrowed from Arabic. This presents us with the uneasy situation that we would have to propose different histories for the particle *əlli* in adjacent languages. Maybe in all these languages *əlli* goes back to the Berber clitic, but it was equated by the speakers with the Arabic element. This led to its specialization into a RC marker in Djebel Nefusa, and strengthened the tendency to copy Arabic RC structures in El-Fogaha and Sokna.

CHAPTER THIRTEEN

CONCLUSIONS

This chapter provides a general appreciation of the Arabic influence on Berber in terms of its general characteristics, and its place in general models of contact-induced change.

13.1 General Characteristics: Phonology

Arabic influence on Berber phonology is of a differentiated pattern. In those regions where Arabic and Berber have strongly different phonemic systems (esp. due to the consonant lenition process known as spirantization), Arabic loans are to a large degree inserted into Berber pronunciation patterns. This is especially so where this insertion would not lead to any problems in the identification of the loan, such as when Arabic /b/, /d/, /t/, /ḍ/ become /b̲/, /d̲/, /t̲/, /ḍ̲/, even though in most spirantizing Berber varieties at least the alveolar plosive pronunciations are also phonemic (but much less frequent). Spirantization being a process which affects a large proportion of the words of the language, this adaptation can be seen as a way to preserve the general phonetic characteristics of the recipient language. Bilingual speakers only rarely transfer Berber spirantization when they speak Arabic, so the adaptation is probably not to be considered the effect of the incapability to pronounce the Arabic phonetics.

Arabic phonemes that are not found originally in Berber, such as the pharyngeal fricatives and /q/, are normally borrowed together with the lexeme. There are some differences here, as Arabic /ṭ/ is much more often "integrated" (becoming /ḍ/ or /ḍ̲/) than /ɛ/ or /ḥ/.

At many points, Berber and Maghribian Arabic share features whose origin is not easily assigned to one or the other linguistic group. Thus the reductions in the short vowel system represent innovations both in Berber and in Arabic, and may have their origin in either group of varieties. Similar problems are at stake when it comes to the phonetic realization of certain phonemes and prosody. Again, Maghribian Arabic and Berber are quite close to each other, but it is often impossible to make out which language is at the origin of a certain phonetic feature.

Generally speaking, Arabic influence on Berber is as expected from a language maintenance situation, in which phonological influence is mainly mediated by loanwords (Van Coetsem 1988), while the take-over of phonological patterns independent from lexical material would be typical of a language shift situation. Taking Matras' scheme of processes and types of phonological change under language contact (Matras 2009: 225), Berber would basically be a case of B "borrowing of phonological features along with word-forms". Convergence of systems on a more structural level (type D in his scheme) has certainly taken place, but is not easily pinned down to Arabic influence on Berber. Adjustment to the patterns of the recipient language is evident in the case of spirantized consonants (type A); in this case, however, not necessarily because of insufficient capability to pronounce them.

A special feature of Arabic influence on Berber is the introduction of foreign consonants in non-borrowed terms, in order to convey expressive values. Thus, the Arabic consonants *ε* and *ḥ* regularly appear in words with expressive connotations, which often stand in variation with forms that lack them. One way to interpret this is that foreign sounds as such convey (or used to convey at an earlier stage) an element of foreignness which makes them more expressive. Moreover, different from using native sounds in expressive prefixation or substitution, the chances of a homonymic clash with other words are smaller. Expressive formations being highly prominent in the forging of new words in Berber, this process has led to an important number of non-Arabic words displaying Arabic loan phonemes.

13.2 General Characteristics: Morphology

Morphological influence of Arabic on Berber is mediated by the lexicon. Morphological patterns are taken over together with the borrowed lexemes. There are several things that may happen after this.

In the first case, patterns found in the borrowed morphemes spread to native words, and thus become productive. In the second case, borrowed morphology remains restricted to borrowed lexems. In the latter case, two morphological systems function side by side synchronically, one with native morphology, the other with borrowed morphology. This pattern is well-known from learned loans in English, such as *phenomenon*, P *phenomena*. Kossmann (2010a) calls this Parallel System Borrowing (PSB) and argues that it is much more wide-spread than often assumed, and that it constitutes a major borrowing pattern in some languages.

Parallel System Borrowing implies etymological compartmentalization, i.e., the restriction of certain grammatical morphemes to lexemes that belong to a specific etymological stratum. Compartmentalization is not only relevant where borrowed morphology is concerned. It is also found when the use of certain native morphological patterns is restricted to foreign lexemes. In this case, the morphological pattern highlights the foreign nature of the lexeme, even though the pattern itself is not etymologically linked to the lexeme in question. Compartmentalization can be strong or weak. In strong compartmentalization, native morphology is restricted to native lexicon while foreign morphology is restricted to foreign lexicon. In weak compartmentalization, native morphology is used both with native and with foreign lexemes, while foreign morphology is restricted to foreign lexicon. There is a cline going from very weak compartmentalization to strong compartmentalization, basically concerning the amount of foreign lexicon inserted into the native patterns. Thus both Arabic nouns in Berber and Latino-Greek nouns in English show weak compartmentalization. Still, the English compartmentalization is weaker than the Berber one, in that the percentage of Latino-Greek lexicon with Latino-Greek morphology in English is smaller than that of Arabic lexicon with (quasi-)Arabic morphology in Berber.

Parallel System Borrowing is very common in Berber. It almost always shows weak compartmentalization, i.e., it only concerns part of the borrowed lexicon. All Berber languages have PSB in the nominal system. Arabic nouns have a different morphological make-up from native nouns, in which often the Arabic article takes the place of the Berber nominal prefix (without being able to express the oppositions expressed in the Berber form), and in which plural forms follow the highly irregular Arabic plural patterns. As shown in section 6.3.1, Arabic nominal morphology is not reflected faithfully in the parallel system. Especially the use of a suffix *-ət* instead of expected Arabic *-a* for the feminine singular is problematic. Both Berber morphology (the FS suffix *-t*) and Arabic morphology (the construct state FS suffix *-ət*) provide parallels, but none of them explains the suffix *-ət* entirely. The native Berber suffix is formally different in its behavior in syllabification, while in Arabic the construct state suffix cannot be combined with the article. As the Arabic article is always taken over in Berber, the resulting word is impossible in Arabic: Beni Iznasen *zzənqəṯ* 'street' corresponds either to the Arabic Free State form with the article, *z=zənq-a* 'the street', or to the Arabic Construct State form without the article, *zənq-ət* '(the) street of'. The combination of the two is not a possible Arabic form. Whatever the etymological solution to this

problem, the (quasi-)Arabic morphology is clearly different in form from native morphology.

It is also different in its behavior. As mentioned above, the Arabic definite article basically takes the place of the Berber prefix. The definite article loses its meaning in Berber and is always present in the word form, similar to the Berber prefix. The Berber prefix is quite different, however, from the Arabic definite article in that it allows to express a number of oppositions: gender, case/state and, to some degree, number. In the (quasi-)Arabic morphology of Berber, these oppositions are not expressed in the article. This has no systematic implications for gender and number, which are also expressed morphologically elsewhere in the word, and which trigger agreement. On the other hand, the category of case/state is only expressed in the Berber prefix, and the lack of oppositional possibilities in the fixed definite article obliterates the case/state opposition for this category of words.

More subtly, gender functions differently in the two parallel systems. In native morphology, gender is basically derivational: most words allow for both genders, allowing for the expression of natural gender with higher animates and of difference in size with lower animates and inanimates. In addition, it is used to oppose collectives to unity nouns. In Arabic, gender is used in a derivational way with higher animates to express natural gender, and with a lot of other nouns to oppose collectives to unity nouns. In the (quasi-)Arabic parallel system—with very few exceptions—gender morphology is not used derivationally. When there is need of an opposition, the noun has to switch its morphological system, e.g., a native morphology unit noun corresponds to a (quasi-)Arabic collective noun, or a native morphology diminutive corresponds to a (quasi-)Arabic neutral form. In such cases, the same lexeme appears in both systems, e.g., Beni Iznasen *lməšmaš* 'apricots' (collective, Arabic morphology, masculine) vs. *ṯaməšmašṯ* 'apricot' (singular unity noun, native morphology, feminine).

Cross-over of native morphemes to foreign morphology is very rare and, different from Gardani (2008), I do not consider it a major infraction on the compartmentalization. The only situation in which it is structurally relevant is the afore-mentioned case of morphological switch, such as found when original Berber nouns are used in a collective vs. unit noun opposition. In such cases, one sometimes finds that an originally Berber noun is assigned an Arabic shape in the collective, e.g. Beni Iznasen *lkəṭṭuf* 'ants' (collective, Arabic morphology) vs. *ṯakəṭṭufṯ* '(small) ant' (singular unity noun, native morphology). Even here, only very few nouns are involved. More systematically, Siwa makes deadjectival nouns from adjectives using the (quasi-)Arabic morphology (Souag 2010:161ff.).

Parallel systems are not restricted to nominal morphology. In a number of varieties, adjectival morphology has parallel systems too. The best-studied case is Ghomara, where the very few remaining Berber adjectives (originally verb forms) have different morphology from the great majority of borrowed adjectives, which preserve their Arabic morphology.

In a number of Berber varieties, Arabic pronouns have been taken over in combination with Arabic particles. Some languages take over the full set of relevant Arabic pronouns (e.g. Figuig), while others only take over part of it and thus have an etymologically mixed parallel system.

Parallel systems in verb morphology are only attested in Ghomara Berber. In this language, about half of the verbs are conjugated according to Arabic morphology. This is a rare situation in the world, but it is well-known from a number of Romani varieties (e.g. Ajia Varvara, Igla 1996), and may also be present with Greek verbs in Cypriot Arabic (Kossmann 2008b). The parallel morphology in Ghomara is not restricted to the verb itself, but also involves pronominal clitics of the direct and indirect object, which are Arabic with Arabic-morphology verbs and Berber with Berber-morphology verbs.

Except for the closed set of personal pronouns and the adjectival class in Ghomara (with only three Berber-based adjectives left), no Berber language has strong compartmentalization in the parallel systems. There are many borrowed nouns and (in Ghomara) verbs that have Berber morphology, in spite of the importance of the Arabic system. The choice of morphological system is partly explainable from the semantic content: for Tarifiyt it was shown that borrowed non-countable nouns have a strong tendency to have (quasi-)Arabic morphology, while borrowed countable nouns have a fifty-fifty distribution over the two morphologies. The distribution of the morphologies in Ghomara verbs also follows some tendencies, which are difficult to explain. Arabic underived verbs can be inflected according to both morphological categories; however Arabic stem II and stem III derivations always receive Berber morphology, while Arabic passive derivations with a prefixed *t(t)-* always have Arabic morphology.

Strong compartmentalization is found in certain settings which do not necessarily imply the take-over of foreign morphology. In Tashelhiyt, two cases of strong compartmentalization occur in the verbal system. In the formation of the Imperfective aspectual stem, triradical verbs (one of the largest categories) have different formations for Berber verbs and for Arabic loans, both using native materials. Berber triradical verbs have gemination of the first or the second radical, while Arabic triradical verbs add a prefix *tt-*. The native prefix *tt-* is found with many other verbal types both in Berber and Arabic etyma, and the compartmentalization only concerns

this specific verb class. Compartmentalization is quite strong here, and only very few Berber triradical verbs have the prefix *tt-*, while virtually no Arabic verbs have gemination. The other case of strong compartmentalization in Tashelhiyt is found in the derivation of the action noun. Action nouns based on Berber verbs have native nominal morphology, while those based on Arabic verbs always have (quasi-)Arabic morphology.

In Ghomara, there are two cases where Arabic morphology has substituted or been added to the Berber paradigms (Mourigh fc.). The first case are passives with *tt-* and *n-*. Although there exist native passive morphemes with similar shapes in a number of Berber varieties (Kossmann 2002a), the fact that Ghomara *tt-/n-* is only combined with Arabic borrowings, and that the passive always has Arabic verb morphology, clearly shows that it comes from Arabic. Ghomara does not preserve an indigenous passive marker, which leaves verbs with a Berber background without a passive. This problem is solved by using equivalent etymologically Arabic passive verbs in a systematic way, leading to suppletive paradigms. Thus the verb 'to hit' has the Berber form *əwwəṭ* when underived (using an Arabic form would be wrong), but the derived Arabic form *n-ḍṛəḇ* when used as a passive. A similar situation is found with active and passive participles in Ghomara. Berber has no equivalent to these forms (the so-called Berber participle is a different category). Ghomara is unique in that it has taken over these categories from Arabic, and applies them also to native verbs. With Arabic loan verbs, this does not create any morphological problems, as the Arabic form can be inserted. With native Berber verbs, the same solution is found as with passives: participles of Arabic verbs are used systematically in suppletion to non-participial forms of Berber verbs. Thus the Berber verb *əšš* 'to eat' is doubled by an active participle *wakəl* which is of Arabic origin; there is no corresponding Arabic loan in other verbal forms of 'to eat'.

The effect of these developments is not so much a parallel system (only the Arabic system is used), but a suppletive system, in which Berber lexemes in some morphological categories correspond to Arabic lexemes in others. With open-set lexical types such as verbs this is extremely uncommon in the world. The only other case that I know of are the closely related northern Songhay languages Tadaksahak and Tagdal, which have suppletive paradigms with verb derivations. In these languages, Songhay-origin underived verbs correspond to Tuareg-origin (derived) verbs (Christiansen 2010). With closed-set lexical types the situation may be more common. One remarks, for example, the existence of a similar suppletive relationship in Tashelhiyt between Berber cardinal numerals and Arabic fractions.

The spread of Arabic morphological patterns to native Berber words is quite rare, and in fact much rarer than, for instance, with Romance noun derivations in English. The reason may be that in Arabic most derivations use apophony, and that transposing an apophonic pattern is more difficult than adding (generalizing) an easily isolated affix. There are a number of cases where Arabic apophonic patterns have been systematically transposed to Berber words, though. The first case is adjectival grading in Siwa and Zuwara (Souag 2010). Berber has no morphological gradation in adjectives, using syntactic means to express comparative and superlative meanings. In Arabic, grade is expressed in the adjective by means of apophony. Siwa has taken over this device in adjectives with an Arabic background, e.g. *aqdim* 'old' (Berber morphology < Ar. *qdim*), *qdəm* 'older'. The same process is applied to adjectives of Berber origin, e.g. *azəṭṭaf* 'black' (< Berber), *zṭəf* 'blacker' (Souag 2010:158). The second case are diminutives in Ghomara (Mourigh fc.). Diminutives in Maghribian Arabic are formed by means of complicated apophonic patterns, largely dependent on the formal shape of the noun (cf. Heath 1987). In Ghomara, the same patterns are applied to words of Berber origin, e.g. from Arabic *ddk̲əṛ* 'male person'—*əddk̲iyyəṛ* 'little male person', and from Berber *tarbat* 'young woman'—*tərbiyyət* 'little young woman'.

Arabic apophonic patterns are also interesting at another level. When Arabic elements are introduced into Berber morphology, the question is which apophonic form is chosen. Not surprisingly, the basic form with nouns is the singular, to which Berber plural formations can be applied. With verbs, there is great diversity, both geographical and lexical, as to the Arabic verb form that is chosen as the basis for the Berber form, and both Imperfect and Perfect Arabic vowel schemes appear in Berber loans. The Arabic apophony *per se* is not taken over, i.e. once the Arabic basic form is chosen, Berber apophonic schemes are applied to it. Ghomara is an exception to this: even with integrated verbs (i.e. those that take Berber morphology), Arabic apophony is copied. Thus with CVC verbs, the difference between Perfects (always *a*) and Imperfects (*u*, *i*, or *a*) is reflected in Ghomara as the difference between Perfective and Aorist, and the lexically determined Arabic Imperfect vocalization is faithfully reproduced in the Ghomara Aorist forms.

Arabic and Berber morphology share similar categories, and therefore the possibilities of categorical transfer are little. There are a few cases, however. Two of these are general in northern Berber except Ghadames: the introduction of a collective—unity noun opposition, and maybe the introduction of nominal adjectives. Both basically use Berber devices,

and in both cases alternative historical explanations are possible. Other cases of categorical transfer use Arabic morphological devices, i.e., Arabic morphology and the new category have been introduced together. The categories involved are Arabic participles in Ghomara and some Libyan varieties, Arabic diminutives in Ghomara, and Arabic adjectival degree in Siwa and, to some extent, Libyan Berber.

13.3 General Characteristics: Syntax

Arabic influence on syntax is more difficult to establish than in other domains. The inherited typological similarities between Arabic and Berber make that there is a serious chance of independent but similar innovations in syntax. More importantly, Berber has played an important role in the constitution of Maghribian Arabic, and many shared structures may stem from Berber rather than the other way round. Strong Arabic influence is found in a number of domains. In the expression of nominal deixis, a number of Berber languages have shifted from a strategy by means of post-nominal deictic clitics to pre-nominal deictic pronouns, a strategy that is clearly inspired by similar structures in Arabic. In the domain of coordination, one remarks the introduction of clause-linking elements, clearly a calque on the Arabic coordinator *w*. In the domain of subordination, Arabic influence is mainly lexical. Many Arabic conjunctions have been introduced as forms, but the basic system remains Berber in nature.

A highly interesting situation is found in relative constructions. Originally, Berber and Arabic constructions were highly different. The historical development of Berber relative constructions shows both convergence and divergence. In a number of Berber varieties, the Arabic difference in construction between indefinite-head and definite-head relatives has been taken over; this may continue to some extent internal tendencies in Berber, but the conventionalization of the construction is without doubt the effect of language contact. Where pronominal reference to the head in the relative clause is concerned, Berber and Arabic were originally very different, Berber having very little pronominal reference, and Arabic using resumptive pronouns everywhere. In Berber one finds two opposite tendencies. In a large number of varieties, Berber has developed in the opposite direction of the Arabic pattern: pronominal reference to the head in the relative clause (inflected "participle" in subject relatives) has become more and more restricted, and was lost in some varieties altogether. In

other varieties, especially in the eastern part of the Maghrib, convergence towards the Arabic pattern is found. Quite a number of languages in the east have introduced resumptive pronouns in non-subject relatives. Moreover, the Berber "participle" (subject-relative verb form) has been lost in a number of varieties, and instead normal inflected verbs are used, just like in Arabic. Early stages of Berber probably only sparsely used elements to introduce the relative clause. This contrasts with Arabic, which has a relative marker with pronominal features in (definite) relative clauses. The ancient situation is still attested in a number of Berber varieties. In many others, different types of relative introductors have evolved, based on pronominal, deictic, and verbal structures. Arabic influence is visible in some of these constructions, while others may have emerged as internal innovations. As a result of these conflicting tendencies, Berber now displays an enormous variation in relative clause structures. Some of these structures are completely different from Arabic, e.g. in Figuig, while others are faithful copies of Arabic patterns, e.g. in a number of Libyan varieties. More than other syntactic features, relative constructions show the intricate interplay between contact-induced and internally motivated change.

13.4 General Characteristics: Lexicon

Berber languages are among the big borrowers of the world's languages. This also concerns basic lexicon. With the exception of Ghadames, all northern Berber languages have higher percentages of borrowings in basic lexicon than a well-known borrower as English took from Romance. Very high scores are found in Ghomara and Siwa. Borrowing of nouns occurs in all semantic spheres. Still, there are items—also in basic lexicon—that are more easily borrowed than others. Terms for adult donkeys, for instance, are hardly ever borrowed, while terms for adult horses are quite often represented by loanwords.

Different from many languages, verbs are as easily borrowed as nouns. Like with nouns, borrowings are frequently found in verbs with rather basic meanings. On the other hand, for many verb meanings all investigated languages use a Berber word, while for others Arabic loans are frequently the only lexical means for expressing the concept. Thus, while 'to forget' is not represented by a borrowing in any of the studied Berber varieties, the verb 'to remember' is quite often represented by a loanword.

In many cases, it is possible to construct an explanation why some word would be borrowed. This may be due to cultural factors, or to lack

of availability of the term in earlier Berber, for example because of linguistic taboos or because phonetic changes led to infortunate homophonies. Explanations of this type help us to understand the fate of individual items. They do not help us to understand the basic fact that Berber is so permeable to borrowing in comparison to other languages, where similar factors play a role. One way of looking at this problem—not really an explanation—is that Berber uses borrowing as the general therapeutic device: once there are problems of one or the other kind, borrowing is used as a way to mend them. Other languages may prefer other instruments, like compounding or semantic shifts, which leads to highly different percentages of borrowing, especially in basic lexicon. Notwithstanding this possibility, the reasons for core borrowing often elude us, and no good reason for it can be formulated.

Core borrowing is often explained by means of vague notions such as prestige. This explanation is insufficient in the case of Berber. In the first place, most borrowings are from dialectal Arabic rather than from the prestige language Standard/Classical Arabic. Dialectal Arabic certainly has covert prestige nowadays as the main language of out-group communication. This factor cannot have been that important in earlier times, when in many regions out-group communication was restricted to a small part of the community, and when in large parts of the Berber-speaking territory most speakers were monolingual. The central problem with prestige explanations in core borrowings, however, is that they do not explain why some basic elements are borrowed whereas others are not. As mentioned abhove, the study of borrowing in a large number of varieties shows that it is by no means evenly distributed over the core lexicon, and that some basic meanings (e.g. 'to pull', 'to go') are much more generally borrowed than others (e.g. 'to drag', 'to arrive').

13.5 Comparison of Borrowing in Different Berber Varieties

Borrowing is not equally distributed over Berber varieties. There are important differences. In this part, a general assessment of this will be made.

Elšík & Matras (2006) provide an overview of borrowing in a large sample of Romani languages. Their huge corpus of different varietes allows them to draw conclusions about hierarchies of the type: Feature X is borrowed more easily than Feature Y; and when Feature Y is borrowed, this implies that Feature X has also been borrowed. Our investigation has a similar type of corpus—varieties of the same language family that all have

undergone important language contact—even though it does not necessarily share all the theoretical premisses. The Berber corpus is not entirely of the same type as the Romani corpus, however. In the first place, the number of varieties studied is much smaller. Moreover, while Romani varieties are often to a large degree isolated from each other, Berber constitutes a kind of linguistic continuum, which allows for the spread of features without many obstacles. As a result, linguistic divergence has been much less pronounced than in the case of Romani. Finally, even though the general social context of Romani is everywhere the same to some degree—small groups of (originally) nomadic people living in a context where a different language is dominant—there are enormous differences in the degree to which the languages are under pressure of the surrounding linguistic communities. In the Berber case, the opposite seems to be true. The social circumstances of Berber-Arabic contact are to some degree more diverse—there is quite some difference between contact between neighboring villages with different languages (as for example in Beni Iznasen), villages surrounded by other Berber speakers (as in Greater Kabylia), (transhumant) nomads, whose contact with Arabic is mainly with Arabic-speaking villagers (e.g. Ayt Atta in southeastern Morocco), and oasis dwellers, whose contact with Arabic is mainly with Arab nomads (e.g. Mzab). However, basic dominance patterns are relatively homogenous among Berber speakers. Arabic is the language of wider communication, but (at least traditionally) not the language of the household or the village. It used to be very well possible to lead a socially integrated life without using Arabic. Finally, and most importantly, Romani has been influenced by many different languages of very different language types, while Berber is mainly in contact with a single language (or group of varieties), Maghribian Arabic. In comparison to Romani, there are more processes of homogenization to be expected in Berber (the effect of the continuum), and less processes of divergence because of different patterns in linguistic dominance and similarities in contact input. Put otherwise, patterns of Arabic influence in Berber are expected to be more homogenous than in Romani. In fact, this is definitely my impression, even though it is problematic to compare languages with very different linguistic systems from the outset, such as Romani and Berber.

This difference also implies that some of the methods that led to interesting results in the work by Elšík & Matras are less useful in the Berber case. The definition of borrowing hierarchies on a detailed scale is hardly insightful in Berber. Still, it is interesting to look at the diversity in contact-induced change in the different Berber varieties.

In phonology, northern Berber varieties are very similar in their behavior vis-à-vis Arabic materials. All investigated varieties show large-scale take-over of foreign phonemes through the means of loanwords. On the other hand, certain major Berber phonological rules are generally applied to Arabic loans. This is the case of consonant lenition in spirantizing dialects, or the application of Berber syllabification procedures in Tashelhiyt. As far as there are regional differences in the degree of nativization, these are not related to a cline in Arabic influence, but to the degree of phonological difference with Arabic. In some Berber varieties, this difference is quite big, and the effects of nativization of Arabic loans are quite big too—e.g. in spirantizing dialects. In other varieties, the system is more similar to Maghribian Arabic, and the difference between nativized and non-nativized phonology is in most cases void.

One of the main processes in morphological borrowing is Parallel System Borrowing (PSB) of inflection. PSB is found in different aspects of inflectional morphology. All northern Berber languages have PSB in the nominal system. In quite a few language, PSB also occurs in the pronominal system, albeit in a rather marginal way. One language, Ghomara, has extended PSB to the verbal system. The four main PSB situations can be schematized as follows (cf. Kossmann 2010a):

	nominal inflection	pronominal inflection	adjectival inflection	verbal inflection
Tashelhiyt	+	–	–	–
Central Mor.	+	–	–	–
Tarifiyt	+	–	–	–
Beni Iznasen	+	–	–	–
Kabyle	+	–	–	–
Ghadames	+	–	–	–
Figuig	+	+	–	–
Mzab	+	+	–	–
Ouargla	+	+	–	–
Siwa	+	+	–	–
Zuwara	+	+	+	–
Ghomara	+	+	+	+

When looking at compartmentalization, a different situation is found. Only very few languages have morphological means that strictly separate etymologically Berber lexicon from etymologically Arabic lexicon. Ghomara shows such a situation with adjectives, in which the very few remaining Berber adjectives have different inflection from the great majority of Arabic adjectives. The only language with systematic compartmentalization in some parts of morphology is Tashelhiyt. In this variety, Berber and Arabic verbs are kept apart by two processes. In the first place, Arabic verbs have Arabic-morphology action nouns, while Berber verbs have Berber-morphology action nouns. In the second place, triliteral verbs (one of the major groups of verbs) have different morphology in the Imperfective aspectual stem for Berber etyma than for Arabic etyma. Interestingly, the latter differentiation is attained by means of Berber morphology: the compartmentalization is therefore not the effect of a generalization of PSB, but a different process.

Take-over of Arabic apophonic patterns in borrowed forms with native inflection is only found in Ghomara, which uses Arabic-based apophony in the differentiation between Aorist and Perfective in CVC loan verbs, even when they have Berber inflection. Take-over of apophonic patterns that introduce a new category is found in a small number of varieties:

Zuwara	(Arabic) participles, adjectival degree
Ghomara	(Arabic) participles, diminutives
Siwa	adjectival degree

In the lexicon, there is a clear difference between the varieties. Ghadames is on all counts the lowest borrower. In this language, foreign lexicon is much less frequent in running texts than elsewhere, and the same is true for the influence of Arabic on basic lexicon. All other languages are relatively high borrowers, with much higher scores than, for instance, Romance influence on English. Among these, Ghomara and Siwa stand out with very high figures, even on a global scale. In different 100-word lists, one third of Ghomara items are borrowings, while they constitute about a quarter of the basic words in Siwa.

The results using the above criteria can be described by a three-level level scale. The first level ("basic") describes what is the lowest degree of impact found in the sample. The second level ("medium") describes what goes beyond the basic degree, but does not reach the third level ("high"). The scale is impressionistic, and the labels are not meant to be applicable cross-linguistically. Thus, on a global scale, "basic" PSB (i.e. only in nominals) is relatively marked, and "medium" lexical borrowing in Berber goes beyond what is found in the large majority of languages in the LWT corpus. On the

	compartmentalization	additional morphology	PSB	prenominal deixis	post-verbal negation	additive clause coordination	resumptive pronouns in RC	linker in RC	core lexicon
Ghadames	B	B	B	B	(B)	B	B	B	B
Tashelhiyt	M	B	B	B	B	B	B	B	M
Central Morocco	B	B	B	B	H	B	B	M	M
Tarifiyt	B	B	B	B	H	M	B	M	M
Beni Iznasen	B	B	B	B	H	M	B	M	M
Kabyle	B	B	B	B	H	B	B	M	M
Figuig	B	B	M	M	H	M	B	B	M
Mzab	B	B	M	M	B	M	M	M	M
Ouargla	B	B	M	B	B	M	M	M	M
Siwa	B	M	M	B	B	M	H	H	H
Zuwara	B	H	M	H	H	H	H	H	?
Ghomara	B	H	H	B	H	H	H	H	H

other hand, the "high" introduction of two new morphological categories in Ghomara may not be that special in a cross-linguistic perspective.

The above table gives a two-fold image. On the one hand, there is a clear difference between some languages that have undergone little Arabic influence (for northern Berber standards), esp. Ghadames, and languages such as Zuwara and Ghomara, which have undergone massive influence from Arabic. On a closer look, different features give different results. Thus, Figuig is highly innovative in its deictic system, but extremely conservative (or at least un-Arabic) when it comes to relative clause structure. Ghomara has parallel systems all over its morphology and an enormous amount of core borrowings, but retains the ancient Berber system in deixis. Tashelhiyt has undergone relatively little influence from Arabic, but is the only languages which has strict compartmentalization according to etymologic origin in verbal morphology.

13.6 A Characterization of Arabic Grammatical Borrowing in Berber

In the following, I shall provide a characterization of Arabic grammatical borrowing in Berber. In order to do so, borrowing types will be defined on

the basis of two axes. On one axe stands the type of material that is taken over. Following Sakel (2007), I will distinguish Matter borrowings (MAT), i.e., a borrowing involving phonological form, from Pattern borrowing (PAT), i.e., the borrowing of a pattern without the phonological form. The two types can cooccur. In some cases, the difference between a MAT+PAT borrowing and a mere MAT borrowing is void, as the pre-existing pattern is the same as the pattern in the source language of the MAT borrowing. Such cases could be called neutral as to PAT, but it is probably better to consider them simply MAT borrowings.

On the other axis stands the functional impact of the borrowing. In some cases, the borrowing adds something (a form, a category . . .) to the pre-existing inventory, without ousting the old forms. This will be called additive borrowing (ADD). In other cases, a borrowing takes the place of an older form. There is no addition in this case, but substitution (SUB). Therefore this second type will be called substitutive borrowing (on the cross-linguistic relevance of the distinction, see Kossmann fc.-b). A third type concerns cases where Arabic elements (esp. morphology) are introduced together with Arabic lexemes, which led to parallel systems to express the same categories, one system with native and nativized words, the other with non-nativized words. This will be called parallelism (PAR).

In order to give a characterization of Arabic borrowing in Berber, the different borrowed elements will be studied according to this categorization.

Phonology. Phonological borrowing from Arabic is exclusively MAT*ADD. Arabic phonemes have been introduced through the lexicon. Their spread to items that were not borrowed involves new lexemes, that get added expressive value by the borrowed material. Substitutive borrowing, in the sense that a Berber phoneme is consistently substituted by an Arabic phoneme is not attested. The only exception could be the irregular sound change *$\gamma > \varepsilon$ in Ghadames. As γ is also a phoneme of Arabic, and as the sound change does not involve Arabic materials, it is improbable that Arabic was a factor in this development.

Morphology: Nouns.
MAT*PAR. The major type of borrowing in Berber noun inflection is MAT*PAR by means of Parallel Systems. Arabic nouns are taken over together with Arabic morphology. This morphology has no impact on the Berber morphological system. Different from other languages, Parallel System Borrowing concerns a large percentage of borrowed nouns and is far from marginal.

MAT-PAT*ADD. The additive introduction of Matter and Pattern is only found in one variety. Ghomara has introduced Arabic diminutive apophony on a large scale, including Berber nouns. While Berber has some derivational means to express size differences through gender change, the Arabic pattern such as found in Ghomara can be applied to nouns of all semantic categories.

MAT-PAT*ADD and PAT*ADD? It has been argued that the opposition between collectives and unity nouns is a calque on Arabic. As no such category would have existed before, this process is clearly additive in nature. Berber varieties differ in the degree to which they use Arabic morphology in the expression of the opposition. In languages where both native and (quasi-)Arabic nominal morphology are used in the collective, one can speak of simple PAT*ADD insertion. In languages where the collective always has (quasi-)Arabic morphology, one should rather speak of MAT-PAT*ADD insertion.

Morphology: Adjectives

MAT*PAR. In a small number of languages, esp. Ghomara and some Libyan varieties, Arabic adjectives have Arabic morphology, while Berber adjectives have Berber morphology. In Ghomara, Arabic adjectives have marginalized Berber adjectives to a large extent, only a few of them remaining in use.

MAT-PAT*ADD. In Siwa and Zuwara Arabic degree morphology has been introduced with adjectives, a category that did not yet exist in Berber.

PAT?. On a different scale, it has been argued that the existence of an adjectival sub-class of the noun in Berber is the result of contact-induced change. Formerly, adjectival modification would have been exclusively expressed by means of stative verbs. If this is true—which is by no means certain—it is difficult to decide whether to call this additive or substitutive borrowing. The new adjectival class did not abolish the ancient class of stative verbs, but restricted its usage.

Morphology: Pronouns

MAT*PAR. Arabic pronouns have been introduced in a number of varieties together with other Arabic materials. In most varieties these are Arabic particles that are commonly followed by a bound pronoun. In Ghomara the phenomenon is broader, as Arabic-conjugated verbs (see below) also have Arabic clitic pronouns. All pronominal borrowing leads to parallel morphological systems.

Morphology: Verbal inflection

MAT*PAR. The addition of Arabic morphology to Berber according to parallel systems is only found in Ghomara Berber. There are two types of this. In the first type, Arabic verbs have been taken over together with their lexically specified apophony for distinguishing aspectual stems. A much more pervasive type is found with a large number of verbs in Ghomara, which preserve their entire Arabic inflectional morphology, including pronominal clitics.

MAT*ADD. Zuwara and Ghomara have introduced Arabic participles. In Ghomara (the Zuwaran situation is unknown) the Arabic apophonic stucture (MAT) is not transferred to Berber verbs. Instead, suppletion is used in order to make passive or active participles from native Berber verbs.

Morphology: Verbal derivation

MAT*SUB. Substitutive borrowing in verbal morphology is found in the derivational system of Ghomara. In the passive voice, the Arabic prefixes *tt-* and *n-* are used. This prefix cannot be transferred to Berber verbs. Instead, there is suppletion: an underived Berber verb corresponds to a passive verb, in which both derivation and the lexeme itself are borrowed from Arabic. It should be noted that the prefix *tt-* is found in many Berber varieties as a native passive marker. Only the lexical substition involved shows beyond doubt that Ghomara *tt-* is not a continuation from this old marker.

Syntax: Deixis

PAT*SUB. In a number of languages, pre-nominal deixis has been introduced, copying Arabic patterns, but without any transfer of Matter. In Figuig and Mzab the new structure coexists with the ancient post-nominal deixis, in Zuwara the Berber structure has been entirely ousted by the new pattern.

Syntax: Negation

PAT*ADD and MAT-PAT*ADD. In a large number of varieties, native pre-verbal negation has been supplemented by a post-verbal element. Lucas (2009) convincingly argues that this happened under the infuence of Maghribian Arabic. The post-verbal element sometimes has a Berber background (i.e. PAT*ADD), sometimes it is a loan from Arabic (i.e. MAT-PAT*ADD).

MAT*SUB. In Ghomara and in Siwa, the pre-verbal marker of negation has been substituted by an Arabic form. It is difficult to say whether this

also involves a pattern change. In both languages, the negative forms of the aspectual stems no more survive, which may be linked to the abolishment of the original negative particle. However, this type of simplification is also found in languages which have retained the original negation, and may be an independent internal development.

Syntax: Coordination

MAT-PAT*ADD. In a few eastern varieties, the Arabic conjunction *w*, *u* has been taken over, which introduced clausal coordination to the language.

PAT*ADD. In a certain number of varieties, clause coordination as a pattern has been taken over from Arabic. The pattern is expressed by means of the (former) preposition *d*, which was originally only used for NP coordination.

Syntax: Subordination

MAT*SUB. There are a number of clear cases where Berber subordinators have been substituted by Arabic words. This does not seem to influence the native patterns; in a few cases, such as the Kabyle usage of *lukan* 'if (counterfactual)' followed by a verb in the negative Perfective, it is evident that earlier structures were preserved without any change. In other cases, Arabic and Berber structures presumably coincided to a large degree.

Syntax: Relativization

PAT*ADD. A clear case where Arabic influenced the patterns of the relative clause is the grammaticalization of an opposition between relative clauses with indefinite heads and relative clauses with definite heads.

MAT-PAT*SUB?. In a few eastern languages, the Arabic relative pronoun *əlli* has been taken over as such as an introducter of the relative clause.

PAT*SUB?. Much more generally, relative construction have sprouted, which introduce the relative clause by means of a pronominal element or something else. In this case, internal and external factors seem to conspire. The degree to which this new pattern has obliterated the earlier pattern without linking is different from variety to variety and from context to context. In many varieties, the ancient and the new pattern coexist in some contexts.

PAT*SUB. At another point of relative syntax, ancient structures have been substituted by new structures too. This is the use of resumptive pronouns in relative clauses. This phenomenon is restricted to Ghomara

and languages in the east of Algeria, in Tunisia, in Libya, and in Siwa. The degree to which this takes place depends on the variety and on the context. In some varieties, only some types of relatives have resumptive pronouns, while others have it consistently in all relative clauses.

This overview shows that the majority of changes are Matter-related and either parallel or additive in nature. Additive borrowing in morphology and syntax brings along new patterns in addition to the matter. Pure Pattern borrowing is relatively rare. In morphology the best case is the introduction of the collective–unity noun distinction. In syntax (which is more about patterns of course) unambiguous Pattern introductions are mainly found in the eastern varieties. These varieties also show quite a few cases of substitutive Pattern borrowing.

Arabic influence on Berber is strongly related to lexical borrowing. This is most clearly so in the case of Parallel System Borrowing, where morphological material is introduced with, and remains restricted to, borrowed lexemes. In syntactic borrowing, similar situations are found with the introduction of Arabic function words, which may or may not have structural implications. It is not entirely restricted to lexically-bound borrowing. There are quite a few syntactical changes that were clearly triggered by Arabic patterns, without any transfer of lexical material.

Parallel System Borrowing is no doubt the most outstanding feature of Arabic influence on Berber. Its extent makes it impossible to fit Berber into the straightjackets of general borrowing typologies, such as those presented in Thomason & Kaufman (1988). This well-known and much-used typology, expressed in a five-step borrowing scale, coalesces two different elements in borrowing: what is borrowed, and to what extent it is extended to the native part of the language. Parallel System Borrowing has no clear place in such a typology—it would automatically be considered of little impact. This is, to say the least, infortunate in languages where about half of the nouns have borrowed morphology.

13.7 Arabic Influence on Berber and the Typology of Contact-Induced Change

In the preceding paragraphs, the general characteristics of Arabic influence on Berber have been put in a framework inspired by current models of contact-induced change. One central point has not yet been addressed. Since Thomason & Kaufman (1988) and van Coetsem (1988), one of the

main tenets of contact linguistics has been the difference between "borrowing" and "imposition" (or "substratum") (to follow van Coetsem's terms, for a historical overview see Winford fc.). In this terminology, borrowing stands roughly for contact-induced change when speakers of a language take over elements from a foreign language, in which they are less fluent. Imposition stands for the take-over of elements from a foreign language, in which the speakers are more fluent. In terms of language learning, borrowing takes place when a learner of a second language inserts elements from this language in his own first language. Imposition takes place when this learner transposes native patterns onto the language (s)he is learning, e.g. by having a "foreign accent".

In the original model by Thomason & Kaufman (1988), the first two scenarios were defined in terms of language maintenance and loss: borrowing was considered to take place when the (primary) language is maintained alongside the foreign language, while imposition takes place when a speech community exchanges its primary language for an imperfectly known second language. For the two situations, different borrowing scales were established, and certain characteristics were defined. The model is based on the results of contact-induced change; thus it neglects the question to what extent the imperfectly learned second language was already present in the shifting community (of course one has to assume it was), and to what extent different levels of second language learning were present and interacting during the language shift. Such a model is clearly too simplistic, a fact recognized among others in Thomason (2008). Van Coetsem's model (1988, 2000) focuses on the initial locus of language change, the individual speaker. In the model a number of factors are defined. The first factor is the dominance relationship between the different languages the speaker has at his or her disposal (more or less implicitly generalized to the speech community). Dominance is defined in terms of linguistic ability—fluency and the like—, not in terms of status of the language in society. The second factor is the stability of the different parts of the linguistic system. It is assumed that certain parts of the linguistic system are less accessible consciously, and therefore less easy to change than others. Thus, for example, non-basic lexicon would be less stable, and therefore easier to change than syntactic structures. These two factors together predict what kind of changes take place in language contact. If the speaker is dominant in language B and inserts elements from language A, the prediction is that these will belong to the less stable parts of the language. If the speaker is dominant in language A and inserts elements from language A

into his or her version of language B, the stable structures of the dominant language will surface in the non-dominant language. The first case (insertion of foreign elements into the dominant language) is called borrowing, the second (insertion of foreign elements into the non-dominant language) is called imposition. The model has a number of weaknesses, due to the rough definitions of its basic building blocks. In the first place, dominance is not always easy to determine. Balanced bilinguals are not that unusual, and may in fact be quite common in situations that ultimately lead to language shift. The model has no clear way of accounting for such speakers, for whom no strict dominance relationship can be established. Moreover, dominance relationships may be different for different parts of the language. Thus, for example, most second generation Moroccan immigrants in the Netherlands are clearly dominant in Dutch when it comes to morphology and syntactic structures, and show strong tendencies of language attrition in their Berber (E-Rramdani 2003). In their phonology, on the other hand, Berber structures tend to be dominant, leading to a (close-to-)perfect pronunciation in Berber and a strong Moroccan accent in Dutch. In recent years, Donald Winford has endeavored to revive the van Coetsemian framework (Winford 2003; fc.). He points to an important element in the framework, which makes it quite different from other models of contact-induced change, the fact that "dominant language" does not necessarily equal first language or native language. Speakers may change dominance relationships during their lives, and speech communities may be so strongly entrenched in other language communities that most of its speakers are dominant in the other language, while still maintaining their community language as the language first spoken to children. Under such circumstances, imposition effects can be found in speech communities with language maintenance. According to Winford, this kind of scenario accounts for some of the most spectacular cases of imposition under language maintenance, e.g., the morphological restructuring found in some Anatolian Greek varieties (Winford fc.).

Arabic influence on Berber provides an interesting test-case for this model. For the majority of Berber languages, one can assume that language shift of Arabic speakers to Berber only played a minor role in the history of the language. Dominance relationships are more difficult to establish. However, at least in Morocco and Algeria, communities seem to have been clearly dominant in Berber traditionally, and in pre-colonial times one must reckon with many monolingual Berber speakers. The situation in the easternmost part is more difficult to assess. Our data on Sokna

and El-Fogaha stem from a time when the language was dying, and it is very well possible that the informants of Sarnelli (1924–1925) and Paradisi (1963) were dominant in Arabic rather than in Berber. For the small oasis of Awdjila and for the village dialects of mainland Tunisa, the situation is not clear. In Siwa, Arabic dominance does not seem to be a major factor nowadays, but this may have been different in the past, when there was a local Arabic variety whose speakers shifted to Berber later on. Elsewhere in Libya, there is no reason to assume that the majority of speakers used to be dominant in Arabic; anecdotal evidence of Zuwara speakers having great difficulties in communicating in Arabic after moving to the capital strongly suggests the opposite. One may therefore conclude that, with the exception of the easternmost oasis dialects, Berber has always been the dominant language of the majority of the Berber-speaking population. The situation in Ghomara Berber is difficult to classify. According to Khalid Mourigh (p.c.), most speakers are balanced bilinguals, and no clear dominance relationships can be defined. His observations only pertain to male speakers in a sea-side village. One expects that data from women and from more isolated villages in the mountains would either show the same picture, or point to dominance of Berber rather than Arabic.

Generally speaking, van Coetsem's predictions are borne out well by the Berber data. Influence of Arabic is in the first place related to the lexicon. As shown above, Parallel System Borrowing plays a great role in the introduction of Arabic morphology. This type of morphological borrowing is in fact a side-effect of lexical borrowing. The same is true for the introduction of Arabic phonemes, which also happened through the medium of loanwords. There are a number of cases, however, where structural elements have been taken over without being clearly related to lexical borrowing. Such cases may be considered counter-evidence to the predictions of the van Coetsemian framework. The main phenomena where we find this are the introduction of segmentally marked clause coordination (see 11.1.2), the introduction of post-verbal negation (see 10.2.1.2), the introduction of a number of Arabic features in relative clause structure (see 12.5), and the change in construction in nominal deixis (see 10.1). Features of this type are attested both in the easternmost varieties, where Arabic dominance is not to be excluded, and in more western varieties. Thus, prenominal deixis of the type [PRONOUN-(DEICTIC) of NOUN], a calque on Arabic, is found in Morocco (Zayan, Figuig), in Saharan Algeria (Mzab) and in Libya (Zuwara) (see 10.1). In none of these varieties, there is any indication that Arabic has ever been a dominant language in the population.

13.8 Arabic Borrowing in Berber and Language Mixing

A final remark must be made on language mixing. In the most common view, a language is mixed when some parts of its structure are entirely expressed by elements from one language, while others are entirely expressed by elements from another language. Often the divide is between lexicon and grammar, but sometimes there is a divide between different grammatical categories. In a mixed language of this type, there is etymological consistency within the categories, but no etymological consistency between categories. No Berber language would be mixed according to such a definition. However, the extensive use of parallel systems in many Berber languages leads to something which, in a broader definition, could certainly be considered a mixture (cf. Wolff & Alidou 2001). This is especially the case of Ghomara Berber. In Ghomara, there are parallel morphological systems for virtually all grammatical categories: nominal, adjectival, pronominal and verbal morphology (including pronominal clitics). As a result, it is very well possible to have elaborate sentences, in which almost every form belongs to Arabic, but also to construct sentences that are exclusively Berber. In basic lexicon, Arabic elements are only a little less frequent than Berber terms (over one third in 100-word lists). Only in the realm of Noun Phrase structure, Berber constructions are dominant, and no Arabic structures have been taken over. With this one caveat, one can say that the Arabic part of Ghomara Berber is as strong and as elaborate as the Berber part. It is therefore to some degree arbitrary to decide whether this is synchronically a Berber language with Arabic admixture, or rather an Arabic variety with lots of Berber in it. Interestingly, the Ghomara situation is quite similar to that found in the Greek and Arabic elements of Cypriot Arabic (provided the analyses in Newton 1964 and Kossmann 2008b are correct): parallel systems in all realms, except for NP structure, where Arabic is dominant. Only in phonology the Greek element in Cypriot Arabic is much more obvious than the Arabic element in Ghomara Berber. This is, however, as expected: due to a very long period of convergence from both sides, Berber and Arabic phonologies of northwestern Morocco have become virtually the same, without acquiring a definitely Arabic or Berber character.

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INDEX

A. Subjects

B. Languages

NB. References to Arabic are so ubiquitous that they have been limited to a minimum in the index.

C. Lexemes

NB Only those lexemes have been included in the index that have been treated in detail. Lexems only appearing as an example have not been included.