The People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
University of Mentouri – Constantine
Faculty of Letters and Languages
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Words Fall Apart

A Study of Lexical Obsolescence in Tashawit across Space and Time

A Thesis Submitted to the Department of English in Candidacy

for the *Es-Science Doctorate Degree* in *Linguistics*

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November 2020

Dedication

... to my family

Acknowledgements

My deepest gratitude goes to my advisor, **Prof. Hacene Hamada**. I am greatly indebted to him for accepting to direct this research project. This thesis would have never been completed without his helpful guidance, valuable feedback and positive encouragement. This statement is by no means a way to deny liability for the final product. I am alone responsible for any mistakes or inadequacies that may appear in any part of this thesis.

I would like to extend my sincere thanks to the members of the board of examiners, Prof. Farida Abderrahim, Prof. Youcef Beghoul, Prof. Riad Belouahem, Prof. Sarah Merrouche and Prof. Nadir Kaouli, for accepting to read and evaluate this work.

I am deeply indebted to my wife for her enormous help, infinite patience and unwavering support. I am also truly thankful to other members of my family who helped me in many ways throughout the course of this study.

Special thanks go to Dr. Hichem Souhali and Prof. Gaouaou Menaa of Moustafa Benboulaid University (Batna). Václav Blažek of Masaryk University (Czech Republic), Miss. Sihem Rouabeh and, my dear friend, Mr. Nadir Felta for helping me get access to some of the theoretical material I used in this thesis.

I also wish to thank the people who helped me during my research stay in Paris in 2017, in particular Prof. Kamel Nait-Zerrad of INALCO, Mr. Cherif Ghalmi, Mr. Hammoudi Ghalmi, Dr. Mohamed Hamza Merabet and Mr. Salim Lounissi. Thanks are also extended to the staff of the libraries of Bulac and Paris 8 for their hospitality.

The present work would have never been completed without the aid of a large number of informants. I should thank all of those informants, in particular the ones who helped in reaching the participants from the different localities and regions, namely

Abdelghafour Berghout, Yahia Berghout, Dr. Hicham Souhali, Dr. Amel Laalouna, Kamel Draa, Abedlghafour Beddiaf, Karim Ayadi, Haroun Melgani, Salah Aaid, Djallel Boulmaiz, Hadj Bouri, Soumia Bouaaziz, Zaidi Khadidja, Souraya Guerfi, Hanane Maamouri, Samia Achiri, Nabil Laiche, Naim Khemmar, Zedira Khemmar, Salah Bouteraa, Nacira Ghodhbane, Wafa Aggoune, Houssem Khalfi, Khaled Talbi, Merouane Annane, Zineb Alouit, Firouz Arfi, Ouissem Derghal, Imene Bensalem, Fouzia Zaabat, Ahlem Benrouag, Sara Hadjris, Brahim Hireche, Faiçal Belbacha, Adel Rahmine, Adel Menzer, Salah Aksa, and others.

I cannot forget Prof. Marteen Kossmaan of Laiden University, Dr. Lameen Souag of Lacito (Paris) and Prof. Mena Lafkioui of EHESS (Paris) for their valuable discussions of some of the parts of the present thesis.

I should also thank Miss Hiba Touati of Hadj Lakhdar University (Batna) for introducing me to the geographic information system ArcGIS, and Dr. Hichem Souhali and Mr. Haroun Melgani for proofreading my thesis and for their helpful comments.

Abstract

The present thesis reports on a descriptive analytical study of contact-induced lexical obsolescence in Tashawit, the variety of Tamazight spoken across the Aurès in eastern Algeria. It traces the use of a number of Berber variants across the different regions where this variety is spoken, aiming to identify the regions where such variants are maintained and where they are lost and to find out if their maintenance and loss is regionally determined. It also aims at investigating lexical maintenance and loss in progress, i.e. across the different generations, to identify if there exist any significant differences between the different age groups in terms of the maintenance and loss of the Berber variants. A wordlist of 61 notions covering a variety of semantic domains was developed in Arabic and was administered, in the form of a sociolinguistic questionnaire, to a large number of speakers from different localities across Tashawit speaking area. The findings of the present study were obtained from the analysis of the responses of 1816 informants who returned back the questionnaire. The statistical analysis has revealed that lexical obsolescence is regionally determined for most of the notions in the wordlist. In general, lexical obsolescence was found to be less striking in the western regions, i.e. Occidental Aurès and Bellezma, in particular the southern part of the region, compared to the eastern regions, that is Oriental Aurès, Nemamcha, Segnia and Harakta. Nonetheless, a number of Berber variants were shown to be maintained better in eastern regions. The analysis has also revealed a strong association between lexical loss and age for most of the notions in the wordlist. The findings obtained for a number of notions conform to the apparent time hypothesis, whereas for other notions the analysis has revealed other tendencies.

Keywords: *Tashawit, language contact, lexical borrowing, lexical obsolescence, region, age.*

Abbreviations and Acronyms

adj.	:	adjective
aor.	:	aorist
CA	:	Classical Arabic
Eg.	:	Egyptian
EGIDS	:	Expanded Graded Intergenerational Disruption Scale
f.	:	feminine
F	:	Fisher test
CDS	:	child directed speech
HCA	:	Haut Commissariat à l'Amazighité
IPA	:	International Phonetic Alphabet
L	:	rate of lexical loss
Lat.	:	Latin
m.	:	masculine
M	:	the arithmetic mean
MSA	:	Modern Standard Arabic
NR	:	no response
O.	:	Oued
pl.	:	plural
Pu.	:	Punic
r	:	Pearson's coefficient of correlation
R.	:	range
SD	:	standard deviation
SPSS	:	Statistical Package for Social Sciences
syn.	:	synonym
sing.	:	singular
TCM	:	Tamazight of Central Morocco
v.	:	verb
v.i.	:	intransitive verb
v.t.	:	transitive verb
χ^2	:	Chi squared test

Transcription System

Neither broad transcription (phonemic transcription) nor narrow transcription is used in the present thesis because the aim of this research is little, if ever, concerned with the phonetic or phonological aspects of the language targeted in the study. Moreover, the pronunciation of Tashawit is highly regular. Therefore, we believe the letter-sound correspondences provided below will be sufficient for the purposes of the present study. We adopted the transcription system used in *Dictionnaire des Racines Berbères – forms attestées I, II* & *III* (see Nait-Zerrad, 1998: xiv-xvi).

Letters	**Sounds (IPA)**	**Descriptions**
		Consonants
b	b	voiced bilabial stop
c	ʃ	voiceless palato-alveolar fricative
č	ʧ	voiceless palato-alveolar affricate
d	d	voiced apico-dental stop
d	ð	voiced interdental fricative
ḏ	dˤ	pharyngealized voiced apico-dental stop
ḍ	ðˤ	pharyngealized voiced interdental stop
f	f	voiceless labiodental fricative
g	g	voiced palatal stop
g^w	g^w	labio-velarized voiced palatal stop
ǧ	ʤ	voiced palato-alveolar affricate
h	h	voiceless layngeal fricative
ḥ	ħ	voiceless pharyngeal fricative
j	ʒ	voiced palato-alveolar fricative

k	k	voiceless palatal stop
k	k^w	labio-velarized voiceless palatal stop
k̟	ç	voiceless palatal fricative
l	l	voiced alveolar lateral
l̩	$l^ʕ$	pharyngealized voiced alveolar lateral
m	m	voiced bilabial nasal stop
n	n	voiced apicodental nasal stop
q	q	voiceless uvular stop
q^w	q^w	labio-velarized voiceless uvular stop
ɣ	ʁ	voiced uvular fricative
r	r	voiced alveolar trill
r̩	$r^ʕ$	pharyngealized voiced alveolar trill
s	s	voiceless alveolar fricative
s̩	$s^ʕ$	pharyngealized voiceless alveolar fricative
t	t	voiceless apico-dental stop
t	θ	voiceless interdental fricative
t̩	$t^ʕ$	pharyngealized voiceless apico-dental stop
x	x	voiceless velar fricative
x^w	x^w	labio-velarized voiceless velar fricative
z	z	voiced alveolar fricative
z̩	$z^ʕ$	pharyngealized voiced alveolar fricative
ɛ	ʕ	voiced pharyngeal fricative
ʔ	ʔ	glottal stop
	Approximants (semi-vowels)	
w	w	voiced labio-velar approximant

y	j	voiced palatal approximant

Vowels

a	a	open central unrounded short vowel
i	ɪ	close front unrounded short vowel
u	u	close back rounded short vowel
e	ə	short mid central short vowel

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A word is dead
When it is said,
Some say.
I say it just
Begins to live
That day.

– Emily Dickinson

General Introduction

General Introduction

1. Background to the Study

It is now more than one hundred years since Saussure has drawn his classic distinction between synchronic and diachronic linguistics. In his classic *Cours de Linguistique Générale*, published posthumously in 1916, Saussure insisted on the primacy of the former. However, a philologist himself, he never underrated the importance of diachronic treatments of language. Although the subsequent decades were marked by a substantial shift towards synchronic linguistics, historical inquiry has never ceased to interest researchers in this field. The study of the origin of language and the changes it undergoes overtime was deemed indispensable in order to understand why language is the way it is, why, for instance, a given language has a particular set of sounds and not others, why it does not have grammatical gender, why it has lost its inflection, and the like. These sorts of *why* questions cannot be answered, at least properly, by a synchronic linguist. An important aspect of language that cannot be detached from its past, and hence its present, is its contact history. No accounts of external changes introduced to any language can be given without an acute awareness of the history, and most importantly the outcomes, of contacts that were established with other languages. Historical linguists have paid special attention to the role played by language contact in causing, and/or accelerating the pace of phonetic, phonological, morphological, syntactic and semantic changes in a language. An area that has also received a great deal of attention within contact linguistics is lexical change.

It is widely accepted among linguists that the lexicon of a language is more susceptible to change than its phonology, morphology and syntax (Thomason and Kaufman, 1988; Van Coetsem, 1988; McMahon, 1994; Winford, 2010; Simpson, 2015, etc.). Researchers' focus is laid on the linguistic processes that make cross-linguistic

transfer possible, like code switching, code mixing and, in particular, lexical borrowing. With regard to the latter process, linguists address issues like borrowability, adaptation and integration of loanwords, the motives that drive speakers of a given language to import words from other languages, and other related problems. The effects of lexical borrowing on the languages involved in contact differ depending, among other things, on the duration of contact, its intensity and the status of the languages involved in relation to one another. The impacts of contact on languages with lower status were found to be far more significant. The borrowing of lexical items from a language with lower status into a more prestigious language is additive in nature, i.e. it is often resorted to in order to denote meanings which are novel to the borrowing language (Bloomfield, 1933). In less prestigious languages, however, the speakers resort to lexical borrowing in order to name new referents as well as to denote notions that are perfectly designated in their own languages (Bloomfield, 1933).

2. Statement of the Problem

Additive borrowing is common to all of the world's languages. It is the most credible explanation that one can offer for the existence of lexical items that do not fit into the phonological or morphological systems of a language. It can be regarded as a process of lexical enrichment at the disposal of the speakers of both dominant and minority languages. However, borrowing that duplicates already existing notions in a language, i.e. core vocabulary, can rather have deleterious effects on the lexicon of such a language. Once a core borrowing, which is imported from a more prestigious language, is established, the use of the original word that was used to denote the duplicated notion will often decline gradually in everyday interactions. It will, though again gradually, cease being transmitted to the descendant generation. The adoption of core borrowings at a large scale results often in massive lexical erosion of the borrowing

language. This is usually associated with a rather more drastic phenomenon in contact situations, language shift. Although not an immediate cause of language shift, massive substitutive borrowing can be a sign of a language gradually losing ground to a more prestigious one and, at times, an indicator of imminent language death.

The sociolinguistic situation in North Africa is, and always has been, a fascinating example of language contact for scholars. The recorded history of contact in this particular region goes back to more than three thousand years. Throughout such a long history, Tamazight has experienced cross-linguistic contacts with a number of major languages spoken around the Mediterranean basin, mainly Egyptian, Phoenician/Punic, Latin, Turkish, Italian, Spanish, French and, more importantly, Arabic. The influence of these languages was more noticeable at the level of the lexicon. However, although foreignisms exist in all of the varieties of Tamazight, evidence has revealed significant differences in both the nature as well as the rates of such loans (Chaker, 1984; Kossmann, 2013). The intensity of contact with some of the languages mentioned earlier has led to the adoption of, not only additive borrowings but also, core borrowings duplicating notions which were perfectly denoted in Tamazight. As a result, many of the original variants denoting certain referents have gone obsolete in many varieties of Tamazight. Some variants were only preserved in one variety, whereas others were found to be obsolete in all varieties. Contact-induced lexical loss changes from one variety to another. It is minimal or moderate in some varieties and substantial in others. The situation in Tashawit speaking territory is no exception. Loans traced to most of the languages mentioned above are still used today in this language. Yet, the rates of the borrowings attributed to such languages are by no means comparable. Arabic loans, as in all other varieties of Tamazight, are far more dominant than all other loans combined. Both additive and core borrowings are attested in Tashawit. Yet, in the

absence of a comprehensive descriptive dictionary, it is not possible to give any estimation of the rates of loanwords in this variety today. It is not possible to estimate the rates of lexical erosion, be it contact-induced or non-contact induced, for the same reason.

Although studies of lexical borrowing are abundant in literature, contact-induced lexical erosion has received little attention from linguists around the world. With regard to Tamazight, this problem seems to have even attracted the attention of a smaller number of researchers. The focus of researchers is laid most on discussing the sources of borrowings, their rates and, somewhat less frequently, their introduction and integration. Comments on the loss of some words in some varieties may be found in some works (see Kossmann, 2013), though, most of the time, such comments are not based on empirical, but rather textual, evidence. A review of Tashawit literature reveals more deficiency in studies of language contact and its outcomes. The question of lexical borrowing in Tashawit was addressed in a limited number of studies, namely Menaa (2004), Lounissi (2011) and Boudjellal (2015). None of such works, however, has alluded explicitly to lexical loss.

3. Significance of the Study

Tashawit is one of the least documented and studied varieties of Tamazight. It seems, then, fair to state that any study under any of the disciplines of linguistics, provided that it is carried out in proper way, would make an almost original contribution to Tashawit literature. The present work is assumed to be of use to researchers who need to be acquainted with the status quo of language contact in Aurès and its surrounding regions. It is also of use to people who are interested in some knowledge about lexical borrowing in Tashawit, in particular the regional variation that exists with regard to the loans used. The present work will also provide useful empirical data to

researchers whose aim is to address the problem of contact-induced lexical loss. More importantly, the findings of the present study will give the reader an idea about the differences in the vitality of Tashawit across the different regions. With regard to the practical part of the study, researchers can make use of the method used and build on it to develop their own. Other wordlists can be devised based on a review of the one used in this thesis and on the results obtained.

4. Aims of the Study

The present work is carried out in order to account for lexical erosion in Tashawit. It aims in general at revealing the outcomes of language contact, in particular lexical borrowing, on the maintenance and use of a number of Berber lexical variants in comparison with foreign loans. The rates of the Berber as well as other alternative variants for each lexical variable will be determined. Based on such rates and other findings, the rates of lexical loss and, accordingly, lexical maintenance will be calculated for each lexical variable in order to evaluate its status in the language. Besides these overall aims, the focus is laid on two major objectives. The first objective is to identify if there exists a relationship between our variable of interest, i.e. lexical obsolescence, and the variable of region. More precisely, we aim at finding out whether lexical loss is more prominent in some regions than others. For each lexical variable, we will determine the region(s) where the Berber variant is still used and the region(s) where it is lost or is less common. The second objective is concerned with identifying if there exists any association between the factor of age and lexical loss. We will determine the extent to which lexical loss is present in each age group and if there exists any significant difference between such groups. To be more specific, we aim at identifying whether young speakers are more likely to undergo lexical loss compared to older speakers.

5. Research Questions

There are two important questions that we aim to answer in the present work. Each question is concerned with the relationship between lexical obsolescence and one of the extralinguistic factors mentioned in the title of the present thesis, i.e. space and time. The first factor is operationalized by reference to the main regions within Tashawit speaking territory. The second factor is defined by reference to the apparent time construct (Bailey et al. 1991) and, hence, can be expressed in terms of age or age groups. The research questions are phrased as follows:

1. Is lexical obsolescence regionally determined in Tashawit? If so, which region or regions show(s) more tendency towards lexical erosion and which of them show(s) more tendency towards lexical maintenance?
2. Is lexical obsolescence associated with age, i.e. are older Tashawit speakers more likely to maintain indigenous Berber words than younger speakers?

6. Methodology

The present work is a large-scale study of the effects of core lexical borrowing on the maintenance of a number of Berber words across Tashawit speaking territories. A total of 1816 informants have participated in the present study. The subjects were engaged directly by the researcher or other fieldworkers, or indirectly by other informants through snowball sampling. The participants ranged from 17 to 98 years old. For purposes of cross-generational comparison, the subjects will be grouped into six groups: 17-20, 21-30, 31-40, 41-50, 51-60 and over 60 years old. Most of the respondents (98.35%) were residents of one of three provinces, Batna, Khenchela and Oum el Bouaghi. Only few of them (1.65%) reside in other provinces, namely Tébessa, Souk-Ahras and Setif. In order to conduct a cross-regional comparison of the rates of lexical loss, the geographical scope, which covers the different research localities, was

divided into six regions: Bellezma, Occidental Aurès (the Aurès Massif), Oriental Aurès, Nemamcha, Harakta and Segnia. This division was adapted from Carette and Warnier (1846).

The fieldwork of this dissertation was conducted over a period of more than two years, from 2016 to 2018. The data used were collected by means of the questionnaire. This instrument was chosen in order to gather a large body of the data needed for the purposes of the present work. The questionnaire was written in Arabic and was made of two parts. The first part is concerned with personal information of the respondents, in particular age, gender, place of birth and residence (village and/or municipality). The first and fourth of these items represent the two social factors that were highlighted earlier, respectively time and space. The second part of the questionnaire is concerned with the lexical variables that were selected for study. It covers sixty-one lexical items that are grouped under sixteen semantic domains. The participants were asked to provide the equivalent(s) they use in Tashawit to refer to each of the notions that were built in the wordlist.

7. Structure of the Thesis

The present dissertation is composed of two parts: one is theoretical and another is practical. The theoretical part is made of two chapters. The first is concerned with the concept of lexical obsolescence. It proceeds with a treatment of lexical borrowing. A distinction is drawn between two types of lexical borrowing, cultural and core borrowing. The chapter, then, tackles the notion of lexical obsolescence, starting with a delimitation of this phenomenon, the contexts in which it occurs, its main types, its motives, the factors that influence its occurrence, etc. The second chapter in the first part addresses the sociolinguistic context of the study. It gives an overview on Tashawit, in particular its classification, the speakers of this variety, the geographical scope it

occupies, the variation within this language, its status and vitality and some of the outcomes of contact on its lexicon. The practical part of the study is composed of three chapters. The third chapter addresses the methodology adopted in the study, in particular the spatial scope, the participants, the data collection tool and the statistical model used for analysis, along with an account of the social as well as the linguistic variables of interest in the present work. The fourth chapter is confined to the results obtained. A detailed description is made for the findings obtained for each lexical variable, accompanied with an examination of the relationship between region/age and lexical loss. In the fifth chapter, an interpretation of the results is made. The different aspects of lexical loss were discussed along with an evaluation of the roles of region and age on the results obtained as a whole. The chapter concludes with a discussion of some of the issues related to lexical erosion as exhibited in the results of our study.

Chapter One: Lexical Obsolescence

Chapter One: Lexical Obsolescence

Introduction

The aim of the present chapter is to provide an account of lexical obsolescence. It begins with a discussion of some of the circumstances that lead to lexical loss, particularly language contact and its outcomes. It addresses the most common linguistic transfer phenomenon that results from language contact, i.e. lexical borrowing. In this section, the process of lexical borrowing will be delimited and distinguished from other cross-linguistic processes, in particular code switching. Of more importance, the two main types of lexical borrowing, cultural and core lexical borrowing, will be highlighted and contrasted. The second section of the chapter is devoted to the phenomenon of lexical obsolescence per se. Two types of lexical loss will be discussed, non-contact induced lexical loss and contact induced lexical loss. The chapter will conclude with a discussion of the main factors that affect lexical loss, with reference to the main studies carried out in the field.

1.1. Outcomes of Language Contact

It is hard or even impossible to think of a human group that had or has managed to remain ideally isolated from other human groups; cultural contact is the norm, not the exception. If we accept this statement to be true and bear in mind the pride of place that language has in establishing such a cultural contact, it would then be equally acceptable to state that the existence of a language that had or has remained ideally immune to the effects of other languages is inconceivable. Thomason (2001) stated, in this respect, that "[l]anguage contact is everywhere: there is no evidence that any languages have developed in total isolation from other languages" (p. 8). Markey (1982) equally argued that "all languages are contact languages" (p. 170). The analysis of any language spoken

in the world today would yield foreign elements that have entered that language at some points of the history of its existence. Language is, therefore, not only a means of communication, but can also serve as a historical record, an archive, that one can resort to in order to understand the nature of interactions that had taken place between different cultures and societies. It tells not only of material and non-material exchanges at times of peace between neighboring or distant nations but also of interactions that had occurred at times of war and turmoil.

Language is believed to be in a constant state of change, gaining and losing, although such changes take place differently for its different components. The outcomes of language contact can be viewed from two perspectives. The first is concerned with the changes that take place at the level of individual speakers, such as interference, bilingualism, language attrition and the like. The second perspective is concerned with the effects exerted on the language of the community as a whole, i.e. on *langue*. These include language change, language shift, linguistic convergence, lexical erosion, and so forth. The occurrence of the effects of contact at the first level does not necessarily entail that they will be exercised on the speech community. If, on the other hand, the effects of contact occur at a larger scale, i.e. the speech community, they are more likely to sustain and influence the language of such a community, be it at the level of lexicon, phonology, morphology or syntax. The outcomes of language contact range from importing a limited number of foreign words, through the emergence of a mixed language, pidgin or creole, to the death of one of the contact languages involved.

The most predictable outcome of language contact is borrowing. The nature of the elements to be transferred and the direction to which they influx depend often on extralinguistic, rather than linguistic, factors. While lexical elements were proved to

transfer in both directions, albeit with different rates, phonological, morphological and syntactic elements, in addition to the fact that they are more resistant to borrowing, transfer, most often, from the more prestigious to the less prestigious language. Scholars, therefore, distinguish between two broad types of borrowing, lexical and structural (Thomason and Kaufman, 1988; Haspelmath, 2009). The former is said to be more common, taking place even in casual contact situations. The latter, which encompasses phonological, morphological and syntactic borrowing, is less common. It occurs only in intense and enduring situations of language contact (Thomason and Kaufman, 1988). The present work addresses the effects of lexical, rather than structural, borrowing on the Berber variety spoken in the east of Algeria, i.e. Tashawit. Accordingly, the following section will be devoted to lexical borrowing and will discard, except for purposes of comparison, all other borrowing processes.

1.1.1. Lexical Borrowing

Borrowing is one of the most important phenomena that are addressed in language contact. It has received a great deal of attention from linguists who adhere to different domains of linguistics. Fundamental to studies of contact linguistics as borrowing is, it should be noted, however, that linguists differ, to some extent, on its delimitation. The dispute that exists is mainly concerned with the direction of transfer, i.e. whether the term *borrowing* should be restricted to one direction of transfer, namely that which takes place from the source to the recipient language, or should cover both directions.

Some linguists have offered a definition that incorporates every sort of transfer between two languages regardless of its direction. Deliberately choosing to overlook the nature of the source of borrowing, Haugen (1950), for one, defines the concept as "the attempted reproduction in one language of patterns previously found in another" (p. 212). He distinguishes, nonetheless, between *importation*, the accurate reproduction

of the model, i.e. the feature in the source language, and *substitution* which he confines to inaccurate reproduction of such a model. More explicitly, Trask (2000) defines the concept broadly as "the transfer of linguistic features of any kind from one language to another as the result of contact" (p. 44). Trask (2000) draws a distinction between borrowing and *interference*, the non-deliberate carrying of linguistic features from one's first language into his/her second language.

Other linguists limit the notion of borrowing to the transfer of foreign features to one's native language. Thomason and Kaufman (1988), for instance, confine the process of borrowing to "the incorporation of foreign features into a group's native language by speakers of that language" (p. 37). Van Coetsem (1988) draws a distinction between two main types of transfer in contact situations, *borrowing* and *imposition*. In order to define each of these concepts accurately, he draws, based on the viewpoint of the speaker who acts as an agent of transfer, one further distinction between source language and recipient language. Borrowing takes place when the transfer of materials occurs from the source language to the recipient language through the agency of the recipient language speaker and, hence, is referred to as *recipient language agentivity* (Van Coetsem, 1988). The use of English speakers of words or expressions like *déjà-vu, vis-à-vis, laissez-faire, cul-de-sac, object d'art, avant-garde, raison d'être* and the like are all instances of lexical borrowing from the French language. Imposition, on the other hand, occurs when the transfer of material takes place from the source language to the recipient language by means of the agency of the source language speaker, a *source language agentivity* (Van Coetsem, 1988). The use of a voiced uvular fricative [ʁ] as an alternative to the alveolar approximant [r] in the word 'great' or the use of alveolar fricatives [s] an [z] instead of dental fricatives [θ] an [ð] in words like 'thin'

and ‘this’ are examples of imposition that French speakers usually make while speaking English.

Lexical borrowing is viewed in the present work from the second perspective highlighted above. Following Thomason and Kaufman (1988), lexical borrowing is defined as the incorporation of foreign lexical items in a group’s language by the speakers of that language. In order to understand the merits of lexical borrowing, we need to distinguish it from other borrowing phenomena that take place in contact situations. The first distinction is drawn between lexical borrowing and structural borrowing. Structural, or grammatical borrowing, is defined as “the copying of syntactic, morphological or semantic patterns (e.g. word order patterns, case-marking patterns, semantic patterns such as kinship term systems)” (Haspelmath, 2009: 39). In general, the borrowing of lexical items precedes the borrowing of structures and patterns (Thomason and Kaufman, 1988). Structural borrowing requires more intense contact compared to lexical borrowing which takes place with minimal language contact (Thomason and Kaufman, 1988).

Distinctions should also be drawn between outcomes of lexical borrowing proper, i.e. loanwords, and a number of other outcomes of related language transfer processes, namely hybrids, loan translations, and semantic loans (see Haugen, 1950). A *loanword*, loan for sort, or a *borrowing* is “a word that at some point in the history of a language entered its lexicon as a result of borrowing (or transfer, or copying)” (Haspelmath, 2009: 36). Haspelmath (2009) stresses that although the source for loans can be complex words or phrases, “this internal structure is lost when the word enters the recipient language” (p. 37). Therefore, loanwords are always lexemes, not phrases, and are not analyzable in the recipient language (Haspelmath, 2009).

A *hybrid*, also known as a 'hybrid loanword' or 'loanblend', on the other hand, refers to a compound form of the source language that is only partially adopted in the recipient language (Haugen, 1950; Haspelmath, 2009). As a result, a hybrid consists of a native component and a borrowed component, e.g. 'monolingual', from *monos*, Greek for 'only', and *lingua*, meaning 'tongue' in Latin, 'genocide', from Greek *genos* meaning 'race, people' and *cīdere* 'to kill' in Latin, 'sociology' from *socius*, Latin for 'comrade', and the Greek *logos* meaning 'word', 'reason', 'discourse', etc.

Another outcome of borrowing that is addressed in the literature is the *loan translation*. Also known as *calques*, loan translations are words, simple or compound, or phrases that are created in a given language by word for word translation of parallel forms in the recipient language (Haugen, 1950). English comprises a number of calques from other languages, such as 'point of view' from French '*point de vue*'; 'antibody' from German *antikörper*; 'devil's advocate' from Latin *advocātus diabolī*; 'milky way' from Latin '*via lactae*', etc.

Semantic loans, in contrast to calques, denote meanings borrowed from a source language by means of word that already exist in the recipient language. The word used, therefore, undergoes a semantic extension to include the new meaning (see Haugen, 1950). In German, for example, the verb *realisieren*, which means 'to make something happen', was extended to mean 'to become aware of something' after the English verb 'to realize' which denotes both meanings.

A number of linguists also draw a distinction between a *nonce borrowing* and an *established borrowing*. The former refers to a borrowing that is not fully integrated into the target language and is not recurrent or widely recognized as a loanword in the speech community (Poplack, Sankoff and Miller, 1988). An established borrowing, on the other hand, besides being phonologically and morphosyntactically integrated into

the system of the recipient language, is widely recognized and frequently used by the speakers of that language (Poplack and Meechan, 1995). They are considered as words that belong to the recipient language by speakers of such a language, and most often are dictionary-attested (Poplack, 2012). In fact, many, if not most, laymen fail to recognize that a given word is a borrowing from another language, and even linguists find it challenging sometimes to decide on the origin of some loans. According to Sankoff and Poplack (1985, cited in Nortier, 1993), the two phenomena are distinguished in terms of social, and not linguistic, parameters.

The distinction between established and nonce borrowings, it is worth mentioning, is not approved by all linguists. While, multiword codes-witches, on the one hand, and established loans, on the other, are agreeably recognized as distinct phenomena, the status of singly occurring items remains a matter of dispute. Poplack, Sankoff and Miller (1988) believe that the category of 'nonce borrowing' is a distinct phenomenon from code switching. Nonce borrowings differ from single-word code-switches in that the latter, just like multi-word codes-witches, are not integrated into the recipient language (Poplack, 2012). Nonce borrowing, however, resembles single-word code-switches in terms of frequency of occurrence; both of them are not recurrent (Poplack, 2012). By contrary, Myers-Scotton (1992), while acknowledging established borrowings as a distinct end product not unrelated to other cross-linguistic phenomena, does not see the need to create the category labelled nonce borrowing. She considers these not as separate entities, but as singly occurring lexemes that she includes under code-switching forms (Myers-Scotton, 1992). Myers-Scotton (1992), contrary to Poplack and others, argues that there is no difference between borrowing and code switching as processes. The only serious difference between single-word code-switches and established borrowings, Myers-Scotton (2002) argues, is their status in the mental

lexicon, "... lemmas underlying code switching forms are only tagged for the embedded language, while borrowed forms have lemmas tagged for both the donor and the recipient language, at least in the mental lexicon of bilinguals in those languages" (p. 153).

1.1.1.1. Cultural Lexical Borrowing

In terms of the motives that stimulate a native speaker to borrow words from another language, Linguists draw a distinction between two main types of lexical borrowing, cultural and core borrowing (Myers-Scotton, 1993a, 2002; Haspelmath, 2009; Kossmann, 2013). The concept of cultural borrowing was first introduced by Bloomfield (1933) to refer to the borrowing of features from a different language as opposed to dialect borrowing which refers to the borrowing of items from a dialect of the same language. The concept is now used in a different sense, concerned mainly with the extent to which the features borrowed are novel or not. Cultural lexical borrowing is defined as the process of importing a lexical item from another language to designate a meaning for which there exists no equivalent in the lexicon of the recipient language. Myers-Scotton (2005) uses the term to refer to those "words that fill gaps in the recipient language's store of words because they stand for objects or concepts new to the language's culture" (p. 331).

The potential ability to name new objects, phenomena, experiences and the like is normally an inherent characteristic of all human languages. Through morphological and other linguistic processes like coining, semantic extension, blending, and others, a language can assign names to referents that were not encountered before. Casagrande (1955) argues that "[n]o knowledge of the language of an impinging culture is required for meaning extensions or new coinages and only native linguistic materials are used" to carry out this type of language innovation which he calls *primary accommodation*

(p. 22). This characteristic seems to be true most often in non-contact situations. Evidence has revealed that in language contact situations the borrowing of a foreign lexical item to designate a new referent brought from the same foreign source is the norm. Weinreich (1953) states, in this respect, that "using ready-made designations is more economical than describing things afresh." (p. 57). *Secondary accommodation*, to use Casagrande's (1955) second term, necessitates a minimum knowledge of the source language for lexical borrowing to take place. In a similar way, Weinreich (1953) contends that, for interlingual influence to take place, there should exist bilingual speakers in the recipient culture (p. 1).

Cultural lexical borrowing is a mutual bi-directional process (Bloomfield, 1933). In other words, both languages at the two sides of transfer borrow from one another. Many words that have now gained an international reputation were first imported from minority languages, such as the ones spoken by indigenous people in America, Africa and Australia, to major languages, such as English, Spanish and French and, then, diffused into the rest of the languages of the world. For example, the word *banana* was imported from Mande, *potato* from Taino or Hayitian Carib, *shampoo,* tobacco from Arawakan, *elephant* and *aoudad* from Berber, *jaguar* from Tupinamba, *cougar* from Guarani, *tomato* and *chocolate* from Nahuatl, and the list goes on. The difference lies, however, in the fact that the language with the lower status borrows more from the dominant language. The number of words that the aforementioned indigenous languages have imported from the major languages they were in contact with is incomparable to what they have exported.

The answer to the question of why cultural lexical borrowing takes place is straightforward. The speakers of any language *need* to name new referents for which no signifiers exist in their own language and, as it has been established earlier,

borrowing seems to be the most convenient way. Necessity or need-filling motive has long been recognized as the main, if not the only, drive for this type of borrowing (Weinreich, 1953; Hockett, 1958; Hock, 1991; McMahon, 1994). Weinreich (1953), for instance, maintains that "[t]he need to designate new things, persons, places and concepts is obviously a universal cause of lexical innovation" (p. 56). Hock (1991) states that the "motivation for borrowing which perhaps most readily comes to mind is need" (p. 408). By the same token, McMahon (1994) states that "the most common and obvious motive for borrowing is sheer necessity: speakers may have to refer to some unfamiliar object or concept for which they have no word in their own language" (p. 201). The borrowing of foreign lexical items to designate new referents is a common practice in all the languages of the world, yet it is not the only sort of lexical borrowing that we encounter in language contact situations. Research in contact linguistics reveals that many world languages engage in lexical borrowing that is by no means necessary.

1.1.1.2. Core Lexical Borrowing

Core lexical borrowing is concerned with situations of lexical transfer that are not motivated by necessity. Ample evidence in the literature shows that in language contact situations speakers also borrow lexical items from other languages to name referents already denoted in their own. Haugen (1953) states that "borrowing always goes beyond the actual needs of language" (p. 373). For example, in addition to thousands of cultural borrowings that were imported from a number of world languages, English has also borrowed many words that are part of core lexicon, such as 'take', 'get', 'call', 'want', 'die', 'hit', 'face', 'leg', 'chest', 'rib', 'wing', 'ill', 'sick', 'weak', 'birth', 'husband', 'egg', 'wall', 'sky', 'fog', 'blue', 'orange', 'guest', 'knot', 'anger', and others more. To refer to this second type of borrowing, Bloomfield (1933) used the term 'intimate borrowing' which takes place between two languages spoken in one single community,

and which usually "extends to speech-forms that are not connected with cultural novelties" (p. 461). In a similar way, Myers-Scotton (1993a) maintains that core borrowings are "taken into a language even though the recipient language already has lexemes of its own to encode the concepts or objects in question" (p. 5). These, she suggests, arise by means of code switching (Myers-Scotton, 1992). Core borrowings, therefore, duplicate terms that already exist in the recipient language. Barron (1986) uses the term *lexical shift*, rather than lexical borrowing, to refer to core lexical borrowing taking place in Papua New Guinea English, but restricts the term of lexical borrowing to cultural transfers only.

Contrary to cultural borrowing, which takes place in all contact languages regardless of their status, core lexical borrowing is most often one-sided; the minority language, i.e. the one perceived to have a lower status, imports core lexicon from the language with the higher status, i.e. the dominant language (Bloomfield, 1933; Hockett, 1958). The loanwords, that were listed earlier, were adopted by English speakers at times when English was perceived to be less prestigious than some other languages that it came into contact with, such as Latin, Old Norse, French, etc. Examples of core borrowings are abundant in the literature. In a study of Shoshoni, an endangered language spoken by Native Americans in the western part of the United States, Miller (1971) observed that in addition to the borrowing of words denoting objects new to their culture, e.g. automobile, table, school, gas, etc., Shoshoni speakers imported words that designated things and objects for which Shoshoni equivalents were already in place, such as 'salt', 'dog', 'wash', 'milk', and others.

The motives for core borrowing are not fully understood. If one adopts the view that "basic vocabulary is almost immune to replacement via borrowing" (Winford, 2003: 53), or the view that "[l]anguages are more likely to copy words from other

languages in the area of cultural vocabulary than in core vocabulary" (Crowley and Bowern, 2010: 206), core borrowings, then, should be rare in the lexicon of any language. Myers-Scotton (1993b) argues that core borrowings are distinguished by the fact that there is "no urgent consensus" requiring their use on the same scale compared to cultural borrowings (p. 175). This idea is, however, not true. Sayahi (2014) argues that the above traditional view is concerned with contact situations that do not involve language shift.

The motive that most linguists seem to agree on when addressing core borrowing is prestige (Hockett, 1958; McMahon, 1994; Myers-Scotton, 2002; Haspelmath, 2009). McMahon (1994) states that "the second major motivation for borrowing is essentially social, and depends on perceptions of prestige" (p. 202). Winford (2010) states that prestige "explains why socially subordinate languages tend to borrow more from dominant languages than vice versa" (p. 177). Sometimes people use expressions from other languages to show their level of education, or, in case of speakers of minority languages, to convey the message that they do not belong to the archaic world of their ancestors (Cowley and Bowern, 2010). Hockett (1958) differentiates between three types of prestige: first, "people emulate those whom they admire, in speech-pattern as well as in other respects"; second, a speaker "wishes to be identified with" a group of people "to be treated as they are", and three, which he considers negative, seeking "conformity with the majority" (p. 404).

It is also important to point to an important aspect of lexical borrowing that takes place in minority languages in intense contact situations. Semi-speakers of a minority language often borrow basic words from a source language with the wrong belief that equivalents of such words do not exist in the recipient language. This sort of borrowing can be regarded as an additive borrowing from the perspective of a semi-speaker.

Despite the fact that the words borrowed have equivalents in the recipient language, the borrowing motive is not prestige, but need; the semi-speaker has actually felt the need for borrowing in order to fill a referential gap and not to associate himself or herself with a language with a higher status. From the perspective of a fluent speaker, who is aware of the existence of such an equivalent, the borrowing of the semi-speaker is a core borrowing. It is possible, based on what has been said here, that a good deal of loans which we think have entered a minority language because of considerations of prestige have actually entered it because of necessity.

Other motives for core borrowing were also reported in the literature. Thomason and Kaufman (1988) use 'cultural pressure' as a cover term to account not only for lexical borrowing but as a key factor to explain and predict rates and types of borrowing that take place in a language contact situation. Cultural pressure was defined as "any combination of social factors that promotes borrowing, e.g., prestige or economic forces that make bilingualism necessary" (Thomason and Kaufman, 1988: 77). Myers-Scotton (2005) links 'cultural pressure' to the loss of vitality of the recipient language to account for the need to import core borrowings in a given minority language.

An interesting example of core borrowing is the one known in the literature as taboo-motivated lexical borrowing. This type of core borrowing is reported about a number of minority languages in the world, like Warlpiri, Tahitian, Haruai, etc. When a speaker of Warlpiri dies, his or her name along with words that resemble it in the language become taboo that need to be avoided and replaced. This lexical replacement is usually carried out via borrowing from a neighboring language (see Bavin, 1989). Similarly in Tahitian, when a member of the royal family dies, "every word which was a constituent part of that person's name, or even any word sounding like it becomes taboo and had to be replaced by new words" (Hock, 1991: 295). Replacement takes

place through metaphorical meaning extension and by large-scale borrowing (Hock, 1991). The most striking example of taboo-motivated borrowing is provided by Comrie (2000) in his account of Haruai, a language of the Piawi family spoken by around one thousand speakers in New Guinea. A speaker of Haruai is prohibited, for taboo considerations, to utter the names of some of his or her relatives, like his/her in-laws. Since most personal names in Haruai community are mere actual words that derive from their language, the speaker of this language is likewise not allowed to use the words identical, or perhaps similar, to his or her relatives' names and needs, instead, to find a substitute for the lexical item in question. The usual strategy that Haruai speakers adopt to avoid such taboos is to borrow words from other neighboring languages, usually the Kobon language.

Taboo-motivated borrowing can be regarded as a subclass of core borrowing in that it duplicates words that already exist in the borrowing language. Yet, it does not seem to be associated with considerations of prestige. By contrary, it involves a need for borrowing, a need to fill the referential gap that would be created by ceasing to use the word associated with taboo or bad omen. In order to differentiate between this type of borrowing, which has features of both types addressed earlier, Haspelmath (2009) coined the concept of therapeutic borrowing, which takes place when an original word that was used to denote some referent becomes unavailable. Therapeutic borrowing covers two subclasses, taboo-motivated borrowing and borrowing for reasons of homonymy avoidance. The latter involves borrowing a word from a different language in order to avoid homonymy clash that may arise because a word sounds much like another word because of sound change (Haspelmath, 2009).

Another motive for core borrowing that is reported in the literature is economy. In his overview of Dutch loanwords in Indonesian, De Vries (1988) resorts to the principle

of economy to refer to speakers' preference to use a word instead of a phrase. Citing Moeliono (1985), he maintained that words like *politik* and *demokrasi*, borrowed from Dutch, have substituted complex Indonesian paraphrases used to refer to such concepts. Vries (1988) also argues that low frequency could be another factor stimulating borrowing, for example the Indonesian word *dursila*, itself a Sanskrit loan, was replaced by the Dutch loan *imorel* or *immoral* which is more frequent. Vries (1988) also points to a third motive, the need for synonyms, which he believes promoted a loan like *kontrol* 'supervision, checking' besides pengawasan 'control'.

Cultural lexical Borrowing and core lexical borrowing take place in different social circumstances. The former occurs at the early stages of contact, and does not require intense contact or widespread bilingualism to occur (Thomason and Kaufman, 1988; McMahon, 1994; Sayahi, 2014). Thomason (2001), based on a borrowing scale proposed first in Thomason and Kaufman (1988), argues that "only non-basic vocabulary gets borrowed under conditions of casual contact" (p. 69). Core borrowing, on the other hand, occurs in situations of intense contact and widespread bilingualism (Myers-Scotton & Okeju, 1973; Thomason and Kaufman, 1988; Thomason, 2001). Thomason (2013) stated that "under circumstances of intense contact, any linguistic feature can be transferred to any other language" (p. 41). Given sufficient amount of cultural pressure and intense contact, borrowing goes beyond open-class items, such as nouns, adjectives and verbs, to more stable closed-class functional items, such as pronouns, prepositions, etc. (Thomason, 2001). With more intense contact and increasing cultural pressure, as well as other social, political and economic factors, speakers of minority languages may move from heavy borrowing in basic and non-basic lexicon to shift to the language they value most.

In sum, the types of borrowing that we have discussed above have different effects on the language. While cultural lexical borrowing enriches a language, extensive core borrowing is viewed as a sign of a language losing ground to a more dominant language. It is through the rate of borrowing in core vocabulary, and not cultural borrowing, that we can assess the degree of the intensity of language contact and the influence that a majority language has exerted on a minority one. It can be stated that massive cultural borrowing in a minority language indicates that such a language has probably lost its internal innovative power to account for new objects, technologies, experiences, and the like. Heavy core borrowing, on the other hand, indicates that a language has lost its vitality and is probably at the onset of language endangerment or death.

1.2. Lexical Obsolescence

Fundamental as they are to any language, words are the least stable elements in the linguistic system. Compared to the phonological, morphological and structural features, which take a long time to change, the longevity of lexical features is much less enduring. The lexical components of language are said to be in a continuous state of flux and flow (Trench, 1855). Words undergo changes in their spelling, pronunciation, morphology and meaning. The most drastic outcome that a word can undergo, however, is to simply cease being a word in the language, in other words becoming obsolete. The lack of stability of the lexical elements of language was best expressed by Murray (1888):

> The living vocabulary is no more permanent in its constitution than definite in its extent. It is not to-day what it was a century ago, still less what it will be a century hence. Its constituent elements are in a state of slow but incessant dissolution and renovation. ‘Old words’ are ever becoming obsolete and dying out: ‘new words’ are continually pressing in. (p. viii)

Lexical obsolescence is not a hard-to-detect phenomenon. It is not unusual for speakers of a given language to engage in talks about words that have grown less, or no longer, used in the daily interactions of a speech community. You could hear a speaker saying "*I haven't heard this word for a long time*" if an archaic term is uttered in a given conversation. Easily noticeable as word mortality is, it has not received sufficient attention in the works of pre-modern language scholars. Interest in this particular linguistic issue seems to be confined to notes and comments that are found in the works of such scholars, in particular lexicographers and dictionary compilers. More attention was devoted to the subject by the thirties of the nineteenth century (see Dike, 1935). Linguists who addressed the subject of words obsolescence were not only interested in a mere listing of obsolete words but also attempted to account for the different factors that instigate lexical loss. The problem of lexical obsolescence, nonetheless, still lacks a solid theoretical background.

1.2.1. Delimitation of the concept

In order to refer to the phenomenon of lexical mortality in a given language, linguists use a variety of terms, such as lexical obsolescence, erosion, loss, reduction, replacement, word obsolescence and the like. Although they denote more or less the same notion, some of these terms seem to have a slightly specific denotation, which makes it more suitable to be used in a particular context when dealing with a particular aspect of this phenomenon. Lexical obsolescence, probably the most widely used among the previous terms, is defined by Giménez-Eguibar (2016) as "the death, elimination, or loss of certain lexemes" (p. 47). If a word is said to go through lexical obsolescence in a given language, it means that "the speakers of that language stop using it and it is not transmitted to the next generation" (Giménez-Eguibar, 2016: 47). Dorian (2013) uses lexical erosion, which she defines as the "reduction and loss in the

lexical resources of a language" (p. 3330). It is clear that Dorian (2013) uses this term to refer to a sweeping phenomenon that affects the lexicon of a given language, as a whole, and not the process of lexical loss that a given word undergoes.

The word *obsolescence* is a relatively recent term. It was first recorded in use around 1809 according to Online Etymology Dictionary, or 1832 according to Webster's English dictionary. The English word, *obsolete*, is traced to the Latin word *obsoletus*, meaning "grown old" or "worn out", which is a past participle of the Latin verb *obsolère*/*obsolescere*, meaning "to grow old" or "fall into disuse" (Hoad, 1996: 319). Accordingly, an obsolete word is one that is no longer used or useful in a given language. Visser (1949), quoted in Bator (2010: 44), defines an obsolete word as one that "when repeated has either no meaning at all, or a meaning entirely different from that it had before" (p. 6). Based on this definition, a word is said to have undergone lexical obsolescence in two cases. The first is concerned with the loss of both the form and content of the word in question. The second case involves the loss of content, whereas the form persists but acquires a different meaning. Words can, therefore, undergo lexical obsolescence through semantic change. In other words, once a given word ceases to be used in a given meaning and acquire a new meaning, such a word will be considered as obsolete in its original sense. Visser (1949) also considered as obsolete those words that "were driven out of the standard language but retained in dialects" (Bator, 2010: 44). Minkova and Stockwell (2009) offer some examples of words which survived in dialectal use: *atter* 'poison', *busk* 'prepare, get ready' *bairn* 'a child' *emmet* 'ant' *besom* 'broom', *mere* 'marsh, fen' (p. 23). Some lexicographers use the label *dialectal* to refer to this type of words. In contrast to Visser (1949), Bator (2010) identifies as obsolete those words that are "non-existent in any form of language" (p. 44).

Lexical obsolescence does not necessarily affect all the senses of a word. Instead, words, which denote more than one meaning, could undergo obsolescence in one or more senses while other senses remain regularly used within the language. For example, the word *craft* is considered obsolete in the sense of 'occult art' or 'magic', while it is actively used to denote 'dexterity' and other close meanings (see Minkova and Stockwell, 2009: 23). Likewise, the word *awkward* is no longer used to mean 'perverse', but it is used to mean 'difficult to use or deal with', 'causing problems, worry or embarrassment', 'uncooperative', 'moving in a way that is not attractive', etc. A word can also become obsolete in a grammatical form and remains used in another. For instance, the word *perdu*, meaning 'a soldier assigned to extremely hazardous duty' has become obsolete as a noun in English, but it is still used as an adjective to mean 'remaining out of sight'. In terms of lexicography, we can say that obsolescence can affects lemmas, entries and/or senses.

Lexicographers seem to adopt a more practical approach to recognize obsolete words. An obsolete word in *Oxford English Dictionary* is one for which no evidence is recorded in modern English. A more precise definition is found in *Longman Dictionary of the English Language*, which marks 1755, the year in which Samuel Johnson's dictionary of English was published, as a dividing line that needs to be taken into consideration in deciding the status of any word (Jackson, 1988, 2002). The term *obsolete* means, operationally, that there is no evidence for the use of the word in question since 1755. The same definition is adopted in a number of other dictionaries, like *Merriam Webster Dictionary of English*.

1.2.2. Graduality of Lexical Obsolescence

Lexical obsolescence is not an abrupt instantaneously noticeable event. It is rather a gradual lingering process, which can last more than a speaker's lifespan.

Lexicographers sometimes specify, if approximately, the year in which a word first appeared in printed texts, but although they refer to words no longer used as obsolete, they rarely, if ever, mention the year in which a word has died out. For example, the first recorded use of the word *perdu* (n.) was thought to be in 1608, according to Merriam-Webster, or late sixteenth century, according to Oxford English Dictionary. However, although all English lexicographers regard the word as obsolete, no explicit date for its decline was specified. Murray (1888: viii) states, in this respect, that:

> ... the death of a word is not an event of which the date can be readily determined. It is a vanishing process, extending over a lengthened period, of which contemporaries never see the end. Our own words never become obsolete: it is always the words of our grandfathers that have died with them. Even after we cease to use a word, the memory of it survives, and the word itself survives as a possibility; it is only when no one is left to whom its use is still possible, that the word is wholly dead.

Macafee (1994) offers a similar description of the word's journey to lexical mortality. He highlights three important stages that a word goes through before it totally disappears from use within a language. The first of the three stages involves the shift from the active use of the word in a given speech community to passive knowledge. This shift takes place gradually throughout successive generations of speakers (Macafee, 1994). The frequency of the use of the word in question would decrease even in the lifetime of the speakers who used to use it regularly in their daily interactions, in particular, if the referent the word denotes is abandoned in the extralinguistic world. The use of the word will decrease sharply within the subsequent generations. In the second stage, the word becomes idiolectal in that it is used by a particular group of speakers (Macafee, 1994), whereas it is rarely, if ever, used by the majority of the

speakers. The use of the word in the third stage will become occasional, i.e. used in very restricted contexts and registers, probably with some explanation when necessary.

The graduality of lexical obsolescence is reflected, to some degree, in the terminology used by lexicographers in descriptive dictionaries to account for the currency of words. Probably the most frequently used label in this respect is the term *obsolete*. As previously mentioned, this descriptive term is used to describe words which are no longer used in the language (Burkhanov, 1998). These words are only encountered in old texts and are understood by speakers who have an interest in studying such old texts, such as scholars of old literature, historians, specialists in religious studies, and the like. The above label may not be used in dictionaries which only include words that still exist in use and discard those that have gone completely obsolete in the language.

A second label that is widely used in the literature is the term *archaic*. Although this descriptive term is sometimes used interchangeably with the first label, some lexicographers prefer to assign it a rather different meaning. An archaic word, or archaism, is a word that "is no longer in current use except in fixed contexts, such as legal documents, nursery rhymes, poetry or prayers, or for humorous effect" (Hartmann and James, 1998: 7). Archaic words are sometimes used intentionally to give an old-fashioned effect or convey an historical effect (Jackson, 1988, 2002). In English, for example, the words *thou* and *thee* are considered archaic. They can be used in certain context, but only to "convey the tone of a bygone or more formal era in prayers and poetry" (Merriam-Webster). Archaic words are often understood by educated speakers but are rarely used in contemporary written or spoken discourse. Other words that can be encountered in usage labels of dictionaries,

and which are used to account for words' currency, include *dated*, *old-fashioned* and *old-use*.

Some words, though considered obsolete, manage to survive in collocations, idioms, proverbs and fixed expressions alike. These are known in the literature as *fossil words*, *lexical fossils* or simply *fossils* (Burridge, 2004). A lexical fossil is defined as "[a] word or phrase that has become obsolete except in set phrases or forms" (Oxford English Dictionary). In such cases, speakers may use and understand the meaning of those words within the context of the expressions uttered, but do not understand them as separate lexical items. Examples of such lexical fossils in English include *ado*, meaning 'to bother over unimportant details', in idioms like 'without further ado' and 'much ado about nothing', *beck*, meaning 'summons', as in 'at one's beck and call', *dint*, 'force or power', in 'by dint of', etc. A probably better example of a fossil word in English is the word *will*. The word 'will' meant originally 'to desire', which is now obsolete, except in phrases like '*do what you will*' (Burridge, 2004). Lexical fossils seem to exist in all languages, including Berber. In Tashawit, for instance, the compound *taylalt n yiḍ*, lit. 'bird of night', is used to denote 'bat'. The word *taylalt* (m. *aylal*), which is still attested in some other Berber varieties as a general term for bird species, is obsolete in Tashawit. The speakers of this variety do not use it except in its compound form, and, certainly, will not understand it, or will take it to mean 'bat', if it is mentioned separately. Accordingly, the word is not attested in Tashawit texts except in its compound form mentioned earlier.

1.2.3. Contexts of Lexical Obsolescence

The contexts in which lexical erosion takes place are not always alike. Dorian (2013) distinguishes between three contexts. First, she considers lexical reduction which takes place as a normal process of language change, arguing that "changes in

lifeways or technology result in the abandonment of some traditional occupations, pastimes, or earlier technologies" (Dorian, 2013: 3330). The second type of lexical erosion occurs in situations of language shift. The disruption of traditional ways of life in minority communities by changes in the overall environment caused by developments like "resource depletion, land takeovers, government-sponsored in-migration, and gradual urbanization" causes the vocabulary of such traditional lifeways to become obsolete (Dorian, 2013: 3330). This second type of lexical erosion can be extensive if the circumstances, which brought it about, extend as well (Dorian, 2013). The Third type of lexical erosion is caused by incomplete language transmission and is also associated with minority-language communities (Dorian, 2013). It is manifested in reduced lexical knowledge in younger speakers of the minority language which results from reduced exposure to the first language and orientation to learn the dominant language.

Giménez-Eguibar (2016) also distinguishes between three types of lexical obsolescence. First, a signifier may be replaced by another signifier, which is "more powerful in political or social terms", but the signified remains constant (p. 48). Second, the signifier can be replaced by another signifier along with a replacement of the corresponding signified, i.e. change in meaning (Giménez-Eguibar, 2016). The third situation involves the loss of a signified in a language. The first and second types seem to correspond with Dorian's second and third settings, whereas the third corresponds with Dorian's first setting. Generally speaking, we can draw a distinction between two distinct contexts that give rise to lexical obsolescence. The first is a natural context, i.e. a non-contact situation, whereas the second is limited to language contact situations.

1.2.4. Types of Lexical Obsolescence

Based on the circumstances in which it takes place, we can distinguish between two types of lexical obsolescence, non-contact-induced lexical obsolescence and contact-induced lexical obsolescence. Further discussion of these two broad types will be provided in the two subsequent sections.

1.2.4.1. Non-contact-induced Lexical Obsolescence

This first type of lexical obsolescence refers to lexical reduction that is by no means prompted by language contact. In other words, this lexical loss takes place with no effect whatsoever exerted by any foreign language. It corresponds to the first type of lexical erosion in Dorian's (2013) classification i.e. lexical reduction in normal language change, and, most likely, to Giménez-Eguibar's (2016) third type of lexical obsolescence, the loss of a signified within a language. This form of lexical loss is encountered in all world languages.

The causes of non-contact induced obsolescence are not fully understood. One may be tempted to claim, in the tradition of the 19th century dialectologists, that *every word has its own history* because after all lexical obsolescence is included among the changes Neogrammarians and 19th century dialectologists were trying, though probably not outspokenly, to account for. Burridge (2004) argues that a "huge numbers of English words seem to drop out of use for no obvious reason at all" (p. 44). Researchers who addressed the subject of words obsolescence put forth a number of different causes. We can group these into internal and external factors. Internal, or linguistic, factors involve a change or a restructuring of some linguistic elements, words in our case, which results in abandoning the use of certain lexical items. Such internal linguistic forces include phonetic, morphological and semantic factors. Of these internal linguistic factors, we can mention: isolation, insignificance of sound, lack of euphony and force, confusion

through homophony, weakened onomatopoeic quality, presence of slangs, shift in meanings, polysemy, and the like (Dike, 1933; Visser, 1949).

One of the reasons provided in the literature for lexical obsolescence is 'insignificance of sound' (Dike 1935; Burridge, 2004; Bator, 2010). Words may fall into disuse if, as a result of reduction or other reasons, they become excessively short or, to use Dike's (1933) terms, 'phonetically unimpressive'. Following Dworkin (1989), Giménez-Eguibar (2016) argues that "the phonetic insignificance of certain words or the absence of a convenient phonetic model" may cause words to become obsolete (p. 48). Old English words like *ǣ* 'custom', *ea* 'river' and *ig* 'island' seem to have been lost for this reason (Burridge, 2004; Burridge and Bergs, 2017). A minimum of 'phonetic saliency' needs to be retained in order for words to remain part of the lexicon of a language (Burridge, 2004). This cause of lexical obsolescence, it is worth mentioning, is confined to content rather than function words for there still exist in English, and certainly other languages, a number of function words as short as the examples provided above but most of them are preserved in the language, e.g. articles, pronouns, prepositions, etc.

Another phonologically related reason for obsolescence is homonymy or homophony (Dike 1935; Menner, 1936; Williams, 1944; Burridge, 2004; Bator, 2010). Words can fade away just because they "sound too much like other words" (Burridge, 2004: 44). Bator (2010), based on earlier works that tackled the subject, states that homonymy was considered a serious cause of lexical obsolescence. Intolerable homonymy, as Burridge and Bergs (2017) call it, takes place when too words, different in meaning, become similar, or even identical, in pronunciation as a result of language change. This similarity may cause confusion, or at times offense, in communication and, hence, one of the two words should be replaced. For example, after dropping its

initial voiceless glottal fricative [h], the Old English word *hrūm* ‘soot’ was dropped of English because it sounded much like ‘room’ (Burridge, 2004). Dworkin (1990), cited in Giménez-Eguibar (2016: 49), talks of homonymy or quasi-homonymy as a cause of words obsolescence offering the example of *laido* “ugly” versus *ledo* “happy”.

The Excessive ambiguity that may emerge due to phonological merger of lexical items is referred to as *homonymy clash* (see Hock, 1991; Durkin, 2009). This clash can result in either complete or partial lexical replacement (Hock, 1991). Gilliéron and Roques (1912) classic example of *cattus* and *gallus* was cited by many scholars to illustrate clash of homonyms (Bloomfield, 1933; Hock, 1991; Durkin, 2009; Geeraerts, 2012). Sound changes of the two Latin words *cattus* ‘cat’ and *gallus* ‘rooster’ led both words to merge into *gat* in Gascon French. In order to avoid the serious ambiguity that could result from the coexistence of the two terms denoting the two domestic animals, the form *gat* ‘rooster’ was replaced by other words, namely *bigey*, the Gascon variant of *vicaire* ‘curate’, or by *azan*, the variant for *faisan* ‘pheasant’. Avoidance of homonymy is explained sometimes by referring to the linguistic principle ‘*one form one meaning*’, also known as the principle of formal efficiency, or, though probably not widely, as isomorphism (Geeraerts, 2012; Durkin, 2009).

Burridge and Bergs (2017) provide another reason for lexical loss, which they link to the idea that words naturally worn out, also referred to as *verbicide*. Literally, this refers to “the deliberate distortion of the sense of a word” (Merriam-Webster). One of the areas of vocabulary that demonstrates this best is the language of abuse. Terms like, *druggel* and *grutnol* are rarely, or never, used in modern English (Burridge, 2004; Burridge and Bergs, 2017). Terms which are too expressive or carry a lot of force lose their vigor through time and may fall into disuse, as people look for new ways to express themselves (Burridge, 2004; Burridge and Bergs, 2017).

Other internal linguistic factors that were offered in the literature include synonymy or rivalry of synonyms (Rynell, 1948; Welna, 2005; Bator, 2010; Giménez-Eguibar, 2016), taboos (Giménez-Eguibar, 2016), polysemy or wrong polysemy (Bator, 2010; Giménez-Eguibar, 2016), the existence of words with excessive semantic charge (Giménez-Eguibar, 2016), etc. There is less agreement, however, among linguists regarding these internal factors. Dike (1933, 1935) lists some of the factors mentioned earlier and exposed the problems inherited in their assumptions. Visser (1949), cited in Bator (2010), argued against sweeping generalizations concerning the significance of linguistic factors such as difficulty in pronunciation, shortness and insignificance in sound.

The reason for non-contact-induced obsolescence that is widely accepted by linguists is not internal but rather external or extralinguistic. Many words fade away for one simple reason, that is the disappearance of the extralinguistic referent that they denote (Dike, 1935; Visser, 1949; Mithun, 1989; Craig, 1997; Hagege, 2000; Burridge, 2004; Mair, 2006; Bator, 2006, 2010; Minkova and Stockwell, 2009; Boas and Pierce, 2011; Dorian, 2013; Burridge and Bergs, 2017, etc.). Visser (1949), cited in Bator (2006: 290), argues that the obsolescence of words which are no longer needed is the easiest to identify because "when things no longer exist the necessity of referring to them will gradually disappear as well" (p.7). Old objects, tools, food, clothes, institutions, customs, ritual and even ideas and beliefs become less common, useful or needed and, hence, fade away or are replaced by newer objects, more advanced tools and technologies, more fashionable clothes, modern institutions, etc. Lexical obsolescence occurs parallel to the obsolescence of extralinguistic referents. Words become less used, ambiguous, then archaic, and subsequently die out. Lexical obsolescence of this type is associated, therefore, with an obsolescence of the referent.

Craig (1997) refers to this type of obsolescence as absolute lexical loss, seemingly because once lost the words denoting obsolete referents are rarely, if ever, revived.

Examples of non-contact lexical loss are abundant in literature. In his study of Oklahoma Cayuga, Mithun (1989) observed that words denoting objects no longer used or referred to have been forgotten, e.g. 'moose', 'beaver', 'mink', and 'weasel'. Similarly, Minkova and Stockwell (2009) provide some examples of English words that are only found in specialized historical contexts, and which cannot not be understood by most speakers of English. They mentioned, among other, *heriot* 'feudal service/military equipment'; *mesne* 'an intermediate lord between a higher lord and a tenant'; *sart* 'a payment made by tenants for the right of taking brushwood from land'; *sparth* 'a broad-bladed battle-axe used in Ireland until the sixteenth century'; *thane* 'a military attendant, follower, or retainer'; *wimple* 'a type of head-covering for women', etc. (Minkova and Stockwell, 2009: 23). Closely related to this is the "regularization of money and standards of measurement, changes in linguistic trends and fashion, and changes attributable to the vagaries of religious, social, and political systems over time" (Giménez-Eguibar, 2016: 49; after Mihalic, 1990; Richmond, 1998; Dike, 1935; Aiken, 1930; Aitken,1987). Minkova and Stockwell (2009) states that "Cultural and social changes, or simply the "fashion" of word-choices can make some words obsolete", for example *barm* 'bosom, lap'; *hight* 'is called'; *fain* 'with pleasure'; *niman*: 'to take'; *here*: 'army', *shaw*: 'a thicket, a small grove' (p. 22).

Some domains are more amenable to obsolescence than others. Burridge and Bergs (2017) provide two examples where lexical obsolescence seems to be "a matter of course". The first is the domain of food which have lost a number of words that were used back in medieval times, e.g. *pottage*, *mortrews*, *buknade*, *civet*, *frumenty*, *losyns*, *rapey*, *doucetes* and *letelorye*. The second example that the authors provide is

concerned with the area of clothing. It shows how a number of words denoting clothes no longer worn are lost, for example the words used in the medieval period for armor: *vambrace*, *rerebrace*, *crinet* and *peytral* (see also Burridge, 2004; Burridge and Mulder, 1998).

Lexical mortality of this sort, in addition to being an outcome of extralinguistic changes, is accordingly an indicator of such a change (Burridge, 2004). It points to a parallel societal change, not only in material culture but non-material culture as well. Following the lexicographer Geoffrey Hughes, Burridge (2004) and Burridge and Bergs (2017) argue that English words for sin and virtue, such as *honor*, *virtue*, *temperance*, *modesty*, *chastity* and *virginity* are no longer morally meaningful to English speakers. They seem to have lost their religious load and acquired a rather neutral meaning. Burridge and Bergs (2017) also argue that giving up the habit of interpreting omens led most people to abandon the use of words like "*augury* 'divination', and more specifically *pyromancy* 'divination by fire' and *tyromancy* 'divining by the coagulation of cheese' (p. 44).

Non-contact induced lexical obsolescence can be explained and understood with reference to the sign theory. Long before Saussure (1916) and Ogden and Richards (1923), Al Ghazzali (1058-1111) delimited the essence of the name, i.e. the sign, stating that "things have a presence in themselves, a presence in minds, and a presence in language" (*our translation*) (Al Ghazzali, 2013: 22). It seems fair, therefore, to assume that the existence, use and sustainability of the mental presence or representation, i.e. the signified, as well as the linguistic presence or representation, i.e. the signifier, of a sign depend on its existence and sustainability in the real world. If something is no longer available in the external environment, its mental as well as linguistic representation will soon fade away. Absolute lexical obsolescence, just like other types

of lexical loss, is gradual. Speakers who are familiar with the extralinguistic referents denoted by obsolete words will remain capable of using those words, in particular with speakers who are equally familiar with such referents. Speakers who are not familiar with the referents, however, like members of the younger generation, are not likely to use such words, even if they used to hear them in the speech of their elders and know what they mean. The third generation of speakers will be, in most cases, not familiar with both the extralinguistic referents as well as the words used to denote them. The words can be said to have moved from actual use, when the extralinguistic referents was available, through being old or less used around the time such referents were abandoned and being archaic, and finally to become completely obsolete among speakers who are not at all familiar with the referents in question nor with the words used to denote them.

1.2.4.2. Contact-Induced Lexical Obsolescence

The most obvious outcome of language contact is lexical borrowing. The borrowing of foreign lexical items affects the lexicon of the borrowing language in a number of different ways. Such effects can be viewed from two distinct perspectives. The first considers lexical borrowing as an important means of enriching the language (Hock, 1991). The type of borrowing which applies to this sort of effect is cultural lexical borrowing. It is cultural because it involves the transfer of lexical items, subsequent to the introduction of their corresponding extralinguistic referents from a different culture or language. To catch the essence of this type of lexical borrowing, some linguists used other terminology, such as lexical addition (Van Coetsem, 1988), additive lexical borrowing (Haspelmath, 2009; Kossmann, 2013), adlexification (Grant, 2015), and the like.

Based on what was said above, it would be safe to state that lexical borrowing is not a necessary forerunner of lexical erosion. Jones (1998) argues, in this respect, that only the type of lexical borrowing which is "prolific, asymmetrical, and occurs in conjunction with a particular socio-political context that it becomes an indicator of language obsolescence" (p. 256). Cultural lexical borrowing, in particular, can be said to have no relationship, at least not a direct one, with lexical obsolescence. Pavlenko (2004) discusses lexical attrition from the perspective of the bilingual speaker, and argues that the type of, as well as the reasons for, borrowing should be closely examined in order to decide if the adoption of lexical items entails lexical attrition in the recipient language. Pavlenko (2004) maintains that if the borrowed item does not have an equivalent in the recipient language, the borrowing is not a sign of attrition but rather an enrichment of the linguistic and conceptual repertoire of the bilingual speaker.

The second perspective from which the effects of lexical borrowing can be viewed is one of lexical innovation rather than enrichment. It has been of interest to researchers to understand the outcomes of such a lexical transfer on the vocabulary of the recipient language. Both Mair (2006) and Demoz (1991) consider lexical obsolescence and lexical innovation to be interrelated phenomena. Demoz (1991) contends that it is the interaction between these two processes that leads to "lexical restructuring (or lexical shift) of a language" (p. 17). While cultural borrowings were merely understood as additions that, most often, do not affect the existence or the interpretation of the lexical items in the semantic domains to which they were incorporated, the same cannot be said about core borrowings. Core lexical borrowings, being duplicative in nature, rather cause a restructuring of the lexicon of the recipient language. The borrowing, which starts as a mere duplication of a native lexical item, i.e. a synonym from a semantic

point of view, ends up displacing the native equivalent if sufficient cultural pressure is present.

Linguists prefer to use a number of terms to designate this type of lexical transfer. For example, some researchers used the term *substitutive lexical borrowing* (see Haspelmath, 2009; Kossmann, 2013), while others, such as Coetsem (1988), use the term *lexical replacement*. Barron (1986) uses the term *lexical shift*, which he considers as one of the stages of the nativization of Papua New Guinea English. Lexical shift is subsequent to lexical borrowing and semantic shift, but is distinct from either (Barron, 1986). Still, other linguists use a rather more frequent term in the domain of contact linguistics, *relexification* (Demoz, 1991; Craig, 1997, Grant, 2015). Relexification, which is used primarily to account for the origins of pidgins and creoles, was borrowed by those linguists to refer to lexical replacement in non-mixed languages as well, though its use for situations of massive lexical replacement would be more appropriate.

The view that core borrowings replace native words in the recipient language is widely accepted among linguists (Weinreich, 1953; Bynon, 1977; Myers-Scotton, 2005; Haspelmath, 2009; Minkova and Stockwell, 2009). Minkova and Stockwell (2009) states that "indeed, a common trigger of lexical loss is the replacement of a native word by borrowings from other languages" (p. 23). They list examples like *blee* 'color, appearance', *ferd* (military) 'expedition', *dight* 'compose, direct', *fremede* 'strange, foreign', *rede* 'advice, to be glad, to rejoice', and *tweon* 'doubt, hesitation' (p. 23). Weinreich (1953: 54) pointed out that a core borrowing affects the existing equivalent in the recipient language in one of three ways:

1) confusion between the content of the new and old word,
2) disappearance of the old word, or
3) survival of both the new and old word, with a specialization in content.

The first effect is in itself momentary for it is not a characteristic of human languages to sustain such confusions. One of the terms, the native or the loan, should be displaced in order to eliminate the misunderstanding that have arisen. In addition one can argue that confusion does not happen often, rather the two terms seem to form synonyms of the same word. Some of the effects mentioned by Weinreich (1953) above were also shared by other linguists. Hock (1991), for one, contends that while need borrowings may enrich the lexicon of given a language, prestige borrowings may lead to a "competition between an inherited and an innovated form" and may also end in a marginalization of the inherited form (e.g., *royal* vs. *kingly*). Baker and Jones (1998: 164) state:

> … in some cases, the borrowing may take the place of the indigenous equivalent. In other cases, both words may co-exist, often enriching the language by expressing different shades of meaning. French/Latin borrowing into English have often been used for more formal expressions than their Anglo-Saxon or Germanic equivalent.

Boas and Pierce (2011) prefer to call this type of lexical erosion 'partial lexical loss' which, they argue, "typically takes place in long-term language contact situations with widespread bilingualism" (p. 114) (cf. Craig, 1997: 262). Notice that 'long-term language contact situations' and 'widespread bilingualism' are the two very same social conditions that linguist stressed for core lexical borrowing to take place. Thomason and Kaufman (1988) use 'intense contact' and 'cultural pressure' to account for such conditions. It is true then that lexical obsolescence accelerates in contact situations compared to non-contact ones. Comparing the percentages of obsolete words between the different periods of the history of English language, Dike (1933) found that only 7% of words became obsolete in Old English period, whereas the rates increased

massively in subsequent periods, which were essentially characterized by intense contact with French and Scandinavian languages.

In many cases, the adoption of a loanword does not necessarily mean that it will be used to denote all the things used to be denoted by the original word. Instead, such a loan can substitute the original word in one or two meanings, while other meanings keep being denoted by the original word. Minkova and Stockwell (2009: 23) have already called attention to this aspect of lexical obsolescence:

> We can also talk of loss of meaning, when in the process of borrowing one or more of the meanings of the original word is taken over by the borrowing, as in *craft*, originally also 'art' *haven*, originally also 'harbor' *cynn* 'kin,' originally also 'species' *idle*, originally also 'empty'... All of these "losses" were amply offset by the adoption of words from the languages with which English came into contact.

1.2.4.2.1. Motives for Contact-induced Lexical Obsolescence

While non-contact induced lexical obsolescence is accounted for by the obsolescence of the extralinguistic referent, the motives for contact-induced obsolescence are not fully understood. In order to account for the latter type of obsolescence, it would be more logical to consider the roots of this lexical reduction. As its name suggests, the main reason for contact induced lexical obsolescence is language contact. However, language contact is understood more as a situation or a context in which lexical obsolescence takes place, rather than being the direct reason or motive for the loss of the native words from a language.

The motive that can account for the loss of the indigenous lexical elements from a given language in contact situations, is the same motive resorted to in order to explain the adoption of core borrowings, i.e. prestige. In other words, the lexical replacement of an item that perfectly denote its referent by its equivalent from another language is

explained best by the fact that the word substituted is perceived to be less prestigious, being part of the lexicon of a less prestigious language, than its counterpart loanword which is associated with a more prestigious language and culture. Inherited lexical items grow less and less prestigious in the eye of a speaker of a minority language as more and more fellow speakers adopt and use the loanword more frequently and regularly. Speakers may grow reluctant to use native words for fear of being described as archaic, not cultured, or associated with an old way of life.

Bator (2010) resorted to prestige to account for the replacement English vocabulary by French loanwords. In Norman England, French enjoyed a higher status than English, therefore words were borrowed from French and subsequently replaced old English words as well as words of foreign origin that were then used in Old English (Bator, 2010). Visser (1949), cited in Bator (2010), use the term 'social levelling' to account for contact induced lexical obsolescence. If a loanword was perceived by speakers of the recipient language to be more prestigious, it will be reflected more frequently in their speech whereas the inherited form will be used less and less until it fades away (see Welna, 2005).

With the increase of cultural pressure exerted by the foreign language, massive core borrowing takes place and, subsequently, more lexical replacement and erosion. With even more cultural pressure, speakers of the minority language begin to develop negative attitudes towards their native language and culture. The growing of such negative attitudes among the speakers of the minority language lead to language shift in younger generations. Speakers who have developed such negative attitudes and happened to be bilinguals are less likely to transmit the indigenous language to their descendants. By contrary, they are more likely to choose to transmit the dominant

language to their offspring so as to provide them with better opportunities for educational success, social integration, and the like.

Contact-induced lexical obsolescence and language shift, accordingly, seem to be interrelated in that the former can be a forerunner of the latter. Boas and Pierce (2011) state, in this respect, that "[a]s the language with the lower prestige is used less over time, its lexicon erodes" (p. 129). However, it is worth to mention that contact-induced lexical erosion and language death are not necessarily inseparable. One can take place with not necessarily having the other. There are situations where a language disappeared with no major lexical erosion, for example the case of Texas German (Boas and Pierce, 2011). Similarly, lexical erosion can take place with no subsequent language death even if the rates of lexical erosion are high, for example the case of English in Norman England.

1.2.4.2.2. Rivalry of Synonyms

Most often, when a core borrowing enters a given language, it becomes an alternative to the word already used to denote the notion in question. In other words, the native word and the loanword, once established, form synonyms that express the same meaning. The doublet may become fossilized in the language, i.e. stable synonyms. However, synonyms are not always stable. Sometimes the inherited form and the loanword engage in a process of competition known in the literature as rivalry of synonyms (Rynell, 1948; Ogura, 2002; Bator, 2010). Rivalry of synonyms is regarded as one of the reasons for non-contact-induced lexical obsolescence (Dike, 1933; Visser, 1949; Chambers, 1990; Bator, 2010). This issue was addressed by a number of researchers who studied contact-induced lexical obsolescence (Dike, 1933; Rynell, 1948; Visser, 1949; Welna, 2005; Bator, 2006, 2010).

Bator (2006) based much of her argument on the view that Scandinavian loanwords inherited in English were replaced by words of French and native origin in the process of a rivalry between such synonyms. For example, Scandinavian loans such as *hink*: 'to halt, to falter'; *nait*: 'useful, good at need'; *stoop*: 'a post, pillar'; *agrote* 'to cloy, cram, surfeit'; *stem*: 'to debate with oneself, to contend'; *file* 'a worthless person, a rascal'; *gro*: 'a kind of fur' and others more were substituted by French or native English words. Bator (2006) concludes that "the presence of Normans and the prestige connected with the French language played a significant role in the displacement of the vocabulary of Scandinavian origin" (p. 292).

Another important study of the rivalry between synonyms is Welna (2005). It discusses the displacement of the Old English verb *niman* by the Scandinavian loanword *takan*. Although retained in non-standard varieties of English until the 17th century, Welna (2005) pointed out that the native word 'nim' or 'niman' disappeared from standard speech around the 15th century as a result of rivalry with the Scandinavian loan. The author, nevertheless, concludes that "the functional factor, here an effort to introduce a new word to either fill a semantic gap or simplify a complex system, need not be the only reason for a replacement of an old item by a native item or a loanword" (p. 54). The verb 'nim' faded away, Welna (2005) rather argues, because it had more numerous forms compared to the Scandinavian alternative which made the latter "easier to handle in speech" (p. 55).

The obsolescence of forms in rivalry situations takes place gradually. It is believed that once a loanword is adopted in a given speech community and is favored compared to the native form, its frequency in language use and texts will start to change; the loanword occurrences will increase whereas those of the native form will decrease (see Rynell, 1948; Welna, 2005; Bator, 2006;). Welna (2005) shows how language

preferences shifted gradually from a prevalent use of the native form to a dominance of the loanword and subsequent displacement of the native form to dialectal use, to finally disappear and become obsolete. The frequency of ‘nim’ was shown to be much higher than that of ‘takan’ in the beginning, but this condition changed in favor of the latter form. The frequency of the verb ‘nim’ started to decrease after the borrowing of the loanword ‘takan’ which became dominant after less than two hundred years. Welna (2005) revealed that the native form which grew less and less used began in due time to be perceived with difficulty. It started to be used in restricted, social and geographical, settings, and became understood by less and less people, many of whom considered it as a foreign word (Welna, 2005).

Aceto (1997) distinguishes between three related contact phenomena in relation to lexicon change, namely lexical concurrence, partial lexical replacement and relexification. Lexical concurrence refers to the state of a coexistence between a native word and a loan that can last for a long period of time with no word necessarily replacing the other. The two terms may form stable synonyms that fossilize in language use. Partial lexical replacement, however, entails a substitution of one or many lexical items with a semantically similar or related lexical item from another language (Aceto, 1997). Lexical concurrence, Aceto (1997) argues, could be the previous stage of partial lexical replacement. Partial lexical replacement, as its name suggests, does not have a sweeping effect on the lexicon of the recipient language. To talk of an effect that is so sweeping and drastic, linguists use the term relexification, i.e. lexical replacement that is so sweeping to the extent to nearly substitute a lexicon of a language with another’s (Aceto, 1997).

1.2.4.2.3. Semantic Narrowing and Specification

As it has been pointed out earlier, core borrowing does not necessarily lead to full obsolescence of a native lexeme from a language, i.e. in all its senses. Sometimes a lexeme suffers a rather partial obsolescence. In other words, a native word with many specifications or related meanings may be replaced by a loanword in one or more senses, but not all meanings. The word is then said to have become obsolete in a particular sense or senses, but is still used in others. Pavlenko (2004) maintains that "certain L1 meanings may be subject to attrition in semantic narrowing" (p. 51). Semantic restriction and narrowing may be accompanied by changes in form. Welna (2005) shows that prior to the substitution of the verb 'nim' by the loanword 'takan', it was narrowed semantically by using it with prefixes. The narrowed sense seemed to be preserved for a period of time in regional dialects (Welna, 2005).

In other cases, a core lexical borrowing can be incorporated into the native words through semantic extension. Pavlenko (2004) provides the example of some Cuban immigrants in the United States who extend the use of the verb *corer* 'to run' to a new sense 'to run for office' as in the phrase *corer para gobernador* meaning 'to run for governer' (p. 51). Pavlenko (2004), accordingly, argues that "even if there appears to be an L1 translation equivalent, lexical borrowing may take place to emphasize particular conceptual distinctions and the two lexical items may co-exist to signify distinct conceptual entities" (p. 48).

1.2.4.2.4. Lexical Loss in Minority Languages

Contact-induced lexical obsolescence is typical of minority languages (Mithun, 1989; Mihalic, 1990; Holloway, 1997; Aikhenvald, 2002). Ruoff (1973: 51, quoted in Holloway, 1997: 49) states that "lexicon is the first area to be reduced or simplified in dying languages, with phonology, morphology, and syntax being simplified later (and

in that order)" (p. 49). Holloway (1997) states that "the reduction of lexicon is so common and pervasive in many dying languages" (p. 49). In his study of the death of Brule Spanish in Ascension Parish, Holloway (1997) reported on his informants' inability to recall certain words and loss of vocabulary, as one of his participants clearly stated "I can't believe it, I used to know all them words. But you know, when you don't use your language, then you forget" (p. 49).

Mithun (1989: 248) observed a reduction in a semantic domain that is supposed to be resistant to lexical loss, namely the vocabulary denoting body parts. His most fluent Oklahoma informant managed to name more common body parts, such as foot, eyes, and face, but could not come up with terms for 'ankle', 'toes', 'hip', 'eyebrow', and 'cheeks'. To refer to some less common body parts, namely 'thigh' and 'hip', his informants resorted to semantic extension of the words 'leg' and 'buttocks' respectively. This seems to be close with what Andersen (1982) termed analogical levelling. Semi-speakers tend to overgeneralize some forms to replace others where several competing alternatives for the same underlying meaning exist.

1.2.5. Factors Influencing Lexical Obsolescence

The factors that influence lexical obsolescence are diverse. They differ from one contact situation to another. In the subsequent section, some of these factors will be highlighted.

1.2.5.1. Lexical Obsolescence and Age

Lexical obsolescence, it is worth noting, differ from one individual to another, or more accurately from one category of speakers to another. Murray (1888) states that words can be "alive to some speakers, and dead to others" (p. viii). The phenomenon of contact-induced lexical obsolescence, for one, is most often age-related. This was also expressed clearly in one of Andersen's (1982) hypotheses on language attrition. In

his hypothesis on lexical reduction, Andersen (1982: 94) states that a language attriter "will have a smaller number and a smaller variety of lexical items available to him" compared to a competent speaker of the same language. Similarly, Boas and pierce (2011) states that "It seems uncontroversial that lexical loss is typically subject to age gradation, in that older fluent speakers tend to remember more words than younger fluent and semi-fluent speakers" (p. 114).

Most contact studies revealed that lexical obsolescence is recorded most in younger speakers whereas the elderly usually show more lexical maintenance. This generational gap is something that younger speakers of dying languages usually admit. Dorian (1973) reported that young speakers of Gaelic in Embo, a village in Sutherland in the Highland area of Scotland, commented that their Gaelic is inferior to that of their elders and, more explicitly, that their elders' lexical repertoire is richer than theirs. Miller (1971) states that younger speakers lack "a complete control of the grammar and phonology, but the area which shows greater impoverishment is vocabulary" (p. 119). Interestingly, Miller (1971) reported that, due to the gap in knowledge of that exist between younger and older speakers of the Amerindian language of Shoshone, especially in the area of lexicon, English turned out to be necessary in conversations to simplify utterances that sound ambiguous due to differences in lexical knowledge. Andersen (1982) maintained that a language attriter "will use a greater number and a greater variety of borrowed lexical item in his speech" than will a competent speaker under comparable circumstances. He also stated that a semi-speaker "will occasionally (or in some cases frequently) use innovated lexical items based either on the language he is speaking or on another language he knows".

Miller (1971) noted that in addition to the fact that young Shoshoni speakers borrow more frequently than their elders, they sometimes "do not use Shoshoni words, but

recognize them in context" (p.118). Miller (1971) also reported on the loss of a number of Shoshoni words which 'refer to an older way of life that are known only to older speakers, such as antelope, rabbit net, bow, names of different kinds of baskets, and the like" (p. 118). In some cases, younger Shoshoni speakers "inappropriately extend the meaning of a more common verb where a less common verb should be used" (Miller, 1971: 118).

Crowley and Bowern (2010) have reported something similar in the Paamese language in Vanuatu. They observed that young speakers of Paamese use English loans for 'bush' and 'garden' instead of Paamese original words that their ascendants use. Along the small number of Paamese speakers who use the indigenous words for 'start' and 'must', Crowley and Bowern (2010) reported that young speakers "would even have trouble saying what the Paamese word for 'start' actually is" (p. 207). Few younger Paamese speakers "can count in their language beyond five, preferring instead to use English-derived terms" (Crowley and Bowern, 2010: 207). Crowley and Bowern (2010: 207) also noted a similar tendency in the Ndebele language of Zimbabwe where younger speakers were revealed to be using English numbers above five instead of Ndebele numbers. This was thought to be a result of the role that English plays in education, in particular the teaching of mathematics.

The relationship between lexical obsolescence and age was also reported in a number of other studies. Bavin (1989) reported that 4-6 years old children in Warlpiri were unfamiliar with the traditional terms used to refer to hunting weapons. It was not made explicit, however, whether these lexical gaps were due to the obsolescence of such hunting tools or because the original words denoting them were replaced by loanwords that younger speaker learned instead of native forms. Aikhenvald (2002)

noticed that “younger speakers have a trouble recalling kinship terms, in particular the suppletive and semi-suppletive vocative forms” (p. 147).

1.2.5.2. Other Factors

Other factors, besides age, may have a relationship with language attrition. Holloway (1997) observed a gender difference in the lexical reduction of his informants. One male informant had a difficulty recalling words denoting household stuff, like ‘skillet’, compared to a female informant who could not deliver the words in the domain of hunting and wildlife, like ‘mink’ and ‘woodpecker’. Holloway (1997) also reports on Elmendorf (1968) who observed that a female Wappo speaker who experienced a difficulty remembering certain words in animal domain compared to household vocabulary, although Elmendorf (1981) attributed such a retrieval difficulty to earlier gender differences rather than to a relationship between gender and amenability to attrition (see Holloway, 1997). Holloway (1997), himself, did not associate the differences between male and female lexical attrition mentioned above to gender but rather to differences in experience. This view is explained better through Andersen’s second hypothesis (1982: 94)

> *Hypothesis 2b (Lexical Reduction):* An LA’s lexical repertoire will match his recent (and prior) experience with different domains of use and semantic areas. His lexicon will be most impoverished in those areas where he has had little or no experience. He will exhibit greater numbers of gaps in those areas where he has not had recent experience in comparison with other areas where he has had recent experience using the language.

It is important to note, nevertheless, that gender can still be viewed as a potentially interesting factor in lexical obsolescence. This can be true mainly due to the fact that gender is sometimes defined by experience. In other words, men and women differ in

their experience, in a large number of communities in the world. It is probably not easy to distinguish between the effects of the two factors, gender and experience, as in Elmendorf (1981) and Holloway (1997).

A third factor that seem to affect lexical obsolescence is rather linguistic and not social. This is concerned with the nature of lexicon itself, whether the lexical items in question are basic or advanced, frequent or not and marked or unmarked. Andersen (1982) states in this respect that the lexicon retained by a language attriter will be common, highly frequent and unmarked, whereas the lexical items he loses will be less-common, low-frequent and highly marked.

1.2.6. Assessment of Lexical Obsolescence

Lexical obsolescence is not always easily and directly measurable. There are some hindrances that make the construct difficult to discern. Mair (2006) highlights two reasons for the difficulty of documenting lexical obsolescence. The first reason is the absence of awareness, on the part of the public or native speakers, of the disappearance of certain words from language use, unlike the opposite case where they seem to be aware of lexical innovations that may take place. In this regard, it is probably not valid to ask native speakers the direct question of what are the words that they think have become obsolete in their language.

The second reason relates to the complexity of language use and choice in literate societies. Words that may seem obsolete for the general public or for the members of certain groups of a given speech community may well in fact be frequently used in certain specialist discourses, as can be reflected in historical religious studies for instance. Mair (2006) also seems to distinguish between actual use of said-to-be-obsolete words and the ability to understand what such terms mean. Put differently, even though many words may not be present in the actual use of the native speakers of

a language, it is probably not accurate to describe them as obsolete as long as such words are kept being read and, hence, understood in the different works of fiction or historical sources (Mair, 2006).

The assessment of lexical obsolescence can be carried out at two levels, the level of the speech community, *langue*, and the level of the individual speaker, individual *competence*. The former targets the body of texts, written and oral, available in different spheres and domains of a given language. The assessment of obsolescence of a given word in such a body of texts can be done today through corpus analysis methods with the aid of sophisticated softwares. This technique seems to allow for a highly valid and reliable measurement of the currency of most words in the language. Another, rather traditional method, that is used to find out whether a given word is obsolete or not is the use of a comprehensive synchronic dictionary. Dictionaries, if designed well, can be a source of reliable assessment of words obsolescence. This is in part true because nowadays lexicographers themselves rely equally on modern techniques of corpus linguistics.

It is important to note, however, that when it comes to minority languages, the reliance on both methods highlighted above is not always possible. Most minority languages in the world are poorly documented. The actual representation of such languages with all its forms and registers is far from being sufficient compared to official languages. Poor documentation is also reflected in works of lexicography in such languages. Dictionaries of minority languages are most often limited in number, sometimes regional and not comprehensive, and, at times, compiled with a prescriptive and purist orientation. Assessment of lexical obsolescence in minority languages is, therefore, more challenging than it is for dominant and well-documented languages.

Researchers often prefer to assess lexical obsolescence in minority languages by focusing on the second source, the competence of individual native speakers. This can be done through an examination of the speech product of an individual speaker through different elicitation techniques, such as the sociolinguistic interview, surveys, etc.

There is a number of inherited problems in the assessment of obsolescence through methods of field linguistics. First, the use of methods and techniques of field linguistics, such as interviews and questionnaires, to assess lexical obsolescence lack coverage. Only few terms can be covered through such techniques. Second, the use of such methods also does not guarantee representativeness and generalizability. In other words, due to the fact that samples investigated are most often small, the result of an investigation cannot be generalized over the speech community. The third challenge to the assessment of lexical obsolescence through methods of field linguistics is concerned with the notion of construct validity and reliability. Lexical attrition is a tricky construct which cannot be discerned easily. In the context of contact-induced lexical obsolescence, Pavlenko (2004: 50) argues that a bilingual speaker is said to have undergone a lexical attrition:

> ... only in cases where an exact L1 equivalent exists but is no longer available to the speaker in either production or comprehension, even when tested in a monolingual L1 context (or at least, when a retrieval of such an item causes significant difficulty and delay).

Pavlenko (2004) argues that, in all other situations, the occurrence of a loanword in the speech of a speaker of a minority language, mainly in the context of the source language or in a conversation with another bilingual speaker, should not be taken for granted as an indicator of lexical attrition. The same speaker may use the native equivalent in other contexts. Pavlenko (2004) argues that we can talk of lexical obsolescence if, providing the availability of native equivalent in the language, speakers

use loan equivalents along with the difficulties that such speakers show in "perception, comprehension and metalinguistic judgments of the use of L1 lexical items" (p. 51).

The difficulty that researchers face in assessing lexical obsolescence, when dealing with individual speakers, are sometimes attributed to the issue of topic avoidance. Topic avoidance, or simply avoidance, was recognized by researchers as a common trait of semi-speakers. Craig (1997: 262) states that "[t]he investigation of lexical attrition in cases of language death is not a straight-forward matter of observation, as the general strategy of semi-speakers with limited linguistic resources is speech avoidance". Aspects of topic avoidance are explained in details by a number of hypotheses advanced by Andersen (1982: 110-1):

> *Hypothesis* 11a (*Avoidance of topic*): An LA will (at times, often, ...) negotiate a rephrasing of a topic within a conversation.
>
> *Hypothesis* 11b (*Avoidance of topic*): An LA will (at times, often, ...) abandon a topic by either negotiating a change in topic or simply giving up.
>
> *Hypothesis* 11c (*Abandonment of message*): An LA may (at times, often, ...) attempt to terminate or actually terminate a conversation because of the difficulty of holding up his end of conversation.
>
> *Hypothesis* 11d (*Avoidance*): An LA may avoid situations where he would have to use language X. Such avoidance would be evidenced by turning down invitations, joining language- Y groups at an event in which speakers of language X and language Y both participated, claiming to not know language X, claiming his knowledge of language X is inadequate, etc. This avoidance could be documented ethnographically or in self reports, experimental procedures (role playing, for example), etc.

Another strategy that is sometimes used by semi-speakers to refer to notions, the equivalents of which, in their own language, is forgotten or not known is paraphrasing and circumlocution. Galván and Campbell (1975: 145), who considered circumlocution as an avoidance strategy, stated that a speaker may use "a descriptive phrase to replace a certain lexical item which is unfamiliar" (cited in Holloway, 1997). Andersen (1982: 106) states:

> *Hypothesis 8a* (*Paraphrase and Circumlocution*): An LA will a significantly greater amount of paraphrasing and circumlocution in his use of language X than will an LC under the same circumstances.
>
> *Hypothesis 8b* (*Paraphrase and Circumlocution*): An LA will (sometimes, often, ...) will choose a semantically related but partially inaccurate and inappropriate equivalent when using paraphrasing and circumlocution to compensate for his linguistic gaps in language X.

Another strategy that was cited in the literature of both first and second language attrition is the use of approximations (Holloway, 1997; Turian and Altenberg, 1991; Jiménez, 2004). An approximation is defined as "[t]he use of a single target language vocabulary item or structure, which the learner knows is not correct, but which shares enough semantic features in common with the desired item to satisfy the learner" (Poulisse et al.1984, cited in Turian & Altenberg, 1991: 214). Holloway (1997) has observed that semi-speakers of the Spanish dialect of Ascension Parish often use words that are semantically similar to a word that they need to use, but that differed in one or more components, e.g. 'mountain' for 'hill', 'sea' for 'lake', etc.

Conclusion

Lexical obsolescence remains a poorly studied linguistic phenomenon. The few works that exist in this sphere are concerned mainly with a listing of the words fell to disuse and at best attempted to list the factors that cause such lexical losses. There

exists, however, no single work in the literature which attempted to provide a theoretical framework to account for lexical obsolescence as a universal phenomenon common to all world languages. There exists no theoretical framework on the basis of which one can predict whether lexical loss is going to take place in a given context and relate it to the different linguistic or extralinguistic factors.

Chapter Two: Tashawit – A Sociolinguistic Background

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Introduction

This chapter gives a sociolinguistic overview of Tashawit language and community. It begins with a description of this Berber variety and its classification, the areas where it is used, and the population that speaks it. It then discusses Tashawit status and vitality, and the linguistic situation of Berber in general and Tashawit in particular in Algeria today. The chapter then addresses the issue of language variation within this Berber variety, and concludes by addressing the status of lexical borrowing in Tashawit, accompanied with a variety of examples.

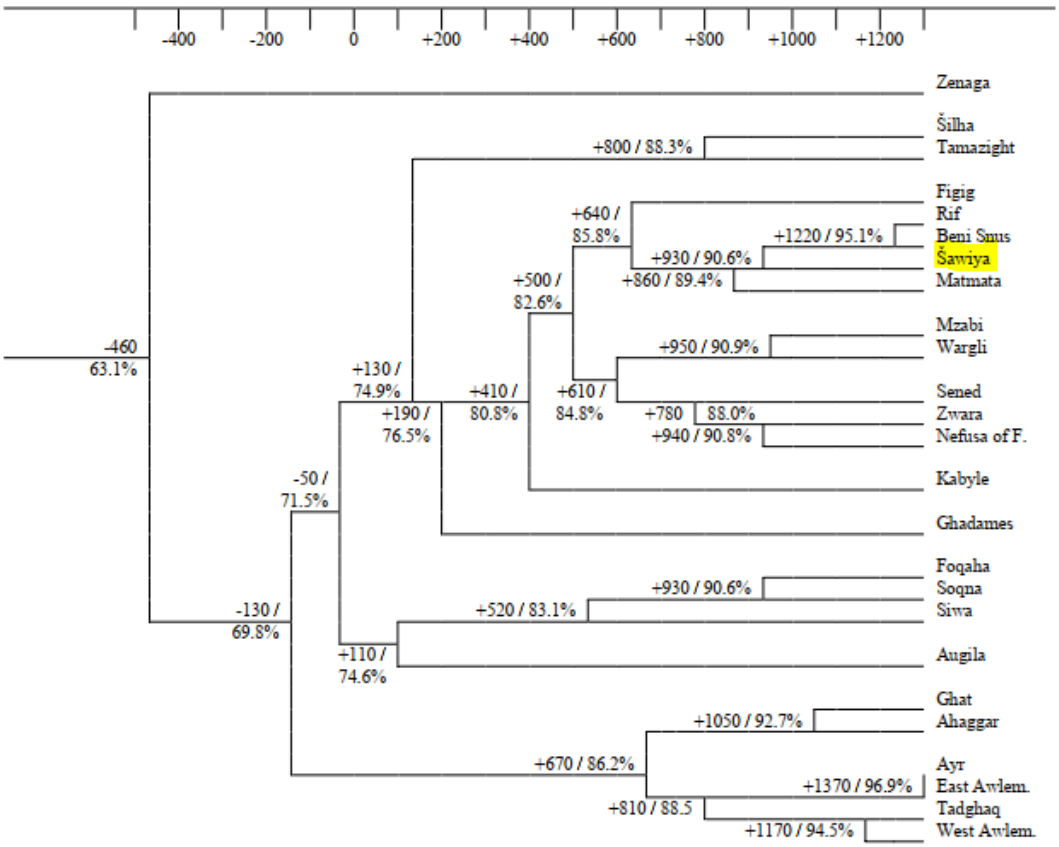
2.1. Tashawit: Overview

Tashawit /θʃawiθ/, to use the common native appellation, is the name of the Berber language spoken by the Shawia people across Aurès and its adjacent regions in the east of Algeria. It is one of the major Berber languages still spoken in Algeria, along with Kabyle, Tuareg, Tumzabt, etc. Tashawit is one of six Berber languages with the larger speaker bases: Tashelhiyt, Kabyle, Tamazight of Central Morocco, Tarifit, Tashawit and Tuareg. The number of speakers of each goes beyond one million.

Tashawit belongs to the Northern Berber group, which also includes a number of other Berber dialects, chiefly Tashelhiyt, Kabyle, Tamazight of Central Morocco, Tarifit, and others (Blažek, 2010). More precisely, Tashawit is considered as one of the offshoots of the branch of Northern Berber called Zenati languages (Kossmann, 2013). The categorization of Tashawit as a Zenati language is something that was held true even among the earliest linguists who studied this Berber language (Masqueray, 1885; Mercier, 1896) although linguists disagree on the number of Berber varieties that belong to this Branch as they disagree on the membership of some varieties. Tashawit

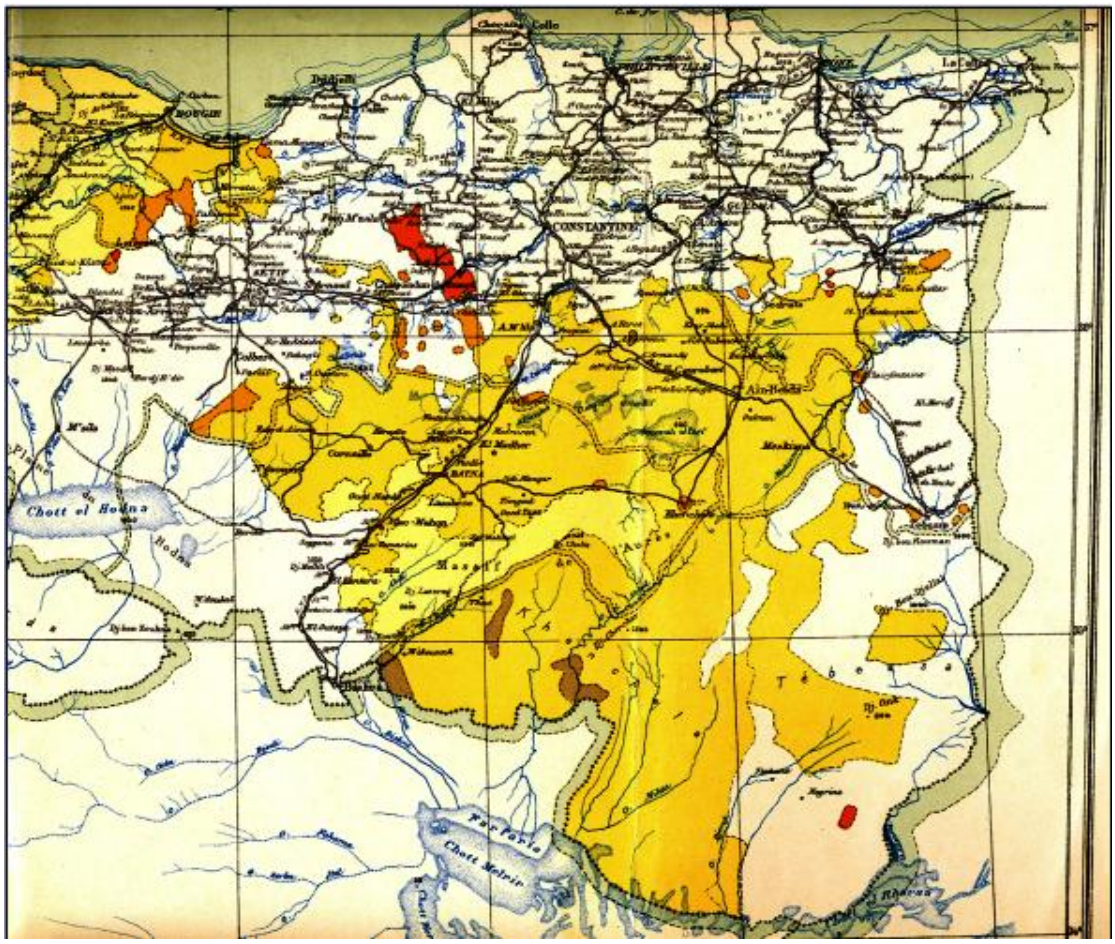
is considered as a dialect within one of the three discrete languages making up the Zenati Branch, namely the Riff cluster. This cluster includes other dialects besides Tashawit, namely Tarifit, Chenoua, Tidikelt, Ghomara, Tlemcen, and Tuwat. The two other languages within this branch are the Mzab-Wargla (covering Tumzabt, Teggargrent, Figuig, Sanhadja, Iznacen, Gourara, Ghardaia, Tougurt, and Seghrušen), and East Zenati (including Nefoussa, Sened, Tmagurt, Jerba, Tamezret, Taujjut, Zrawa). Kossmann (2013) regards Tashawit as a distinct language within the Zenati Branch which also includes many other languages, such as Tarifit, Chenoua, Beni-Snous, Tumzabt, Teggargrent, and others. In *Ethnologue*'s classification of Berber languages, Tashawit is also considered as a distinct language along with eleven other Berber languages under the Zenati Branch (Lewis et al. 2016). Lexicostatistic studies, namely Blažek (2010), reveals a classification which retains, to a great extent, the same major varieties, Tashawit, Tarifit, Tumzabt, Beni-Snous, Teggargrent, etc. According to Blažek (2010), Tashawit emerged as a recognizably distinct language around the middle of the eighth century as it departed from the cluster grouping a sub-branch of Zenati languages from which Metmata, Tarifit and Beni-Snous emerged later at different divergence time nodes. Taking into account the aforementioned classifications, the closest relative Berber varieties to Tashawit are Matmata (southwest of Algiers), Tarifit (northeast of Morocco) and Beni Snous (southwest of Tlemcen). Mercier (1896) had already stated back around the turn of the twentieth century that the Berber varieties with which Tashawit share more analogy are those of Beni Menacer, Ouarsenis, Achaacha (now extinct), Matmata, and Ouled Ben Halima, all of which are spoken by the Zenati people.

Fig 2.1 Classification of Berber Languages (Blažek, 2010)



Tashawit is spoken today in a relatively larger area compared to the other Berber varieties spoken in Algeria, with the exception of Tuareg. Tashawit speaking area occupies, in broad terms, the Aurès region and the eastern High Plains south of Constantine and adjacent to the Tunisian borders. It ranges administratively over eight provinces in the east of the country: Batna, Khenchela, Oum el Bouaghi, Tebessa, Souk Ahras, Guelma, Biskra and Setif. Nevertheless, the presence of Tashawit speakers differs significantly across theses provinces. The Bulk of speakers are found in the first four provinces, whereas their presence is confined to a limited number of localities in other provinces, mainly south and southeast of Souk Ahras, South of Guelma, South of Setif and few localities in the north of Biskra.

Map 2.1. Tashawit Speaking area (Doutté & Gautier, 1913)



Spoken by one of the largest Berber groups in the country, Tashawit is second only to Kabyle in terms of the number of its speakers. The exact number of the speakers of this Berber variety is, nevertheless, hard to estimate in the absence of a regular updating of official censuses. Around the turn of the 20th century, Tashawit population was believed to be around one-third million speakers, representing, then, 29% of the Berber speakers in Algeria and 8.5% of the total population (Doutté and Gautier, 1913). We should be careful not to guard the same percentage when talking about Tashawit speakers today compared to the present population of Algeria as Boudjellal (2015) did for many considerations, chiefly among these is language shift. Based on 1966 census, Gautier (1913) provided a number of 473.486 speakers, representing 20% of Berber speakers in Algeria. Chaker (1990) estimated the number to be somewhere between a

minimum of 0.85 million and a maximum of 1.9 million speakers. A 1993 census claimed the number of speakers to be 1.4 million speakers (Lewis, Simon and Fennig, 2016). In Ethnologue's 19th edition, Lewis et al. (2016) estimated a population of 2.13 million as for 2016.

2.2. Language Variation

There exists a good deal of language variation in Tashawit. Such variation was noticed by the earliest linguists who studied this Berber variety (Masqueray, 1885; 1886; Mercier, 1896). Masqueray (1885) distinguished between two varieties spoken in Aurès. The first variety is spoken across Oriental Aurès, and is named Zenatia, whereas the second, named Tamazight, is spoken in Occidental Aurès, i.e. the Aurès Massif. Studies of regional variation within Tashawit are very rare. Two works can be mentioned in this respect Lounissi (2011) and Boudjellal (2015).

Language variation is observed mainly at the lexical and phonological levels, but also, though not so frequently, at the morphological and syntactic levels. We will focus in this section on phonological and lexical levels for their prominence. To begin with, lexical variation was shown to be, to a great extent, regionally determined in Tashawit. The first author who referred lexical variation in Tashawit is Masqueray (1885). Comparing between the variety spoken in Oriental Aurès, the Zenatia, and the variety spoken in Occidental Aurès, Tamazight, on the basis of around forty words, Masqueray (1885) pointed out important differences and distinct lexical tendencies. In a similar way, Mercier (1896), who studied the Tashawit variety spoken in Ahmar Kheddou, stated that the vocabulary changes from one valley to another.

There is a serious gap in the literature on lexical variation in Tashawit. Moreover, the very few works that addressed the issue (e.g. Lounissi, 2011; Boudjellal, 2015) have only dealt with regional variation. Other social variables that sociolinguistics usually

address under this domain, like age, gender, mobility etc., are not yet studied by researchers who are interested in this Berber variety. The type of lexical variation that we will discuss here, therefore, is regional lexical variation. One way to tackle regional lexical variation in Tashawit, and certainly other Berber varieties, is to contrast between regions in terms of the maintenance and loss of the Berber variants.

We can distinguish between three or four main lexical variation tendencies when addressing regional lexical variation from the perspective of maintenance and loss. Some lexical variables are maintained in Berber forms, or variants, which are distributed differently across Tashawit speaking territories. The notion of 'short', for height, is denoted in Tashawit by two main variants, *agilal* and *agezlan* (see Huyghe, 1906). The former variant, also realized as *ayilal*, is used mainly in the Massif, whereas the latter, also realized as *ayezlan*, is more common in Bellezma and its surrounding territories (Boudjellal, 2015). The second example of this type of regional lexical variation is concerned with the words used to say 'turn off'. Two Berber variants are attested in Tashawit: *exsi* and *ens* (Huyghe, 1906: 260; Huyghe, 1907). The former is attested in the High Planes, the Massif of Bellezma, and the west and northeast of Occidental Aurès, whereas the latter is used in the High Planes, Oriental Aurès, Nemamcha and the south and southeast of the Occidental Aurès (Boudjellal, 2015). More examples of this first type of regional lexical variation are found in Tashawit vocabulary, such as *yiğğ* vs. *wiṭ* 'one', *ahu* vs. *aɛilbi* 'boy', *buya* vs. *tata* 'chameleon', *tameqqit* vs. *tuddimt* 'drop', etc. (see Masqueray, 1885; Boudjellal, 2015).

For another category of lexical variables, we observe a contrast between one or more common Berber variant(s), attested also in other Berber varieties in the same meaning, and one or more alternative Berber variant(s) whose original meaning is more or less different. The variants in this case can be considered as false synonyms if one is

to consider the original meanings of the words involved, i.e. the ones in which they are commonly attested in Berber. There exist, for instance, two variants in Tashawit for ‘black’, namely *aberkan* / *aberḳan* and *aɣugg*^{w}*al* (Huyghe, 1906). The latter variant is less common than the former. It is used in the northwestern part of Bellezma, the southern and eastern parts of the Aurès Massif, Oriental Aurès and Nemamcha, whereas the former is attested in all of the remaining regions (Boudjellal, 2015). Traced to the same root as the verb *ɣwel*, which means ‘to be brown’ or ‘to become brown’ (see Foucauld, 1951), the variant *aɣugg*^{w}*al* most likely means ‘brown’ or ‘dark brown’ but its meaning seems to have been extended to designate ‘black’ in some Berber dialects (Huyghe, 1906; Delheure, 1984; Delheure, 1987).

Another example of this type of lexical variation is found in the contrast between the variants used to denote ‘milk’ in Tashawit, i.e. *aɣi* and *tajeɣɣimt*. The first variant, which is dominant, is encountered all over Tashawit speaking areas except in the northeastern territory, i.e. among the tribes of Segnia and Harakta (Boudjellal, 2015). The original meaning of the second variant is ‘sip’ of a liquid like water and milk (see Huyghe, 1906: 314; Huyghe, 1907: 481). Its use to denote milk is a clear instance of semantic extension. Other examples of this sort of lexical variation include *ayeddid* ‘waterskin made of goat skin’ vs. *acibuḍ* ‘waterskin made of goat skin, but is smaller in size and of lower quality’ (Basset, 1961, p. 3), *aki* ‘to wake up’ vs. *ekker* ‘to get up’; *ini* ‘fireplace stone’ vs. *taẓṛut* ‘stone’, etc.

It is not always easy to distinguish between the two types of regional lexical variation addressed above. In the absence of a comprehensive etymological dictionary of Tamazight, it would be difficult to decide which Berber variant is related to the accurate proto-Berber word that denoted a given notion, and which is a semantic extension.

The third category of lexical variables involves notions that are denoted by one or more common Berber variant(s) in some regions and by one or more loans in other regions. Some of the examples of this contrast are provided in Boudjellal (2015). For instance, two variants of the verb 'to ride' are attested in Tashawit, one is Berber and another is an Arabic loanword. The Berber variant *eny* is retained mainly in the northwestern part of Bellezma among Ait Sultan, Ait Sellam and Ait Ali, in addition to some localities elsewhere in the regions of Harakta and Nemamcha. The loanword, *rkeb*, is used in the northeastern part of Bellezma, all over the Massif and in Oriental Aurès (see Boudjellal, 2015). A second example is the one found between the variants used to denote 'horse' in Tashawit. The Berber variant, *yis*, is used all over Bellezma and the Massif, whereas the Arabic loan, *zzimel*, is used mainly in Oriental Aurès and Nemamcha, as well as some localities in the region of Harakta (see Boudjellal, 2015).

Lexical variation across the different Tashawit speaking territories is manifested sometimes in lack of full mutual intelligibility among the speakers of such regions. Speakers of territories where Berber variants were massively replaced by Arabic loans would find it more or less difficult to understand speakers from territories where Berber variants are retained most. Tashawit speakers of other regions find it difficult sometimes to understand the variety spoken in the Aurès Massif. They usually state that the purest Tashawit variety is spoken among the inhabitants of the Massif, whom they call *Ijbailiyen*, literally those who dwell in the mountains. The variety spoken by the Nemamcha is also received with some difficulty. The extent to which these claims are reliable and the extent to which problems in mutual intelligibility are significant is not yet confirmed through empirical evidence. However, although these claims remain hypothetical, because they are built on informal observations and accounts of individual

speakers, the assumption stated about the relationship between rates of lexical borrowing and replacement and the rates of mutual intelligibility sounds logical.

Tashawit varieties are also highly marked for their phonological variation. Such variation is mostly built around consonants. As to vowel sounds, phonological differences seem to be minimal and less studied as well. There exist a number of consonant sounds around which phonological variation and pronunciation differences are built. The first illustration of phonological variation in Tashawit that we provide here is the contrast between the voiced palatal approximant [j] and the voiced velar stop [g]. As a result of palatalization in some varieties of Tashawit, there resulted a great number of words where the consonant /g/ is pronounced instead of the original [j] (see Boudjellal, 2015). We observe, therefore, pairs such as *azyen* vs. *azgen* 'half', *tayut* vs. *tagut* 'fog', *tayuft* vs. *taguft* 'artemisia', *tisseynit* vs. *tissegnit* 'needle', *aryaz* vs. *argaz* 'man', *aylim* vs. *aglim* 'leather', etc. This palatalization reaches its peak in the dialect of Beni Frah in the north of Biskra (see Basset, 1961).

A second phonological process which resulted in a regional variation in pronunciation is spirantization (see Boudjellal, 2015). Spirantization refers to the phonological process by which a consonant changes into a spirant, i.e. a fricative, consonant. In Berber linguistics, spirantization is used to refer to "the change of short stops into (flat) fricatives, accompanied, where possible, by advancing the place of articulation" (Kossmann, 2013: 178). This phonological process is recorded mainly in northern Berber languages (Kossmann, 2013; Mourigh, 2017). One of the outcomes of spirantization in Tashawit is the contrast that we observe between the voiceless velar stop [k] and the voiceless palatal fricative [ç], which is shown to be regionally determined. In the northern regions, as in Bellezma, Segnia and Harakta, only the [k] exists and the speakers find it difficult to pronounce [ç]. However, what is pronounced

in these regions as a voiceless velar stop [k] is realized as a voiceless palatal fricative [ç] in a great number of words in the Aurès Massif. In the Massif, both k and ç are used. We can cite for instance: *tafukt*vs. *tafuḳt* 'sun', *iken* vs. *iḳen* 'twin', etc.

Spirantization does not stop at the level of fricative consonants. Mourigh (2017) argues that stops weaken through the following process:

stop > fricative > approximant > zero.

The contrast between [k], [ç] and [j] that we encounter in the pronunciation of a number of words is related to the same process. For example, *tazdakt* vs. *tazdaḳt* vs. *tazdayt*, 'palmtree'; *tanezzakt* vs. *tanezzaḳt* vs. *tanezzayt* 'early morning', *tmammakt* vs. *tmammaḳt* vs. *tmammayt* 'tamarind'; etc. Though these forms are all attested in Tashawit, there is a lack in research on where each form is used most. However, based on what is said above concerning the regional distribution of [ç], it seems safe to assume that the change from [ç] to [j] would take place only in the regions where [ç] exists, i.e. the Massif.

A third regionally determined phonological variation in Tashawit is exemplified by the contrast that exists between the pharyngealized voiced dental fricative [ðˤ] and the pharyngealized voiceless alveolar stop [tˤ]. The latter consonant is used instead of the former in most words in the northern part of Bellezma. Elsewhere in Aurès both consonant occur in different words. Examples of this contrast include *ḍaṛ* vs. *ṭaṛ* 'foot', *ḍaḍ* vs. *ṭaṭ* 'finger', *asemmiḍ* vs. *asemmiṭ* 'cold', *aṛuḍ* vs. *aṛuṭ* 'clothes', etc. The fricative [ðˤ] seems to occur in limited number of words in the varieties spoken in the north of Bellezma, as in *tɣiṛḍemt* 'scorpion' and *aɣeṛḍa* 'mouse'. The use of [tˤ] instead of [ðˤ] is also reported for a number of Berber dialects, such as Ghomara, lesser Kabylia, Djebel Nefusa, Awdjila and Siwa (Kossmann, 2013).

Other variations in pronunciation include the realization of the feminine morpheme. In Tashawit, as in all other Berber languages, the feminine form of a word is marked by the existence of the bound morpheme t- at the beginning and the end of the word for notions represented in both genders (Mercier, 1896). For unanimated feminine notions the feminine morpheme is found at the beginning of the word, but not necessarily at the end, so we have *taddart* 'house', *tagidit* 'pillar', *tafukt* 'sun', but also *tiṭ* 'eye', *tala* 'pond', *tusna* 'rabbit hole', etc. (cf. Mercier, 1896). The phonological realization of the initial feminine morpheme is not unique across different regions. It can appear in the strong form [θ] as in the examples above. It can also be realized in one of two weak forms, the soft aspiration [h], e.g. *haddart* and *hagidit*, or the null morpheme ∅, *addart* and *agidit* (see Mercier, 1896). It is not clear if the use of the feminine forms, which we highlighted here, are regionally determined. Joly (1911) is among the first to suggest this idea. She claimed that in the variety of Ait Sellam the initial feminine morpheme is never weakened to [h]; it is always pronounced in its strong form. We also observe that the null morpheme form of feminine morpheme is recorded most in northeastern regions, Segnia and Harakta (see Boudjellal, 2015).

2.3. Language Status and Vitality

Tashawit is not, or at least not yet, an endangered language. It does not figure in the list of endangered languages in UNESCO's *Atlas of World's Languages in Danger* (see Moseley, 2010). Nevertheless, it remains a minority language like all other Berber varieties. Based on the Expanded Graded Intergenerational Disruption Scale (EGIDS), Ethnologue classifies Tashawit as a *vigorous* language, corresponding, therefore, to level 6a in the scale (Nb. higher numbers on the scale correspond to greater disruption to intergenerational language transmission). The level 6a refers to a language which is used for face to face communication within all generations and the situation is

sustainable (Lewis, Simon and Fennig, 2016). Ethnologue's classification shows that Tashawit is currently a safe language. It seems, in this respect, to be in a better position than some other Berber languages that are categorized as vulnerable or endangered, such as Chenoua, Teggargrent, Beni-Snous, and so on.

If we are to adopt UNESCO's nine factors for assessing language vitality as a frame of reference (see UNESCO, 2003), we can state that Tashawit differs from the Berber varieties described as endangered only in terms of the second factor, the absolute number of speakers, and the third factor, the proportion of speakers to the whole population. The number of speakers of a given language in a given country and the proportion of such speakers in the whole population are deemed important in sustaining the stability of that language. In other words, one can state, though not so assertively, that the larger the population that speaks a given language as a mother tongue and the higher the proportion of such speakers in the whole population, the safer this language would be. Yet, these two factors are not the best indicators of language vitality. For instance, Tamasheq, the Berber variety spoken in Mali, is classified as a developing language (level 5) although the number of its speakers is smaller than that of Tashawit (around 378.000). A more striking example is Tamajeq (Tayert) variety of Niger, which is classified as educational (level 4) although its population is around 250000 speakers (1998 census). The Berber variety of Siwa, though has a total number of speakers around 20000 as to 2013 enjoys the same status as Tashawit whose speakers are well beyond one million speakers. Other factors, therefore, should be taken into account in assessing the vitality of any human language.

It is important to note that the level attributed to Tashawit in Ethnologue, i.e. being a vigorous language, corresponds to a stage beyond which a language enters the zone of endangerment. The very next level, i.e. the first level of endangerment, 6b is one at

which a language is described as a *threatened* language. It is therefore interesting to ask the question of how long would the stability of Tashawit endure.

Ethnologue's categorization of Tashawit as a vigorous language entails that it is used among all generations, which, in fact, is not an accurate description. The state of intergenerational language transmission differs across Tashawit speaking territories. In southern territories, such as in the Aurès Massif, language transmission is maintained, and the language is used by all generations including almost all children (Guedjiba, 2012, 2013). It is even possible to find monolingual speakers in such mountainous region, such as old women. Intergenerational transmission seems to be somewhat interrupted as we move towards the Bellezma range and upwards to the north. However, the great majority of the ascendant generation, parents and grandparents, and probably most of the descendant generation speak the language. In the peripheral rural communities of the region of Harakta, Tashawit is less used, especially among the members of the descendant generation. There is a sweeping language shift in such communities that it is not common to find youngsters who know the language. Tashawit speakers in many of those areas are middle-aged adults and older members of the community. Tashawit is used less frequently at home and is rarely transmitted to children, whereas dialectal Arabic is widely used. It seems more convincing to describe the status of Tashawit in this latter region as "shifting" (level 7) rather than vigorous.

A second important point that we need to consider when discussing intergenerational language transmission of Tashawit is that language shift is more observed in urban centers than in rural localities. For instance, the situation in the capital cities of the main provinces, Batna, Khenchela and Oum el Bouaghi, and other large urban centers, especially in the north and northeast, e.g. Ain el Beida, Ain Mlila, etc., suggests that language shift is the norm. The speakers of Tashawit in such urban

gatherings are usually middle-aged adults and the elderly or, most often, youngsters who learned the language as their mother tongue in rural localities and then moved to such cities later on. It is rare to stumble upon young speakers who were born in capital cities and have maintained the language. The attitudes of parents and old fluent speakers, and their linguistic choices, in particular when addressing their descendants, hold the key to an understanding of the dynamics of language shift on the part of the descendant generation. Fluent speakers may use Tashawit when talking to other fluent speakers, like spouses, peers, parents, and the like, but not when interacting with their children, an abrupt switching to Arabic takes place.

The breach of natural intergenerational language transmission and the subsequent language shift in some Tashawit speaking regions reflects sheer negativity in people's attitudes towards the Berber language and culture in general and Tashawit language and culture in particular. In her study of university students' attitudes towards Tashawit, Hadjarab (2016: 29) revealed that the participants had negative and, sometimes, even hostile attitudes towards this language. The participants commented that Tashawit is

> ... associated with older generations, ignorance and the traditional way of life, it is described as an oral and out-of-the-ordinary language that is no longer useful in comparison with other languages; in other words, unable to perform communication functions (*our translation*). (Hadjarab, 2016, pp. 29)

There is also a negative attitude and a sense of prejudice, on the part of the inhabitants of urban localities and capital cities towards the people who speak Tashawit, namely those inhabiting rural localities (Hadjarab, 2016).

The reluctance of parents to transmit Tashawit to their children is best accounted for by reference to the negative attitudes they hold towards Tashawit language and culture. Parents are not only unwilling to transmit this language to their children, but also discourage its learning or use. Holding such negative attitudes, especially as an

overall tendency in the community, must have a good reason. Parents, simply, try to be pragmatic and make choices that they believe will work best for their children. The common motive such parents give when asked about the issue is that they transmit Arabic to their ascendants so as to make them achieve better academically. Parents believe their children need to have a good command of Arabic by the time they enroll in primary school, although the variety they make their children acquire is colloquial rather than Standard Arabic. This motive, if unjustified empirically, is widely spread among such parents.

Choosing to transmit Arabic to kids, for academic advantages, may somehow explain parents' tendency, but is not the only motive. The other motive is social, which is to help their children integrate in a community where Arabic is predominant. In many cases, parents refuse to transmit the heritage language to their children in order to abandon an ethnic identity that their children could be scorned for. Parent's negative attitudes seem to have also shaped the attitudes of their children towards the language. In large cities, the younger generation, on their part, have developed a negative attitude towards the language. They do not see any use of learning the language, and do not want to learn it. Instead, they prefer to learn one of the major languages of the world, which they believe is more practical.

The spread of negative attitudes among some Tashawit speakers, in particular, and Berber speakers, in general, can be accounted for by a number of factors, the most direct of which is the representation of the Berber language in the different domains of language use. Being a spoken language like most other Berber varieties, Tashawit is, most often, confined to informal contexts where oral communication is the norm, such as home, neighborhood, cultural events, and daily informal interactions with other fluent speakers. In formal oral communicative events and in situations where written

communication is needed, Arabic is the language normally used. The use of Tashawit in the first category of domains described earlier depends on a number of factors, most evidently the mastery of Tashawit by the speakers involved in interaction, but also solidarity, social distance, and the degree of familiarity and intimacy among the speakers. If we consider these factors in relation to the variable of region, some cross-regional differences will emerge. In areas where language shift is prevalent, as in the northeastern regions and urban centers, the domains seem to be limited compared to those where language maintenance is the norm. The discard of Berber in most formal domains of language use developed in the speakers, parents in particular, the belief that learning Berber will serve no beneficial role. If their children grow learning this language, they will be in disadvantage and have fewer chances to succeed not only in the educational domain but also in most, if not all, domains. The absence of Berber in key domains of language use affects not only the attitudes of its native speakers but non-Berber speakers as well.

The marginalization of Berber in formal domains of language use is one of the outcomes of an overall language planning policy that have been adopted in the countries where it is spoken, in particular Algeria and Morocco. Today, the status of Berber in these countries remains uncertain in the presence of an overall policy that favors the Arabic, or even, the French language. After independence, the corresponding governments of these countries moved towards a policy of Arabization in most sectors. Berber languages were marginalized and denied any official status for more than four decades. They were even denied the status of a national language for a long time. Although the situation of Berber language has changed a little in the last two decades, namely in Morocco and Algeria, such changes do not rise to a position that can guarantee its sustainability and development.

In Algeria, Tamazight seems to have gained some advantages compared to previous decades. It was acknowledged as a national language in 2002 subsequent to the events of the Kabyle Spring in 2001. In the 2016 constitutional revision, Tamazight was promoted to the status of an official language, and an academy of the Berber language and a national center for research on Berber language and culture were promised as an ancillary to the act of the constitution. Yet, on the ground, Tamazight has gained very little. It is still marginalized in most domains of language use, and enjoys almost none of the privileges that a true official language normally should. The assertion to promote and foster Tamazight as stated in the institution seems, therefore, not worth the paper it is printed on. By contrary, the policy of *Arabic, and French, only* is the dominant policy.

The effects of this hostile language policy are reflected most in the educational domain. Tamazight had to wait more than four decades after Independence to be included as a subject in schools, exactly in 1995 after the school boycott known as "Grève du cartable" in Kabyle during the 1994-1995 academic year. Following the boycott, the High Commission for Amazigh affairs (HCA) was created by a presidential decree (n° 95-147 of Mai, 27th 1995). The duty of HCA, according to article 4 of the decree, was to rehabilitate and promote Berber identity as one of the foundations of national identity, and to introduce Tamazight language in educational and communication systems. The incorporation of Tamazight in education following these developments has been rather slow. Even after almost two decades and a half of the ensuing of the decree, the Berber language is not yet incorporated in all schools in Berber speaking regions, let alone all over the country.

The teaching of Tamazight is still facing obstacles. Except for the Kabyle region, Tamazight is struggling today to get ground as a simple ancillary in primary and

secondary schools in areas where it is the mother tongue of the population. In the Aurès, unlike in Kabyle region, the number of schools, primary or secondary, which have incorporated Tamazight in their curricula, is incomparable to those showing a stiff resistance (see Chaker, 2013; Guedjiba, 2012). Tamazight is taught mainly in the Massif, whereas the majority of schools elsewhere have not yet introduced it as a school subject (see Guedjiba, 2012). It is also taught in some other localities in the province of Batna, as in Merouana in Bellezma, etc. The number of students studying Tamazight in this province is said to be between 25000 and 30000, and the number of Tamazight teachers to be around 200 as to 2017. It is important to note, however, that many of the teachers who teach Tamazight in Aurès do not hold a degree in the language. This is mostly true with regard to the earlier years of teaching the language. Recently, teachers who hold university degrees were recruited, but they are still far from reaching a full coverage. In other provinces, such as Khenchela, Oum el Bouaghi, Tebessa, etc. Tamazight instruction is completely unrepresentative. The number of schools which have incorporated it in its programs, as well as the number of instructors, is insignificant.

Another hindrance for the introduction of Tamazight in schools is the absence of serious mature legislative decisions on the part of decision makers. The teaching of Tamazight remained optional for a long time. The choice of whether to study this language as a school subject was left in the hands of parents, most of whom disagree on adding another course to the already overloaded programs. The main factor, nonetheless, which remains as the real hindrance on the development of Tamazight teaching is the sheer negativity that people hold against this language. Parents, as pointed out earlier, do not see any benefit that their children would gain if they learn this language. As a result, the spread of the teaching of Tamazight across the different

schools in the region of Aurès remains slow. The optionality of teaching Tamazight and the negative attitudes held by people are the most important hindrances of the progress of Tamazight in the educational domain.

At the tertiary level, Tamazight was equally discarded for a long time all over the country. Although Berber was first introduced in university in the 1880s in Algiers, it was abruptly stopped in 1962 after Algeria gained its independence (Chaker, 1996; Quitout, 2007). Later on, Berber was allowed to be taught as a mere course, with no specific degree to be conferred, from 1965 to 1972 in the Faculty of Letters at the University of Algiers by Mouloud Maamri (Chaker, 1996). The studying of Tamazight was again stopped until early 1990s when two departments of the Berber language and culture were officially created in Tizi Ouzou (1990) and Béjaia (1991), which were meant to train teachers and researchers in the different domains of Berber language, such as linguistics, literature and the like (Chaker, 1996). In Aurès, the introduction of Tamazight in higher education was rather late compared to Kabyle region, namely during the 2013-2014 academic year. This recent progress seems to have some contributions, in particular by training teachers which would reduce the serious lack of instructors in the primary and secondary levels. It would also be an important step in order to fill an important gap in the scholarly literature on Tashawit language.

The debate over the introduction of Berber to schools, in particular as a subject of study in university, leads us to talk about an important factor in assessing the vitality of a given language. This is concerned with UNESCO's ninth factor, i.e. the amount and quality of documentation. Tashawit is a poorly documented language. Compared to some other Berber languages, namely Kabyle, Tashelhiyt, and Tuareg, little study on this particular Berber variety was undertaken. Most of the existing literature on Tashawit and the Berber group that uses it, on top of its scarcity, is of a sociocultural

rather than linguistic nature. Serious gaps exist in the literature regarding the description of the different levels of linguistic analysis of Tashawit.

A part of the knowledge we have about Tashawit is found in works that address on Berber in general or could be deduced from such works as shared features among Berber varieties, in particular the works of René Basset and André Basset. Be that as it may, there is still a number of works that made serious attempts to account for certain linguistic aspects of Tashawit. Of the few monographs that exist, we mention, according to the field of study, the following works: phonology (Benguesmia, 2013); morphology (Abouba, 1993; Meziani, 1997a, 1997b; Guedjiba, 2000); and syntax (Sierakowsy, 1871; Mercier, 1896; Penchoen, 1973). An important point that needs to be stressed is the fact that most of these works laid focus on particular regions or even tribes rather than being based on a study of all Tashawit varieties. One variety, in particular, associated with one tribe was given more attention by French linguists than any other Tashawit variety, that is the Tashawit spoken by the Ait Frah (Ain Zaatout) in the north of Biskra, west of the Aurès Massif (Basset, 1961; Penchoen, 1973). The varieties spoken in Ahmar Kheddou and Ait Sellam were given some, yet insufficient, attention by Mercier (1896) and Joly (1912) respectively. Besides these varieties, very little or nothing is known about the peculiarities of other Tashawit varieties.

Lack of literature about Tashawit is also manifested in the area of Lexicography. Two pieces of work that exist and were done in a proper academic manner appeared more than one century ago, that is Huyghe (1906) and Huyghe (1907). Huyghe's dictionaries are handwritten manuscripts which yet need to be properly published. Other dictionaries that were compiled recently include Ounissi (2003) and Saad (2013). Ounissi (2003) and, in particular, Saad (2013) have a purist orientation including almost only indigenous Berber terms regardless of use. These two works even lack so much of

the rudiments of dictionary development and seem, for that reason, to be more like long lexical lists or glossaries than dictionaries per se. In recent decades, the domain of sociolinguistics has attracted the attention of some researchers (Maougal, 1981, 1984; Dielman, 1994; Ghanes, 1997; Menaa, 2004; Lounissi, 2011; Guedjiba, 2012, 2013; Boudjellal, 2015). In a nutshell, Tashawit remains a poorly studied Berber variety. The scarcity of academic studies and language descriptions of Tashawit, at the different levels, affects negatively another related aspect of this language, namely the materials for language education and literacy, UNESCO's sixth criterion for the assessment of language vitality.

One of the main problems faced today regarding the teaching of Tamazight in schools is concerned with which variety to be taught. In the absence of a standard Berber variety in Algeria, in contrast to the situation in Morocco, this issue remains not yet solved. The absence of a standard variety affects directly the materials to be used for purposes of instruction. It is easy then to imagine the hardships that curricular decision makers, in general, and textbook designers, in particular, will face in the process of materials selection and design. It seems, nonetheless, the problem was worked out with no much consideration. The mostly documented Berber variety in the country seems to be the one adopted as a source of instructional materials, i.e. Kabyle. This was the case mainly due to the fact that curricular decision makers and textbook designers were themselves speakers of this Berber variety. These decisions do not seem to be easily welcomed in other regions, where teachers were found to be more or less flexible in their choices of the variety to be taught and, hence, the materials to be used. Teachers who find themselves restricted to use the standardized textbooks will have no choice but to adapt the material used to the variety spoken in the region they are working in. In doing so, the teachers need to have accessibility to materials written in the variety

they are adapting the textbooks to. Unfortunately, in the case of Tashawit, as pointed out earlier, the materials available for education are by no means sufficient. Most of the materials that exist, including dictionaries, descriptive grammars, literature, and so on, are old and not fully accessible. It is mostly available in its electronic formats and, even so, such materials are poorly used.

Another area that Tashawit needs to be assessed in is its responses to new domains and media. Although, Tashawit is present today in media, in particular radio, its use in such media is by no means satisfying. The number of radio programs which are presented in Tashawit in local radios of Batna, Khenchela and Oum el Bouaghi are incomparable to those presented in Arabic. The same, or even worse, can be said about the representation of this variety in TV programs. As to new trends of media, more accurately social media such as Facebook, twitter and the like, Tashawit could be said to have been represented even worse. In spite of the presence of tens or hundreds of groups in social media which claim affinity to Tashawit language and culture, the actual use of Tashawit in posts, group discussions and the like is very occasional. The main reason for such a scarcity is most likely the fact that Tashawit, as many other Berber varieties, is not yet a well-established written language. People find it easier to handle chatting and the different types of written communication using dialectal Arabic than Tashawit. The orthography is not standardized and, even so, it is not mastered by such people. The desire for clarity and the focus on the delivery of the message seems to hold the keys to the choice of the language in which such social media discussions are to be handled.

2.4. Tashawit in Contact

The contact between Tashawit and other languages is, more or less, a comparable specimen of the contact between Berber and those languages. Nevertheless, it is evident

that the history of the contact of the latter is much longer than the former. As it has been pointed out earlier in this chapter, Tashawit emerged as a distinct Berber variety around the first half of the eighth century (Blažek, 2010). The length of language contact, however, does not seem to be the most important factor that affects the differences in the outcomes of contact that exist between Tashawit and other Berber varieties. It is rather the difference in the intensity of such contacts and, to a lesser degree, the identity of the superstrater language that led to the differences observed in the outcomes of language contact.

The outcomes of contact between Berber and other languages seem to have been preserved to a considerable degree in Tashawit. Much of the traces of the languages that Berber had a contact with that were recorded in other Berber languages are also attested in Tashawit. The outcomes of language contact that had taken place before Tashawit emerged as a distinct Berber variety are mostly, if not exclusively, in the domain of lexicon. For example, one of the few preserved Egyptian loanwords in Berber, namely *tiyni* 'dates', is also preserved in Tashawit (Mercier, 1896; Huyghe, 1906Basset, 1961). More loanwords, attributed to such a period are traced to another Afroasiatic language, Punic. Of the Punic loans, which are also attested in other Berber varieties, Tashawit has preserved *aṛmun* 'pomegranate', *ɣanim* 'reed', *aḍeffu* 'apple', *aɣṛum* 'bread', *ssaɣit* 'walnut tree' (probably only in toponymy), *jadir*/*jatir* 'wall, steep crag', *amesmaṛ* 'nail', *afḍis* 'hammer', *agelzim* 'hoe', *ẓarif* 'alum' and *lmed* 'learn' (cf. Blažek, 2014 and Kossmann, 2013). The language that had more effect at that time is not an Afroasiatic but, instead, an Indo-European language, Latin. Loanwords traced to this language are not only more frequent than Punic loans, but their effects were observed in a wider number of semantic domains. Some of the Latin loans that are still used in Tashawit include *aqeṭṭus* 'cat', *falku* 'falcon', *fullis* 'chick', *tafirast* 'pear-tree',

kaḍdus ‘thistle’, *tkilsa* ‘mulberry and mulberry tree’, *fleyya* ‘pennyroyal’, *tayda* ‘pine’, *ulmu* ‘elm’, *urti* ‘garden’ (probably retained only in toponyms), *iger* ‘field’, *lfurnu* ‘stove’, *atmun* ‘plough-beam’, *tγawsa* ‘thing’, *sakku* ‘bag’, *tyuga* ‘pair’, *tilmi* ‘file’, *laḳtu* ‘bed’, and others (cf. Laoust, 1920; Kossmann, 2013). Other examples of Latin loans in Tashawit, as in other Berber languages, include the names of months in the solar calendar (see Kossmann, 2013 for a detailed treatment).

The examples of loans provided above are products of contacts between an antecedent of Tashawit, more likely the Zenati variety, and one of the three aforementioned languages. We can describe as genuine or direct those contacts that have taken place between Tashawit and other languages subsequently to its emergence as a distinct Berber variety. Accordingly, the first language with which this fully-fledged Tashawit variety has contacted is probably Arabic.

The influence of Arabic on Berber, Tashawit included, is far more reaching than any other language. To grasp this influence more properly, one needs to consider the fact that only Arabic, and seemingly not any other language, has left an influence on Berber in aspects other than lexicon. Even at the level of lexicon, Berber has gone beyond the importation of single lexical items, as the case with all other languages that Berber borrowed from, with some exception concerning French, to the borrowing of phrases and expressions that Berbers use in their daily interactions. This could be due to the fact that contacts with other languages were not intense enough to allow for the borrowing of complex lexical items or, at least, their persistence.

Contact with Arabic and, to some degree French, is still continuing and so are the effects of these languages. The influence of Arabic has certainly become more important in the post-independence period as Magribian states adopted Arabization policy in all sectors, of which the educational, administrative and media sectors seem

to be the most important. In many Berber dialects, Arabic loans displaced not only Berber original forms but also many of the previous loans borrowed from Egyptian, Punic and Latin, for example *iḥebba* vs *teyni*, *lebṣel* vs. *aẓalim*, *tajnant* vs. *urti*, etc.

A point worth noting regarding the nature of loans imported from Arabic is that they originate from Classical Arabic/ Modern Standard Arabic and dialectal Arabic as well. Some studies revealed that Arabic vernaculars, rather than Classical or Standard Arabic, were the major sources of loans. For instance, in a study conducted on 62 Kabyle native speakers living in Tizi Ouzou and Oran, Brahimi (2000) found 22.7% of the words in the corpus she built to be loanwords: 19.2% were from Algerian Arabic, 1.1% from Standard Arabic, and 2.4% from French. Kossmann's (2009) examination of Tarifit revealed 51.7% of loans in a 1526-item word list: 41.7% from dialectal Arabic, 3.2% from Classical/Standard Arabic, and 6.3% from French and Spanish.

2.4.1. Arabic loans in Tashawit.

The contact between Berber and Arabic has been in place for around thirteen hundred years, i.e. since the time of Islamic conquests. The same duration can be assumed for the contact between Tashawit and Arabic. As a result, Arabic loans were imported, albeit in different rates, to all semantic domains.

One of the most important domains where Arabic loans are noticeably attested is that of religion and beliefs. The conversion of Berbers to Islam motivated the borrowing of a considerable number of words to cope with the new religion. Being a Muslim entails the necessity of performing some religious practices, such as praying, fasting and the like. This made it mandatory for the new converts to have a minimum degree of bilingualism to be able to fulfill those practices properly. Boogert and Kossmann (1997) highlight three attested key terms: *ẓẓall* 'to pray', *ẓum* 'to fast', and *tamezgida* 'mosque' as being the first Arabic words to enter the Berber language. In the case of

Tashawit, at least, the first two words, *ẓẓall* and *ẓum* as well as their derivations *tẓallit* and *ṣṣyam* are also attested. The loanword *tamezgida*, synchronically speaking, is not attested in Tashawit, though the word *lmesjed* which derives from the same root could be heard, though it is not a well-established loanword. The Arabic loan that is most frequently used in Tashawit to denote mosque is *ljameɛ*.

One can assume that the three loans mentioned earlier are not necessarily the very first to enter the Berber language. It is possible that the very first Arabic words to be imported are those found in the profession of faith or the *Shahada* as this latter is the first mandatory step that one needs to undertake to become a Muslim. Of such words *eched* 'testify' or 'bear witness', *Allah* 'God', and *ṛasul* 'messenger' seem to be more likely. Other notions which have a close connection with the previously mentioned ones should have also entered Berber or Tashawit around the same time, e.g. *lquṛan* 'Quran', *ṛemḍan* 'Ramadan', *zzakat* '', *lḥej* 'pilgrimage', *nnabi* 'prophet', etc.

Tashawit speakers, as those of many other Berber languages, also use Arabic loans to denote daily obligatory prayers: *ṣṣbeḥ* 'the dawn prayer', *ddhuṛ* 'the noon prayer', *lɛaṣeṛ* 'the afternoon prayer', *lmeɣreb* 'the sunset prayer', and *leɛca* 'the evening prayer', as well as other voluntary prayers, such as *lefjer* 'the prayer before the dawn prayer', and *luter* 'the prayer after the evening prayer', etc. In some Berber dialects, such as Tuareg, Zenaga, Teggargrent, Tumzabt, Zuwara, Tacelhiyt, and others, a number of Berber terms were coined, with some variation among the cognates, to denote the five basic prayers (see Kossmann, 2013; Souag, 2015), but in Tashawit only Arabic borrowings are attested. Arabic loans in the domain of religion and faith include both cultural and core borrowings. Examples of the former include loans such as *lquran*, *remdan*, the names of prayers, etc. Examples of the latter include *dɛu* 'to pray', *ɛbed* 'to worship', *ddin* 'religion' or 'faith', etc.

Arabic loans in Tashawit also exist in other semantic domains. The use of numerals, for one, is dominated by Arabic borrowings. Similarly to many other Berber languages, such as Kabyle, Figuig, Chenoua, Nefoussa, and Siwa (see Kossmann, 2013), Tashawit has only retained in its system the first two cardinal numbers: *yict*, *yiğ* and *wiṭ* (f. *tict*) 'one' and *sen* (f. *sent*, *sennet*) 'two' (Mercier, 1896; Kossmann, 2013). Arabic loans are used exclusively for higher numbers. Tashawit speakers, it should be noted, usually use Arabic loans when they count, *waḥed* 'one', *zuj* or *tnin* 'two', *tlata*, *rebɛa* 'four', *xemsa* 'five' ... instead of *yict*, *sen*, *tlata*, *rebɛa*, *xemsa* ... (cf. Kossmann, 2013). We should note, however, that the word *zuj* is used only when counting or as a single-word code-switch to answer a question, as in (1) below.

A: *kem n iḍ.an a.t.nsi.d d.in*?
How many nights have you spent there?
B: *zuj*.
Two ... (1)

It seems that this Arabic word is not used in any other context. Therefore, the answer in (2) is very unlikely.

A: *kem n iḍ.an a.t.nsi.d d.in*?
How many nights have you spent there?
B: *zuj* n iḍ.* ... (2)

The use of Arabic loans when referring to ordinal numbers is determined by the presence or absence of Arabic loans in the corresponding cardinal number. The word *amezwaru* [aməzwaru] is used to denote 'first'. Other ordinal numbers are formed by adding the Berber particle *wiss* (m.) or *tiss* (f.), marking order, to the corresponding cardinal number to refer to the order needed, hence *wiss sen* 'second', *wiss tlata* 'third', *wiss ṛebɛa* 'fourth', *tiss xemsa* 'fifth', etc. (see Huyghe, 1907: 548-9). Ordinal numbers are also expressed in Tashawit by pure Arabic loans, e.g. *ttani*, *ttalet*, *ṛṛabeɛ*, etc., or,

probably more frequently for certain speakers, French loans, *dduziam*, *tteṛwaziam*, *lkateṛiam*, etc.

Words of Arabic origin are also used to denote fractions. In Tashawit, as in other Berber languages, fractions are designated by adding the corresponding cardinal number to the phrase *amur wiss*, e.g. *amur wiss sen* 'one half', literally 'the second part', *amur wiss tlata* 'one third', *amur wiss rebɛa* 'one quarter', and so on (Huyghe, 1906). It is worth noting that, most often, the word *azgen* / *azyen* and, probably less commonly, *neṣf*, *nefṣ* and *neṣṣ* are used to refer to 'one half' (Huyghe, 1906) and, sometimes, *azgen n azgen* is used to refer to 'one quarter'. The use of '*amur wiss* ...' to designate fractions seems to be less used among younger speakers who prefer to use Arabic loans, *ttelt* / *ttulut* / *ttalta*, *ṛṛbeɛ* / *rrubuɛ*, *lxumus*, etc.

Some of such fraction names originated other meanings. For example, from the word *lxumus* emerged the word *axemmas*, which originally referred to a person who rents a garden, field, etc., to get the fifth of the profits. It is now used to refer to any renter of a garden or field with no predetermined portion of profits. It is used sometimes pejoratively to mean a servant. In a similar way, the word *leɛcuṛ* which stems from *lɛucuṛ* is used to refer to 'zakat' because one tenth of the harvest or crops are expected to be paid. The words *nniṣef*, *ṛṛbeɛ*, and *ttmen*, or *ttumun* 'one eighth' are used by the people who recite the Quran to refer to its portions, e.g. *ttmen n lḥizb* 'one eighth of a group', *ṛṛbeɛ n lḥizb* 'one fourth of a group', etc.

Arabic loans are also recorded in the domain of time. The Arabic words for 'minute', 'hour', 'day', 'month', 'year' and 'century' were all borrowed into Tashawit. However, the loans differ, more or less, in their morphological and grammatical integration in the recipient language. Arabic loans of the first two notions were shown to be partially or fully integrated, depending on the variety involved, in the

morphological system of Tashawit, *ddqiq.t* (pl. *ddqayeq*) vs. *t.adqiq.t* (pl. *t.idqiq.in*) ‘minute’ and *ssaɛ.t* vs. *t.saɛ.t* (pl. *sswayeɛ*) ‘hour’. As can be noticed both the singular and the plural forms of these loans are attested in Tashawit. The Arabic borrowings corresponding to the last four notions are not integrated morphologically but are adopted in the forms in which they are used in colloquial Arabic, *yum* ‘day’, *cchṛ* ‘month’, *sna* ‘year’ and *l.qṛn* ‘century’. These loans were shown to be only partially integrated into the grammatical system of Tashawit.

Although imported in its singular form, the word *yum*, which is used in CA and MSA in forms which designate both periods of ‘one day’ or more than ‘ten days’, by adding it to the corresponding number of the period needed to be denoted, it is only used to designate the latter in Tashawit. Therefore, the speakers say, for instance, *ḥdaɛc n ʷussan* or *ḥdaɛc n yum* ‘eleven days’, *tnaɛc n ʷussan* or *tnaɛc n yum* ‘twelve days’, etc. but *ass* and not *yum** ‘one day’. To refer to a period between ‘three days’ and ‘ten days’, Tashawit speakers add the plural form of the previous loan, i.e. *eyyam*, to the number denoting the period needed, e.g. *telt eyyam*, *rebɛ eyyam*, etc.

The Arabic loan *cchṛ* is used along with the Berber word *yur* to denote a period of ‘one month’. In order to refer to a period of ‘two months’ or more, Tashawit speakers add the plural form of the Berber word, i.e. *i.yar.n* (Basset, 1961) (*iyran* in Huyghe 1906 and 1907), or a plural form of the Arabic loan, namely *lchaṛ* to the number denoting the span needed, e.g. *sen n i.yar.n* / *lechaṛ* ‘two months’, *tlata n i.yar.n* / *lechaṛ* ‘three months’, etc. The Berber variant, however, seems to have lost much of its currency today.

The use of the Arabic loan *sna* is similar to that of *yum*. It is only found in forms denoting periods of more than ten years. Tashawit speakers, therefore, use *ḥdaɛc y.sugg^{w}as.n* / *y.sugg^{w}us.a* or *ḥdaɛc sna* ‘eleven years’, *tnaɛc y.sugg^{w}as.n* / *y.sugg^{w}us.a*

or *tnaɛc sna* ‘twelve years’, but *asugg^{w}as* and not *sna** ‘one year’. To refer to a period between ‘two years’ and ‘ten years’, Tashawit speakers use the Berber variant or another Arabic loan, *leɛwam*, e.g. *sen n leɛwam* ‘two years’ *tlata n leɛwam* ‘three years’, etc.[1].

The period of one century is designated only by an Arabic loan, *lqeṛn*, whereas a period of ‘two centuries’ or more is designated by adding the plural *lqṛun* to the corresponding number, e.g. *sen n lqṛun* ‘two centuries’, *tlata n lqṛun* ‘three centuries’, etc.

It is important to note, here, that the periods of ‘two days’, ‘two months’ and ‘two years’ are also denoted in Tashawit by *yumin, cehṛin* and *ɛamin*. In Tashawit, as in all other Berber languages, number has two values, the singular and the plural. In Arabic, in particular CA and MSA, number has three values, the singular, the dual and the plural. As a result, one could be tempted to regard these three borrowings as instances of morphological borrowing. This, however, is not an accurate treatment. The three loans above are unanalyzable. In other words, they are monomorphemic and cannot be treated as if they are composed of free morphemes, *yum, cehṛ* and *ɛam,* to which the bound morpheme, *-in*, is added. For this reason, they cannot be written as *yum.in, cehṛ.in* and *ɛam.in* but as spelled earlier. This is mainly due to the fact that these words are the only instances of dual forms that are attested in Tashawit. Unless such a structure diffuses to other words in the language in a way that makes it possible to create a dual form from a singular form or a free morpheme, we cannot talk of morphological borrowing.

[1] The expression *leɛwam.in*, literally ‘those years’, in the phrase ‘*y.qqar.aḵ leɛwam.in*’ is used sometimes as an opening of a fable or a legend. It was translated by Mercier (1896), as “[o]n raconte qu’il y a quelques années” (p. 47), i.e. “it is said that a few years ago”. It is also used to mean ‘once upon a time’, ‘in the old days’, ‘in the past’, and the like.

The names of the days of the week are all denoted by Arabic loans in Tashawit (Mercier, 1896; Huyghe, 1906, 1907; Basset, 1961). The Berber words that denote them were definitely lost for a long time. Although the Chaouia people, like all Berber groups, have been using the Berber calendar to refer to the months of the solar calendar a very long time ago, they also use the names of months from a different calendar system, the Islamic calendar. Three established loans for names of months that derive from this calendar are used, namely *ṛjeb, ceɛban* and most importantly *ṛemdan*. Nonetheless, there seems to be no felt need to use the names of other months in such a calendar and, hence, they are rarely, if ever, used. The words used in Arabic to denote seasons are all attested in Tashawit, *lmecta* 'winter' *ṛṛbiɛ* 'spring', *ṣṣif* 'summer' and *lexrif* 'autumn' (Huyghe, 1906). The Berber words for seasons, namely the three first ones, are also attested in Tashawit (see Huyghe, 1906, 1907). Arabic loans that are used to denote some other notions in this domain also exist, e.g. *taṣebḥit, ṣṣbaḥ* 'morning', *taɛcwit* 'afternoon' (Huyghe, 1906).

Arabic loans are also recorded in other semantic domains. The rates of such loans differ from one domain to another, as they also seem to differ from one region to another. The domain of body seems to include less loans compared to others. If we choose to use Swadesh 100 word-list as a reference, we can state that few terms designating body parts are expressed in Tashawit through Arabic loans. Loanwords for notions that do not exist in Swadesh 100 word-list seem to be more frequent. They sometimes exist side by side with Berber variants, but other loans seem to have displaced the Berber variant permanently. Table 2.1 bellow lists some of the basic lexical notions along with their corresponding Berber and / or Arabic borrowings as attested in the most important Tashawit texts.

Arabic loans are abundant in the domain of agriculture and vegetation, e.g. *taweṛqit* ‘leaf’, *tacjiṛt* ‘tree’, *zzerriɛt* ‘seed’, *tanewart* ‘flower’, *lḥcic* ‘grass’, *taqcirt* ‘bark’, *eḥfer* ‘to dig’, *ɛarf* ‘branch’, *tajnant* ‘garden’, *ezrɛ* ‘sow’, *ameḥṛat* ‘plough’, etc. However, it seems that Arabic loans are attested most in the area of cultivated plants. These include *lebṣel* ‘onion’, *tteffaḥ* ‘apple’, *leɛdes* ‘lentil’, *llubiyya* ‘cowpea’, *lḥummeṣ* ‘chick-pea’, *lğelbana* ‘black-eyed pea’, *zṛudeyya* ‘carrot’, *lxertel* ‘parsnip’, *iḥebba* ‘dates’, *ṛṛəmman* ‘pomegranate’, *ssfeṛjel* ‘quince’, *lanjaṣ* ‘pear’, *ṛṛuẓ* ‘rice’, *lmesṭuṛa* ‘corn’, *lxerrub* ‘carob’, and others more. The Berber equivalents of some of the loans mentioned above are attested in Tashawit, e.g. *tafercit* ‘bark’, *eɣz* ‘to dig’, *ciḍu, taseṭṭa* ‘branch’, *tabḥirt* ‘garden’ and *tifinin* ‘black-eyed pea’ (Huyghe, 1906). The equivalents of other borrowings, however, seem to be obsolete, albeit survived in other Berber languages, e.g. *afraw* (Destaing, 1938; Foucauld, 1951) ‘leaf’; *acek* (Masqueray, 1893; Foucauld, 1951), *taddagt* (Destaing, 1938), *aseklu* (Taifi, 1991) ‘tree’; *éfelêli* (Foucauld, 1951), *aflilu* (Lanfry, 1973), *afelilu* (Sarnelli, 1924) ‘onion’; *takiḍa* ‘carob’ (Destaing, 1938); *xizzu* (Destaing, 1914, 1938; Serhoual, 2002) ‘carrot’, *tadellaxt* (Sarnelli, 1924) ‘cowpea’, etc. Some Arabic loans in this domain are in rivalry with loans from other languages, Egyptian and, in particular, Punic and Latin. These include *iḥebba* vs. *tiyni* ‘dates’, *tteffaḥ* vs. *aḍeffu* (Pu.) ‘apple’, *ṛṛəmman* vs. *aṛmun* (Pu.) ‘pomegranate’, *ssfeṛjel* vs. *taktunya* (Lat.) ‘quince’ (Huyghe, 1906, 1907) and *lanjaṣ* vs. *tafirast* (Lat.). Because neither the Berber equivalent for ‘onion’, *aflilu*, nor the Punic loan, *aẓalim*, is attested in Tashawit, we cannot say for sure if the Arabic loan *lebṣel* has replaced the Berber variant or the Punic loan.

Most Arabic loans in the domain of animals are core borrowings. Arabic loans in this domain seem to be attested most in the area of ‘wild animals’, e.g. *afṛux* ‘bird’, *lefɛa* ‘viper’, *nnamus* and *lbaɛuḍ* ‘mosquito’, *rrtila* ‘spider’, *lqerd* ‘monkey’, *nnmer*

'tiger', *lfil* 'elephant', *belḥaret* 'lion', *tasedda* 'lioness', *miɛṛuf* 'owl', etc. The Berber equivalents of some of these loans are still used in Tashawit: *acṭiṭ* 'bird', *talefsa* and *fiɣeṛ* 'viper', *iwlelli* 'spider', *aksel* 'tiger', *arr* 'lion', *tarret* 'lioness' and *twekt* 'owl' (Huyghe, 1906, 1907). Arabic borrowings attested in the area of 'domestic animals' include *aɛetrus* (vs. *amlus* and *zalaɣ*) 'goat', *zzimel* (vs. *yis*) 'horse', *lɛuda*[2] (vs. *tagmart*) 'mare', *aɛejmi* (vs. *agenduz*) 'calf', *aɛejmi* (vs. *afunas*) 'bull' or 'ox', *aserdun* 'mule', *lefḥel* 'stallion', *amahrun* and *ajedɛun* (vs. *aɣedwi*) 'foal', *ajḥiḥ* 'donkey foal', etc. (see Huyghe, 1906, 1907; Basset, 1936, 1939).

Arabic loanwords are attested, with varying rates, in all other domains. Table 2.1 below list some of the most basic notions, along with the Berber equivalents attested in Tashawit and their corresponding Arabic loans. The notions listed in the table figure in the mostly used wordlists in the domain of historical linguistics. Semantic domains are represented differently because such domains vary considerably in terms of the frequency of the notions that built in them. By the same token, some semantic domains were not included because the notions they cover are much less frequent than other domains.

Table 2.1. A sample of core borrowings in Tashawit

Notions	**Berber variant(s)**	**Arabic loan(s)**
	The physical world	
fire	*timess* (Huyghe: 1906)	*lɛafit* (Huyghe, 1906), *lɛafift* (Boudjellal, 2015)
stone	*adɣaɣ* (Huyghe, 1906) *taẓṛut* (Huyghe, 1906)	*aḥdir* (Huyghe, 1906)
smoke		*ddexxan* (Huyghe, 1906)

[2] In order to refer to the plural of *lɛuda*, Tashawit speakers use the word *tiɣallin*. The singular form of this word is only used in a limited number of Berber languages: *tɣallet* (Delheure, 1984), *tɣallit* (Delheure, 1987). The word *tiɣallin* is also used as a plural for *tagmart* instead of *tigmarin* in some Berber varieties (see Destaing, 1914).

cloud	*asegna* (Huyghe, 1906) *tajnut* (Basset, 1961)	*sḥab* (Huyghe, 1906) *lɣim* (Boudjellal, 2015)
sand	*ijdi* (Joly, 1912: 223)	*ṛṛmel* (Huyghe, 1906)
wind	*aḍu* (Boudjellal, 2015)	*rriḥ* (Huyghe, 1906) *aɛeğağğ* (Huyghe, 1906)
rain	*anẓaṛ* Huyghe (1907) *tametna* (Huyghe, 1906)	*lgerret* (Huyghe, 1906) *nnu* (Huyghe, 1907)
dust		*aɣebbaṛ*, *lɣubeṛt* (Huyghe, 1906)
fog	*tayut* (Huyghe, 1906)	*ɣim* (Huyghe, 1906)
forest		*ɣabt* (Huyghe, 1906)
sea		*lebḥeṛ* (Huyghe, 1906)
ice	*ajris*, *ɣuṛṛaif*	
	Kinship	
person	*ij* (pl. *iwdan*) (Huyghe, 1906)	*ɛebd* (Huyghe, 1906) *nas* (Huyghe, 1906)
wife	*tameṭṭut*, *tamɣaṛt* (Basset, 1961)	*leɛyal* (Basset, 1961)
	Body	
to sleep	*eṭṭes* (Huyghe, 1906)	
feather		*rrict* (Huyghe, 1906)
leg	*aqebbal* (Huyghe, 1906) *sagel (*Masqueray, 1885)	*sag* (Huyghe, 1906)
to vomit	*err* (Huyghe, 1906)	*ɛuqq* (Huyghe, 1906)
be alive	*edder* (Huyghe, 1906)	*ḥey* (Huyghe, 1906)
to breathe	*sunfi*	*neffes* (Huyghe, 1906)
	Food and Drink	
salt	*tisent* (Huyghe, 1906)	*lmelḥ*, *ṛṛbeḥ*
fruit		*fakia*, *fakit* (Huyghe, 1906), *lexrif*
suck	*ṣumm* (Huyghe, 1906)	*muṣṣ* (Huyghe, 1906)
rotten	*irwi* (Huyghe, 1906)	*ixmej*
	Clothing and grooming	
to sew	*eyni* (Huyghe, 1906)	*xeyyeṭ* (Huyghe, 1906)
	The house	

house	*taddart* (Huyghe, 1906)	*axxam* (Huyghe, 1906)
	Agriculture and vegetation	
tree		*tacejrit*
leaf		*tiweṛqet* (Huyghe, 1906)
flower	*ajeğğig* (Basset, 1961)	*tanewwart*
grass		*leḥcic*
bark	*tafercit* (Huyghe, 1906)	*taqcirt*
to dig	*eɣz* (Huyghe, 1906)	
	Basic actions and technology	
to cut	*ebbi* (Huyghe, 1906)	*qess*
to pull		*ejbed* (Huyghe, 1961)
to lie	*eẓẓel*	*berrek* (Huyghe, 1961)
to push	*demmer* (Huyghe, 1906)	*dfeɛ* (Huyghe, 1906)
to burn	*serɣ* (Huyghe, 1906)	*ḥṛeq* (Huyghe, 1906)
to squeeze	*ẓemm* (Huyghe, 1906)	*ɛṣeṛ* (Huyghe, 1906)
to rub	*ames* (Huyghe, 1906)	*ḥukk* (Huyghe, 1906)
to split	*ebḍa* (Huyghe, 1906)	*feṛeq* (Huyghe, 1906)
	Motion	
to swim		*ɛumm* (Huyghe, 1906)
road	*abrid* (Huyghe, 1906)	
to turn	*ezli* (Huyghe, 1906), *izleg* (Basset, 1961)	*beṛṛen*, *beṛṛem* (Huyghe, 1906)
	Spatial relations	
big	*ameqqṛan* (Huyghe, 1906), *yigit* (Huyghe, 1906)	
long	*azegrar* (Huyghe, 1906)	*aṭuwwali*
far	*yugej* (Tibermacine, 2009)	*bɛid* (Huyghe, 1906), *ibɛed* (Basset, 1961)
heavy	*yiẓag* (Huyghe, 1906)	*itqel* (Huyghe, 1906)
short	*agilal*, *agezlan* (Huyghe, 1906)	*iḍṛef* (Huyghe, 1906)
near	*yudes* (Timermacine, 2009)	*yeqṛeb* (Huyghe, 1906)

round	*aknannaḍ* (Huyghe, 1906)	*imdewwer* (Basset, 1961)
thick	*azewwar* (Huyghe, 1906)	*iɣleḍ* (Huyghe, 1906)
straight	*ysreḍ* (Huyghe, 1906)	*qbala*, *qedqed* (Huyghe, 1906)
narrow		*iḍiq* (Huyghe, 1906) *yiɛsar* (Basset, 1961)
wide	*yiraw* (Huyghe, 1906)	*yuseɛ* (Huyghe, 1906)
	Quantity	
many		*labas* (Huyghe, 1906)
all		*kull* (Huyghe, 1906)
to count		*eḥseb* (Huyghe, 1906)
few	*drus* (Huyghe, 1907) *qičč* (Huyghe, 1906)	*qli* (Huyghe, 1906)
	Time	
new	*atrar* (Tibermacine, 2009)	*ajdid* (Huyghe, 1906)
old		*aqdim* (Huyghe, 1906)
	Sense Perceptions	
cold	*ysqeḍ*, *ysmeḍ* (Huyghe, 1906)	*ybred* (Huyghe, 1906)
green	*aziza(w)* (Huyghe, 1906; Basset, 1961)	
yellow	*awṛaɣ*, *acemlal* (Huyghe, 1906)	*qaṛsi*, *asellaḥ* (Boudjellal, 2015)
sharp		*iqetɛen* (Huyghe, 1906), *yemḍa* (Tibermacine, 2009), *yerḥa*
wet	*anebzagu* (Basset, 1961: 30)	*inedda* (Huyghe, 1906: 334)
dirty	*yekkinğu* (Tibermacine, 2009)	*yemsex* (Huyghe, 1906: 628) *yexmeğ* (Basset, 1961: 113)
hot	*yzɣel* (Huyghe, 1906)	*yeḥma* (Huyghe, 1906: 98)
smooth	*aleqqaɣ* (Huyghe, 1906)	
	Emotions and values	
good		*yeḥla* (Huyghe, 1906)
bad		*yqbeḥ* (Huyghe, 1906)

correct		*asḥiḥ* (Huyghe, 1906)
	Cognition	
to think		*xemmem* (Huyghe, 1906)
if	*ma*, *mdara* (Huyghe, 1906),	*lukan* (Huyghe, 1907)
	Speech and language	
to sing	*ecnu* (Tibermacine, 2009)	*ɣenna* (Huyghe, 1906)
	Warfare and hunting	
to hunt		*ṣeyyeḍ*, *ṣṭaḍ* (Huyghe, 1906)

Arabic loans, though attested in the class of vocabulary called function words, seem to be minimal. Among the loans that are used we mention: *bla* 'without', *kem* 'how much, how many', *menhu* 'who?'. Many of the loans presented here entered Tashawit a long time ago. In relation to this, there are no studies about the frequencies of loans in comparison with their equivalent Berber forms, so it is difficult to talk about the state of lexical rivalry that exist between most of the examples mentioned earlier with certainty.

2.4.2. French loans in Tashawit

The effect of French on Tashawit lexicon is also important. The rate of French borrowings is second only to Arabic. Many of such French loans entered Tashawit, and many other Berber varieties, during the French colonization of North Africa. The Borrowings traced to this Latin language, nonetheless, are by no means attributed to the colonial period. A good number of them are clearly new borrowings, in particular those belonging to the domain of new technologies.

French loans in Tashawit are attested in a number of semantic domains. The domain that was affected most, however, is that of modern world (cf. Kossmann, 2009). These loans were borrowed into Tashawit in order to cope with the requirements of a modern way of life. As a result, most of such loans are additive, rather than core borrowings, as

they were imported along with the introduction of modern objects and technologies. Examples of loanwords in this domain include: *ṭṭaksi* / *ṭumubile* 'car', *lmacina* 'train', *ljeṛnan* 'newspaper', *tiliffun* 'telephone', *lbaṭṛi* 'battery', *lbanka* 'bank', *tilivizyun* 'television', *lmikṛu* 'computer', *nnilu* 'plastic', *tturnifis* 'screwdriver', *ṛṛadyu* 'radio', *ṛṛubini* 'faucet', *lmutur* 'engine', *lkabel* 'wire', etc. French borrowings that are attested in other domains include *tcambeṛt* 'room', *lbiru* 'office', *lefrigu* 'refrigerator', *takuzint* 'kitchen', etc. As it can be noticed, a good number of the French loans listed from domains other than that of modern world are core borrowings because they denote referents which are already designated in Tashawit. The morphology of most of these loans also indicates that they entered Tashawit through Algerian Arabic.

There is a serious deficiency in the literature regarding the effect of French on Tashawit lexicon. The only study that we are aware of is Menaa (2004: 327-356). The rate of French loans in the corpus that was studied is 13.66%, of which nouns represent 82%. Many of such loans are listed in the previous paragraph. More importantly, the study tackles the issue of loans integration into the phonetic and morphosyntactic systems of Tashawit, as well as the semantic adaptation. It also addresses the motives of lexical borrowing from French. The author maintains that the motive that led to the importation of most of the loans is need, and only few of them imported for considerations of prestige.

Conclusion

Works on language contact in Tashawit speaking region and its effects on the language are few and far between. The little things that we know about this subject are obtained from old text, many of which go back more than a century. Both the language and the speech community described in such old works have certainly changed. As to the former, evidence have pointed out that Tashawit has been affected, in particular in

its lexicon through borrowing from Arabic and French. With regard to the speech community, it is important to note that it has also been affected considerably, in particular with reference to the issue of intergenerational language transmission. In the absence of updated studies about Tashawit in general, and the effects of language contact on this variety in particular, it is difficult to assess the extent to which this Berber variety has changed compared to what we used to know about it.

Chapter Three: Methodology

Chapter Three: Methodology

Introduction

This chapter is devoted to the methodology adopted in the present study. It first highlights the linguistic variables chosen for investigation and clarifies the criteria that were laid down to guide the selection of the notions that were included in the wordlist used in the study. The chapter also specifies the extralinguistic variables that were chosen for analysis. The participants, the method used in data collection, along with its justification, and the piloting and the administration of the research tool are also described in this chapter. The chapter concludes with an account of data coding and the statistical models adopted in data analysis.

3.1. Linguistic Variables

The main object of the present study is to examine the currency of a number of Berber words in Tashawit. Each of such Berber lexical variants, to use a more technical linguistic term, will be studied with reference to other non-Berber variants that are used in Tashawit to denote the corresponding notion in the wordlist. Each notion in the list represents one unit of analysis, i.e. one linguistic variable. We will hitherto use the term lexical variable instead of linguistic variable to avoid the confusion that may arise because the latter is also used in the literature to refer to other linguistic units within the different levels of linguistic analysis.

In order to meet the objectives of the present study, a wordlist of sixty-one notions was devised. The wordlist chosen for the present work is not completely novel. Although it is not identical to any other wordlist used in other studies, of lexicostatistics in particular, most of the notions built in it are found dispersed among other wordlists that were developed by linguists. Moreover, most of the notions included in the wordlist chosen for the present work are basic and exist in most world's languages.

The notions included in the wordlist were chosen based on a number of criteria that were established in order to enhance the validity of the data collection tool. To begin with, it seems fair to say that there is no single cure-all wordlist to use to reach absolute valid findings in lexical studies. Linguists keep reviewing previously built lexical lists and end up developing their own[1]. To engage in a lexical study, one would think that the longer the list the better the results. However, this is neither completely true nor is it practical. A short list, well devised and with clear objective criteria, could serve the purposes of a historical linguist better than a messy long one. In addition, approaching fieldwork with a long list entails that the data will be elicited from a relatively small number of informants and, therefore, casts doubt on the external validity of the findings. As mentioned earlier, the wordlist we devised for the purposes of the present research is composed of sixty-one notions, which, we believe, is neither short nor long but acceptable, in particular when considering the scope of this study.

As a first criterion, the list excludes notions that fall at either ends of the maintenance-loss continuum. In other words, all notions that show no genuine lexical variation were left out. Such notions can hardly be regarded as lexical variables in the sense that only one word, Berber or other, is used to denote them across Tashawit speaking regions. For example, pronouns were shown to be perfectly maintained in Tashawit, with no competing loans, and were accordingly discounted. Notions like *tongue*, *teeth*, *face* and others, which figure in Basic lexicostatistic lists such as Swadesh-100 and Leipzig-Jakarta list, were also discounted for the same reason; only Berber words are used to denote them. In a similar way, notions such as days of the week, cardinal numbers above three were also excluded because they are only

[1] There exist today more than three hundred concept lists in the field of linguistics (please visit: https://concepticon.clld.org). These are used in the different domains of linguistics, such as historical linguistics, psycholinguistics, and others. They range in length from few words to around eighteen hundred words.

designated through Arabic loanwords; the Berber words used to denote them have gone obsolete for a long time.

The second criterion that was used in the selection of the notions in the wordlist is the number of Berber variants through which they are designated. Notions denoted by fewer Berber variants are more likely to be included in the wordlist. Most of the notions that were built in the wordlist are denoted only through one single Berber variant common to all, or most, Berber languages. Since the present study is concerned with regional and cross-generational variation in contact induced lexical loss, the focus was laid mainly on tracing the replacement of Berber variants with loanwords, hence deliberately overlooking other sorts of lexical variation where rivalry exists not only between Berber variants and loans but among Berber variants as well. There are some exceptions to this second criterion; some of the notions included are denoted in Berber by more than one variant. This, nonetheless, was not perceived as an impediment as long as only one of such variants is attested in Tashawit.

The third criterion has to do with the familiarity of the notions. Basic words, i.e. those which designate more universal meanings, were given priority over less basic ones. Our judgment of the familiarity of the notions was based on a comparison of more than 300 hundred lexicostatistic lists (please visit: http://concepticon.clld.org). All the notions included in such lists were ordered from the most frequent to the least frequent, and were then selected bearing in mind the two previous criteria. The more representations a notion has, that is the more lists it figures in, the more basic it is believed to be and the more likely it is to be selected. The implementation of the aforementioned criteria resulted in the exclusion of notions that even exist in most widely used lexicostatistic lists, such as Swadesh-100 and Leipzig-Jakarta list, etc. This

is hardly surprising if one bears in mind that the notions built in such lists were chosen based on their stability, i.e. being unborrowable or rarely borrowable.

The notions included in the wordlist used in the present work are built around a variety of semantic domains: 'physical world', 'agriculture and vegetation', 'animals', 'body', 'clothing and grooming', 'food and drink', 'sense perception', 'spatial relations', 'time', 'motion', 'speech and language', 'warfare and hunting', 'basic action and technology', 'house', 'possession', and 'cognition'. It should be noted that these semantic domains are not equally represented in the list. The reason for this inequity is that semantic domains respond differently to the criteria of selection highlighted above. The domains of 'physical world', 'agriculture and vegetation', 'body' and 'time' are more represented than other domains. Such discrepancy is also observed in most lexicostatistic lists used in the field of historical linguistics (cf. Swadesh-100 list; Leipzig-Jakarta list, etc.).

The following section presents the lexical variables used in the present study categorized in terms of the semantic domains to which they belong. The number added after each term indicates its representation, i.e. the number of lexicostatistic lists in which it appears. We should remind the reader that such representations are not ultimately constant. Instead, they are subject to slight changes as linguists develop new lists each year. Therefore, the representations of the notions that appear in newer lexicostatistic lists will increase, leading to some changes in the ranking of all notions[2].

❖ The physical world: *fire* (225), *cloud* (199), *sand* (180), *wind* (168), *rain* (128), *fog* (102), *forest* (99), *ice* (83), *to freeze* (58), and *shade* (48).

❖ Time: *new* (199), *old* (100), *morning* (60), *summer* (32), *winter* (30), *spring* (27) and *autumn* (26) & *afternoon* (22).

[2] The representations provided remain accurate up to December 2019.

❖ Agriculture and vegetation: *tree* (211), *to dig* (117), *branch* (56), *to plant* (27), *pine* (22), *palm tree* (16), *spike* (4) & *oleander* (0),

❖ Animals: *bird* (217), *fish* (216), *cat* (70), *bee* (65), *pigeon*/*dove* (36)[3] & *female-goat* (3)[4].

❖ Body: *to vomit* (112), *elbow* (56), *beard* (54), *chin* (53), *sick* (50), *to* bury (32), *heel* (26), *grave* (21), *eyelash* (19) & *span* (0)

❖ Clothing and Grooming: *belt* (25) & *mirror* (21)

❖ Food and Drink: *salt* (157), to *sieve* (7) & *yeast* (4)

❖ Sense Perception: *heavy* (148), *light* (56) & *clean* (36)

❖ Spatial relations: *far* (148) & *near* (137)

❖ Speech and language: *to repeat* (3)

❖ Motion: *to arrive* (31), *to follow* (23) & *to send* (21)

❖ Warfare and hunting: *to defeat* (9)

❖ Basic action and technology: *to squeeze* (90)

❖ Possession: *to beg* (7)

❖ House: *to reside* (17)

❖ Cognition: *who?* (178)

3.2. Extralinguistic variables

The study of contact induced lexical loss in Tashawit, our response variable, will be carried out with reference to two main explanatory social variables, space, operationalized in terms of regions, and time, operationalized in terms of the age of the participants.

[3] The word 'pigeon' does not figure in the lexicostatistic lists of *concepticon*. The word that is used is dove (36).
[4] The number of representations of 'goat', as a class, is 60.

3.2.1. Space

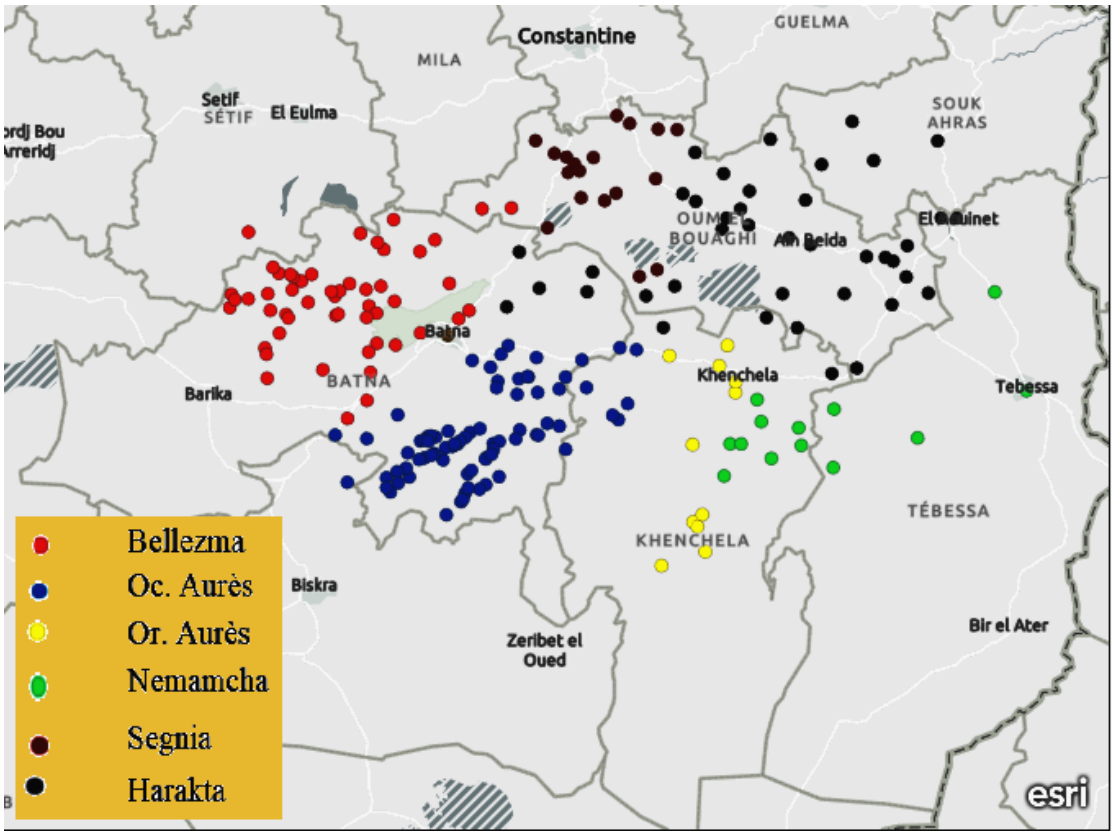
It is one of the main goals of the present research to identify the relationship between region and lexical loss in Tashawit. We seek to find out if there exist any significant differences, in terms of lexical loss, across the different regions, i.e. whether the Berber variants are preserved better in some regions than others. In order to make such a regional comparison, the geographical scope covered in the present thesis is divided into a number of regions (see Map 3.1 below)[5]:

1. **Bellezma**: in the northwestern part. Major localities: Ain Azel, Ain Djasser, Ain Touta, Bir Chouhada, Bouhilf, Boumaguer, Chouaab, El Hassi, Fesdis, Gosbat, Guigba, Hidoussa, Ksar Bellezma, Lemsane, Merouana, Ngaous, Oued Chaaba, Oued El Ma, Ouled Aouf, Ouled Sellam, Ouled Si Slimane, Rahbat, Ras el Aioun, Sefiane, Seriana, Souk Naamane, Talkhamt, Taref, Taxlent & Zana el Beida.
2. Batna City
3. **Occidental Aurès** (the Aurès Massif): in the southwestern part. Major localities: Ain Zaatout, Arris, Ben Foudhala el Hakania, Bouhmama, Bouzina, Chelia, Chir, Doufana (Ouled Fadel), Fais (Taouzient), Foum Toub, Ghassira, Ichmoul, Inoughissen, Maafa, Menaa, Msara, Oued Taga, Ouyoun el Assafir, Tkout, Tazoult, Teniet el Abed, Tighanimine, Tigherghar, Timgad & Yabous.
4. **Oriental Aurès**: in the southeastern part between the Massif and the region of Nemamcha. Major localities: Baghai, Chechar, Djellal, El Hamma, Ensigha, Kais, Khenchela city & Tamza.

[5] Our division is an adaptation of Carette's and Warnier's (1846), whose main criterion for division is tribal distribution. [5] Please visit: https://www.loc.gov/resource/g8241e.ct003442/?r=0.641,0.233,0.33,0.135,0

5. **The region of Nemamcha**: in the southeastern part. Major localities: Babar, Bedjene, Cheria, El Ogla, Morsott, Tazougaght (El Mahmal), Tebessa & Zoui (Ouled Rechache)
6. **The region of Harakta**: in the northeastern region. Major localities: Ain Babouche, Ain Beida, Ain Diss, Ain Touila, Ain Yagout, Ain Zitoun, Behir Chergui, Berriche, Bir Bouhouche, Boulhilet, Boumia, Chemora, Dhalaa, El Belala, El Djazia, El Madher, El Aouinet, Fkirina, Ksar Sbahi, Mdaourouch, Meskiana, Mesloula, Mtoussa, Oued Keberit, Oued Nini, Oum el Adhaim, Oum el Bouaghi, Rahia, Remila,
7. **The region of Segnia**: in the northeastern part between Bellezma and the regionof Harakta. Major localities: Ain Fakroun, Ain Kercha, Ain Mlila, El Amiria, El Fedjoudj Boughrara Saoudi, El Harmilia, Hanchir Toumghani, Ouled Gacem, Ouled Hamla, Ouled Zouai & Sigus.

Map 3.1 Regions and Research Localities



The balk of the data produced for the present work (98.35%) was elicited from Tashawit speakers who reside in one of three provinces, Batna, Khenchela or Oum el Bouaghi. Only a tiny fraction of the data was produced elsewhere, that is Tébessa, Souk-Ahras, Sétif and Biskra.

3.2.2. Time

The second main explanatory social variable chosen for analysis in the present study is time or, more accurately, 'apparent time'. Apparent time is a construct used by sociolinguists as a parallel to 'real time' to study language change in progress. The fundamental assumption of the apparent time construct, often termed as apparent time hypothesis, is that "differences among generations of similar adults mirror actual diachronic developments in a language: the speech of each generation is assumed to reflect the language more or less as it existed at the time when that generation learned the language" (Bailey et al. 1991: 242). The apparent time hypothesis states, for example, that "the speech of, say, 40-year-olds today directly reflects the speech of 20-year-olds twenty years ago and can thus be compared and contrasted meaningfully to the speech of 20-year-olds today" (Chambers and Trudgill, 1998: 151).

With regard to the present study, the apparent time construct is used to investigate the differences, if any, across the different generations in terms of lexical loss. The concern, in other words, is to find out whether older members of Tashawit speech community have preserved Berber variants better than younger members. In order to carry out such a cross-generational comparison, the participants who took part in the present study were split into six age groups: under-20, 21-30, 31-40, 41-50, 51-60 and older-than-60.

3.3. Participants

The data used in the present study were elicited from 1816 Tashawit speakers, who were recruited either directly, by the researcher or other fieldworkers, or via other participants, that is through the friend-of-a-friend sampling technique. The ages of the participants ranged from 17 to 98 years old, with a mean of 35.23 (the number of missing cases is 25). With regard to gender, the data yielded showed that males accounted only for 35.57% of the participants (646), compared to females who accounted for 63% (1144) (the number of missing cases is 26). The fieldwork was carried out over a period of more than two years between 2016 and 2018. It is worth to note that the participants in the present study are not necessarily NORM speakers, i.e. No mobile Rural Males (see Chambers and Trudgill, 1998: 29-30), but rather have diverse social profiles. We have both mobile and no mobile, rural and urban and, as mentioned above, male and female speakers.

3.4. Method and Procedures

The data used in the present study were obtained by the means of a sociolinguistic questionnaire. This was regarded as the most appropriate and practical elicitation tool for a number of reasons. The first reason is concerned with the geographical scope of the study. As displayed above, the present study involved informants from a large number of research localities distributed across the larger part of Tashawit speaking area. As a result, it was very difficult to use other data collection tools, like the sociolinguistic interview, to elicit the amount of data needed to fulfill the objectives of the present study.

The second reason has to do with the validity of the data collection tool to be used. Sociolinguistic interviews are unstructured or semi-structured at best and often elicit data that can be of limited use if the lexical variables to be addressed are well specified.

The use of a sociolinguistic interview does not guarantee the occurrence of a minimal number, let alone all, of the lexical variables included in the wordlist.

The best way to overcome the aforementioned limitations of the sociolinguistic interview is the use of corpus analysis. However, this method is not possible at present for one simple reason; there exists currently no corpus in Tashawit that can be used in order to assess the currency of the different Berber variants targeted in the present study. The best alternative to corpus analysis in our context is the use of the sociolinguistic questionnaire. This tool allows us to elicit data about all the notions in the wordlist. It can also be administered to a large number of informants from all regions and social groups. Although the occurrence of a given form in the response of an informant is not a guarantee that s/he uses it regularly as it could be a part of his receptive lexicon, its recurrence in the responses of many informants, who are from the same age group, locality or region, can be a good indicator of its presence in the daily use of such an age group, locality or region.

Sociolinguistic questionnaires use a variety of techniques to elicit responses from participants in a study, such as translation (e.g. Macafee, 1994), direct questioning (e.g. Chambers, 1990, 1998; Boberg, 2005), indirect questioning (e.g. Agutter and Cowan, 1981; Jones, 2001), word recognition (Macaulay, 1977), etc. (see Millar, Barras & Bonnici, 2014, p. 47). The elicitation technique used in the questionnaire of the present study is translation. Participants were asked to provide the equivalent(s) they use in their Tashawit variety to refer to each of the notions listed in the wordlist. The other techniques, which are suitable for investigating lexical variation, are not valid in measuring lexical obsolescence. An important indicator of lexical loss is the retrieving difficulty, particularly in language contact situations. Word recognition techniques and the techniques which ask the participants to choose a word from a set of options risk to

conceal such a retrieving difficulty. Techniques that present participants with definitions or descriptions and then ask them to produce the corresponding words that denote them, as in Jones (2001), are also inappropriate. Such techniques, we believe, do not guarantee that the subjects will produce the exact words needed rather than others that denote close notions.

The questionnaire is composed of two sections. The first section contains seven items concerned with the biographical information of the participants: gender, age, tribe, place of birth, residence and the places where they lived along with the age interval for each place. Focus is laid on the two social variables highlighted earlier, age and residence (region). The second section of the questionnaire is concerned with the lexical variables selected for analysis. It contains sixty-one lexical items that cover the sixteen semantic domains listed above. The questionnaire was written in Modern Standard Arabic. The verbs were presented in the imperfective aspect so as not to be confused with their corresponding nouns (items 9, 21, 22, 33, 38, 46 & 53-60). In addition, when necessary, a noun phrase was inserted between parentheses, after the verb, to clarify the meaning targeted by the item (items 9, 22, 38, 53, 55-58 & 61) (see Appendix I).

3.5. Piloting and Administration

Prior to the administration of the final version of the questionnaire, pre-final versions were piloted a number of times. The first and second versions of the questionnaire were respectively perfect duplicates of Swadesh-100 and Leipzig-Jakarta lists. After an examination of the responses obtained from these first two administrations, we realized that a lot, if not most, of the notions in the two wordlists mentioned above are perfectly preserved in Tashawit. Conversely, other words were shown to be obsolete. A new wordlist was compiled subsequent to the piloting of the

two first versions where the criteria explained earlier were taken into account. Once the notions to be incorporated in the wordlist were decided, a final piloting was carried out in order to check the clarity of instructions, remove ambiguities in wording, detect items that are misunderstood and check if the length of the questionnaire is appropriate.

The administration of the questionnaire was carried out in a number of ways. A good number of the copies of the questionnaire were distributed by the researcher himself. Moreover, a number of informants were reached through internet, namely via Google docs application. The subjects were sent an electronic copy of the questionnaire which they filled and sent back. The majority of questionnaire copies were administered thanks to the assistance of a number of people that we call fieldworkers, in the tradition of Gilliéron (1912), or intermediaries as Chambers chooses to call them. Our intermediaries were provided with a clear set of instructions on the sort of people that are eligible for taking part in the completion of the questionnaire. As mentioned earlier, a considerable number of the participants were recruited through snowball sampling technique. The subjects who completed the questionnaire were told to distribute it to other speakers that they know, such as relatives, friends and the like.

3.6. Data reduction and Coding

The coding of the data obtained for the present study was carried out in two stages. In the first stage, the responses produced in reaction to each item in the wordlist were assigned code numbers. For instance, the data obtained for the item 'bird' yielded the following responses: the Berber variant *acṭiṭ*, the Arabic loans *afṛux*, *aṭeyyaṛ* and *aɛeṣfuṛ*, and a number of irrelevant responses, such as those denoting other bird species. Before coding these answers, each response was given a specific label, *acṭiṭ* was labelled as Berber, *afṛux* as 'loan-1', *aṭeyyaṛ* as 'loan-2', *aɛeṣfuṛ* as 'loan-3', and the remaining irrelevant responses as 'others'. The labels were then assigned code numbers

as follows: Berber = 1, ‘loan-1’ = 2, ‘loan-2’ = 3, ‘loan-3’ = 4, and ‘others’ = 5. This made it possible for the importation of the responses into the software used in the analysis (SPSS). The numbers assigned to the different labels, it should be noted, are arbitrary and do not have a true value because the data is nominal. The first stage of data coding made it possible to obtain the descriptive statistics of each lexical variant, such as the percentage, the regions it is used in, the categories of participants who use it, and so on.

In the second stage of coding, the data was assigned one of two possible code numbers, 0 or 1. The data was considered from a different perspective. Any response that is produced is judged as being an instance of lexical maintenance or lexical loss. Accordingly, any relevant Berber response was considered as an instance of lexical maintenance, whereas all other responses, such as loanwords - nonce or established, Arabic or other - Berber responses that denote other notions, other irrelevant responses and non-responses, were considered as instances of lexical loss. The choice of which number, 0 or 1, to assign to each instance depends on which of them is to be considered as our outcome variable. If the outcome variable is lexical maintenance, any instance of lexical maintenance will be assigned the code number 1 whereas every instance of lexical loss will be assigned a code number of 0. As the title of the present thesis clearly indicates, the variable of interest in the present work is lexical loss and, accordingly, any instance of lexical maintenance will be assigned a number of 0, indicating an absence of lexical loss, whereas any instance of loss will be coded as 1, indicating that lexical loss exists. In cases where a respondent exhibited both lexical maintenance and loss, for instance producing a relevant Berber variant and a loan variant, the responses will be assigned a code number of 0. When dealing with individual speakers, we consider lexical maintenance and lexical loss to be mutually exclusive and, thus, it

would be safe to infer maintenance instead of attrition in such cases. Nonetheless, in order not to be superficial equating a speaker who only produced a Berber variant with another who produced both a Berber and a non-Berber response, such cases will be given more attention in the discussion of the results in chapter five.

The rate of lexical loss, for any notion, can be calculated using the formula (1) bellow:

$$L = NR + B + I \quad (1)$$

Where:

L: the rate of lexical loss

NR: the rate of non-responses, i.e. the rate of avoidance,

B: the rate of borrowings (established and nonce)

I: the rate of irrelevant responses

It can also be calculated by subtracting the rate of valid Berber responses (VBR) from the total, hence the formula (2) below.

$$L = 1 - VBR \quad (2)$$

The overall value of lexical loss, i.e. lexical attrition, for a given participant can be calculated by adding up the scores s/he gets for each of the sixty-one notions in the wordlist.

$$LA = \sum L_1 + L_2 + L_3 + ...+ L_{61} \quad (3)$$

The formula (3) above can be used to calculate the overall value of lexical attrition for an age group or a region.

3.7. Statistical Analysis

The response variable for each notion in the present study, as can be clearly noticed from data coding, is a binary, or Bernoulli, variable. It is referred to as such because it assumes two possible states of lexical loss for each individual speaker; it is either absent, hence assigned a value of 'zero', or present and therefore assigned a value of 'one'. It is not possible to account for a relationship between this sort of variable and any predictor variable using a linear regression model because the outcome variable can only take two values, 0 or 1. The model that is used by statisticians to account for non-linear relationships is called the Logistic regression model. Known equally as the logistic or logit model, this is used to model the probability of mutually exclusive events, e.g. alive vs. dead, win vs. loss, pass vs. fail, and the like (For a detailed account of the logit model, please check Hosmer and Lemeshow, 2000).

In our case, the binary logit model will be used to test the significance of the relationship between lexical loss, on the one hand, and region and age on the other for each lexical variable. It will also be used to calculate the relative odds of lexical loss between the different regions and age groups, and statistically test the significance of the differences recorded between such regions and groups.

Lexical attrition, as operationalized above, is not a categorical variable as lexical loss, but rather a discrete variable, for individual speakers, and a continuous variable for age groups and regions. Accordingly, the significance of the relationship between lexical attrition, on the one hand, and region and age on the other will be tested by using the linear regression model (Montgomery et al., 2012).

Conclusion

The methodology adopted in the present work is assumed to be appropriate for the investigation of the research problem addressed in the present study. The choice of the

data collection tool has taken into account both previous research and the practicality of the tool to be used. The lexical variables chosen for analysis are considered suitable taking into account the criteria set for their selection. The length of the wordlist used is acceptable considering the scope of this study and the total number of speakers who took part in the fieldwork. The statistical model adopted for data analysis is chosen based on the nature of the response variable and, accordingly, the nature of the relationship investigated in the present research.

Chapter Four: Results

Chapter Four: Results

Introduction

The main object of this chapter is to analyze the data obtained in the fieldwork of the present study. The proportions of the main variants produced for each lexical variable will be calculated, and the geographic distribution of each variant will be determined. More importantly, the overall rate of lexical loss for the Berber variant(s) of each notion will also be calculated in order to assess its/their currency in Tashawit as a whole. The regions where the Berber variants are still preserved, and accordingly those where they are lost, will be respectively identified. The analysis will also be carried out for each notion in order to calculate, and compare, the rates of lexical loss recorded across the different age groups. The chapter will conclude with a summary of the findings.

4.1. Data Analysis

The findings of the present study are arranged according to the semantic domains to which the notions in the wordlist belong. It is worth noting, however, that it is not among the objectives of this study to investigate variation in the rates of lexical loss across the domains involved. The criteria established for the selection of the notions in the wordlist used in the present work (see section 3.1 above) make it somewhat inadequate to tackle such a relationship because the semantic domains covered are not equally represented. This is not to underestimate the importance of such a relationship, but the focus of the present work is laid only on the relationships between lexical loss and the variables of region and age.

4.1.1 The Physical World

4.1.1.1. Fire

The most common Berber equivalents for 'fire' are traced to two main roots, **FW** and **MS** (Kossmann, 2018). Words traced to the former are still preserved in a number of Berber varieties[1]. In Tashawit literature, no derivative of this root is used as a general term for 'fire'. It is important to note, nonetheless, that Tashawit preserves the word *feffu* / *fuffu*, which is used to refer to 'fire' in child-directed speech (CDS), often as a word of warning (Ounissi, 2003; Tibermacine, 2009; Saad, 2013). A similar form is also attested in some other Berber varieties, namely in Tumzabt, *fufu* / *fuffu* (Delheure, 1984), and Siwa, *fuffu* (Zerrad, 2002) (for more details on Berber CDS, see Bynon, 1968). The data elicited from the participants in response to the present item confirm textual evidence. Only one response in the data can be traced to the first Berber root above, namely *fufect*. Produced only by one subject from the locality of Arris in the Aurès Massif, this word, according to some fluent speakers who were consulted later, denotes 'small fire' or 'spark'. It is possible, based on its form that the word *fufect* has resulted from a semantic change or broadening of the word *fuffu*.

Of the derivatives of the second root that are used in the different Berber varieties[2], *timess* is the one reported in Tashawit texts (Huyghe, 1906, 1907; Basset, 1961;

[1] **Cognates**: *afa*, *afawa* (Taifi, 1991), *afa* (Laoust, 1920), *tifawt* (Mouliéras, 1895; Delheure, 1984), *tfawt* (Motylinski, 1898), *ufa* (Lanfry, 1973) and *afiu* (Putten, 2013).

[2] **Cognates**: *timsi* (Masqueray, 1893; Provotelle, 1911; Delheure, 1984, 1987; Brugnatelli, 2011, also in the Berber varieties of Beni Menacer (Basset, 1885), *témsé* (Foucauld, 1951), *timessi* (Destaing, 1914; Renisio, 1932; Dallet, 1982; Taifi, 1991; Amaniss, 2009; Serhoual, 2002), *himesi* (Laoust, 1912), *timess*, *times* (Dallet, 1982), *temsi* (Basset, 1890; Motylinski, 1898); *tămse* and *temse* (Heath, 2006), *temci* (Basset, 1890). We encounter another word for 'fire' in Zenaga which is not attested with such a meaning in other Berber varieties, that is *azzun* (pl. *azzuzun*, *uzzanen*) (Basset, 1909), *azuzun* (Faidherbe, 1877; Masqueray, 1879), or *oʔẓuẓen / uʔẓuẓen* (Taine-Cheikh, 2008, cited in Kossmann, 2018). This word is traced to the root **ZN** or **Ẓ**N, which generates the verbs *zuzan* 'to warm oneself at fire' (Faidherbe, 1877) and *ẓẓiẓen* 'to warm oneself at fire or in the sun' (Dallet, 1982) (cf. *ezz* 'to warm oneself by standing in front of the fire and keeping a distance from it' (Foucauld, 1951). Traced to the same root are the words

Ounissi, 2003; Tibermacine, 2009; Saad, 2013). This word is assigned specific denotations in some of these texts, namely 'conflagration' (Huyghe, 1906) or 'great fire' (Basset, 1961). Realized in the data as *timess*, but also as *timessi* and *timesset*, the frequency of this Berber variant is completely negligible (0.66%)[3]. However, there seems to be some variation, if insignificant, regarding the currency of this variant across the different regions. Half of the subjects who produced it, six to be exact, are from the Massif, namely from the localities of Chennaoura, Tkout, Arris, Teniet el Abed, Menaa and Ouarka. Three other subjects reside in Batna city, but two of them are originally from the Massif, namely from the localities of Tagoust and Tkout. The remaining three occurrences of the variant were recorded in the localities of Ain Touta, south of Bellezma, Ain Touila, south of the region of Harakta, and in the city of Oum el Bouaghi. Besides being extremely infrequent, the variant *timess* was produced along with an Arabic loan by eight of the twelve respondents who produced it (cf. Lounissi, 2011; Boudjellal, 2015).

The overwhelming majority of informants who responded to the present item have produced the words *lɛafit*, *lɛafift* and, occasionally, *lɛafekt* or *lɛaft* (97.91%). The word *lɛafit*, and its related forms, is a copying of the word *lɛafya* which is attested in some of the Arabic vernaculars of North Africa and which denotes the same thing, in particular Algeria (Ben Sedira, 1910) and Morocco (Harrell, 1966). Kossmann (2013) regards it as an instance of therapeutic borrowing which was imported in order to avoid the negative connotation associated with the Berber word for 'fire', *timess*, which also

taẓuẓimt (pl. *tiẓuẓam*) 'ember, fragment of coal' (Foucauld, 1951) and *taẓuẓent* (pl. *tiẓuẓan*) 'hot coal, ember' (Heath, 2006).

[3] I should remind the reader that the percentages provided in the analysis, except for those indicating response rates, are calculated based on the number of tokens of, say a variant, rather than the number of respondents who produced it.

denotes ‘hell fire’. The ultimate source of the word *lɛafit*, accordingly, is the Arabic word *ɛafiya*. In classical Arabic, this signifies health, soundness, safety, security, freedom from evil, etc. (Lane, 1968). In Tashawit, the loanword *lɛafit* does not seem to be a recent borrowing; it is attested even in the earliest texts (Sierakowsky, 1871; Mercier, 1896; Huyghe, 1906, 1907; Basset, 1961)[4].

The analysis of the data points to a regional variation in the use of the third variant. The word *lɛafift* is used over a larger speaking area (51.13%), covering most of the regions of Bellezma, Segnia, Oriental Aurès, Nemamcha and, to a lesser degree, the region of Harakta. It is also the variant used in some of the northeastern localities of the Massif. The variant *lɛafit* (46.78%), on the other hand, is used prominently in the Massif and a number of localities in the eastern part of the regions of Harakta and Nemamcha, in Batna city as well as few other localities in other regions.

The remaining responses that were recorded in the data are more or less irrelevant. The most frequent of these is the word *tafessut*. Realized most as *afessut*, this response was produced mainly in the region of Harakta: Ain Beida (3), Meskiana (3), El Rahia (2), Dhalaa (1), El Djazia (1), Fkirina (1) and Oum el Adhaim (1). Two other occurrences of this response were recorded in the region of Segnia, namely in Ain Fakroun and Sigus. The original meaning of this word remains unclear. Its occurrence in such adjacent localities mentioned above, in particular the eastern part of the region of Harakta, suggests that it is in no way arbitrary. It could be a descriptive term for ‘fire’ or a particular fire-related phenomenon as is the case with some other terms that were also produced by the subjects, like *samur* ‘red embers’ (Huyghe, 1907) ‘huge fire’ or ‘the flames of a huge fire’ (Ounissi, 2003; Saad, 2013), and *amezhar* ‘huge fire’. Some

[4] The Arabic loan is attested in many Berber varieties (Cid Kaoui, 1907; Provotelle, 1911; Destaing, 1938; Laoust, 1920; Taifi, 1991; Serhoual, 2002; Mourigh, 2016, etc.).

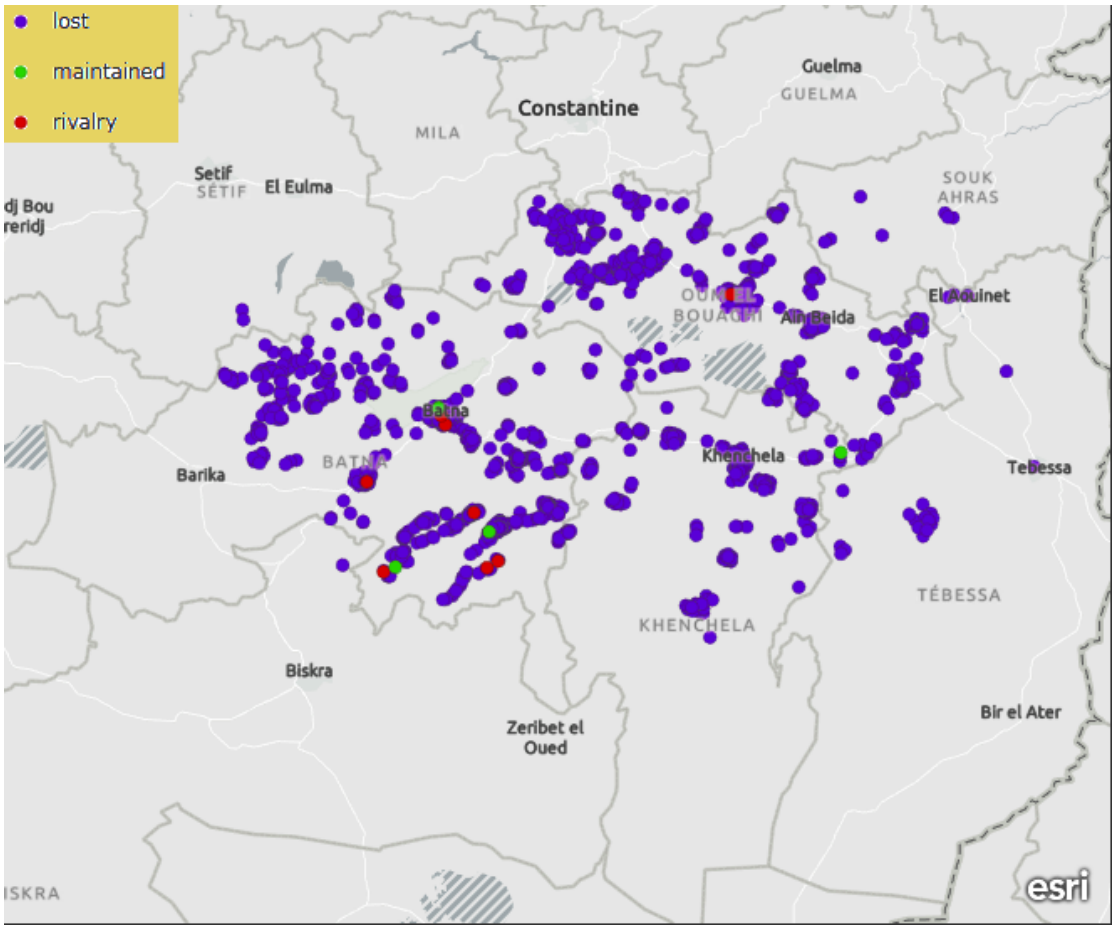
other participants have produced other words which are close, if distinct, in meaning, for example *tirrjin* ‘embers’, *burej* ‘flame’ (Huyghe, 1906, 1907), and the like. The findings obtained for the present lexical variable are summed in Table 4.1 below.

Table 4.1 ‘fire’: frequencies of lexical variants

lexical variants	**number of tokens**
fufect	1
timess …	12
lɛafit / lɛafift …	1781
afessut	14
others	11
NR	12
total	1841

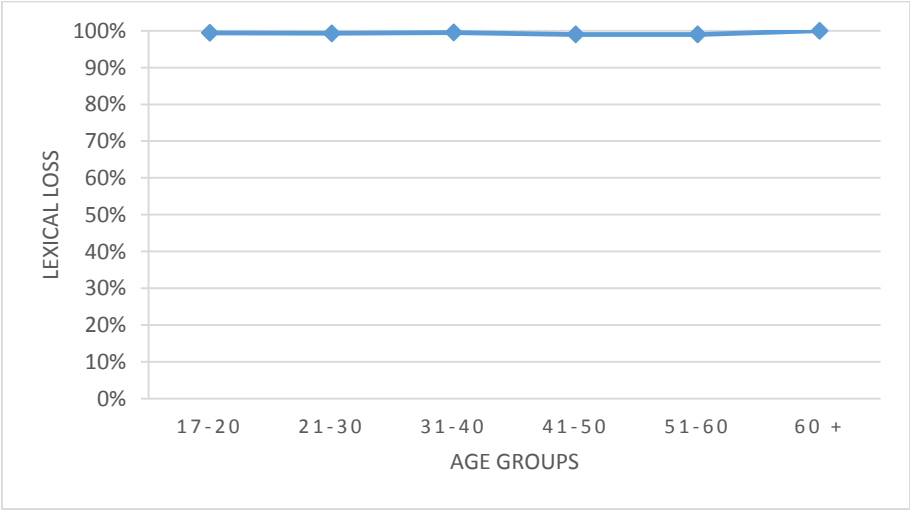
The proportion of the first Berber variant in comparison with all other responses, including other Berber responses, Arabic loans, irrelevant responses and non-responses, is utterly insignificant (0.05%). Backed by the fact that this variant is not attested in Tashawit texts, this can be considered a compelling evidence of its obsolescence in this Berber variety. The frequency of the second Berber variant, *timess*, though slightly higher, is also completely insignificant (0.66%). Overall, the rate of lexical loss calculated for the present notion is among the highest obtained in the data: L (fire) = 99.3% ($\chi^2 = 1779.37$, $p < 0.001$).

Map 4.1 Lexical loss of the Berber word(s) for 'fire' across Tashawit speaking area



The statistical analysis has also shown no significant differences across the different age groups in terms of the rates of lexical loss of the Berber variants (χ^2 = 3.069, p = 0.689) (see Fig. 4.1 below).

Fig. 4.1 Lexical loss of the Berber word(s) for 'fire' across age groups



4.1.1.2. Cloud

The data obtained in response to the second lexical variable showed a different tendency compared to the previous item. Some Berber variants for 'cloud' are still used. In Tashawit, such variants are all traced to the root **GNW**[5]. The derivatives of this root in Tashawit can be grouped under two headwords. The first headword is *tajnut* / *tajnawt* (Basset, 1961, p. 175; Ounissi, 2003, p. 118; Saad, 2013, p. 73). Realized most often in the plural form *tijnaw*, this variant was produced by a tiny fraction of informants (4.62%). It is used mainly in the region of Nemamcha (26.25%). It was also recorded, though less frequently, in Occidental Aurès (6.97%), in Oued Abdi in particular, and Oriental Aurès (7.55%). The second headword covers variants formed by the addition of a voiceless alveolar sibilant [**s**] to the previous root. The resulting forms include *asegna*, *asegnu*, *aseggen*, *aseyna*, *aseynu*, etc. These are much more frequent compared to the previous variant (32.69%). They are most common in the Massif (66.74%). They are also used, though less frequently, in Bellezma (24.31%), in particular the central localities, Oriental Aurès (31.13%), Nemamcha (17.5%), Harakta (9.14%) and Segnia (3.94%). Other Berber variants that are attested in other Berber varieties are missing both in the literature and the data obtained in the present study[6].

[5] **Cognates:** *ağenna* 'cloud' (Foucauld, 1951), *tajnutct* 'thick rain cloud' (Serhoual, 2002), *tiğnaw* (Lanfry, 1973), *tijnut* (Boudot-Lamotte, 1964), *tajniwt*, *tağniwt* (Delheure, 1984), *asegnu* in TCM (Cid Kaoui, 1907; Mourigh, 2016; Lafkioui, 2007) *isignw* (Taifi, 1991), *tasegnut* (Jordan, 1934), *aseynu*, *asiynu* (Serhoual, 2002; Lafkioui, 2007), *asinu* (Basset, 1897; Lafkioui, 2007), *asigna* (Laoust, 1912; Dallet, 1982). We also encounter *asinna* in Beni Menacer (Basset, 1885), *asiynu* in Beni Iznacen (Destaing, 1914), etc.

[6] These include *amruk* (Faidherbe, 1877), *iblem* (Motylinski, 1898), *amedlu* in Tachelhiyt (Cid Kaoui, 1907; Chafik, 1990), *adeccur* 'white cloud' (Jordan, 1938), *t.ejarak*/*egarak* 'cloud' (Heath, 2006), *egarak* 'large cloud' (Ritter, 2009), *téğerek* 'rain cloud' (Ritter, 2009, p. 816), *téğerek* (Sudlow, 2011) in particular 'rain cloud' (Foucauld, 1951), *édelêgé* 'cirrcumulous cloud', *tibyi* and *taheğârat* 'large dark low cloud' (Foucauld, 1951) and *aẓyar* (Masqueray, 1983; Prasse et al., 2003), in particular a 'small isolated cloud' (Foucauld, 1951), *tamăyort* 'large rain cloud' (Prasse et al, 2003), *e-haγsar* 'large storm cloud' (Heath, 2006), etc.

Although the Berber variant seems to be preserved considerably, accounting in total for 37.31% of all lexical tokens produced in response to the present item, it remains much less frequent compared to Arabic borrowings. Three Arabic loans were recorded in the data, *ssḥab*, *lγim* and *leγamam*. The frequencies of these variants differ considerably. The first loan, *ssḥab*, sometimes realized as *tasḥabt*, is the most frequent (48.84%). It prevails over the northern regions: Segnia (82.89%), Harakta (72.29%) and the larger part of Bellezma (62.39%). It is also the most frequent variant in a number of localities in the regions of Occidental Aurès (17.08%), Oriental Aurès (37.74%) and Nemamcha (38.75%). The second loan, *lγim*, occasionally realized as *taγyamt*, is much less frequent than the former (8.11%). It was recorded in small varying frequencies across the different regions: Nemamcha (15%), Oriental Aurès (14.15%), and Harakta (13.43%), Bellezma (10.55%), Segnia (5.7%) and the Massif (1.57%). The least frequent of the three Arabic loans is *leγmam* (3.18%). There are two main regions in which this third borrowing is used, the Aurès Massif (5.17%), in particular Oued Abdi and Oued Labiod, and the region of Segnia (7.46%). It is missing in other regions barring a limited number of locations in Oriental Aurès and in Batna city (cf. Basset, 1890).

A number of other responses were recorded in the data. Of these responses, the closest in meaning to the present item are *ajenna* and *tagut* / *tayut*. The former, which designates 'sky', is only used figuratively to denote 'cloud' in Tashawit. For example, the word *ijenwan* (sing. *ajenna*) in the sentence "*γir ad-εeaddan* ***ijenwan*** *f-tmura n-sen, ḥedd ma issen mani h-a-dd-^{e}lfen i-waman*" can only be rendered as 'clouds' instead of skies! Hence, the whole sentence can be translated as "When clouds pass over their land, no one knows where they will pour down water" (see Basset, 1961, p. 307). The words *tagut* / *tayut* are used to designate 'fog', and never 'cloud', in Tashawit. It is

worth to note, however, that these words are attested with such a meaning in some other Berber varieties, e.g. Beni-Snous and Beni-Salah (see Destaing, 1914, p. 249). All of the remaining responses are considered completely irrelevant, e.g. *taguft* ‘artemisia’, which seems to be confused with the previous, *lemṭer* ‘rain’, *aɣebbaṛ* ‘wind’, *tafukt* ‘sun’, *azeɛqiṛ* ‘frost’, *tajmut* ‘garden’, etc. Table 4.2 below provides a summary of the data obtained in response to the present lexical item.

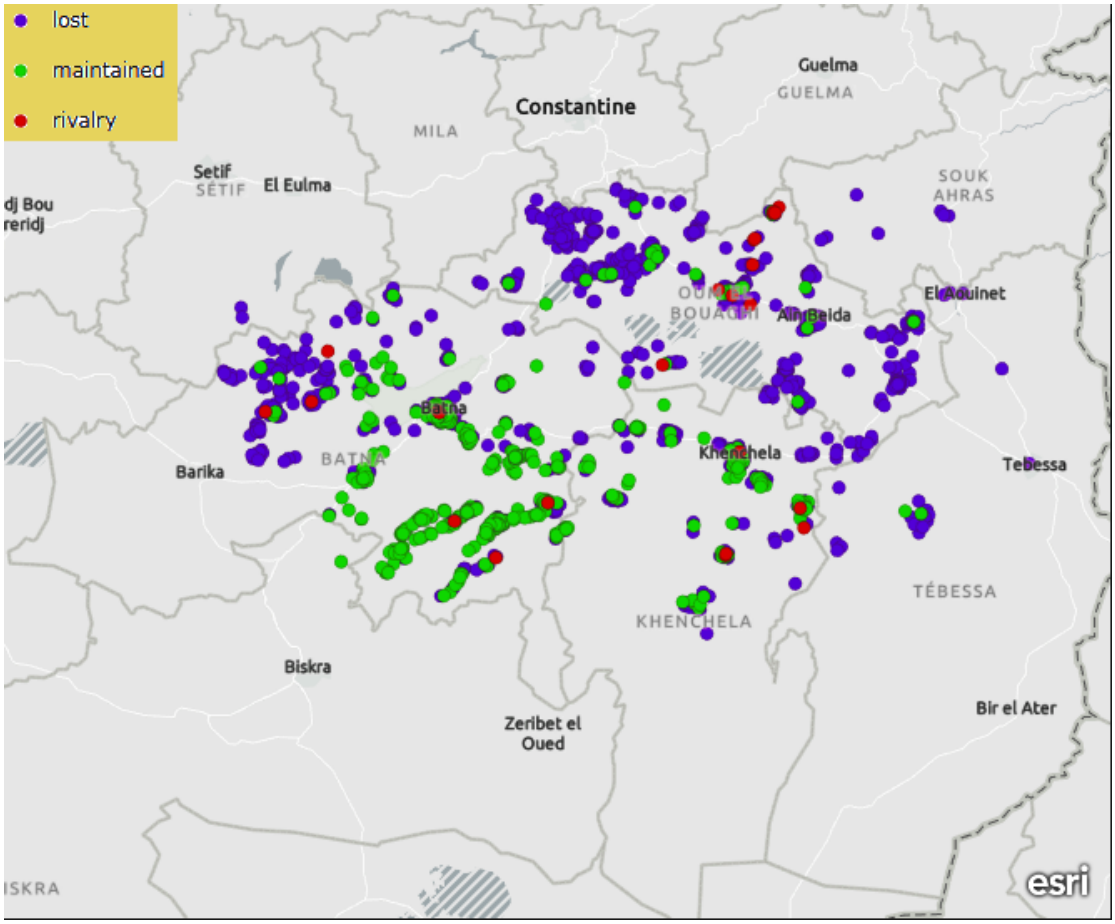
Table 4.2 ‘cloud’: frequencies of lexical variants

lexical variants	**number of tokens**
tijnaw …	74
asegna / aseyna …	524
ssḥab …	783
lɣim …	130
leɣmam …	51
others	41
NR	259
total	1862

The Berber variants for the present item are maintained considerably, but lexical loss is the dominant trend: L (cloud) = 67.88% (χ^2 = 130.1, p < 0.001). It is important to note, however, that the rates of lexical loss differ from one region to another (χ^2 = 215.18, p < 0.001). The lowest rate of lexical loss was recorded in the Massif (L = 30.26%). The odds of lexical loss in the Massif are 3.62 times lower than the region of Nemamcha (L = 61.11%) (χ^2 = 29.1, p < 0.001), 6.49 times lower than Oriental Aurès (L = 73.79%) (χ^2 = 76.33, p < 0.001) and 8.71 times lower than Bellezma (L = 79.07%) (χ^2 = 139.44, p < 0.001). Greater differences were obtained between the Massif and the northeastern regions, with relative odds of 1 to 21.35 compared to the region of Harakta (χ^2 = 238.28, p < 0.001) and 1 to 64.54 compared to the region of Segnia (χ^2 = 138.65, p < 0.001).

The analysis has revealed important differences between other regions. The odd of lexical loss in the region of Nemamcha are 1.79 times lower than Oriental Aurès (χ^2 = 4.13, p = 0.042), 2.4 times lower than Bellezma (χ^2 = 10.96, p = 0.001), 5.89 times lower than the region of Harakta (χ^2 = 41.46, p = 0.001) and 17.82 times lower than the region of Segnia (χ^2 = 51.26, p < 0.001). The analysis has also revealed that lexical loss in Oriental Aurès is only 1.34 times less likely than Bellezma (χ^2 = 1.46, p = 0.23), but 3.29 times less likely compared to the region of Harakta (χ^2 = 21.88, p < 0.001) and 9.94 times less likely compared to the region of Segnia (χ^2 = 35, p < 0.001).

Map 4.2 Lexical loss of the Berber word(s) for 'cloud' across Tashawit speaking area

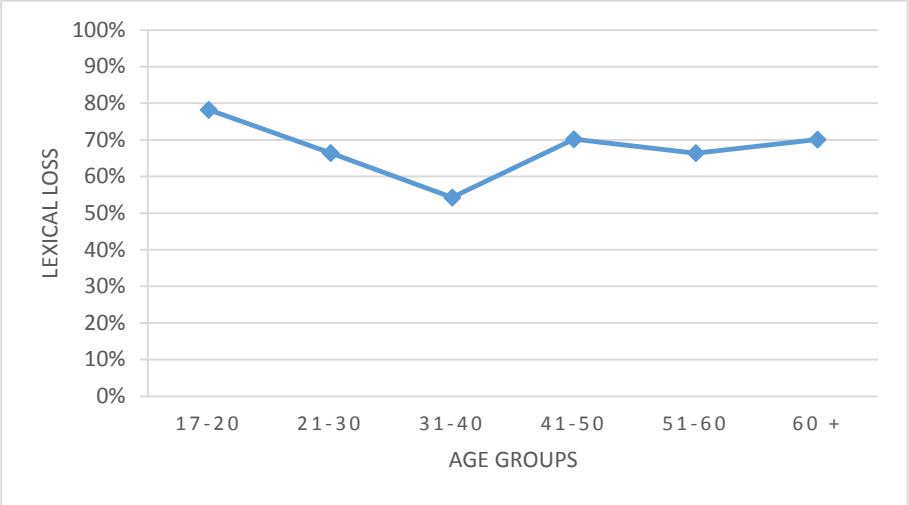


Lexical loss is less dominant in the northwestern territories than it is in the northeastern ones. The odd of lexical loss in Bellezma are 2.45 times lower than the region of Harakta (χ^2 = 15.3, p < 0.001) and 7.41 times lower than the region of Segnia

(χ^2 = 28.97, p < 0.001). A significant difference was also revealed between the northeastern regions; Lexical loss in the region of Harakta is 3.02 times less likely than the region of Segnia (χ^2 = 8.48, p = 0.004).

The analysis has also revealed a considerable degree of cross-generational variation in the use of the Berber words for 'cloud' (χ^2 = 34.706, p < 0.001). The rates of lexical loss decrease between the first age group ($L_{17\text{-}20}$ = 78.24%), the second age group ($L_{21\text{-}30}$ = 66.44%) and the third age group ($L_{31\text{-}40}$ = 54.28%). Speakers of the first age group are 1.78 times more likely to lose the Berber variant compared to those of the second age group (χ^2 = 13.18, p < 0.001) and 3.02 times more likely compared to those of the third age group (χ^2 = 30.25, p < 0.001). The odds of lexical loss for the second age group are 1.7 times higher than the third age group (χ^2 = 9.84, p = 0.002). The rate of lexical loss increases significantly for the fourth age group ($L_{41\text{-}50}$ = 70.18%). Speakers of this age group are 1.98 times more likely to undergo lexical loss compared to those of the third age group (χ^2 = 10.65, p = 0.001). The rate of lexical loss changes very slightly for the fifth age group ($L_{51\text{-}60}$ = 66.38%) and the sixth age group (L_{+60} = 70.09%). A speaker from the fourth age group is only 1.2 times more likely to lose the Berber variant compared to a speaker from the fifth age group (χ^2 = 0.8, p = 0.37) and 1.03 times less likely compared to a speaker from the sixth age group (χ^2 = 0.017, p = 0.9). The odds of lexical loss for the fifth age group are only 1.23 times lower than the sixth age group (χ^2 = 0.88, p = 0.35).

Fig. 4.2 Lexical loss of the Berber words for ‘cloud’ across age groups



4.1.1.3. Sand

There are a variety of terms that are used in Berber to refer to ‘sand’. Most of such terms designate specific types of sand, rather than ‘sand’ in general[7], and are attested in varieties spoken in or near desert areas (Kossmann, 2013). The most common words are traced to two Berber roots, **MLL**[8], which signifies whiteness, and **GDW**[9]. The Berber variant attested in Tashawit, *ijdi*, is traced to the second root (Joly, 1912).

The analysis of the data obtained for the present item has revealed an almost total absence of the Berber variant (0.43%). Three of the subjects who produced this variant are from the region of Bellezma, namely the localities of Ain Touta, Ngaous and Talkhemt. Two other occurrences were recorded in Batna city, both of the speakers who produced it are originally from Ghassira, another was recorded in the Massif, namely

[7] These include: *aberda* in particular ‘pure sand of dunes’ (Delheure, 1984) or ‘oasis sand’ (Zerrad, 1998), *azrar* ‘thick sand, gravel’ (Delheure, 1984), *édehi*: ‘thin sand’ (Motylinski, 1908; Foucauld, 1951), *ékeouez̧* and *taṛez̧z̧it* ‘thick sand’ (Foucauld, 1951), *tafza*: ‘mountain sand’ (Huyghe, 1903), etc.

[8] **Cognates**: *amlal* (Destaing, 1938; Jordan, 1934), *tamellilit* (Motylinski, 1904), *mlal* (Van Putten, 2013) and, in Gourara in particular, *cal amellal*, literally ‘white soil’, (Basset, 1885), etc.

[9] **Cognates**: *iğidi* (Masqueray, 1893), *igidu* (Laoust, 1920; Jordan, 1934; Amaniss, 2009), *igidw* (Taifi, 1991), *ajédi* in Tayert (Basset, 1885), *éjedi* in Ghat (Basset, 1885), *ijdi* (Delheure, 1984,1987; Dallet, 1982; Serhoual, 2002); *jidi* (Motylinski, 1898), *ijedi* (Laoust, 1912), etc. Words of related meanings, traced to this root, are attested in other Afroasiatic languages (see Blažek, 2000).

in the village of Tkout, and still another occurrence was recorded in the city of Oum el Bouaghi.

The vast majority of the participants who responded to the present item have produced the Arabic loanword *ṛṛmel* (76.25%). This is the prominent variant in all regions and most of the localities covered in the present work: Bellezma (77.09%), Occidental Aurès (76.46%), Oriental Aurès (65.42%), Nemamcha (82.13%), Harakta (81.43%) and Segnia (74.01%).

An alternative Berber word was produced by a considerable proportion of the subjects in response to the present item, that is *cal* (19.2%). In Tashawit, as in other Berber languages, this word is ordinarily used to refer to 'soil' or 'ground' rather than 'sand'. This response was recorded in most of the localities included in the study. It is frequent in a number of localities, like Batna, Arris, Ain Kercha, Ain Mlila, Khenchela, Ain Touta, Ichmoul, Ain Beida, Oum el Bouaghi, Ain Fakroun, etc. However, its ratio to that of the Arabic loan within such localities is not significant. In a number of other localities, we observe a sort of balance between the word *cal* and the Arabic loan, namely in the territory of Mader Harakta (Mader, Boumia, Chemora, Ain Yagout), in Doufana, and in Babar. The word *cal* is dominant only in the locality of Msara, southeast of the Massif.

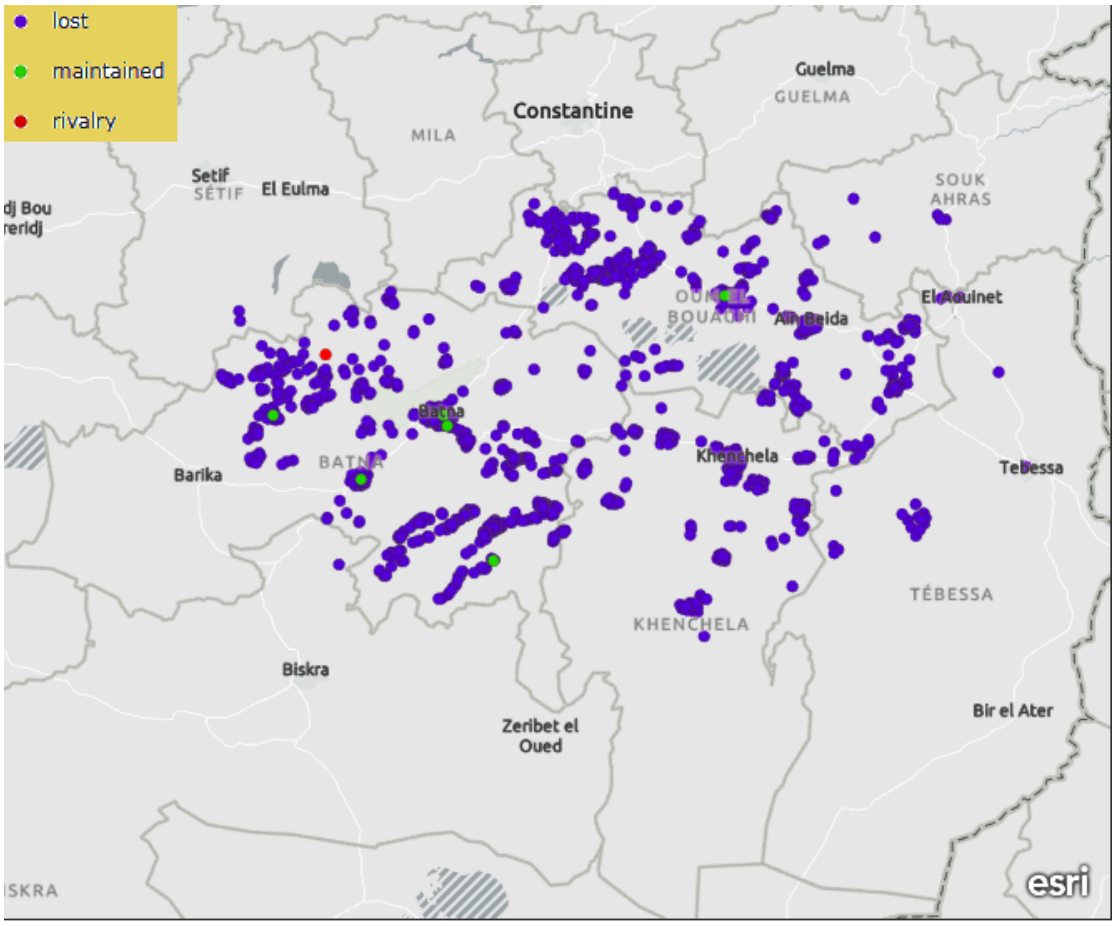
A number of other speakers have produced other irrelevant responses, in particular some types of soil. These include *aḥeṣḥaṣ* / *aḥezḥaz* 'soil', *aḥeṣbi* / *lḥeṣbet* 'gravel' (Lane, 1968), and others. Table 4.3 below shows the main variants produced in response to the present lexical variable along with the frequency of each variant.

Table 4.3 ‘sand’: frequencies of lexical variants

lexical variants	**number of tokens**
ijdi	7
ṛṛmel	1228
cal	313
others	66
NR	224
total	1838

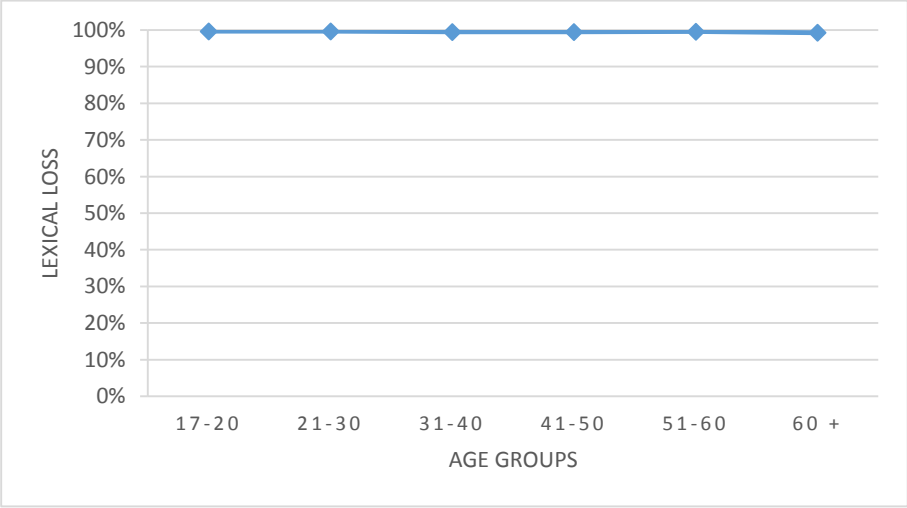
In a similar way to the first item in the present semantic domain, the Berber equivalent for ‘sand’ was also shown to be virtually obsolete: L (sand) = 99.62% (χ^2 = 1808.12, p < 0.001). Its frequency in the data and the spatial dispersion of its occurrences indicate that it has fallen into disuse for a long period of time. Yet, its loss seems to have taken place at different points of time. The localities in which it occurred are probably the ones where it last survived. Following Joly (1912), we can assume that the word *ijdi* was in active use around the turn of the twentieth century in the region of Bellezma, or at least among the members of the tribe of Ait Sellam. Be that as it may, the loss of the Berber word for ‘sand’ is, from a synchronic point of view, not regionally determined. There exist no significant differences in terms of the degrees of lexical loss observed across the different regions covered in the present work (χ^2 = 3.41, p = 0.75).

Map 4.3 Lexical loss of the Berber word(s) for ‘sand’ across Tashawit speaking area



As can be noticed from Fig.4.3 below, the relationship between lexical loss and age is statistically insignificant ($\chi^2 = 0.6$, $p = 0.99$).

Fig. 4.3 Lexical loss of the Berber word(s) for ‘sand’ across age groups



4.1.1.4. Rain

To denote ‘rain’, the speakers of some Berber varieties resort to the semantic extension of the common Berber word for ‘cloud’. This, however, is attested only in a limited number of varieties[10]. The Berber variant that enjoys a wider currency among Berber varieties stems from the Berber root **NẒṚ**. This is attested mainly in the northern Berber varieties and is realized in two main forms: *anẓaṛ* and *amẓaṛ*[11]. It is the first variant that is attested in Tashawit (Sierakowski, 1871; Huyghe, 1906, 1907)[12].

The data obtained in response to the present lexical variable revealed a considerable degree of lexical variation. Only a tiny fraction of informants has produced the Berber variant (3.32%). The Berber variant survives marginally in Occidental Aurès. The number of its occurrences in this region alone accounted for 87.1% of the total number of its tokens. It should be noted, nonetheless, that this variant is not the dominant variant in this region (10.59%). It seems to be only regularly used in few localities in the southwestern part of the region, in particular Menaa and Tigherghar. Beyond the Massif, this variant was produced only occasionally by a handful of speakers.

An alternative Berber variant that was produced in response to this lexical item is *tametna*. This variant is not well attested with this meaning in other Berber varieties[13]. This variant is more frequent than the former (16.78%). It is used today over a larger speaking area, covering the region of Nemamcha (95.45%), most of Oriental Aurès

[10] **Cognates**: *aǧenna* (Foucauld, 1951) and *tajnuyt*/*taǧniwt* (Delheure, 1984), etc.

[11] **Cognates**: *anẓaṛ* (Motylinski, 1898, 1904; Provotelle, 1911; Cid Kaoui, 1907; Destaing, 1938; Taifi, 1991; Serhoual, 2002; Dallet, 1982) and *amẓaṛ* (Delheure, 1987), etc.

[12] In the variety of Tashawit spoken among Ait Frah, the word *anẓaṛ* has undergone a semantic change, denoting ‘rain water that remain in rocks’ (Basset, 1961).

[13] In TCM, *ametna* designates ‘persistent rain, repeated showers, snowfall, snow storm, and steam rising from the ground in summer after rain’ (Taifi, 1991) and *imetniwen* denotes ‘period of rain in winter’ (Taifi, 1991). According to Chafik (1990), this word designates a ‘snow/hail storm’.

(70.34%), and some localities in the southeast of the Massif (12.48%) and others in the region of Harakta (7.4%).

The most frequent variant in the date is the Arabic loanword *nnuwwet* / *nnewwet* (49.06%). Its immediate source is most likely the dialectal Arabic word *nneww* (Ben Sedira, 1910). Its ultimate source is the word *enneoua* [ˀnnəwʕ] of Classical Arabic. This refers to the set and/or rise of one of the twenty-eight stars composing the lunar mansions (Lane, 1968) which ancient Arabs believed to bring rain and, hence, used to say "we have given rain by such a star" (Lane, 1968: 2861). This variant is used over a large speaking area, covering the regions of Bellezma (93%), Segnia (95%) and, the major part of, Harakta (71.94%). It is less common in the southern regions, Occidental Aurès (7.65%), Oriental Aurès (9.66%) and, in particular, Nemamcha (1.14%).

The second most frequent Arabic loan is *lgerret* / *agerriw* (16.89%). This could be derived from the word *geurra* 'tempest' (Ben Sedira, 1910) which seems to be an extension of the word *qirra* 'bitter cold' (Lane, 1968). Nonetheless, one can assume that it is closer in meaning to the word *geret* 'humide' (Foucauld, 1951). This variant is prevalent in the Massif (43.33%) and some localities in the northern part of Oriental Aurès (6.9%).

The third Arabic loan, *lemṭeṛ*, which stems from the most common word for rain in Arabic (Ben Sedira, 1910; Omar, 2008; Lane, 1968), is less frequent compared to the two previous borrowings (13.14%). It is used mainly in the Massif (24.71%), the region of Harakta (18.37%) and Oriental Aurès (12.41%).

The least frequent Arabic loan in the data is *lγit*. This is translated as 'signifying rain' or 'rain that is productive of much good' (Lane, 1968: 2314). Its insignificant frequency (0.16%) indicates that it is not an established loanword in Tashawit.

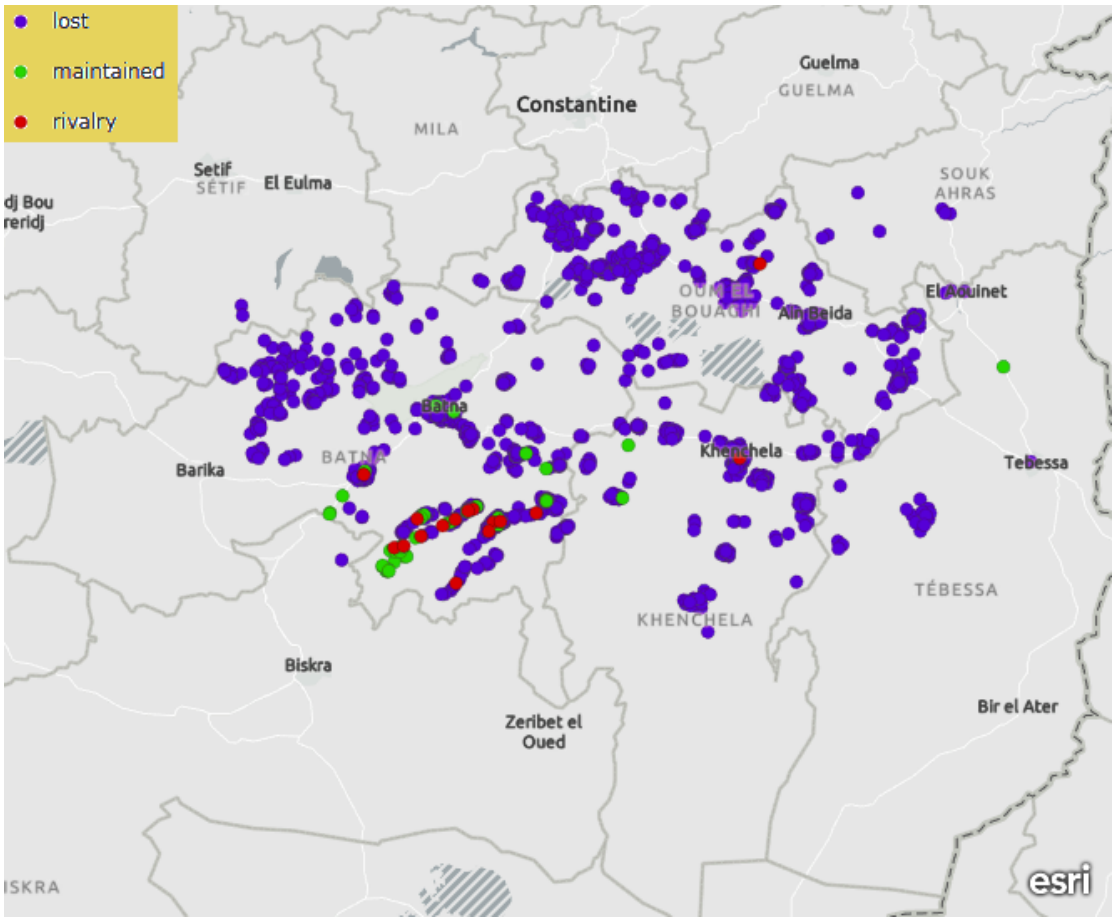
A number of other responses were produced in reaction to the present item. Some of these responses denote types of rain, such as *lebxax* ‘drizzle’ or ‘light rain’, and other are used extensively to mean rain, e.g. *ajenna* ‘sky’. The rest are words that are used in Tashawit to denote other natural phenomena, e.g. *akerra* ‘hail’, *asegnu* ‘cloud’, etc.

Table 4.4 ‘rain’: frequencies of lexical variants

lexical variants	**number of tokens**
anẓaṛ	62
tametna	313
nnuwwet / nnewwet	916
lgerret …	313
lemṭeṛ	245
others	18
NR	35
total	1902

The Berber equivalent for ‘rain’, *anẓaṛ*, is marginally preserved in Tashawit: L (rain) = 96.74% (χ^2 = 1660.22, $p < 0.001$). The analysis has revealed that lexical loss is regionally determined (χ^2 = 118.349, $p < 0.001$). Lexical loss is the norm in most regions, in particular the northern and eastern regions: Bellezma (L = 98.86%), Nemamcha (L = 98.89%), Oriental Aurès (L = 99.33%), Harakta (L = 99.74%) and Segnia (L = 100%). No significant differences were obtained between these rates. The relative odds of lexical loss in the region of Harakta are 4.57 to 1 compared to Bellezma (χ^2 = 1.73, p = 0.19), 4.37 to 1 compared to the region of Nemamcha (χ^2 = 1.08, p = 0.3) and 2.7 to 1 compared to Oriental Aurès (χ^2 = 0.49, p = 0.48). In a similar way, the relative odds of lexical loss in Bellezma are only 1 to 1.05 compared to the region of Nemamcha (χ^2 = 0.002, p = 0.97) and 1 to 1.69 compared to Oriental Aurès (χ^2 = 0.21, p = 0.65). Speakers of Oriental Aurès are only 1.62 times more likely to lose the Berber variant compared to those of the region of Nemamcha (χ^2 = 0.11, p = 0.73).

Map 4.4 Lexical loss of the Berber word(s) for ‘rain’ across Tashawit speaking area

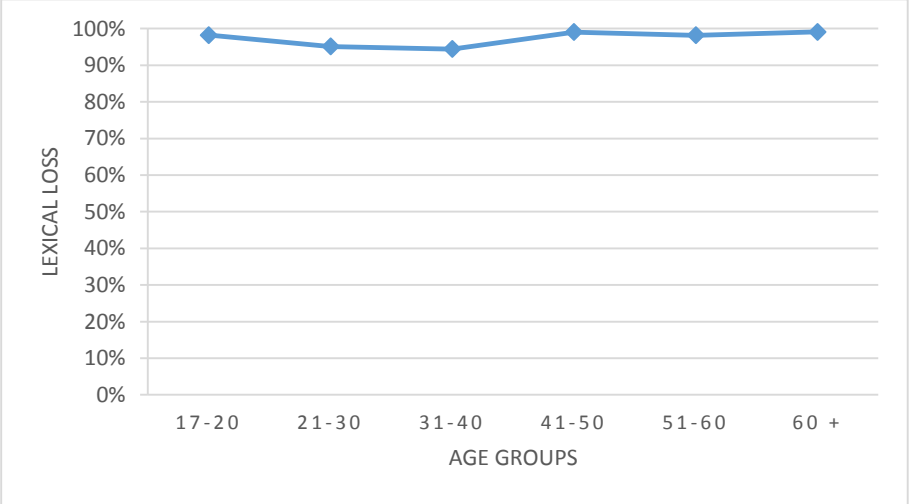


The Berber variant is preserved relatively better in Occidental Aurès (L = 89.47%). The odds lexical loss in the Massif are 11.14 times lower than Bellezma ($\chi^2 = 16.22$, $p < 0.001$), 11.66 times lower than the region of Nemamcha ($\chi^2 = 5.85$, $p = 0.016$), 18.87 times lower than Oriental Aurès ($\chi^2 = 8.4$, $p = 0.004$), and 50.98 times lower than the region of Harakta ($\chi^2 = 15.10$, $p < 0.001$).

Overall, the analysis has revealed no significant relationship between lexical loss and age for the item under consideration ($\chi^2 = 9.533$, $p = 0.0896$). This is reflected in the differences of lexical loss obtained between most age group pairs. The relative odds of a speaker from the second age group ($L_{21\text{-}30} = 83.27\%$) maintaining the Berber variant are 2.65 times as high as a speaker from the first age group ($L_{17\text{-}20} = 92.96\%$) ($\chi^2 = 4.158$, $p = 0.041$), but it is only 1.41 times as high as a speaker from the third age group

($L_{31\text{-}40}$ = 87.5%) (χ^2 = 0.881, p = 0.348). A speaker from the third age group is only 1.89 times more likely to maintain the Berber variant compared to a speaker from the first age group (χ^2 = 1.293, p = 0.255), and is 3.21 times more likely to maintain it compared to a speaker from the fourth age group ($L_{41\text{-}50}$ = 95.74%) (χ^2 = 2.393, p = 0.122). The differences are also insignificant between the remaining age groups. A speaker from the fifth age group ($L_{51\text{-}60}$ = 90.24%) is 2.43 times more likely to preserve the Berber variant compared to a speaker from the fourth age group (χ^2 = 1.043, p = 0.307) and 1.51 times more likely to preserve it compared to a speaker from the sixth age group (L_{+60} = 93.33%) (χ^2 = 0.129, p = 0.719).

Fig. 4.4 Lexical loss of the Berber word(s) for 'rain' across age groups



4.1.1.5. Wind

The present item is denoted in Berber by two main variants. The first is traced to the root **WHḌ**[14] and the second is traced to **ẒWḌ**[15]. The Berber variant attested in Tashawit, *aḍu*, is traced to the former, though it seems to have undergone a semantic

[14] **Cognates**: *aḍu* (Basset, 1885; Masqueray, 1893; Motylinski, 1904, 1908; Foucauld, 1951; Laoust, 1912; Destaing, 1914, 1938; Jordan, 1934; Dallet, 1982; Delheure, 1984; 1987; Taifi, 1991; Serhoual, 2002) and *aṭu* (Motylinski, 1898; Provotelle, 1911), etc.

[15] The Berber equivalent for 'wind' which is traced to the second root is attested mainly in TCM: *azwu* (Taifi, 1991; Roux and Chaker, 2019), *azewu* (Amaniss, 2009), *azg^{w}u* (Roux and Chaker, 2019), etc.

broadening denoting both ‘wind’ (Basset, 1961, 271) or ‘wind that blows gently in summer’ (Basset, 1961: 51). Although derivatives of the second root are attested in Tashawit, none of them is used to refer to ‘wind’.

Of all the participants who responded to this item, only fifteen individuals managed to produce the variant *aḍu* (0.89%). The few occurrences of this variant were recorded mainly in the western regions, five in the Massif, namely in the localities of Arris, Tkout, Ghassira, Menaa and Tigherghar, three in Batna city and three in Bellezma, namely in Ain Touta, Ngaous and Merouana. The remaining instances were recorded in the northeastern regions, three in the region of Harakta, namely in Ain Touila, Ain Beida and Oum el Bouaghi, and one in Ain Mlila. The dispersion of the occurrences of the Berber variant indicates that it has fallen into disuse in Tashawit. It is unlikely that it is used regularly by the speakers who produced it, but it seems that it is at least part of their receptive lexicon. This was supported by the fact that most of the subjects who produced the Berber variant, twelve to be exact, have also produced other, non-Berber, responses.

Four main Arabic borrowings were recorded in the data. The most frequent of these is *rriḥ* (36%). This borrowing prevails over the regions of Segnia (77.87%), Harakta (76.81%), Nemamcha (85.33%) and, less frequently, Oriental Aurès (48.04%). It is very infrequent in Bellezma (4.42%) and the Massif (4.58%).

The second most frequent variant in the data is the word *aɣebbaṛ* (30.09%)[16]. This word is attested with the meaning ‘dust’ in Tashawit (Huyghe, 1906, 1907) and, extensively as the data show, to mean ‘wind’ or, probably more accurately, ‘violent and cold wind which carries dust’ (Basset, 1961: 51). The variant *aɣebbaṛ* is dominant in

[16] This loan is traced back to the Arabic word for dust, *ɣubaṛ* (Lane, 1968). Its immediate source is most likely the word *ɣebbaṛ* ‘dust’ (Ben Sedira, 1910).

the Massif (70.83%) and some of the adjacent localities like in Batna city. Its use in other regions, however, is occasional.

The third Arabic loan that was produced by the subjects is *lehwa*. In Arabic, this word is used to denote 'air' or 'atmosphere'[17]. In Tashawit, it is attested with the meanings 'air', 'smooth wind', 'atmosphere', 'temperature', and 'climate' (see Huyghe, 1907). The number of occurrences of this Arabic loanword is less significant than the two previous loans (13.16%). It is used mainly in the region of Bellezma (55.28%) and a number of the surrounding localities, in particular Batna city.

The least frequent Arabic loanword that was produced in response to the present lexical item is *aɛejjaj* / *aɛeğğağ* (8.02%). The word *ɛağağ* is used in CA to refer to 'dust', in particular 'dust that is carried by wind' (Lane, 1968). In some Algerian vernaculars, it denotes 'hurricane' (Ben Sedira, 1910). In a similar way, it is used in Tashawit to mean 'hurricane' or 'tempest' (Huyghe, 1906: 687). This variant was recorded most frequently in the regions of Bellezma (14.86%), the Massif (8.52%), in particular the territory of O. Labiod, and in Batna city.

Some of the informants who took part in the present study produced responses which designate different types of wind, such as *abeḥri* 'cold wind, coming from the sea', *aḍehrawi* 'wind of the north', and *cchili* 'hot wind, of the southwest' (Huyghe, 1906; Ben Sedira, 1910). Other participants have produced other responses, which are attested in Tashawit with slightly different meanings, such as *aseffay* 'snow tempest', *nnesmet* 'breeze', and others. The most frequent of such responses is the word *asemmiṭ*. This word is used in Tashawit, as in many other Berber varieties, to mean 'cold' instead of 'wind'. Although it was produced by a tiny proportion of speakers (2.62%), forty-

[17] See Lane (1968), Omar (2008), Ben Sedira (1910), etc.

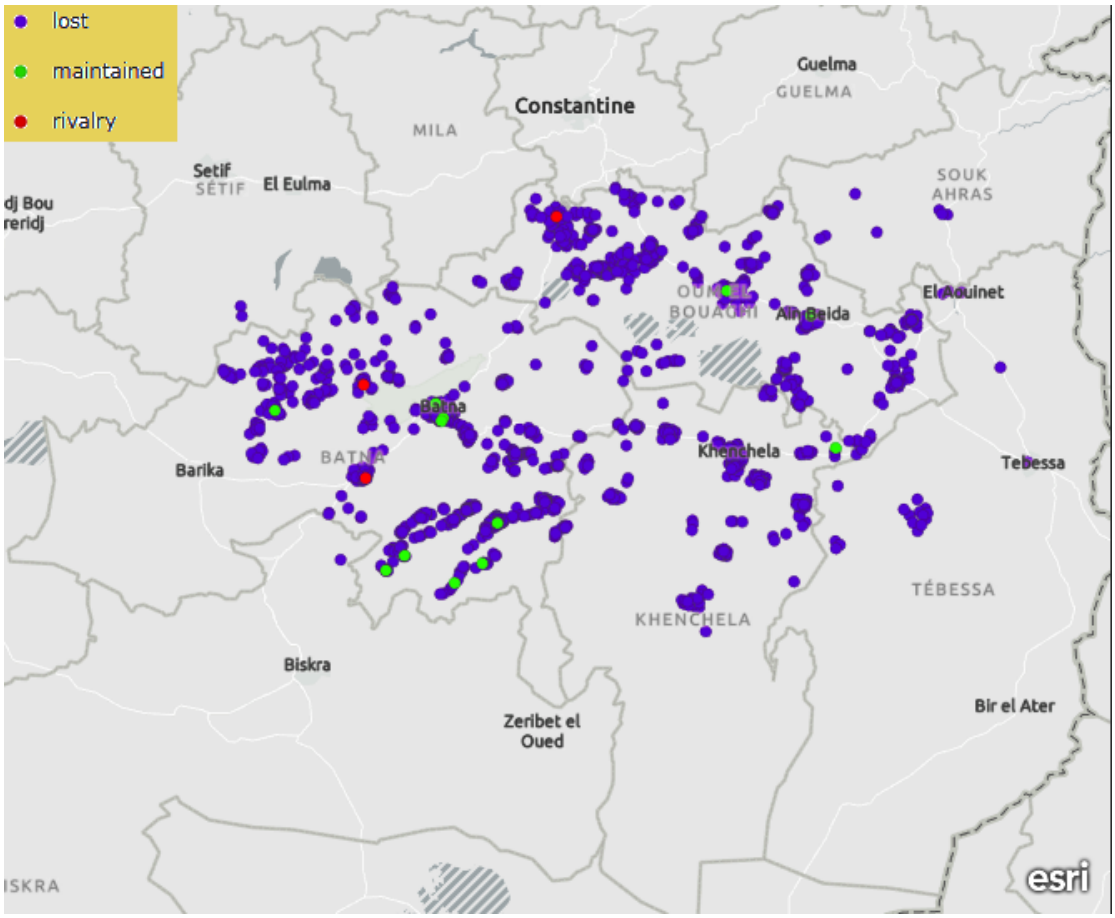
two of the forty-nine speakers who produced it are from the region of Bellezma. This indicates that this word is also used to denote ‘wind’ or ‘cold wind’ in this particular region (see Sierakowski, 1871). A summary of the data obtained for the present lexical item is provided in Table 4.5 below.

Table 4.5 ‘wind’: frequencies of lexical variants

lexical variants	**number of tokens**
aḍu	15
rriḥ	610
aɣebbaṛ	510
aɛeğğağ / aɛejjaj	136
lehwa	223
asemmiṭ	49
others	142
NR	209
total	1894

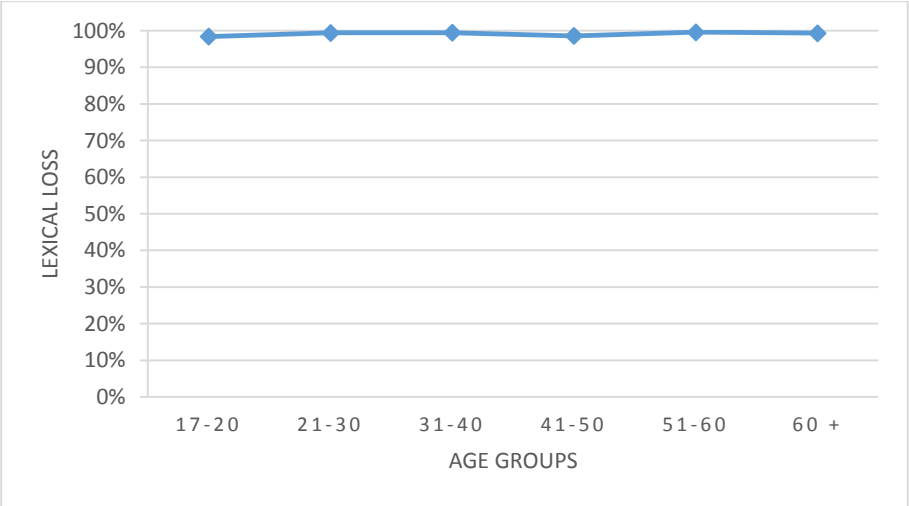
Based on the rate of lexical loss calculated for the present item, L (wind) = 99.21% (χ^2 = 1832.5, $p < 0.001$), the Berber variant *aḍu* can be described as virtually obsolete. The decline of the words *aḍu* seems to have taken place for a fairly long time in most Tashawit speaking regions. This is backed up by the fact that this variant is missing in most Tashawit texts. However, it seems that this Berber variant has survived at least in one locality in the southwestern part of Occidental Aurès, namely Ain Zaatout (Basset, 1961, Boudjellal, 2015). The analysis of the data shows little or no regional variation in the maintenance of the Berber variant (χ^2 = 1.66, p = 0.95).

Map 4.5 Lexical loss of the Berber word(s) for ‘wind’ across Tashawit speaking area



The relationship between lexical loss and age is equally insignificant ($\chi^2 = 3.95$, $p = 0.56$). The Berber variant has basically fallen into disuse in the speech of all the members of the speech community regardless of their age or any other factor.

Fig. 4.5 Lexical loss of the Berber word(s) for ‘wind’ across age groups



4.1.1.6. Fog

The Berber equivalents for ‘fog’ that are attested most in the literature stem from the root **G**[18]. In Tashawit, two derivatives of this root are attested: *tayut* (Huyghe, 1906, 1907; Saad, 2013) and *tagut* (Ounissi, 2003; Tibermacine, 2009; Saad, 2013). We also encounter, in some Berber varieties, other Berber words that are used to denote ‘fog’ or ‘types of fog’, but none of them is attested in Tashawit[19].

Two main variants dominate informants’ responses to this lexical item, one is the Berber variant and another is an Arabic loan. The Berber variant is the most frequent response in the data (55.97%). It prevails over the regions of Segnia (70.63%), Occidental Aurès (65.54%) and Bellezma (64.75%). It is also used, but less frequently, in the regions of Oriental Aurès (33.67%), Harakta (17.96%) and Nemamcha (8.11%). The Arabic loan, *ḍḍbab*, was produced by a minority of speakers (38.18%). It is prominent in the regions of Nemamcha (93.26%), Harakta (91.89%) and Oriental Aurès (73.44%), but it is less frequent in the regions of Segnia (21.14%), Occidental Aurès (22.17%) and Bellezma (14.54%).

The present item was to some extent problematic to some informants. Some participants failed to provide a relevant response, and produced instead responses that denote things which are different. For example, a number of participants provided *taguft* or *tayuft*, which denotes ‘artemisia’. It is clear that the participants who produced this response were confused between the two words due to phonological resemblance.

[18] **cognates**: *agu* (Dallet, 1982), *aggwu* ‘thick fog’, *taggwut* and *tagwut* (Taifi, 1991), *tagut* (Motylinski, 1898; Cid Kaoui, 1907; Jordan, 1934; Dallet, 1982; Serhoual, 2002), *taggut* (Serhoual, 2002) and *tağyayt* (Masqueray, 1893; Foucauld, 1951). This variant is realized in some varieties, such as Beni-Snous, Beni-Iznacen, Zkara and Beni Menacer, as *tayyut* (Destaing, 1914) and as *hawut* in Chenoua (Laoust, 1912).

[19] These include *tasist* (Chafik, 1990), *tabaṣuṛt*, in particular ‘morning fog’ (Destaing, 1938) or ‘sea fog’ (Chafik, 1990), *iwiẓ* ‘warm/thin summer fog’ (Destaing, 1938; Chafik, 1990), *kumbet* ‘humid fog’ (Foucauld, 1951) and *essir* (Provotelle, 1911).

Another response that exemplifies confusion due to phonological resemblance is *tagurt* ‘door’. A number of other informants, not familiar with the Berber word for ‘fog’, offered responses that designate a close natural phenomenon, namely ‘cloud’. Both the Berber word *asegna* as well as the Arabic loanwords *tasḥabt*, *lγim* and *leγmam* were produced in this respect. Some other informants have produced responses that denote completely different natural phenomena, such as *tafukt* ‘sun’, *tfawt* ‘light, daylight’, *aγebbaṛ* ‘wind’, *ajris* ‘ice’ and *aslit m anẓar* ‘rainbow’. These responses, however, were very insignificant in number.

Table 4.6 ‘fog’: frequencies of lexical variants

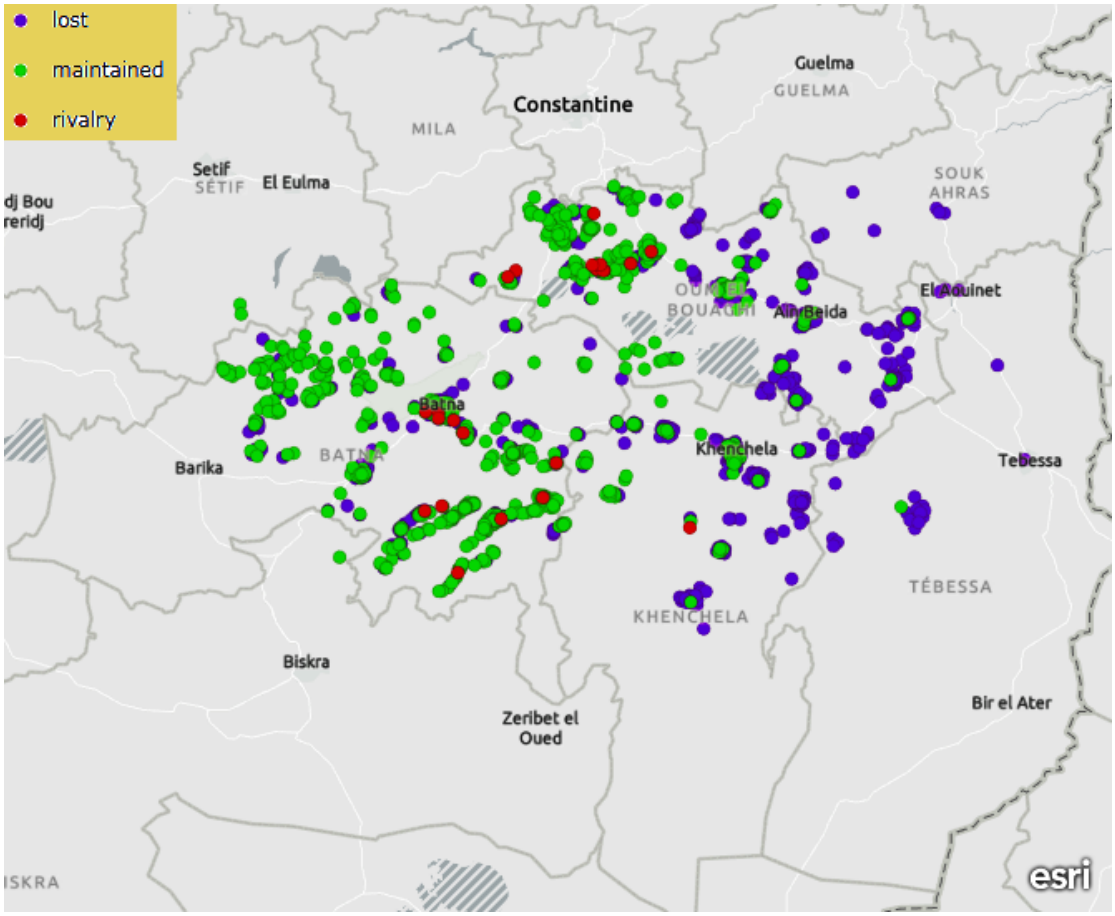
lexical variants	**number of tokens**
tagut / tayut	881
ḍḍbab	601
others	92
NR	269
total	1843

The rates of maintenance and loss obtained for the present item are close to one another, the difference is not statistically significant: L (fog) = 52.2% (χ^2 = 3.56, p = 0.059). Yet, these rates vary considerably across the different regions covered in the present study (χ^2 = 416.25, p < 0.001). As Map 4.6 below displays, instances of lexical maintenance and Lexical loss cluster somehow in two, more or less, distinct areas. The area which shows a tendency towards lexical maintenance covers the western regions, the Massif, Bellezma, and the region of Segnia, whereas lexical loss is more dominant in the southeastern regions, Nemamcha and Oriental Aurès, and the region of Harakta.

The lowest rate of lexical loss was obtained in the region of Segnia (L = 29.36%). The odds of a speaker from this region maintaining the Berber variant is 4.57 times higher compared to a speaker from Bellezma (L = 34.48%) (χ^2 = 1.596, p = 0.206) or

the Massif (L = 34.46%) (χ^2 = 2.024, p = 0.155). Accordingly, the relative odds of a speaker from the Massif maintaining the Berber variant compared to a speaker from Bellezma are 1 to 1 (χ^2 = 0, p = 1).

Map 4.6 Lexical loss of the Berber word(s) for 'fog' across Tashawit speaking area

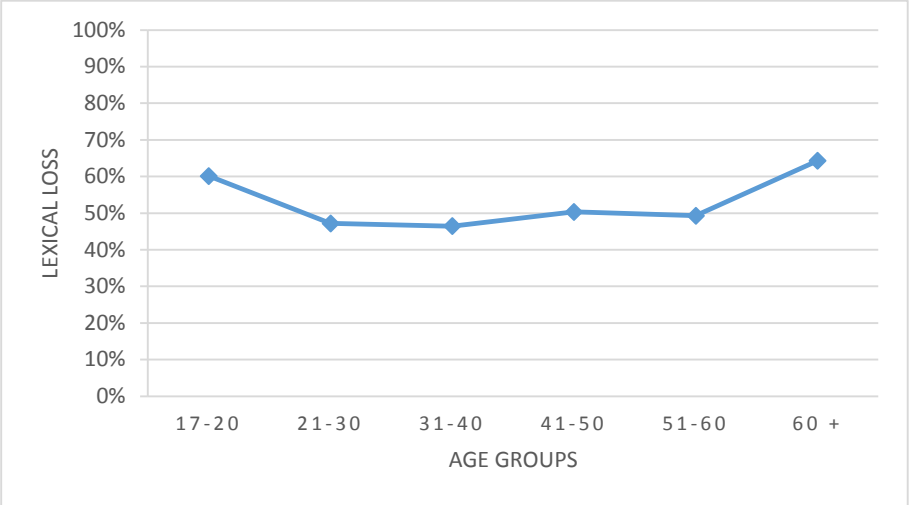


Comparisons with the rates obtained in other regions have revealed important differences. The odds of lexical maintenance in the region of Segnia are 13.39 times higher than the region of Harakta (L = 84.73%) (χ^2 = 208.273, p < 0.001) and 8.38 times higher compared to Oriental Aurès (L = 77.7%) (χ^2 = 89.652, p < 0.001). The highest rate of lexical loss was recorded in the region of Nemamcha (L = 93.26%). The relative odds of a speaker from this region losing the Berber variant compared to a speaker from the region of Segnia are 33.27 to 1 (χ^2 = 110.186, p < 0.001). The analysis has also revealed a significant difference between the regions of Nemamcha and Oriental Aurès.

A speaker from the latter is 3.97 times more likely to maintain the Berber variant compared to another from the former (χ^2 = 9.783, p = 0.0018). In a similar way, the relative odds of a speaker from the region of Harakta maintaining the Berber variant compared to a speaker from the region of Nemamcha are 2.49 to 1 (χ^2 = 4.463, p = 0.0346).

Variation in the rates of lexical loss across the different age groups is shown in Fig. 4.6 below. The relationship between lexical loss and age is significant (χ^2 = 25.66, p < 0.001). The highest rates of loss were obtained for the youngest and the eldest age group. The relative odds of a speaker from the first age group ($L_{17\text{-}20}$ = 59.87%) losing the Berber variant is 1.63 times as high as a speaker from the second age group ($L_{21\text{-}30}$ = 48.1%) (χ^2 = 12.48, p < 0.001). The rate of lexical loss changes very slightly across the second, third and fourth age groups. A speaker from the second age group is only 1.05 times more likely to lose the Berber variant compared to a speaker from the third age group ($L_{31\text{-}40}$ = 46.81%) (χ^2 = 0.098, p = 0.754) and 1.03 times less likely to lose it compared to another from the fourth age group ($L_{41\text{-}50}$ = 51.14%) (χ^2 = 0.614, p = 0.433). In a similar way, a speaker from the fourth age group is 1.02 times more likely to lose the Berber variant compared to another from the fifth age group ($L_{51\text{-}60}$ = 50.58%) (χ^2 = 0.015, p = 0.9). The rate of lexical loss increases significantly for the sixth age group (L_{60+} = 64.94%). The relative odds of a speaker from this age group losing the Berber variant are 1.81 times higher compared to another from the fifth age group (χ^2 = 8.075, p = 0.0045).

Fig. 4.6 Lexical loss of the Berber word(s) for ‘fog’ across age groups



4.1.1.7. Forest

The only Berber equivalent for ‘forest’ that was recorded in the data is *tiẓgi*[20]. In Tashawit, this variant is attested only in recent dictionaries (Ounissi, 2003: 140; Saad; 2013: 222). Only four informants managed to produce this word (0.24%). Some of the elderly from the Massif to whom we mentioned the word were able to provide its meaning. All other Berber words that are attested in other varieties are missing, both in Tashawit texts and in the data elicited for the present item[21].

Two alternative Berber variants were recorded in the data, *adrar* and *malu*. These words are originally used to denote different, though not unrelated, things. The former is attested in Tashawit, as in other Berber varieties, with the meaning ‘mountain’ instead of ‘forest’ (Huyghe, 1906: 426, see Zerrad, 1998: 371). The use of this word to refer to ‘forest’ is an instance of semantic broadening. It accounted for a small proportion of the total number of responses produced by the subjects (11.77%). This was produced

[20] This variant is also attested in Kabyle (Huyghe, 1903; Dallet, 1982). The word *tiẓgi*, according to Chafik (1990), designates specifically ‘a dense forest’.

[21] In addition to *tiẓgi*, there are three main Berber variants that denote ‘forest’: *tagant* (Destaing, 1938; Jordan, 1934; Serhoual, 2002), *amadaɣ* or *amteɣ* (Motylinski, 1908; Foucauld, 1951; Dallet, 1982) and *éfei* (Foucauld, 1951).

mainly in the region of Harakta (34.2%). Its use declines in the surrounding regions: Bellezma (13.7%), Nemamcha (7.59%), Oriental Aurès (5.88%), Occidental Aurès (3.66%) and Segnia (2.07%). The second alternative Berber variant, *malu*, is less recurrent in the data (2.38%). This variant, which shares the same root as the Berber word for shade *tili*, is most commonly used to denote a shady place, usually a mountain slope (Basset, 1961: 342)[22]. It was produced mainly in the Massif (7.1%).

The vast majority of the subjects who responded to this item have produced the Arabic loanword *lɣabt* (78.23%). It is the dominant variant in all the regions covered in this research: Harakta (62.1%), Bellezma (74.89%), Occidental Aurès (80.43%), Nemamcha (83.54%), Oriental Aurès (89.92%) and Segnia (95.87%).

Another response that was recorded in the data is *ṣṣewwet* / *ṣṣuwwet* was produced by a tiny fraction of speakers (1.16%). The exact meaning of this word is 'wilderness'. It is a synonym of another loan that is used in Tashawit, that is *lexla* 'empty/uninhabited place, desert' (Huyghe, 1907: 264)[23]. The word *ṣṣewwet* / *ṣṣuwwet* could be traced to the Arabic word *ṣeww* 'empty'[24]. This was produced by a limited number of informants in Occidental Aurès (2.37%).

Other responses that were recorded in the data include *tajnant* / *tabḥirt* 'garden', *ajemmaḍ* 'bank', etc., in addition to a number of place names. Table 4.7 below provides a summary of the main responses produced in reaction to the present lexical item.

Table 4.7 'forest': frequencies of lexical variants

lexical variants	**number of tokens**
tiẓgi	4
lɣabt	1283

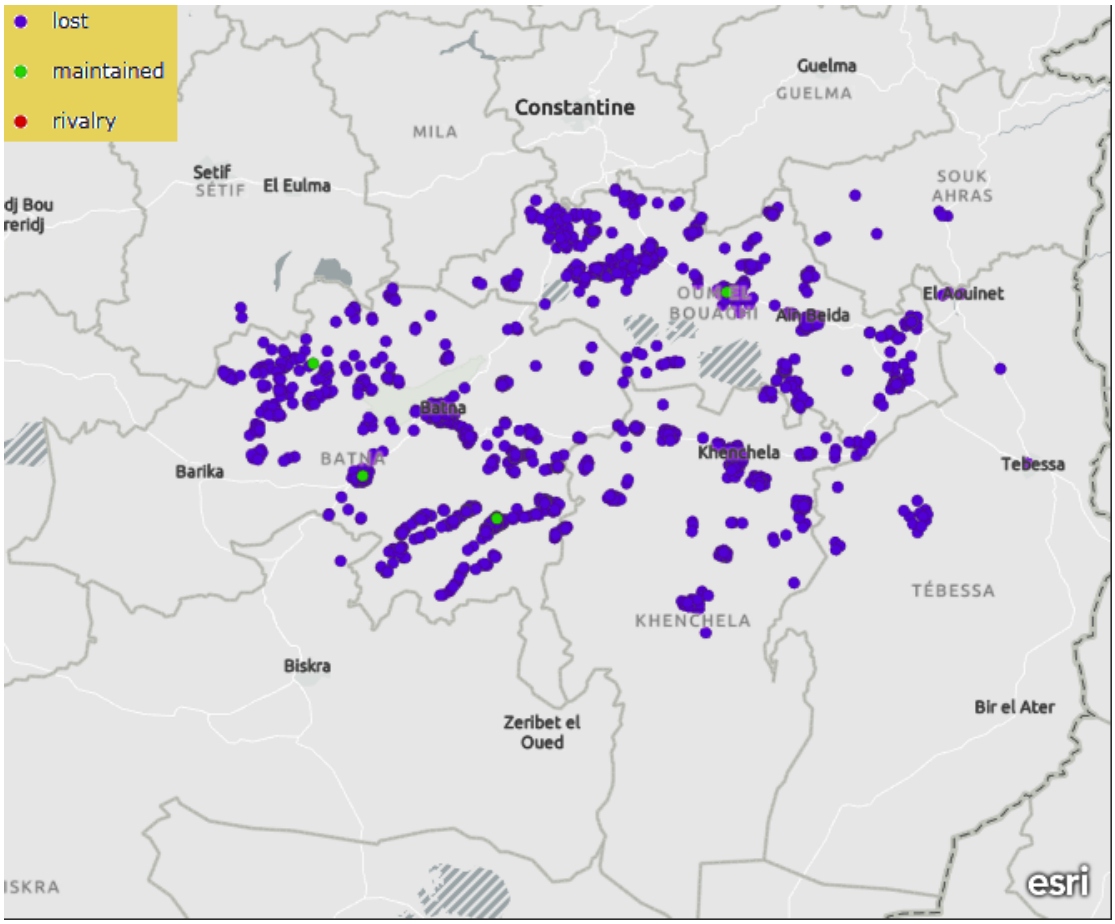
[22] cf. Kabyle (Huyghe, 1902) and Matmata (Destaing, 1914)
[23] see Lane (1968: 804), Omar (2008: 693).

[24] See Lane (1968: 1739)

adrar	192
malu	42
ṣṣewwet …	16
others	104
NR	214
total	1855

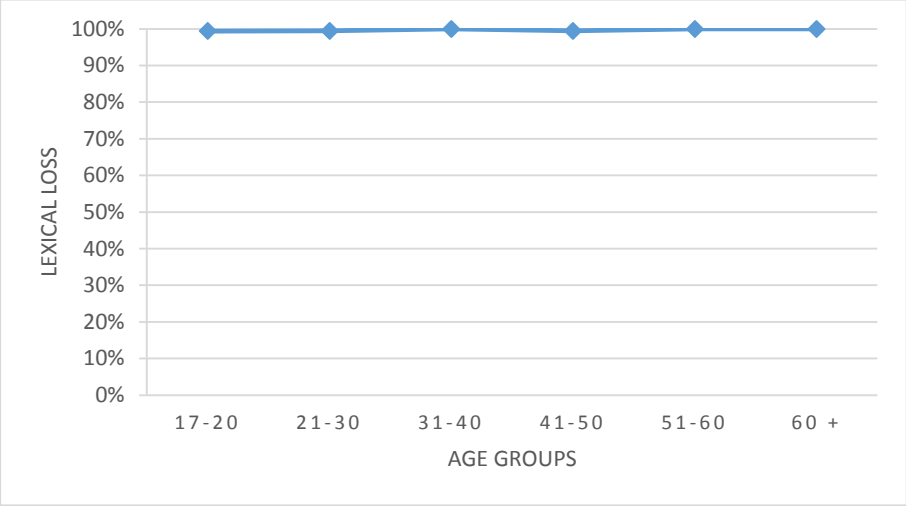
The data obtained for the present lexical variable has revealed that most of the Berber equivalents for 'forest' that are attested in other Berber varieties are obsolete in Tashawit. With regard to the variant *tiẓgi*, the analysis has revealed that it is virtually obsolete: L (forest) = 99.78% (χ^2= 1837.04, p < 0.001). Although the Berber variant was produced only in the Massif and Bellezma, its insignificant frequency does not allow for any claim of regional variation in terms of its maintenance.

Map 4.7 Lexical loss of the Berber word(s) for 'forest' across Tashawit speaking area



The analysis of the data has also revealed no significant differences between the different age groups with regard to the maintenance or loss of the Berber variant (χ^2 = 1.54, p = 0.892).

Fig. 4.7 Lexical loss of the Berber word(s) for 'forest' across age groups



4.1.1.8. Ice

The Berber equivalents for 'ice' are all traced to one single root, **GRS**[25]. The most attested variant in Tashawit is *ajris* (Huyghe, 1906, 1907; Basset, 1961). Joly (1912) provided a slightly different form, *ijris*. The data collected in response to this lexical item showed that this Berber word is the most frequent variant in the data (51.43%). The Berber variant prevails in the regions of Nemamcha (84.52%), Bellezma (79.08%), Oriental Aurès (71.9%) and Occidental Aurès (54.62%). It is less common in the northeastern regions: Segnia (22.1%) and Harakta (19.35%).

An alternative Berber word that was produced in response to the present lexical item is *lqeṛṛayf* / *lɣeṛṛayf*, also *aqṛaf* / *aɣṛaf* (9.43%). This variant is attested in a number of Tashawit texts, mainly Huyghe (1906, 1907) and Basset (1961). It is also used in

[25] **Cognates**: *ajris* (Serhoual, 2002), *ajres* (Delheure, 1987), *ajric* (Destaing, 1914) *agris* (Dallet, 1982; Taifi, 1991), *ayris* (Destaing, 1938; Jordan, 1934), *aɣeris* (Masqueray, 1893), *eɣeris* (Foucauld, 1951) and others.

Tashawit to denote ‘frost’ (Huyghe, 1906: 312). This word is not attested with this meaning in other Berber varieties[26]. The data has revealed that this variant is almost confined to Occidental Aurès (30.11%) and Batna city (9.94%), together covering 97.53 % of the total number of the tokens produced for this variant.

The second most frequent variant in the data is the Arabic loan *lğemmada*. It accounts for over one quarter of the total number of tokens produced (25.22%). It is prominent in the regions of Segnia (65.92%) and Harakta (59.44%), but it is very uncommon elsewhere, in particular in the regions of Nemamcha and Occidental Aurès where it is totally missing. Another Arabic loan that was produced by the subjects is *jjlid*. It is much less frequent than the previous loan (5.3%). It was recorded in all regions, but more frequently in the regions of Harakta (11.94%), Oriental Aurès (7.44%) and Segnia (5.24%). The third lexical borrowing that was produced by the participants is of French origin. The variant *laglaṣ* is a resonance of the French noun phrase ‘la glace’, which denotes the same referent. It seems to be a recent borrowing considering that it is not morphologically integrated into Tashawit. In addition, this borrowing is not attested in Tashawit texts. The frequency of this French borrowing is close to that of the previous Arabic loan (5.76%). It was recorded in most regions, in particular Occidental Aurès (11.83%).

A number of irrelevant responses were produced by some participants, e.g. *ṣṣqiɛ* ‘frost’, *adfel* ‘snow’, *aṣemmiḍ* ‘cold’, and others. The frequencies of the main responses produced in reaction to the present item are provided in table 4.8 below.

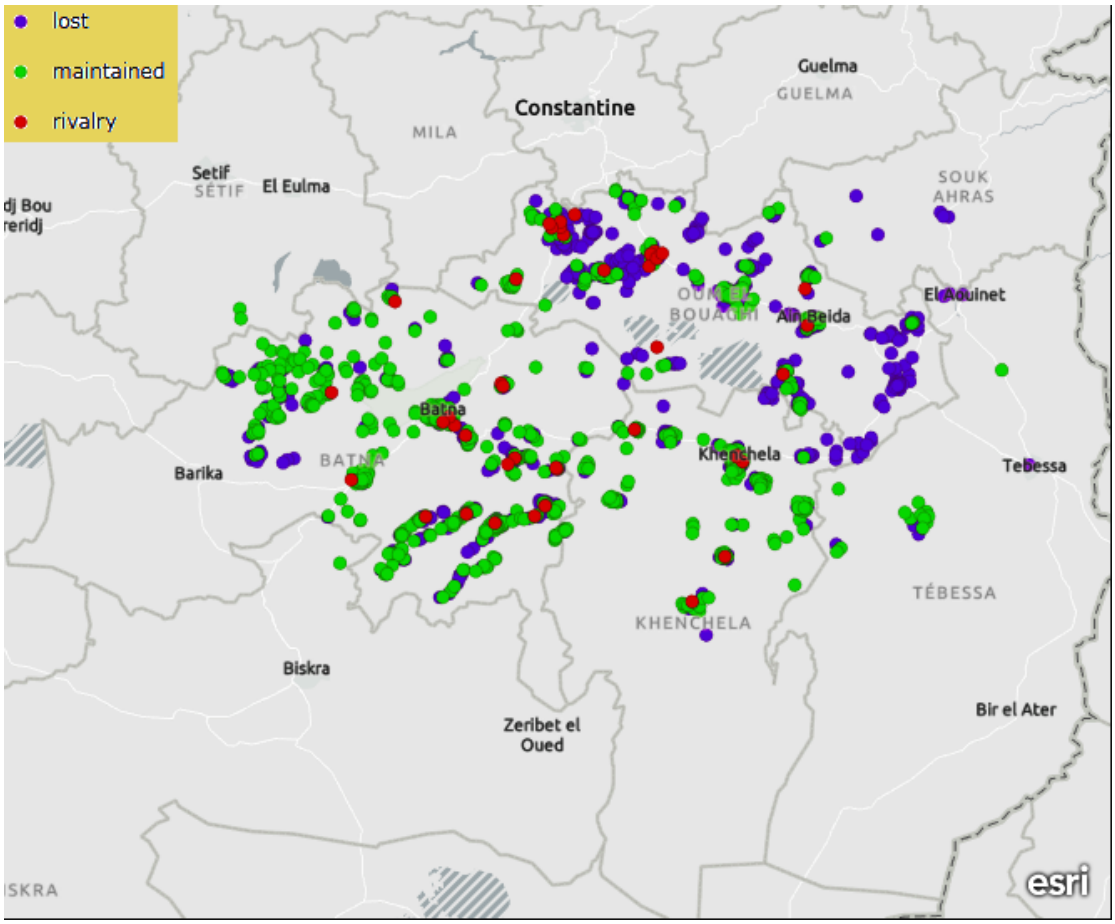
[26] According to Chafik (1990), *ayṛaf* denotes ‘bitter cold’. The word *aqraf* is used in Gourara of Timimoun to mean ‘cold wind’ (Boudot-Lamotte, 1964).

Table 4.8 ‘ice’: frequencies of lexical variants

lexical variants	**number of tokens**
ajris	883
lqeṛṛayf / lγeṛṛayf…	162
ljemmada …	433
jjlid	91
laglaṣ	99
others	49
NR	157
total	1874

The Berber word for ‘ice’ can be described as moderately maintained in Tashawit: L (ice) = 52.88% (χ^2 = 6.1, p = 0.013). Lexical loss, as can be seen in Map 4.8 below, is regionally determined for the present item (χ^2 = 317.97, p < 0.001). The lowest rate of lexical loss was recorded in the regions of Nemamcha (L = 20.00%) and Bellezma (L = 26.74%). The difference between these rates is statistically insignificant; the odds of lexical loss in Bellezma are only 1.44 times higher (χ^2 = 1.6, p = 0.21). The rates of loss obtained in the neighboring regions are quite different. In Oriental Aurès, lexical maintenance is dominant albeit less striking than the two previous regions (L = 40.00%). The relative odds of lexical loss in Oriental Aurès are 1.82 to 1 compared to Bellezma (χ^2 = 7.47, p = 0.006) and 2.66 to 1 compared to the region of Nemamcha (χ^2 = 1.596, p = 0.21). The Berber variant is moderately preserved in the Massif (L = 45.49%). The analysis has revealed that the odds lexical loss in this region are only 1.25 times higher than Oriental Aurès (χ^2 = 1.35, p = 0.24), but 2.29 times higher compared to Bellezma (χ^2 = 24.04, p < 0.001) and 3.33 times higher compared to the region of Nemamcha (χ^2 = 18.61, p < 0.001).

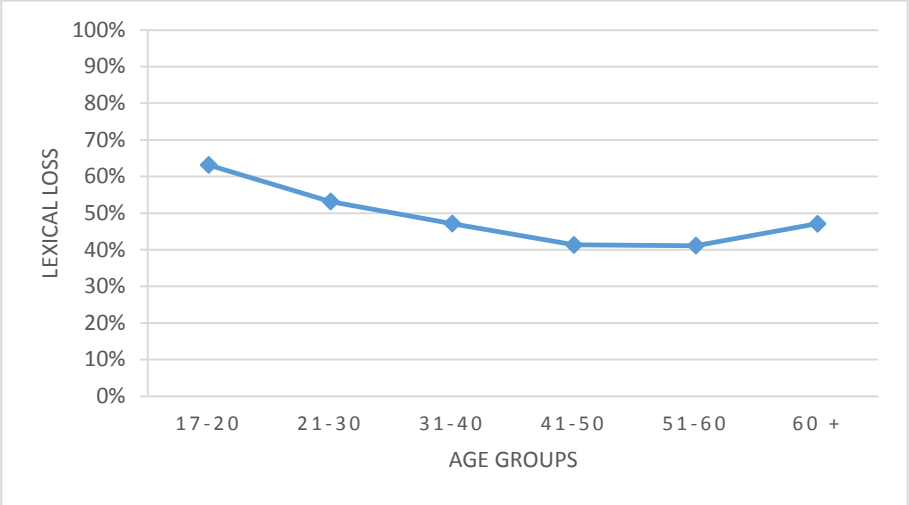
Map 4.8 Lexical loss of the Berber word(s) for ‘ice’ across Tashawit speaking area



The highest rates of lexical loss were recorded in the regions of Segnia (L = 77.37%) and Harakta (L = 77.43%). The odds of lexical loss for speakers of these two regions are identical ($\chi^2 = 0$, $p = 0.99$). The analysis has revealed, nonetheless, significant differences with regard to other regions. The odds of lexical loss in the region of Segnia are 4.1 times higher than Occidental Aurès ($\chi^2 = 65.21$, $p < 0.001$), 5.14 times higher than Oriental Aurès ($\chi^2 = 52.87$, $p < 0.001$), 9.38 times higher than Bellezma ($\chi^2 = 120.2$, $p < 0.001$) and 13.69 times higher than the region of Nemamcha ($\chi^2 = 74.98$, $p < 0.001$). The odds of lexical loss in the region of Harakta are 4.11 times higher than Occidental Aurès ($\chi^2 = 85.68$, $p < 0.001$), 5.15 times higher than Oriental Aurès ($\chi^2 = 61.84$, $p < 0.001$), 9.4 times higher than Bellezma ($\chi^2 = 145.71$, $p < 0.001$) and 13.73 times higher than the region of Nemamcha ($\chi^2 = 81.56$, $p < 0.001$).

The analysis has also revealed a close association between lexical loss and age (χ^2 = 34.71, $p < 0.001$). The highest rate of lexical loss was recorded for the youngest age group ($L_{17\text{-}20}$ = 63.89%). The odds of a speaker from the first age group losing the Berber variant is 1.47 times as high as a speaker from the second age group ($L_{21\text{-}30}$ = 54.58%) (χ^2 = 7.61, p = 0.006) and 1.86 as high as a speaker from the third age group ($L_{31\text{-}40}$ = 48.68%) (χ^2 = 10.82, p = 0.001). On the other hand, the relative odds of a speaker from the second age group losing the Berber variant compared to a speaker from the third age group are only 1.26 to 1 (χ^2 = 1.96, p = 0.16). The lowest rates of lexical loss was recorded for the fourth age group ($L_{41\text{-}50}$ = 42.73%) and the fifth age group ($L_{51\text{-}60}$ = 43.3%). The analysis has shown no significant difference between these two groups. The relative odds of a speaker from the latter losing the Berber variant compared to a speaker from the former are 1.01 to 1 (χ^2 = 0.001, p = 0.98). The relative odds of a speaker from the third age group losing the Berber variant compared to another from the fourth or the fifth are 1.27 to 1 (χ^2 = 1.39, p = 0.24) and 1.24 to 1 (χ^2 = 1.56, p = 0.21) respectively. The rate of lexical loss increases significantly for the sixth age group (L_{+60} = 58.06%). A speaker from this group is 1.9 times more likely to lose the Berber variant compared to a speaker from the fifth age group (χ^2 = 9.6, p = 0.002).

Fig. 4.8 Lexical loss of the Berber word(s) for 'ice' across age groups



4.1.1.9. Freeze (v.)

The Berber equivalent for this item is traced to the same root as the previous item, i.e. **GRS**. However, the Berber equivalent for the present item, unlike the previous, is attested in a limited number of Berber languages[27].

The Berber variant attested in Tashawit, *gres* (Zerrad, 2002: 888), accounted only for a small proportion of the total number of tokens produced for the present item (8.98%). The highest frequencies of this variant were recorded in the southeastern regions, i.e. Oriental Aurès (29.68%) and Nemamcha (33.03%). It was also recorded, though much less frequently, in other regions: Segnia (1.14%), Harakta (3.13%), Bellezma (5.04%) and the Massif (6.17%).

The first alternative to the Berber variant is the variant *eqṛef* / *eγṛef*. This is more frequent, accounting in total for 25.32% of all responses. It was produced mainly in the Massif (66.52%) and Batna city (41.43%). This variant was found to be less common in the neighboring regions of Bellezma (9.88%) and Oriental Aurès (5.93%) and, even

[27] **Cognates**: *egres* (Dallet, 1982) and *gerres* (Taifi, 1991), etc.

much less common, in the northeastern regions: Harakta (1.4%), Segnia (1.89%). It is completely missing in the data obtained from the region of Nemamcha.

The most frequent variant in the data is the Arabic loanword *jmed* (35.64%). It is dominant in the northeastern regions: Harakta (80.63%) and Segnia (57.2%). The Arabic loan was also produced, though less frequently, in the remaining regions: Oriental Aurès (29.66%), Nemamcha (25.49%), Bellezma (17.05%) and the Massif (7.71%). The second most frequent variant in speakers' responses is the French loanword *eglaṣa* / *egleṣ* (27.29%). This loan is dominant in the region of Bellezma (56.03%). It is used less frequently in other regions: Segnia (36.74%), Nemamcha (33.33%), Oriental Aurès (22.88%), the Massif (19.16%) and Harakta (12.53%).

A number of other responses were recorded in the data. Besides being produced by a tiny fraction of informants, none of such responses is considered relevant in denoting the notion in question, e.g. *ṣmeḍ* / *ṣqeḍ* 'to become cold'. Table 4.9 below provides a summary of the data elicited for the present lexical item.

Table 4.9 'to freeze': frequencies of lexical variants

lexical variants	**Number of tokens**
jres	155
qṛef / eɣṛef	437
jmed	620
eglaṣa …	471
others	43
NR	193
Total	1919

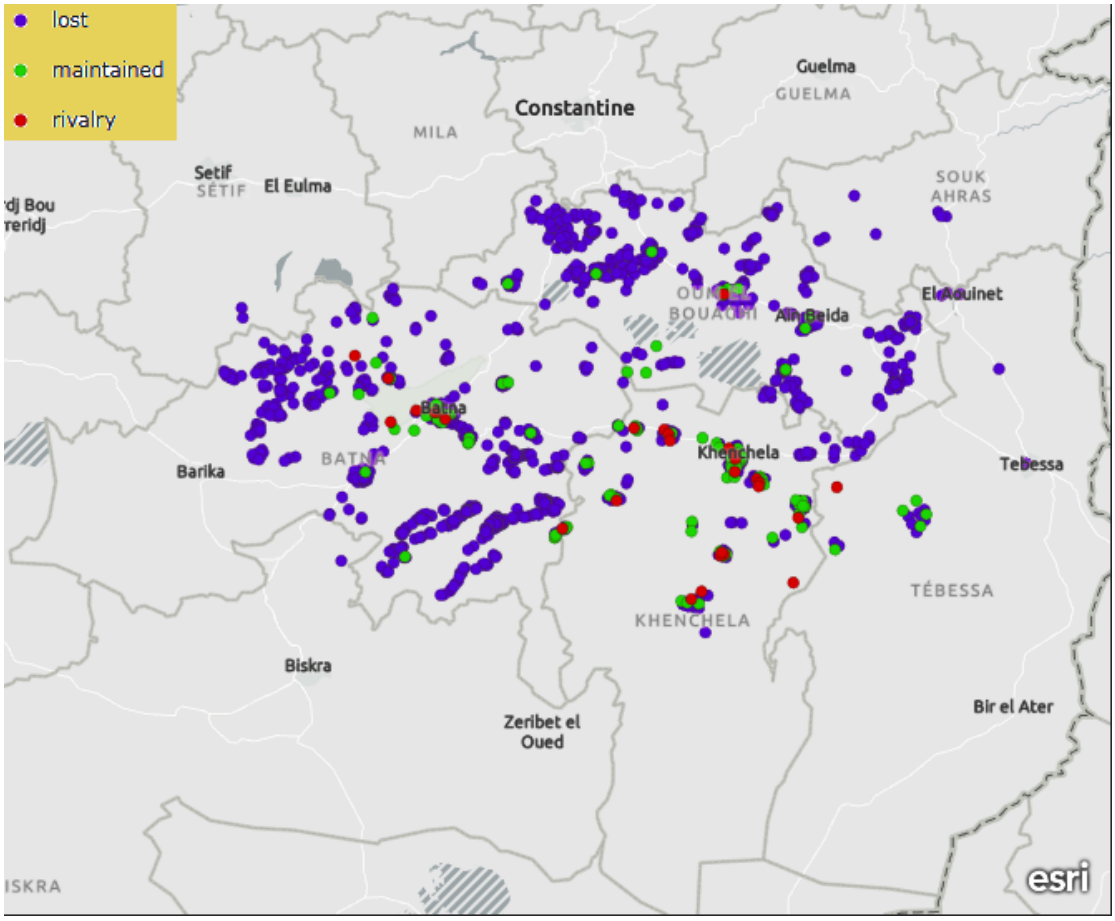
The analysis of the data obtained for the present item has shown that the Berber variant is in a serious decline: L (freeze) = 91.92% (χ^2 = 797.54 p < 0.001). The rates of lexical loss, nonetheless, differ from one region to another (χ^2 = 173.2, p < 0.001). In a similar way to the previous item, the analysis has revealed that the lowest rate of

lexical loss was obtained in the region of Nemamcha (L = 65.42%). A close rate was recorded in Oriental Aurès (L = 69.87%). The relative odds of lexical maintenance in these regions are 1.33 to 1 respectively ($\chi^2 = 1.02$ $p = 0.31$).

The rates of lexical loss obtained in the remaining regions are much higher: Occidental Aurès (L = 94.15%), Bellezma (L = 95.41%), Harakta (L = 97.25%) and Segnia (L = 98.92%). The analysis has revealed some regional variation across these regions. Speakers living in Occidental Aurès are only 1.2 times less likely to lose the Berber variant compared to those residing in Bellezma ($\chi^2 = 0.29$, $p = 0.59$), but 2.2 less likely compared to those of the region of Harakta ($\chi^2 = 4.74$, $p = 0.029$) and 5.5 less likely compared to those of the region of Segnia ($\chi^2 = 7.74$, $p = 0.005$). In a similar way, speakers living in Bellezma are only 1.83 less likely to maintain the Berber variant compared to those of the region of Harakta ($\chi^2 = 2.08$, $p = 0.15$), but 4.56 higher compared to the region of Segnia ($\chi^2 = 5.51$, $p = 0.02$). The odds of lexical loss in the region of Harakta are only 2.5 times lower compared to the region of Segnia ($\chi^2 = 1.94$, $p = 0.16$).

Much variation was revealed when comparing the two sets of regions. The relative odds of lexical loss in Oriental Aurès are 1 to 7.5 compared to the Massif ($\chi^2 = 58.45$, $p < 0.001$), 1 to 9.04 compared to Bellezma ($\chi^2 = 43.09$, $p < 0.001$), 1 to 16.52 compared to the region of Harakta ($\chi^2 = 62.92$, $p < 0.001$) and 1 to 41.24 compared to the region of Segnia ($\chi^2 = 37.52$, $p < 0.001$). The odds of lexical loss in the region of Nemamcha are 9.95 times lower compared to the Massif ($\chi^2 = 62.31$, $p < 0.001$), 12 times lower compared to Bellezma ($\chi^2 = 48.31$, $p < 0.001$), 21.93 times lower compared to the region of Harakta ($\chi^2 = 67.95$, $p < 0.001$) and 54.72 times lower compared to the region of Segnia ($\chi^2 = 41.72$, $p < 0.001$).

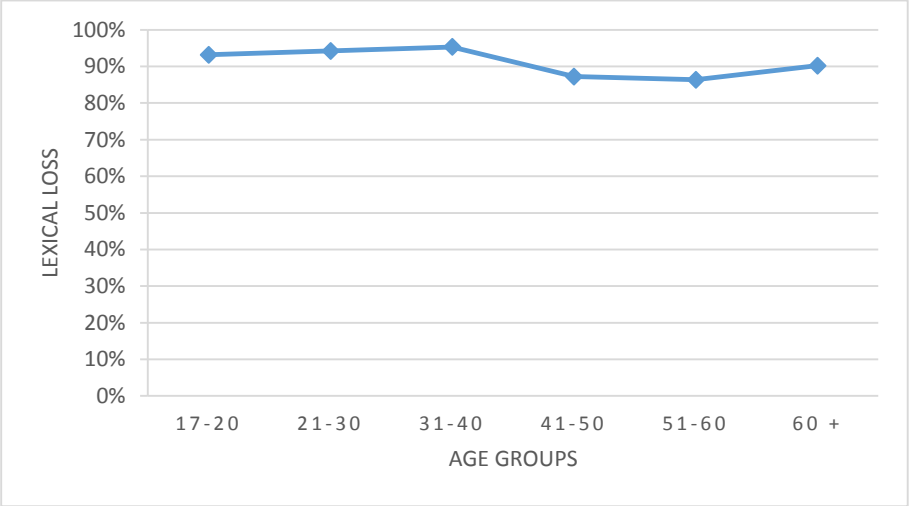
Map 4.9 Lexical loss of the Berber word(s) for ‘to freeze’ across Tashawit speaking area



With regard to the relationship between age and lexical loss, the analysis has also revealed significant results (χ^2 = 22.38, p < 0.001). The rate of lexical loss increases between the first age group ($L_{17\text{-}20}$ = 93.15%), the second age group ($L_{21\text{-}30}$ = 94.23%) and the third age group ($L_{31\text{-}40}$ = 95.31%). This increase is, nonetheless, insignificant. The odds of lexical maintenance for speakers of the first age group are only 1.12 times higher than those of the second age group (χ^2 = 0.165, p = 0.684) and 1.47 times higher than those of the third age group (χ^2 = 0.912, p = 0.340). Speakers of the second age group, likewise, are only 1.32 times less likely to lose the Berber variant compared to those of the third age group (χ^2 = 0.547, p = 0.46). The rate of lexical loss, then, decreases in a significant way between the third and the fourth age group ($L_{41\text{-}50}$ = 87.22%), with relative odds of lexical loss of 2.97 to 1 respectively (χ^2 = 6.625, p =

0.01). The decrease in the rate of lexical loss that is observed for the fifth age group ($L_{51\text{-}60}$ = 86.35%), however, turned out to be insignificant (χ^2 = 5.15, p = 0.082). Speakers of this group are only 1.12 times more likely to preserve the Berber variant compared to those of the fourth age group (χ^2 = 6.625, p = 0.01). In a similar way, the increase observed for the sixth age group (L_{60+} = 90.18%) is insignificant. The relative odds of lexical loss for the fifth and sixth age groups are 1 to 1.47 (χ^2 = 1.4, p = 0.24).

Fig. 4.9 Lexical loss of the Berber word(s) for 'to freeze' across age groups



4.1.1.10. Shade

All the Berber equivalents for 'shade' are traced to the root **L**[28]. The derivative attested in Tashawit is *tili* (Huyghe, 1906: 455). In the data, it accounted for less than a third of the total number of tokens produced in response to the present item (31.21%). It was realized mainly as *tili* and *hili*. Other forms, namely *ili*, *tiri* and *amalu*, were produced by a handful of speakers. The Berber variant is used mainly in the western regions: Occidental Aurès (49%) and, in particular, Bellezma (67.68%). The area in which the Berber variant is mainly used extends from O. Abdi in Occidental Aurès

[28] **Cognates**: *tili* (Masqueray, 1893; Delheure, 1984, 1987; Taifi, 1991; Destaing, 1938; Serhoual, 2002; Dallet, 1982; Motylinski, 1904; Van Putten, 2013), *teli* (Masqueray, 1893), *têle* (Foucauld, 1951;), *hili* (Laoust, 1912), etc.

through the northwestern and southwestern territories of the Massif to the western part of Bellezma. The Berber variant is rarely used in the remaining regions: Oriental Aurès (9%), Harakta (3.32%), Segnia (3.06%) and Nemamcha (1.31%).

The most frequent variant in the data is the Arabic loanword *ḍḍell* (57.38%). Phonetic realizations of this variant cluster around three main initial consonants [ðˤ], [dˤ] and [tˤ], hence the variants *ḍḍell* [ðˤəɬɬ], which dominates over the larger part of localities, *ḏḏell* [dˤəɬɬ] and *ṭṭell* [tˤəɬɬ]. The Arabic loan prevails over a larger speaking area compared to the Berber variant. It is used all over the eastern and central parts of the area covered in the present study, i.e. from the eastern part of Bellezma (22.71%), through the regions of Segnia (86.5%) and Harakta (76.13%) in the north, and in the south from the eastern localities of the Massif (48.1%) through Oriental Aurès (66%) to the region of Nemamcha (76.31%). The second Arabic loan, *lexyal*, is much less recurrent than the former (10.15%). It is common in the eastern regions, Nemamcha (22.37%), Oriental Aurès (22%), Harakta (18.73%) and Segnia (10.55%), but it is less used in the western regions, in particular Bellezma (7.86%) and the Massif (2.47%).

Other responses were also recorded in the data, but none of which is relevant in denoting ‘shade’, e.g. *sallas* ‘darkness’, *tfawt* ‘light, daylight’, *tafukt* ‘sun’, and others. These were produced only by a very tiny fraction of informants (see Table 4.10 below).

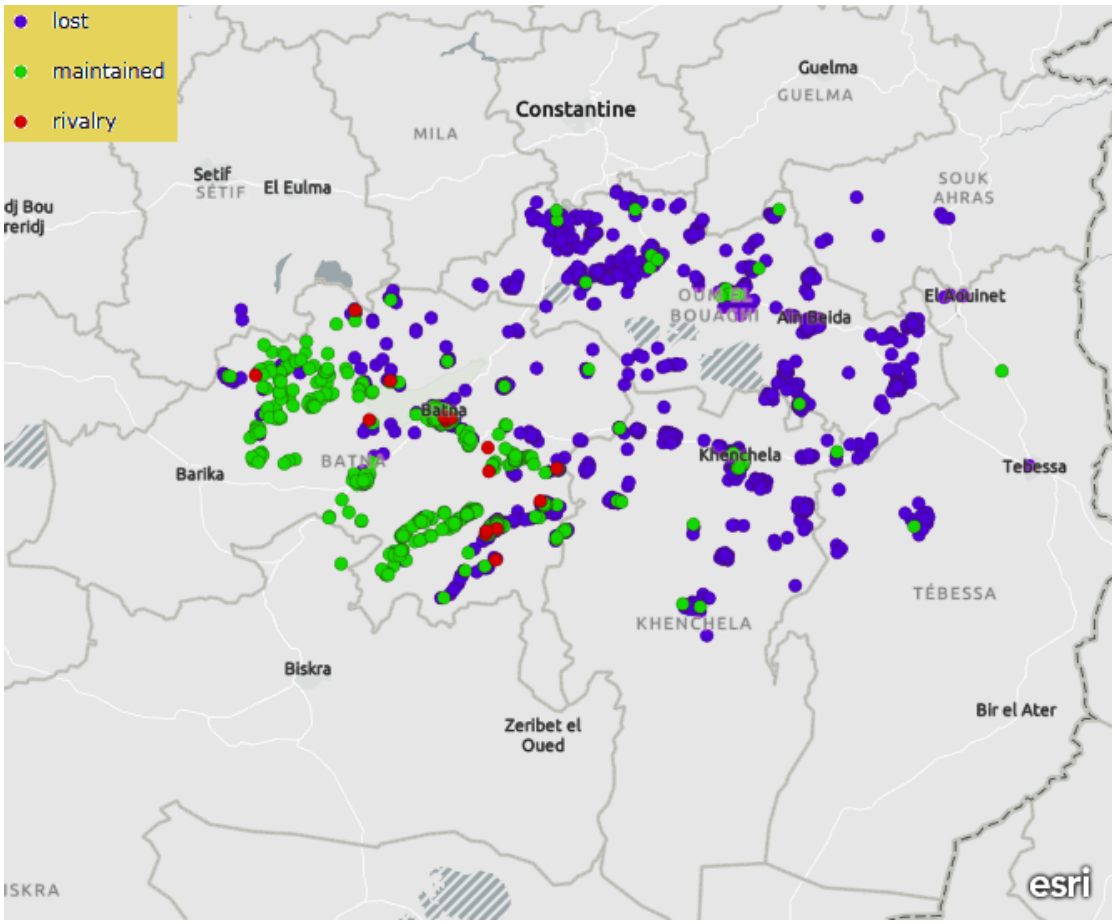
Table 4.10 ‘shade’: frequencies of lexical variants

lexical variants	**number of tokens**
tili ...	495
ḍḍell	910
lexyal	161
others	20
NR	258
total	1844

Although the Berber variant denoting the present lexical item is maintained better compared to a number of the previous items, lexical loss remains high: L (shade) = 73.16% ($\chi^2 = 394.58$, $p < 0.001$). As it can be noticed from Map 4.10 below, the use of the Berber equivalent for 'shade' is regionally determined ($\chi^2 = 525.11$, $p < 0.001$). The results showed the existence of two main areas, one is considerably maintaining the Berber variant and the other is characterized by lexical loss. The lowest rate of lexical loss was recorded in the region of Bellezma (L = 39.92%). Lexical loss is moderate in Occidental Aurès (L = 53.22%). Logistic regression analysis has shown a significant difference between these two regions. Lexical maintenance in Bellezma is 1.71 times more likely than the Massif ($\chi^2 = 11.66$, $p = 0.01$).

The highest rates of lexical loss were recorded in the eastern regions: Oriental Aurès (L = 93.79%), Segnia (L = 97.32%), Harakta (L = 97.44%) and Nemamcha (L = 97.77%). The analysis has revealed significant differences in terms of lexical maintenance between the eastern and western regions. The odds of lexical maintenance in Bellezma are 22.74 times higher than Oriental Aurès ($\chi^2 = 72.5$, $p < 0.001$), 54.6 times higher than the region of Segnia ($\chi^2 = 98.19$, $p < 0.001$), 57.18 times higher than the region of Harakta ($\chi^2 = 137.82$, $p < 0.001$) and 66.21 times higher than the region of Nemamcha ($\chi^2 = 33.33$, $p < 0.001$). The odds of lexical maintenance in the Massif are 13.28 times higher than Oriental Aurès ($\chi^2 = 52.64$, $p < 0.001$), 31.9 times higher than the region of Segnia ($\chi^2 = 77.14$, $p < 0.001$), 33.4 times higher than the region of Harakta ($\chi^2 = 110.66$, $p < 0.001$) and 38.68 times higher than the region of Nemamcha ($\chi^2 = 25.69$, $p < 0.001$).

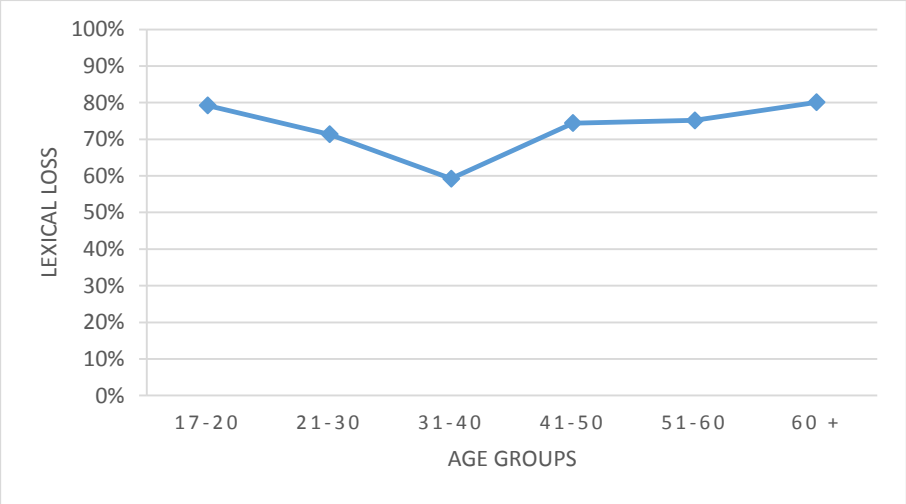
Map 4.10 Lexical loss of the Berber word(s) for ‘shade’ across Tashawit speaking area



The findings obtained for the present item showed that lexical loss is closely associated with age (χ^2 = 28.22, p < 0.001). The rate of lexical loss decreases between the first ($L_{17\text{-}20}$ = 79.21%), the second ($L_{21\text{-}30}$ = 71.33%) and the third age group ($L_{31\text{-}40}$ = 59.25%). Speakers of the first age group are 1.45 times more likely to lose the Berber variant compared to those of the second age group (χ^2 = 5.32, p = 0.021) and 2.48 times more likely compared to those of the third age group (χ^2 = 20.08, p < 0.001). A speaker from the second age group is 1.71 times more likely to lose the Berber variant compared to another from the third age group (χ^2 = 9.75, p = 0.002). The rate of lexical loss increases for the fourth age group ($L_{41\text{-}50}$ = 74.41%). This increase was proven to be significant; the odds of lexical loss for the fourth age group are twice higher than the third age group (χ^2 = 10.29, p = 0.001). The rate of lexical loss changes insignificantly

through the three older age groups. It increases slightly for the fifth age group ($L_{51\text{-}60}$ = 75.15%). Speakers of this group are only 1.08 times more likely to lose the Berber variant compared to those of the fourth age group ($\chi^2 = 0.128$, $p = 0.721$). The highest rate of lexical loss was recorded for the sixth age group (L_{+60} = 80.08%). A speaker beyond the age of sixty is only 1.27 times more likely to lose the Berber variant compared to a speaker from the fifth age group ($\chi^2 = 0.945$, $p = 0.331$) and 1.38 times more likely compared to another from the fourth age group ($\chi^2 = 1.57$, $p = 0.21$).

Fig. 4.10 Lexical loss of the Berber word(s) for 'shade' across age groups



4.1.2. Time

4.1.2.1. New

The Berber equivalents for 'new' are obsolete in most Berber languages. The use of Arabic borrowings seems to be the norm when denoting this notion. Nonetheless, words of Berber origin are still used in some Berber varieties. The Berber variants attested in the literature are traced to two main roots, **YNY / YNT** and **TRR** (Kossmann, 2013). Derivatives of the first root are attested Tuareg and Zenaga[29]. Words traced to

[29] **Cognates**: *inai* 'to be new, recent' (Foucauld, 1951), *ămăyno* (Prasse, et al. 2003), *äynäh* 'to be new' (Taine-Cheikh, 2008, cited in Kossmann, 2013). The variant *yunnan* is attested in Medieval Nefoussa (Bossoutrot, 1900), but it is believed to be lost in modern Nefoussa (Kossmann, 2013; cf. Motylinski, 1898). Chafik (1990) provides *amgnay*/*amaynay*.

the second root are found mainly in eastern Berber varieties[30]. In Tashawit, the word *atrar* 'new' is attested (Ounissi, 2003: 59).

There are two responses in the data that can be linked to the first root above, *amaynu* and *awyan*. However, the frequencies of these responses are almost null; the former was produced by two informants (0.12%) whereas the latter was produced by one speaker only (0.06%). The variant *atrar* was found to more frequent than the former (10.63%). It is the dominant variant in the region of Nemamcha (96.51%). It also used, though much less frequently, in the neighboring region of Oriental Aurès (35.77%). Its use in the remaining regions is very occasional: Occidental Aurès (4.91%), Harakta (4.25%), Bellezma (2.83%) and Segnia (0.4%).

The most recurrent variant in the data is the Arabic loanword *ajdid* (88.37%). It is the dominant variant in the northern and southwestern regions: Harakta (92.82%), Occidental Aurès (95.95%), Bellezma (96.97%) and Segnia (98.8%). It is less dominant in Oriental Aurès (64.23%). The Arabic loan is rarely used in the region of Nemamcha (2.32%). Irrelevant responses recorded for the present item are very few, e.g. *n imir* 'of now/of this moment', *ameggas*, clearly produced after the greeting *asugg^{w}as d ameggaz* meaning 'happy (new Berber) year', and *yeḥla* 'good'.

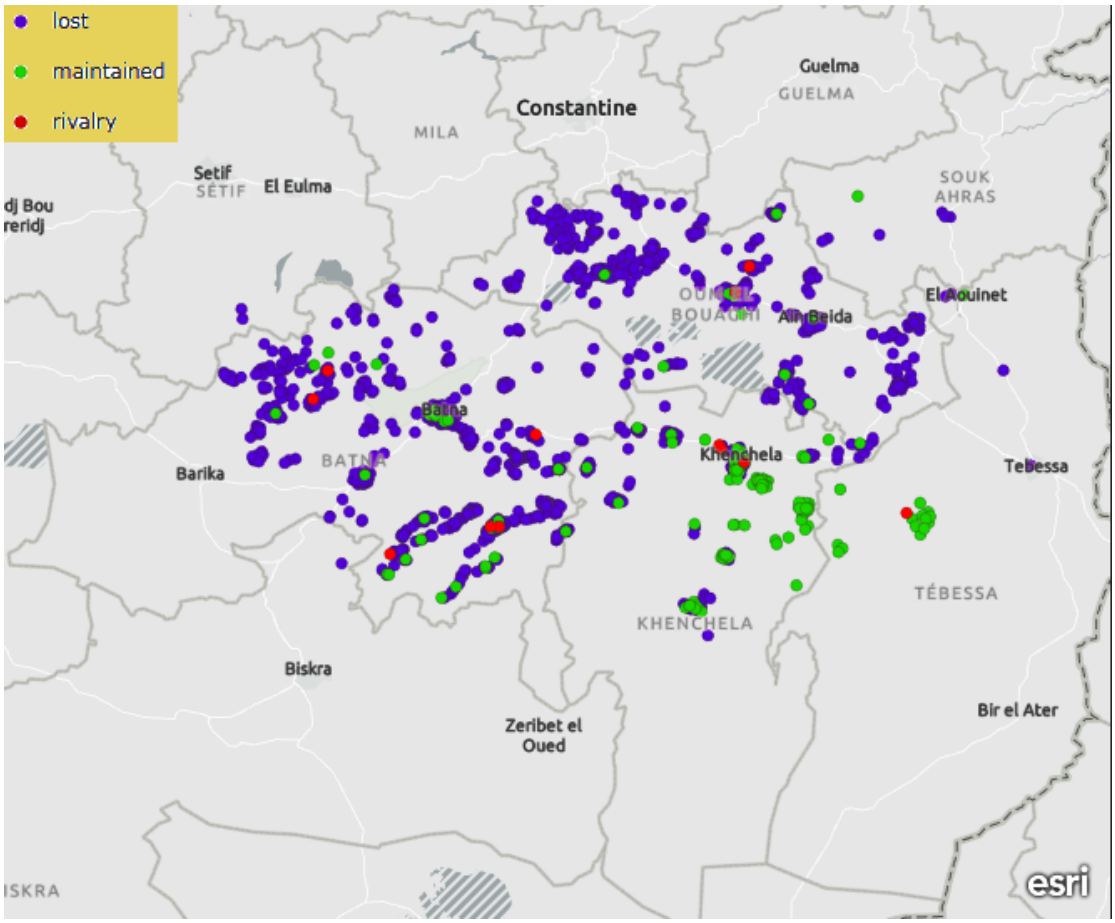
Table 4.11 'new': frequencies of lexical variants

lexical variants	**Number of tokens**
atrar	182
amaynu …	3
ajdid	1508
others	13
NR	122
Total	1828

[30] **Cognates**: *atrar* (Basset, 1890), *trir* (Sarnelli, 1924), *atrâr* (Van Putten, 2013), *trar* (Paradisi, 1963, cited in Kossmann, 2013), etc.

The overall rate of lexical loss calculated for the present variable is very high: L (new) = 89.88% (χ^2 = 1175.04, p < 0.001). The use of the Berber variant, *atrar*, is regionally determined (χ^2 = 411.126, p < 0.001). The Berber variant can be described as regional, being preserved mainly in the region of Nemamcha (L = 6.67%). The second lowest rate of lexical loss was recorded in Oriental Aurès (L = 69.66%). The odds of lexical maintenance in the region of Nemamcha are 32.14 times higher than Oriental Aurès (χ^2 = 57.01, p < 0.001). Greater differences were obtained with regard to other regions. The odds of lexical maintenance in the region of Nemamcha are 269.65 times higher than Occidental Aurès (L = 95.06%) (χ^2 = 139.66, p < 0.001), 289.33 times higher than the region of Harakta (L = 95.38%) (χ^2 = 135.64, p < 0.001), 502 times higher than Bellezma (L = 97.29%) (χ^2 = 118.84, p < 0.001) and 3640 times higher than the region of Segnia (L = 99.62%) (χ^2 = 56.84, p < 0.001). The analysis has also revealed significant differences between Oriental Aurès and these regions. The odds of lexical maintenance in Oriental Aurès are 8.39 times higher than Occidental Aurès (χ^2 = 57.74, p < 0.001), 9 times higher than the region of Harakta (χ^2 = 53.14, p < 0.001), 15.62 times higher than Bellezma (χ^2 = 42.1, p < 0.001) and 113.27 times higher than the region of Segnia (L = 99.62) (χ^2 = 21.58, p < 0.001).

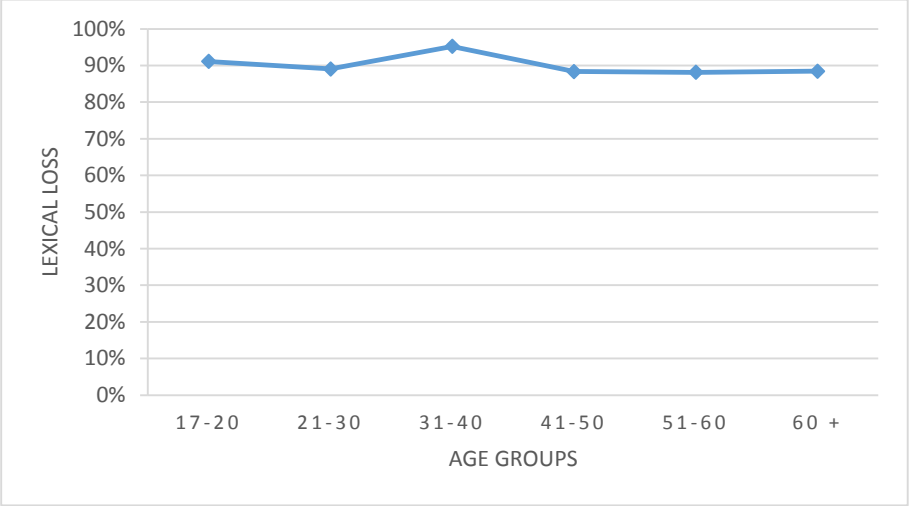
Map 4.11 Lexical loss of the Berber word(s) for 'new' across Tashawit speaking area



Logistic regression analysis has revealed that, in general, lexical loss is weakly associated with age for the present item (χ^2 = 8.06, p = 0.15). However, when we considered individual differences, the analysis revealed some significant results. The highest rate of lexical loss was recorded for the third age group ($L_{31\text{-}40}$ = 95.2%). The odds of lexical loss for this age group are 2.24 times higher than the second age group ($L_{21\text{-}30}$ = 89.07%) (χ^2 = 5.38, p = 0.02), 2.39 times higher than the fourth age group ($L_{41\text{-}50}$ = 88.35%) (χ^2 = 5.096, p = 0.024) and 2.35 times higher than the fifth age group ($L_{51\text{-}60}$ = 88.16%) (χ^2 = 5.091, p = 0.024). However, the differences recorded between the third group and those of the first age group ($L_{17\text{-}20}$ = 91.12%) and sixth age group (L_{+60} = 88.46%) are statistically insignificant. The relative odds of lexical loss for speakers of the third age group are only 1.78 times higher compared to those of the first age

group (χ^2 = 2.33, p = 0.127) and 1.49 times higher than speakers of the sixth age group (χ^2 = 0.814, p = 0.367). No significant differences were obtained between any other age group pairs.

Fig. 4.11 Lexical loss of the Berber word(s) for 'new' across age groups



4.1.2.2. Old (ancient)

Based on the literature, the Berber equivalent(s) for 'old' seem(s) to have gone obsolete in most Berber varieties. The first Berber equivalent for the present item is *iru*. This variant is attested only in Tuareg varieties[31]. The data collected in response to the present variable show a complete absence of this variant. Another word that is attested in the literature, though of debatable origins, is the variant *agbur* (also *akbur* and *aqbur*)[32]. According to Delheure (1984, 1987) and Kossmann (2013), these words are loans which can be traced back to the Arabic word *kbir* 'old' (Ben Sedira, 1910). This Arabic word, it should be noted, does not mean 'ancient', but instead is used to designate an 'old person', etc. This second sense is expressed in Berber using words like *amuqṛan*, *amɣar*, *awessar*, etc. These words are still used widely in all Berber

[31] See Masqueray (1893: 23), Motylinski (1908: 82) and Foucauld (1951: 1650). Chafik (1990) gives the word *amaru* 'old'.
[32] See Jordan (1934), Delheure (1984, 1987) and Taifi (1991). The variant *aqbur* is also attested in Figuig (Kossmann, 2013).

varieties (Haddadou, 2007), which may suggest that the word *kbir* had probably never been borrowed. The borrowing of the Arabic word *qdim* would have been, and in fact was, a better alternative. It would be more compelling to relate the variant *aqbuṛ*, and its related forms, to the Arabic word *ɣabir* meaning 'very ancient' (Lane, 1968), especially when considering that it is similar in meaning. Interestingly, a response, close in form, was recorded in the data, namely *aɣbir*. This word is attested in Tashawit with the meaning 'uninhabited house' (Huyghe, 1907). It seems reasonable to relate this use to the meaning of 'ancient', 'used', etc. It is possible that the word *aɣbir* and *ɣabir* are derivatives of a common Afroasiatic root. If this is the case, one may extend the argument to state that the words *aqbur* and *ajbir*, which were also recorded in the data, are all offshoots of the same Afroasiatic root. It is important to note, however, that the number of tokens produced for these three forms are insignificant: *aqbuṛ* (0.34%), *aɣbir* (0.11) and *ajbir* (0.05%).

The most common variant in the data is the Arabic loan *aqdim*. Realized also as *yeqdem* 'to be old', it accounted alone for 97.68% of the total number of tokens produced by the subjects. It prevails over all the localities covered in the present research work. Another word that was produced in the data, and which is also attested in some Berber varieties is the variant *esref* [33]. This variant was produced by an insignificant number of speakers (0.11%).

Some other informants resorted to alternative Berber forms to express the notion in question, e.g. *awessar* 'old/aged person', *zik* 'in the past' or *n zik* 'of the past', etc.

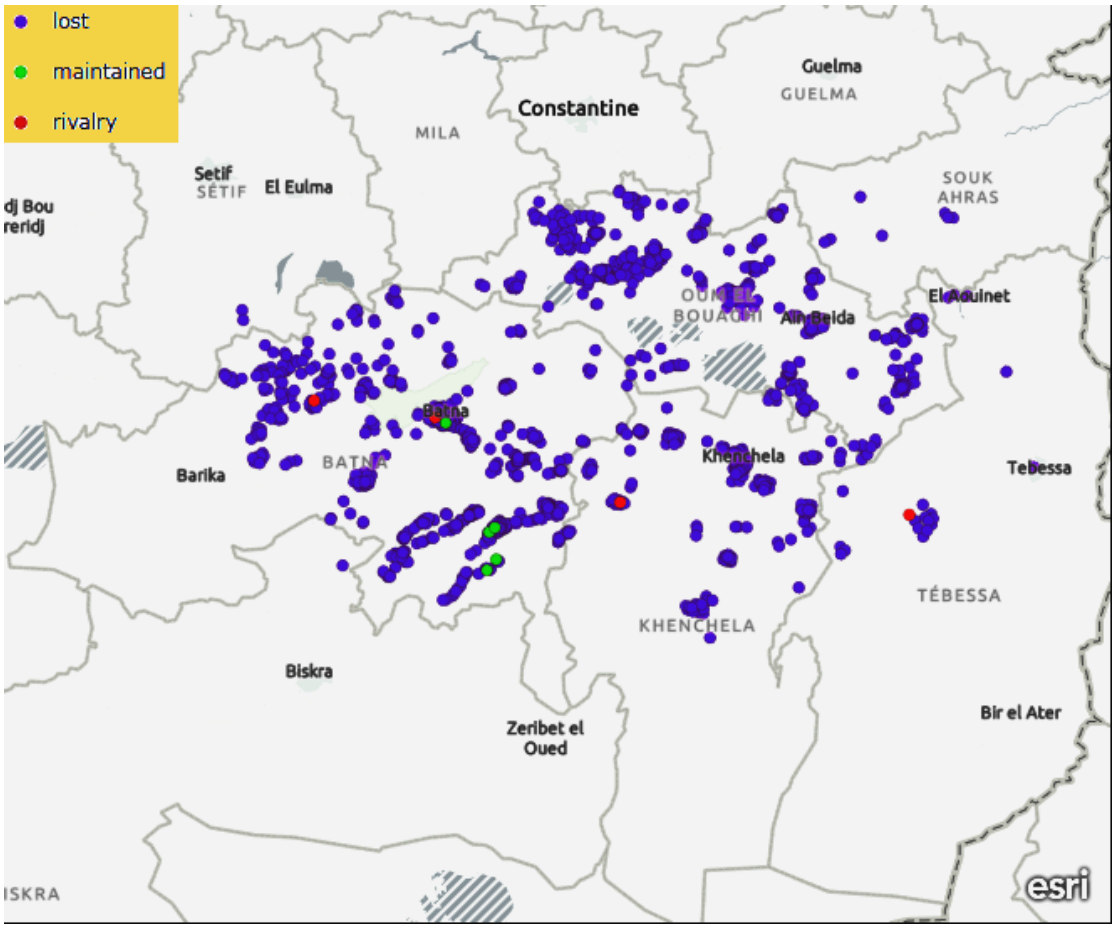
[33] In TCM, the word *asrif* 'used, worn out' is attested (Taifi, 1991). The word *caref* 'old man/woman' is attested in Siwa. Basset (1890) states that this is an Arabic loan. Kossmann (2013) relates this to the Arabic word *carif* 'old (camel mare)'.

Table 4.12 ‘old’: frequencies of lexical variants

lexical variants	**number of tokens**
aqdim ...	1687
aqbur ...	9
esref	2
others	29
NR	102
total	1829

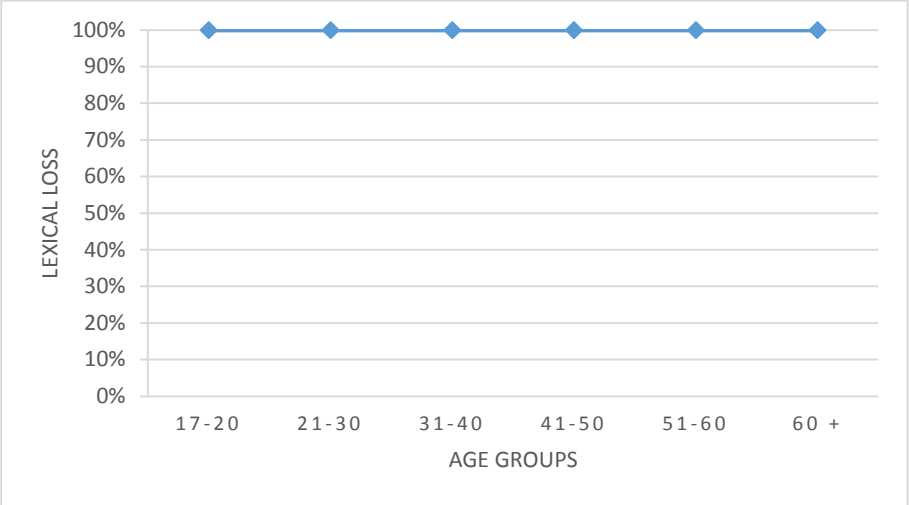
The Berber word for ‘old’, i.e. the one traced to the root **R**, is certainly obsolete in Tashawit as it is in most other Berber varieties. If we are to adopt the view that *aqbur* and its related forms are loans rather than Berber words, it can be stated that lexical obsolescence for the present item is absolute: L (old) = 100% ($\chi^2 = 1827$, $p < 0.001$). The result will change only very slightly if, on the other hand, the above word is regarded as a Berber variant: L = 99.51% ($\chi^2 = 1793$, $p < 0.001$). It would be more accurate, then, to describe the Berber variant as virtually obsolete. The relationship between lexical loss and region is insignificant in either cases: $\chi^2 = 0$, $p = 1$ or $\chi^2 = 1.19$, $p = 0.95$. Yet, in the second case, we can assume that the loss of the Berber variant is relatively recent in the western regions, where eight of the nine tokens produced for the variant *aqbur* were recorded.

Map 4.12 Lexical loss of the Berber word(s) for ‘old’ across Tashawit speaking area



The variant *aqbur* was produced mainly by younger speakers; six of the nine informants who produced it are from the second age group. The first, third and fourth age groups produced the remaining three tokens, one per each, whereas none of the speakers of the fifth and the sixth age groups produced any. Yet, the Statistical analysis has revealed no cross-generational variation in terms of lexical loss, both when *aqbur* and its related forms are regarded as Berber words ($\chi^2 = 0$, $p = 1$) and, definitely, when regarded as Arabic borrowings ($\chi^2 = 1.19$, $p = 0.95$).

Fig. 4.12 Lexical loss of the Berber words for ‘old’ across age groups



4.1.2.3. Morning

The Berber word for ‘morning’ is traced to the same root to which the Berber words for ‘light/daylight’, ‘fire’, ‘sun’ are traced as well, that is **FW**. Derivatives of this root which denote ‘morning’ are attested in a limited number of Berber varieties[34]. This variant does not appear in Tashawit texts. Instead, an alternative Berber variant is attested, namely *tanzagt* (Huyghe, 1906: 405) / *tanezzaḳt* (Basset, 1961: 6). Traced to the Berber root **NZ**, which expresses the notion of being early, the original meaning of this word seems to be ‘early morning’ (see Masqueray, 1879: 493, 519)[35].

Derivatives of the first root above are almost completely missing in the data. Only seven informants managed to produce the word *tifawt* or *tifawin* (0.39%). Six of the seven informants who produced this variant are from Occidental Aurès, whereas the seventh informant is from Bellezma. This variant is totally missing in other regions.

[34] **Cognates**: *tufat* (Masqueray, 1893; Foucauld, 1951), *tifawt* (Taifi, 1991), *tufut* (Destaing, 1914), etc.

[35] A cognate of this variant is attested in Zenaga: *tenezzet* ‘morning’ (Faidherbe, 1877; Basset, 1909), *tenezzet* ‘early’/‘morning’ (Masqueray, 1879). The word *tanazzat* is also used in the same dialect to refer to ‘prayer of morning’ (Kossmann, 2013). In Tuareg, the word *tanhit* is used to designate ‘early morning’ (Foucauld, 1951; cf. Chafik, 1990).

The variant *tanezzaḳt*, also realized as *tanezzayt*, was revealed to be more frequent than the previous variant (9.01%). It was produced mainly in the region of Nemamcha (45.16%). It was produced in a less frequent way in the Massif (12.71%), Oriental Aurès (9.1%) and Bellezma (7.97%), but it is very occasional in the northeastern regions, Harakta (2.32%) and Segnia (0.38%).

The most frequent variant in the data is the Arabic borrowing *taṣebḥit* (88.37%). It dominates, albeit with varying degrees, over most of the regions covered in the study: Harakta (98.45%), Segnia (95.88%), Bellezma (90.44%), Oriental Aurès (84.61%) and the Massif (83.84%). It is moderately used in the region of Nemamcha (50.54%).

Two nonce Arabic borrowings were recorded in the data, *tabukrit* 'early morning' (0.33%) and *taṭeḥwit* 'forenoon' (0.05%). Other responses that were produced by the subjects include *ass* 'day, daylight', *lefjer* 'dawn', etc. Table 4.13 below gives a summary of the responses obtained for the present item.

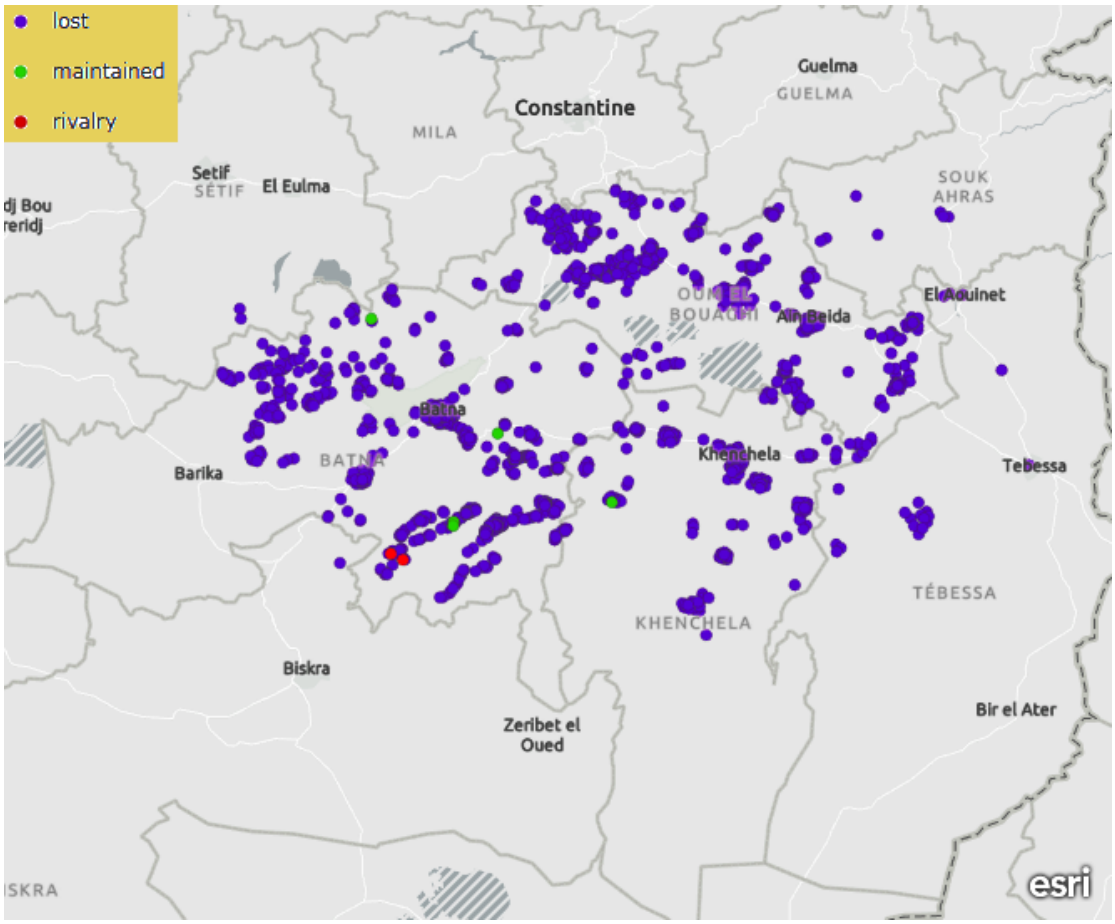
Table 4.13 'morning': frequencies of lexical variants

lexical variants	**number of tokens**
tifawt...	7
tanezzaḳt...	162
taṣebḥit ...	1589
others	40
NR	46
Total	1844

Taking into account the frequencies of Arabic loans, established or nonce, irrelevant responses and non-responses, the rate of lexical loss calculated for the Berber variant *tifawt* is extremely high: L (morning) = 99.6% (χ^2 = 1788.32, $p < 0.001$). The analysis has shown no regional variation with regard to the obsolescence of this variant (χ^2 = 1.25, p = 0.97). However, it seems that the loss of this Berber variant is relatively

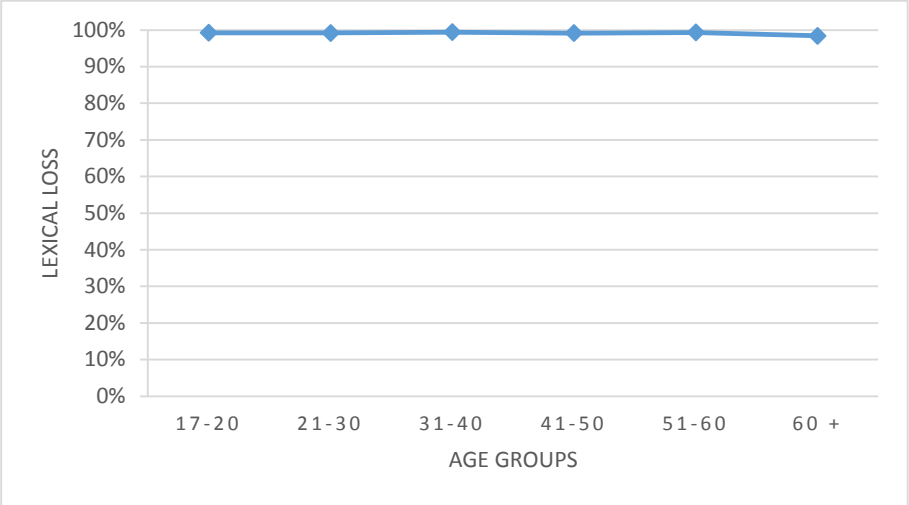
recent in the Massif compared to other regions. There is a regional variation in the lexical replacement of the Berber variant. In the northern and, in particular, the northeastern regions lexical replacement was achieved by lexical borrowing from Arabic. In the southern regions, lexical replacement seems to have taken place by semantic broadening, that is of the meaning of the word *tanezzayt*. Nonetheless, this alternative Berber word has itself undergone a massive lexical replacement due to the introduction of the Arabic loan.

Map 4.13 Lexical loss of the Berber word(s) for 'morning' across Tashawit speaking area



In a similar way to region, age was proved to have no relationship with lexical loss. The Berber variant, *tifawt*, can be described as obsolete or virtually obsolete for all speakers regardless of their age ($\chi^2 = 1.78$, $p = 0.88$), or any other social factor (see Fig. 4.13 below).

Fig. 4.13 Lexical loss of the Berber words for 'morning' across age groups



4.1.2.4. Afternoon

In Berber, the notion of 'afternoon' is denoted by words that stem from the root **WDW**[36]. The variant attested in Tashawit is *tamdit* (Huyghe, 1906: 652) and *tameddit* (Basset, 1961: 346).

The number of tokens recorded in the data for the Berber variant represent 14.94% of all responses. It is used in Bellezma (46.82%), mainly in the central and south-central localities. It is also used, though much less frequently in other regions, namely Nemamcha (15.22%) and the Massif (11.86). It is used, even less frequently, in the regions of Oriental Aurès (6.85%), Harakta (3.55%) and Segnia (1.15%).

The variant that prevails over the major part of Tashawit speaking areas is the Arabic borrowing *taɛecwit* (80.37%). Its immediate source seems to be dialectal Arabic, namely *lɛecwa* (Ben Sedira, 1910). Its use prevails over the regions of Segnia (96.54%), Harakta (93.15%), Oriental Aurès (88.36%), the Massif (80.39%) and Nemamcha (78.26%). The Arabic loan is less dominant in Bellezma (48.31%), where it is used

[36] **Cognates**: *tadeggat* (Motylinski, 1908; Foucauld, 1951), *tadugg^{w}at* (Taifi, 1991) and *tadugg^{w}at* (Destaing, 1938), *tammedit* (Motylinski, 1898; Lanfry, 1973; Delheure, 1984, 1987; Serhoual, 2002; Dallet, 1982), etc.

mainly in the northwestern localities of the region. Another Arabic borrowing that was recorded in the data is *amsay*. It is evident, based on its insignificant frequency (0.7%), that it is not yet an established borrowing in Tashawit.

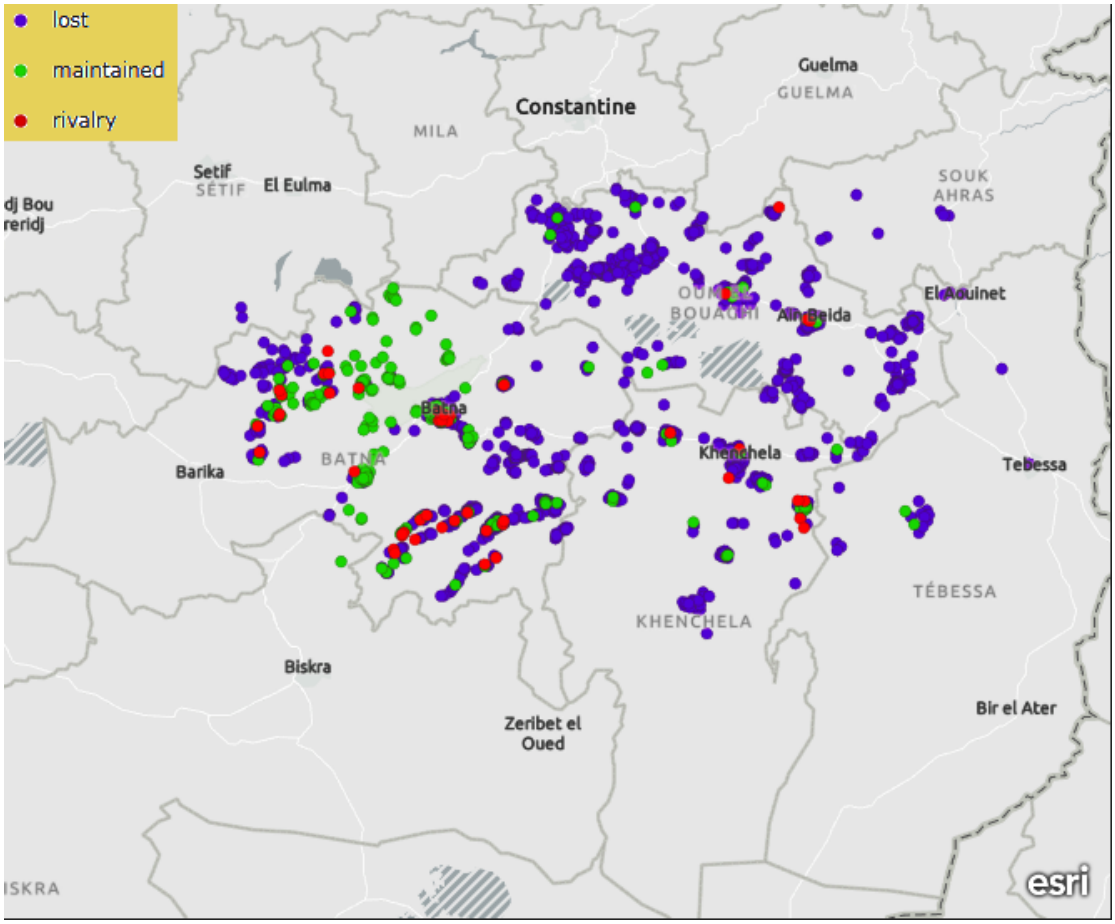
A number of participants provided the word *amensi*, the accurate meaning of which is 'dinner'. This word is also used extensively to mean 'evening', probably originally the time around which dinner is served. Other irrelevant responses that were produced include *iḍ* 'night', *tanezzayt* 'early morning', *sallas* 'darkness' and others.

Table 4.14 'afternoon': frequencies of lexical variants

lexical variants	**number of tokens**
tameddit	277
taɛecwit...	1490
amsay	13
others	74
NR	27
total	1881

Lexical loss is largely dominant for the present item: L (afternoon) = 85.75% (χ^2 = 394.58, $p < 0.001$). The statistical analysis has shown a considerable degree of regional variation (χ^2 = 223.08, $p < 0.001$). Lexical obsolescence is prominent in the eastern regions, but it is less dominant in the western ones. Lexical loss is moderate in Bellezma (L = 51.55%). The Berber variant is maintained marginally in the southern regions: Nemamcha (L = 84.44%), Occidental Aurès (L = 87.55%) and Oriental Aurès (L = 93.1%). The analysis has revealed important differences between these regions and the region of Bellezma. The odds of lexical maintenance in Bellezma are 5.1 times higher compared to the region of Nemamcha (χ^2 = 26.53, $p < 0.001$), 6.61 times higher compared to the Massif (χ^2 = 101.32, $p < 0.001$) and 12.69 times higher compared to Oriental Aurès (χ^2 = 52.51, $p < 0.001$).

Map 4.14 Lexical loss of the Berber word(s) for ‘afternoon’ across Tashawit speaking area

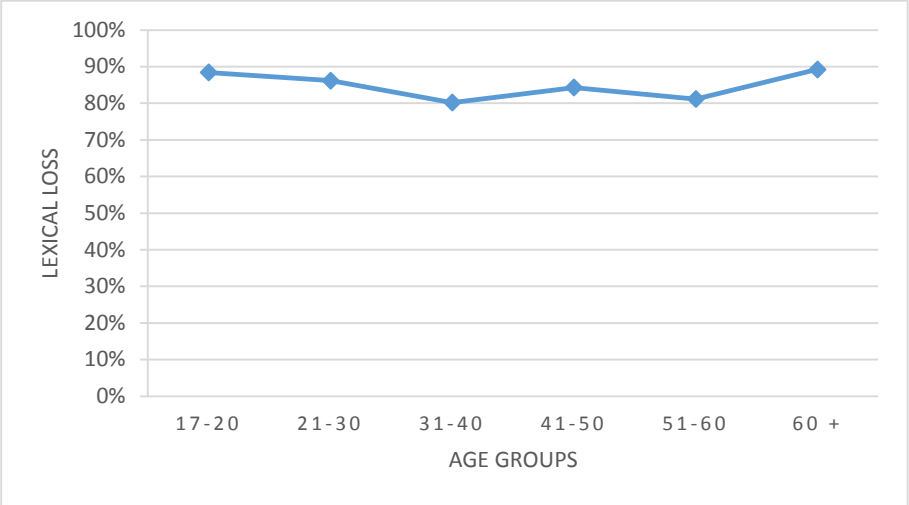


The highest rates of lexical loss were recorded in the eastern regions: Harakta (L = 96.41%) and Segnia (L = 98.85%). Speakers of the region of Segnia are 3.2 times more likely to lose the Berber variant compared to those of the region of Harakta, but the difference is insignificant ($\chi^2 = 3.29$, $p = 0.07$). The analysis has also revealed that the odds of lexical loss in the region of Harakta are only twice higher than Oriental Aurès ($\chi^2 = 2.61$, $p = 0.106$). However, the odds of lexical loss in the region of Harakta are 3.82 times higher than the Massif ($\chi^2 = 19.14$, $p < 0.001$), 4.95 times higher than the region of Nemamcha ($\chi^2 = 16.11$, $p < 0.001$) and 25 times higher than Bellezma ($\chi^2 = 116.32$, $p < 0.001$). The odds of lexical loss in the region of Segnia are 6.37 times higher than Oriental Aurès ($\chi^2 = 7.71$, $p = 0.005$), 12.2 times higher than Occidental Aurès (χ^2

= 17.56, $p < 0.001$), 15.87 times higher than the region of Nemamcha ($\chi^2 = 18.09$, $p < 0.001$) and 83.33 times higher than Bellezma ($\chi^2 = 54.69$, $p < 0.001$).

The statistical analysis has shown that age is not a good predictor of lexical loss ($\chi^2 = 9.23$, $p = 0.1$). The analysis has, nonetheless, revealed significant differences between some of the age groups involved. The rate of lexical loss decreases slightly between the first age group ($L_{17\text{-}20} = 88.42\%$) and the second age group ($L_{21\text{-}30} = 86.2\%$); a speaker from the former is only 1.15 times more likely to lose the Berber variant compared to another from the latter ($\chi^2 = 0.5$, $p = 0.48$). The rate of lexical loss decreases also slightly between the second and the third age group ($L_{31\text{-}40} = 80.18\%$). The odds of lexical maintenance of the third age group are only 1.48 times higher compared to the second age group ($\chi^2 = 3.41$, $p = 0.065$). However, the odds of lexical maintenance for the third age group are 1.71 times higher compared to the first age group ($\chi^2 = 4.62$, $p = 0.032$). We observe an increase in the rate of lexical loss between the third and the fourth age group ($L_{41\text{-}50} = 84.32\%$). This increase is, nonetheless, statistically insignificant; the odds of a speaker from the fourth age group losing the Berber variant compared to another from the third group are only 1.34 times higher ($\chi^2 = 1.245$, $p = 0.264$). The rate of lexical loss decreases again between the fourth and the fifth age group ($L_{51\text{-}60} = 81.14\%$), but the relative odds of lexical loss between these two groups are only 1.22 to 1 ($\chi^2 = 0.65$, $p = 0.42$). The highest rate of lexical loss was recorded for the sixth age group ($L_{+60} = 89.23\%$). The increase in the rate of lexical loss between the fifth and sixth group is quite significant; the relative odds of lexical loss between these two group are 1 to 1.82 ($\chi^2 = 3.89$, $p = 0.049$).

Fig. 4.14 Lexical loss of the Berber word(s) for 'afternoon' across age groups



4.1.2.5. Summer

There are two equivalents for 'summer' in Berber. The first is traced to the root **WLN**[37] and is attested only in Tuareg. The second variant is traced to the root **BD**[38] and is attested in most other Berber varieties including Tashawit, *anebdu* (Huyghe, 1906: 260).

The analysis of the data has revealed that the variant *anebdu* is widely used in Tashawit (78.58%). It prevails over the majority of regions covered in the present work: Harakta (93.73%), Segnia (96.15%), Nemamcha (96.47%), Oriental Aurès (88.81%) and Bellezma (86.34%). This variant has suffered a great deal of lexical replacement in the Massif (37.18%).

The second most frequent variant in the data is the Arabic loan *ṣṣif* (18.98%). It is prominent in the central and western territories of the Massif (55.88%), in particular O. Labiod and O. Abdi and some other adjacent localities. It is also used, if less frequently, in Batna city (25%), but it is used only occasionally in other regions: Oriental Aurès

[37] The second variant is attested mainly in Tuareg: *iwélen* (Masqueray, 1893) and *ewilen* (Motylinski, 1908; Foucauld, 1951), etc.

[38] **Cognates:** *tenawdud* (Basset, 1909), *anebdu* (Destaing, 1914, 1938; Taifi, 1991; Serhoual, 2002; Dallet, 1982; Motylinski, 1898; Provotelle, 1911) and *nebdu* (Motylinski, 1898), etc.

(5.97%), Bellezma (4.82%), Nemamcha (2.35%), Harakta (1.57%) and Segnia (1.53%). The second Arabic loan, *lḥumman*, was produced by a tiny fraction of informants (2.1%). It was recorded mainly in the region of Bellezma (5.62%). A third loan was also recorded in the data, that is *awessu* (0.73%). This, according to Kossmann (2013), is a borrowing from the Latin word *Augustus* (Kossmann, 2013). It was recorded in the regions of Oriental Aurès and Harakta.

A number of other responses were recorded in the data. These include the names of other seasons and other irrelevant responses. Of such words, the closest in meaning to 'summer' is *ssammet*. This term refers to the fourty-day period between the 12th of the seventh month, *yulyez*, and the 20th of the 8th month, *tγuccet*, of the Berber calendar. It corresponds to the period between the 25th of July and the second day of September of the Gregorian calendar. Other respondents have produced responses which denote other seasons.

Table 4.15 'summer': frequencies of lexical variants

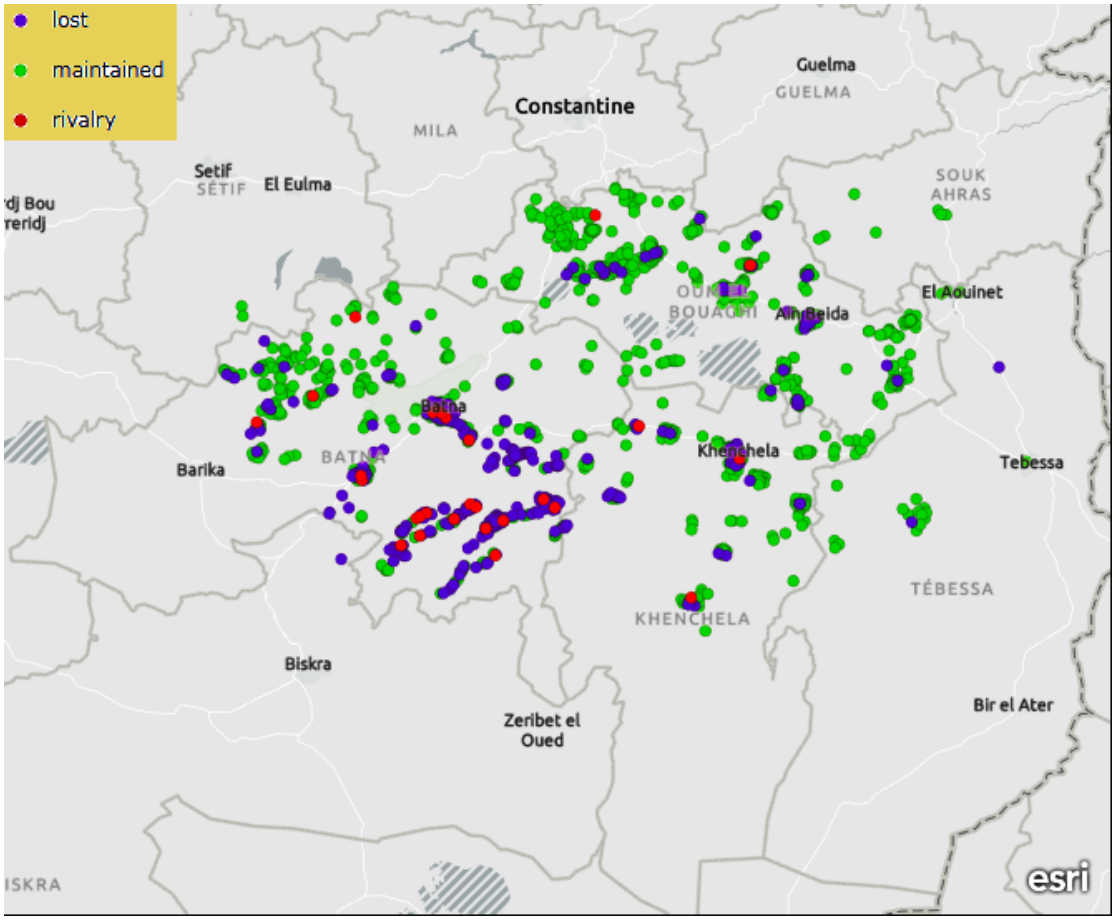
lexical variants	**number of tokens**
anebdu	1334
ṣṣif	335
lḥumman	37
awessu	13
others	46
NR	85
Total	1850

The data obtained for the present item has revealed that lexical loss is low compared to all other notions in the wordlist: L (summer) = 27.89% ($\chi^2 = 350.14$, $p < 0.001$). The findings have shown that region is an important predictor of lexical loss ($\chi^2 = 511.346$, $p < 0.001$). Lexical loss is the dominant trend in the Massif (L = 62.02%). Logistic regression analysis has revealed that the odds of lexical loss in this region are 7.46 times

higher than Oriental Aurès (L = 17.93%) (χ^2 = 72.27, p < 0.001) and 8.2 times higher than Bellezma (L = 16.67%) (χ^2 = 119.1, p < 0.001). The analysis has revealed much variation when we compare the Massif to the regions of Nemamcha (L = 7.78%), Harakta (L = 8.21%) and Segnia (L = 4.21%). A speaker from Occidental Aurès is 19.23 times more likely to lose the Berber variant compared to a speaker from the region of Nemamcha (χ^2 = 53.53, p < 0.001), 18.18 times more likely than a speaker from the region of Harakta (χ^2 = 195.57, p < 0.001) and 37.1 times more likely than another from the region of Segnia (χ^2 = 125.55, p < 0.001).

The odds of lexical loss in the region of Segnia are significantly lower than most other regions. The relative odds of lexical loss in this region are 1 to 2.03 compared to the region of Harakta (χ^2 = 3.9, p = 0.048), 1 to 4.54 compared to Bellezma (χ^2 = 18.67, p < 0.001) and 1 to 4.97 compared to Oriental Aurès (χ^2 = 18.11, p < 0.001). A speaker from the region of Segnia is 1.92 times less likely to lose the Berber variant compared to a speaker from the region of Nemamcha, but the difference is statistically insignificant (χ^2 = 1.69, p = 0.19). The relative odds of lexical loss in the region of Nemamcha are 1 to 2.59 compared to Oriental Aurès (χ^2 = 4.49, p = 0.034), 1 to 2.37 compared to Bellezma (χ^2 = 4.08, p = 0.043), but only and 1 to 1.06 compared to the region of Harakta (χ^2 = 0.02, p = 0.894). Lexical loss in the region of Harakta was revealed to be 2.24 times less likely compared to Bellezma (χ^2 = 10.47, p = 0.001) and 2.44 times less likely compared to Oriental Aurès (χ^2 = 9.87, p = 0.002). The difference between the regions of Bellezma and Oriental Aurès are insignificant; the odds of lexical loss in the former are only 1.09 times lower compared to the former (χ^2 = 0.1, p = 0.75).

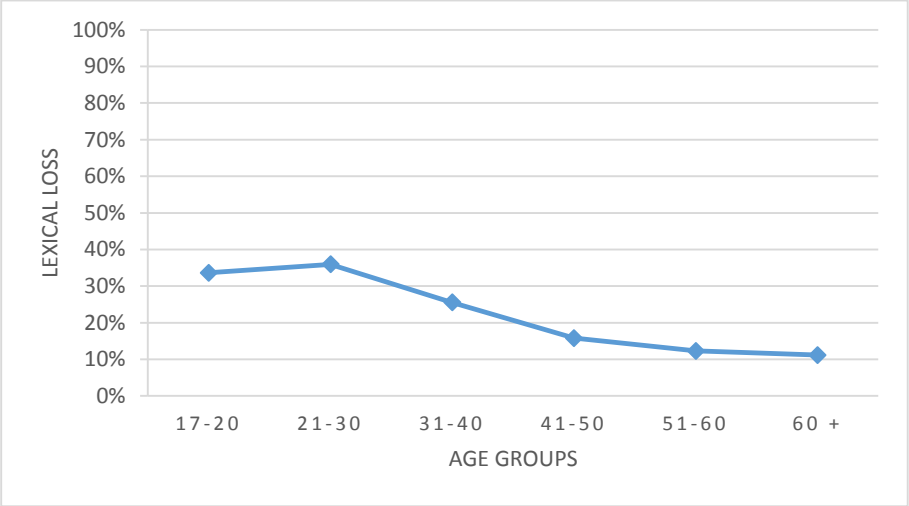
Map 4.15 Lexical loss of the Berber word(s) for ‘summer’ across Tashawit speaking area



With regard to cross-generational variation, the analysis of the data obtained for the present item has shown that age plays a crucial role in predicting lexical loss (χ^2 = 266.673, p < 0.001). Younger speakers exhibit lexical loss more than older speakers. The rate of lexical loss increases slightly between the first ($L_{17\text{-}20}$ = 33.65%) and the second age group ($L_{21\text{-}30}$ = 35.59%). A speaker aged between 17 and 20 years is 1.11 times less likely to preserve the Berber variant than a speaker aged between 21 and 30 years (χ^2 = 0.49, p = 0.48). The rate of lexical loss, then, decreases in a continuous way between the second and the sixth age group. The odds of lexical loss for speakers of the second age group are 1.64 higher than the third age group ($L_{31\text{-}40}$ = 25.54%) (χ^2 = 6.92, p = 0.009), whereas the odds of lexical loss for this latter are only 1.48 times higher than the fourth age group ($L_{41\text{-}50}$ = 15.81%) (χ^2 = 3.56, p = 0.059). The lowest rates of

lexical loss were recorded for the fifth age group ($L_{51\text{-}60}$ = 12.3%) and the sixth age group (L_{+60} = 11.18%). The relative odds of lexical loss for speakers of the fourth age group are only 1.34 to 1 compared to those of the fifth age group (χ^2 = 1.19, p = 0.275) and 1.49 to 1 compared to those of the sixth age group (χ^2 = 1.58, p = 0.21). The odds of lexical loss for speakers of the fifth age group are only 1.11 times higher than those of the sixth age group (χ^2 = 0.11, p = 0.74).

Fig. 4.15 Lexical loss of the Berber word(s) for 'summer' across age groups



4.1.2.6. Winter

The words used in Berber to refer to winter are all traced to the root **GRS**[39]. The variant attested in Tashawit is *tajrest* (Huyghe, 1906: 330). Of all the tokens produced by the subjects, only 3.54% of the responses produced match the Berber variant. It was recorded mainly in the Massif (8.41%), particularly in the localities of Tigherghar, Menaa, Tkout, Bouzina, and Arris (see Map 4.16 below). It was produced only by a handful of speakers in other regions.

[39] **Cognates**: *tağrest* (Masqueray, 1893; Foucauld, 1951; Delheure, 1984; Serhoual, 2002), *teğeres* Lanfry, 1973), *tagerst* (Taifi, 1991; Destaing, 1938), *tegrest* (Motylinski, 1898; Provotelle, 1911), *tajrest* (Delheure, 1984), etc.

The Arabic loan *lmecta*, occasionally *ccta*, (Ben Sedira, 1910) was produced by the overwhelming majority of speakers (95.06%). It was recorded in all localities covered in the present study, and in most of them it was the only variant used: Harakta (98.93%), Segnia (97.67%), Nemamcha (96.47%), Oriental Aurès (96.8%), Bellezma (93.9%) and Occidental Aurès (90.04%).

The participants have also produced other words to denote the referent in question. For instance, the word *llyali*, literally "nights", was produced by a number of informants. This word rather refers to the forty-day period of winter parallel to *ssammet*, which are known for their bitter cold. They extend from the 12th day of the last month, *Jember*, to the twentieth day of the first month of the Berber calendar, *Yennar*, i.e. from December 25th to the second day of February. Other responses that were recorded in the data include *aṣemmiḍ* 'cold', *ajris* 'ice', *anebdu* 'summer', etc.

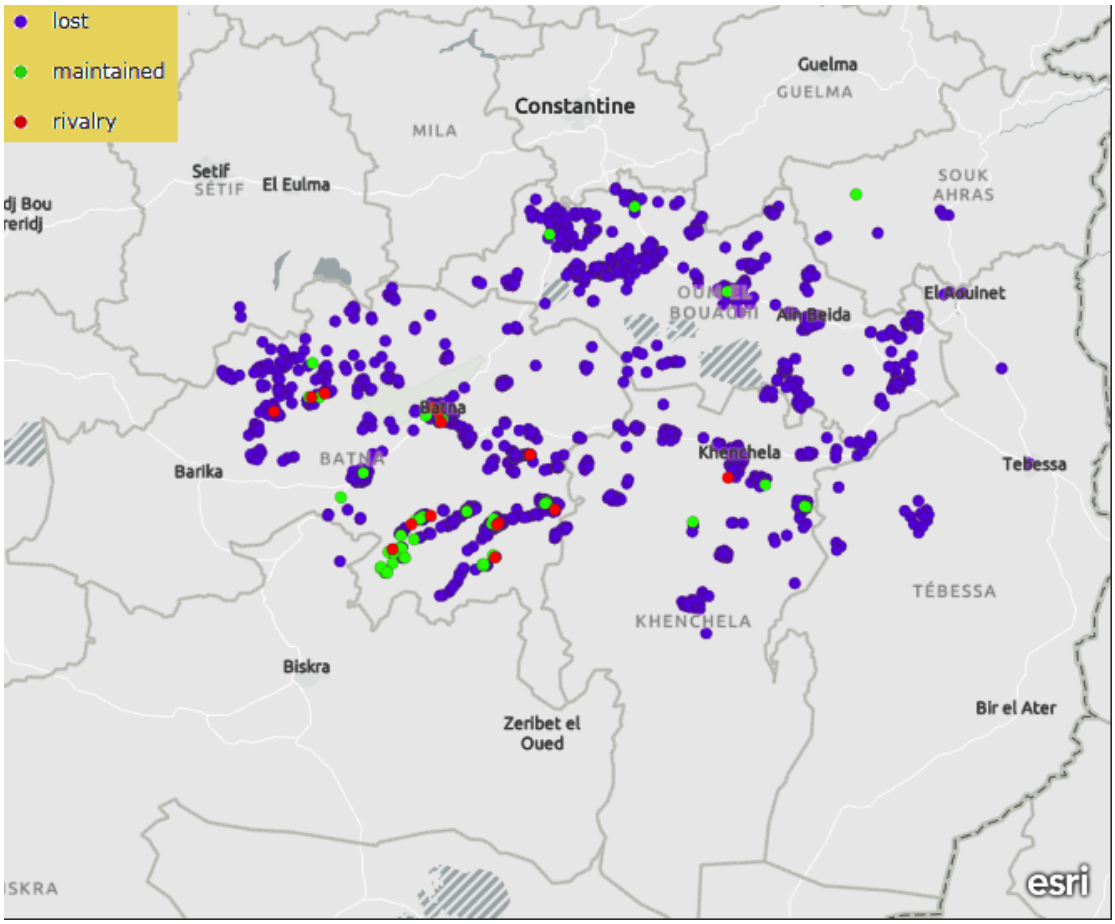
Table 4.16 'winter': frequencies of lexical variants

lexical variant	**number of tokens**
tajrest	61
lmecta ...	1636
others	24
NR	115
Total	1836

The Berber equivalent for 'winter' is retained slightly in Tashawit: L (winter) = 96.68% (χ^2 = 1598.24, $p < 0.001$). Although lexical loss is prominent in all regions, the analysis has revealed that it still has a significant relationship with region (χ^2 = 49.32, $p < 0.001$). It survives marginally in the Massif (L = 91.85%), specifically in southwestern localities. Logistic regression analysis has revealed significant differences between Occidental Aurès and most other regions in the use of the Berber variant. The relative odds of lexical loss in the Massif are 1 to 2.77 compared to

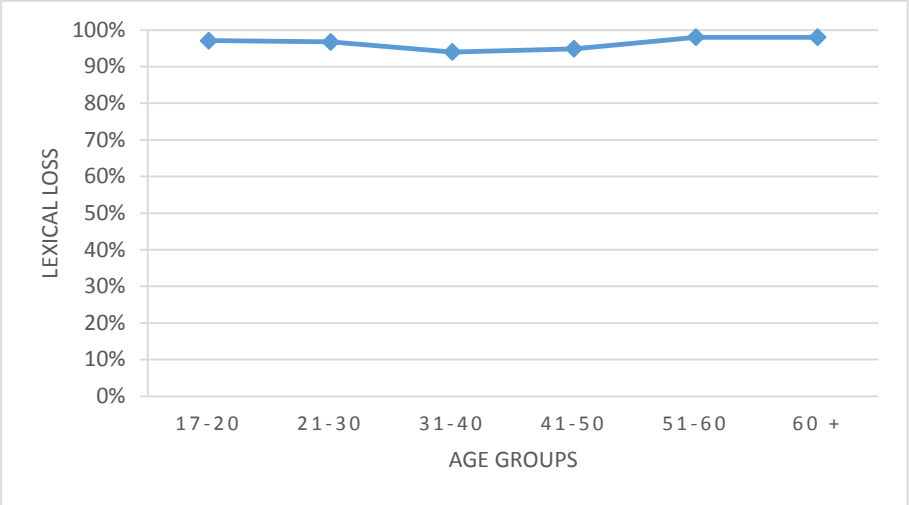
Bellezma (L = 96.9%) (χ^2 = 6.6, p = 0.01) and 1 to 6.35 compared to Oriental Aurès (L = 98.62%) (χ^2 = 6.38, p = 0.012). The differences are more significant regarding the northeastern regions, Segnia (L = 99.23%) and Harakta (L = 99.49%). The relative odds of lexical loss in the Massif are 1 to 11.5 compared to the region of Segnia (χ^2 = 11.2, p = 0.001) and 1 to 17.22 compared to the region of Harakta (χ^2 = 15.25, p < 0.001). The analysis has also revealed some difference between the Massif and the region of Nemamcha (L = 96.67%). A speaker from Occidental Aurès is 2.57 times more likely to maintain the Berber variant compared to a speaker from the region of Nemamcha, but the difference is not significant (χ^2 = 2.39, p = 0.122).

Map 4.16 Lexical loss of the Berber word(s) for 'winter' across Tashawit speaking area



Cross-generational analysis has revealed that lexical loss is weakly associated with age. Lexical loss is overwhelmingly dominant for all age groups (χ^2 = 7.99, p = 0.16).

Fig. 4.16 Lexical loss of the Berber word(s) for ‘winter’ across age groups



4.1.2.7. Autumn

A number of words are used in Berber to denote this item. The first word is *amaris* (Cid Kaoui, 1894). Masqueray (1893) provides *maris*, to which he assigns a specific meaning, that is ‘the first half of autumn’ instead of ‘autumn’ as a whole. For Foucauld (1951), the word *amaris* designates ‘time of harvesting (of any type of fruit at any period of the year)’ and is used by extension to refer to ‘the period of harvesting dates’ (p. 1229). Foucauld (1951) states that “the meaning of *amaris* is recent; it was unknown 50 years ago” (p. 1229) (*our translation*). Another word that is used to denote ‘autumn’ is *amwan* (Motylinski, 1908; Chafik, 1990) or *amewan* (Foucauld, 1951). For Masqueray (1893), the word *amawan* designates ‘the second half of autumn’. It seems that this word has undergone a semantic restriction, at least in some varieties of Tuareg, as a result of the introduction of the previous loan. A third variant that is attested with the meaning ‘autumn’ is attested in the varieties of Tuareg spoken in Mali, *ɣárat* (Heath, 2006), and Niger, *ɣarat* (Prasse, et al., 2003).

The Berber word attested in Tashawit for ‘autumn’ is *tamenzuigt* (Huyghe, 1907: 485)[40]. The word *amenzu* (f. *tamenzut* / *tamenzuyt* / *tamenzuigt*) is used in Tashawit, and other Berber varieties, specifically to denote the first-born son or daughter, and in general something that appears or takes place early[41]. In Tashawit, it has been extended from ‘fruit that appears early’ to cover ‘the period of time when such an early fruit appears’, i.e. early autumn, and further to cover the whole season.

No trace of the first three variants mentioned earlier was recorded in the data elicited from the subjects. The alternative Berber word *tamenzut* / *tamenzuyt*, on the other hand, was produced by a considerable number of the participants (38.5%). It is used in the northeastern regions, Harakta (71.84%) and Segnia (86.99%), in addition to a narrow territory in the southwest of Bellezma (34.36%). It was also recorded in many other localities in other regions, though it is by no means dominant. Another response that was produced in the data, and which has a link to the previous variant, is *tmaẓuẓt*. This word denotes the last-born son or daughter, and anything that appears or takes place late. In contrast to the previous variant, *tmaẓuẓt* seems to have fallen into disuse, being produced only by four informants (0.25%).

The majority of informants have produced an Arabic loan in response to the present item, namely *lexrif* (54.88%). It prevails over the southern regions, i.e. Nemamcha (86.84%), Oriental Aurès (75.51%) and the Massif (93.82%), in addition to the eastern and northwestern parts of Bellezma (60.49%). Its use in the northeastern regions is occasional: Segnia (6.5%) and Harakta (15.52%).

[40] A cognate of this variant is attested with the meaning ‘the first season of plowing’ in some Berber varieties of Morocco (Laoust, 1920).

[41] See Delheure (1984, 1987), Taifi (1991), Destaing (1914, 1938), Serhoual (2002), Dallet (1982), etc.

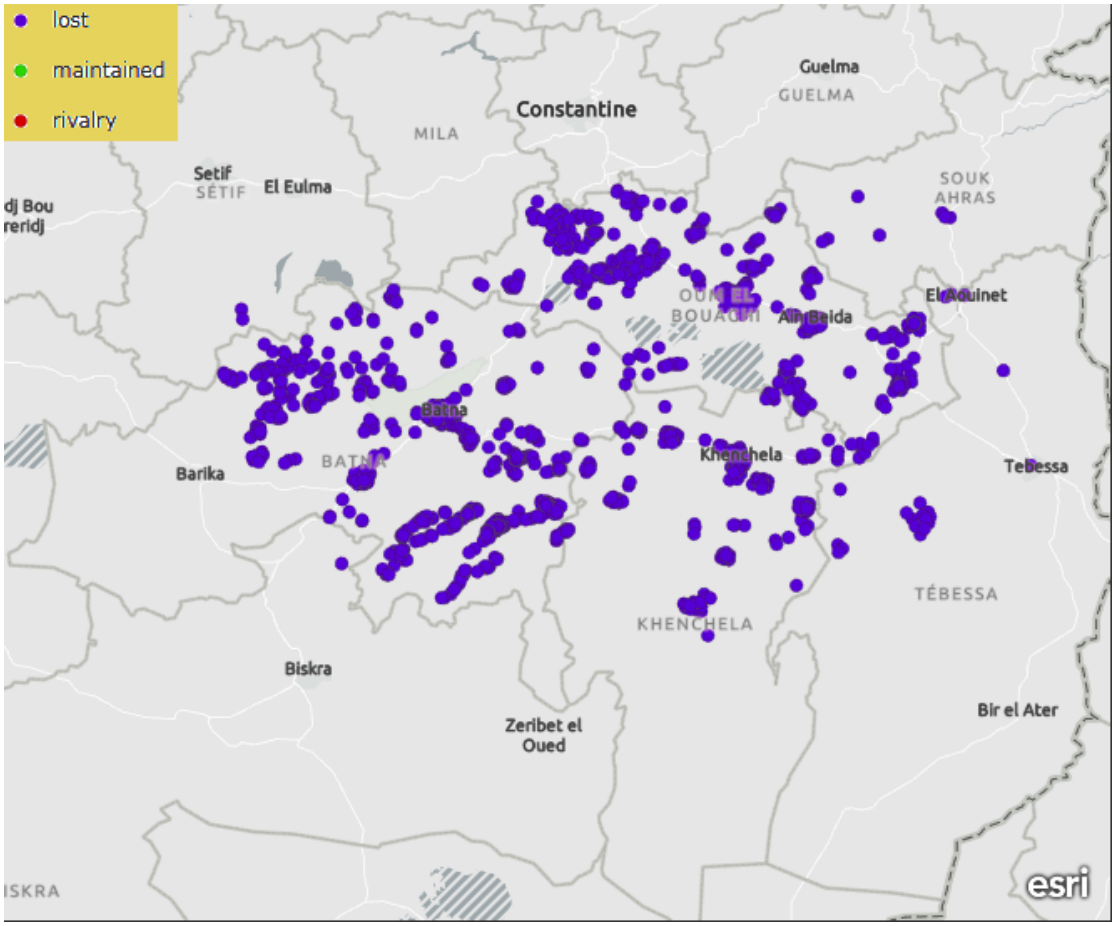
Other responses, mainly words denoting other seasons, were recorded in the data. These, however, were produced by tiny fractions of the participants.

Table 4.17 ‘autumn’: frequencies of lexical variants

	lexical variant	**number of tokens**
	tamenzut	599
	tmaẓuẓt	4
	lexrif	854
	awessu	27
	others	72
	NR	275
	Total	1831

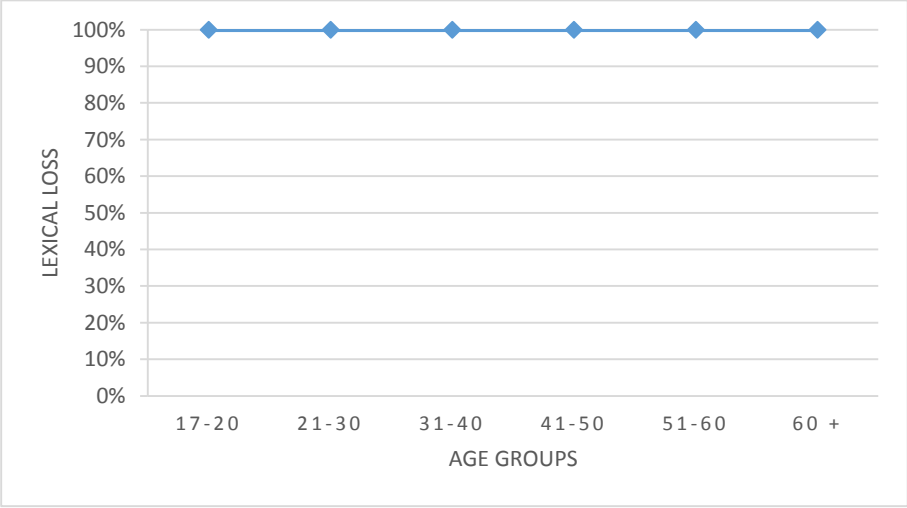
The data obtained for the present item has revealed that the Berber word for ‘autumn’ is obsolete in Tashawit: L (autumn) = 100% (χ^2 = 1828, p < 0.001). There exists no regional variation with regard to the obsolescence of the Berber variant (χ^2 = 0, p = 1). Regions differ, however, in terms of lexical replacement of the Berber variant. In the regions of Segnia, Harakta and the western part of Bellezma, the Berber variant was replaced by an alternative Berber word, i.e. *tamenzut*. In the southern regions, Nemamcha, Oriental Aurès and the Massif, and the eastern part of Bellezma, this alternative Berber variant was itself replaced by the Arabic loan.

Map 4.17 Lexical loss of the Berber word(s) for ‘autumn’ across Tashawit speaking area



The Berber equivalent for ‘autumn’ is obsolete for all the members of the speech community, regardless of their age or any other social factor ($\chi^2 = 0$, $p = 1$).

Fig. 4.17 Lexical loss of the Berber word(s) for ‘autumn’ across age groups



4.1.2.8. Spring

The Berber word(s) for 'spring' are all traced to the same root, **FSW**[42]. The Berber variant attested in Tashawit is *tifeswin* (Huyghe, 1906: 537). Recent dictionaries provide the form *tafsut* (Tibermacine, 2009; Saad, 2013).

In the data, the Berber variant was realized as *tafsut*, *tafsuyt* and *tifeswin*. It accounted for the larger part of the tokens produced (73.49%). It is prevalent in the northern and the southeastern regions: Harakta (89.07%), Segnia (92.68%), Bellezma (85.9%), Nemamcha (85.19%) and Oriental Aurès (74.28%). It is also used, though not so frequently, in Occidental Aurès (41.79%).

The Arabic loanword, *ṛṛbiɛ*, accounted for around one quarter of the total number of tokens produced (24.22%). It is widely used in Occidental Aurès (56.67%), particularly in O. Abdi and O. Labiod. It is less common in other regions: Oriental Aurès (21.9%), Nemamcha (14.81%), Bellezma (12.33%), Harakta (7.47%) and Segnia (2.85%),

As it was observed for the three previous items, some respondents produced words denoting other seasons, *anebdu*, *lmecta* and *tamenzut*.

Table 4.18 'spring': frequencies of lexical variants

lexical variant	**number of tokens**
tafsut / *tifeswin* ...	1220
ṛṛbiɛ	402
others	44
NR	181
total	1847

[42] **Cognates**: *tafsit* (Masqueray, 1893; Foucauld, 1951), *tafsut* (Taifi, 1991), *tafsut* (Dallet, 1982), *hafsut* (Laoust, 1912), etc.

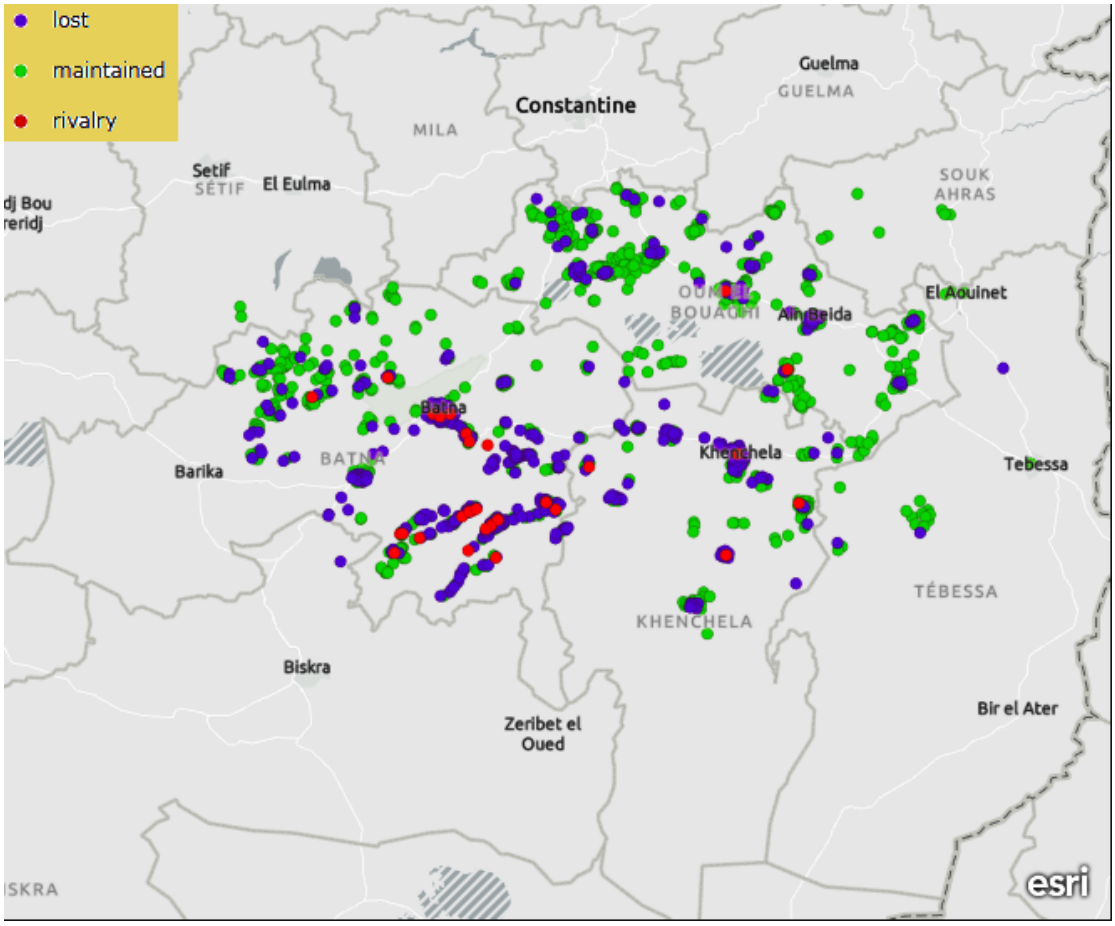
The analysis of the data produced has revealed that the present item suffers less loss compared to most of the lexical variables investigated in the present study: L (spring) = 33.95% (χ^2 = 186.78, p < 0.001). The use of the Berber variant was proven to be regionally determined (χ^2 = 293.074, p < 0.001). The highest rate of lexical loss was recorded in Occidental Aurès (L = 59.02%). The closest rate was obtained in Oriental Aurès (L = 46.21%). The analysis has revealed a significant difference between these two regions. A speaker from Occidental Aurès is 1.68 times more likely to lose the Berber variant compared to another from Oriental Aurès (χ^2 = 7.29, p = 0.007).

The Berber variant is maintained largely in the remaining regions: Bellezma (L = 24.42%), Nemamcha (L = 22.22%), Harakta (L = 14.62%) and Segnia (L = 12.64%). The analysis has revealed some regional variation across these regions. The odds of lexical maintenance in the region of Segnia are 2.23 times higher than Bellezma (χ^2 = 11.58, p = 0.001) and 1.97 times higher than the region of Nemamcha (χ^2 = 4.67, p = 0.031), but only 1.18 times higher compared to the region of Harakta (χ^2 = 0.509, p = 0.475). The odds of lexical maintenance in the region of Harakta are 1.89 times higher compared to the region of Bellezma (χ^2 = 9.71, p = 0.002), but only 1.67 times higher than the region of Nemamcha (χ^2 = 3.09, p = 0.079).

Greater differences were obtained between the Massif and Oriental Aurès, on the one hand, and the remaining regions on the other. The odds of lexical loss in Oriental Aurès are 2.66 times higher than Bellezma (L = 24.42%) (χ^2 = 19.61, p < 0.001), 3.33 times higher than the region of Nemamcha (L = 22.22%) (χ^2 = 13.17, p < 0.001), 5.02 times higher than the region of Harakta (L = 14.62%) (χ^2 = 53.88, p < 0.001) and 5.93 times higher than the region of Segnia (χ^2 = 50.79, p < 0.001). The odds of lexical loss in the Massif are 4.46 times higher than Bellezma (L = 24.42%) (χ^2 = 74.75, p < 0.001),

5 times higher than the region of Nemamcha (L = 22.22%) (χ^2 = 35.75, p < 0.001), 8.4 times higher than the region of Harakta (L = 14.62%) (χ^2 = 154.16, p < 0.001) and 9.9 times higher than the region of Segnia (χ^2 = 121.16, p < 0.001).

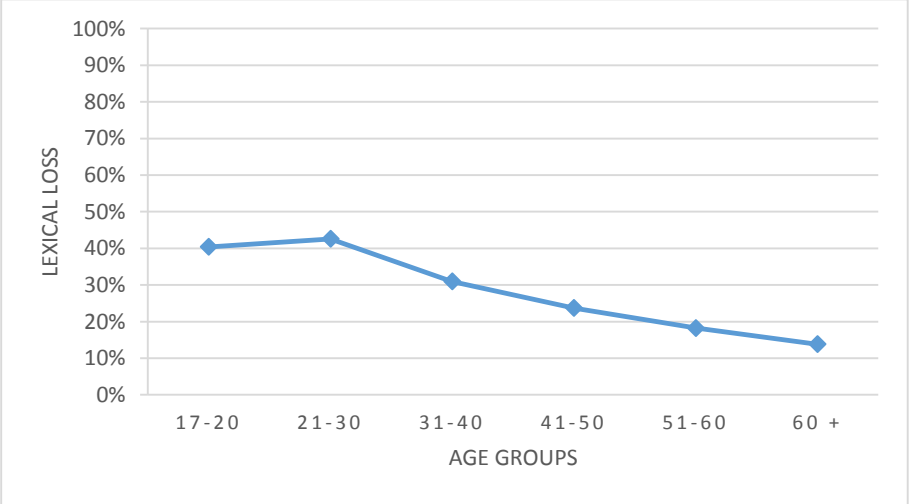
Map 4.18 Lexical loss of the Berber word(s) for 'spring' across Tashawit speaking area



Lexical maintenance is the dominant trend for all age groups. Nonetheless, the analysis has revealed significant differences between such groups in the extent to which they maintain the Berber variant (χ^2 = 92.968, p < 0.001). The rate of lexical loss increases slightly between the first age group ($L_{17\text{-}20}$ = 40.38%) and the second age group ($L_{21\text{-}30}$ = 42.6%). A speaker from the first age group is only 1.1 times more likely to maintain the Berber variant compared to another from the second age group (χ^2 = 0.432, p = 0.511). The rate of lexical loss decreases in a continuous way between the second and the sixth age group. The relative odds of lexical loss for speakers of the

second age group are 1.65 to 1 compared to the third age group ($L_{31\text{-}40}$ = 30.98%) (χ^2 = 8.043, p = 0.005). The odds of lexical loss for the third age group are only 1.51 times higher than the fourth age group ($L_{41\text{-}50}$ = 23.7%) (χ^2 = 2.63, p = 0.1), but two times higher than the fifth age group ($L_{51\text{-}60}$ = 18.25%) (χ^2 = 9.37, p = 0.02). Speakers of the fourth age group are only 1.39 times less likely to preserve the Berber variant compared to the fifth age group (χ^2 = 2.1, p = 0.15), but 1.94 times higher compared to the sixth age group (L_{+60} = 13.82%) (χ^2 = 5.42, p = 0.02). The decrease observed between the fifth and the sixth age group is statistically insignificant, with relative odd of lexical loss of 1.39 to 1 respectively (χ^2 = 1.342, p = 0.247).

Fig. 4.18 Lexical loss of the Berber word(s) for 'spring' across age groups



4.1.3. Agriculture and Vegetation

4.1.3.1. Tree

The present item is denoted in Berber by a variety of terms[43]. Most of the Berber variants used in other varieties are not attested in Tashawit. The Berber variant *taseklut*

[43] The words attested include: *taddagt* (Destaing, 1938), *aẓeqqur* (Laoust, 1920) and *acek* (Foucauld, 1951; Masqueray, 1893). These three terms are used to refer to 'tree' in general. The word *taseklut* designates, in particular, a small tree and *axliğ* is used to refer to a 'forest tree' (Chafik, 1990). Another term that is attested in Berber is *iğlef* (Chafik, 1990). This is used, in particular, to refer to a garden tree or, more specifically, a 'fig tree'.

was provided in Saad (2013). However, this alone is not an evidence of its maintenance in this Berber variety for two reasons. First, this word was not included in other Tashawit texts. Second, the dictionary of Saad (2013) is not purely descriptive; it includes to some extent words that are known to be obsolete in Tashawit. The analysis of the data obtained for the present item has also revealed a complete absence of the variant *taseklut*. It is worth to mention, nonetheless, that this variant is preserved in toponyms under the plural form *Tisekla*, in the locality of Maafa, along with the variant *axliğ* which is preserved in two place names, *Khelidj* in Gosbat and *Bouyakhligène* in Talkhamt.

In Tashawit, an alternative Berber variant is used to denote tree, that is *taseṭṭa* (Sierakowski, 1871; Ounissi, 2003; Tibermacine, 2009; Saad, 2013). The exact meaning of this word, however, is 'branch' and not 'tree' (Huyghe, 1906, 1907; Basset, 1961). In the data, the variant *taseṭṭa* accounted for around one third of the total number of tokens produced (33.31%). It prevails in the regions of Bellezma (58.29%) and Segnia (75.42%). It is also recorded in the region of Harakta (34.06%), in particular the eastern localities. Its use decline as we move to the Southern regions, i.e. Oriental Aurès (16.46%), Occidental Aurès (4.52%) and Nemamcha (1.49%).

The most frequent response in the data is the Arabic loan *tacejṛit* (65.13%). Occasionally realized as *tacjiṛt* and *tasejṛit*, this variant is used mainly in the regions of Nemamcha (97.01%), Oriental Aurès (81.01%), Occidental Aurès (93.22%) and Harakta (64.71%). It is used in a less common way in the regions of Bellezma (41.71%) and Segnia (24.58%).

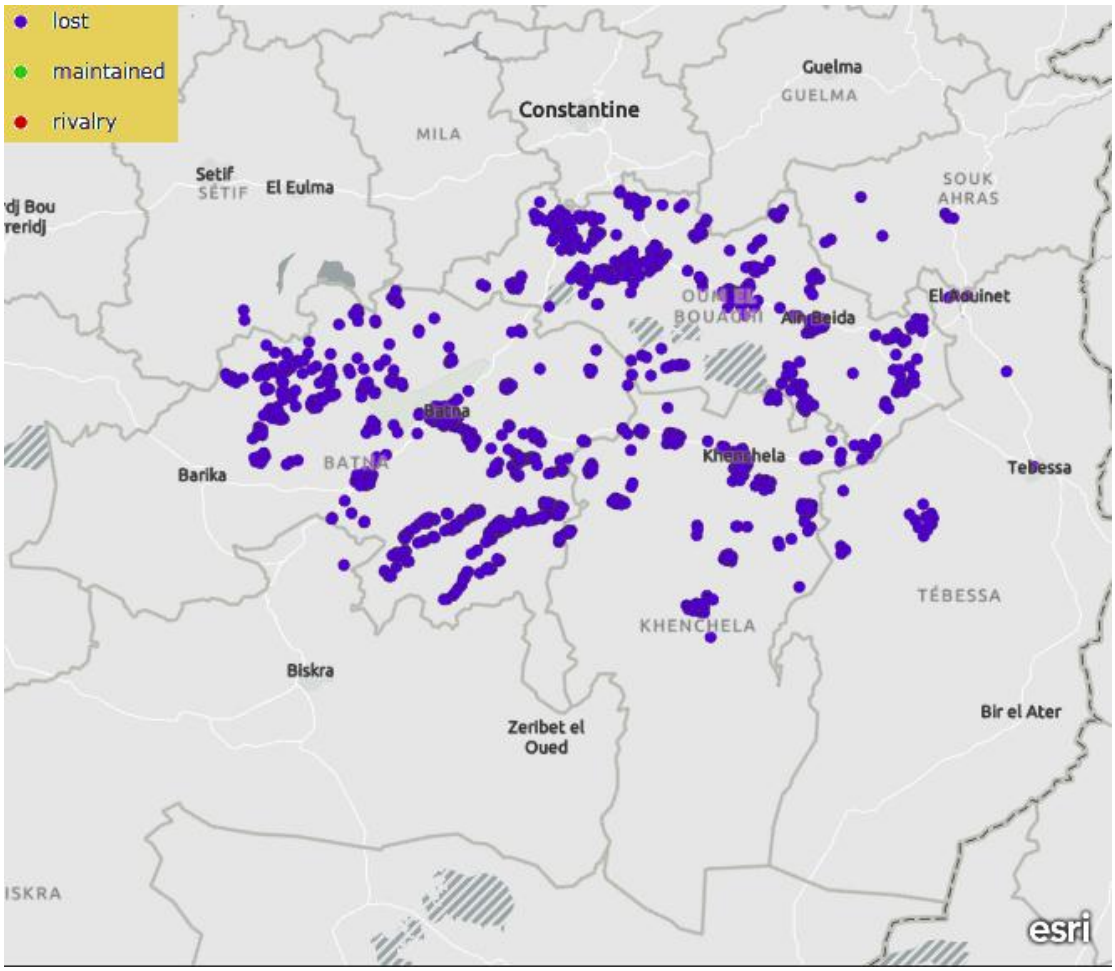
A number of irrelevant responses were recorded in the data, e.g. *tağebbart* 'palm tree', *fireɛ* 'branch', *tajnant* 'garden', etc. However, these were produced only by a tiny fraction of the participants (see Table 4.19).

Table 4.19 ‘tree’: frequencies of lexical variants

lexical variant	**number of tokens**
taseṭṭa	470
tacejṛit…	920
others	22
NR	416
Total	1828

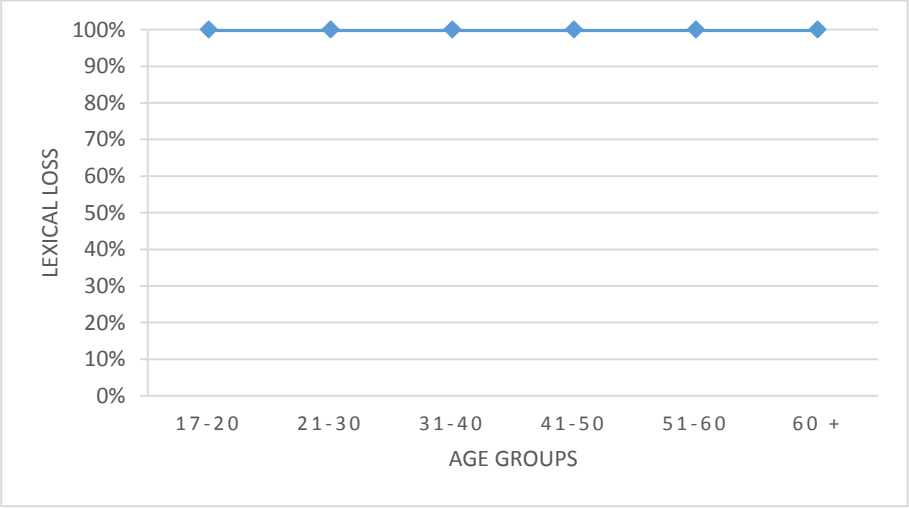
Based on the data collected for the present lexical item, it seems safe to state that the Berber words for ‘tree’ has gone obsolete in Tashawit: L (tree) = 100% ($\chi^2 = 1825$, $p < 0.001$). This conclusion holds true in all the regions covered in the study ($\chi^2 = 0$, $p = 1$). There is, nonetheless, a regional variation with regard to the lexical replacement of the Berber variants. In the northern regions, Harakta, Segnia and the larger part of Bellezma, lexical replacement took place through semantic extension of a Berber word that denote a related referent, that is *taseṭṭa* ‘branch’. In the southern regions, that is Nemamcha, Oriental Aurès and the Massif, and the southwestern part of Bellezma, the Berber variants were replaced by the Arabic loan.

Map 4.19 Lexical loss of the Berber word(s) for ‘tree’ across Tashawit speaking area



In a similar way, the Berber words are utterly obsolete in Tashawit that they will be equally lost for all speakers regardless of their age or any other factor ($\chi^2 = 0$, $p = 1$).

Fig. 4.19 Lexical loss of the Berber word(s) for ‘tree’ across age groups



4.1.3.2. Branch

The most common Berber equivalents for the present item are traced to the root **SḌW**[44]. Two words which derive from this root are attested in Tashawit, *ciḍu* and *tasṭa* (Huyghe, 1906: 75). The second word is used more specifically to denote 'a branch with leaves' (Huyghe, 1907: 496). Other Berber words that are used with the meaning 'branch' in other Berber varieties are not attested in Tashawit[45].

The number of responses that match the variant *ciḍu* accounted for 6.22% of the total number of tokens produced. It was recorded mainly in the Massif (14.57%), particularly in O. Abdi, and Batna city (15.82%). The second word, realized in the data as *taseṭṭa*, is much less frequent (0.87%). It was produced in extremely tiny fractions in Occidental Aurès, Batna city and the region of Harakta.

The most frequent variant in the data is the Arabic loan *ɛiref* / *ɛaref* / *ɛerf* (40.17%)[46]. This first loan is, geographically speaking, the most widely spread in Tashawit. It is used all over the regions of Bellezma (68.95%), Oriental Aurès (68.48%) and Nemamcha (52.78%), in addition to the eastern and southwestern parts of the Massif (47.53%). It is much less frequent in the northeastern regions: Harakta (12.5%) and Segnia (7.42%). Two other Arabic loans were recorded in the data, *leɣṣen*[47] and

[44] **Cognates**: *taseṭṭa* (Foucauld, 1951; Taifi, 1991; Destaing, 1938; Serhoual, 2002), *taciṭa* Kabyle (Dallet, 1982), etc.

[45] These include *tafercit* (Lanfry, 1973), *afurk* (Dallet, 1982), *ageṭṭum* (Dallet, 1982; Taifi, 1991), *tilu* 'branch of palmtree' (Lanfry, 1973), *ala* 'branch with leaves' (Taifi, 1991), *ileɣ* 'the main branch of a tree' (Destaing, 1938), *illeɣ*: 'short cut branch' (Dallet, 1982), *ameslaɣ* 'big branch' (Destaing, 1938), *tareṭṭa*: 'palm tree branch or branch' (Foucauld, 1951), *tamuẓelt, aẓel* 'branch of tree' and *taẓelyit*: 'branch of palmtree' (Destaing, 1938), etc.

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[46] See Paulmier (1850), Ben Sedira (1910). This variant is also attested in Tashawit texts (Huyghe, 1906, 1907).

[47] See Lane (1968), Omar (2008), Paulmier (1850), Ben Sedira (1910), etc.

fireɛ[48]. These accounted only for tiny fractions of the total number of responses produced, 3.68% and 2.34% respectively.

The rest of responses produced in reaction to the present item are irrelevant, e.g. *asɣar* ‘wood’, *akeccuḍ* ‘cut branch’, *axceb* ‘wood’, *aqebbal* / *aqezzul* ‘stick’, *aẓwer* ‘root’, etc. These accounted for a large proportion of the total number of tokens produced (46.26%).

Table 4.20 ‘branch’: frequencies of lexical variants

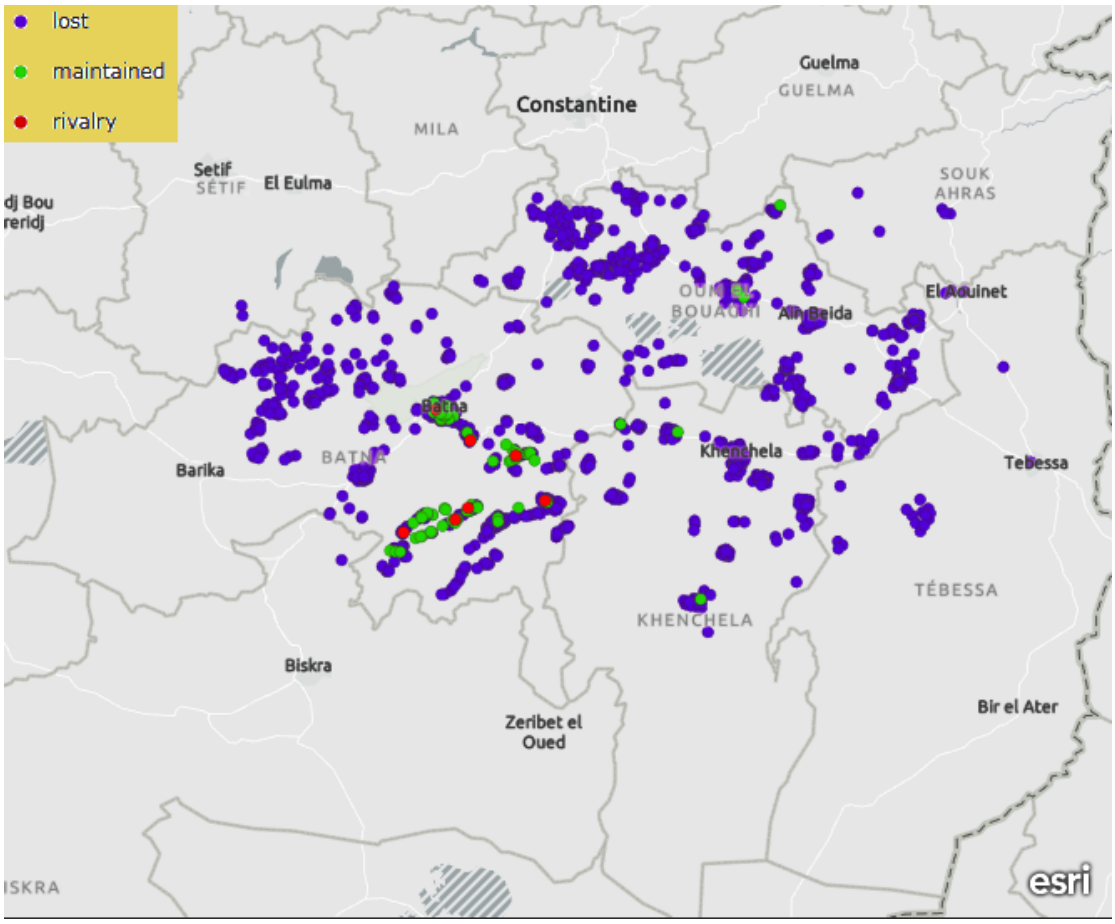
lexical variant	**number of tokens**
ciḍu	93
taseṭṭa	13
ɛaref…	608
fireɛ	35
leɣṣen	55
others	692
NR	350
total	1846

The rate of lexical loss obtained for the present item is very high: L (branch) = 94.26% (χ^2 = 1444.58, p < 0.001). The analysis has revealed that the use of the Berber variant is regionally determined (χ^2 = 40.51, p < 0.001). Based on the data, it can be said that the Berber variant is obsolete in the regions of Bellezma (L = 100%), Segnia (L = 100%) and Nemamcha (L = 100%). It can be described as archaic or virtually obsolete in the regions of Oriental Aurès (L = 98.62%) and Harakta (L = 99.23%). The lowest rate of lexical loss was recorded in the Massif (L = 84.12%). Logistic regression analysis has shown that the odds of lexical maintenance in this region are 13.5 times higher than Oriental Aurès (χ^2 = 12.95, p < 0.001) and 24.35 times higher compared to

[48] See Lane (1968), Omar (2008), Ben Sedira (1910), etc.

the region of Harakta (χ^2 = 28.96, p < 0.001). The Berber variant is also maintained to some extent in Batna city (L = 87.02%). The odds of lexical loss in this locality are only 1.25 times higher than the Massif (χ^2 = 0.86, p = 0.35).

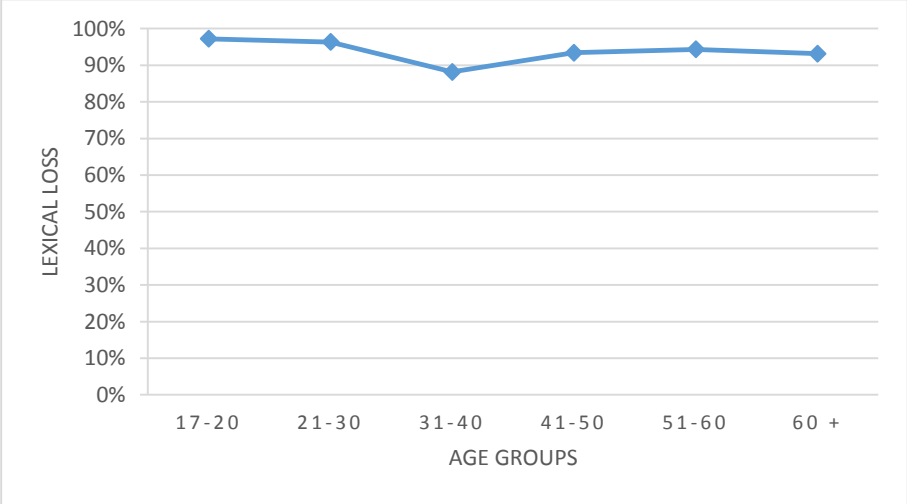
Map 4.20 Lexical loss of the Berber word(s) for 'branch' across Tashawit speaking area



The relationship between lexical loss and age was proven to be statistically significant (χ^2 = 17.08, p = 0.004). The rate of lexical loss decreases slightly between the first age group ($L_{17\text{-}20}$ = 97.21%) and the second age group ($L_{21\text{-}30}$ = 96.33%). A speaker from the former is 1.84 times more likely to lose the Berber variant compared to another from the latter, though the difference is insignificant (χ^2 = 0.256, p = 0.11). Conversely, the decrease observed between the second and the third age group is significant ($L_{31\text{-}40}$ = 88.16%). The odds of lexical maintenance for speakers of the third age group are 2.49 times higher than the second age group (χ^2 = 10.15, p = 0.001) and

4.57 times higher than the first age group (χ^2 = 13.91, p < 0.001). The rate of lexical loss increases slightly for the fourth age group ($L_{41\text{-}50}$ = 93.4%) and the fifth age group ($L_{51\text{-}60}$ = 94.32%). The odds of lexical loss for speakers of this age group are only 1.81 times higher compared to those of the third age group (χ^2 = 2.859, p = 0.09) and 1.18 times lower compared to those of the fifth age group (χ^2 = 0.2, p = 0.65). However, the odds of lexical loss for speakers of the fifth age group are 2.15 times higher compared to those of the third age group (χ^2 = 4.76, p = 0.029). The rate of lexical loss decreases slightly between the fifth and the sixth age group (L_{+60} = 93.16%); the odds of lexical loss between these groups are 1.11 to 1 respectively (χ^2 = 0.064, p = 0.8).

Fig. 4.20 Lexical loss of the Berber word(s) for 'branch' across age groups



4.1.3.3. Dig (v.)

Most of the words attested in Berber varieties for this lexical variable stem from the root **ΓZ**[49]. In Tashawit, the Berber variant is realized as *eγz* or *γez* (Huyghe, 1906: 143).

The analysis has revealed that the Berber variant is the most frequent response in the data (61.9%). This variant is widely used in the northern regions: Harakta (75.07%),

[49] **Cognates**: *eγeh* (Foucauld, 1951), *eγz* (Motylinski, 1898; Laoust, 1912; Destaing, 1914; Serhoual, 2002; Dallet, 1982), *γez* (Destaing, 1938; Taifi, 1991), *aγz* (Basset, 1885), *sedeγez* (Delheure, 1987), etc.

Segnia (86.05%) and Bellezma (86.31%). It is less frequent in Oriental Aurès (52.43%), and the Massif (37.12%). The use of the Berber variant in the region of Nemamcha is very rare (2.53%).

The Arabic loan, *eḥfer*, is much less frequent than the Berber variant (23.36%). Its main area of dominance is the region of Nemamcha (87.34%). The use of this loan declines as we move westwards to the regions of Oriental Aurès (37.86%) and the Massif (27.47%), north towards the region of Harakta (22.06%) or northwest towards the regions of Segnia (7.97%) and Bellezma (6.22%).

A second Arabic borrowing was recorded in the data, that is *exṛeb* (Huyghe, 1906: 143)[50]. This was produced by a small proportion of the subjects (11.41%). It is used in the Massif (33.05%), particularly in O. Abdi and O. Labiod. The number of occurrences of this variant in the Massif accounts for 80.63% of all its tokens. The variant *exṛeb* was produced by a small number of participants in Batna city (12.29%) and Bellezma (6.22%), but no trace of it was recorded elsewhere. Other responses that were recorded in the data include *nqec* 'to turn soil, to pickaxe, to hoe', *nbec* 'to pickaxe' and *neqeb* 'to drill' (Huyghe, 1906). Another word that was recorded in the data is *erbec* (2.24%). Its etymology, in contrast to the previous words, is not clear.

Table 4.21 'to dig': frequencies of lexical variants

lexical variant	**number of tokens**
eγz	1048
ḥfer	391
xṛeb	191
others	63
NR	184
Total	1877

[50] The origin of this loan is most likely the Arabic word *xaraba* 'to bore, to perforate' (Lane, 1968).

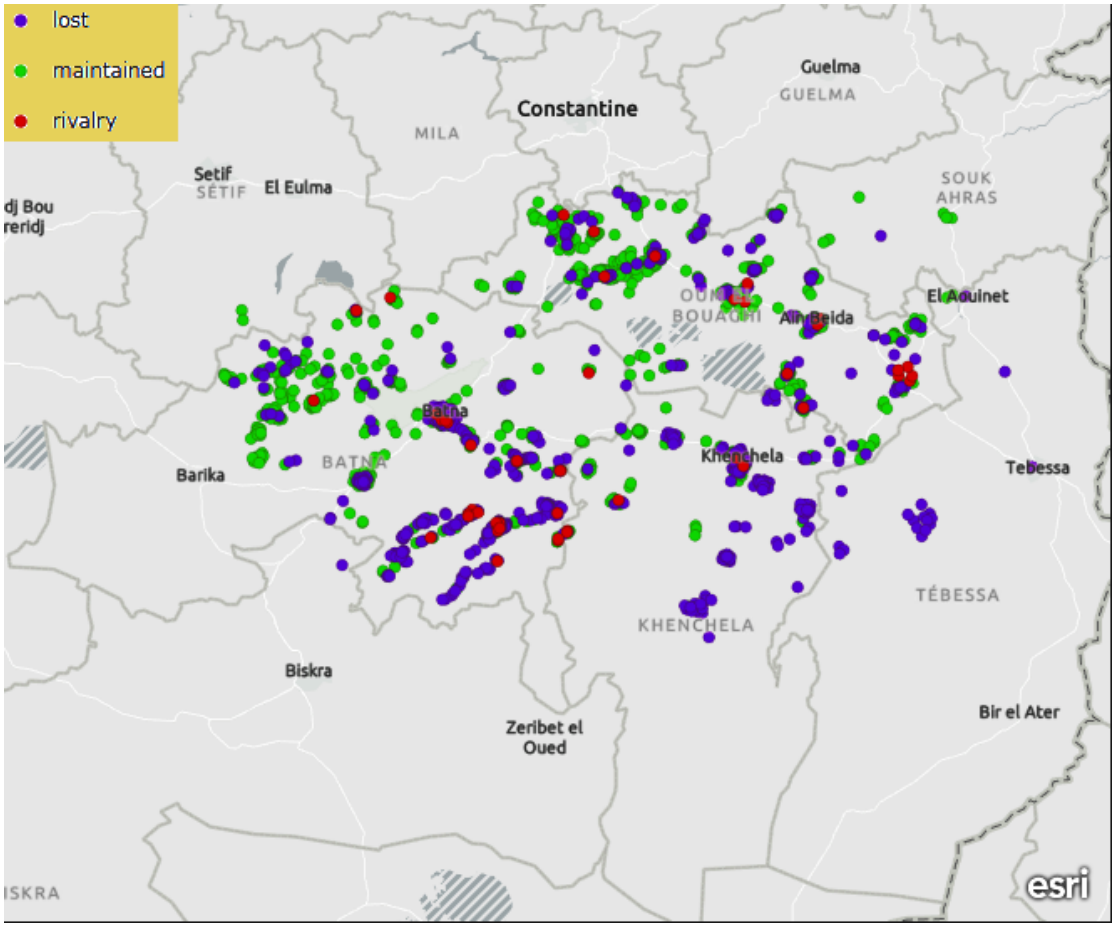
The findings obtained for the present item indicate that the Berber word for ‘dig’ is fairly preserved in Tashawit: L (dig) = 44.17% (χ^2 = 25.32, p < 0.001). The analysis has also shown a considerable degree of regional variation in terms of lexical maintenance and loss (χ^2 = 380.643, p < 0.001). The Berber variant has declined tremendously in the region of Nemamcha (L = 97.78%). Its use has also declined, though much less critically, in Oriental Aurès (L = 62.76%) and the Massif (L = 62.88%). Lexical loss in the region of Nemamcha is 26 times more likely compared to Oriental Aurès (χ^2 = 19.68, p < 0.001) and Occidental Aurès (χ^2 = 8.94, p = 0.003). The odds of lexical loss in Occidental Aurès, however, are identical to Oriental Aurès (χ^2 = 0.001, p = 0.98).

Lexical maintenance is the dominant trend in the northern regions: Bellezma (L = 19.38%), Segnia (L = 17.24%) and Harakta (L = 27.44%). The analysis has revealed little variation between the first two regions. The odds of lexical loss in Bellezma are only 1.15 times higher compared to the region of Segnia (χ^2 = 0.396, p = 0.529). The odds of lexical loss in the region of Harakta, however, are 1.81 times higher than the region of Segnia (χ^2 = 8.94, p = 0.003) and 1.57 times higher than Bellezma (χ^2 = 5.44, p = 0.02).

The analysis has revealed greater differences between the northern and the southern regions. The odds of lexical maintenance in Bellezma are 7 times higher than Oriental Aurès (χ^2 = 69.82, p < 0.001) and Occidental Aurès (χ^2 = 112.11, p < 0.001), and 183 times higher than the region of Nemamcha (χ^2 = 50.62, p < 0.001). The odds of lexical maintenance in the region of Segnia are 8.1 times higher than Oriental Aurès (χ^2 = 77.54, p < 0.001) and Occidental Aurès (χ^2 = 121.82, p < 0.001) and 211.2 times higher than the region of Nemamcha (χ^2 = 53.24, p < 0.001). In a similar way, lexical maintenance is 4.47 more likely in the region of Harakta compared to Oriental Aurès

(χ^2 = 52.69, p < 0.001) and Occidental Aurès (χ^2 = 101.89, p < 0.001) and 116.37 times more likely compared to the region of Nemamcha (χ^2 = 43.16, p < 0.001).

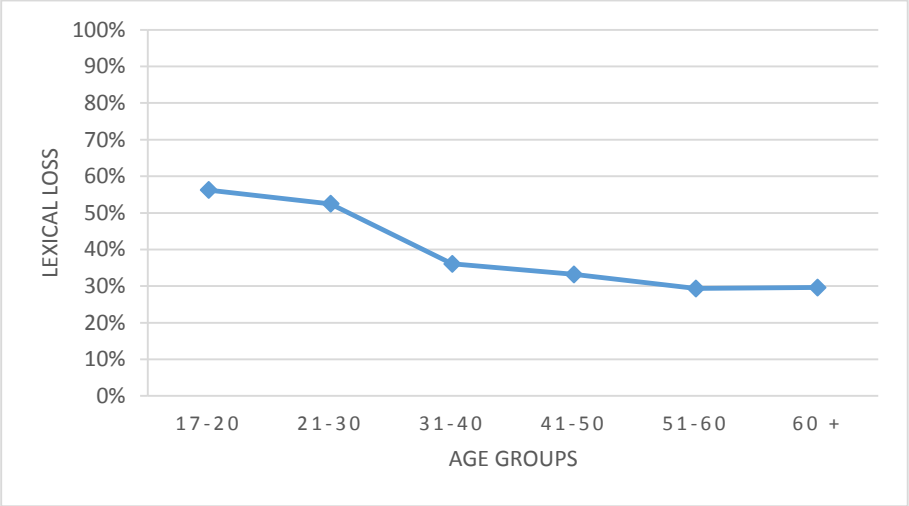
Map 4.21 Lexical loss of the Berber word(s) for 'to dig' across Tashawit speaking area



The analysis of the data obtained for the present item has shown that age plays an important role in predicting lexical loss (χ^2 = 85.386, p < 0.001). The rate of lexical loss decreases slightly between the first age group ($L_{17\text{-}20}$ = 56.22%) and the second age group ($L_{21\text{-}30}$ = 52.45%). A speaker from the second age group is only 1.15 times more likely to maintain the Berber variant compared to a speaker from the first age group (χ^2 = 0.989, p = 0.32). The rate of lexical loss decreases in a significant way, however, between the second and the third age group ($L_{31\text{-}40}$ = 36.1%). The relative odds of lexical maintenance for speakers of the third age group are 2 to 1 compared to the second age group (χ^2 = 15.95, p < 0.001) and 2.3 to 1 compared to the first age group (χ^2 = 18.55,

$p < 0.001$). The rate of lexical loss changes slightly through the remaining age groups. The relative odds of lexical loss for speakers of the third age group are 1.03 to 1 compared to the fourth age group ($L_{41\text{-}50}$ = 33.18%) (χ^2 = 0.023, p = 0.88), 1.4 to 1 compared to the fifth age group ($L_{51\text{-}60}$ = 29.34%) (χ^2 = 2.57, p = 0.11) and 1.21 to 1 compared to the sixth age group (L_{+60} = 29.61%) (χ^2 = 0.641, p = 0.42). Overall, lexical loss is more common among younger speaker compared to the elderly.

Fig. 4.21 Lexical loss of the Berber word(s) for 'to dig' across age groups



4.1.3.4. Plant (v.)

The Berber variant attested in Tashawit, *eẓẓu* (Huyghe, 1906: 503), is traced to the same root to which all other Berber variants are traced, that is **Ẓ**[51].

The data produced for the present lexical item is dominated by two competing variants, a Berber variant and an Arabic loan. The Berber variant was produced by a considerable number of informants (39.42%). It is preserved mainly in the Massif (76.98%), particularly in O. Abdi and O. Labiod and some localities in the northern part of the region. It is also used, though much less frequently, in Batna city (42.4%). It is worth noting that most of the subjects who produced the Berber variant in this city are

[51] **Cognates**: *eẓẓ* (Foucauld, 1951; Motylinski, 1904), *eẓẓa* (Motylinski, 1898), *eẓẓu* (Laoust, 1912; Destaing, 1914, 1938; Serhoual, 2002; Dallet, 1982), ẓẓu (Taifi, 1991), *uẓẓu* (Sarnelli, 1924), etc.

from the Massif. The number of occurrences of the Berber variant in the Massif and Batna city account for 95.44% of the total number of tokens of this variant. The use of the Berber variant beyond this area is negligible.

The Arabic loanword, *ɣres* (Huyghe, 1906: 503), accounted for around half of the total number of tokens produced (50.85%). It prevails over the northern and eastern regions: Bellezma (82.44%), Oriental Aurès (84.09%), Nemamcha (84.93%), Harakta (84.67%) and Segnia (78.3%). The lowest frequency of this Arabic loan was recorded in Occidental Aurès (18.84%), specifically along the eastern and southern borders of the Massif.

Responses other than the two previous variants were also recorded in the data. The most frequent of these is the Arabic loan *zreɛ* (6.96%). This seems to be a relatively recent borrowing[52]. It was produced mainly in the regions of Segnia (18.3%), Nemamcha (15.07%) and Harakta (12.33%). It is important to note, nonetheless, that this innovation is observed mainly among speakers of the first and the second age groups and is not well established among older speakers.

Another Arabic loan that was recorded in the data is *rẓeg*. This variant is attested with the meaning 'to plant' in the Tashawit variety of Ait Frah (Basset, 1961)[53]. In the data, this variant was produced only by a tiny fraction of the subjects (1.13%).

A number of irrelevant responses were recorded in the data. These include *eɣz / eḥfer* 'to dig', *felleḥ* 'to cultivate', *edfen* 'to bury', etc.

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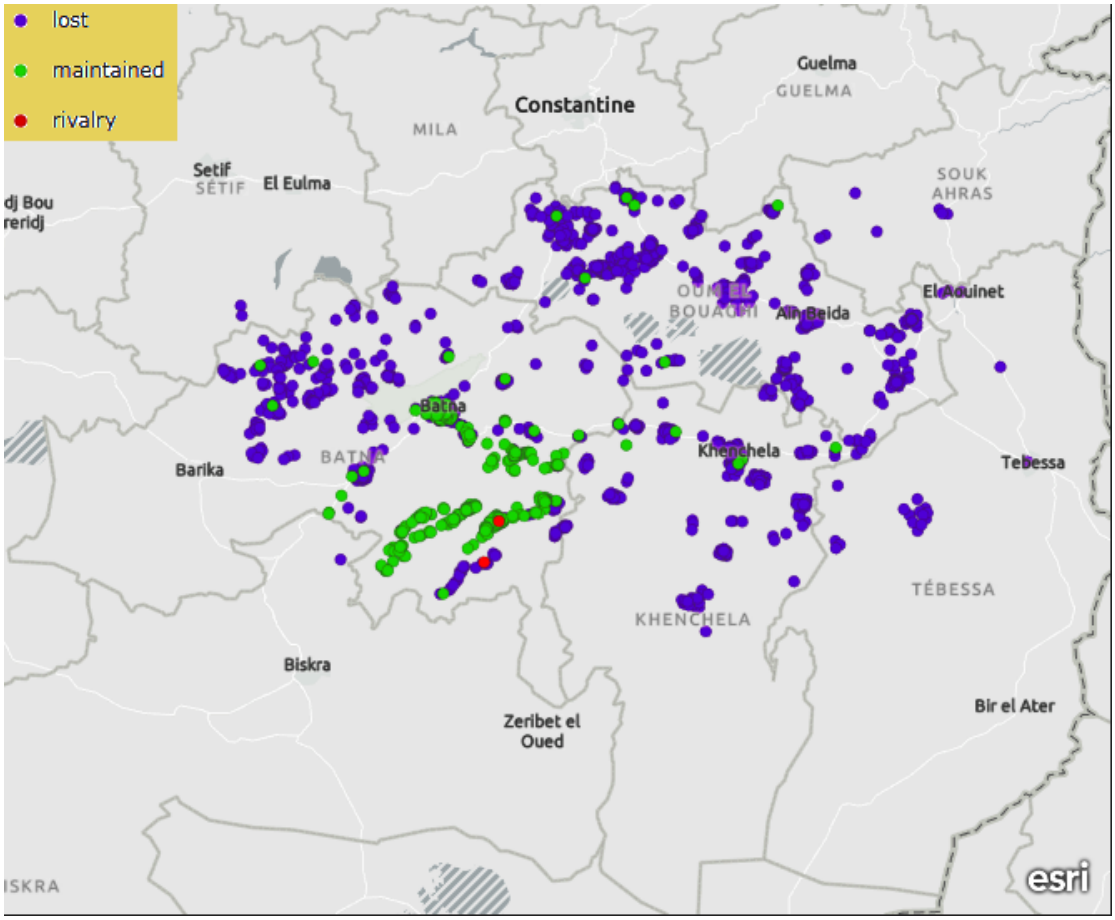
[52] This word is used to mean 'to sow' instead of 'to plant' in the source language (Lane, 1968; Omar, 2008; Ben Sedira, 1910). This meaning is also the one attested in Tashawit texts (Huyghe, 1906, 1907).
[53] This variant is traced to the Arabic word *racaqa* 'shot at (with an arrow)' (Lane, 1968; Omar, 2008). A word with a close meaning is attested in Tashawit, that is *receq* 'to stick/to implant', for example into the ground, (Huyghe, 1907; cf. Chafik, 1990).

Table 4.22 ‘to plant’: frequencies of lexical variants

lexical variant	**number of tokens**
eẓẓu	417
eγres	921
ezreɛ	100
rẓeg	17
others	58
NR	307
Total	1820

Overall, the analysis has revealed that lexical loss is the dominant trend for the present item: L (plant) = 77.09% (χ^2 = 269.22, p < 0.001). The statistical analysis has also revealed that region is an important predictor of lexical loss (χ^2 = 910.376, p < 0.001). The Berber variant is fairly maintained in the Massif (L = 28.97%). The second lowest rate of lexical loss was recorded in Batna city (L = 67.48%). The relative odds of a speaker from the Massif maintaining the Berber variant compared to another residing in Batna city are 5.09 to 1 (χ^2 = 81.29, p < 0.001). The loss of the Berber variant elsewhere is almost absolute. The odds of lexical maintenance in the Massif are 76.62 times higher than Bellezma (L = 96.9%) (χ^2 = 135.02, p < 0.001), 86.43 times higher than Oriental Aurès (L = 97.24%) (χ^2 = 74.33, p < 0.001), 157.53 times higher than the region of Segnia (L = 98.47%) (χ^2 = 96.85, p < 0.001) and 316.29 times higher than the region of Harakta (L = 99.23%) (χ^2 = 95.86, p < 0.001). The Berber variant can be described as obsolete in the region of Nemamcha (L = 100%).

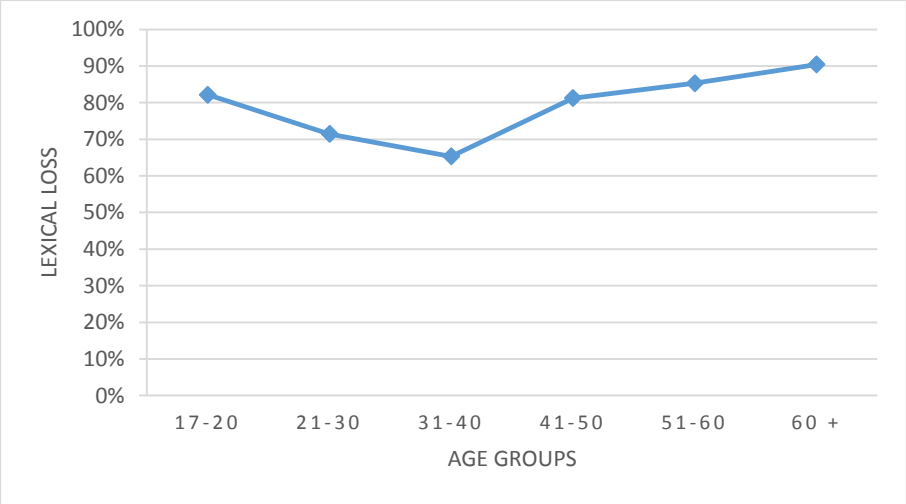
Map 4.22 Lexical loss of the Berber word(s) for ‘to plant’ across Tashawit speaking area



Lexical loss differs from one age group to another ($\chi^2 = 59.169$, $p < 0.001$). The rate of lexical loss decreases between the first age group ($L_{17\text{-}20} = 82.14\%$), the second age group ($L_{21\text{-}30} = 71.42\%$) and the third age group ($L_{31\text{-}40} = 65.32\%$). Speakers of the first age group are 1.84 times more likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 12.98$, $p < 0.001$) and 2.39 times more likely compared to those of the third age group ($\chi^2 = 16.65$, $p < 0.001$). However, a speaker from the second age group is only 1.3 times more likely to lose the Berber variant compared to another from the third age group ($\chi^2 = 2.17$, $p = 0.14$). The rate of lexical loss increases in a significant way for the fourth age group ($L_{41\text{-}50} = 81.21\%$). The relative odds of lexical loss for speakers of this age group are 2.26 to 1 in comparison with those of the third age group ($\chi^2 = 12.33$, $p < 0.001$). The rate of lexical loss continues increasing

between the fourth and the fifth age group ($L_{51\text{-}60}$ = 85.28%). However, this increase is statistically insignificant; speakers of this group are only 1.4 times more likely to lose the Berber variant compared to those of the fourth age group (χ^2 = 1.6, p = 0.206). The highest rate of lexical loss was recorded for the older age group (L_{+60} = 90.41%). The odds of lexical loss for speakers of this age group are only 1.57 times higher than those of the fifth age group (χ^2 = 1.94, p = 0.164), but 2.15 times higher than those of the fourth age group (χ^2 = 5.64, p = 0.018).

Fig. 4.22 Lexical loss of the Berber word(s) for 'to plant' across age groups



4.1.3.5. Palm Tree

Three main variants were produced by the subjects in response to the present item, one is a Berber word and two are Arabic borrowings. The Berber variant is traced to the root **ZDY**[54]. The forms attested in Tashawit are *tazdayt* (Huyghe, 1906: 468) and *tazdaḳt* (Basset, 1961: 61). Realized in the data as *tazdayt*, *tazdaḳt* and occasionally as *tazzayt*, the Berber variant accounted for 37.32% of the total number of tokens produced. It was produced mainly in the Massif (76.94%). Its frequency in this particular region accounted for 61.19% of the total number of its tokens. It is also used,

[54] **Cognates**: *tazdayt* (Delheure, 1984, 1987; Taifi, 1991; Destaing, 1938; Serhoual, 2002; Dallet, 1982), *zait* (Basset, 1890), *tezdit* (Motylinski, 1898), *tezdet* (Provotelle, 1911) and *tazzayt* (Masqueray, 1893; Foucauld, 1951), etc.

though less frequently, in Oriental Aurès (49.4%) and Bellezma (30.2%), in particular the southwestern part of the region. The Berber variant was produced in tiny fractions in the regions of Nemamcha (6.59%), Harakta (4.45%) and Segnia (3.03%).

The most frequent variant in the data is the Arabic loan *nnexlet* / *nnxelt*, also realized as *tinxelt* and *tanxelt* (48.09%). Its area of use covers the northern and southeastern regions: Harakta (88.7%), Segnia (85.28%), Nemamcha (81.58%) and the northern and southeastern parts of Bellezma (53.46%). The use of this Arabic borrowing is limited in other regions, Oriental Aurès (38.35%) and, in particular, the Massif (4%).

The second loan that was recorded in the data is *tağebbart* (8.14%)[55]. This loan is confined mainly to some localities in the southeastern part of the Massif (16.41%), precisely in the localities of Tighanimine, Arris, Ichmoul and, more prominently, Tkout and Ghassira. It was also recorded in Batna city. Beyond these localities, the variant *tağebbart* was produced only by a handful of speakers.

Some participants have produced a number of circumlocutions to denote the item in question, e.g. *tacejṛit n teyni*, *tasetta n teyni*, *tasetta n ihebba*, *tacejṛit n ihebba* 'tree of dates', *tasetta n ddegla* 'tree of degla', *tasetta n nnxel*: 'tree of palm', etc. Other words, which denote other plants were also produced, such as *tasetta* or *tacejṛit* 'tree', *lejrid* 'a palm-branch without leaves', etc.

Table 4.23 'palm tree': frequencies of lexical variants

lexical variant	**number of tokens**
tazdayt …	568
nnxelt …	732
tajebbaṛt	124

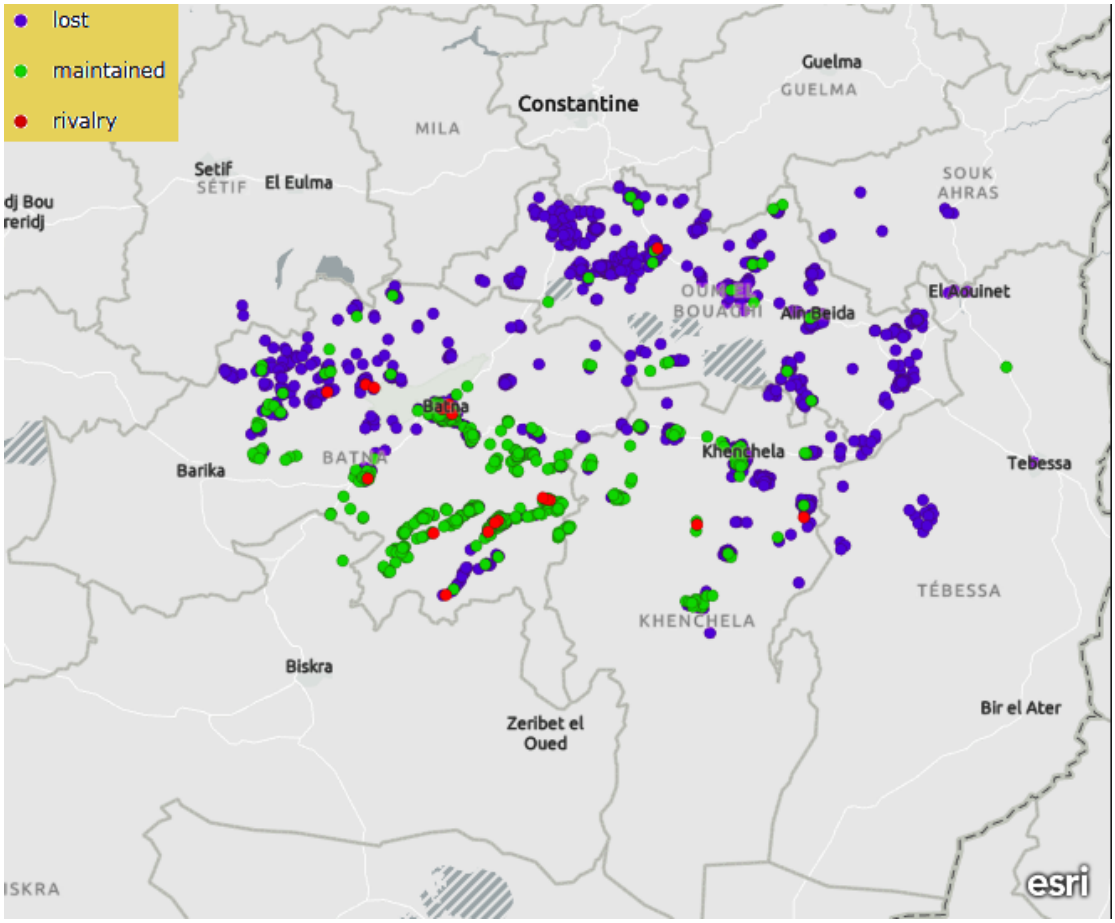
[55] In Classical Arabic, *alğebbar* or *alğubbar* is used to denote 'tall young palm tree' or as a collective noun for palm trees (Lane, 1968). In Tashawit, *tağebbart* is attested with the meaning 'male palm tree' (Basset, 1961: 80).

others	98
NR	319
total	1841

Lexical loss is the dominant trend for the present lexical item: L (palm) = 69.15% (χ^2 = 269.22, p < 0.001). The use of the Berber variant is closely associated with region (χ^2 = 689.06, p < 0.001). The Berber variant is preserved primarily in Occidental Aurès (L = 25.54%). The Statistical analysis has revealed important differences between the Massif, on the one hand, and Batna city (L = 55.83%), Bellezma (L = 76.36%) and Oriental Aurès (71.72%) on the other. The odds of lexical maintenance in Occidental Aurès are 3.68 times higher than Batna city (χ^2 = 54.93, p < 0.001), 9.42 times higher than Bellezma (χ^2 = 153.53, p < 0.001) and 7.4 times higher than Oriental Aurès (χ^2 = 88.41, p < 0.001).

The highest rates of lexical loss were recorded in the regions of Nemamcha (L = 93.33%), Harakta (96.15%) and Segnia (L = 97.32%). The relative odds of lexical maintenance in the Massif are 40.82 times higher compared to the region of Nemamcha (χ^2 = 72.47, p < 0.001), 72.9 times higher than the region of Harakta (χ^2 = 228.19, p < 0.001) and 105.81 times higher than the region of Segnia (χ^2 = 137.47, p < 0.001). The analysis has also revealed significant differences between these three regions and the regions of Bellezma and Oriental Aurès. The odds of lexical loss in Bellezma are 11.24 times higher than the region of Segnia (χ^2 = 34.78, p < 0.001), 4.33 times higher than the region of Harakta (χ^2 = 10.75, p = 0.001) and 7.74 times higher than the region of Nemamcha (χ^2 = 46.13, p < 0.001). The odds of lexical loss in Oriental Aurès are 5.52 times higher than the region of Nemamcha (χ^2 = 13.73, p < 0.001), 9.86 times higher than the region of Harakta (χ^2 = 50.66, p < 0.001) and 14.3 times higher than the region of Segnia (χ^2 = 39.15, p < 0.001).

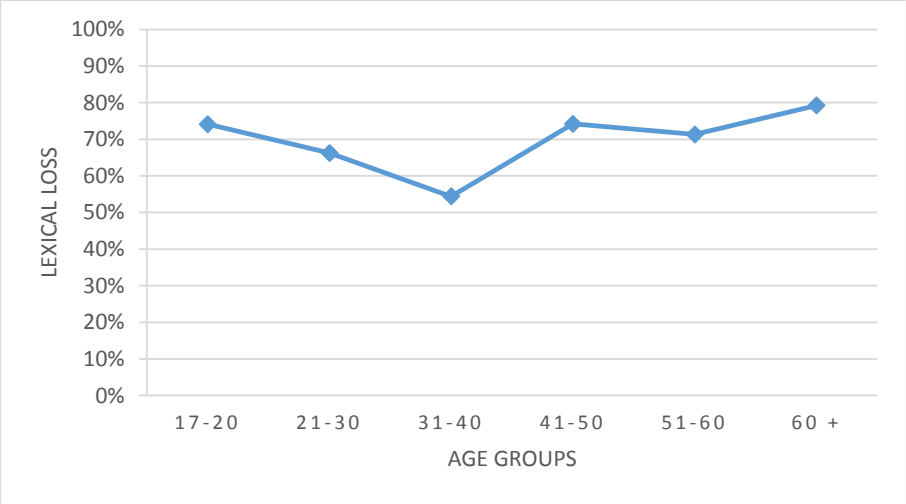
Map 4.23 Lexical loss of the Berber word(s) for ‘palm tree’ across Tashawit speaking area



The findings obtained for the present item show that lexical loss is closely associated with age ($\chi^2 = 38.177$, $p < 0.001$). The rate of lexical loss decreases between the first ($L_{17\text{-}20} = 74.12\%$), the second ($L_{21\text{-}30} = 66.25\%$) and the third age group ($L_{31\text{-}40} = 54.38\%$). Speakers of the first age group are 1.48 times more likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 6.62$, $p = 0.01$) and 2.56 times more likely compared to those of the third age group ($\chi^2 = 22.92$, $p < 0.001$). A speaker from the second age group is 1.73 times more likely to lose the Berber variant compared to another from the third age group ($\chi^2 = 10.54$, $p = 0.001$). The rate of lexical loss increases abruptly between the third and the fourth age group ($L_{41\text{-}50} = 74.17\%$). Speakers of the fourth age group are 2.61 times more likely to lose the Berber variant compared to those of the third age group ($\chi^2 = 19.893$, $p < 0.001$). The rate of lexical

loss changes insignificantly across the three older age groups. It decreases slightly for the fifth age group ($L_{51\text{-}60}$ = 71.3%). Speakers of this group are only 1.19 times less likely to lose the Berber variant compared to those of the fourth age group (χ^2 = 0.668, p = 0.414). The highest rate of lexical loss was recorded for the sixth age group (L_{+60} = 79.2). A speaker from this group is 1.53 times more likely to lose the Berber variant compared to a speaker from the fifth age group, but the difference is still insignificant (χ^2 = 3.066, p = 0.08) (see Fig. 4.23 below).

Fig. 4.23 Lexical loss of the Berber word(s) for 'palm tree' across age groups



4.1.3.6. Pine

The Berber equivalent for 'pine' is attested in a limited number of Berber varieties. Its origin is traced to the Berber root **ZMB**[56]. A derivative traced to this root is also attested in Tashawit: *zumbi* (coll.) (Huyghe, 1906: 497; Huyghe, 1907: 569)[57]. In the data, the Berber variant was realized as *zumbi*, *tzumbit* and *tzumbayt*. These accounted only for a tiny fraction of the total number of tokens produced (3.66%). They were produced mainly in the Massif (6.54%), Bellezma (5.55%) and Batna city (4.7%).

[56] A derivative of this root is attested in Kabyle: *azumbi* (Dallet, 1982). The variant attested in TCM, namely *azmag* (Taifi, 1991), is traced to an analogous Berber root, **ZMG**.

[57] The word *zumbi* is also used in Tashawit to refer to 'fir' and to 'pine seeds' (Huyghe, 1906, 1907).

The most recurrent variant in the data is the Arabic loanword *ṣṣnubeṛ* (54.5%). It was realized sometimes in compound forms, such as *taseṭṭa n ṣṣnubeṛ*, *tacejṛit n ṣṣnubeṛ*, etc. This Arabic borrowing is prominent in the northeastern and southeastern regions: Segnia (95.11%), Harakta (91.84%), Nemamcha (89.7%) and Oriental Aurès (56.1%). It is less common in Bellezma (39.9%) and, in particular, Occidental Aurès (11.78%).

The second most frequent variant in the data is a Latin loan, that is *tayda* (30.38%) (Kossmann, 2013). Realized also as *tayedwin* (pl.), *taseṭṭa n tayda*, *tacejṛit n tayda*, this loan accounted for 30.38% of the total number of tokens produced. It is prevalent in the southwestern regions, in particular the Massif (67.28%). It is also used, though less frequently, in Bellezma (30.3%) and Oriental Aurès (28.05%). The use of this Latin loan is rare in the remaining regions.

Participants have produced a myriad of other responses, none of which is relevant. These include *ṣṣerwel* 'cypress', *idgel* / *idyel* 'cedar', (*taseṭṭa n*) *acekrid* and *uxlif* 'kermes oak', *aṣefṣaf* 'willow', *aywal* 'spanish juniper', *lhendi* 'prickly pear', *taqqa* 'common juniper', *alili* 'oleander', *tabɣa* 'dog rose', and others more.

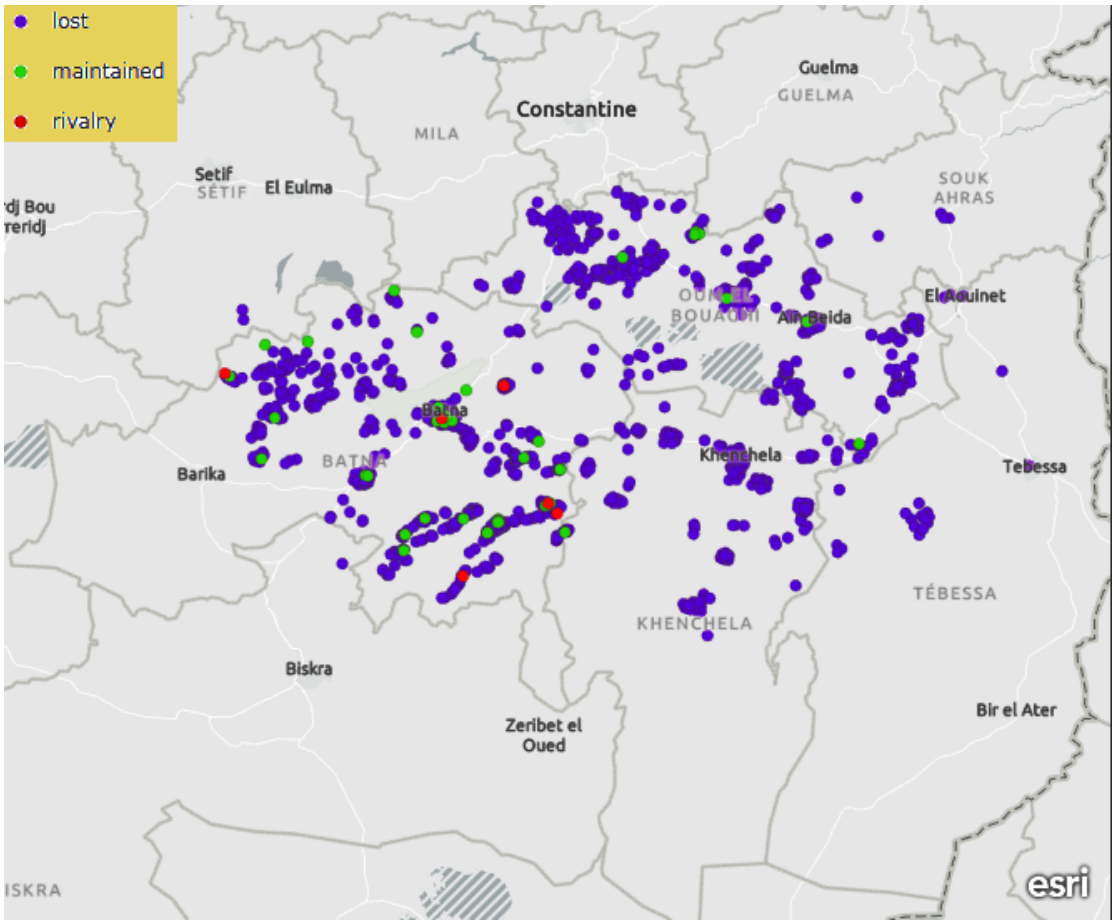
Table 4.24 'pine': frequencies of lexical variants

lexical variant	**number of tokens**
tzumbit …	52
tayda…	432
ṣṣnubeṛ	774
others	163
NR	412
Total	1833

The rate of lexical loss obtained for the present lexical item is extremely high: L (pine) = 97.16% (χ^2 = 1629.02, p < 0.001). In general, there is little regional variation

in the use of the Berber variant (χ^2 = 11.83, p = 0.066). The lowest rate of lexical loss was recorded in Occidental Aurès (L = 94.64%). The odds of a speaker from the Massif losing the Berber variant is only 1.27 times less likely than a speaker from Bellezma (L = 95.74%) (χ^2 = 0.42, p = 0.51). However, lexical loss is more striking in the regions of Segnia (L = 99.6%) and Harakta (L = 97.95%). A speaker from the region of Segnia is 11.58 times more likely to lose the Berber variant compared to another from Bellezma (χ^2 = 5.459, p = 0.019) and 14.74 times more likely to lose it compared to another from Occidental Aurès (χ^2 = 6.92, p = 0.009). A speaker from the region of Harakta is only 2.31 times more likely to lose the Berber variant compared to a speaker from Bellezma (χ^2 = 2.558, p = 0.11), but 2.71 times more likely to lose it compared to another from Occidental Aurès (χ^2 = 5.837, p = 0.016). The relative odds of a speaker from the region of Segnia losing the Berber variant compared to another from the region of Harakta are 5.45 to 1 (χ^2 = 2.538, p = 0.111). The highest rates of lexical loss were obtained in the regions of Oriental Aurès (L = 100%) and Nemamcha (L = 100%). The Berber variant can be described as obsolete in these regions.

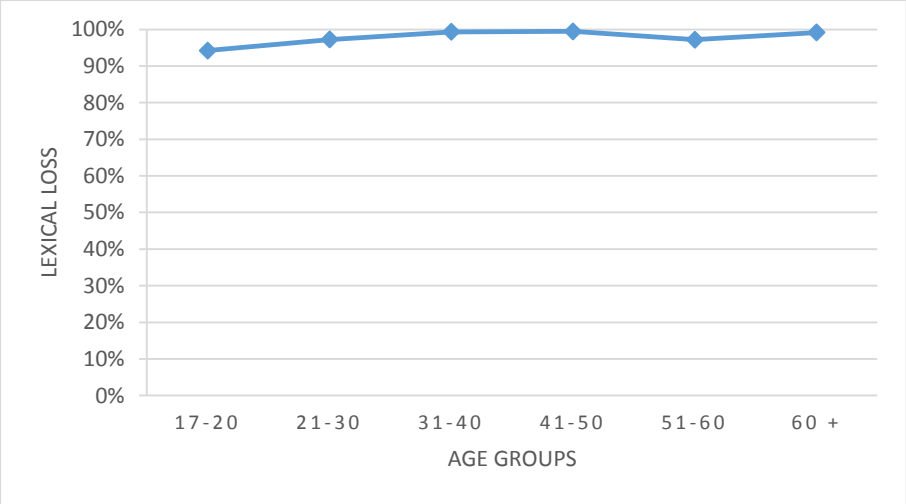
Map 4.24 Lexical loss of the Berber word(s) for ‘pine’ across Tashawit speaking area



The Statistical analysis has revealed that the relationship between lexical loss and age is significant ($\chi^2 = 17.88$, $p = 0.003$). The rate of lexical loss increases significantly between the 17-20 age group ($L_{17\text{-}20} = 94.23\%$) and the 21-30 age group ($L_{21\text{-}30} = 97.22\%$). A speaker from the second age group is 2.25 times more likely to lose the Berber variant compared to a speaker from the first age group ($\chi^2 = 6.242$, $p = 0.012$). The rate of lexical loss increases slightly between the second and the third age group ($L_{31\text{-}40} = 99.32\%$). The relative odds of a speaker from the third age group losing the Berber variant compared to another from the second age group are 5.59 to 1 ($\chi^2 = 2.8$, $p = 0.095$). The rate of lexical loss remains almost constant between the third and the fourth age group ($L_{41\text{-}50} = 99.47\%$), with relative odds of lexical loss of 1 to 1.17 ($\chi^2 = 0.012$, $p = 0.91$). The rate of lexical loss, then, decreases between the fourth and the

fifth age group (L_{51-60} = 97.16%). A speaker from the former is 7.02 times more likely to lose the Berber variant compared to another from the latter, but the difference is statistically insignificant (χ^2 = 1.065, p = 0.067). The rate of lexical loss increases between the fifth and the sixth age group (L_{+60} = 99.15%). This change is again statistically insignificant; a speaker from the fifth age group is only 2.46 times less likely to lose the Berber variant compared to another from sixth age group (χ^2 = 1.273, p = 0.259).

Fig. 4.24 Lexical loss of the Berber word(s) for 'pine' across age groups



4.1.3.7. Spike

The Berber equivalents for 'spike' that are attested most across Berber varieties are traced to the root **YDR**[58]. An equivalent traced to the same root is also attested in Tashawit: *tidert* (Huyghe, 1906: 249) and *teggdert* (Basset, 1961: 241). The data obtained for this lexical variable show that the Berber variant was produced only by a minority of informants (8.1%). It was produced mainly in the Massif (25.25%), particularly in the western and southwestern localities, Tkout, Ghassira, Chir, Menaa,

[58] **Cognates**: *taydert* (Taifi, 1991; Jordan, 1934; Serhoual, 2002; Delhrure, 1984, 1987), *tidert*, *tigdert* (Huyghe, 1903), *taydreṭṭ*, *tiydreṭṭ* (Dallet, 1982), Nefoussa: *tidrit*, (Motylinski, 1898), etc. In Tuareg, a variant traced to another root is used the variant *tahammart* is attested (Masqueray, 1893; Foucauld, 1951).

Bouzina and Arris. Almost all the remaining tokens were produced by participants residing in Batna city (12.99%).

Another Berber word that was recorded in the data is *tacewaṭṭ* (8.29%). In Tashawit, this denotes 'a bundle of spikes' (Saad, 2013)[59]. The majority of speakers who produced this variant are from the region of Bellezma (47.11%). Most of the remaining participants who produced it are from Batna city (9.74%).

The most frequent variant in the data is the Arabic loan *tasbult* / *tasenbult* (79.32%)[60]. It prevails over the vast majority of Tashawit speaking regions, covering the regions of Segnia (99.17%), Nemamcha (97.4%), Harakta (95.89%) and Oriental Aurès (90%). It is also used, though less frequently, in the western regions: Occidental Aurès (67.68%) and Bellezma (45.78%).

Other responses that were produced in reaction to the present item include *ideɣ* 'bundle of wheat, barley, etc.', *irden* 'wheat', *timzin* 'barley', etc.

Table 4.25: 'spike': frequencies of lexical variants

lexical variant	**number of tokens**
tiydert …	125
tacewaṭṭ	127
tasbult…	1224
others	65
NR	293
total	1834

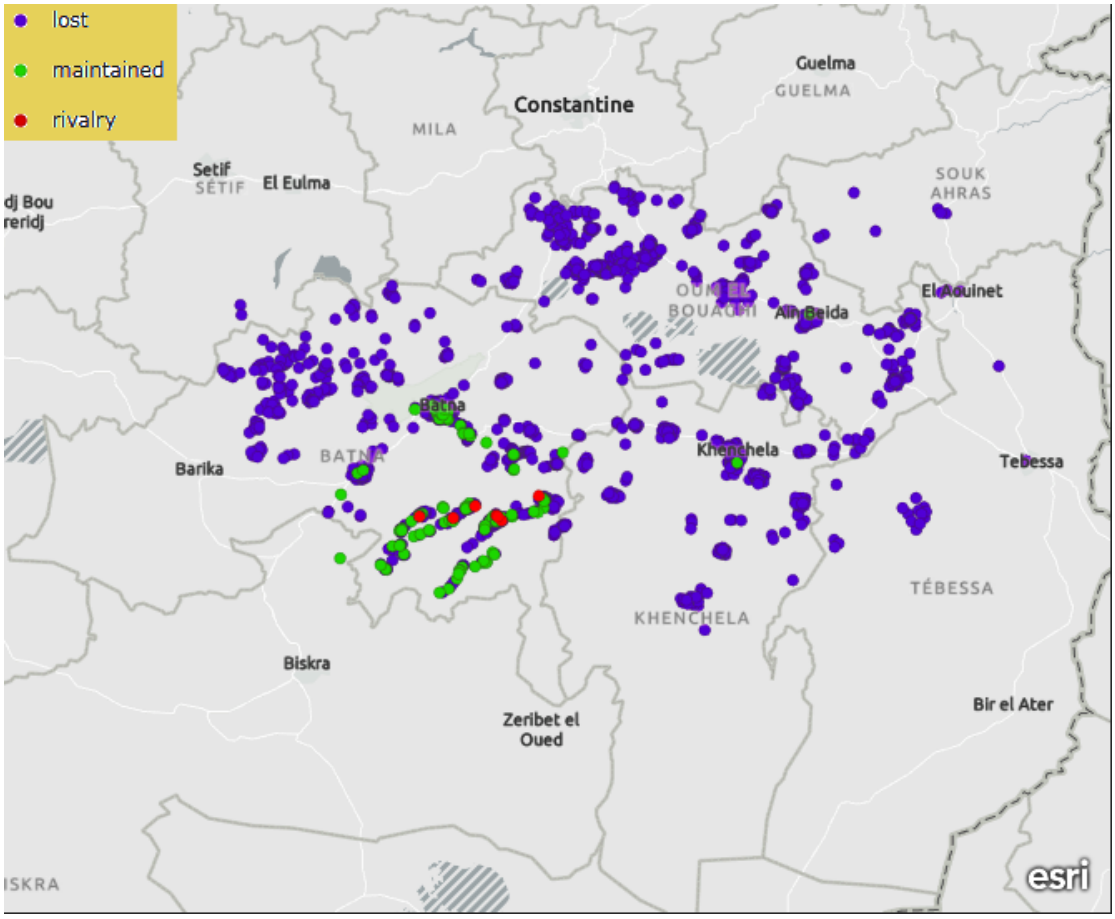
The rate of lexical loss obtained for the present lexical item is the highest in this semantic domain: L (spike) = 93.18% (χ^2 = 1360.44, p < 0.001). Although lexical loss

[59] Traced to the Berber root **CWḌ**, which signify grilling, the exact meaning of this word is probably the one attested in TCM: *tacgg^{w}aṭṭ* / *tacewaḍṭ* 'a bundle of spikes to grill' (Taifi, 1991).

[60] See Ben Sedira (1910)

is the dominant trend, the analysis has revealed that the rates of lexical loss differs cross-regionally ($\chi^2 = 229.849$, $p < 0.001$).

Map 4.25 Lexical loss of the Berber word(s) for ‘spike’ across Tashawit speaking area



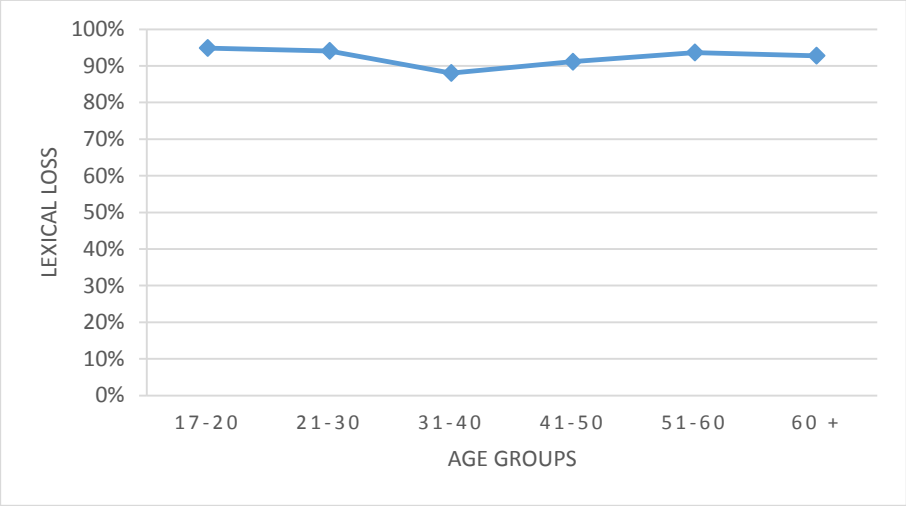
The Berber variant is maintained mainly in the Massif. The rate of lexical loss recorded in this region is significantly lower than all other regions (L = 78.6%). Beyond the Massif, the lowest rate of lexical loss was recorded in Batna city (L = 90.29%). The relative odds of a speaker from the Massif losing the Berber variant compared to another residing in Batna city are 1 to 3.12 ($\chi^2 = 16.978$, $p < 0.001$). The Berber variant, as can be noticed in Map 4.25 above, is lost all over the region of Bellezma except in the locality of Ain Touta (L = 98.45%). Accordingly, the odds of a speaker from this region losing the Berber variant, assuming we do not know the locality s/he resides in, is 18.29 times higher than a speaker from Occidental Aurès ($\chi^2 = 31.061$, $p < 0.001$). It

is clearly that the Berber variant has also fallen into disuse in the remaining regions. A speaker from Occidental Aurès is, for instance, 46 times more likely to maintain the Berber variant compared to another from Oriental Aurès (L = 99.31%) (χ^2 = 14.229, p < 0.001) and 168.16 times more likely than a speaker from the region of Harakta (L = 99.74%) (χ^2 = 25.248, p < 0.001). The Berber variant can be considered obsolete in the regions of Segnia (L = 100%) and Nemamcha (L = 100%).

The relationship between lexical loss and age is quite significant (χ^2 = 11.23, p = 0.047). The highest rate of lexical loss was obtained for the youngest age group ($L_{17\text{-}20}$ = 94.87%). It decreases slightly for the second age group ($L_{21\text{-}30}$ = 94.08%). The odds of speakers of the first age group losing the Berber variant compared to those of the second age group are only 1.16 times higher (χ^2 = 0.248, p = 0.618). However, the decrease observed between the second and the third age group is significant ($L_{31\text{-}40}$ = 88.04%). A speaker from the third age group is 2.16 times less likely to lose the Berber variant compared to another from the second age group (χ^2 = 7.577, p = 0.006) and 2.51 times less likely to lose it compared to another from the first age group (χ^2 = 7.222, p = 0.007). The rate of lexical increases slightly for the fourth age group ($L_{41\text{-}50}$ = 91.16%). The odds of a speaker from the third age group maintaining the Berber variant compared to another from the fourth age group are only 1.44 times higher (χ^2 = 0.821, p = 0.36). In a similar way, the difference observed between the fourth and the fifth age group (93.65%) is statistically insignificant. A speaker from the fifth age group is only 1.43 times more likely to lose the Berber variant compared to a speaker from the fourth age group (χ^2 = 1.027, p = 0.311). Compared to those of the third age group, however, the odds of lexical loss for speakers of the fifth group are two times higher (χ^2 = 4.077, p = 0.043). The rate of lexical loss decreases slightly for the sixth age group (L_{+60} =

92.76%). The relative odds of lexical loss for the sixth age groups are 1 to 1.15 compared to the fifth age group ($\chi^2 = 0.12$, $p = 0.229$).

Fig. 4.25 Lexical loss of the Berber word(s) for 'spike' across age groups



4.1.3.8. Oleander

Informants' responses to this item are dominated by two main variants, a Berber word and an Arabic loan. The majority of informants have produced the Berber variant *alili* (53.77%). This Berber equivalent (see Huyghe, 1906: 379) is traced to the same root to which all other equivalents in other Berber varieties are traced as well, i.e. **LL**[61]. It was recorded, though with varying frequencies, in all regions. Its area of dominance covers the southern and northwestern regions: the region of Nemamcha (53.33%), Bellezma (56.67%), Oriental Aurès (63.38%) and the Massif (80.36%). Its use decline, however, in the northeastern regions: Segnia (17.45%) and Harakta (21.68%).

The Arabic loan *ddefla* is much less frequent than the Berber variant (27.15%). It is used most frequently in the region of Harakta (65.49%). Its use declines considerably in the surrounding regions: Segnia (44.97%), Nemamcha (26.67%) and Oriental Aurès

[61] **Cognates**: *ilel* (Masqueray, 1893); *elel* (Foucauld, 1951), *alili* (Destaing, 1914; 1938; Amaniss, 2009; Serhoual, 2002), *ilili* (Dallet, 1982), *ariri* (Serhoual, 2002), etc.

(23.94%). The lowest frequencies of the Arabic loan were recorded in the western regions: the Massif (5.44%) and Bellezma (16.67%).

A considerable proportion of the responses produced for the present lexical item denote referents other than 'oleander' (19.03%). These include *aɛric* 'vine', *tayda* 'pine', *tayzelt* 'raspberry', and others more.

Table 4.26: 'oleander': frequencies of lexical variants

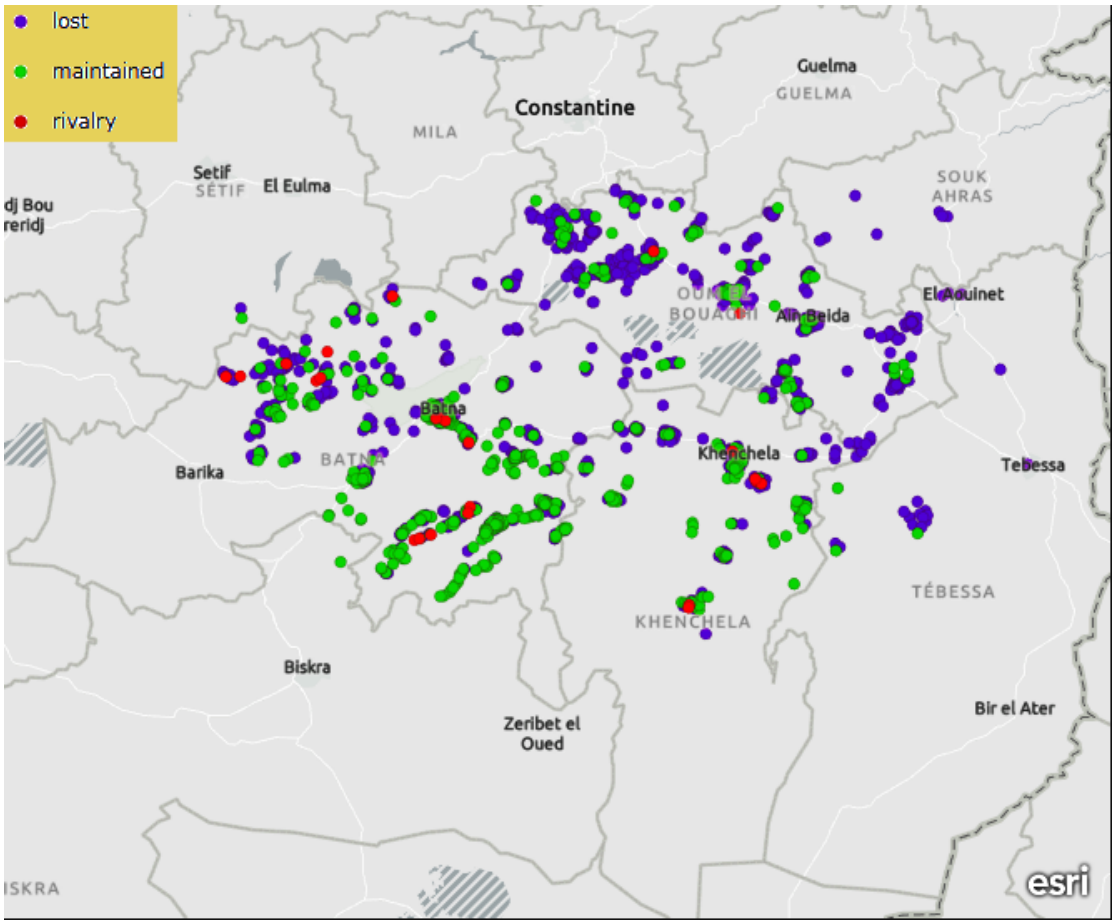
lexical variant	**number of tokens**
alili	606
ddefla …	309
others	215
NR	715
total	1834

Lexical loss is fairly dominant for the present item: L (oleander) = 66.96% (χ^2 = 216.48, $p < 0.001$). Similarly, to the previous items addressed under the present domain, the analysis has revealed that the use of the Berber variant is regionally determined (χ^2 = 261.573, $p < 0.001$). The lowest rate of lexical loss was recorded in Occidental Aurès (L = 42.92%). The analysis has revealed that the Berber variant is maintained in this region better than the surrounding regions. The odds lexical maintenance in the Massif are 2.71 times higher than Bellezma (L = 67.05%) (χ^2 = 37.699, $p < 0.001$), 2.96 times higher than Oriental Aurès (L = 68.96%) (χ^2 = 28.656, $p < 0.001$) and 2.41 times higher than the region of Nemamcha (L = 64.44%) (χ^2 = 13.523, $p < 0.001$).

The highest rates of lexical loss were recorded in the regions of Harakta (L = 85.9%) and Segnia (L = 90.04%). A speaker from Occidental Aurès is 8.1 times less likely to lose the Berber variant compared to a speaker from the region of Harakta (χ^2 = 146.238, $p < 0.001$) and 12.02 times less likely to lose it compared to another from the region of Segnia (χ^2 = 120.124, $p < 0.001$). Comparisons involving regions other

than the Massif revealed variant degrees of regional variation. The statistical analysis has shown a significant difference between the rates of lexical loss recorded in Bellezma and the neighboring region of Segnia. The relative odds of a speaker from the latter maintaining the Berber variant compared to another from the former are 1 to 4.44 (χ^2 = 36.883, p < 0.001). However, the odds of a speaker from the region of Segnia maintaining the Berber variant compared to another from the region of Harakta are 1 to 1.48 (χ^2 = 2.439, p = 0.12).

Map 4.26 Lexical loss of the Berber word(s) for 'oleander' across Tashawit speaking area



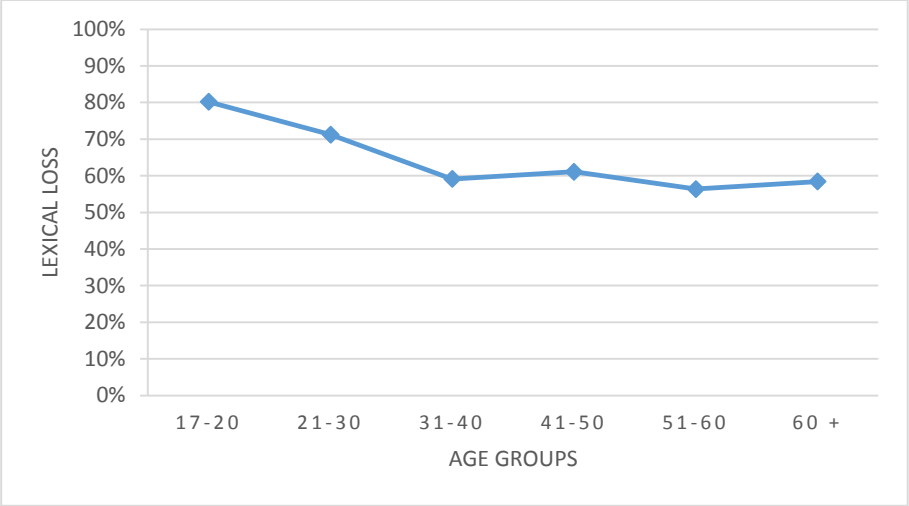
The analysis has revealed no significant regional variation across the southeastern regions; the odds of speakers from the region of Nemamcha losing the Berber variant are only 1.23 times higher than those of Oriental Aurès (χ^2 = 0.515, p = 0.473). Lexical loss is less dominant, however, in the southeastern than the northeastern regions. A

speaker from the region of Nemamcha is 3.36 times more likely to preserve the Berber variant compared to a speaker from the region of Harakta ($\chi^2 = 21.09$, $p < 0.001$) and 5 times more likely to preserve it compared to another from the region of Segnia ($\chi^2 = 28.306$, $p < 0.001$). A speaker from Oriental Aurès, on the other hand, is 2.74 times more likely to preserve the Berber variant compared to a speaker from the region of Harakta ($\chi^2 = 19.042$, $p < 0.001$) and 4.07 times more likely to preserve it compared to another from the region of Segnia ($\chi^2 = 26.266$, $p < 0.001$).

The analysis of the data obtained for the present item has shown that age plays an important role in predicting lexical loss ($\chi^2 = 57.919$, $p < 0.001$). The highest rate of lexical loss was obtained for the youngest age group ($L_{17\text{-}20} = 80.19\%$). It decreases significantly for the second ($L_{21\text{-}30} = 71.23\%$) and the third age group ($L_{31\text{-}40} = 59.14\%$). Speakers of the first age group are 1.59 times less likely to maintain the Berber variant compared to those of the second age group ($\chi^2 = 7.947$, $p = 0.005$) and 2.72 times less likely compared to those of the third age group ($\chi^2 = 23.608$, $p < 0.001$). Speakers of the second age group are 1.71 times less likely to preserve the Berber variant compared to those of the third age group ($\chi^2 = 9.669$, $p = 0.002$). The rate of lexical loss changes only slightly through the remaining age groups. The relative odds of a speaker from the fourth age group ($L_{41\text{-}50} = 61.09\%$) maintaining the Berber variant compared to another from the third age group are 1 to 1.03 ($\chi^2 = 0.024$, $p = 0.877$). The lowest rate of lexical loss was recorded for the fifth age group ($L_{51\text{-}60} = 56.35\%$). However, the decrease observed for this group is statistically insignificant; speakers of this age group are only 1.24 times less likely to lose the Berber variant compared to those of the fourth age group ($\chi^2 = 1.299$, $p = 0.254$). The increase observed between the fifth and the sixth age group ($L_{+60} = 58.42\%$) is also statistically insignificant; the odds of a speaker from the

fifth age group preserving the Berber variant compared to another from the sixth group are only 1.14 times higher ($\chi^2 = 2.279$, $p = 0.131$).

Fig. 4.26 Lexical loss of the Berber word(s) for 'oleander' across age groups



4.1.4. Animals

4.1.4.1. Bird

The present item is denoted in Berber varieties by words which are traced to the root **GḌḌ**[62]. A derivative of this Berber root is also attested in Tashawit, *acṭat* (Joly, 1912).

Realized in the data as *acṭiṭ*, the Berber variant was produced only by a very tiny fraction of the participants (3.67%). It was produced mainly in the region of Bellezma (20.55%), more specifically in a narrow territory in the northwestern part of the region (see Map 4.27 below). The number of occurrences of the Berber variant in this region covers 81.25% of the total number of tokens produced for this variant. It is almost totally missing in other regions. Most of the speakers who produced the Berber variant in other regions are originally from the northwestern part of Bellezma.

[62] **Cognates**: *égeḍiḍ* (Foucauld, 1951), *igeḍèḍ* (Masqueray, 1893), *agḍiḍ* (Destaing, 1938; Taifi, 1991; Dallet, 1982), *ajḍiḍ* (Delheure, 1984, 1987; Taifi, 1991; Serhoual, 2002), *ajḍeḍ*, *ajdeḍ* (Destaing, 1914), *ağaḍiḍ* Lanfry, 1973), *acṭiṭ* (Provotelle, 1911), *acṭiṭ*, *aceṭṭiṭ* 'small bird' (Motylinski, 1898), etc. In Gourara, the word *zukk* (f. *tzukket*) is used to denote 'bird' (Bodout-Lamotte, 1964).

Over half of the subjects who responded to the present item have produced the Arabic loanword *afṛux* (53.9%). Realized occasionally as *lferx*, this loan is used in an area that stretches from the southeast of Bellezma (12.55%) through the Massif (97.62%) and Oriental Aurès (68.38%) to the region of Nemamcha (92.94%). It is less widely used in the region of Harakta (36.28%) and only occasionally used in the region of Segnia (5.9%). The second most frequent variant in the data is the Arabic loanword *aṭeyyaṛ* (37.66%). This variant is prevalent in the regions of Harakta (60.86%), Segnia (85.83%) and the eastern and southern localities of Bellezma (52.55%). It is also used in Oriental Aurès (25.64%), but is almost completely missing in Occidental Aurès and the region of Nemamcha.

Other responses that were recorded in the data include the nonce borrowing *a.ɛeṣfuṛ* (0.34%), *ẓẓawec* 'sparrow', and other irrelevant responses.

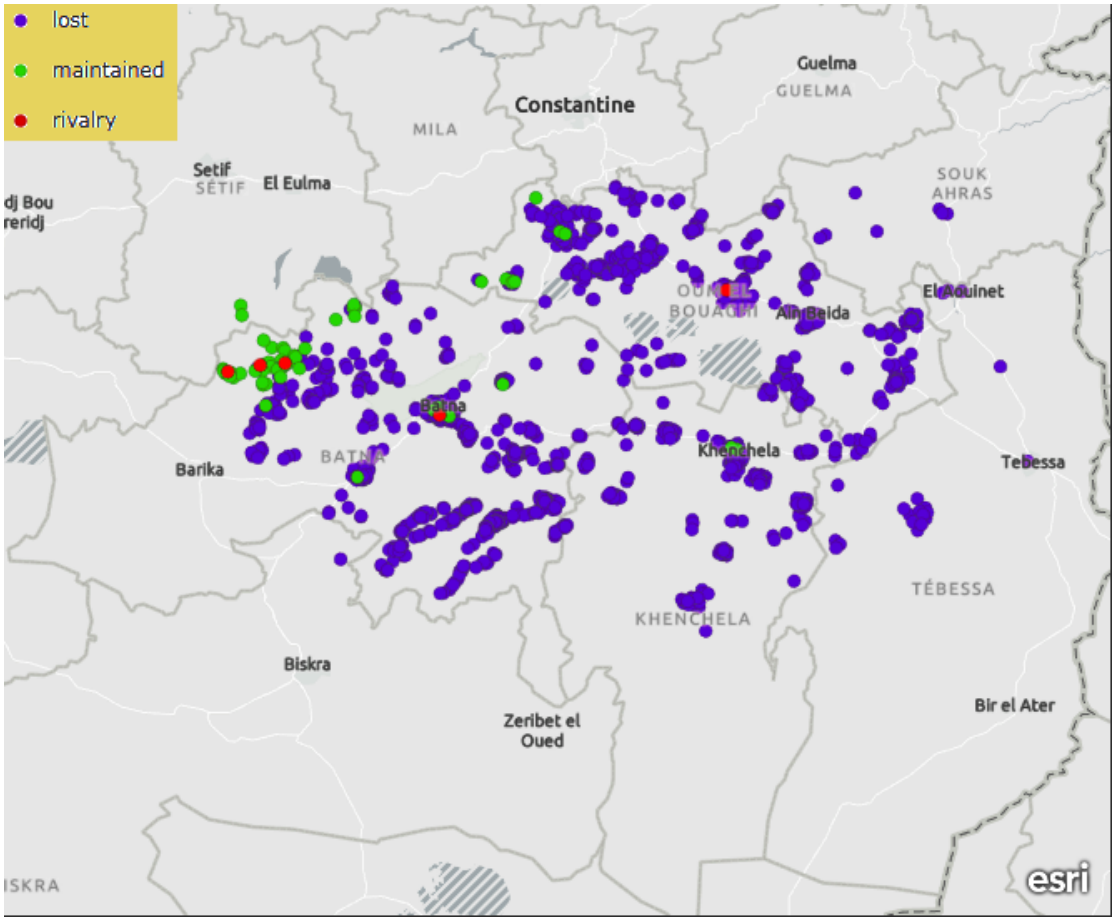
Table 4.27 'bird' : frequencies of lexical variants

lexical variant	**number of tokens**
acṭiṭ	63
afṛux…	939
aṭeyyaṛ	656
others	83
NR	116
total	1857

The Berber word for 'bird' is the least maintained of all the notions included under the semantic domain under treatment: L (bird) = 96.61% ($\chi^2 = 1608.96$, $p < 0.001$). The statistical analysis has shown that the use of the Berber variant is regionally determined ($\chi^2 = 247.61$, $p < 0.001$). It is completely lost in the regions of Nemamcha (L = 100%) and Occidental Aurès (L = 100%). It is also obsolete, or virtually obsolete, in the regions of Harakta (L = 99.49%), Segnia (L = 98.85%) and Oriental Aurès (L =

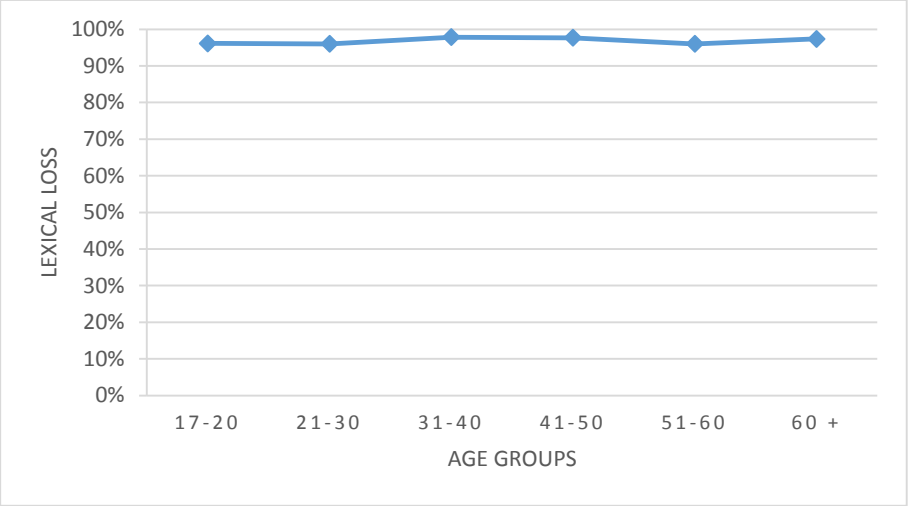
98.62%). The Berber variant is maintained to some degree in the region of Bellezma (L = 79.84%). The rate of lexical loss recorded in this region is significantly lower than all other regions. The statistical analysis has revealed that a speaker from Bellezma, regardless of the locality s/he resides in, is 10.15 times more likely to maintain the Berber variant compared to a speaker in the region of Segnia ($\chi^2 = 23.442$, $p < 0.001$), 18.05 times more likely than a speaker in Oriental Aurès ($\chi^2 = 15.76$, $p < 0.001$) and 48.97 times more likely than another in the region of Harakta ($\chi^2 = 28.75$, $p < 0.001$). The differences become even greater when the comparison is drawn between speakers living in the northwestern part of Bellezma, specifically the localities of Ras el Aioun, Guigba, Gosbat, Ouled Sellam, Oued Elma, and those living in other regions.

Map 4.27 Lexical loss of the Berber word(s) for 'bird' across Tashawit speaking area



Cross-generational analysis has revealed no significant relationship between lexical loss and age (χ^2 = 2.932, p = 0.71) (see Fig.4.27 below).

Fig. 4.27 Lexical loss of the Berber word(s) for 'bird' across age groups



4.1.4.2. Fish

The Berber words that are used in the different Berber varieties to denote the present item derive from one common root, **SLM**[63]. The Berber variant *aslem* is attested in all Tashawit texts (Sierakowski, 1871; Huyghe, 1906, 1907; Basset, 1961, etc.).

The analysis of the data has shown that the Berber variant is the most frequent variant (55.33%). This variant is used almost exclusively in the Massif (98.5%). It is also dominant in Oriental Aurès (62.5), particularly in the northwestern part, and in the southwestern localities of Bellezma (61.76%). The Berber variant was produced by small minorities in the regions of Nemamcha (15.58%), Harakta (14.95%) and Segnia (13.54%).

The Arabic loanword *lḥūt* / *taḥutit* is less frequent than the Berber variant (43.82%). It prevails over the eastern regions: Nemamcha (79.22%), Harakta (84.11%) and Segnia

[63] The Berber word for 'fish' enjoys less currency compared to the Berber equivalent of the previous lexical item: *asulmay* (Foucauld, 1951; Masqueray, 1893), *aslem* (Cid Kaoui, 1907; Destaing, 1914, 1938; Taifi, 1991; Dallet, 1982); *asrem* (Serhoual, 2002), *cigmen* (Faidherbe, 1877), etc.

(85.66%). It is also used in Bellezma (36.97%), in particular the eastern and northern localities, and the eastern localities of Oriental Aurès (36.45%). It is completely insignificant in the Massif (1.54%).

A handful of speakers produced the Arabic borrowing *samaka* (0.61%), which is clearly a nonce borrowing. Few other participants produced a number of irrelevant responses, such as *asnem*, *asman*, etc. It is evident that the subjects who provided such responses have failed to produce the Berber variant due to lack of competence or lexical retrieving difficulties.

Table 4.28 'fish': frequencies of lexical variants

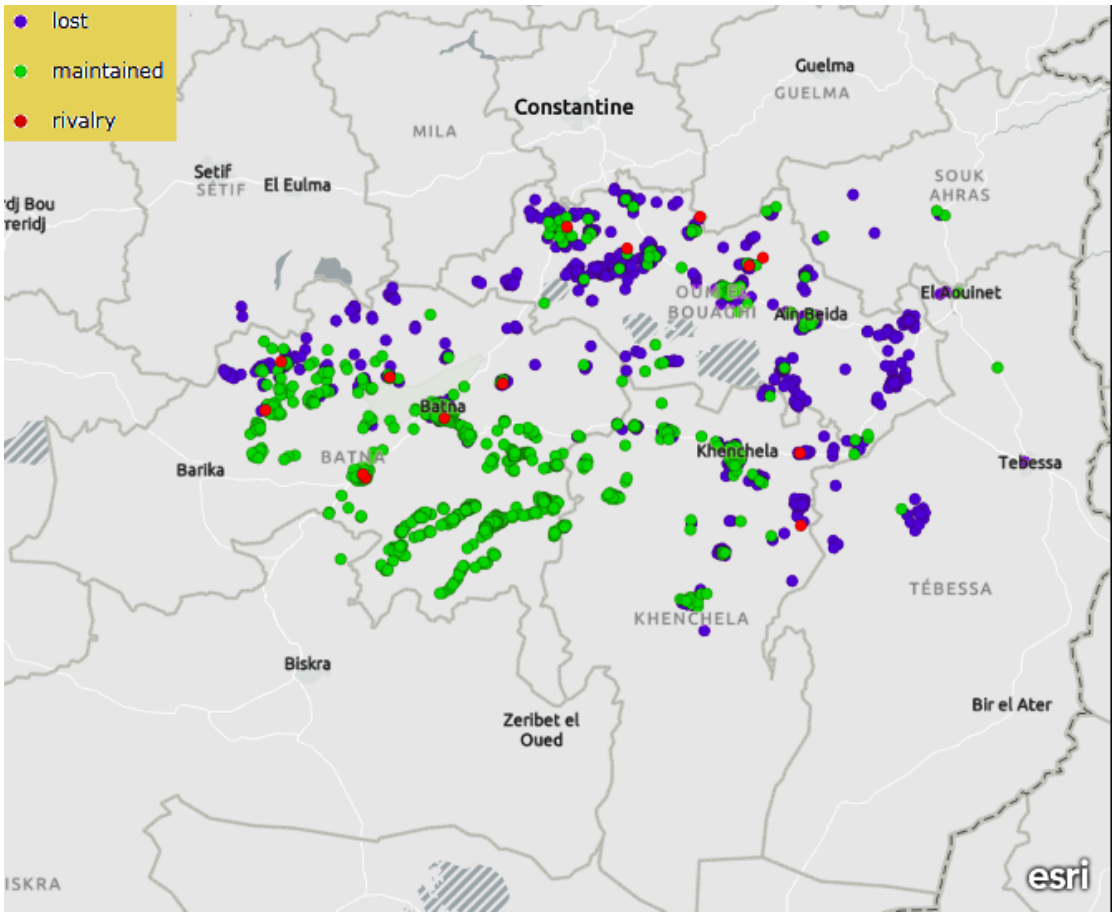
lexical variant	**number of tokens**
aslem	913
lḥut ...	723
others	13
NR	180
total	1829

The analysis of the data elicited for the present item points to a balance between lexical maintenance and lexical loss: L (fish) = 50.08% ($\chi^2 = 0$, $p = 1$). This apparent stability does not hold in all regions ($\chi^2 = 854.332$, $p < 0.001$). The Berber variant is preserved mainly in the Massif (L = 4.08%). The Berber variant is fairly maintained in Bellezma (L = 43.02%). However, the odds of lexical loss in Bellezma are 17.76 times higher than the Massif ($\chi^2 = 117.12$, $p < 0.001$). Lexical loss is fairly dominant in Oriental Aurès (L = 58.62%). A speaker from Oriental Aurès is 1.88 times more likely to lose the Berber variant compared to another from Bellezma ($\chi^2 = 147.6$, $p = 0.003$) and 33.33 times more likely compared to another from Occidental Aurès ($\chi^2 = 147.6$, $p < 0.001$).

The highest rates of lexical obsolescence were recorded in the regions of Nemamcha (L = 85.56%), Harakta (L = 85.9%) and Segnia (L = 86.97%). The odds of lexical loss in these three region are so close: 1 to 1.03 between the region of Nemamcha and the region of Harakta ($\chi^2 = 0.007$, $p = 0.933$), 1 to 1.13 between the region of Nemamcha and the region of Segnia ($\chi^2 = 0.12$, $p = 0.73$) and 1 to 1.1 between the region of Harakta and the region of Segnia ($\chi^2 = 0.15$, $p = 0.69$).

The statistical analysis has revealed significant differences between the regions of Nemamcha, Harakta and Segnia, on the one hand, and Oriental Aurès, Bellezma and Occidental Aurès on the other. The odds of lexical maintenance in Oriental Aurès are 4.18 times higher than the region of Nemamcha ($\chi^2 = 17.293$, $p < 0.001$), 4.29 times higher than the region of Harakta ($\chi^2 = 42.88$, $p < 0.001$) and 4.71 times higher than the region of Segnia ($\chi^2 = 38.61$, $p < 0.001$). The odds of lexical maintenance in Bellezma are 7.84 times higher than the region of Nemamcha ($\chi^2 = 40.13$, $p < 0.001$), 8.07 times higher than the region of Harakta ($\chi^2 = 117.86$, $p < 0.001$) and 8.07 times higher than the region of Segnia ($\chi^2 = 95.71$, $p < 0.001$). Greater differences were obtained with regard to the Massif. A speaker from Occidental Aurès is 139.35 times more likely to preserve the Berber variant compared to a speaker from the region of Nemamcha ($\chi^2 = 168.351$, $p < 0.001$), 143.3 times more likely than a speaker from the region of Harakta ($\chi^2 = 324.195$, $p < 0.001$) and 157.07 times more likely than another from the region of Segnia ($\chi^2 = 288.325$, $p < 0.001$).

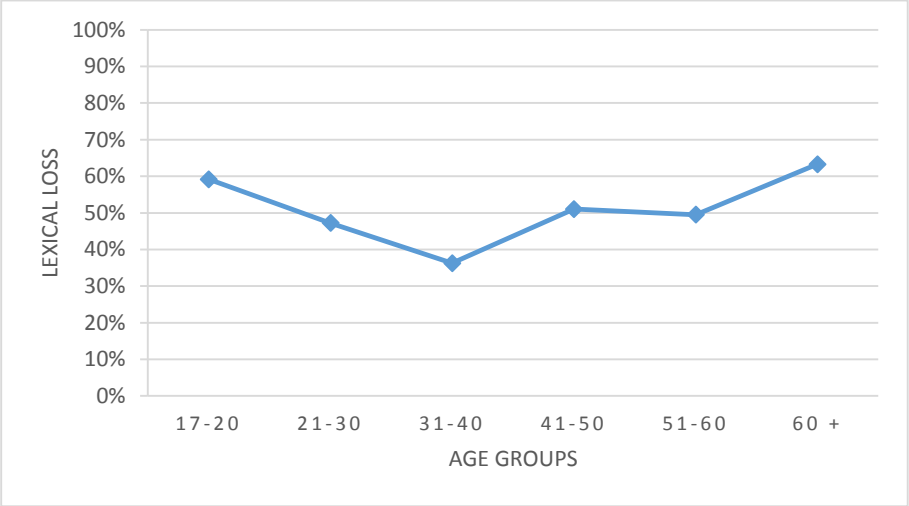
Map 4.28 Lexical loss of the Berber word(s) for ‘fish’ across Tashawit speaking area



The findings obtained for the present item showed that lexical loss is closely associated with age (χ^2 = 36.051, p < 0.001). The rate of lexical loss decreases in a significant way between the first ($L_{17\text{-}20}$ = 59.16%), the second ($L_{21\text{-}30}$ = 47.24%) and the third age group ($L_{31\text{-}40}$ = 36.26%). Speakers of the first age group are 1.61 times less likely to preserve the Berber variant compared to those of the second age group (χ^2 = 11.98, p = 0.01), and 2.44 times less likely compared to those of the third age group (χ^2 = 21.8, p < 0.001). The odds of lexical loss for the second age group are 1.51 times higher than the third age group (χ^2 = 5.86, p = 0.015). The rate of lexical loss increases significantly between the third and the fourth age group ($L_{41\text{-}50}$ = 51.03%), with relative odds of lexical loss of 1 to 1.8 respectively (χ^2 = 8.14, p = 0.004). The rate of lexical loss remains almost constant between the fourth and the fifth age group ($L_{51\text{-}60}$ =

49.48%); the odds of a speaker from the fourth age group losing the Berber variant compared to another from the fifth age group are only 1.08 times higher ($\chi^2 = 0.165$, $p = 0.684$). The highest rate of lexical loss was recorded for the sixth age group ($L_{+60} = 63.25\%$). A speaker from this age group is 1.75 times more likely to preserve the Berber variant compared to another from the fifth age group ($\chi^2 = 7.1$, $p = 0.008$) (see Fig. 4.28 below).

Fig. 4.28 Lexical loss of the Berber word(s) for 'fish' across age groups



4.1.4.3. Cat

Berber equivalents 'for' cat derive in all Berber varieties from the root **MC**[64]. The variant *mucc* (see Huyghe, 1906; 1907; Basset, 1961), is the most recurrent variant in the data (58.14%). It is prominent in the Massif (98.27%) and Bellezma (94.21%). It is also used, though much less frequently, in Oriental Aurès (56.41%). It was produced only in small fractions in other regions: Nemamcha (14.81%), Harakta (11.44%) and Segnia (5.47%).

[64] Three or four main realizations of this root are attested: *mucc* (Foucauld, 1951; Masqueray, 1893; Boudo-Laotte, 1964; Delheure, 1984, 1987; Taifi, 1991; Serhoual, 2002; Destaing; 1914), *amucc* (Destaing, 1938; Taifi, 1991), *amcic* (Laoust, 1912; Dallet, 1982), and *amnic* (Motylinski, 1898), etc.

The second important variant in the data is *lqeṭṭ / lgeṭṭ*. Realized sometimes as *aqeṭṭiw*, *ageṭṭiw* and *aqeṭṭus*[65], this variant was revealed to be much less frequent than the former (27.21%). It is used mainly in the regions of Nemamcha (83.95%) and Harakta (68.91%). It is also used, though less frequently, in the regions of Segnia (39.42%) and Oriental Aurès (28.19%). In the western regions, this loanword was produced by a very insignificant proportion of informants: Bellezma (3.74%) and the Massif (1.08%).

Another variant that was produced in the data is *abecciw* / *lbecc*. It is occasionally realized as *lbess* and *abessiw*. It is clear that this variant has the same origin as the one used in Tashawit CDS (Ounissi, 2003; Saad, 2013; cf. Bynon, 1968)[66]. This variant is less frequent than the two previous ones (14.65%). It is used mainly in the region of Segnia (55.11%). It is also used, though much less frequently, in the region of Harakta (19.65%) but it is missing in other regions.

Table 4.29 'cat': frequencies of lexical variants

lexical variant	**number of tokens**
mucc	1032
lqeṭṭ / lgeṭṭ …	481
abecciw …	260
others	2
NR	89
total	1864

[65] This variant is also attested in a number of other Berber varieties: *yaṭṭus* (Basset, 1890; Provotelle, 1911), *qaṭṭús* (Motylinski, 1898) *ageṭṭus* (Motylinski, 1904) and *takaṭṭust* (Lanfry, 1973). It is a Latin loan (Kossmann, 2013). The ultimate source of this variant, it is worth noting, is Afroasiatic, namely *kadis* of Nubian and *Kadiska* of Berber (Quiles and Lopez-Menchero, 2011; Kurtz, 2013).

[66] A cognate of this variant, namely *biciw*, is attested in Nefoussa (Zerrad, 1998). This variant is definitely related to *bissa* (Arabic), *puss* (English), *poes* (Dutch), *puus*, *puus-katte* (Low German), *puus-mau* (), *poes* (West-Frisian), *pus* (Danish), *kattepus* (Dialectal Swedish), Norwegian *pus* (Norwegian), *pisi* (Turkish), etc.

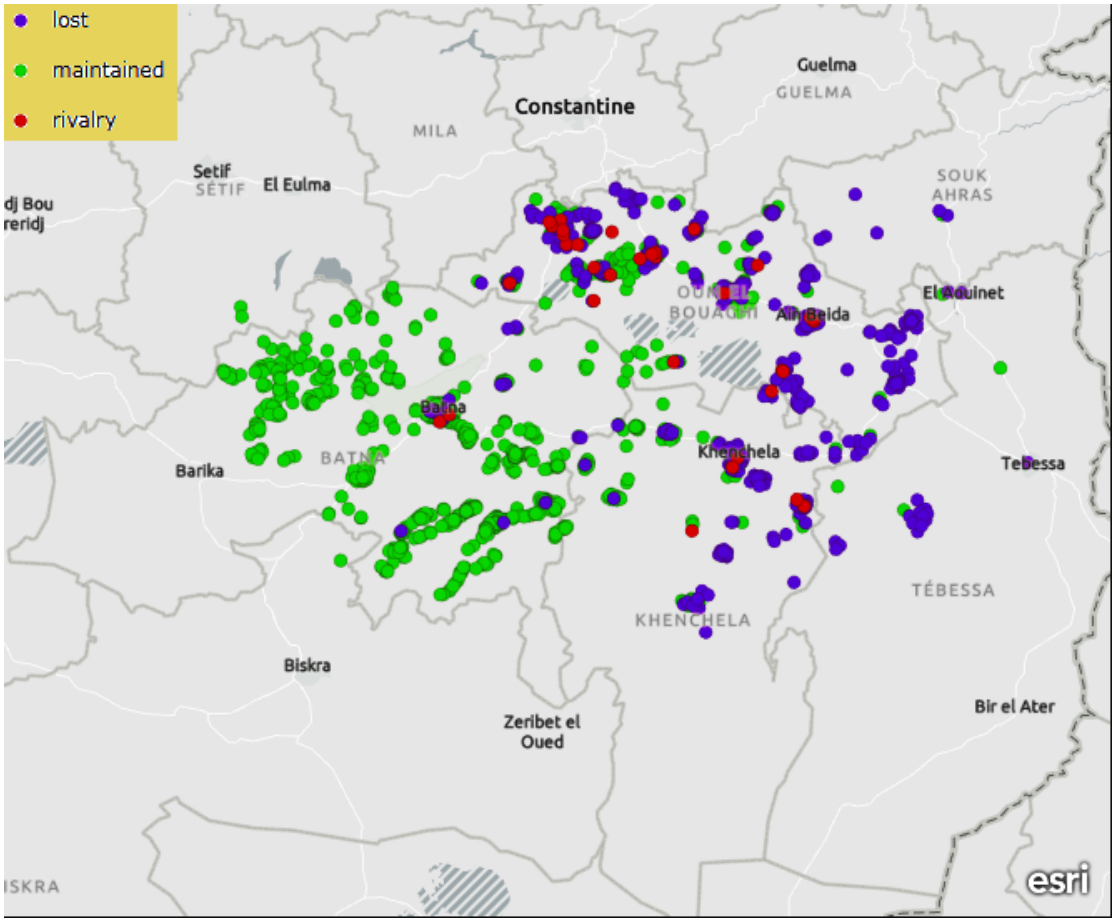
The Berber word for ‘cat’ is fairly maintained in Tashawit: L (cat) = 44.63% (χ^2 = 21.24, $p < 0.001$). In the same way to most of the item analyzed previously, the use of this Berber variant is closely associated with region (χ^2 = 1283.974, $p < 0.001$). It is preserved predominantly in the western regions: Occidental Aurès (L = 2.15%) and Bellezma (L = 5.43%). Although the rates of lexical loss recorded in these two regions appear to be close to one another, the analysis has revealed that the odds of lexical maintenance in the Massif are 2.61 times higher (χ^2 = 5.21, p = 0.023). Lexical loss is slightly dominant in Oriental Aurès (L = 54.48%). The analysis has revealed important differences between Oriental Aurès and the two previous regions. The odds of lexical maintenance in Oriental Aurès are 20.83 times lower than Bellezma (χ^2 = 89.31, $p <$ 0.001) and 55.56 times lower than the Massif (χ^2 = 123.06, $p < 0.001$).

The use of the Berber variant declines sharply in the eastern regions: Nemamcha (L = 85.56%), Harakta (L = 88.21%) and, in particular, Segnia (L = 94.25%). The odds of lexical loss in the region of Segnia are 2.19 times higher than the region of Harakta (χ^2 = 6.47, p = 0.01) and 2.77 times higher than the region of Nemamcha (χ^2 = 6.46, p = 0.01). However, the odds of lexical loss in the region of Harakta are only 1.26 times higher than the region of Nemamcha (χ^2 = 0.47, p = 0.49).

The statistical analysis has revealed significant differences between the two sets of regions mentioned above. Lexical maintenance is 4.95 times more likely in Oriental Aurès than the region of Nemamcha (χ^2 = 21.72, $p < 0.001$), 6.25 times more likely than the region of Harakta (χ^2 = 64, $p < 0.001$) and 13.7 times more likely than the region of Segnia (χ^2 = 69.53, $p < 0.001$). The odds of lexical maintenance in Bellezma are 100 times higher than the region of Nemamcha (χ^2 = 129.97, $p < 0.001$), 125 times higher than the region of Harakta (χ^2 = 236.77, $p < 0.001$) and 333.33 times higher than the region of Segnia (χ^2 = 218.68, $p < 0.001$). The odds of lexical maintenance in the Massif

are 270.09 times higher than the region of Nemamcha ($\chi^2 = 163.17$, $p < 0.001$), 333.33 times higher than the region of Harakta ($\chi^2 = 268.14$, $p < 0.001$) and one thousand times higher than the region of Segnia ($\chi^2 = 253.21$, $p < 0.001$).

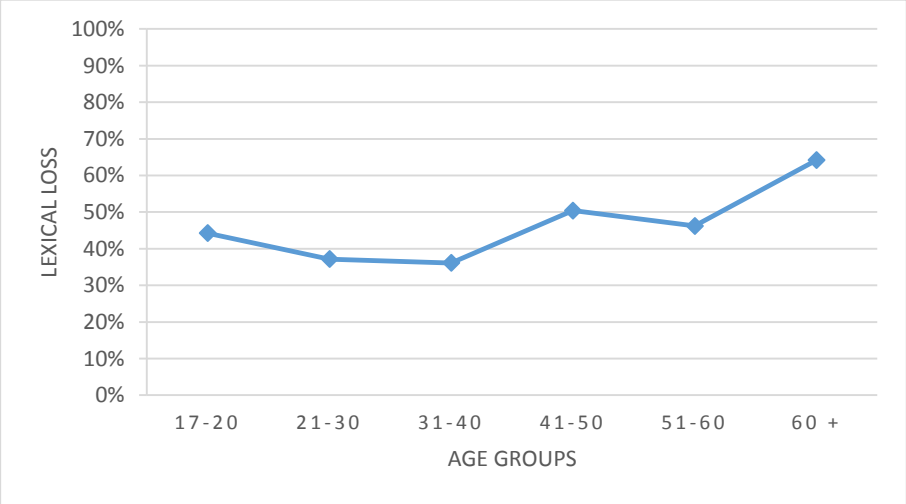
Map 4.29 Lexical loss of the Berber word(s) for 'cat' across Tashawit speaking area



Cross-generational analysis has revealed a significant association between lexical loss and age ($\chi^2 = 52.134$, $p < 0.001$). The rate of lexical loss decreases in a significant way between the first age group ($L_{17\text{-}20} = 44.23\%$) and the second age group ($L_{21\text{-}30} = 37.18\%$), but only slightly between the second and the third age group ($L_{31\text{-}40} = 36.12\%$). The odds of lexical loss for speakers of the first age group are 1.34 times higher than those of the second age group ($\chi^2 = 4.46$, $p = 0.035$). The odds of lexical loss for speakers of the second age group are almost identical to those of the third age group ($\chi^2 = 0.001$, $p = 0.97$). The rate of lexical loss increases significantly for the fourth

age group ($L_{41\text{-}50}$ = 50.42%). The odds of lexical loss for the fourth age group are 1.76 times higher than the third age group (χ^2 = 7.63, p = 0.006). We observe a slight decrease in the rate of lexical loss for the fifth age group ($L_{51\text{-}60}$ = 46.21%); a speaker from this age group is only 1.16 times more likely to maintain the Berber variant compared to another from the fourth age group (χ^2 = 0.672, p = 0.412). The rate of lexical loss increases again for the sixth age group (L_{+60} = 64.17%). Speakers of this group are 2.03 times less likely to maintain the Berber variant compared to those of the fifth age group (χ^2 = 11.36, p = 0.001).

Fig. 4.29 Lexical loss of the Berber word(s) for 'cat' across age groups



4.1.4.4. Bee

In most Berber varieties, this species is designated by a word that has its origin in the root **ZW**[67]. The variant attested in Tashawit is also traced to the same root: *tizizwit*

[67] **Cognates:** *tijijba* (Faidherbe, 1877), *tezzwit* (Destaing, 1938) *tizizwit* (Taïfi, 1991), *tazizwa*, *tizizwa* (Mourigh, 2016), *tzizwit* (Serhoual, 2002), *tuzizwit*, *dzizwit* (Renisio, 1932), *dzizwi* (Destaing (1914), *tizizwi* (Delheure, 1984), *tezizwa* (pl. coll.) (Provotelle, 1911), *tizizwit* (Dallet, 1982), *tezizwi* (Motylinski, 1898), *tamzizza* (Van Putten, 2013), etc. The Berber equivalent for 'bee' was not reported in the earliest dictionaries of Tuareg, i.e. Cid Kaoui, 1894, 1900), Masqueray (1893) and Motylinski (1908). Cid Kaoui (1894) maintains that this species is unknown for the Imuhaγ, i.e. Tuareg. Although they are familiar with honey, but they ignore that it is produced by bee, which they seem to agree to refer to as *ihi n tament* 'fly of honey' (Cid Kaoui, 1900; cf. Delheure, 1987, and Motylinski, 1904). In a similar way, Foucauld (1951) states that "there are no bees in Ahaggar" (our translation) (p. 619). A bee can, nonetheless, be denoted by *éhenkêker n turawet*, which exactly denotes a 'big wasp which produces honey' (Foucauld,

(Huyghe, 1906: 5) and *tzizwi* (Basset, 1961: 159). The majority of the participants who responded to this item have produced the Berber word (61.97%). The Berber variant is prominent in the southern and western regions: Nemamcha (81.71%), Oriental Aurès (84.54%), the Massif (98.9%) and, the southern and western localities of, Bellezma (72.34%). It is much less common in the region of Harakta (13.83%) and, in particular, the region of Segnia (4.29%).

The Arabic loan *nnḥelt*, also realized as *nnḥel*, *tinḥelt*, and the like (cf. Destaing, 1914), is much less frequent than the Berber variant (26.64%). It is prominent in the northeastern regions: Segnia (78.54%) and Harakta (62.06%). It is less frequent, however, in the southeastern and western regions: Nemamcha (13.41%), Bellezma (9.79%), Oriental Aurès (9.1%) and, in particular, the Massif (0.22%).

Another Arabic loan that was recorded in the data is *tbaɛuṭṭ* (4.25%). The original meaning of this word in Arabic is 'gnat' or 'mosquito' instead of 'bee'[68]. It is attested with the same meaning in Tashawit texts (Huyghe, 1906: 431-2). The analysis has shown that this variant is completely insignificant or missing in most regions. However, it can be regarded as an established borrowing in the region of Harakta (21.89%).

A number of informants produced responses that denote close species, e.g. *ireẓẓi*, *irẓeẓẓi*, *iwerẓeẓẓi*, *aberzezzu* 'wasp' (cf. Basset, 1885: 28), *tusna* 'type of bee or wasp', and *buzenzel* 'wasp', *tagemt / tagent* 'horsefly', etc.

Table 4.30 'bee': frequencies of lexical variants

lexical variant	**number of tokens**
tizizwet …	1007
tinḥelt…	433

1951). In the variety of Tuareg spoken in Mali, this species seems to be know. A group of words traced to the root ZMBW are attested: *azimbaw*, *azémbaw*, etc. '(honey) bee' (see Heath, 2006: 808).

[68] See Marcel (1885), Ben Sedira (1910), Lane (1968), Omar (2008), etc. The word *baɛuḍ* (coll.) is used to refer to mosquitos, in particular when this is big (Huyghe, 1906: 432)

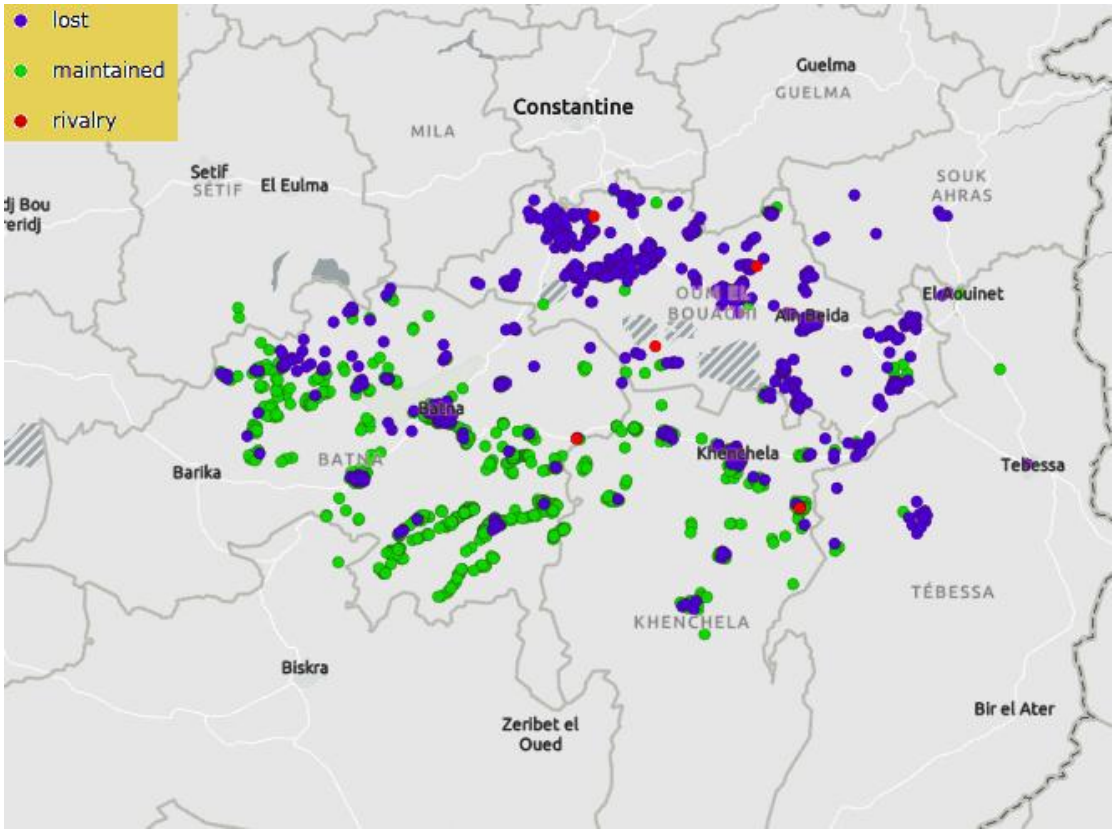
tbaɛuṭṭ	69
others	116
NR	204
Total	1829

The Berber word for ‘bee’ is fairly maintained in Tashawit: L (bee) = 44.94% (χ^2 = 18.52, $p < 0.001$). The statistical analysis has revealed that region is a strong predictor of lexical loss (χ^2 = 947.218, $p < 0.001$). The Berber variant is maintained, almost perfectly, in the Massif (L = 3.86%). It is also maintained largely in the regions of Nemamcha (L = 24.44%), Bellezma (L = 34.11%) and Oriental Aurès (L = 35.86%). Logistic regression analysis has revealed significant differences between the Massif and these three regions. The odds of lexical loss in Occidental Aurès are 8.05 times lower than the region of Nemamcha (χ^2 = 36.89, $p < 0.001$), 12.88 times lower than Bellezma (χ^2 = 87.07, $p < 0.001$) and 13.92 times lower than Oriental Aurès (χ^2 = 79, $p < 0.001$). However, the analysis has revealed little variation across such three regions. The odds of lexical loss in Oriental Aurès are only 1.08 times higher than Bellezma (χ^2 = 0.126, p = 0.723) and 1.6 times higher compared to the region of Nemamcha (χ^2 = 2.85, p = 0.091). The odds of lexical loss in Bellezma are only 1.73 as high as they are in the region of Nemamcha (χ^2 = 3.32, p = 0.068).

In the northeastern regions, lexical loss is the norm: Harakta (L = 86.67%) and Segnia (L = 96.17%). The odds of lexical loss in the former are 3.86 times lower than the latter (χ^2 = 14.47, $p < 0.001$). Much variation is observed when the rates of lexical loss obtained in these two regions are compared to those recorded in the ones mentioned earlier. A speaker from Occidental Aurès is 161.78 times more likely to maintain the Berber variant compared to a speaker from the region of Harakta (χ^2 = 323.46, $p < 0.001$) and 624.71 times more likely compared to another from the region of Segnia (χ^2 = 256.15, $p < 0.001$). A speaker from the region of Harakta is 11.63 times less likely to

maintain the Berber variant in comparison with a speaker from Oriental Aurès (χ^2 = 115.35, $p < 0.001$), 12.5 times less likely than a speaker from Bellezma (χ^2 = 162.35, $p < 0.001$) and 20 times less likely than a speaker from the region of Nemamcha (χ^2 = 109.31, $p < 0.001$). A speaker from the region of Segnia is 45.45 times less likely to maintain the Berber variant compared to a speaker from Oriental Aurès (χ^2 = 108.03, $p < 0.001$), 47.62 times less likely compared to a speaker from Bellezma (χ^2 = 124.27, $p < 0.001$) and 76.92 times less likely compared to another from the region of Nemamcha (χ^2 = 115.35, $p < 0.001$).

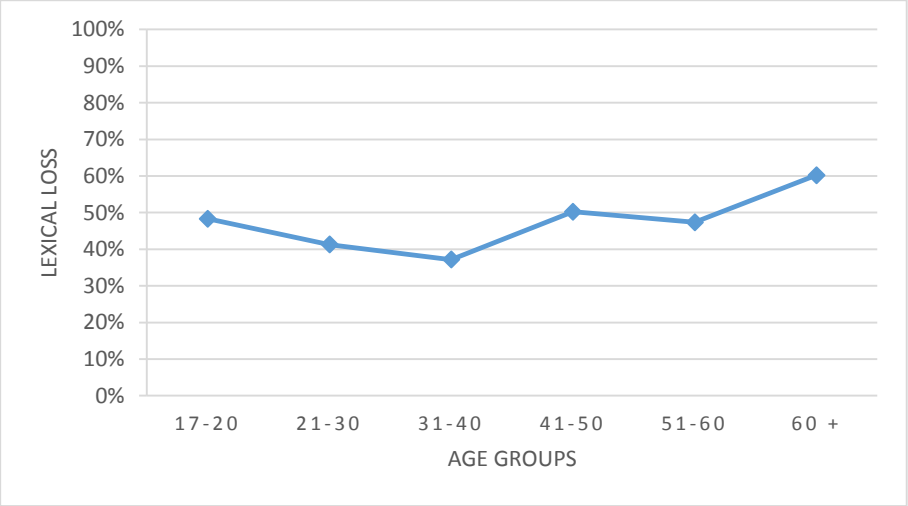
Map 4.30 Lexical loss of the Berber word(s) for 'bee' across Tashawit speaking area



There is a significant relationship between Lexical loss and age for this item (χ^2 = 27.651, $p < 0.001$). The rate of lexical loss decreases significantly between the first age group ($L_{17\text{-}20}$ = 48.31%) and the second age group ($L_{21\text{-}30}$ = 41.25%) and slightly between the second and the third age group ($L_{31\text{-}40}$ = 37.18%). Speakers of the first age group are 1.35 times less likely to preserve the Berber variant compared to those of the

second age group (χ^2 = 4.71, p = 0.03) and 1.5 times less likely compared to those of the third age group (χ^2 = 4.62, p = 0.032). Speakers of the third age group, however, are only 1.11 times more likely to preserve the Berber variant compared to those of the second age group (χ^2 = 0.4, p = 0.524). The rate of lexical loss increases significantly between the third and the fourth age group ($L_{41\text{-}50}$ = 50.22%). The odds of lexical loss for the fourth age group are 1.5 times higher than the third age group (χ^2 = 3.99, p = 0.046). The rate of lexical loss remains almost constant between the fourth and the fifth age group ($L_{51\text{-}60}$ = 47.33%), with relative odds of lexical loss of 1.06 to 1 respectively (χ^2 = 0.093, p = 0.761). The rate of lexical loss increases again for the sixth age group (L_{+60} = 63.25%). The analysis has revealed that speakers of this group are 1.75 times more likely to lose the Berber variant compared to those of the fifth age group (χ^2 = 7.21, p = 0.007) (see Fig. 4.30 below).

Fig. 4.30 Lexical loss of the Berber word(s) for 'bee' across age groups



4.1.4.5. Pigeon

The Berber equivalent for ‘pigeon’ that is shared most among Berber varieties stems from the root **DBR**[69]. In Tashawit, the word *adbir* is attested (Huyghe, 1906: 496).

The Berber variant was produced by a minority of speakers (37.7%). It is used mainly in the Massif (84.58%) and Batna city (60.99%). It was also produced, though less frequently, in Bellezma (41.29%), in particular the southwestern, and even less frequently in Oriental Aurès (16.51%). The Berber variant was produced only in tiny fractions in other regions: Harakta (3.15%), Nemamcha (2.56%) and Segnia (0.79%).

The Arabic loan, realized most as *taḥmamt*, is the most recurrent variant in the data (60.32%). It is prominent in the eastern regions: Segnia (97.62%), Harakta (96.93%), Nemamcha (93.59%) and Oriental Aurès (80.73%). It is also dominant, though to a lesser degree, in the region of Bellezma (57.08%), in particular the eastern and northwestern parts of the region. The Arabic loans were also recorded, though much less frequently, in the Massif (13.44%).

Some speakers produced some Berber words and Arabic loans that denote other bird species, such as *tmilli* ‘oriental turtle dove’, *tasekkurt* ‘partridge’, *afṛux* ‘bird’, etc.

Table 4.31 ‘pigeon’: frequencies of lexical variants

lexical variant	**number of tokens**
tadbirt …	630

[69] **Cognates:** *tedebert* (Lux, 2011), *tadabirt* (Cid Kaoui, 1894), *tidebirt* (Masqueray, 1893; Motylinski, 1908), *atbir* (Destaing, 1938) *atbir*, *itbir* (Taïfi, 1991), *adbir*, *atbir* (Lafkioui, 2007), *adbir*, *itbir* (Renisio, 1932), *adbir* (Laoust, 1912), *atbir* (Basset, 1885), *atbir* (Delheure, 1984, 1987), *itbir* (Dallet, 1982), *adbir* (Motylinski, 1898), *adbir* (Sarnelli, 1924), *abdir* (Basset, 1890), *adabir* (Lanfry, 1973), *adbir* (Van Putten, 2013). Foucauld (1951) maintains that *tédebirt* used to denote both domestic and wild pigeon. This designation, however, was lost and the word preserved two meanings ‘dove’ and ‘pin-tailed sandgrouse’ (Foucauld, 1951). This bird is denoted in Ahaggar, according to Foucauld (1951), by the variant *akekkemmaẓ*.

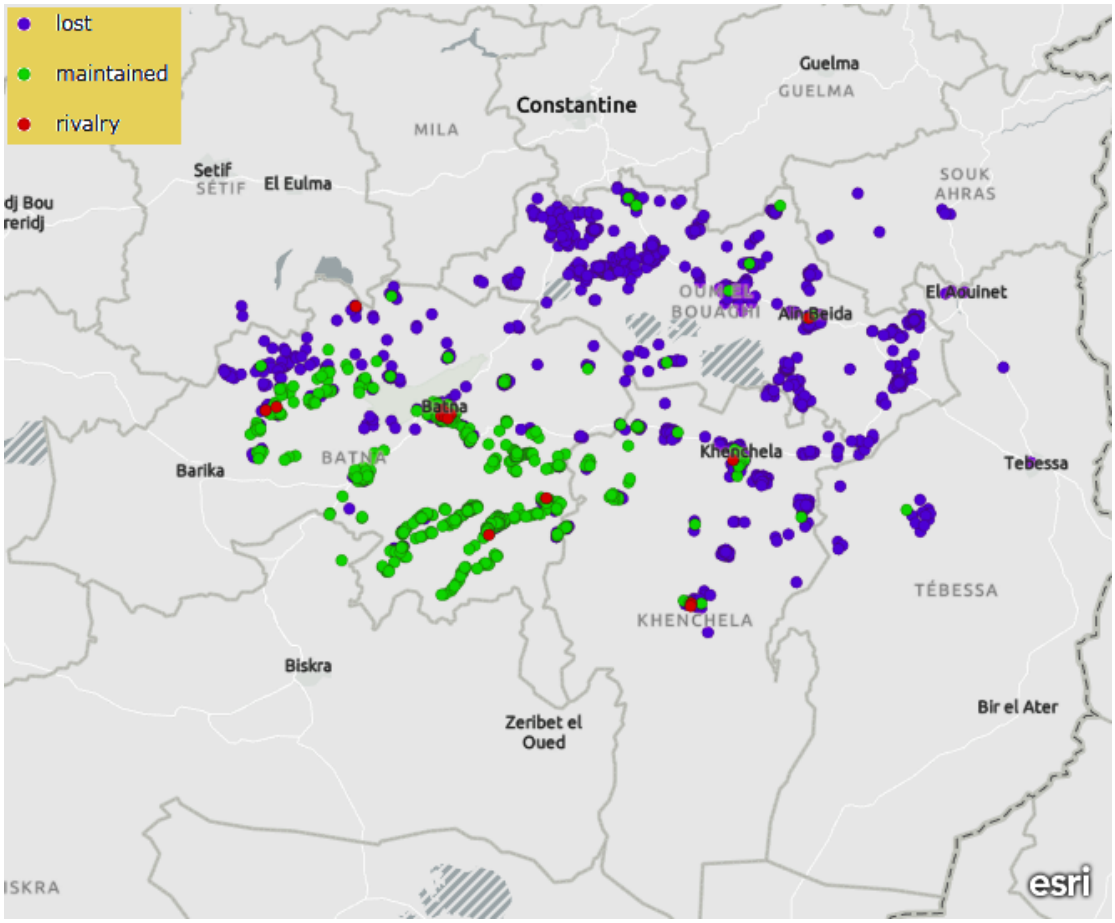
taḥmamt …	1008
others	33
NR	168
total	1839

Barring the Berber word for ‘bird’, the Berber equivalent for ‘pigeon’ is maintained less than the Berber variants of all other lexical items addressed under this semantic domain: L (pigeon) = 65.74% (χ^2 = 186.02, p < 0.001). As the case is for other items, the use of the Berber variant is closely associated with region (χ^2 = 56.42, p < 0.001). It is preserved mainly in Occidental Aurès (L = 17.6%). The second lowest rate of lexical loss was recorded in Bellezma (L = 60.47%). The analysis has revealed that the odds of lexical loss in this region are 7.16 times higher than Occidental Aurès (χ^2 = 125, p < 0.001). The Berber variant is maintained marginally in Oriental Aurès (L = 87.59%). The relative odds of lexical loss in this region are 4.61 to 1 compared to Bellezma (χ^2 = 29.35, p < 0.001) and 33.04 to 1 compared to the Massif (χ^2 = 156.39, p < 0.001).

The highest rates of lexical loss were recorded in the regions of Nemamcha (L = 97.78%), Harakta (L = 97.18%) and Segnia (L = 99.23%). Little regional variation was revealed between these regions. Speakers of the region of Segnia are 3.76 times more likely to lose the Berber variant in comparison with those of the region of Harakta (χ^2 = 2.93, p = 0.087) and 2.94 times more likely than speaker of the region of Nemamcha (χ^2 = 1.15, p = 0.284). In a similar way, speakers of the region of Harakta are only 1.28 times less likely to lose the Berber variant than those of the region of Nemamcha (χ^2 = 0.1, p = 0.753). However, a great deal of regional variation was revealed when these three regions were compared to the ones mentioned earlier. The odds of lexical maintenance in the Massif are 161.35 times higher than the region of Harakta (χ^2 = 238.52, p < 0.001), 206.05 times higher than the region of Nemamcha (χ^2 = 53.95, p < 0.001), and 606.44 times higher than the region of Segnia (χ^2 = 79.16, p < 0.001).

Lexical loss is also much less prominent in Bellezma compared to these regions. Speakers of Bellezma are 84.67 times less likely to lose the Berber variant than those of the region of Segnia ($\chi^2 = 37.88$, $p < 0.001$), 22.53 times less likely than those of the region of Harakta ($\chi^2 = 88.39$, $p < 0.001$), and 28.77 times less likely than those of the region of Nemamcha ($\chi^2 = 21.39$, $p < 0.001$). Speakers of Oriental Aurès, likewise, are 6.24 times less likely to lose the Berber variant compared to those living in the region of Nemamcha ($\chi^2 = 5.83$, $p = 0.016$), 4.88 times less likely compared to those living in the region of Harakta ($\chi^2 = 16.02$, $p < 0.001$) and 18.35 times less likely than those living in the region of Segnia ($\chi^2 = 14.93$, $p < 0.001$).

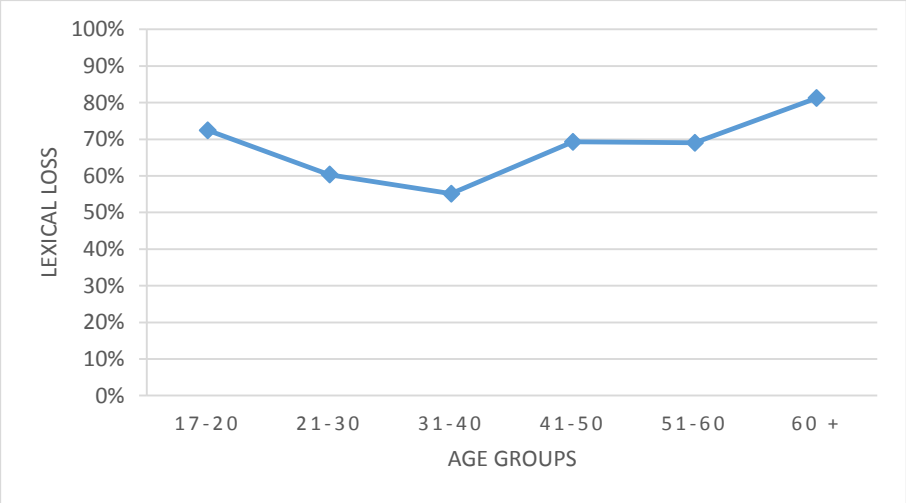
Map 4.31 Lexical loss of the Berber word(s) for 'pigeon' across Tashawit speaking area



The findings obtained for the present item are closely associated with age ($\chi^2 = 41.208$, $p < 0.001$). The rate of lexical loss decreases between the first ($L_{17\text{-}20} = 72.45\%$)

the second ($L_{21\text{-}30}$ = 60.32%) and the third age group ($L_{31\text{-}40}$ = 55.13%). The odds of lexical loss for the first age group are 1.7 times higher compared to the second age group (χ^2 = 12.8, p < 0.001) and 2.08 times higher compared to the third age group (χ^2 = 13, p < 0.001). Speakers of the third age group, however, are only 1.19 times more likely to preserve the Berber variant compared to those of the second age group (χ^2 = 1.04, p = 0.307). The rate of lexical loss increases significantly between the third and the fourth age group ($L_{41\text{-}50}$ = 69.27%). The relative odds of lexical loss for speakers of the third and fourth age groups are 1 to 1.6 respectively (χ^2 = 5.11, p = 0.024). The rate of lexical loss remains almost unchanged for the fifth age group ($L_{51\text{-}60}$ = 69.07%); the relative odds of lexical loss for the fourth age group are 1.08 times higher compared to the fifth age group (χ^2 = 0.16, p = 0.689). The rate of lexical loss decreases in a significant way for the sixth age group (L_{+60} = 81.21%). Logistic regression analysis has shown that speakers of the fifth age group are 1.97 times more likely to maintain the Berber variant compared to those of the sixth age group (χ^2 = 7.58, p = 0.006) (see Fig. 4.31 below).

Fig. 4.31 Lexical loss of the Berber word(s) for ‘pigeon’ across age groups



4.1.4.6. Female Goat

The Berber variant used in Tashawit to refer to 'female-goat' is *ţγaţţ* / *γaţţ* (Huyghe, 1906: 100). Cognates traced to the same root, i.e. **ΓḌ**, are attested in a large number of Berber varieties[70]. The second Berber variant is traced to the root **XSY / ΓSY**[71]. Derivatives of this root, however, are attested more commonly with the meaning 'ewe' in Tashawit and most other Berber varieties.

The majority of speakers who responded to this item have produced the variant *γaţţ / tγaţţ* (56.1%). This variant is prominent in the Massif (94.58%), the region of Nemamcha (90.7%) and Bellezma (75.69%). It is also the most frequent variant in Oriental Aurès (56%). In the northeastern regions, the Berber variant was revealed to be only occasionally used: Segnia (3.09%) and Harakta (6.8%) (cf. Boudjellal, 2015).

The second most recurrent variant is *tagɛuẓt* / *tageɛɛuẓt* / *takɛuẓt* / *takeɛɛuẓt* (39.77%). The origin of this variant is not clear. It is attested in few Tashawit texts, e.g. Boudjellal (2015), but it is not attested, to the best of our knowledge, in other Berber varieties. It seems to be a descriptive term that is used to refer to this animal. According to some knowledgeable speakers that we have consulted, *akɛuẓ* (coll.) is a pejorative term that is used to describe this species. However, this seems to have changed and the word is now used to simply refer to 'goat', particularly in the northeastern regions. This variant is used prominently in the regions of Segnia (91.89%) and Harakta (92.63%). It is also used, though much less frequently, in Oriental Aurès (37.6%) and Bellezma

[70] **Cognates:** *taḍ* (Basset, 1909), *taḍ* (Lux, 2011), *taγaţţ* (Destaing, 1938) *taγaţţ* (Taïfi, 1991), *taγaţţ* (Mourigh, 2016), *taγaţţ* (Serhoual, 2002), *tγaţ* (Destaing (1914), *tγaţ* (Basset, 1885), *tγaţţ* (Boudot-Lamotte, 1964); *tγaţţ* (Delheure, 1984), *tγaţ* (Provotelle, 1911), *taγaţţ* (Dallet, 1982), *tγaţ* (Motylinski, 1898), *tγaţ* (Basset, 1890), *tiɛaţ* (Lanfry, 1973), *tγaţ* (Van Putten, 2013), etc.

[71] **Cognates:** *tekci* (Faidherbe, 1877; Basset, 1909), *tullid* (Basset, 1909), *tiγse* (Foucauld, 1951), *tixsi* (Delheure, 1987), *tixsi* (Sarnelli, 1924), *welli* (Lanfry, 1973), etc.

(15.69%). As to the remaining regions, the use of this variant is occasional: Massif (2.39%) and Nemamcha (4.65%) (cf. Boudjellal, 2015).

The Arabic loan, realized as *tamɛazt*, *timeɛzet*, *lmeɛzet*, etc., was produced by a tiny fraction of informants (2.71%). The highest frequency for this variant was recorded in Bellezma (8.23%). Although this borrowing does not seem to be well-established in Tashawit, the form *t.imɛaz* is used in some Tashawit varieties as a plural or a collective noun for the same animal (see Hyughe, 1906: 100).

Some irrelevant responses were produced by some participants, e.g. *izmer* '*lamb'*, *ikerr* 'ram', *tajelmit* 'kid', *aɛetṛiq* 'he-goat', etc. The word *tixsi*, which was produced by five speakers, is also considered irrelevant.

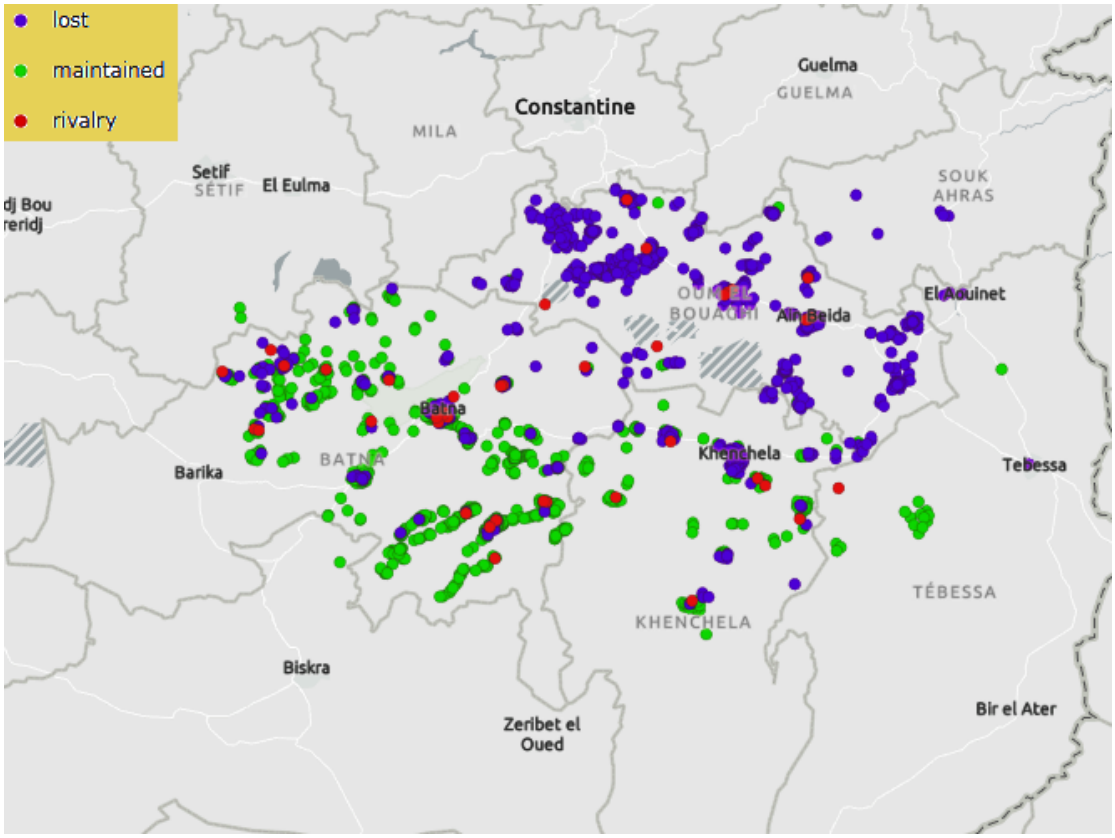
Table 4.32 'female goat': frequencies of lexical variants

lexical variant	**number of tokens**
t.γaṭṭ	993
takɛuẓt …	704
tamɛazt …	48
others	25
NR	93
total	1863

The statistical analysis has revealed that the Berber equivalent for the present item is fairly maintained: L (f. goat) = 46.7% ($\chi^2 = 26.12$, $p < 0.001$). The analysis has also revealed that the use of the Berber variant is regionally determined ($\chi^2 = 37.18$, $p < 0.001$). The lowest rates of lexical loss were recorded in the regions of Occidental Aurès (L = 6.44%) and Nemamcha (L = 12.22%). The odds of lexical maintenance in the Massif are two times higher compared to the region of Nemamcha, though the difference is statistically insignificant ($\chi^2 = 3.57$, $p = 0.059$). The analysis, nonetheless, has revealed lower odds of lexical maintenance in other regions. In Bellezma (L =

25.19%), lexical maintenance is 2.42 times less likely than the region of Nemamcha (χ^2 = 6.28, p = 0.012) and 4.9 times less likely than Occidental Aurès (χ^2 = 44.88, p < 0.001). Lexical maintenance is moderate in Oriental Aurès (L = 51.72%). The odds of lexical maintenance in this region are 7.69 times lower than the region of Nemamcha (χ^2 = 6.28, p = 0.012) and 15.62 times lower than Occidental Aurès (χ^2 = 119.18, p < 0.001). The odds of lexical loss in Oriental Aurès are 3.18 times higher than Bellezma (χ^2 = 27.8, p < 0.001).

Map 4.32 Lexical loss of the Berber word(s) for ‘f-goat’ across Tashawit speaking area

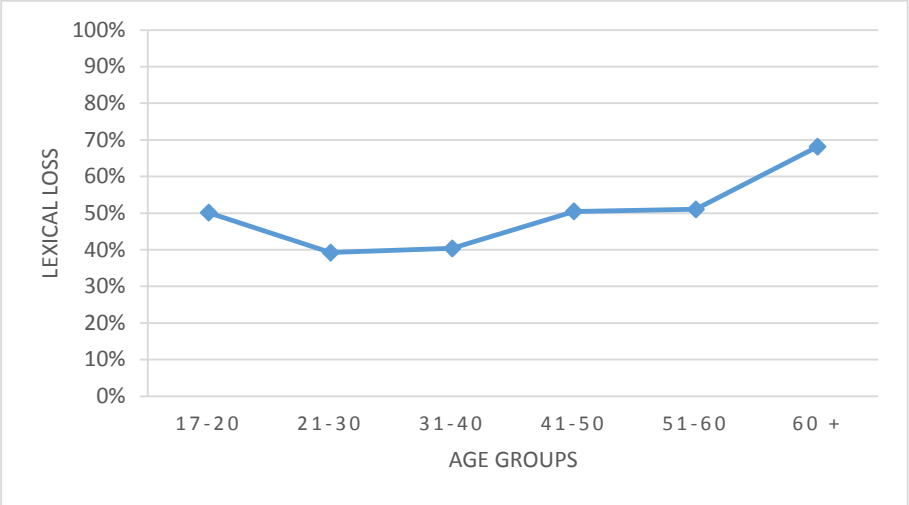


Lexical loss is extremely prevailing in the northeastern regions: Harakta (L = 91.28%) and Segnia (L = 96.93%). The difference between these two regions is statistically significant; speakers of the latter are three times more likely to lose the Berber variant compared to those of the former (χ^2 = 7.58, p = 0.06). The analysis has revealed more striking differences when these rates of lexical loss were compared to those recorded in the previous regions. The odds of lexical loss in the region of Harakta

are 9.8 times higher than Oriental Aurès ($\chi^2 = 86.84$, $p < 0.001$), 31.25 times higher than Bellezma ($\chi^2 = 223.77$, $p < 0.001$), 76.92 higher than the region of Nemamcha ($\chi^2 = 137.45$, $p < 0.001$) and 142.86 times higher than Occidental Aurès ($\chi^2 = 372.17$, $p < 0.001$). The odds of lexical loss in the region of Segnia are 29.41 times higher than Oriental Aurès ($\chi^2 = 73.18$, $p < 0.001$), 90.9 times higher than Bellezma ($\chi^2 = 138$, $p < 0.001$), 250 higher than the region of Nemamcha ($\chi^2 = 126.6$, $p < 0.001$) and 500 times higher than Occidental Aurès ($\chi^2 = 228.35$, $p < 0.001$).

Age has an important effect on lexical loss ($\chi^2 = 51.632$, $p < 0.001$). The rate of lexical loss decreases in a significant way between the first age group ($L_{17\text{-}20} = 50.13\%$) and the second age group ($L_{21\text{-}30} = 39.25\%$). The odds of lexical maintenance for the latter are 1.47 times higher than the former ($\chi^2 = 7.82$, $p = 0.005$). The rate of lexical loss remains almost constant between the second and the third age group ($L_{31\text{-}40} = 40.37\%$), with relative odds of lexical loss of 1 to 1.05 respectively ($\chi^2 = 0.005$, $p = 0.95$). The rate of lexical loss increases in a significant way between the third and the fourth age group ($L_{41\text{-}50} = 50.48\%$) and changes only slightly for the fifth age group ($L_{51\text{-}60} = 51.02\%$). The odds of lexical loss for the fourth age groups are 1.54 times higher than the third age group ($\chi^2 = 4.21$, $p = 0.04$), but only 1.06 times lower than the fifth age group ($\chi^2 = 0.113$, $p = 0.737$). The highest rate of lexical loss was obtained for the sixth age group ($L_{+60} = 68.11\%$). The statistical analysis has revealed that speakers of the sixth group are 1.95 less likely to maintain the Berber variant compared to those of the fifth age group ($\chi^2 = 9.81$, $p = 0.002$) (see Fig. 4.32 below).

Fig. 4.32 Lexical loss of the Berber word(s) for ‘female-goat’ across age groups



4.1.5. Body

4.1.5.1. Vomit (v.)

Two Berber equivalents are attested in the literature for the present item. The words that are used across most Berber varieties are derived from the root **RR**[72]. The Berber variant used in Tashawit also stems from the same root, *err* (Huyghe, 1906: 745). The second Berber variant is traced to the root **QQ** and is attested mainly, if not exclusively, in Tuareg dialects[73].

The majority of informants who responded to the present item have produced the variant *err* (77.96%). It prevails over the larger part of Tashawit speaking area: Oriental Aurès (87.04%), Bellezma (90.38%), Harakta (92.79%), Nemamcha (93.9%) and Segnia (98.41%). It is less frequent in the Massif (46.4%).

[72] **Cognates:** *iraza* (Faidherbe, 1877), *rar* (Destaing, 1938) *rar* (Taïfi, 1991), *rri* , *rraz* (Mourigh, 2016), *err* (Serhoual, 2002), *err* (Renisio, 1932), *err* (Destaing (1914), *err* (Laoust, 1912), *ar* (Boudot-Lamotte, 1964); *err* (Delheure, 1984, 1987), *err* (Provotelle, 1911), *err* (Dallet, 1982), *err* (Motylinski, 1898), *err* (Sarnelli, 1924), *Siwa* (Basset, 1890), *err* (Lanfry, 1973), etc.

[73] The equivalent attested in Tuareg varieties for ‘to vomit’ is *uqqu* (Masqueray, 1893; Cid Kaoui, 1894; Motylinski, 1908; Foucauld, 1951).

The second most frequent variant in the data is the word *ɛuqq* (16.52%)[74]. It was produced mainly in the Massif (49.45%), particularly in O. Labiod and the lower part of O. Abdi. It was also produced in Batna city (14.75%). The word *guɛɛ* which was also produced in the data, albeit by few respondents in Bellezma, seems to be related to this variant.

Two Arabic loans were recorded in the data, *uɛad (iriran)* and *tqeyya*. These were produced only by a small number of respondents, 2.79% and 1.07% respectively. Based on their frequencies as well as their absence in the literature, these can only be regarded as nonce borrowings in Tashawit.

Table 4.33 'to vomit': frequencies of lexical variants

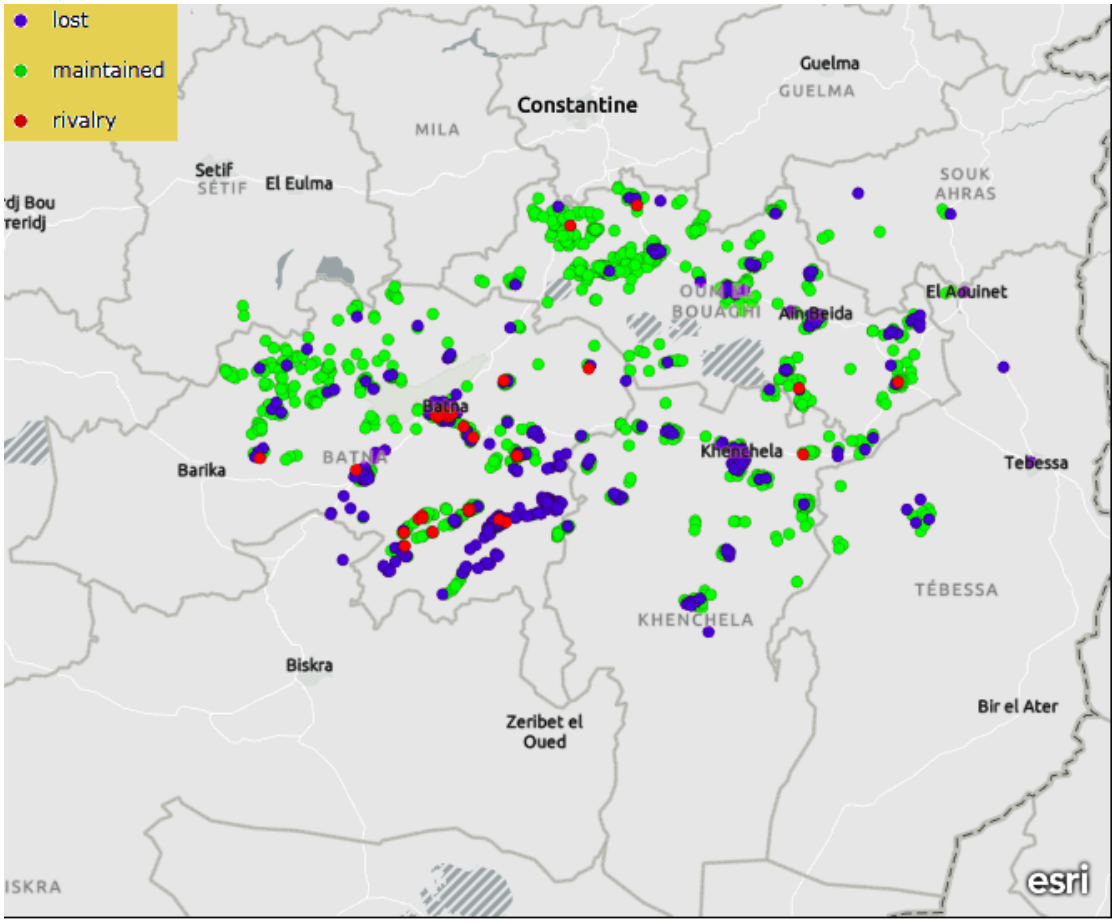
lexical variant	**number of tokens**
err	1312
ɛuqq …	278
uɛad (iriran)	47
tqeyya	18
others	27
NR	179
Total	1861

[74] This word is also attested in Tarifit. Kossmann (2013) considers this word to be an Arabic loanword that probably derives from the word *ɛeyyeq* which is used in the Arabic vernacular spoken in the Rif region in Morocco to mean the same thing. However, this word seems to be attested only in this vernacular. No word in the dictionaries of CA, MSA or even other Arabic vernaculars can be regarded as its source. The fact that the word *ɛuqq* is attested in Tashawit and not in vernaculars that often serve as its sources of loans, i.e. those spoken in the east of Algeria or other Algerian Arabic vernaculars in general, unlike the case of Tarifit, seems to be a good evidence that it is not an Arabic loanword. Kossmann says that such word could have been developed onomatopoeically, but independently, in the colloquial Arabic spoken in the Rif and in Tashawit. Lafkioui also believes that it is onomatopoeic but of Berber, and not an Arabic, origin and that the word *ɛeyyeq* derives from it. There is also a possibility that the word *ɛuqq* is a cognate of the variant used in Tuareg. The insertion of the voiced pharyngeal fricative [ʕ] in initial position can be a result of lexical diffusion, as in terms such as *addis* vs. *aɛeddis* 'abdomen', *tillit* vs *tɛillit* 'louse', etc.

The rate of lexical loss obtained for the present variable is the lowest compared to most other lexical variables addressed in the present study: L (vomit) = 29.5% (χ^2 = 312.826, $p < 0.001$). Lexical loss differs from one region to another ($\chi^2 = 156.23$, $p < 0.001$). The Berber variant is maintained largely in the northern and eastern regions: Segnia (L = 5.36%), Nemamcha (L = 14.44%), Harakta (L = 15.38%) and Bellezma (L = 16.28%). The analysis has revealed that the odds of lexical maintenance in the region of Segnia are significantly higher than the other three regions: 2.98 to 1 compared to the region of Nemamcha ($\chi^2 = 7.2$, $p = 0.007$), 3.21 to 1 compared to the region of Harakta ($\chi^2 = 14.27$, $p < 0.001$) and 3.43 to 1 compared to Bellezma ($\chi^2 = 14.62$, $p < 0.001$). However, little variation was revealed between such three regions. The odds of lexical maintenance in the region of Nemamcha are only 1.15 times higher than Bellezma ($\chi^2 = 0.17$, $p = 0.681$) and 1.08 times higher than the region of Harakta (χ^2 =0.05, $p = 0.823$). Speakers of the region of Harakta are only 1.07 times more likely to preserve the Berber variant compared to those of Bellezma (χ^2 =0.094, $p = 0.76$).

The Berber variant is also maintained considerably in Oriental Aurès (L = 35.17%). It is, however, less preserved than the previous regions. The odds of lexical maintenance in this region are 2.79 times lower than Bellezma ($\chi^2 = 17.94$, $p < 0.001$), 2.98 times lower than the region of Harakta ($\chi^2 = 23.93$, $p < 0.001$), 3.22 lower than the region of Nemamcha ($\chi^2 = 11.34$, $p = 0.001$) and 9.62 times lower than the region of Segnia ($\chi^2 = 48.26$, $p < 0.001$). The highest rate of lexical loss was obtained in Occidental Aurès (L = 54.29%). The relative odds of lexical maintenance in this region are 1 to 2.19 compared to Oriental Aurès ($\chi^2 = 15.79$, $p < 0.001$), 1 to 6.1 compared to Bellezma ($\chi^2 = 88.31$, $p < 0.001$), 1 to 6.54 compared to the region of Harakta (χ^2 = 124.28, $p < 0.001$), 1 to 7 compared to the region of Nemamcha ($\chi^2 = 38.62$, $p = 0.001$) and 1 to 20.83 times lower than the region of Segnia ($\chi^2 = 110.03$, $p < 0.001$).

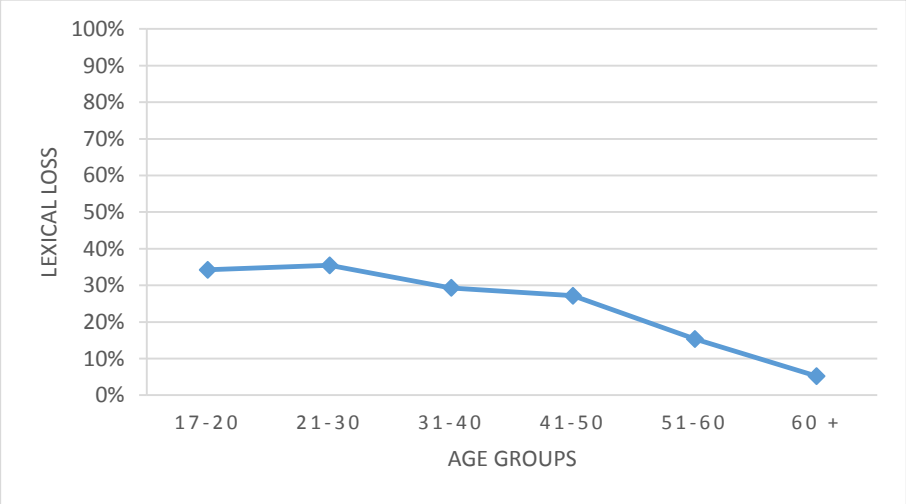
Map 4.33 Lexical loss of the Berber word(s) for ‘to vomit’ across Tashawit speaking area



As can be clearly seen in Fig. 4.33 below, there is a close association between lexical loss and age ($\chi^2 = 34.133$, $p < 0.001$). Higher rates of lexical loss were recorded for younger age groups and lower rates were recorded for older age groups. The rate of lexical loss changes very slightly between the first age group ($L_{17\text{-}20} = 34.23\%$) and the second age group ($L_{21\text{-}30} = 35.46\%$). A speaker from the second age group is only 1.03 times more likely to maintain the Berber variant compared to a speaker from the first age group ($\chi^2 = 0.59$, $p = 0.81$). The rate of lexical loss decreases also slightly between the second and the third age group ($L_{31\text{-}40} = 29.28\%$) and between the third and the fourth age group ($L_{41\text{-}50} = 27.14\%$). The relative odds of lexical maintenance for speakers of the third age group are 1.32 to 1 compared to the second age group ($\chi^2 = 2.3$, $p = 0.13$) and 1 to 1.12 compared to the fourth age group ($\chi^2 = 0.26$, $p = 0.61$). The

relative odds of lexical maintenance for speakers of the fourth age group, however, are 1.48 to 1 compared to the second age group ($\chi^2 = 5$, $p = 0.025$). The rate of lexical loss decreases significantly for the fifth age group ($L_{51\text{-}60} = 15.36\%$). Speakers of this group are 1.97 times more likely to maintain the Berber variant compared to those of the fourth age group ($\chi^2 = 8.48$, $p = 0.004$). The most maintaining age group is the sixth ($L_{+60} = 5.22\%$). The odds of lexical maintenance for this group are 3.79 times higher than the fifth group ($\chi^2 = 9.87$, $p = 0.002$) and 7.46 times higher than the fourth age group ($\chi^2 = 23.3$, $p < 0.001$).

Fig. 4.33 Lexical loss of the Berber word(s) for 'to vomit' across age groups



4.1.5.2. Sick

There are two main Berber variants that express this state of being. The first variant is traced to the root **RN** and seems to be attested only in Tuareg dialects[75]. Most Berber varieties use, however, words traced to the root **ḌN** to denote the present item[76]. In

[75] The variant traced to this root is *émiren* (f. *témirent*) 'sick' (Foucauld, 1951). It seems the notion in question is expressed more frequently through stative verbs: *irin*/*terin* 's/he is ill' (Masqueray, 1893; Cid Kaoui, 1894) *eran*, *irin* 'to be sick' (Motylinski, 1908) or *iran* 'to be sick' (Foucauld, 1951). Derivatives of this root are attested in Tashawit but their meaning is distinct, though not totally unrelated. The word *amirnen*, for example, is used to refer to the state of worry and dissatisfaction that babies undergo for different reason, such as sickness. The same word is used to refer to murmuring-like sound made by babies when they undergo such a state of worry (Tibermacine, 2009; Saad, 2013).

[76] **Cognates:** *amaḍun* (Destaing, 1938) *amuḍin* (Taïfi, 1991), *maḍun* (Delheure, 1984, 1987), *amuḍin* (Dallet, 1982), *amaḍun*, *muḍan* Lanfry, 1973). Some of the Berber varieties that has lost the adjective

Tashawit, the variant traced to this second root is realized as *amaḍun* (Huyghe, 1906: 396) or *maḍun* (Basset, 1961: 161).

Informants' responses to the present item are dominated by two variants, the Berber variant and an Arabic loanword. The Berber variant, *a.maḍun*, was produced by the majority of participants (54.72%). It prevails over a relatively larger area compared to the Arabic loan, covering the regions of Oriental Aurès (94.44%), Harakta (96.4%), Segnia (97.32%) and Nemamcha (97.72%). It was produced only by a minority in the Massif (21.89%) and a tiny fraction of informants in Bellezma (3.97%). The Arabic loanword, *amṛiḍ*, accounted for 43.94% of the total number of tokens produced in response to the present lexical item. It is dominant in the western regions, the Massif (74.46%) and, in particular, Bellezma (93.65%). It is marginally used in the western regions: Segnia (2.68%), Harakta (3.32%) and Oriental Aurès (5.55%). The analysis of the data has revealed that the Arabic loan is completely missing in the region of Nemamcha.

A number of other words and circumlocutions were produced by the subjects to refer to the present item, for example *ud izmir ca*, 'he is unable' (Huyghe, 1906; Basset, 1961; cf. Basset, 1885; Provotelle, 1911), *ameɛlalu* 'weak, sick', etc.

Table 4.34 'sick': frequencies of lexical variants

lexical variant	**number of tokens**
a.maḍun	981
amṛiḍ	788
others	28
NR	42
Total	1839

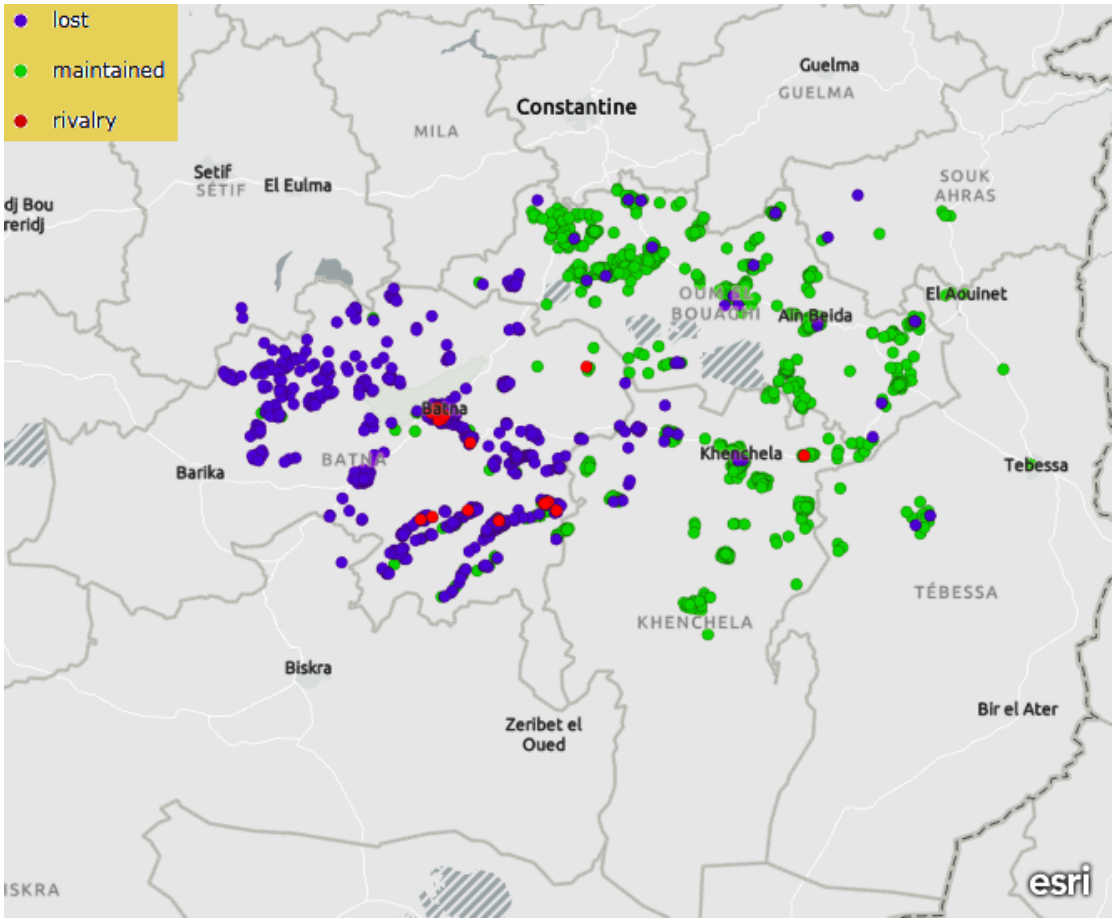
resort to the use of stative verbs to express the state of being in question: *yuḍan* (Faidherbe, 1877), *smiḍen* 'to be slightly ill' (Renisio, 1932), *uḍen* (Boudot-Lamotte, 1964); *yuṭen* (Motylinski, 1898), *yuṭin* (Basset, 1890), etc.

The Berber equivalent for ‘sick’, namely *a.maḍun*, is fairly maintained in Tashawit: L (sick) = 46.66% (χ^2 = 8.1, p = 0.004). As it is clearly displayed in map 4.34 below, there is an almost perfect clustering of the instances of maintenance and loss for the present item (χ^2 = 68.31, p < 0.001). The Berber variant is preserved prominently in the eastern regions. The lowest rates of lexical loss were recorded in the regions of Segnia (L = 2.68%) and Nemamcha (L = 2.22%). The analysis has revealed no significant differences between these two regions, with relative odds of lexical loss of 1.21 to 1 respectively (χ^2 = 0.056, p = 0.81). The analysis has also revealed no significant differences between the rates of loss recorded in these regions and the one obtained in Oriental Aurès (L = 6.21%). The relative odds of lexical loss in this latter are 2.4 times higher compared to the region of Segnia (χ^2 = 2.89, p = 0.089) and 2.9 times higher compared to the region of Nemamcha (χ^2 = 1.81, p = 0.18). A close rate of lexical loss was recorded in the region of Harakta (L = 7.69%). The analysis has revealed a significant difference between the rates of lexical loss obtained in this region and those obtained in the neighboring region of Segnia; the odds of lexical loss in the former are three times higher compared to the latter (χ^2 = 6.69, p = 0.01). No significant differences were obtained, however, between the rates of lexical loss obtained in the region of Harakta and those recorded in the regions of Nemamcha and Oriental Aurès. The relative odds of lexical loss in this region are 3.66 to 1 compared to the region of Nemamcha (χ^2 = 3.08, p = 0.079) and 1.26 to 1 compared to Oriental Aurès (χ^2 = 0.344, p = 0.56).

The highest rates of lexical loss were recorded in the western regions, i.e. Occidental Aurès (L = 78.11%) and, in a more prominent way, Bellezma (L = 96.12%). The odds of lexical loss in the Massif are 6.95 times lower than Bellezma (χ^2 = 32.24, p < 0.001). The analysis has revealed much regional variation when we compare the

rates of lexical loss obtained in the western regions with those obtained in the eastern ones. The relative odds of lexical loss in Occidental Aurès are 43.48 to 1 compared to the region of Harakta ($\chi^2 = 290.07$, $p < 0.001$), 52.63 to 1 compared to Oriental Aurès ($\chi^2 = 121.37$, $p < 0.001$), 125 to 1 compared to the region of Segnia ($\chi^2 = 148.45$, $p = 0.001$) and 166 to 1 compared to the region of Nemamcha ($\chi^2 = 48.8$, $p < 0.001$). The relative odds of lexical loss in Bellezma are 333.33 to 1 compared to the regions of Harakta ($\chi^2 = 231.49$, $p < 0.001$), and Oriental Aurès ($\chi^2 = 157.85$, $p < 0.001$), and 1000 to 1 compared to the regions of Segnia ($\chi^2 = 184.47$, $p = 0.001$) and Nemamcha ($\chi^2 = 79.51$, $p < 0.001$).

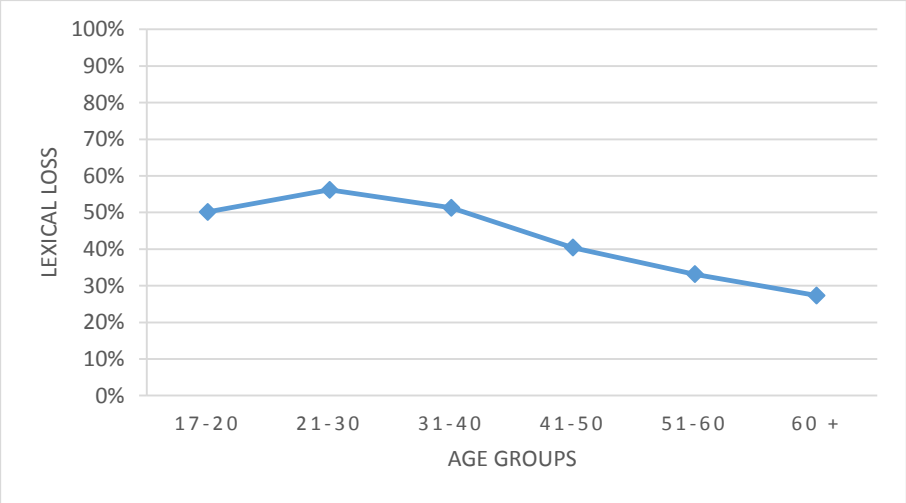
Map 4.34 Lexical loss of the Berber word(s) for 'sick' across Tashawit speaking area



There is a strong association between lexical loss and age ($\chi^2 = 69.561$, $p < 0.001$). The rate of lexical loss increases slightly between the first age group ($L_{17\text{-}20} = 50.12\%$)

and the second age group ($L_{21\text{-}30}$ = 56.18%). A speaker from the first age group is only 1.27 times more likely to maintain the Berber variant compared to another from the second age group (χ^2 = 3.07, p = 0.08). The rate of lexical loss decreases in a continuous way between the second and the sixth age group. The odds of lexical loss for speakers of the third age group ($L_{31\text{-}40}$ = 51.28%) are only 1.22 times lower compared to the second age group (χ^2 = 1.47, p = 0.22) and 1.04 times higher compared to the those of first age group (χ^2 = 0.043, p = 0.836). Speakers of the fourth age group ($L_{41\text{-}50}$ = 40.41%), on the other hand, are 1.56 times more likely to preserve the Berber variant compared to those of the third age group (χ^2 = 4.78, p = 0.029). The decrease observed between the fourth and fifth age group ($L_{51\text{-}60}$ = 33.15%) is insignificant; the odds of lexical maintenance for speakers of the fifth age group are only 1.31 times higher (χ^2 = 1.9, p = 0.17). The lowest rate of lexical loss was recorded for the sixth age group (L_{+60} = 27.33%). Speaker of this group are only 1.38 times more likely to preserve the Berber variant compared to those of the fifth age group (χ^2 = 1.96, p = 0.16), but 1.8 times higher compared to those of the fourth age group (χ^2 = 6.41, p = 0.01).

Fig. 4.34 Lexical loss of the Berber word(s) for ‘sick’ across age groups



4.1.5.3. Chin

There exist two Berber variants that denote the present item. The first variant is traced to the root **MR** and seems to be more common among Berber varieties[77]. The second variant is traced to the root **ƔSMR** (formed by the blending of the root **ƔS** 'bone' and **MR** 'beard', lit. 'beard bone')[78]. The derivatives of both roots are attested in Tashawit: *tamart* and *taɣesmart* (Huyghe, 1906: 411-2).

The variant *tmart* was revealed to the most recurrent response in the data (54.45%). It is prominent particularly in the northern and southeastern regions: Bellezma (76%), Segnia (66.39%), Harakta (68.96%), Oriental Aurès (68.49%) and Nemamcha (85.71%). It is also used, though much less frequently, in Occidental Aurès (19.53%).

The variant *taɣeṣmaṛt* is much less frequent than the former Berber variant (17.95%). It was produced mainly in the Massif (50.52%), especially in O. Abdi and O. Labiod and some of the adjacent localities in the northern part of the region. It was also produced in Batna city (29.13%). Thirty out of the thirty-seven respondents who produced this variant in this city are originally from the Massif.

The Arabic loanword, *ddeqn*, is much less frequent than both Berber variants (2.37%). This variant does not seem to be an established borrowing in Tashawit. It was produced by a tiny fraction of participants in the region of Harakta (6.9%), particularly in the localities of Oued Nini and Behir Chergui. It is almost totally missing in other regions.

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[77] **Cognates:** *tamart* (Foucauld, 1951), *tamart* (Taïfi, 1991), *tammert* (El Hannouche, 2008), *tmart*, *tammart* (Lafkioui, 2007), *tmart* (Renisio, 1932), *tmart* (Destaing (1914), *hamart* (Laoust, 1912), *tmart* (Nouh-Mefnoune & Abdessalam, 2011), *tmart* (Delheure, 1987), *tamart* (Dallet, 1982), *tamart* (Basset, 1890), *tumert* (Motylinski, 1898), etc.

[78] **Cognates:** *tax^{w}smart* (Destaing, 1938) *taɣesmirt*, *taqesmart* (Roux and Chaker, 2019), *t.aqesmar.t*, *t.aɣesmar.t* (Lafkioui, 2007), *aɣesmir* (Renisio, 1932), *taɣesmart* (Basset, 1885), *taɣ^{w}esmart* (Dallet, 1982), *ɣusmar* (Lanfry, 1973), etc. It is worth noting that this variant is also used in Tashawit to denote 'jaw' or 'lower jaw' (Huyghe, 1906, 1907).

The rest of responses produced by the subjects in reaction to the present item are irrelevant. Two responses should be highlighted here. The first is *lleḥyet* (8.95%). This is an Arabic loan which denotes ‘beard’ rather than ‘chin’ (see section 4.1.5.4 below). It was recorded mainly in the region of Harakta. It seems the subjects who produced this response confused ‘chin’ for ‘goatee’. The second most frequent irrelevant response is the word *tmagriwt* / *tmayriwt* (6%). Traced to the same root as *tmart*, this word is used to designate ‘jaw’ rather than chin in Tashawit (Huyghe, 1906, 1907). Other irrelevant responses include *magg* ‘cheek’, *udem* ‘face’, *iri* ‘neck’, and the like.

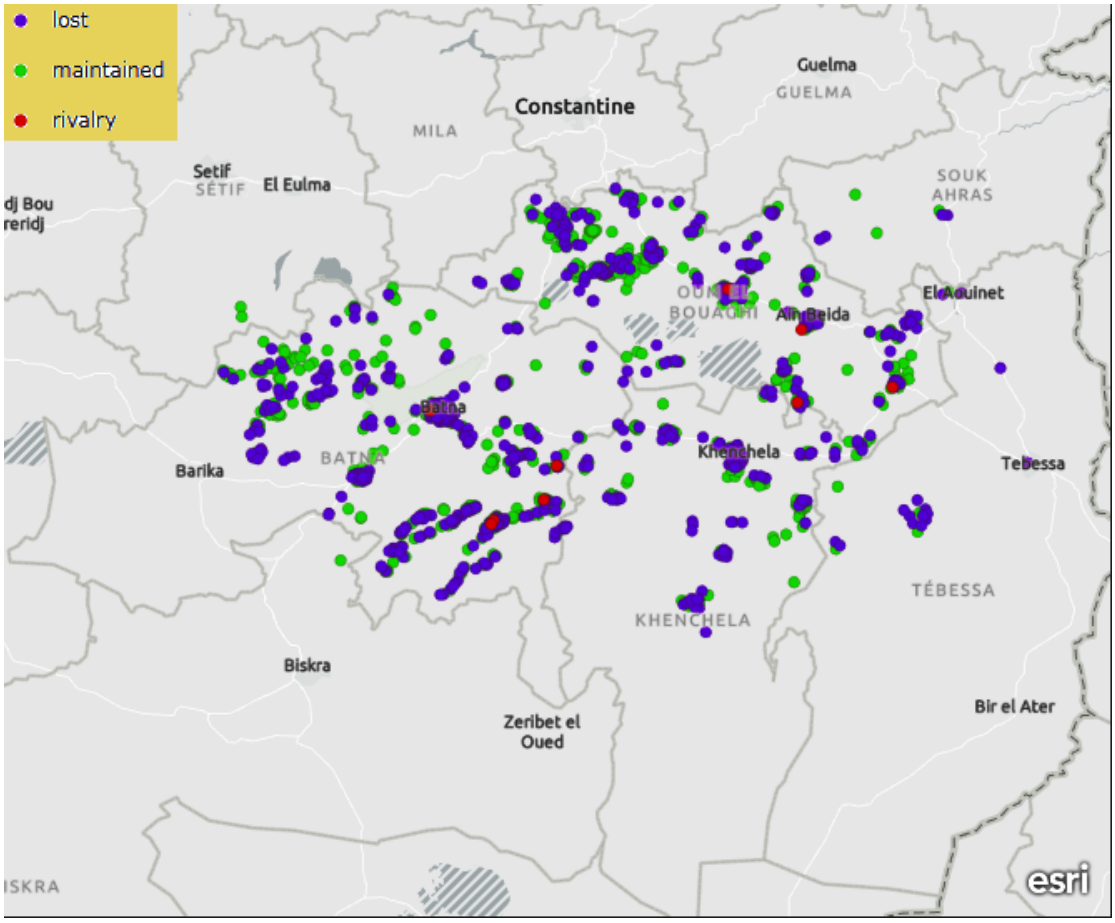
Table 4.35 ‘chin’: frequencies of lexical variants

lexical variant	**number of tokens**
tmart	740
taɣeṣmart	242
ddeqn	32
others	340
NR	475
Total	1829

The rate of lexical loss obtained for the present item is relatively low compared to other items addressed under the same semantic domain: L (chin) = 46.31% ($\chi^2 = 9.82$, $p = 0.0017$). Lexical loss differs from one region to another ($\chi^2 = 35.45$, $p < 0.001$). The lowest rates of lexical loss were recorded in the regions of Segnia (L = 37.54%), Nemamcha (L = 40.0%) and Occidental Aurès (L = 42.49%). Little regional variation was revealed between these three regions. The relative odds of lexical maintenance in the region of Segnia are only 1.11 times higher compared to the region of Nemamcha ($\chi^2 = 0.17$, $p = 0.68$) and 1.23 times higher compared to Occidental Aurès ($\chi^2 = 1.69$, $p = 0.19$). The relative odds of lexical maintenance in the region of Nemamcha are only 1.11 times higher compared to Occidental Aurès ($\chi^2 = 0.19$, $p = 0.66$). Close rates of

lexical loss were recorded in the regions of Harakta (L = 45.64%) and Bellezma (L = 46.51%). The analysis has revealed that speakers of the former are only 1.04 times more likely to preserve the Berber variant compared to those living in the latter ($\chi^2 = 0.047$, $p = 0.83$). Logistic regression analysis has revealed little variation between these two regions and the regions addressed earlier. The relative odds of lexical loss in the region of Harakta are 1.4 to 1 compared to the region of Segnia ($\chi^2 = 4.18$, $p = 0.041$), but only 1.14 to 1 compared to Occidental Aurès ($\chi^2 = 0.047$, $p = 0.828$) and 1.26 to 1 compared to the region of Nemamcha ($\chi^2 = 0.94$, $p = 0.332$). In a similar way, the relative odds of lexical loss in Bellezma are 1.4 to 1 compared to the region of Segnia ($\chi^2 = 4.18$, $p = 0.041$), but only 1.18 to 1 compared to Occidental Aurès ($\chi^2 = 1.09$, $p = 0.3$) and 1.3 to 1 compared to the region of Nemamcha ($\chi^2 = 1.14$, $p = 0.29$).

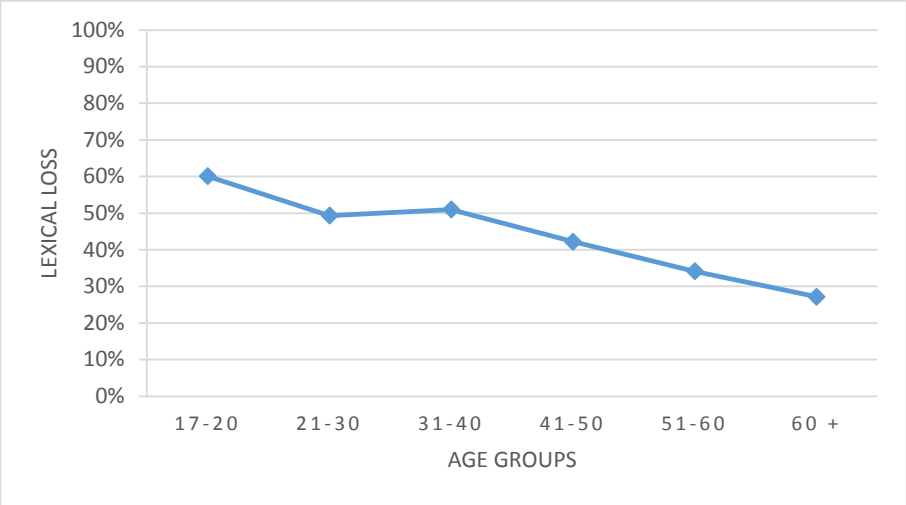
Map 4.35 Lexical loss of the Berber word(s) for ‘chin’ across Tashawit speaking area



The highest rate of lexical loss was recorded in Oriental Aurès (L = 62.76%). The relative odds of lexical loss in this region are significant compared to all other regions: 1.94 to 1 compared to Bellezma ($\chi^2 = 9.71$, $p = 0.002$), 2 to 1 compared to the region of Harakta ($\chi^2 = 12.18$, $p < 0.001$), 2.28 to 1 compared to the Massif ($\chi^2 = 17.76$, $p = 0.001$), 2.53 to 1 compared to the region of Nemamcha ($\chi^2 = 11.34$, $p = 0.001$) and 2.8 to 1 compared to the region of Segnia ($\chi^2 = 23.17$, $p = 0.001$).

Data analysis has shown a strong relationship between lexical loss and age ($\chi^2 = 66.422$, $p < 0.001$). The rate of lexical loss decreases in a significant way between the first age group ($L_{17\text{-}20} = 60.07\%$) and the second age group ($L_{21\text{-}30} = 49.33\%$). Speakers of the second age group are 1.57 times more likely to preserve the Berber variant compared to those of the first age group ($\chi^2 = 10.46$, $p = 0.001$). The rate of lexical loss increases slightly for the third age group ($L_{31\text{-}40} = 51\%$). The odds of lexical maintenance for the second age group are only 1.08 times higher ($\chi^2 = 0.237$, $p = 0.627$). The rate of lexical loss, then, decreases continuously between the third and the sixth age group. The decrease observed between the third and the fourth age group ($L_{41\text{-}50} = 42.21\%$), on the one hand, and between the fourth and the fifth ($L_{51\text{-}60} = 34.11\%$), on the other, turned out to be insignificant. Speakers of the fourth age group are 1.42 times more likely to preserve the Berber variant compared to those of the third age group ($\chi^2 = 3$, $p = 0.083$) and 1.41 times less likely to preserve it compared to speakers of the fifth age group ($\chi^2 = 3.26$, $p = 0.071$). Conversely, speakers of the fifth age group are two times more likely to preserve the Berber variant compared to those of the third age group ($\chi^2 = 12.3$, < 0.001). The odds of lexical maintenance for speakers of the sixth age group ($L_{+60} = 27.18\%$) are only 1.42 times higher compared to those of the fifth age group ($\chi^2 = 2.43$, $p = 0.12$), but two times higher compared to those of the fourth age group ($\chi^2 = 9.27$, $p = 0.002$).

Fig. 4.35 Lexical loss of the Berber word(s) for ‘chin’ across age groups



4.1.5.4. Beard

All the Berber words used to denote ‘beard’ stem from the root **MR**[79]. The Berber variant is attested in most Tashawit texts: *tmart* (Sierakowski, 1871: 114; Basset, 1961: 227; Tibermacine, 2009: 134), *tamart* (Huyghe, 1906: 59; Joly, 1912: 258), etc.

The findings obtained for the present lexical item point to a rivalry between the Berber word and an Arabic loanword. The Berber variant accounted for 37.16% of the total number of tokens produced. It is used most frequently in Oriental Aurès (44.55%), the region of Harakta (41.92%) and the Massif (40.82%). It is also common, though less frequently, in Bellezma (31.17%), the region of Nemamcha (20.73%) and the region of Segnia (16%). The Arabic loan, realized as *lleḥyet* or *lleḥya*, was revealed to be more widely used than the Berber variant (58.88%). It is dominant, though in varying degrees, in all regions: Oriental Aurès (53.47%), Occidental Aurès (55.5%), Harakta (57.14%), Bellezma (61.9%), Nemamcha (68.29%) and Segnia (80.4%).

[79] **Cognates:** *tammurt* (Faidherbe, 1877), *tamart* (Foucauld, 1951), *tamart* (Destaing, 1938) *tamart* (Taïfi, 1991), *tammart* (Mourigh, 2016), *tmart* (Serhoual, 2002), *tmart* (Renisio, 1932), *tmart*, *akamar* (Destaing (1914), *hamart* (Laoust, 1912), *tmart* (Basset, 1885), *tmaḥt*, pl. *tmarin* (Boudot-Lamotte, 1964); *tmart* (Delheure, 1984, 1987), *tmart* (Provotelle, 1911), *tamart* (Dallet, 1982), *tumert* (Motylinski, 1898), *tmart* (Sarnelli, 1924), *tamart* (Basset, 1890), *tumert* (Motylinski, 1898), *tumert* (Lanfry, 1973), *tamirt* (Van Putten, 2013), etc.

A number of irrelevant responses and circumlocutions were recorded in the data, e.g. *cclaɣem* ‘mustache’, *zaw* ‘hair’, *zaw n tmart* ‘chin hair’, *udem* ‘face’, *zaw n wudem* ‘facial hair’, *tadmert* ‘chest’, etc. Table 4.36 below provides a summary of the data elicited for the present variable.

Table 4.36 ‘beard’: frequencies of lexical variants

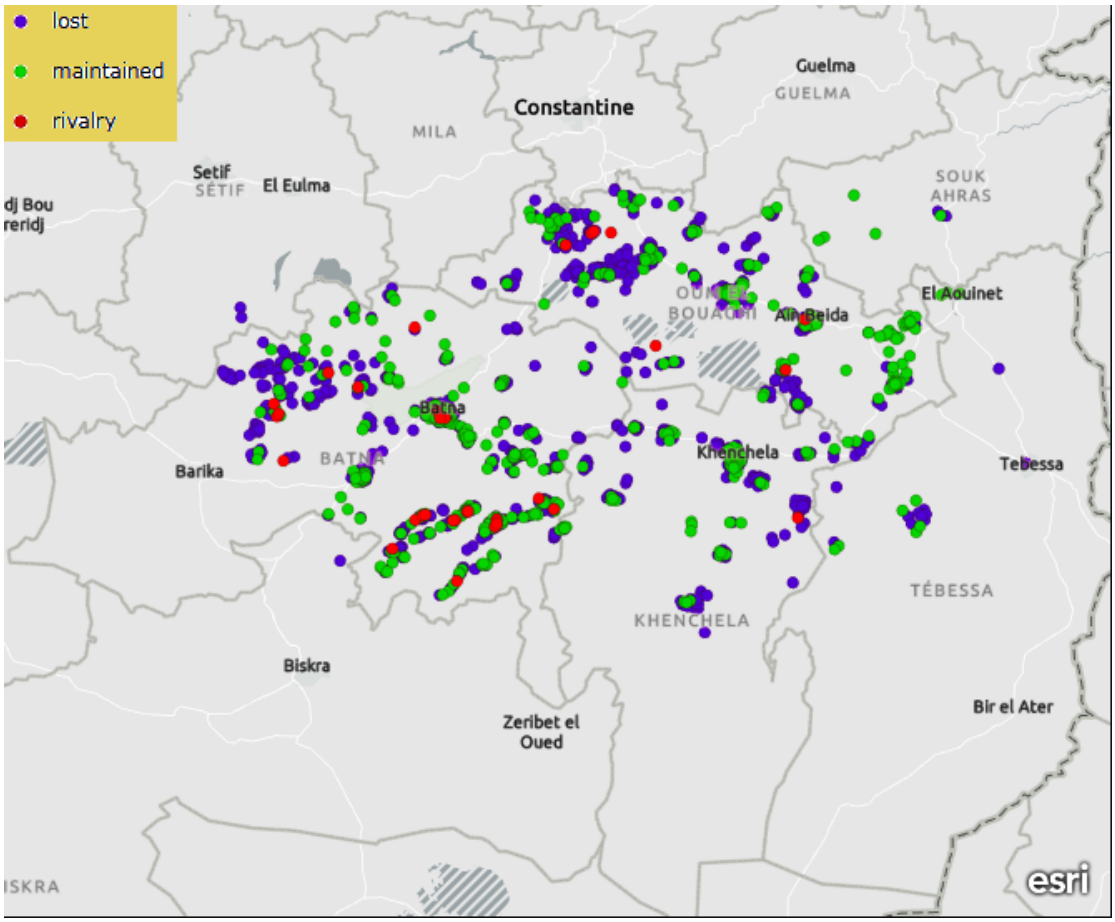
lexical variant	**number of tokens**
tmart …	609
lleḥyet …	965
others	65
NR	218
Total	1857

The rate of lexical loss calculated for the present lexical variable is fairly high: L (beard) = 67.39% (χ^2 = 221.58, p < 0.001). Regional analysis has revealed significant differences in terms of lexical loss (χ^2 = 35.54, p < 0.001). The lowest rates of lexical loss were recorded in Occidental Aurès (L = 59.66%) and the region of Harakta (L = 63.33%). Logistic regression analysis has revealed slight differences between these two regions. Speakers living in the Massif are only 1.17 times more likely to maintain the Berber variant compared to those of the region of Harakta (χ^2 = 1.21, p = 0.27). A close rate to the one recorded in the region of Harakta was obtained in Oriental Aurès (L = 68.97%). Speakers of the former are only 1.29 more likely to preserve the Berber word compared to those of the latter (χ^2 = 1.47, p = 0.27). However, the odds of lexical loss in Oriental Aurès are 1.5 times higher compared to Occidental Aurès (χ^2 = 4.03, p = 0.045).

The highest rates of lexical loss were recorded in the regions of Bellezma (L = 72.09%), Nemamcha (L = 81.11%) and Segnia (L = 84.67%). The analysis has revealed little variation between these regions. Speakers of Bellezma are 2.14 times more likely

to preserve the Berber variant compared to those of the region of Segnia ($\chi^2 = 11.84$, $p = 0.001$), but only 1.7 times higher compared to those of the region of Nemamcha ($\chi^2 = 2.81$, $p = 0.093$). In a similar way, Speakers of the region of Nemamcha are only 1.29 times more likely to preserve the Berber variant compared to those of the region of Segnia ($\chi^2 = 0.62$, $p = 0.43$).

Map 4.36 Lexical loss of the Berber word(s) for 'beard' across Tashawit speaking area



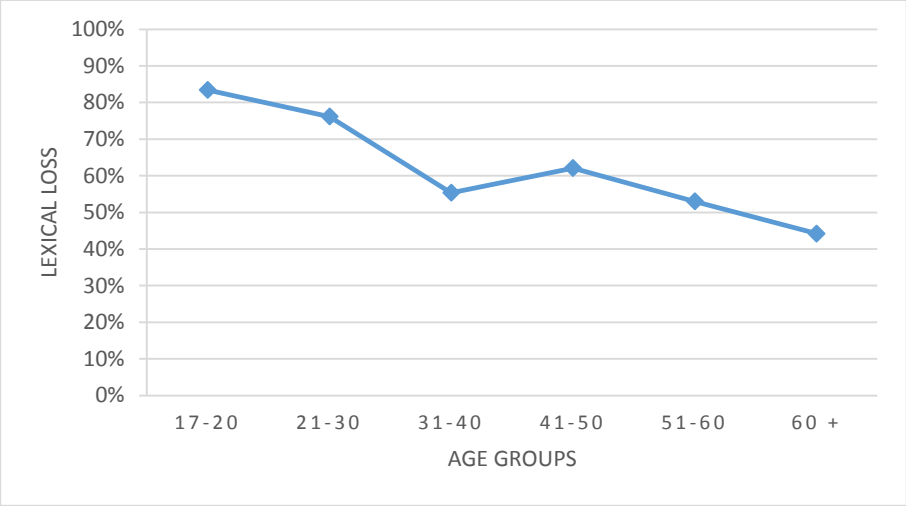
The analysis has revealed greater differences between the two sets of regions. The odds of lexical maintenance in the Massif are 1.75 times higher compared to Bellezma ($\chi^2 = 11.04$, $p = 0.001$), 2.9 times higher compared to the region of Nemamcha ($\chi^2 = 13.95$, $p < 0.001$) and 3.74 times higher compared to the region of Segnia ($\chi^2 = 45.2$, $p < 0.001$). The odds of lexical maintenance in the region of Harakta are 1.5 times higher than Bellezma ($\chi^2 = 5.35$, $p = 0.021$), 2.49 times higher than the region of Nemamcha

(χ^2 = 33.33, p < 0.001) and 3.2 times higher than the region of Segnia (χ^2 = 33.33, p < 0.001). Speakers living in Oriental Aurès are only 1.16 more likely to maintain the Berber variant compared to those of Bellezma (χ^2 = 0.44, p = 0.51), but 1.93 times more likely than those of the region of Nemamcha (χ^2 = 4.14, p = 0.042) and 2.49 times more likely than those of the region of Segnia (χ^2 = 13.33, p < 0.001).

The analysis of the data obtained revealed a strong association between lexical loss and age (χ^2 = 135.861, p < 0.001). The rate of lexical loss changes within a relatively large interval 39.2%, with a maximum of 83.42% and a minimum of 44.22%. It decreases significantly between the first age group ($L_{17\text{-}20}$ = 83.42%) and the second age group ($L_{21\text{-}30}$ = 76.15%) and between the second and the third age group ($L_{31\text{-}40}$ = 55.37%). Speakers of the first age group are 1.59 times more likely to lose the Berber variant compared to those of the second age group (χ^2 = 7.15, p = 0.007) and 4.1 times more likely compared to those of the third age group (χ^2 = 45.01, p < 0.001). The odds of lexical loss for speakers of the second age group are 2.58 times higher than it is for speakers of the third age group (χ^2 = 30.08, p < 0.001). We notice a slight increase in the rate of lexical loss between the third and the fourth age group ($L_{41\text{-}50}$ = 62.11%). The odds of lexical loss for speakers of the fourth age group are only 1.39 times higher compared to the third age group (χ^2 = 2.64, p = 0.1). The rate of lexical loss decreases once again for the fifth age group ($L_{51\text{-}60}$ = 53%). Speakers of the fifth age group are only 1.09 times more likely to preserve the Berber variant compared to those of the third age group (χ^2 = 0.21, p = 0.65), but 1.52 times more likely to preserve it compared to those of the fourth age group (χ^2 = 4.96, p = 0.026). The most maintaining age group is the sixth (L_{+60} = 44.23%). The relative odds of lexical maintenance for speakers of this group are 1.39 to 1 compared to those of the fifth age group (χ^2 = 5.52, p = 0.11)

and 1.52 to 1 compared to those of the third age group ($\chi^2 = 3.58$, $p = 0.059$), but 2.1 to 1 compared to those of the fourth age group ($\chi^2 = 12.04$, $p = 0.001$).

Fig. 4.36 Lexical loss of the Berber word(s) for 'beard' across age groups



4.1.5.5. Elbow

The most attested Berber equivalent for 'elbow' is traced to the root **ΓMR**[80]. The derivatives of this root that are attested in Tashawit are *taɣmert* (Sierakowski, 1871: 117) and *taɣemmaṛt* (Huyghe, 1906: 137).

The analysis of the data has revealed a variety of responses, few of which denote the present item. The Berber variant, realized as *taɣmeṛt* and occasionally *tiɣmeṛt*, accounted only for a small proportion of the responses produced (22.66%). It was recorded mainly in the southern regions: the Massif (48.07%), in particular O. Abdi, O. Labiod and the northern localities of the region, Oriental Aurès (29.11%) and Nemamcha (21.13%). It is much less frequent in the northern regions: Segnia (7.65%), Harakta (6.25%) and Bellezma (3.73%).

[80] **Cognates:** *timirt* (Lux, 2011), *taɣemart* (Masqueray, 1893), *taɣmert* (Foucauld, 1951), *tiɣmert* (Destaing, 1938) *tiɣmert* (Taïfi, 1991), *taɣmeṛt* (Mourigh, 2016), *taɣmert*, *taɣmert* (Serhoual, 2002; Lafkioui, 2007), *taɣemmart* (Renisio, 1932), *tiɣmert* (Destaing (1914), *tiɣmert* (Dallet, 1982), *taɣmert* (Lanfry, 1973). The word used in Teggargrent is *takerf^{w}it*/*takerfuyt* (Delheure, 1987), etc.

The Arabic loan *lmeṛfeq* is less frequent than the Berber variant (14.16%). It was recorded mainly in the eastern regions, in particular Nemamcha (39.44%), the eastern and southern localities of Harakta (23.53%), Oriental Aurès (16.45%), in particular Khenchela city, and the western localities of Segnia (14.21%). It is less recurrent, however, in the western regions: Bellezma (9.94%) and the Massif (3.86%).

The majority of tokens produced in response to the present item are descriptive terms or words which denote other body parts (62.9%). The most frequent of such descriptive terms is the word *takeɛbuṛt* / *takeɛbaṛt* (9.68%)[81]. This response was recorded mainly in the regions of Bellezma (34.16%) and Segnia (21.86%). Its use in other regions seems to be occasional: Harakta (1.84%), the Massif (1.48%) and Oriental Aurès (1.26%).

The most frequent response in the data, nonetheless, is a word that denotes a different body part, *a.ɣil* 'arm' (31.77%). Being unable to recall the Berber variant or fully aware of their ignorance of it, the participants resorted to the use of the Berber word which designates the closest body part. Other irrelevant responses that were recorded in the data include *ṭṭabeq* 'shoulder', *takɛebt* 'ankle', *fus* 'hand', *fud* 'knee', *lmefṣel* 'joint', *zzend* 'wrist', *lɛateq* 'shoulder', *aẓi* 'shoulder', etc. Some respondents produced the word *taɣeṣmart* 'chin'. These informants were confused due to phonological resemblance.

Table 4.37 'elbow': frequencies of lexical variants

lexical variant	**number of tokens**
taɣmeṛt	281
lmeṛfeq	175
takeɛbuṛt ...	120

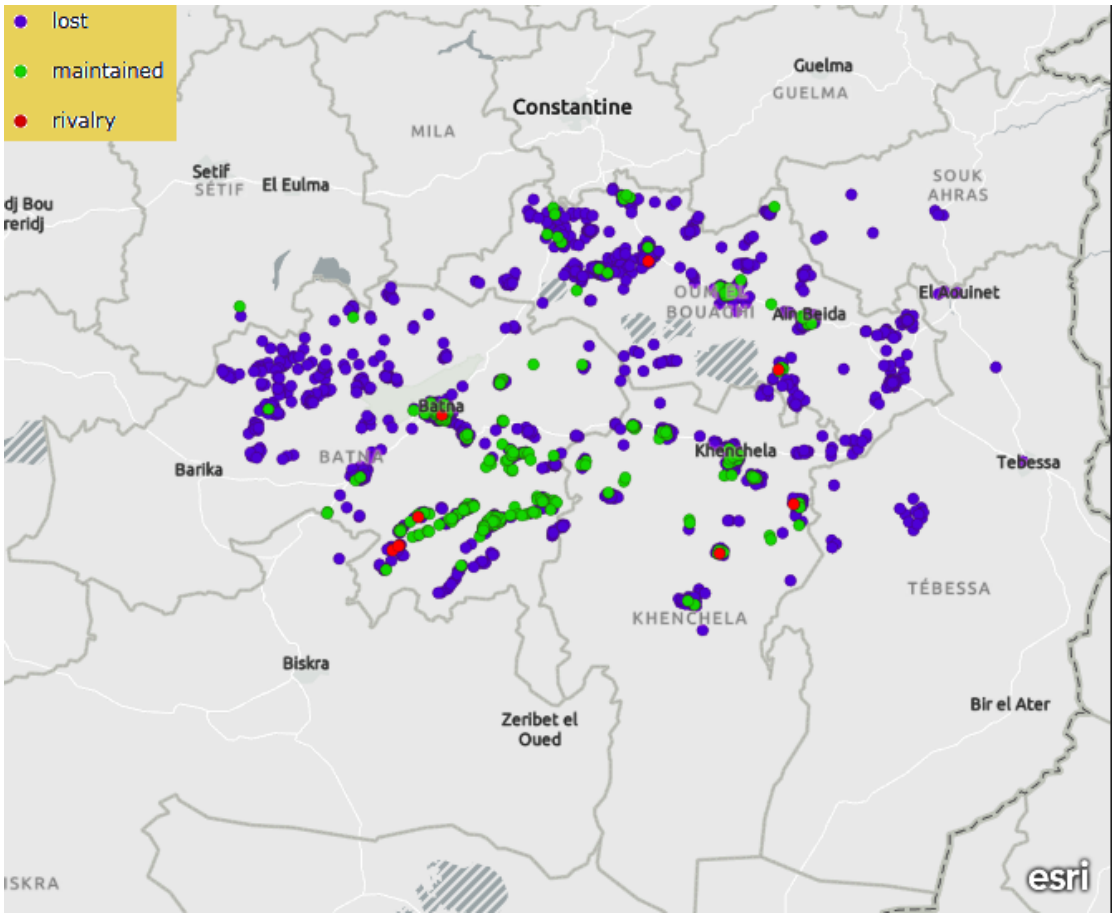
[81] This word is traced to the Arabic root **KƐBR**, in particular the word *kuɛbuṛa* which signifies anything compact and round, such as a bone, knuckle, and the like (Lane, 1968; Omar, 2008) or the joint of two bones (Omar, 2008).

others	664
NR	586
Total	1826

The rate of lexical loss calculated for the present lexical variable is very high: L (elbow) = 84.61% ($\chi^2 = 873.58$, $p < 0.001$). As can be inferred from the results presented above, region is an important predictor of lexical loss ($\chi^2 = 123.25$, $p < 0.001$). The Berber variant is maintained better in the southern regions than the northern ones. The southern regions, however, do not maintain the Berber variant in the same degree: Occidental Aurès (L = 65.24%), Nemamcha (L = 83.33%) and Oriental Aurès (L = 84.14%). The relative odds of lexical maintenance in the Massif are 2.66 times higher compared to the region of Nemamcha ($\chi^2 = 10.73$, $p = 0.001$) and 2.83 times higher compared to Oriental Aurès ($\chi^2 = 17.66$, $p < 0.001$). Little variation was revealed, however, between Oriental Aurès and the region of Nemamcha. The odds of lexical loss in Oriental Aurès are only 1.06 times higher ($\chi^2 = 0.027$, $p = 0.87$).

The highest rates of lexical loss were recorded in the northern regions: Harakta (L = 93.85%), Segnia (L = 94.64%) and Bellezma (L = 97.67%). The analysis has revealed little variation across these regions. Speakers of the region of Harakta are only 1.16 times less likely to lose the Berber variant compared to those of the region of Segnia ($\chi^2 = 0.18$, $p = 0.67$). In a similar way, speakers of the latter are only 2.38 times less likely to lose the Berber variant compared to those of Bellezma ($\chi^2 = 3.06$, $p = 0.08$). However, the odds of lexical loss in Bellezma are 2.75 times higher compared to the region of Harakta ($\chi^2 = 4.77$, $p = 0.029$).

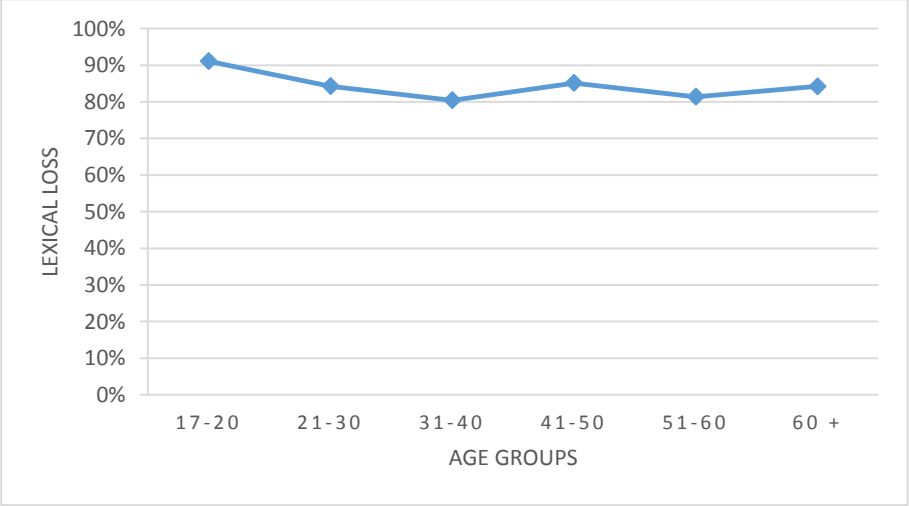
Map 4.37 Lexical loss of the Berber word(s) for ‘elbow’ across Tashawit speaking area



The analysis has revealed much regional variation when we compare between the northern and southern regions. The odds of lexical loss in the Massif are 8.13 times lower than the region of Harakta ($\chi^2 = 81.5$, $p < 0.001$), 9.4 times lower than the region of Segnia ($\chi^2 = 59.12$, $p < 0.001$), and 22.38 times lower than Bellezma ($\chi^2 = 53.64$, $p < 0.001$). The odds of lexical loss in the region of Nemamcha are 3.05 times lower than the region of Harakta ($\chi^2 = 10$, $p = 0.002$), 3.53 times lower than the region of Segnia ($\chi^2 = 10.23$, $p = 0.001$) and 8.4 times lower than Bellezma ($\chi^2 = 18.07$, $p < 0.001$). In a similar way, the relative odds of lexical loss in Oriental Aurès are significantly lower than the northern regions: 1 to 2.87 compared to the region of Harakta ($\chi^2 = 10$, $p = 0.002$), 1 to 3.33 compared to the region of Segnia ($\chi^2 = 10.23$, $p = 0.001$), and 1 to 7.92 compared to Bellezma ($\chi^2 = 18.07$, $p < 0.001$).

The statistical analysis has revealed a significant association between lexical loss and age (χ^2 = 15.83, p = 0.007). The lowest rate of lexical loss was recorded for the third age group ($L_{31\text{-}40}$ = 80.41%). The relative odds of the speakers of this age group losing the Berber variant compared to those of the second age group ($L_{21\text{-}30}$ = 84.25%) are 1 to 1.37 (χ^2 = 3.41, p = 0.065), but 1 to 2.55 compared to those of the first age group ($L_{17\text{-}20}$ = 91.11%) (χ^2 = 12.02, p = 0.001). The difference recorded between the first and the second age group is also significant; a speaker from the former is 1.87 times more likely to lose the Berber variant compared to another from the latter (χ^2 = 7.69, p = 0.006). The rate of lexical loss increases between the third and the fourth age group ($L_{41\text{-}50}$ = 85.15%). However, this increase is statistically insignificant; the odds of a speaker from the fourth age group losing the Berber variant compared to another from the third group are only 1.44 times higher (χ^2 = 1.88, p = 0.17). The rate of lexical loss decreases, once again, between the fourth and the fifth age group ($L_{51\text{-}60}$ = 81.37%), but the relative odds of lexical loss between these two groups are only 1.38 to 1 (χ^2 = 1.67, p = 0.2). The rate of lexical loss increases slightly between the fifth and sixth age group (L_{+60} = 84.22%). The relative odds of lexical loss for speakers of the sixth age group are only 1.13 times higher (χ^2 = 0.17, p = 0.68).

Fig. 4.37 Lexical loss of the Berber word(s) for ‘elbow’ across age groups



4.1.5.6. Bury (the dead)

The Berber equivalents for the present item are traced to three main roots, **ẒKW / SKW**, **NBL** and **NDL**. Derivatives of the two first roots are attested only in Tuareg[82]. Words traced to the third root, however, are more attested in the literature[83]. A derivative of this root also exists in Tashawit, *enḍel* (Huyghe, 1906: 243, 353; Basset, 1961: 161-2, 297).

Two main variants dominate subjects' responses to the present item, the Berber variant *enḍel* and the Arabic loan *edfen*[84]. The Berber variant was produced by a minority of respondents (23.63%). It was produced mainly in Occidental Aurès (57.88%). It was also produced in Batna city, mainly by subjects who are originally from the Massif (44.64%). In the remaining regions, the Berber variant was revealed to be rarely used: Bellezma (6.00%), Oriental Aurès (3.12%), Segnia (1.63%) and Harakta (1.21%). It is completely missing in the region of Nemamcha.

The Arabic borrowing was produced by the majority of informants (68.11%). It is prominent in the northern and southeastern regions: Bellezma (82.49%), Oriental Aurès (91.67%), Harakta (94.86%), Segnia (97.15%) and Nemamcha (97.47%). However, the analysis has revealed that it is much less common in Occidental Aurès (22.35%).

Another response that was recorded in the data, though much less frequently than the previous variants, is *eɣbeṛ* (6.76%). The exact meaning of this word in Tashawit is

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[82] The first root is realized as *eẓk* (Masqueray, 1893; Motylinski, 1908) or *esku* (Foucauld, 1951). The second root is realized as *enbel* (Masqueray, 1893; Motylinski, 1908) or *embel tamettant* (Cid Kaoui, 1894). The exact meaning of this word seems to be 'to hide under the ground' but is used extensively to denote the meaning under consideration (Cid Kaoui, 1894; Foucauld, 1951; Chafik, 1990).

[83] **Cognates:** *enḍel tamettant* (Cid Kaoui, 1894), *enḍel* (Masqueray, 1893; Foucauld, 1951), *emḍel* (Destaing, 1938) *nḍel*, *mḍel*, *nnel* (Taïfi, 1991), *mṭel* (Mourigh, 2016), *nḍer* (Serhoual, 2002), *emḍel* (Destaing (1914), *enḍel* (Boudot-Lamotte, 1964), *enḍel* (Delheure, 1984, 1987), *enḍel*, *enṭel* , *emḍel* (Dallet, 1982), *nṭel* (Motylinski, 1898), *emḍal* (Basset, 1890), *enḍel*, *enṭel* (Lanfry, 1973), *emta* (Van Putten, 2013), etc.

[84] See Lane (1968), Omar (2008), Paulmier (1850), Ben Sedira (1910), etc.

'to hide, esp. under the ground' (Tibermacine, 2009; Saad, 2013) and 'to hide' (v.i.) (Tibermacine, 2009)[85]. This response was produced mainly in the southern regions, Occidental Aurès (15.04%) and Bellezma (9.22%), but it is less frequent in the eastern ones, Nemamcha (1.26%), Harakta (1.51%) and Oriental Aurès (3.12%).

One circumlocution was recorded in the data, that is *yegrit dug nil* 'he put him in the grave'. Some irrelevant responses were also produced, e.g. *yerdem* 'to backfill', *yeqqaz* 'to dig', etc.

Table 4.38 'to bury': frequencies of lexical variants

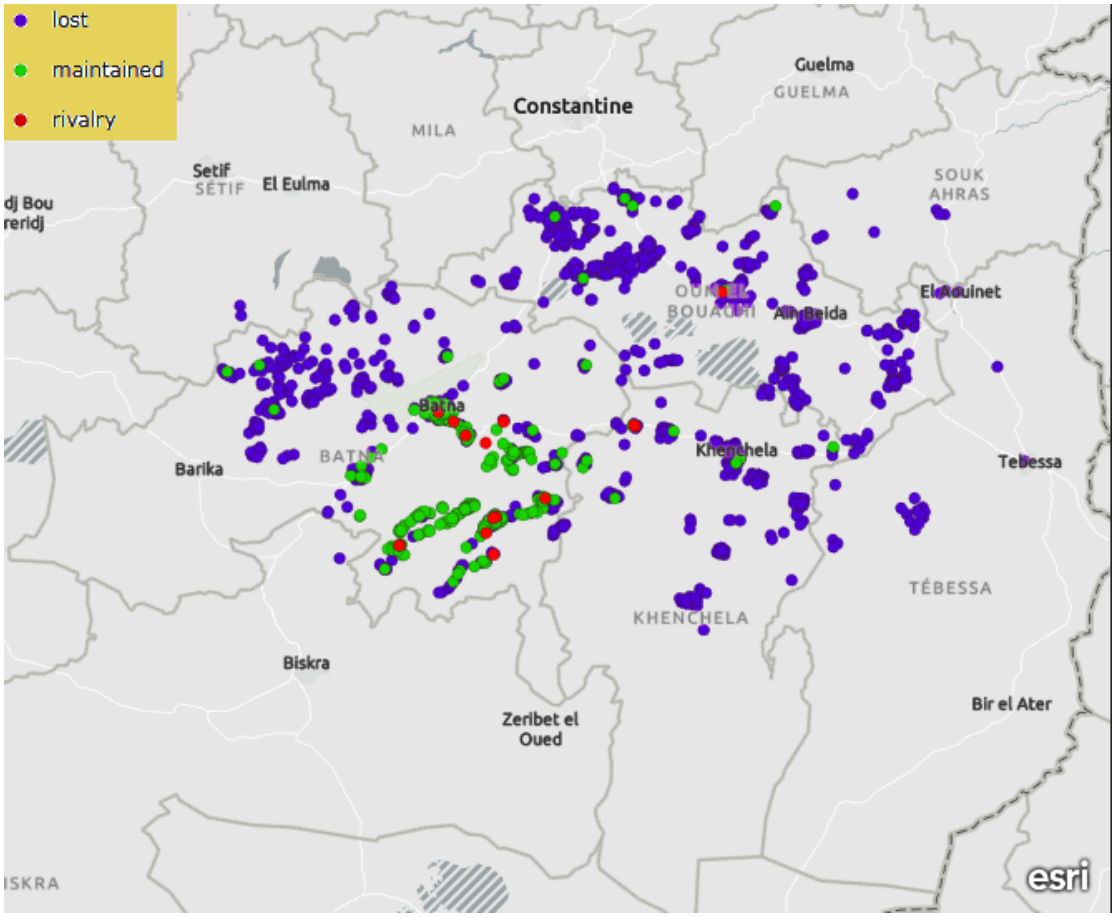
lexical variant	**number of tokens**
enḍel	381
edfen	1097
eɣbeṛ	109
others	24
NR	232
Total	1843

The rate of lexical loss calculated for the present lexical variable is high: L (bury) = 79.33% (χ^2 = 632.88, p < 0.001). The statistical analysis has revealed a strong association between lexical loss and region (χ^2 = 147.52, p < 0.001). The Berber variant is fairly preserved in Occidental Aurès (L = 40.13%). It is also preserved, though to a lesser degree, in Batna city (L = 63.59%). The analysis has revealed that the odds of lexical maintenance in the Massif are 2.6 times higher than Batna city (χ^2 = 30.68, p < 0.001). In the remaining regions, lexical obsolescence is the norm: Bellezma (L = 94.96%), Oriental Aurès (L = 97.93%), Harakta (L = 98.21%), Segnia (L = 98.47%) and Nemamcha (L = 100%). The analysis has revealed little variation across these regions. Speakers of Oriental Aurès, for instance, are only 2.51 times more likely to

[85] **Cognates**: *eɣber* 'to hide' (v.t.) (Foucauld, 1951), 'to hide under ground' (Delheure, 1987) and 'to hide (v.i.), to disappear' (Delheure, 1987).

lose the Berber variant in comparison with those of Bellezma ($\chi^2 = 2.01$, $p = 0.16$), 1.16 times less likely compared to those of the region of Harakta ($\chi^2 = 0.043$, $p = 0.835$) and 1.36 times less likely compared to those of the region of Segnia ($\chi^2 = 0.16$, $p = 0.692$). Speakers of the region of Harakta are only 1.17 times less likely to lose the Berber variant in comparison with those of the region of Segnia ($\chi^2 = 0.065$, $p = 0.8$). Nonetheless, lexical loss was proven to be more prominent in the northeastern regions compared to the region of Bellezma. The odds of lexical loss in this region are 2.9 times lower than the region of Harakta ($\chi^2 = 5.02$, $p = 0.025$) and 3.41 times lower than the region of Segnia ($\chi^2 = 4.49$, $p = 0.034$).

Map 4.38 Lexical loss of the Berber word(s) for 'to bury' across Tashawit speaking area

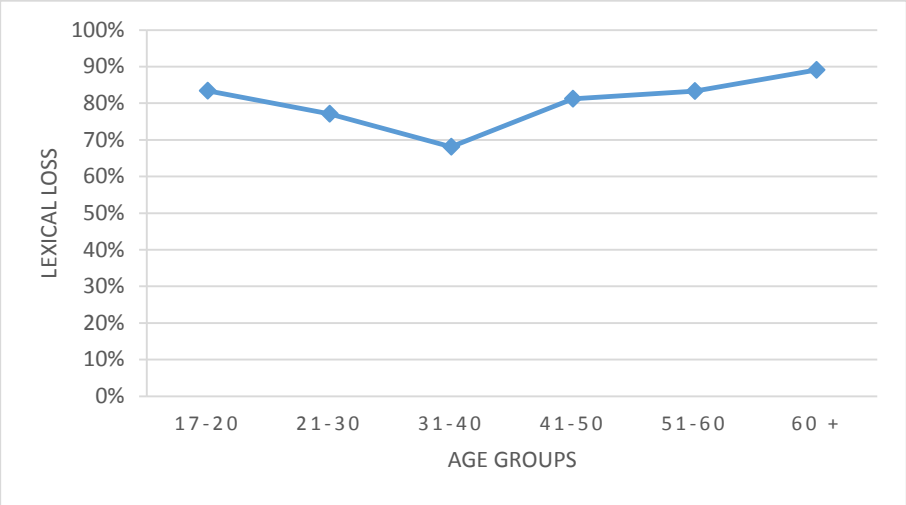


The analysis has revealed greater differences between the regions mentioned above and Occidental Aurès. The odds of lexical maintenance in the Massif are 28.12 times higher than Bellezma ($\chi^2 = 123.77$, $p < 0.001$), 70.62 times higher than Oriental Aurès

(χ^2 = 51.89, p < 0.001), 81.63 times higher than the region of Harakta (χ^2 = 125.52, p < 0.001) and 95.86 times higher than the region of Segnia (χ^2 = 79.22, p < 0.001).

Cross-generational analysis has also revealed an important association between lexical loss and age (χ^2 = 25.905, p < 0.001). The rate of lexical loss decreases in a significant way between the first age group ($L_{17\text{-}20}$ = 83.42%), the second age group ($L_{21\text{-}30}$ = 77.12%) and the third age group ($L_{31\text{-}40}$ = 68.14%). Speakers of the first age group are 1.46 times more likely to lose the Berber variant compared to those of the second age group (χ^2 = 4.75, p = 0.029) and 2.26 times more likely compared to those of the third age group (χ^2 = 14.22, p < 0.001). The odds of lexical loss for speakers of the second age group are 1.55 times higher compared to those of the third age group (χ^2 = 5.8, p = 0.016). The rate of lexical loss increases in a significant way between the third and the fourth age group ($L_{41\text{-}50}$ = 81.22%). The odds of lexical loss for speakers of the fourth age group are twice higher compared to those of the third age group (χ^2 = 9.44, p = 0.002). The rate of lexical loss increases slightly for the fifth age group ($L_{51\text{-}60}$ = 83.35%). Speakers of this group are only 1.15 times more likely to lose the Berber variant compared to those of the fourth age group (χ^2 = 0.32, p = 0.57). The highest rate of lexical loss was recorded for the sixth age group (L_{+60} = 89.09%). A speaker beyond the age of sixty is, however, only 1.63 times less likely to preserve the Berber variant compared to a speaker from the fifth age group (χ^2 = 2.56, p = 0.11), but 1.87 times less likely compared to another from the fourth age group (χ^2 = 4.07, p = 0.044) (see Fig. 4.38 below).

Fig. 4.38 Lexical loss of the Berber word(s) for ‘to bury’ across age groups



4.1.5.7. Heel

The Berber variants used to designate ‘heel’ have the same origin, i.e. the root **WRZ**[86]. This is realized in Tashawit as *nirz* (Huyghe, 1906: 681) and *inerz* (Basset, 1961: 124).

The findings obtained in the present study point to a rivalry between a variety of terms. The Berber variant was revealed to be the most frequent variant in the data (58.68%). It is used mainly in the Massif (78.74%), Bellezma (67.78%), in particular the southern and northwestern parts, and the region of Segnia (61.19%. It is also used, though less frequently, in the regions of Harakta (40.07%) and Oriental Aurès (33.77%). The lowest frequency of the Berber variant was recorded in the region of Nemamcha (3.17%).

Four Arabic loans were recorded in the data. In total, they accounted for around one third of the total number of tokens produced (33.65%). The most frequent of such

[86] **Cognates:** *azrih* (Masqueray, 1893), *azreh* (Foucauld, 1951), *awerz* (Destaing, 1938) *iwerz*, *inirz*, *imerz* (Taïfi, 1991), *awerz* (Mourigh, 2016), *awrez*, *i.nerz*, *i.nirz*, *nurz* (Lafkioui, 2007), *inerz* (Renisio, 1932), *nirez* (Laoust, 1912), *inerz* (Delheure, 1984, 1987), *inirez* (Provotelle, 1911), *ag^{w}rz* (Dallet, 1982), *inerz* (Motylinski, 1898), *anerz* (Lanfry, 1973), etc.

loans is *lḥafer* / *lḥifer* (17.3%)[87]. This response was recorded in different rates across the different regions. It is used mainly in the northeastern regions: Harakta (31.12%) and Segnia (24.2%), but it is less common in the northwestern and southeastern regions: Bellezma (17.78%), Oriental Aurès (16.88%) and Nemamcha (11.11%). The lowest frequency of this variant was obtained in the Massif (2.18%). The second most frequent loan in the data is *lkaɛeb* (13.48%)[88]. This is the most widely used variant in the region of Nemamcha (71.43%). Its frequency in the neighboring region, i.e. Oriental Aurès, is much lower (32.47%). It is even much less frequent in other regions: Harakta (14.9%), the Massif (11.17%), Bellezma (6.67%) and Segnia (3.2%). The two other borrowings that were recorded in the data, *lɛaqeb*[89] and *aɛeṛqub*[90], are not well established in Tashawit. Responses that match the former accounted only for 2.27% of the total number of responses produced. The latter was produced only by a handful of participants (0.66%) (cf. Basset, 1890).

A number of irrelevant responses were recorded in the data, e.g. *ḍaṛ* 'foot', *fud* 'knee', *tijeltemt* 'calf', and others.

Table 4.39 'heel': frequencies of lexical variants

lexical variant	**number of tokens**
inerz / nirz	801
lɛaqeb	31
lḥafer…	235
lkaɛeb	184
aɛeṛqub	9

[87] This word is used to denote 'hoof' (Lane, 1968; Omar, 2008) or 'ugly foot' (Lane, 1968).
[88] This word is used more commonly to denote 'ankle-bone' (Lane, 1968; Omar, 2008) or 'talus' (Lane, 1968), but also denotes 'heel' (Marcel, 1885).

[89] See Lane (1968) and Omar (2008).

[90] In Arabic, the word *aɛeṛqub* designates 'Achilles tendon' (Lane, 1968; Omar, 2008). However, it is attested with the meaning 'heel' in vernacular Arabic (Bocthor, 1828; Paulmier, 1850).

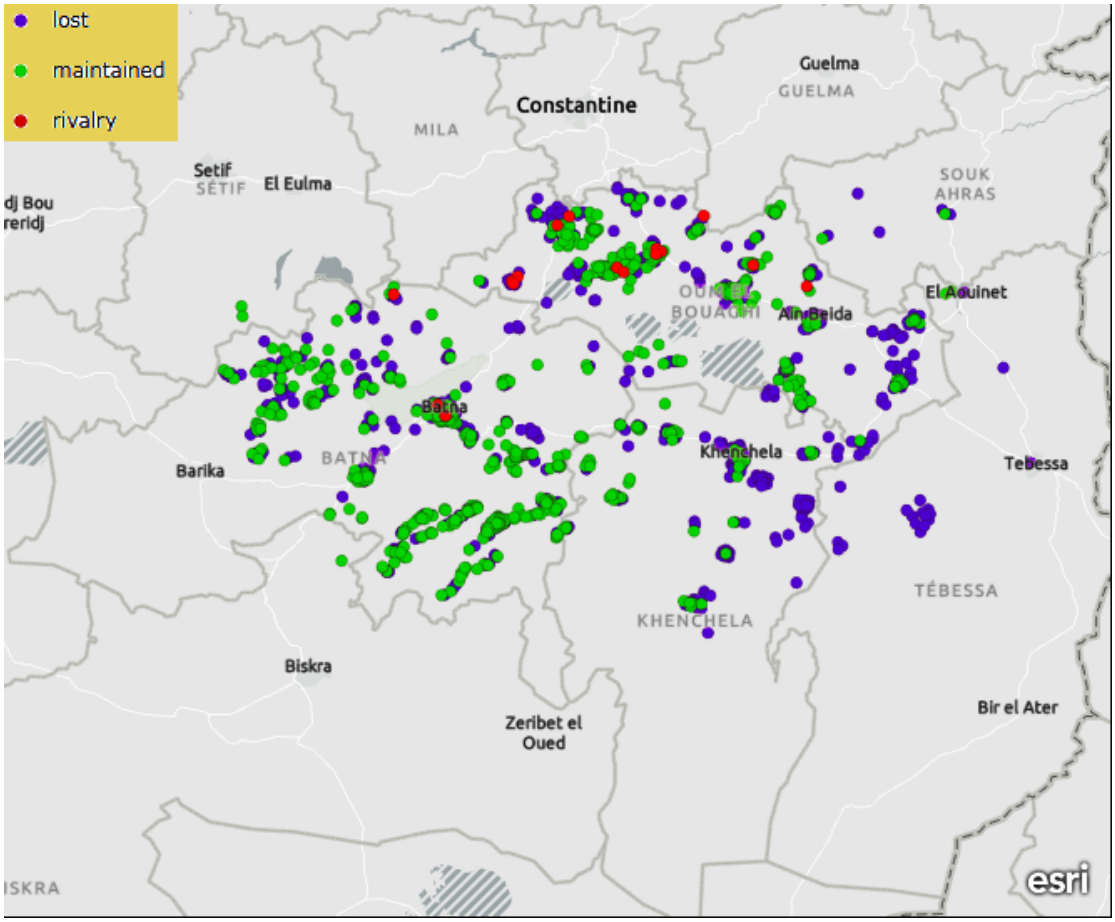
others	104
NR	469
Total	1833

Lexical loss is fairly dominant for the present lexical variable: L (heel) = 56.3% (χ^2 = 29.1, $p < 0.001$). There is however a considerable regional variation in the use of the Berber variant (χ^2 = 29.1, $p < 0.001$). The region maintaining the Berber variant the most is Occidental Aurès (L = 38.2%). The Berber variant is also preserved moderately in the regions of Segnia (L = 48.66%) and Bellezma (L = 52.71%). Logistic regression analysis has revealed significant differences between the Massif, on the one hand, and the regions of Segnia and Bellezma, on the other. Speakers living in Occidental Aurès are 1.53 times more likely to use the Berber variant compared to those living in the region of Segnia (χ^2 = 7.48, p = 0.006) and 1.8 times more likely to use it compared to those living in Bellezma (χ^2 = 14.11, $p < 0.001$). The analysis has revealed no significant difference between the regions of Bellezma and Segnia, with relative odds of lexical maintenance of 1 to 1.18 (χ^2 = 0.85, p = 0.36).

The Berber variant is preserved to some extent in the region of Harakta (L = 66.41%). The analysis has revealed that the odds of lexical loss in this region are 1.77 times higher than Bellezma (χ^2 = 12.14, $p < 0.001$), 2.09 times higher than the region of Segnia (χ^2 = 20.15, $p < 0.001$) and 3.19 times higher than the Massif (χ^2 = 85.68, $p < 0.001$). The Berber variant is maintained even less in Oriental Aurès (L = 81.38%). The odds of lexical loss in Oriental Aurès are 2.31 times higher than the region of Harakta (χ^2 = 12.07, p = 0.001), 4.1 times higher than the region of Bellezma (χ^2 = 31.96, $p < 0.001$), 4.83 times higher than the region of Segnia (χ^2 = 39.86, $p < 0.001$) and 7.41 times higher than the Massif (χ^2 = 71.64, $p < 0.001$). The Berber variant is 9.61 times more likely to be maintained in Oriental Aurès than it is in the neighboring region of Nemamcha (L = 97.78%) (χ^2 = 9.17, p = 0.002). The relative odds of lexical loss in this

last region are 22.22 times higher than the region of Harakta ($\chi^2 = 18.41$, $p < 0.001$), 40 times higher than the region of Bellezma ($\chi^2 = 25.64$, $p < 0.001$), 45.45 times higher than the region of Segnia ($\chi^2 = 27.96$, $p < 0.001$) and 71.43 times higher than the Massif ($\chi^2 = 34.96$, $p < 0.001$).

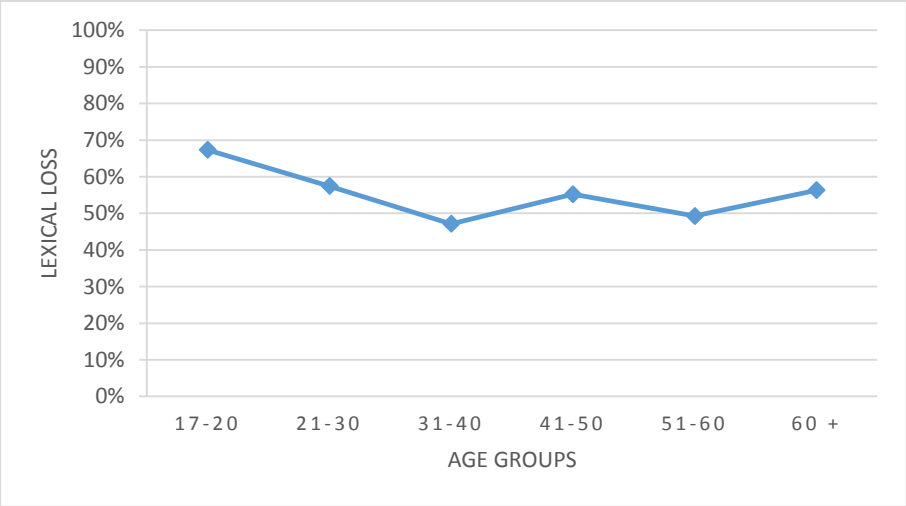
Map 4.39 Lexical loss of the Berber word(s) for 'heel' across Tashawit speaking area



Age was also revealed to be an important predictor of lexical loss ($\chi^2 = 25.905$, $p < 0.001$). The highest rate of lexical loss was obtained for the youngest age group ($L_{17\text{-}20} = 67.31\%$). It decreases significantly for the second ($L_{21\text{-}30} = 57.43\%$) and the third age group ($L_{31\text{-}40} = 47.15\%$). Speakers of the first age group are 1.59 times less likely to maintain the Berber variant compared to those of the second age group ($\chi^2 = 10.49$, $p = 0.01$) and 2.26 times less likely compared to speakers of the third age group ($\chi^2 = 18.36$, $p < 0.001$). Speakers of the second age group are 1.42 times less likely to preserve the

Berber variant compared to those of the third age group ($\chi^2 = 4.47$, $p = 0.034$). The rate of lexical loss changes slightly through the remaining age groups. It increases slightly between the third and the fourth age group ($L_{41\text{-}50} = 55.21\%$), with relative odds of lexical loss of 1 to 1.38 respectively ($\chi^2 = 2.58$, $p = 0.11$). The rate of lexical loss decreases again between the fourth and the fifth age group ($L_{51\text{-}60} = 49.28\%$). Speakers of this group are only 1.32 times less likely to lose the Berber variant compared to those of the fourth age group ($\chi^2 = 2.23$, $p = 0.13$). The increase observed between the fifth and the sixth age group ($L_{+60} = 56.33\%$) is also statistically insignificant; the odds of a speaker from the fifth age group preserving the Berber variant compared to another from the sixth group are only 1.28 times higher ($\chi^2 = 1.45$, $p = 0.23$).

Fig. 4.39 Lexical loss of the Berber word(s) for 'heel' across age groups



4.1.5.8. Eyelashes

Berbers use a variety of terms to refer to the present item. Some of those words are also used to denote other closely related body parts[91]. The most common variant and

[91] In Tuareg, we encounter *illiten n tit* (Cid Kaoui, 1894), *ilaggen* (sing. and pl.) (Masqueray, 1893), and *ilaggen* (sing. *alag*) (Foucauld, 1951). Two words which are traced to the root **RGL** are attested in Kabyle and TCM: *irgel* (Dallet, 1982) and *argel* (Taifi, 1991). Chafik (1990) argues that the exact meaning of this word is 'eyelid' (cf. Destaing, 1938). In TCM, the word *acbab* is used to denote 'eyelash' as well as 'eyelid' (Taifi, 1991). Other words used to refer to 'eyelash' are *madel* (Motylinski, 1898), *taṣṭṭat uwallen*, literally 'branch of eye' (Destaing, 1938) and *anber* (Lanfry, 1973).

the true equivalent for ‘eyelash’ is traced to the root **BL**[92]. In Tashawit, the word *abel* (pl. *ibilwen*) is attested (Huyghe, 1906: 103).

A considerable proportion of the participants have produced the Berber variant (42.94%). It was realized mainly in plural forms *abliwen*, occasionally *ablawen*, *ibliwen* or *iblawen*, but the singular forms, *abel* and *abliw*, were also recorded. The Berber variant is retained mainly in the Massif (91.45%) and Batna city (80.25%). It was also recorded, though less frequently, in Bellezma (43.11%) and, even less frequently, in Oriental Aurès (18.18%). It is completely missing or insignificant in the remaining regions: Harakta (2.96%) and Segnia (1.3%).

The most frequent variant in the data is the Arabic loan *ccwafeṛ* (54.07%). This was also realized as *lecfaṛ*, *ccifeṛ* and *ccafeṛ*. This loan is traced to the Arabic word *cufṛ*. This designates ‘the eyelid edge from which eyelashes emerge’ and is only used erroneously to refer to ‘eyelash’ in Classical and Modern Standard Arabic (Lane, 1968; Omar, 2008). In Maghribian Arabic, the word *cfeṛ* is used to denote ‘eyelash’ (Paulmier, 1850; Ben Sedira, 1910; Harrell, 1966). This Arabic borrowing is used prominently in the regions of Segnia (96.54%), Harakta (94.41%), Nemamcha (96%), Oriental Aurès (73.86%) and, the northern and southeastern localities of, Bellezma (53.33%). It was produced in small proportions in Batna city (16.77%) and, in particular, Occidental Aurès (6.24%).

A second Arabic loan was recorded in the data, that is *ṛṛmuc*. This derives from a modern Arabic word for ‘eyelash’, *ṛimc* (Omar, 2008). It does not seem to be a well-established loanword in Tashawit (1.37%). Another word of Arabic origins that was

[92] **Cognates:** *abel*, *abliw* (Lafkioui, 2007), *abel* (Renisio, 1932; Laoust, 1912; Boudot-Lamotte, 1964; Delheure, 1984, 1987), etc.

recorded in the data is *lehdab* (Lane, 1968; Omar, 2008). This was produced only by two respondents (0.16%). A number of irrelevant responses and circumlocutions were recorded in the data, e.g. *zaw n tiṭ* 'eye's hair', *leḥwajeb* 'eyebrows', *tiṭ* 'eye, etc.

Table 4.40 'eyelashes': frequencies of lexical variants

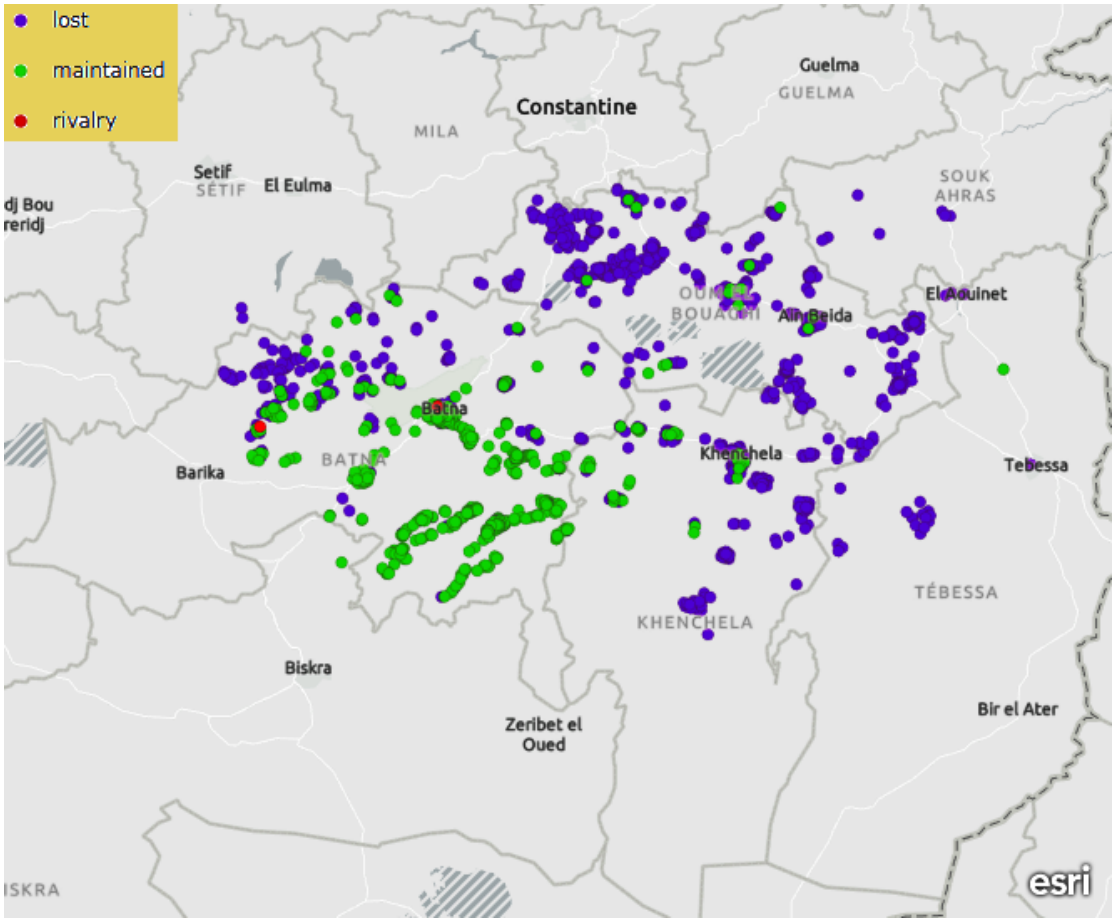
lexical variant	**number of tokens**
abliwen …	660
ccwafeṛ…	831
ṛṛmuc …	21
lehdab	2
others	23
NR	286
Total	1823

The rate of lexical loss calculated for the present lexical variable is fairly high: L (eyelashes) = 63.8% (χ^2 = 570.02, p < 0.001). As can be noticed in Map 4.40 below, the use of the Berber variant is regionally determined (χ^2 = 173.52, p < 0.001). The Berber variant is preserved mainly in the southwestern region, i.e. Occidental Aurès (L = 15.02%). It is also preserved in Bellezma, though lexical loss is still the dominant trend (L = 62.4%). The analysis has revealed that the odds of lexical loss in Bellezma are 9.39 times higher than Occidental Aurès (χ^2 = 150.48, p < 0.001). The Berber variant is preserved marginally in Oriental Aurès (L = 87.59%). The relative odds of lexical loss in this region are 4.86 to 1 compared to Bellezma (χ^2 = 28.79, p < 0.001) and 45.61 to 1 compared to the Massif (χ^2 = 156.39, p < 0.001).

The highest rates of lexical loss were recorded in the regions of Harakta (L = 95.64%), Segnia (L = 98.85%) and Nemamcha (L = 98.89%). Little regional variation was revealed between these regions. Speakers of the region of Segnia are 3.92 times more likely to lose the Berber variant in comparison with those of the region of Harakta (χ^2 = 4.68, p = 0.031), but only 1.03 times more likely than speaker of the region of

Nemamcha (χ^2 = 0.001, p = 0.98). Speakers of the region of Harakta are 4.06 times less likely to lose the Berber variant than those of the region of Nemamcha (χ^2 = 1.83, p = 0.18). However, a great deal of regional variation was revealed when these three regions were compared to other regions. The odds of lexical maintenance in the Massif are 124.12 times higher than the region of Harakta (χ^2 = 296.81, p < 0.001), 486.51 times higher than the region of Segnia (χ^2 = 108.14, p < 0.001), and 503.49 times higher than the region of Nemamcha (χ^2 = 37.65, p < 0.001). Lexical loss is also much less prominent in Bellezma compared to these regions. Speakers of Bellezma are 13.22 times less likely to lose the Berber variant than speakers of the region of Harakta (χ^2 = 85.42, p < 0.001), 51.81 times less likely than those of the region of Segnia (χ^2 = 44.06, p < 0.001) and 53.62 times less likely than those of the region of Nemamcha (χ^2 = 15.43, p < 0.001). Speakers of Oriental Aurès are 2.72 times less likely to lose the Berber variant compared to those of the region of Harakta (χ^2 = 7.61, p = 0.006), 10.67 times less likely than those of the region of Segnia (χ^2 = 13.75, p < 0.001) and 11.04 times less likely compared to those of the region of Nemamcha (χ^2 = 5.33, p = 0.021).

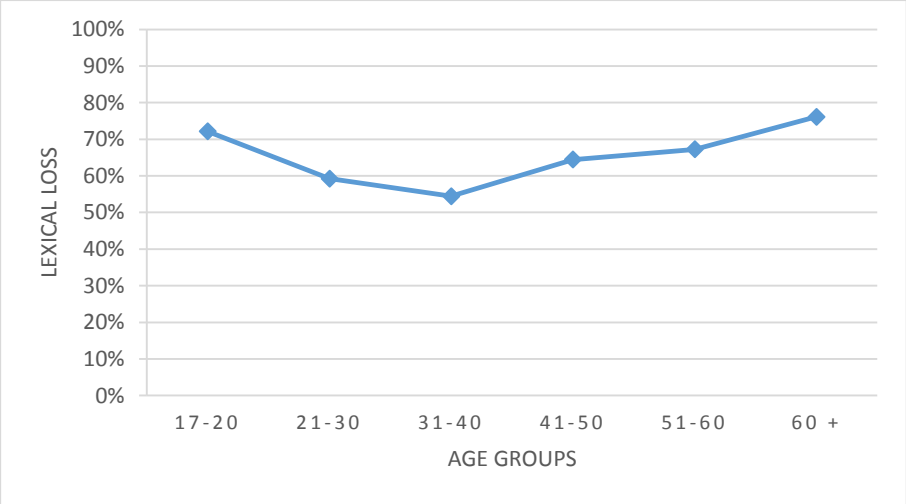
Map 4.40 Lexical loss of the Berber word(s) for ‘eyelashes’ across Tashawit speaking area



The statistical analysis has revealed that age has an important effect on lexical loss ($\chi^2 = 35.79$, $p < 0.0001$). The rate of lexical loss decreases between the first age group ($L_{17\text{-}20} = 72.12\%$), the second age group ($L_{21\text{-}30} = 59.24\%$) and the third age group ($L_{31\text{-}40} = 54.54\%$). Speakers of the first age group are 1.8 times more likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 15.86$, $p < 0.001$), and 2.22 times more likely compared to those of the third age group ($\chi^2 = 16.83$, $p < 0.001$). The odds of lexical loss for speakers of the second age group, however, are only 1.23 times higher compared to those of the third age group ($\chi^2 = 1.52$, $p = 0.22$). The rate of lexical loss increases in a significant way between the third and the fourth age group ($L_{41\text{-}50} = 64.44\%$). The odds of lexical loss for speakers of the fourth age group are 1.51 times higher than speakers of the third age group ($\chi^2 = 4.02$, $p = 0.045$). The rate of lexical

loss changes slightly for the fifth age group ($L_{51\text{-}60}$ = 67.22%). It is 1.14 times more likely for speakers of this age group to lose the Berber variant compared to those of the fourth age group (χ^2 = 0.44, p = 0.5). The rate of lexical loss continues increasing between the fifth and the sixth age group (L_{+60} = 76.11%). Speakers of the latter are 1.61 times less likely to preserve the Berber variant compared to those of the fifth age group (χ^2 = 4.19, p = 0.041) and 1.83 times less likely compared to those of the fourth age group (χ^2 = 6.51, p = 0.01) (see Fig. 4.40 below).

Fig. 4.40 Lexical loss of the Berber word(s) for 'eyelashes' across age groups



4.1.5.9. Grave

The Berber equivalents for 'grave' are traced to two main roots, **NḌL / MḌL**[93]. and **ZK**[94]. The derivatives of both of these roots are attested in Tashawit literature: *tanḍilt* (Huyghe, 1906: 698) and *azqa* (Huyghe, 1907: 91)[95].

[93] **Cognates:** *tanḍelt* (Masqueray, 1893), *tinḍelt*, *tinḍelt*, *tinnelt*, *asemḍal* (Mercier, 1937; Taïfi, 1991), *imḍal*, *tamḍalt*, *anḍar*, *amḍar* (Serhoual, 2002), *amḍal*, *tamḍalt* (Renisio, 1932), *tanḍelt* (Destaing (1914), *tmaḍlin*, (Basset, 1885), *tanṭelt* (Dallet, 1982), etc.

[94] **Cognates:** *aẓekka* (Masqueray, 1893; Foucauld, 1951), *aẓekka*, *taẓekkawt*, *taẓekkat* (Dallet, 1982), *zekka* (Motylinski, 1898), *isukwan* (Sarnelli, 1924), *azekku* Lanfry, 1973), *ačča* (Van Putten, 2013), etc.

[95] In Tuareg, a third word is attested, namely *asensu* (Foucauld, 1951).

The word *azqa* was revealed to be completely missing in the data. The variant *tanḍelt*, realized also as *hanḍel* and *timenḍelt*, accounted only for a small proportion of the total number of tokens elicited in response to the present item (14.26%). It was produced mainly in Occidental Aurès (37.83%). The number of its occurrences in this region accounted for 74.3% of the total number of tokens that match this variant. It is dominant in the localities of Ichmoul, Tighanimine, Arris, Maafa, Tigherghar and Ouyoun el Assafir. It is also used, if less frequently, in O. Abdi and some of the northeastern localities of the region, in Batna city and the locality of Ain Touta in the southwestern part of Bellezma.

The majority of respondents have produced words which are traced to the Arabic root **QBR** (56.29%). The variants generated from this root include *aqbuṛ*, which is more common, *leqbeṛ* and *timeqbeṛt*. The first two variants, though differ in their degree of adaptation to the morphological properties of Berber, derive from one Arabic word, that is *qebṛ* 'grave' (Ben Sedira, 1910). The third variant, on the other hand, is borrowed from the word *meqbṛa* 'cemetery' (Ben Sedira, 1910). This Arabic loan prevails in the regions of Bellezma (85.27%), Segnia (61.63%), in particular the southern and eastern localities, and the western and southern localities of the region of Harakta (57.95%). It was also recorded, though less frequently, in the Massif (40.64%), mainly in the northwestern part, Oriental Aurès (27.7%) and Nemamcha (13.98%).

The second Arabic loan that was recorded in the data, *tajebbant*, is also traced to an Arabic word for cemetery, namely *jebbana* (Ben Sedira, 1910). This loan, however, was produced only by a small minority of informants (8.53%). It is the most frequent variant in the region of Nemamcha (41.93%). However, it is less widely used in other regions: Oriental Aurès (13.33%), Occidental Aurès (11.66%), Segnia (5.91%) and Harakta (4.68%).

The fourth variant that was recorded in the data is *anil / nil* (19.07%). In the literature, this word was assigned the meaning of 'grave', 'tomb' or 'sepulcher' (Basset, 1893; Delheure, 1984, 1987) or 'coffin' (Huyghe, 1906, 1907). Another meaning that was assigned to this word, by a well-informed Tashawit speaker that we have consulted, is 'grave hole'. The etymology of this word remains unclear. It is possible that this word has resulted from a phonological change of the Berber variant (cf. TCM *tinnelt* 'grave'). This variant was recorded mainly in the regions of Oriental Aurès (48.33%), Nemamcha (38.64), Harakta (30.68%) and Segnia (29.13%). It is less frequent in the western regions: Occidental Aurès (8.38%) and Bellezma (1.23%).

Table 4.41 'grave': frequencies of lexical variants

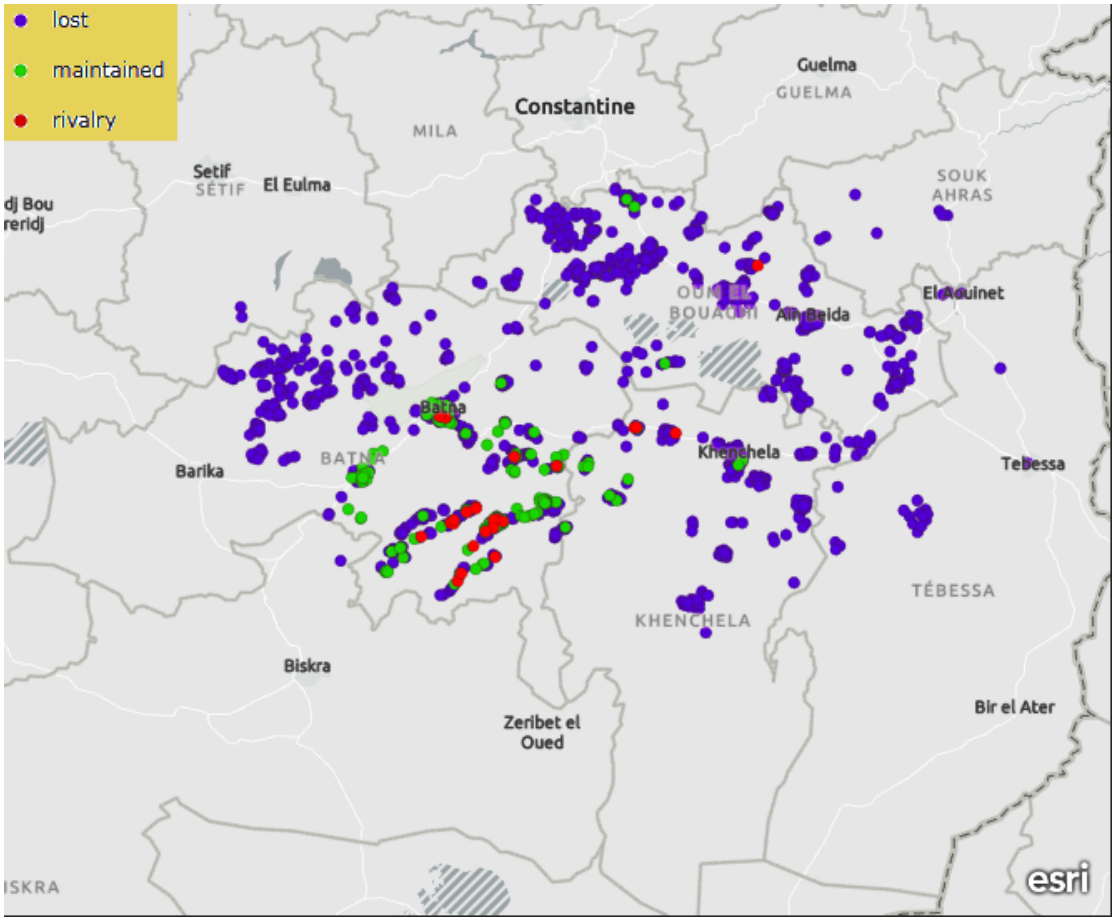
lexical variant	**number of tokens**
tanḍelt…	252
anil…	338
aqbuṛ …	993
tajebbant	156
others	25
NR	108
Total	1872

The rate of lexical loss calculated for the present item is higher than most other notions addressed under the domain of 'body': L (grave) = 86.54% (χ^2 = 994.66, p < 0.001). Logistic regression analysis has revealed that lexical loss is regionally determined (χ^2 = 24.16, p < 0.001). The Berber variant is preserved mainly in Occidental Aurès (L = 60.3%). It is also maintained to some degree in Batna city (L = 80.1%). Speakers residing in this city, however, are 2.65 times less likely to preserve the Berber variant compared to those living in the Massif (χ^2 = 30.68, p < 0.001). The rate of lexical loss recorded in Bellezma was higher than both Occidental Aurès and Batna city (L = 93.41%). The relative odds of lexical loss in this region are 3.52 to 1

compared to Batna city ($\chi^2 = 16.97$, $p < 0.001$) and 9.33 to 1 compared to the Massif ($\chi^2 = 69.35$, $p < 0.001$).

The rates of loss recorded in the remaining regions are extremely high: Oriental Aurès (L = 97.24%), Segnia (L = 99.23%), Harakta (L = 99.49%) and Nemamcha (L = 100%). The analysis has revealed no significant differences between the rates of lexical loss obtained in these regions. The odds of lexical loss in Oriental Aurès are 3.67 times lower compared to the region of Segnia ($\chi^2 = 2.22$, $p = 0.14$) and 5.5 times lower compared to the region of Harakta ($\chi^2 = 3.83$, $p = 0.05$). In a similar way, the odds of lexical loss in the region of Segnia are only 1.5 times lower compared to the region of Harakta ($\chi^2 = 0.065$, $p = 0.8$).

Map 4.41 Lexical loss of the Berber word(s) for 'grave' across Tashawit speaking area

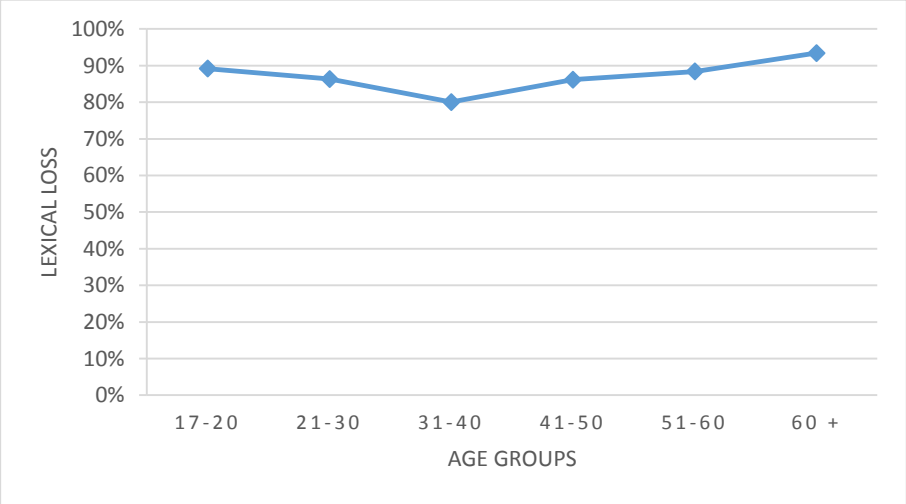


A great deal of regional variation is observed between the three regions just mentioned above and the Massif. The odds of lexical maintenance in Occidental Aurès are 23.21 times higher than Oriental Aurès ($\chi^2 = 37.16$, $p < 0.001$), 85.26 times higher than the region of Segnia ($\chi^2 = 38.54$, $p < 0.001$) and 127.72 times higher than the region of Harakta ($\chi^2 = 45.98$, $p < 0.001$). The differences are less striking with regard to Bellezma. Speakers of the latter are 9.13 times more likely to preserve the Berber variant compared to those of the region of Segnia ($\chi^2 = 8.63$, $p = 0.003$) and 13.68 times more likely compared to the region of Harakta ($\chi^2 = 12.1$, $p = 0.001$). The odds of lexical maintenance in Bellezma, however, are only 2.49 times higher compared to Oriental Aurès ($\chi^2 = 69.35$, $p = 0.11$).

The analysis of the data has revealed some degree of association between lexical loss and age ($\chi^2 = 15.41$, $p = 0.009$). The rate of lexical loss decreases slightly between the first age group ($L_{17\text{-}20} = 89.16\%$) and the second age group ($L_{21\text{-}30} = 86.33\%$). The relative odds of the speakers of the first age group losing the Berber variant compared to those of the second age group are only 1.32 times higher ($\chi^2 = 1.74$, $p = 0.19$). However, the decrease observed between the second and the third age group ($L_{31\text{-}40} = 80.05\%$) is statistically significant. A speaker from the third age group is 1.57 times more likely to maintain the Berber variant compared to a speaker from the second age group ($\chi^2 = 4.55$, $p = 0.033$). A speaker from the third age group is 2.06 times more likely to maintain it compared to another from the first age group ($\chi^2 = 8.19$, $p = 0.004$). The rate of lexical loss increases slightly for the fourth age group ($L_{41\text{-}50} = 86.18\%$). The analysis has revealed that this change is statistically insignificant; the odds of a speaker from the third age group maintaining the Berber variant compared to another from the fourth age group are only 1.6 times higher ($\chi^2 = 3.12$, $p = 0.08$). The difference observed between the rates of lexical loss recorded between the fourth age group and

the fifth age group ($L_{51\text{-}60}$ = 88.38%) turned out to be insignificant as well, with relative odds of lexical loss of 1 to 1.16 respectively (χ^2 = 0.29, p = 0.59). Compared to those of the third age group, however, speakers of the fifth group are 1.85 times more likely to lose the Berber variant (χ^2 = 5.53, p = 0.019). The rate of lexical loss increases slightly for the sixth age group (L_{+60} = 93.41%). The relative odds of speakers of the sixth age groups losing the Berber variant are only 1.86 to 1 compared to those of the fifth age group (χ^2 = 2.9, p = 0.09), but 2.16 to 1 compared to those of the fourth age group (χ^2 = 4.37, p = 0.04).

Fig. 4.41 Lexical loss of the Berber word(s) for 'grave' across age groups



4.1.5.10. Span

All the Berber words that are used to denote this item are traced to the root **RDS**[96]. A derivative of this root, namely *tardast*, is also attested in Tashawit (Huyghe, 1906: 228).

[96] **Cognates:** *taredast* (Masqueray, 1893), *tardast* (Foucauld, 1951; Destaing, 1938; Taïfi, 1991; Serhoual, 2002; Delheure, 1987; Dallet, 1982), *terdest* (Lanfry, 1973), etc.

The Berber variant is the most frequent response in the data, accounting for around half of the total number of tokens produced (49.89%). It is prevalent in the Massif (72.42%) and Oriental Aurès (60%). It is less widely used in other regions. It was recorded mainly in the southern and central localities of Bellezma (43.22%), the eastern localities of Nemamcha (40%) and the northwestern parts of the regions of Harakta (30.07%) and Segnia (29.33%).

The Arabic loan, *ccber*, is less recurrent than the Berber variant (44.94%). It is prominent in the eastern localities of the region of Harakta (64.86%), the southern localities of the region of Segnia (53.38%) and the northwestern part of Bellezma (52.26%). This borrowing is less widely used in the southern regions: Nemamcha (42.04%), Oriental Aurès (37.2%) and, in particular, Occidental Aurès (22.7%).

A number of irrelevant responses were recorded in the data, e.g. *fus* 'hand', *ɣil* 'arm', *surif* / *lxeṭwet* 'step', etc.

Table 4.42 'span': frequencies of lexical variants

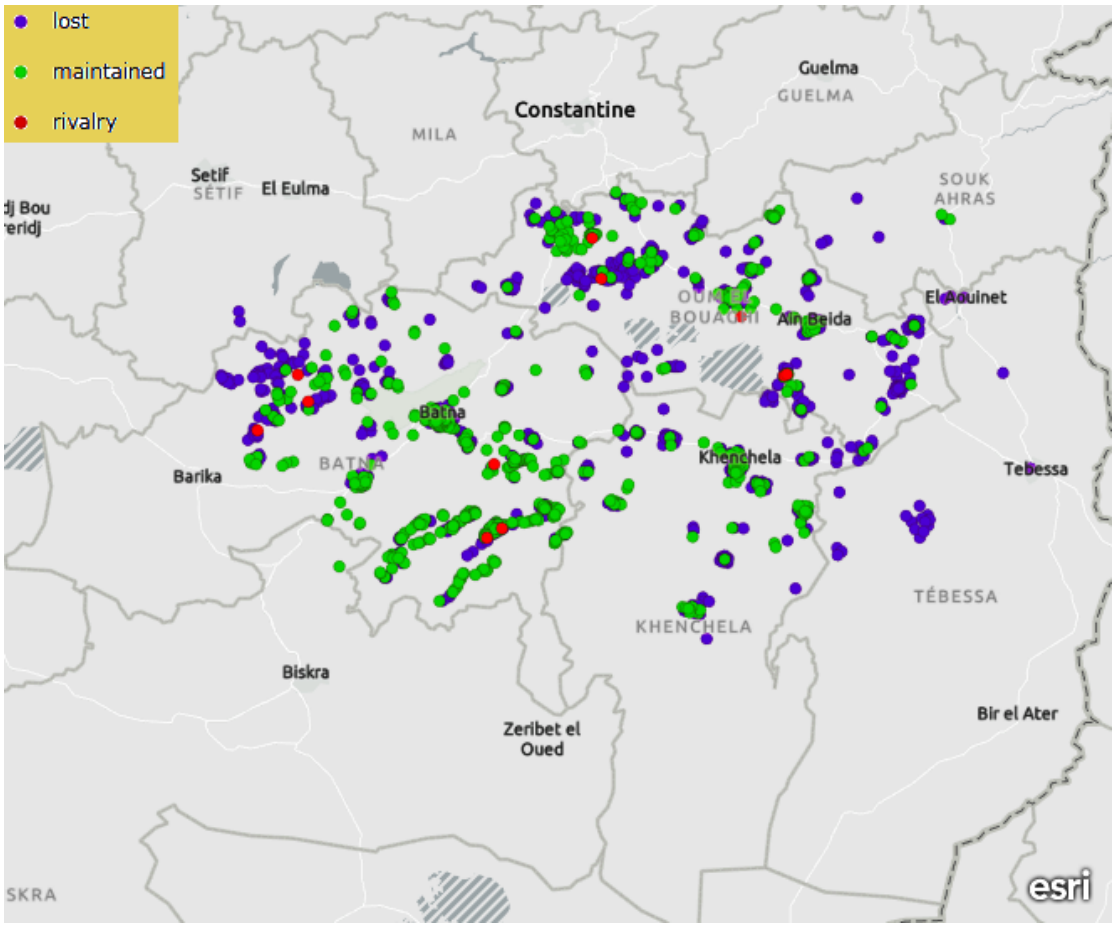
lexical variant	**number of tokens**
tardast	705
ccber	635
others	73
NR	419
Total	1832

Regardless of the large number of participants who produced the Berber variant, lexical loss remains the dominant trend for the present item: L (span) = 61.52% (χ^2 = 96.74, $p < 0.001$). As can be inferred from the results exposed earlier, the loss of the Berber variant is determined to some extent by region ($\chi^2 = 24.15$, $p = 0.002$). We can distinguish between two areas, one in which lexical loss is dominant and another where the use of the Berber variant is the norm. The first area covers the regions of Bellezma

(L = 66.67%), Nemamcha (L = 68.89%), Oriental Aurès (L = 72.41%), Segnia (L = 73.95%) and Harakta (L = 74.36%). The analysis shows little regional variation across these five regions. Speakers of Bellezma are 1.45 times less likely to lose the Berber variant compared to those of the region of Harakta ($\chi^2 = 4.47$, $p = 0.035$), but 1.11 times less likely compared to those of the region of Nemamcha ($\chi^2 = 0.15$, $p = 0.7$), 1.31 times less likely compared to those of Oriental Aurès ($\chi^2 = 1.42$, $p = 0.23$) and 1.41 times less likely compared to those of the region of Segnia ($\chi^2 = 3.28$, $p = 0.07$). The odds of lexical loss in the region of Nemamcha are 1.18 times lower compared to Oriental Aurès ($\chi^2 = 0.33$, $p = 0.56$), 1.28 times lower compared to the region of Segnia ($\chi^2 = 0.86$, $p = 0.35$) and 1.31 times lower compared to the region of Harakta ($\chi^2 = 1.11$, $p = 0.29$). The odds of lexical loss in Oriental Aurès are only 1.08 times lower than the region of Segnia ($\chi^2 = 0.11$, $p = 0.74$) and 1.1 times lower than the region of Harakta ($\chi^2 = 0.21$, $p = 0.65$). Similarly, speakers of the region of Segnia are only 1.02 times more likely to preserve the Berber variant compared to those living in the region of Harakta ($\chi^2 = 0.014$, $p = 0.91$).

The second area covers one region only, the Massif (L = 39.7%). The odds of lexical maintenance in the Massif are significantly higher than all of the previous regions: 3.04 to 1 compared to Bellezma ($\chi^2 = 46.76$, $p < 0.001$), 3.36 to 1 compared to the region of Nemamcha ($\chi^2 = 24.19$, $p < 0.001$), 4 to 1 compared to Oriental Aurès ($\chi^2 = 44$, $p < 0.001$), 4.31 to 1 compared to the region of Segnia ($\chi^2 = 74$, $p < 0.001$) and 4.4 to 1 compared to the region of Harakta ($\chi^2 = 98.1$, $p < 0.001$).

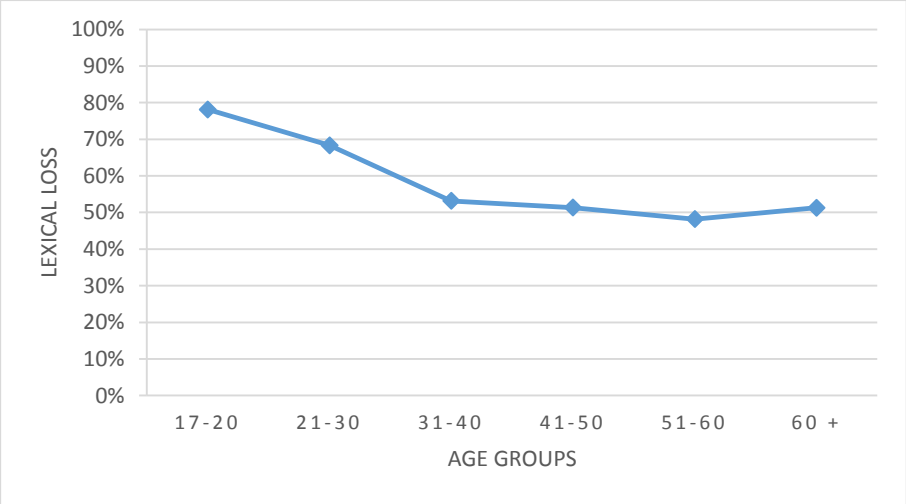
Map 4.42 Lexical loss of the Berber word(s) for ‘span’ across Tashawit speaking area



The statistical analysis has also revealed that age is an important predictor of lexical loss (χ^2 = 90.64, p = 0.0011). The rate of lexical loss decreases significantly between the first age group ($L_{17\text{-}20}$ = 78.12%) and the second age group ($L_{21\text{-}30}$ = 68.32%). The odds of lexical loss for speakers of the first age group are 1.67 times higher than those of the second age group (χ^2 = 10.4, p = 0.001). The rate of lexical loss decreases significantly between the second and the third age group as well ($L_{31\text{-}40}$ = 53.17%). A speaker from the second age group is 1.86 times less likely to maintain the Berber variant compared to another from the third age group (χ^2 = 13.47, $p < 0.001$). The odds of lexical maintenance for speakers of the third age group are 3.1 higher compared to those of the first age group (χ^2 = 31.84, $p < 0.001$). The rate of lexical loss decreases only slightly between the third and the fourth age group ($L_{41\text{-}50}$ = 51.33%); speakers of

the fourth age group are only 1.17 times more likely to use the Berber variant compared to those of the third age group (χ^2 = 0.6, p = 0.44). The rate of lexical loss continues decreasing between the fourth and the fifth age group ($L_{41\text{-}50}$ = 48.19%). This decrease is also insignificant, with relative odds of lexical loss of 1.07 to 1 (χ^2 = 0.12, p = 0.73). We, then, observe a slight increase for the sixth age group (L_{+60} = 51.27%). Speakers of this groups, however, are only 1.15 times more likely to lose the Berber variant compared to those of the fifth age group (χ^2 = 0.45, p = 0.5).

Fig. 4.42 Lexical loss of the Berber word(s) for 'span' across age groups



4.1.6. Clothing and Grooming

4.1.6.1. Belt

The most common Berber equivalent for 'belt' is traced to the root **BGS**[97]. In Tashawit, the variant *abgas* (f. *tabgast*) is attested, in particular with the meaning of 'woman's belt' (Huyghe, 1906: 90). The word *tayust* 'strap' is also attested (Huyghe, 1906: 630).

[97] **cognates:** *tağbest* (Foucauld, 1951), *agg^{w}es* 'rope belt', *tak^{w}est* 'leather work belt' (Destaing, 1938), *abekkas* (Taïfi, 1991), *abekkas*, *abyas* (Serhoual, 2002), *abyas* 'woman's belt made of fabric or silk' (Renisio, 1932), *abecci* (Delheure, 1984), *abecci*, *tabeccit* (Delheure, 1987), *abagus*, *agus*, *aggus* (Dallet, 1982), *abeccuc* (Sarnelli, 1924), etc.

The Berber variant, realized as *abgas*, *tabgast*, *abeggas* and *tabeggast*, is the most frequent response in the data (45.16%). It was recorded mainly in the northern regions: Bellezma (64.07%), Segnia (77.6%) and Harakta (74.8%). In the southern regions, the Berber variant was recorded mainly in Oriental Aurès (38.38%), but it is much less common in the Massif (5.94%) and the region of Nemamcha (1.28%).

The second most frequent response in the data is the Arabic loan *taḥezzamt* (34.86%). This is used mainly in the Massif (68.81%). It is also common in the regions of Nemamcha (43.75%), Oriental Aurès (26.00%) and Bellezma (17.67%). The lowest frequencies of this variant were recorded in the northeastern regions: Segnia (5.2%) and Harakta (3.52%). A small proportion of participants produced the Arabic loan *ssbet* (4.25%)[98]. This variant was recorded mainly in the region of Segnia and Harakta. A third Arabic loan was also produced, *taḥmilt* (3.36%)[99]. This was recorded mainly in Occidental Aurès (10.75%), in particular in O. Abdi and O. Labiod, and in Batna city.

In addition to the three Arabic loans mentioned earlier, a French loanword was also recorded in the data, namely *ssantura* (7.87%). Its absence in Tashawit texts and realization in the data indicate that it is a relatively new borrowing in Tashawit. This was recorded only in tiny fractions in the regions of Occidental Aurès (10.3%), Bellezma (12.99%), Segnia (6.4%) and Nemamcha (8.97%).

Another variant that appears in the data is *tazellumt*[100]. This was produced only by a tiny fraction of respondents (4.88%). It is the most frequent variant in the region of Nemamcha (46.15%). It was also produced, though less frequently, in Oriental Aurès (21%).

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[98] This is a direct loan from the word *sebta* 'leather belt, without pocket, for males' (Bocthor, 1828). Its ultimate source is most likely the Arabic word *sibt* 'tanned leather' (Lane, 1968).

[99] See Paulmier (1850).

[100] The word *azellum* denotes a rope of goat hair or mane and a belt made of such a rope (Huyghe, 1906, 1907).

All other responses that were produced to denote the present item are irrelevant, e.g. *tasɣunt* ‘rope’, *fuli* ‘thread’, etc.

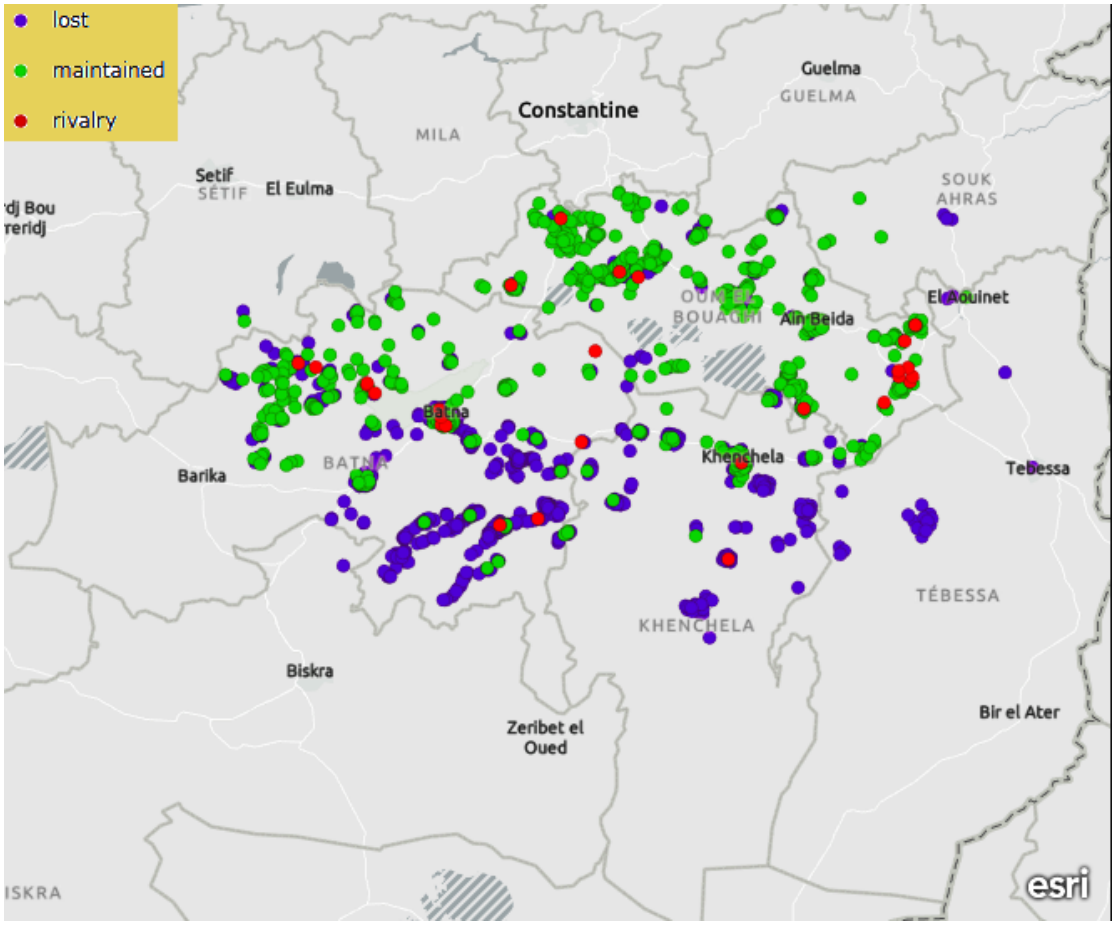
Table 4.43 ‘belt’: frequencies of lexical variants

lexical variant	**number of tokens**
abeggas …	742
taḥezzamt …	550
ssbet	67
taḥmilt	53
ssantura	124
tazellumt …	77
others	30
NR	231
Total	1874

Even though the Berber variant is still used considerably, lexical loss remains the dominant trend: L (belt) = 60.28% (χ^2 = 80.83, p < 0.001). It is important to note, nonetheless, that lexical loss differs cross-regionally (χ^2 = 123.45, $p < 0.001$). Lexical maintenance is prominent in the northeastern regions: Segnia (L = 25.67%) and Harakta (L = 29.23%). Although the rate of lexical loss is lower in the region of Segnia, the analysis has revealed that speakers of this region are only 1.2 times more likely to preserve the Berber variant compared to those living in the region of Harakta (χ^2 = 0.986, p = 0.32). The Berber variant is also maintained considerably in the northwestern region, i.e. Bellezma (L = 42.64%). The analysis has revealed important differences in terms of lexical loss compared to the northeastern regions. The relative odds of lexical loss in Bellezma are significantly higher: 1.8 to 1 compared to the region of Harakta (χ^2 = 12.22, p < 0.001) and 2.15 to 1 compared to the region of Segnia (χ^2 = 16.35, p < 0.001).

Lexical loss is the norm in the southern regions. However, it suffers less obsolescence in Oriental Aurès (L = 73.79%) compared to Occidental Aurès (L = 94.85%) and Nemamcha (L = 98.88%). Accordingly, the odds of lexical loss in Oriental Aurès are 6.54 times lower than the Massif ($\chi^2 = 44.31$, $p < 0.001$) and 31.6 times lower than the region of Nemamcha ($\chi^2 = 11.39$, $p = 0.001$). The odds of lexical loss in the Massif are only 4.83 times higher compared to the region of Nemamcha ($\chi^2 = 2.35$, $p = 0.12$).

Map 4.43 Lexical loss of the Berber word(s) for 'belt' across Tashawit speaking area



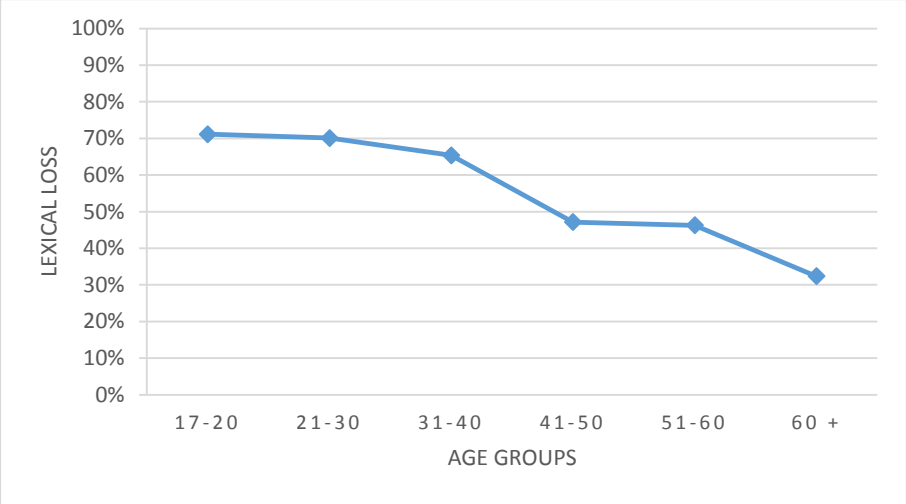
The odds lexical loss obtained in the southern regions are much higher compared to the northwestern region. The odds of lexical loss in Bellezma are 3.8 times lower than Oriental Aurès ($\chi^2 = 34.44$, $p < 0.001$), 24.8 times lower than Occidental Aurès ($\chi^2 = 172.37$, $p < 0.001$) and 119.74 times lower than the region of Nemamcha ($\chi^2 = 22.3$, p

< 0.001). Greater differences were revealed when the rates of lexical loss recorded in the southern regions were compared to those recorded in the northeastern regions. The odds of lexical loss in the region of Harakta are 6.82 times lower than Oriental Aurès (χ^2 = 76.66, p < 0.001), 44.59 times lower than Occidental Aurès (χ^2 = 256.03, p < 0.001) and 215.47 times lower than the region of Nemamcha (χ^2 = 28.2, p < 0.001). The relative odds of lexical loss in the region of Segnia are even lower compared to southern regions: 1 to 8.15 compared to Oriental Aurès (χ^2 = 79, p < 0.001), 1 to 53.33 compared to the Massif (χ^2 = 247.03, p < 0.001) and 1 to 257.7 times lower than the region of Nemamcha (χ^2 = 29.89, p < 0.001).

The comparison of the findings obtained across the different age groups revealed that age is an important predictor of lexical loss (χ^2 = 134.218, p < 0.001). Higher rates of lexical loss were recorded for younger age groups and lower rates were recorded for older age groups. The rate of lexical loss changes very slightly between the first age group ($L_{17\text{-}20}$ = 71.13%) and the second age group ($L_{21\text{-}30}$ = 70.08%). A speaker from the second age group is only 1.07 times more likely to maintain the Berber variant compared to a speaker from the first age group (χ^2 = 0.19, p = 0.66). The rate of lexical loss decreases also insignificantly between the second and the third age group ($L_{31\text{-}40}$ = 65.37%). The relative odds of lexical maintenance for speakers of the third age group are 1.19 to 1 compared to the second age group (χ^2 = 0.96, p = 0.33) and 1.27 to 1 compared to the first age group (χ^2 = 1.43, p = 0.23). The rate of lexical loss, then, decreases in a significant way between the third age group and the fourth age group ($L_{41\text{-}50}$ = 47.14%). The relative odds of lexical maintenance for speakers of the fourth age group are 2.11 to 1 compared to those of the third age group (χ^2 = 13.08, p < 0.001). Speakers of this group, however, are only 1.09 times more likely to lose the Berber variant compared to those of the fifth age group ($L_{51\text{-}60}$ = 46.25%) (χ^2 = 0.2, p = 0.65).

The lowest rate of lexical loss was obtained for the sixth age group (L_{+60} = 32.37%). The odds of lexical maintenance for this group are 1.79 times higher than the fifth group (χ^2 = 7.19, p = 0.007) and 1.94 times higher than the fourth age group (χ^2 = 8.91, p = 0.003).

Fig. 4.43 Lexical loss of the Berber word(s) for 'belt' across age groups



4.1.6.2. Mirror

The most common Berber word for 'mirror' is traced to the root **SY**. The derivative attested in Tashawit, *tisit* (Huyghe, 1906: 312, 421) is similar in form to those attested in other Berber languages[101].

Three main variants were produced in the data to designate the present item, one is the Berber variant and two are Arabic borrowings. The Berber variant is less frequent compared to Arabic loans (16.64%). The most recurrent variant in the data is the Arabic loan *alemmaɛ* (62.7%). The second Arabic loan *tamrayt*, realized sometimes as *lemri*, accounted for around one fifth of total number of tokens produced (20.2%).

[101] **Cognates:** *tisit* (Masqueray, 1893; Foucauld, 1951), *tisit* (Destaing, 1914; Serhoual, 2002; Delheure, 1984, 1987; *tisit* (Motylinski, 1898); *tisit n udem* (Sarnelli, 1924), *tist n agĕwâl*, literally 'mirror of seeing' (Van Putten, 2013), etc. In Ghadamès we encounter the words *taẓurut* Lanfry, 1973), *teẓrut* and *teẓru* (Lanfry, 1973). These, according to Lanfry (1973), designate 'a big mirror of imported from the Occident'.

The three variants are distributed differently across the regions of the study. The Berber variant is used mainly in Occidental Aurès (48.86%). This region alone covers 80.61% of the total number of tokens produced for this variant. It is used in a dominant way in O. Labiod, in particular the localities of Foum Toub, Ichmoul, Arris, Tighanimine, Ghassira, Inoughissen and Tkout. It was also recorded, though less frequently, in other localities in the Massif, as in Ouyoun el Assafir and in O. Abdi. The loan *alemmaɛ* is prevalent all over the eastern regions, Segnia (89.72%), Harakta (87.53%), Nemamcha (90.9%) and Oriental Aurès (89.15%), in addition to the eastern and western territories of the Massif (49.9%). The variant *tamrayt*, on the other hand, is used in a prominent way in Bellezma (85.95%). It was also produced, though much less frequently, in the regions of Segnia (9.09%) and Harakta (11.14%).

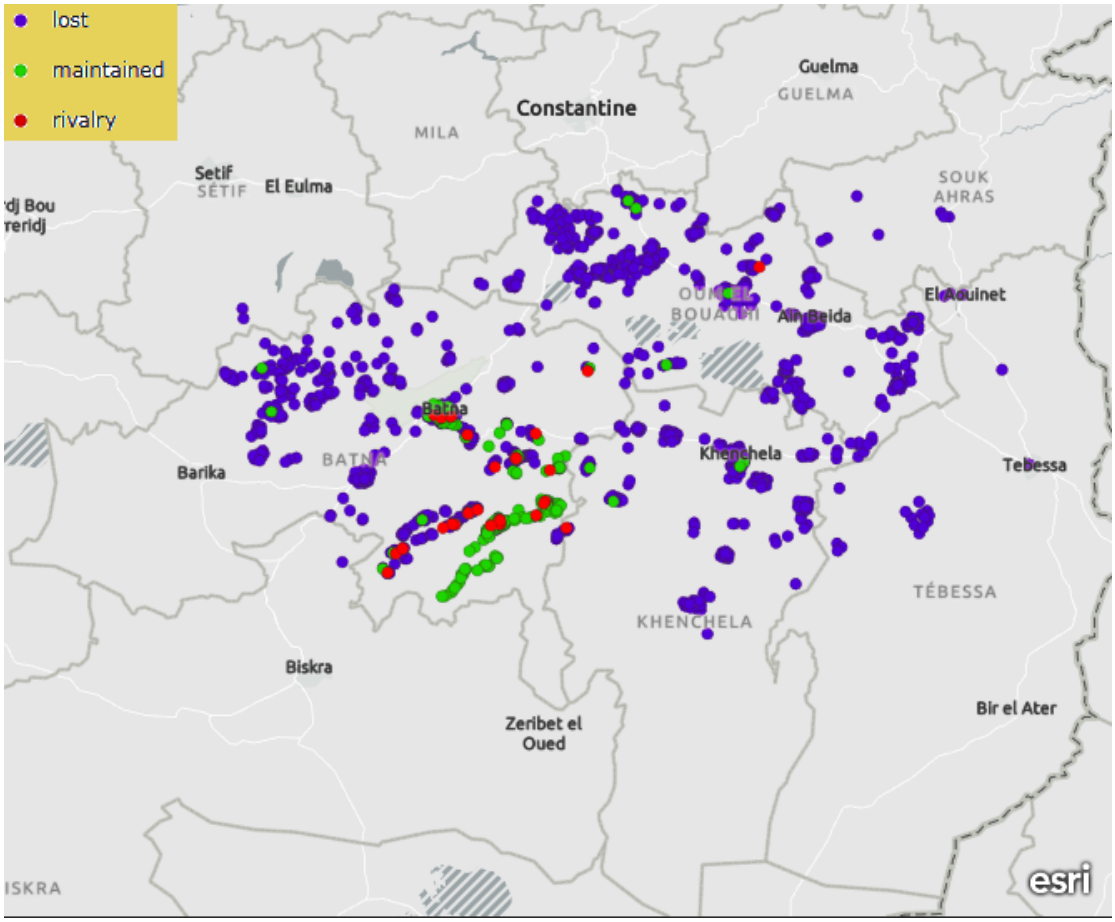
Table 4.44. 'mirror': frequencies of lexical variants

lexical variant	**number of tokens**
tisit	294
alemmaɛ	1108
tamrayt …	357
others	8
NR	99
Total	1866

Based on the findings shown above, the rate of lexical loss obtained for the present lexical variable is higher than the previous item: L (mirror) = 84.24% ($\chi^2 = 873.92$, $p < 0.001$). As can be noticed in Map 4.44 below, the loss of the Berber variant is regionally determined ($\chi^2 = 37.25$, $p < 0.001$). The Berber equivalent for 'mirror' is maintained moderately in the Aurès Massif, in particular in the territory of O. Labiod (L = 49.14%). Beyond the Massif, the Berber variant is almost only used in Batna city by speakers who are originally from the Massif (L = 77.67%). Logistic regression analysis has

revealed that a speaker from the Massif, regardless of the locality he lives in, is 3.6 times more likely to use the Berber variant compared to a speaker living in Batna city ($\chi^2 = 44.86$, $p < 0.001$).

Map 4.44 Lexical loss of the Berber word(s) for 'mirror' across Tashawit speaking area



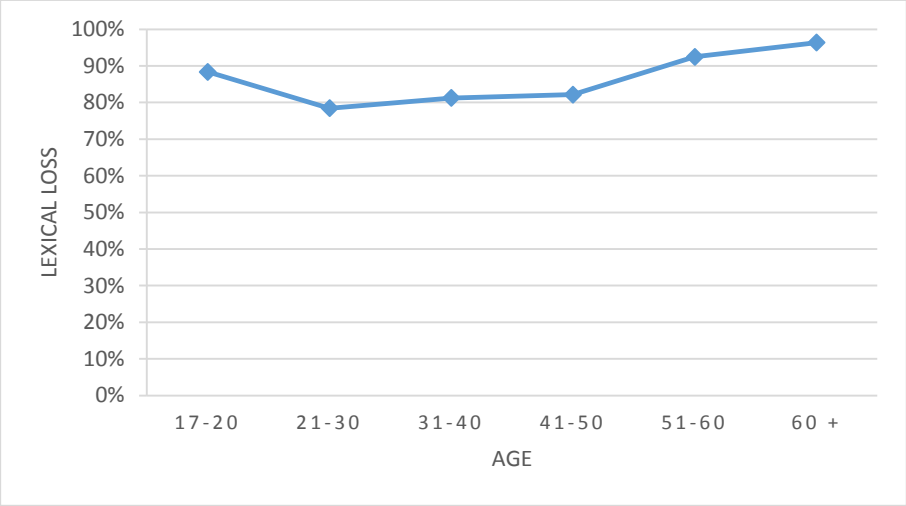
The Berber variant can be judged as obsolete, or virtually obsolete, in the remaining regions: Oriental Aurès (L = 97.93%), Harakta (L = 98.97%), Bellezma (L = 99.22%), Segnia (L = 99.23%) and Nemamcha (L = 100%). Little variation is observed across these regions. Speakers of Oriental Aurès are only 2.04 times more likely to preserve the Berber variant compared to those of the region of Harakta ($\chi^2 = 0.86$, $p = 0.35$), 2.7 times more likely compared to those of Bellezma ($\chi^2 = 1.17$, $p = 0.28$) and 2.73 times more likely compared to those of the region of Segnia ($\chi^2 = 1.2$, $p = 0.27$). In a similar way, speakers of the region of Harakta are only 1.33 times more likely to preserve the

Berber variant compared to those of Bellezma ($\chi^2 = 0.1$, $p = 0.74$) and 1.34 times more likely compared to those of the region of Segnia ($\chi^2 = 0.11$, $p = 0.73$). The relative odds of lexical loss in Bellezma compared to the region of Segnia are 1 to 1 ($\chi^2 = 0$, $p = 0.99$). Conversely, the analysis has revealed a great deal of regional variation between the Massif and other regions. The relative odds of lexical maintenance in this region are 49 to 1 compared to Oriental Aurès ($\chi^2 = 43.4$, $p < 0.001$), 99.87 to 1 compared to the region of Harakta ($\chi^2 = 81.51$, $p < 0.001$), 132.47 to 1 compared to Bellezma ($\chi^2 = 46.59$, $p < 0.001$) and 134.02 to 1 compared to the region of Segnia ($\chi^2 = 46.82$, $p < 0.001$).

Cross-generational analysis of the data obtained for the present item has revealed a significant relationship between lexical loss and age ($\chi^2 = 50.798$, $p < 0.001$). The rate of lexical loss decreases significantly between the first age group ($L_{17\text{-}20} = 88.35\%$) and the second age group ($L_{21\text{-}30} = 78.43\%$). Speakers aged between 21 and 30 years are 2.08 times more likely to preserve the Berber variant compared to speakers between the age of 17 and 20 years ($\chi^2 = 13.7$, $p < 0.001$). The difference calculated, however, between the second and the third age group ($L_{31\text{-}40} = 81.23\%$) and between the third and the fourth age group ($L_{41\text{-}50} = 82.15\%$) are insignificant. Speakers of the second age group are only 1.11 times more likely to maintain the Berber variant compared to those of the third age group ($\chi^2 = 0.27$, $p = 0.6$) and 1.26 times more likely compared to those of the fourth age group ($\chi^2 = 1.38$, $p = 0.24$). In a similar way, the relative odds of lexical loss for speakers of the third age group are 1 to 1.14 compared to those of the fourth age group ($\chi^2 = 0.25$, $p = 0.62$). We, then, observe an abrupt significant increase between the fourth and the fifth age group ($L_{51\text{-}60} = 92.47\%$), with relative odds of lexical loss of 1 to 2.32 respectively ($\chi^2 = 8.7$, $p = 0.003$). The increase of lexical loss continues for the sixth group ($L_{+60} = 96.34\%$). This increase is statistically insignificant; speakers of the sixth age group are only 2.33 times more likely to lose the Berber variant compared

to those of the fifth age group ($\chi^2 = 3.2$, $p = 0.074$), but 5.41 times more likely compared to those of the fourth age group ($\chi^2 = 13.86$, $p < 0.001$).

Fig. 4.44 Lexical loss of the Berber word(s) for 'mirror' across age groups



4.1.7. Food & Drink

4.1.7.1. Salt

There exists one single equivalent for 'salt' in Berber[102]. The variants reported in the literature for Tashawit are *tisent*, *hisen* and *isen* (Huyghe, 1906: 639).

The analysis of the data gathered for the present lexical item has revealed a rivalry between three main variants, the Berber word and two Arabic loans. The Berber variant was produced only by a small minority (11.25%). It is retained today in the Massif (29.94%), where nearly three quarters of the total number of tokens of this variant were produced (74.62%). It is used mainly across the localities of the southern edge of the Massif, namely Inoughissen, Tkout, Ghassira, Menaa and Tigherghar. It is also used, though less frequently, in other localities of O. Labiod, namely Arris, Ichmoul and Tighanimine, and even less in the upper part of O. Abdi. The majority of the remaining

[102] **Cognates:** *tisemt* (Masqueray, 1893; Motylinski, 1809), *têsemt* (Foucauld, 1951), *tisent* (Destaing, 1938; Taïfi, 1991; Serhoual, 2002; Basset, 1885; Delheure, 1984, 1987; Provotelle, 1911; Dallet, 1982; Lanfry, 1973; Sarnelli, 1924; Basset, 1890; Motylinski, 1904; Van Putten, 2013), etc.

tokens produced for the present variant were recorded in Batna city (18.32%). The Berber variant was produced only by a handful of speakers in other regions. In the region of Nemamcha, in particular, the Berber variant was completely missing.

The most frequent variant in the data is the loanword *lmelḥ* / *lemleḥ* (54.08%). The second Arabic loan *ɣrbeḥ* or *rrəbḥ* is less frequent (34.15%). This loan is traced to the Arabic root **RBḤ** which signifies 'winning'. It is used euphemistically to substitute the word *lmelḥ* for pessimistic concerns. The first Arabic loanword is more dominant than the second in most regions: Occidental Aurès (49.09% vs. 20.49%), Oriental Aurès (52.17% vs. 40.87%), Bellezma (64.59% vs. 33.85%), Segnia (52.17% vs. 46.64%), Harakta (50.69% vs. 47.35%) and Nemamcha (58.51% vs. 30.85%). The difference between the two variants in such regions is not always significant. Rather, we can distinguish between three areas. The first area covers a number of localities where the first Arabic loanword is dominant or, at least more frequent. This covers most of the localities of the Massif, the northern and, in particular, the northwestern areas of Bellezma, such as Ras el Aioune, Ouled Si Slimane, Gosbat, Talkhemt, etc., the southern part of Segnia, the northwestern and southeastern localities of the region of Harakta, and a number of localities in the region of Nemamcha and Oriental Aurès. The second area covers localities where the second loan is more frequent, mainly in the southeast of Bellezma, the northern localities of the region of Segnia, and a number of other localities in the southern part of the region of Harakta, Oriental Aurès and some northeastern localities in the Massif. Still, in a number of other localities, especially in Bellezma and Oriental Aurès, a rivalry is observed between the two variants.

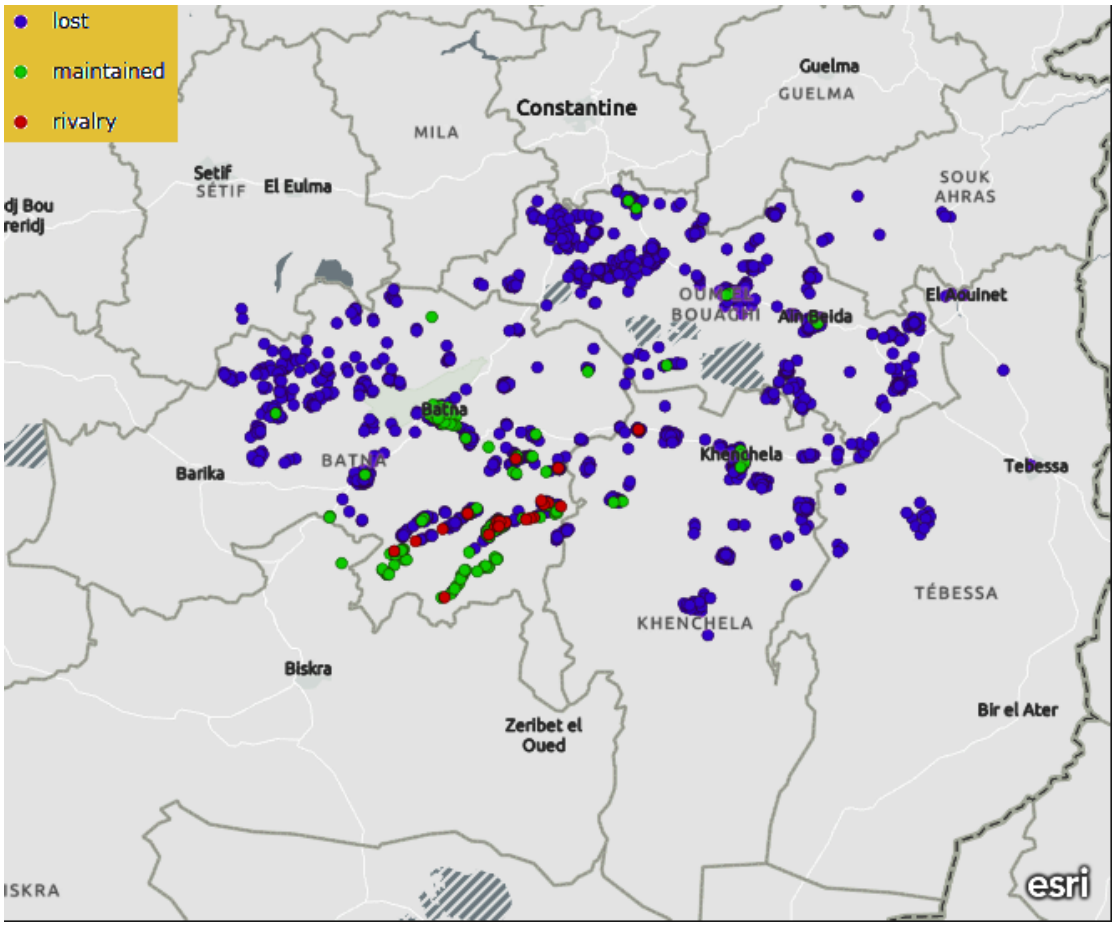
The present item has evoked few irrelevant responses. These include *asebxi*, literally '... of marsh', *ajdid* 'new' and *tisit* 'mirror', which was confused with *tisent* due to phonological resemblance.

Table 4.45 ‘salt’: frequencies of lexical variants

lexical variant	**number of tokens**
tisent …	197
lmelḥ …	947
rrebḥ …	598
others	9
NR	181
Total	1932

The Berber word for ‘salt’ is marginally maintained in Tashawit: L (salt) = 89.8%, (χ^2 = 320.327, $p < 0.001$). The analysis has revealed a significant relationship between lexical loss and region (χ^2 = 150.22, $p < 0.001$). Lexical loss, as displayed in Map 4.45 below, is extremely prominent in the eastern and northern regions: Oriental Aurès (L = 96.55%), Harakta (L = 98.72%), Bellezma (L = 98.84%), Segnia (L = 99.23%) and Nemamcha (L = 100%). No significant differences were obtained across these regions with regard to the loss of the Berber variant. The odds of lexical loss in Oriental Aurès are 2.75 times higher than the region of Harakta (χ^2 = 2.5, p = 0.11), 3.04 times higher than Bellezma (χ^2 = 2.26, p = 0.13) and 4.62 times higher than the region of Segnia (χ^2 = 3.3, p = 0.07). The relative odds of lexical loss in the region of Harakta are 1 to 1.10 compared to Bellezma (χ^2 = 0.02, p = 0.89) and 1 to 1.68 compared to the region of Segnia (χ^2 = 0.39, p = 0.54). Speakers of Bellezma are only 1.52 times more likely to preserve the Berber variant compared to those living in the region of Segnia (χ^2 = 0.21, p = 0.65).

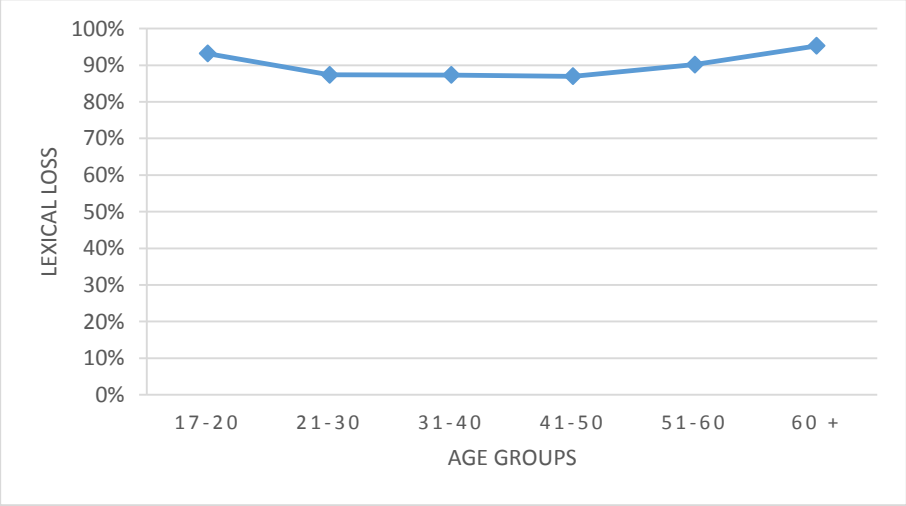
Map 4.45 Lexical loss of the Berber word(s) for ‘salt’ across Tashawit speaking area



The Berber equivalent for ‘salt’, is maintained to some degree in Occidental Aurès (L = 68.45%). The analysis has revealed important differences between the Massif and all other regions. The relative odds of lexical maintenance in this region are 12.9 to 1 compared to Oriental Aurès ($\chi^2 = 30.13$, $p < 0.001$), 35.48 to 1 compared to the region of Harakta ($\chi^2 = 59.93$, $p < 0.001$), 39.17 to 1 compared to Bellezma ($\chi^2 = 38.75$, $p < 0.001$) and 59.68 to 1 compared to the region of Segnia ($\chi^2 = 32.54$, $p < 0.001$). In addition to the Massif, the Berber variant is retained to some degree in Batna city (L = 83.01%). The analysis has revealed that speakers living in this city are 2.25 times less likely to preserve the Berber variant compared to those living in Occidental Aurès ($\chi^2 = 14.85$, $p < 0.001$), but at least 5.73 times more likely to preserve it compared to any other region.

The analysis has shown some significant differences across the variable of age (χ^2 = 15.909, p = 0.0071). The rate of lexical loss decreases significantly between the first age group ($L_{17\text{-}20}$ = 93.17%) and the second age group ($L_{21\text{-}30}$ = 87.36%). It is 1.95 times more likely for a speaker from the second age group to maintain the Berber variant compared to a speaker from the first age group (χ^2 = 7.15, p = 0.007). The rate of lexical loss remains almost stable between the second age group, the third age group ($L_{31\text{-}40}$ = 87.32%) and the fourth age group ($L_{41\text{-}50}$ = 87%). The relative odds of lexical loss for speakers of the second age group are 1.02 to 1 compared to those of the third age group (χ^2 = 0.004, p = 0.95) and 1.01 to 1 compared to those of the fourth age group (χ^2 = 0.003, p = 0.95). The odds of lexical loss for the third age group are identical to the fourth age group (χ^2 = 0, p = 0.99). The rate of lexical loss increases, though only slightly, for the fifth age group ($L_{51\text{-}60}$ = 90.16%). Speakers of this group are only 1.36 times less likely to preserve the Berber variant compared to those of the fourth age group (χ^2 = 1.1, p = 0.29). The highest rate of lexical loss was recorded for the sixth age group (L_{+60} = 95.28%). The odds of lexical loss for this age group, however, is only 2.28 times higher compared to those of the fifth age group (χ^2 = 3.5, p = 0.061), but 3.11 times higher compared to those of the fourth age group (χ^2 = 6.71, p = 0.01).

Fig. 4.45 Lexical loss of the Berber word(s) for 'salt' across age groups



4.1.7.2. Sieve (v.)

The most common Berber equivalent for this item among the different Berber varieties is traced to the root **FF**[103]. The Berber variant is attested in Tashawit: *siff* (Huyghe, 1906: 69).

Speakers' responses to the present item cluster around four main variants, one is the Berber variant and three are Arabic loans. The Berber variant *siff*, also realized as *sisef*, was produced by a minority of informants (23.21%). It is preserved mainly in the region of Harakta (57.01%). It is also the most frequent, yet not the dominant, variant in Bellezma (37.19%), in particular the territory of O. Sultan in the southwestern part of the region, and the region of Segnia (25.01%), mainly in the northern localities. The Berber variant was recorded in small proportions in Oriental Aurès (11.21%) and Occidental Aurès (3.11%), and was revealed to be completely missing in the region of Nemamcha.

The most frequent variant in the data is the Arabic loan *ɣerbel* (39.91%). As can be inferred from its frequency, however, this variant is not dominant over all the regions covered in the present study. It is prevalent mainly in the regions of Nemamcha (79.76%), the Massif (63.33%) and Oriental Aurès (51.4%). It is less frequent in Bellezma (35.54%) and, even less common, in the regions of Harakta (21.67%) and Segnia (11.74%).

Another important variant that was produced in the data is the Arabic loan *ṣeyyeṛ*. The analysis has shown that this second loan is less recurrent than the former (21.38%).

[103] **Cognates:** *ssaff*, *ssiff* (Destaing, 1938), *siff* (Roux and Chaker, 2019), *sifef* (Mercier, 1937), *ssifef*, *ssafef* (Mourigh, 2016), *sifef* (Serhoual, 2002), *siff* (Renisio, 1932), *ssif* (Destaing (1914), *siff* (Delheure, 1984), *iff*, *ifif*, *siffif* (Delheure, 1987), *ssiff* (Dallet, 1982), *sif* (Motylinski, 1898), *sisef* (Van Putten, 2013), etc. The word used in Tuareg to denote the present item is *seksek* (Foucauld, 1951). In Teggargrent, the word *ezwi* is also used to denote the present item (Delheure, 1987). However, the exact meaning of this word is 'to winnow' (cf. Delheure, 1984; Lanfry, 1973; Saad, 2013).

It is dominant in the region of Segnia (60.73%). It is also used in the southeastern part of the region of Harakta (21.94%) and the eastern and central localities of Bellezma (23.14%). It is even less recurrent in Oriental Aurès (11.21%) and Occidental Aurès (9.33%).

The third Arabic borrowing that was recorded in the data, *rebbeḥ*, is less recurrent than both of the Arabic loans mentioned earlier (6.65%). It is traced back to the Arabic word *rbeḥ* 'to win'. This variant seems to have originated as a word used to denote the present item because it was thought to bring good fortune (cf. *rrebḥ* 'salt'). It was produced mainly in the Massif (20.00%), in particular in O. Abdi and a number of adjacent localities. The number of its occurrences in this region alone accounted for 81.01% of the total number of its tokens. It is almost completely missing in other regions, except in Batna city. The speakers who produced this variant in this particular locality are originally from O. Abdi.

The analysis of the data collected from the participants has revealed a fifth variant, that is *zerred*. The origin of this word is not clear. It is unlikely to be an Arabic loan; all the meanings associated with the root **ZRD** in Arabic are irrelevant. It is possible that this word is a derivative of the same root from which *tazzert* 'pitchfork' derive, i.e. **ZR**. If this is the case, the original meaning of this word should be 'to winnow' instead of 'to sieve'. This variant was produced only by a tiny fraction of speakers (1.92%). It was recorded in Oriental Aurès (10.28%), the region of Nemamcha (5.95%) and Occidental Aurès (3.11%).

Besides the five variants mentioned above, a number of irrelevant responses were produced by a small number of participants. These include *ṣeffa* 'to purify', *sizdi* 'to filtrate', *neqqa* 'to refine', *huzz* 'to shake', *ftel* 'to make couscous from durum wheat',

zuzzer ‘to winnow’, *serg* ‘to sort out’, *ezḍ* ‘to grind’, *tallumt* ‘a sieve’, *ellem* ‘to spin’ (coined from the previous word), *ɛawed* ‘to repeat’, etc.

Table 4.46 ‘to sieve’: frequencies of lexical variants

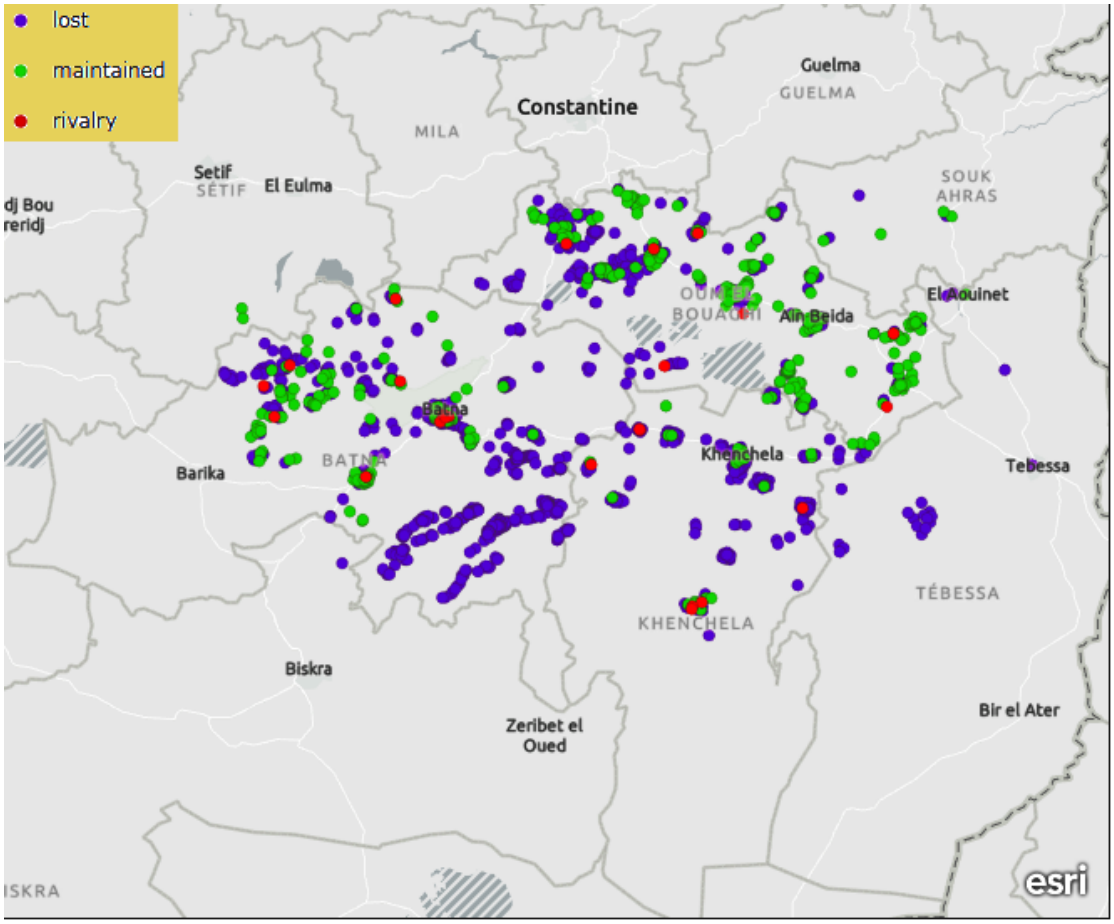
lexical variant	**number of tokens**
siff / *sisef*	406
ɣerbel	698
ṣeyyeṛ	374
rebbeḥ	111
zerred	33
others	46
NR	205
Total	1873

Lexical loss is the dominant trend for the present item: L (sieve) = 78.32% (χ^2 = 595.38, p < 0.001). This dominance varies, however, from one region to another (χ^2 = 109.742, p < 0.001). The Berber variant suffers less obsolescence in the Northern regions (see Map 4.46 below). It is maintained moderately in the region of Harakta (L = 50.51%) and to a considerable degree in Bellezma (L = 65.12%). The analysis has revealed that the odds of lexical maintenance in Bellezma are 1.83 times lower compared to the region of Harakta (χ^2 = 13.34, p < 0.001). However, the Berber variant is maintained better in Bellezma than the region of Segnia (L = 76.24%); the relative odds of lexical loss in the former are 1 to 1.72 compared to the latter (χ^2 = 7.69, p < 0.001).

Lexical loss is extremely dominant in the southern regions. However, it is less striking in Oriental Aurès (L = 87.59%) compared to Occidental Aurès (L = 97%) and the region of Nemamcha (L = 97.78%). Speakers of this region are 4.58 times less likely to lose the Berber variant compared to those of the Massif (χ^2 = 16.87, p < 0.001) and 6.24 less likely compared to those of the region of Nemamcha (χ^2 = 11.39, p = 0.001).

The odds of lexical loss in the Massif, however, are only 1.36 times lower compared to the region of Nemamcha ($\chi^2 = 0.16$, $p = 0.69$).

Map 4.46 Lexical loss of the Berber word(s) for 'to sieve' across Tashawit speaking area

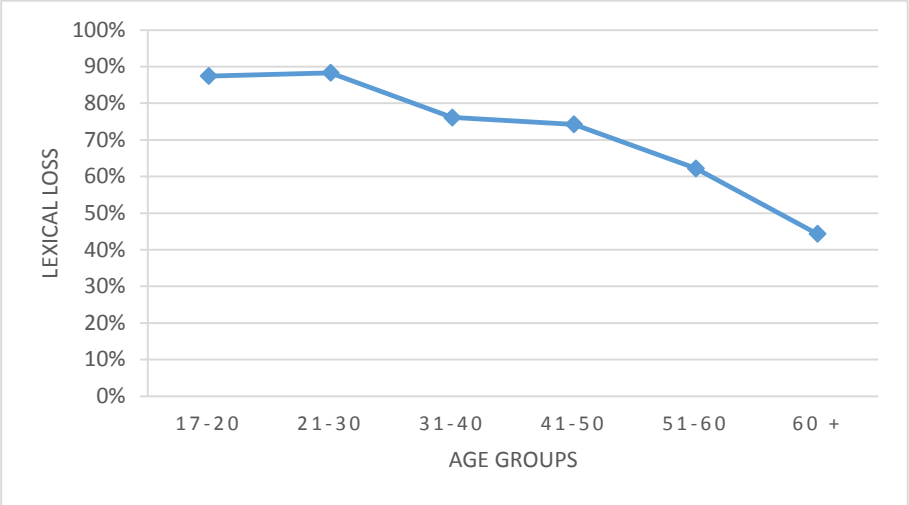


The analysis has revealed significant differences between the rates of lexical loss obtained in the southern regions and the northern regions. The odds of lexical loss in Bellezma are 3.78 times lower than Oriental Aurès ($\chi^2 = 21.96$, $p < 0.001$), 17.3 times lower than Occidental Aurès ($\chi^2 = 89.58$, $p < 0.001$) and 23.57 times lower than the region of Nemamcha ($\chi^2 = 18.9$, $p < 0.001$). Significant differences were also recorded with regard to the region of Segnia. The relative odds of lexical loss in this region are 1 to 2.2 compared to Oriental Aurès ($\chi^2 = 7.33$, $p < 0.001$), 1 to 10.06 compared to Occidental Aurès ($\chi^2 = 56.22$, $p < 0.001$) and 1 to 13.71 times compared to the region of Nemamcha ($\chi^2 = 12.87$, $p < 0.001$). Greater relative odds of lexical loss were obtained

between the southern regions and the region of Harakta: 1 to 6.91 compared to Oriental Aurès ($\chi^2 = 50.72$, $p < 0.001$), 1 to 31.63 compared to Occidental Aurès ($\chi^2 = 142.21$, $p < 0.001$) and 1 to 43.11 compared to the region of Nemamcha ($\chi^2 = 27.16$, $p < 0.001$).

The comparison of the results obtained for the different age groups has revealed that age is an important predictor of lexical loss ($\chi^2 = 33.6$, $p < 0.001$). The rate of lexical loss changes very slightly between the first age group ($L_{17\text{-}20} = 87.44\%$) and the second age group ($L_{21\text{-}30} = 88.33\%$). A speaker from the second age group is only 1.08 times more likely to maintain the Berber variant compared to a speaker from the first age group ($\chi^2 = 0.14$, $p = 0.71$). The rate of lexical loss decreases in a significant way between the second and the third age group ($L_{31\text{-}40} = 76.14\%$). The relative odds of lexical maintenance for speakers of the third age group are 2.31 to 1 compared to the second age group ($\chi^2 = 15.95$, $p < 0.001$). However, the odds of lexical maintenance for speakers of the fourth age group ($L_{41\text{-}50} = 74.25\%$) compared to those of the third age group are only 1.12 times higher ($\chi^2 = 0.24$, $p = 0.62$), but 2.59 times higher compared to the second age group ($\chi^2 = 23.67$, $p < 0.001$). The rate of lexical loss decreases significantly for the fifth age group ($L_{51\text{-}60} = 62.22\%$). Speakers of this group are 1.78 times more likely to maintain the Berber variant compared to the fourth age group ($\chi^2 = 8.08$, $p = 0.004$). The lowest rate of lexical loss was recorded for the sixth age group ($L_{+60} = 44.36\%$). The relative odds of lexical maintenance for this group are 2.03 to 1 times compared to the fifth age group ($\chi^2 = 11.49$, $p = 0.001$).

Fig. 4.46 Lexical loss of the Berber word(s) for ‘to sieve’ across age groups



4.1.7.3. Yeast

The Berber word for ‘yeast’, which derives from the root **MTN**, is preserved essentially in Northern Berber varieties[104]. It is realized in Tashawit as *amtun* (Huyghe, 1907: 56). This variant was produced only by a tiny fraction of respondents (4.53%), mainly in Occidental Aurès (11.54%) and Batna city (11.23%). Its frequency elsewhere is completely insignificant, accounting only for 5.33% of the total number of its tokens. The Berber variant was either totally missing, as in the regions of Bellezma and Nemamcha, or was produced by one or two speakers, as in the regions of Harakta, Segnia and Oriental Aurès.

The overwhelming majority of the participants have produced the Arabic loan *taxmirt* (92.44%). This prevails over all regions, in particular Oriental Aurès (98.3%), Segnia (99.6%), Harakta (99.7%), Bellezma (100%) and Nemamcha (100%). The Arabic loan is also prevalent, though in a less striking way, in the Massif (88.46%) and Batna city (88.76%).

[104] **Cognates:** *tamtent* (Destaing, 1938), *tamtunt*/*tantunt* (Roux and Chaker, 2019), *antun* (Serhoual, 2002), *tamtunt* (Destaing, 1914; Dallet, 1982), etc.

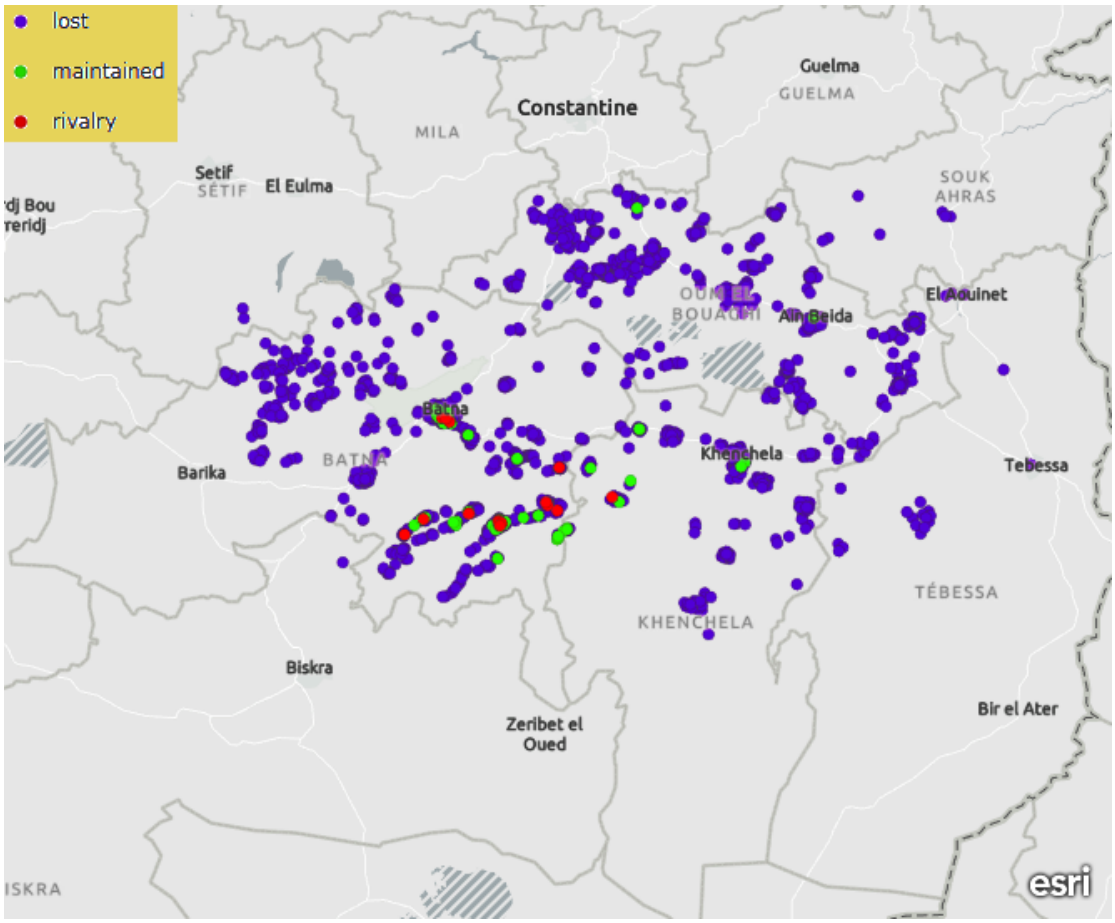
A number of irrelevant responses were recorded in the data, e.g. *ukfil* / *akfil*, *ameṭluɛ* ‘fermented bread’, *aγṛum* ‘bread’, *arekti* ‘dough’, etc.

Table 4.47 ‘yeast’: frequencies of lexical variants

lexical variant	**number of tokens**
amtun	75
taxmirt	1529
others	50
NR	189
Total	1843

The Berber word for ‘yeast’ is preserved only marginally in Tashawit: L (yeast) = 95.93% (χ^2 = 105.92, p < 0.001). Although lexical loss is prominent in all regions, the analysis has revealed that the use the Berber variant is regionally determined (χ^2 = 105.92, p < 0.001). The Berber equivalent for ‘yeast’, is maintained marginally in the Massif (L = 89.05%) and in Batna city (L = 90.29%). The difference recorded between Batna city and the Massif is statistically insignificant; the odds of lexical loss are 1 to 1.14 respectively (χ^2 = 0.23, p = 0.23). In the remaining regions, lexical loss is extremely prominent or absolute: Oriental Aurès (L = 98.62%), Segnia (L = 99.62%), Harakta (L = 99.74%), Bellezma (L = 100%) and Nemamcha (L = 100%). The differences obtained across these regions are insignificant statistically. For instance, the odds of lexical loss in Oriental Aurès are 3.64 times higher than the region of Segnia (χ^2 = 1.1, p = 0.29) and 5.44 times higher than the region of Harakta (χ^2 = 1.9, p = 0.17). The relative odds of lexical loss in the region of Harakta are 1.5 to 1 compared to the region of Segnia (χ^2 = 0.081, p = 0.78).

Map 4.47 Lexical loss of the Berber word(s) for ‘yeast’ across Tashawit speaking area

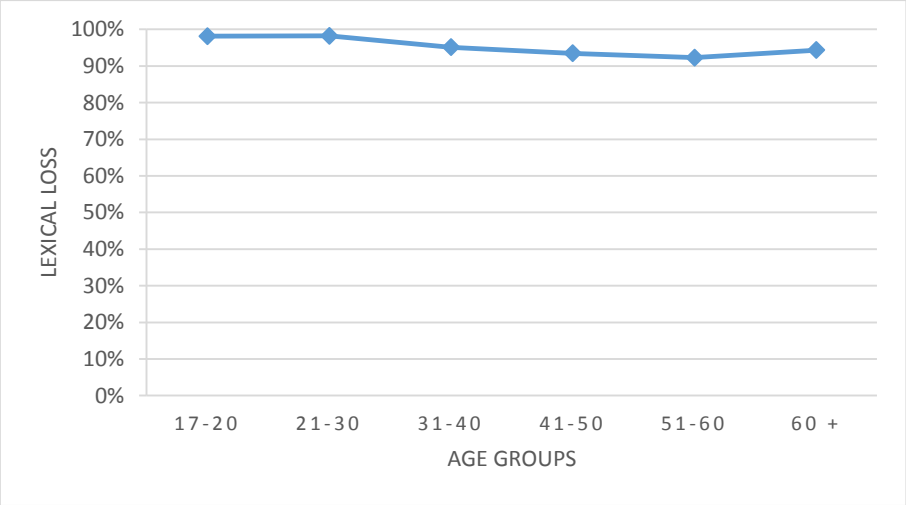


The comparison of the northern and eastern regions to the southwestern ones has revealed significant differences. It is 8.79 times more likely for the Berber variant to be preserved in the Massif than Oriental Aurès ($\chi^2 = 8.93$, $p = 0.003$), 31.95 times more likely compared to the region of Segnia ($\chi^2 = 11.7$, $p = 0.001$) and 47.8 times more likely compared to the region of Harakta ($\chi^2 = 14.6$, $p < 0.001$). Speakers living in the city of Batna are 7.69 times more likely to maintain the Berber variant compared to those of Oriental Aurès ($\chi^2 = 7.4$, $p = 0.007$), 27.96 times more likely compared to those living in the region of Segnia ($\chi^2 = 10.47$, $p = 0.001$) and 41.83 times more likely compared to those living in the region of Harakta ($\chi^2 = 13.18$, $p < 0.001$).

The statistical analysis has also revealed some degree of variation across the different age groups ($\chi^2 = 26.85$, $p < 0.001$). The rate of lexical loss remains almost

unchanged between the first age group ($L_{17\text{-}20}$ = 98.12%) and the second age group ($L_{21\text{-}30}$ = 98.23%). The odds of lexical loss for the first and the second age groups are identical ($\chi^2 = 0$, $p = 1$). The rate of lexical loss decreases in a significant way between the second and the third age group ($L_{31\text{-}40}$ = 95.11%). Speakers of this group are 2.62 times less likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 4.76$, $p = 0.03$). However, the difference observed between the third and the fourth age group ($L_{41\text{-}50}$ = 93.46%) is insignificant; the relative odds of lexical loss for the third age group are 1.56 to 1 compared to the fourth age group ($\chi^2 = 1.08$, p = 0.3). The decrease observed for the fifth age group ($L_{51\text{-}60}$ = 92.28%) also turned out to be insignificant. Speakers of this age group are only 1.13 times more likely to preserve the Berber variant compared to those of the fourth age group ($\chi^2 = 0.13$, p = 0.72) and 1.76 times more likely compared to those of the third age group ($\chi^2 = 1.92$, p = 0.17). The rate of lexical loss increases slightly for the sixth age group (L_{+60} = 94.33%); the relative odds of lexical loss for this group are only 1.44 times higher compared to the fifth age group and ($\chi^2 = 0.79$, $p = 0.37$).

Fig. 4.47 Lexical loss of the Berber word(s) for 'yeast' across age groups



4.1.8. Sense Perception

4.1.8.1. Heavy

There is only one single Berber equivalent for 'heavy'. This is traced to the root **ẒY**[105]. In Tashawit, the variants *iẓay* (Huyghe, 1906: 389) and *iẓag* (Basset, 1961: 389), which stem from the same root, are also attested.

Contrary to the findings obtained for many of the variables targeted in the present study, which revealed a dominance of Arabic borrowings, the analysis of the data elicited for this lexical item showed that the Berber variant is more frequent (65.12%). The Berber word prevails over the regions of Bellezma (89.41%), Segnia (87.9%) and Occidental Aurès (79.39%). It is also used, though much less frequently in the regions of Harakta (38.95%), in particular the northern part, and Oriental Aurès (14.28%). The data obtained from the participants in the region of Nemamcha showed that the use of the Berber variant is very rare (1.2%).

The second most recurrent variant in the data is the Arabic loan *etqel*. Also realized as *edqel*, the Arabic borrowing represented slightly over one third of the total number of responses produced (34.19%). It is prominent in the eastern regions: Harakta (63.64%), Oriental Aurès (86.06%) and Nemamcha (97.95%). The Arabic loan is not widely used in other regions: Bellezma (10.2%), Segnia (12.11%) and Occidental Aurès (20.61%)

Other responses were recorded in the data, but all of them are considered irrelevant, e.g. *eṛẓen* 'to be sedate', *yezzur* 'thick'. One informant has produced *iṛẓag* 'bitter'. It is obvious that this informant, who lacks full command of the Berber form, has confused

[105] **Cognates**: *iẓay* (Foucauld, 1951), *iẓḍiy* (Destaing, 1938) *amaẓay* (Taïfi, 1991), *amaẓẓay* (Serhoual, 2002), *iẓa* (Destaing (1914), *eẓẓa* (Delheure, 1984), *ẓẓa* (Delheure, 1987), *aẓayan* (Dallet, 1982), *iẓẓa* (Motylinski, 1898), *ẓak* Lanfry, 1973), *ẓẓak* (Van Putten, 2013), etc.

iẓag for a word which means something entirely different due to phonological resemblance.

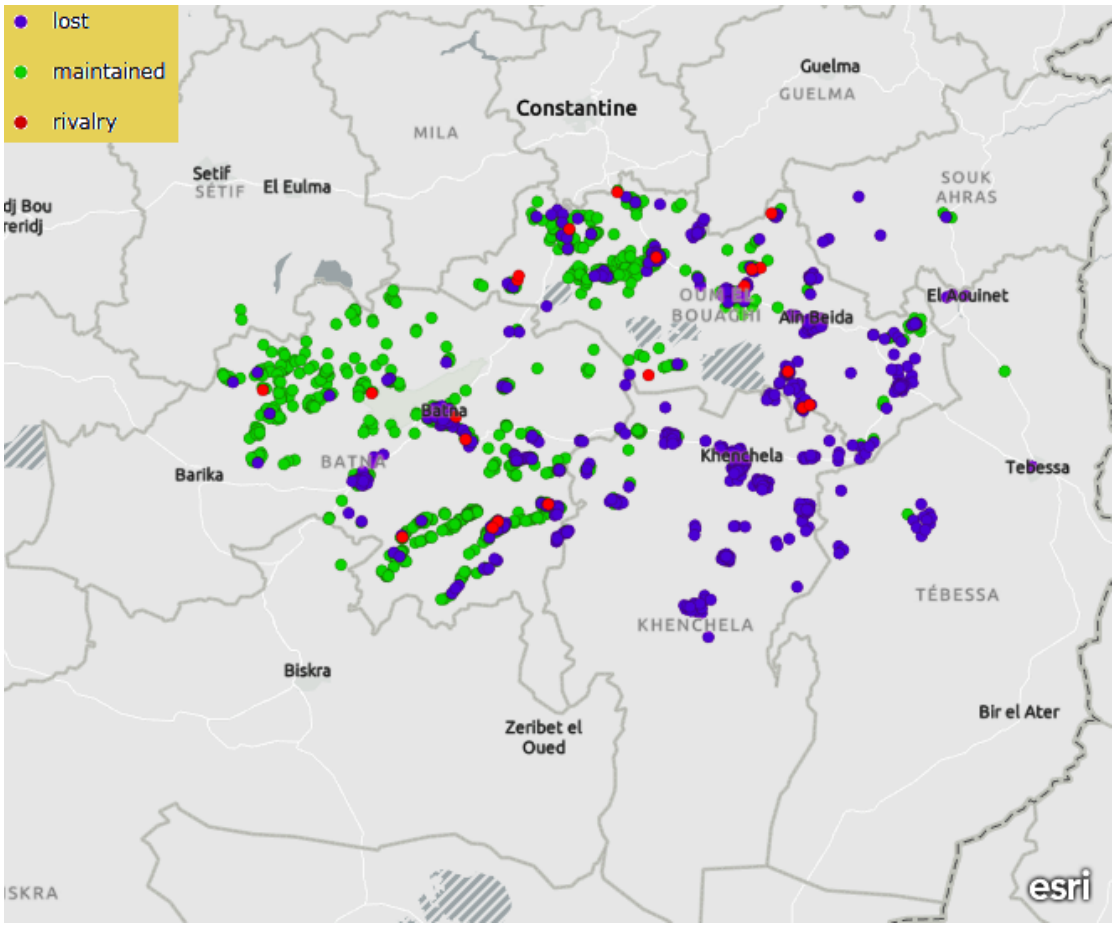
Table 4.48 ‘heavy’: frequencies of lexical variants

lexical variant	**number of tokens**
iẓag / *iẓagy*	1141
etqel / edqel	599
others	12
NR	89
Total	1841

The rate of lexical loss calculated for the present item is low compared to most other lexical items: L (heavy) = 38.02% (χ^2 = 105.92, p < 0.001). The analysis has revealed that lexical loss is closely associated with region (χ^2 = 105.92, p < 0.001). The Berber variant is preserved in three main regions: Bellezma (L = 12.02%), Segnia (L = 15.71%) and Occidental Aurès (L = 21.46%). Little regional variation was recorded across these three regions. The odds of lexical loss in the Massif are two times higher than Bellezma (χ^2 = 9.74, p = 0.002), but only 1.47 times higher than the region of Segnia (χ^2 = 3.51, p = 0.06). The odds of lexical loss in the region of Segnia are only 1.36 times higher compared to Bellezma (χ^2 = 1.47, p = 0.22).

Lexical loss is dominant in the regions of Harakta (L = 62.31%), Oriental Aurès (L = 88.97%) and, in particular, Nemamcha (L = 97.78%). The loss of the Berber variant varies considerably across these three regions. It is 4.88 times less likely for a speaker from the region of Harakta to lose the Berber variant compared to another from Oriental Aurès (χ^2 = 30.93, p < 0.001) and 26.62 times less likely compared to another from the region of Nemamcha (χ^2 = 20.62, p < 0.001). Speakers of this latter are 5.46 times more likely to lose the Berber variant compared to those of Oriental Aurès (χ^2 = 4.95, p = 0.026).

Map 4.48 Lexical loss of the Berber word(s) for ‘heavy’ across Tashawit speaking area

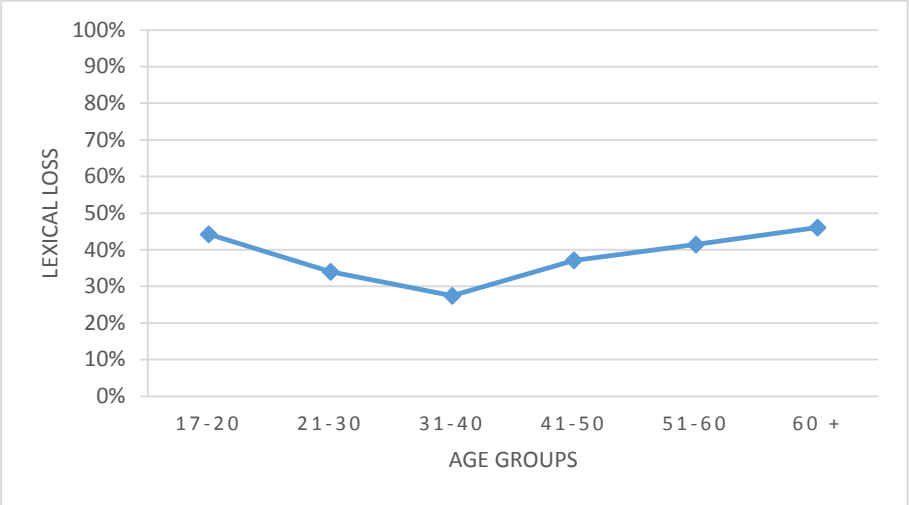


The analysis has revealed greater regional differences between the two sets of regions. The odds of lexical loss in the region of Harakta are 6.06 times higher than Occidental Aurès ($\chi^2 = 137.01$, $p < 0.001$), 8.85 times higher than the region of Segnia ($\chi^2 = 119.54$, $p < 0.001$) and 12.05 times higher than Bellezma ($\chi^2 = 130.68$, $p < 0.001$). The odds of lexical loss in Oriental Aurès are 29.41 times higher than the region of Occidental Aurès ($\chi^2 = 138.05$, $p < 0.001$), 43.47 times higher than the region of Segnia ($\chi^2 = 143.09$, $p < 0.001$) and 58.82 times higher than Bellezma ($\chi^2 = 155.6$, $p < 0.001$). Greater differences were revealed with regard to the region of Nemamcha. Speakers of this region are 166.67 times more likely to lose the Berber variant compared to those of Occidental Aurès ($\chi^2 = 49.27$, $p < 0.001$), 250 times more likely compared to those

of the region of Segnia ($\chi^2 = 55.26$, $p < 0.001$) and 333.33 times more likely than those of Bellezma ($\chi^2 = 60.86$, $p < 0.001$).

The analysis has also revealed that lexical loss is associated with age ($\chi^2 = 23.69$, $p < 0.001$). The rate of lexical loss decreases between the first age group ($L_{17\text{-}20} = 44.2\%$), the second age group ($L_{21\text{-}30} = 34\%$) and the third age group ($L_{31\text{-}40} = 27.54\%$). Speakers of the first age group are 1.51 times more likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 8.6$, $p = 0.003$) and 2.13 times more likely compared to those of the third age group ($\chi^2 = 13.98$, $p < 0.001$). However, speakers of the second age group are only 1.41 times more likely to lose the Berber variant compared to those of the third age group ($\chi^2 = 3.45$, $p = 0.63$). The rate of lexical loss increases significantly between the third and the fourth age group ($L_{41\text{-}50} = 37.11\%$). The relative odds of lexical loss for speakers of the latter are 1.63 to 1 in comparison with those of the former ($\chi^2 = 5.03$, $p = 0.025$). The rate of lexical loss continues increasing between the fourth and the fifth age group ($L_{51\text{-}60} = 41.44\%$). However, this increase is statistically insignificant; speakers of this group are only 1.17 times more likely to lose the Berber variant compared to those of the fourth age group ($\chi^2 = 0.65$, $p = 0.42$). The highest rate of lexical loss was recorded for the sixth age group ($L_{+60} = 46.05\%$). The odds of lexical loss for speakers of this age group are only 1.23 times higher compared to those of the fifth age group ($\chi^2 = 1.04$, $p = 0.31$) and 1.44 times higher than those of the fourth age group ($\chi^2 = 2.87$, $p = 0.09$), but 2.35 times higher than those of the third age group ($\chi^2 = 13.47$, $p < 0.001$).

Fig. 4.48 Lexical loss of the Berber word(s) for ‘heavy’ across age groups



4.1.8.2. Light (adj.)

The Berber word for ‘light’ is attested in most Berber varieties[106]. Derivatives of the Berber root from which the different cognates emerge, i.e. **FS**, are also attested in Tashawit: *fessis* ‘light’, *feses* and *fess* ‘to be light’, etc. (Huyghe, 1906: 380).

In the data, the Berber variant accounted only for a small proportion of the total number of tokens produced (7.38%). It was produced mainly in Occidental Aurès (16.14%). Most of the tokens produced for the Berber variant were recorded in this region (72.13%), mainly in O. Abdi and O. Labiod. It is less frequent in the northeastern part of the region. Most of the remaining tokens, i.e. 22.95%, were recorded in Batna city (15.22%). The Berber variant was produced only by a handful of speakers in the regions of Harakta (1.22%), Segnia (0.41%) and Bellezma (0.41%). It is completely missing in Oriental Aurès and the region of Nemamcha.

[106] **Cognates**: *fesus* (Masqueray, 1893), *ifsas* (Foucauld, 1951), *ifsus* (Destaing, 1938) *afessas*, *anafsas* (Taïfi, 1991), *afsas* (Serhoual, 2002), *nufsus* (Destaing (1914), *Chenoua* (Laoust, 1912), *fessis* (Huyghe, 1906), *efsus* (Basset, 1885), *efsus* (Delheure, 1987), *afessas* (Dallet, 1982), *Nefoussa* (Motylinski, 1898), *afessas* Lanfry, 1973), *fesus* (Van Putten, 2013), etc.

In contrast to the Berber variant, the Arabic loan, *yxeff / yexfif*, was produced by the vast majority of respondents (91.96%). It is prominent in all the regions covered in the present study. However, it is less dominant in Occidental Aurès (79.82%) compared to the remaining regions: Harakta (98.51%), Segnia (99.18%), Bellezma (99.59%), Oriental Aurès (100%) and Nemamcha (100%).

Few irrelevant responses were recorded in the data, e.g. *azdad* 'thin', *iless* 'smooth', *iṛhef* 'fragile', etc.

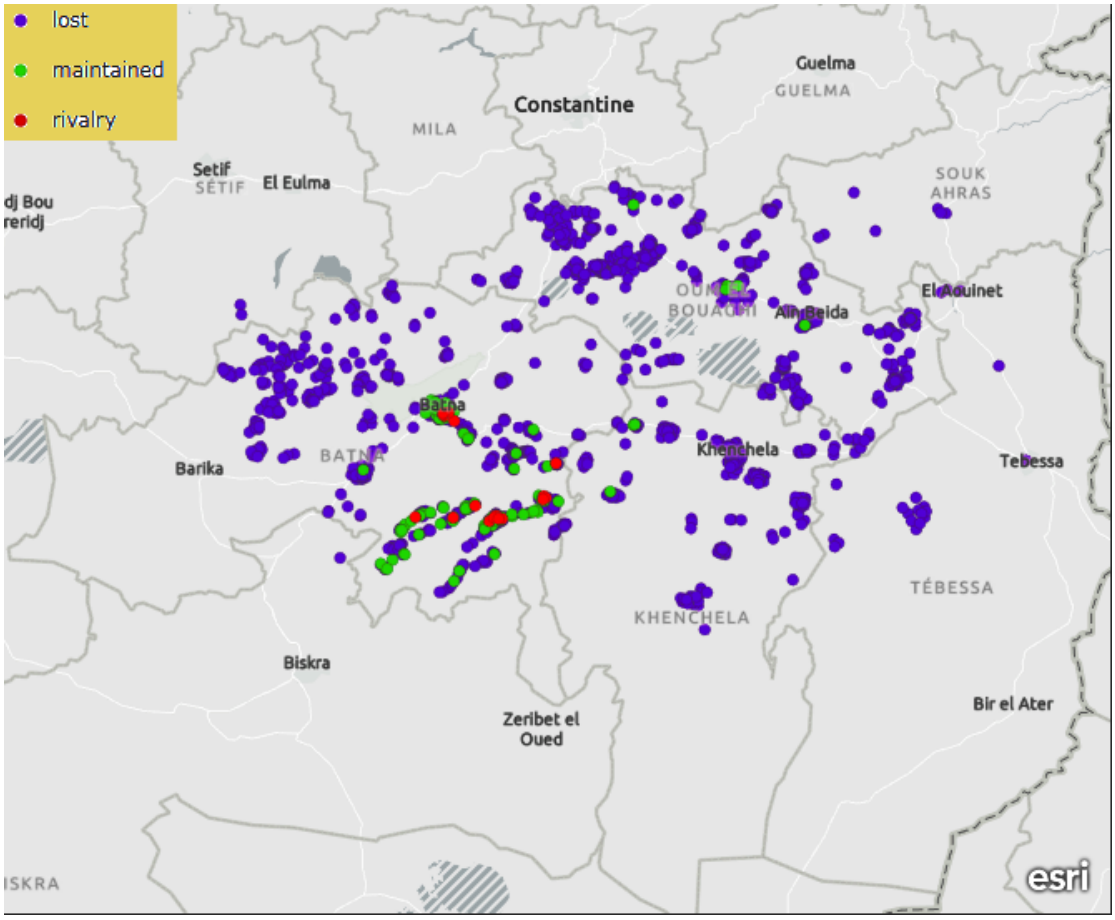
Table 4.49 'light': frequencies of lexical variants

lexical variant	**number of tokens**
ifess …	122
ixeff …	1511
others	11
NR	182
Total	1826

The rate of lexical loss calculated for the present variable is very high: L (light) = 93.32% (χ^2 = 1373.78, $p < 0.001$). Although lexical loss is dominant in all regions, it still has a significant relationship with region (χ^2 = 23.42, p = 0.0051). The Berber variant, as it can be noticed in Map 4.49 below, has become obsolete or virtually obsolete in most regions: Harakta (L = 98.72%), Bellezma (L = 99.61%), Segnia (L = 98.97%), Oriental Aurès (L = 100%) and Nemamcha (L = 100%). The analysis has revealed no significant differences between these rates. The odds of lexical loss in the region of Harakta are only 2.66 times lower than Bellezma (χ^2 = 0.76, p = 0.38) and 2.69 times lower than the region of Segnia (χ^2 = 0.78, p = 0.38). The odds of lexical loss in Bellezma are the same as in the region of Segnia (χ^2 = 0, p = 1). The Berber variant is preserved to some degree in Occidental Aurès (L = 81.16%). The odds of lexical loss in this region are significantly lower than all other regions. Speakers of the

Massif are 22.47 times less likely to lose the Berber variant compared to those of the region of Harakta ($\chi^2 = 36.33$, $p < 0.001$), 59.83 times less likely compared to those of Bellezma ($\chi^2 = 16.45$, $p < 0.001$) and 60.53 times less likely compared to those of the region of Segnia ($\chi^2 = 16.54$, $p < 0.001$). The Berber variant survives to some extent in Batna city (L = 86.41%). The analysis has revealed that speakers residing in this locality are only 1.48 times more likely to lose the Berber variant compared to those living in the Massif ($\chi^2 = 2.78$, $p = 0.096$), but at least 15 times less likely to lose it compared to the speakers of any other region.

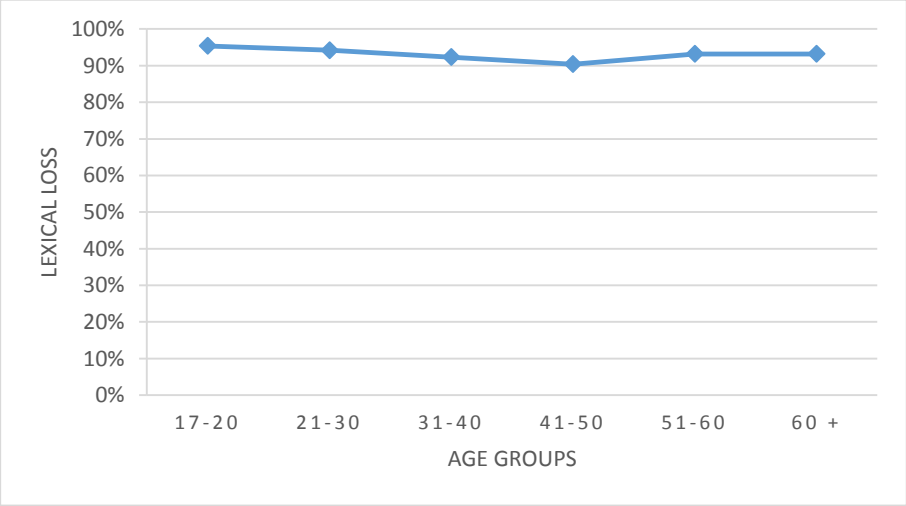
Map 4.49 Lexical loss of the Berber word(s) for 'light' across Tashawit speaking area



Overall, the analysis has revealed no significant relationship between lexical loss and age for the item under consideration ($\chi^2 = 4.88$, $p = 0.43$). The rate of lexical loss decreases slightly between the first age group ($L_{17\text{-}20} = 95.38\%$), the second age group

($L_{21\text{-}30}$ = 94.21%), the third age group ($L_{31\text{-}40}$ = 92.33%) and the fourth age group ($L_{41\text{-}50}$ = 90.41%). The odds of lexical loss for the first age group are only 1.23 times higher than the second age group (χ^2 = 0.45, p = 0.5) and 1.52 times higher than the third age group (χ^2 = 1.42, p = 0.27). However, speakers of the first age group are 2.23 times more likely to lose the Berber variant than those of the fourth age group (χ^2 = 4.06, p = 0.04). Speakers of the second age group are only 1.24 times more likely to lose the Berber variant compared to those of the third age group (χ^2 = 0.46, p = 0.5) and 1.63 times more likely compared to those of the fourth age group (χ^2 = 1.42, p = 0.27). In a similar way, speakers of the third age group are only 1.31 more likely to lose the Berber variant compared to those of the fourth age group (χ^2 = 0.57, p = 0.45). The rate of lexical loss increases slightly between the fourth and the fifth age group ($L_{51\text{-}60}$ = 93.17%). The odds of lexical loss for the fifth group are only 1.5 times higher than the fourth age group (χ^2 = 1.4, p = 0.24). The rate of lexical loss remains almost unchanged between the fifth and the sixth age group (L_{+60} = 93.21%). The relative odds of lexical loss for the sixth age group are only 1.03 times higher compared to the fifth age group (χ^2 = 0.004, p = 0.95).

Fig. 4.49 Lexical loss of the Berber word(s) for ‘light’ across age groups



4.1.8.3. Clean

The Berber equivalent for ‘clean’ derives from the root **ZDG**[107]. In Tashawit, the variant *zedig* is attested (Huyghe, 1906: 544). In the data elicited from the respondents, the Berber variant was realized as *azeddag*, *azedday* and *izdeg*. It accounted only for a tiny fraction of the total number of tokens produced (3.53%). It was recorded mainly in Oriental Aurès (23.15%) and the region of Nemamcha (17.24%). Its frequency is completely insignificant in other regions.

The most frequent variant in the data is the Arabic borrowing *yinḍif* (56.49%). Realized also as *yinḍaf* and *yenḍaf*, this loan prevails over the regions of Harakta (91.17%), Bellezma (84.36%), Nemamcha (73.56%), Segnia (57.37%) and Oriental Aurès (53.7%). It is less common, however, in Occidental Aurès (16.93%). The second Arabic loan, *yeṣfa*, is less frequent than the former (30.09%). It is prominent in Occidental Aurès (80.18%). It is also used, if less frequently, in a number of localities in the region of Segnia (37.85%). In the remaining regions, this second loan was found to be much less frequent: Oriental Aurès (14.81), Bellezma (8.23%), Harakta (5.13%) and Nemamcha (2.3%).

The rest of responses elicited from the subjects are irrelevant. These include *yirid* ‘washed’, *atrar* ‘new’, *acebḥan* ‘beautiful’, etc.

Table 4.50 ‘clean’: frequencies of lexical variants

lexical variant	**number of tokens**
azeddag…	59
yinḍif …	944
yeṣfa	603
others	65

[107] **Cognates**: *ahaddiğ* (Masqueray, 1893), *izzağ* (Foucauld, 1951), *Tashelhiyt* (Destaing, 1938) *azeddag*, *azedday*, (Taïfi, 1991), *amezdag* (Serhoual, 2002), *azedgan*, *azedyan* (Dallet, 1982), etc.

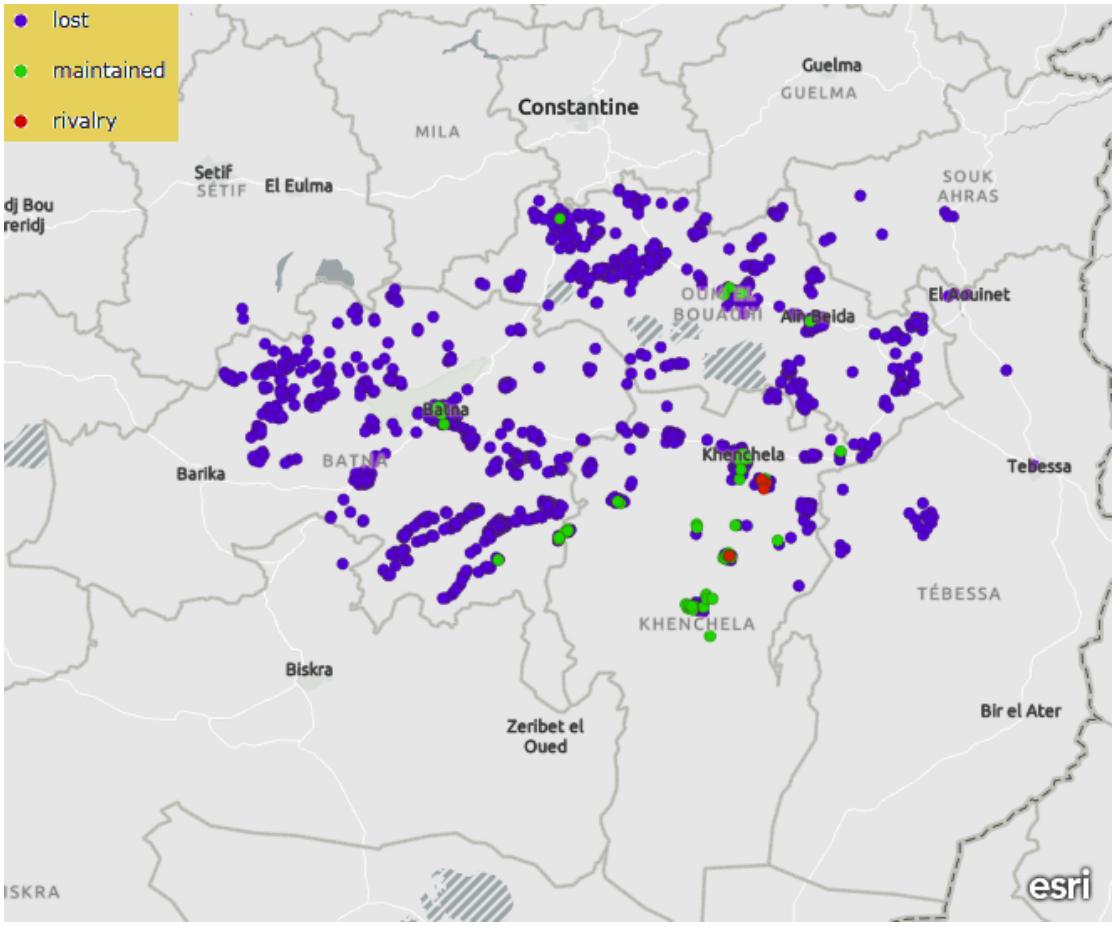
NR	178
Total	1849

The Berber word for ‘clean’ has declined seriously in Tashawit: L (clean) = 96.81% (χ^2 = 1613.68, p < 0.001). Lexical loss is the dominant trend in all regions. Yet, the analysis has revealed that the relationship between lexical loss and region is significant (χ^2 = 79.75, p < 0.001). Based on its spatial distribution (see Map 4.50 below), the Berber variant can be described as regional, being confined to the southern localities of Oriental Aurès (L = 82.76%) and the region of Nemamcha (L = 83.33%). The difference between the rates of lexical loss recorded in these regions is statistically insignificant. Speakers of the region of Nemamcha are only 1.04 times more likely to lose the Berber variant compared to those of Oriental Aurès (χ^2 = 0.013, p = 0.91).

The rates of lexical loss in other regions are significantly higher: Occidental Aurès (L = 98.28%), Harakta (L = 98.72%), Segnia (L = 99.62%) and Bellezma (L = 100%). The degree of obsolescence in these regions is almost constant; no statistically significant differences were obtained between the rates of loss recorded. The relative odds of lexical loss in the Massif are 1 to 1.34 compared to the region of Harakta (χ^2 = 0.27, p = 0.61) and 1 to 4.54 compared to the region of Segnia (χ^2 = 2.025, p = 0.15). The odds of lexical loss in the region of Harakta are only 3.38 times higher compared to the region of Segnia (χ^2 = 1.23, p = 0.27). More significant differences were obtained by comparing these regions to the southeastern ones. It is 11.45 times more likely for the Berber variant to be maintained in the region of Nemamcha compared to Occidental Aurès (χ^2 = 28.69, p < 0.001), 15.4 times more likely compared to the region of Harakta (χ^2 = 26.46, p < 0.001) and 52 times more likely compared to the region of Segnia (χ^2 = 14.4, p < 0.001). The relative odds of lexical maintenance in Oriental Aurès are 11.93 to 1 compared to Occidental Aurès (χ^2 = 35.01, p < 0.001), 16.04 to 1 compared to the

region of Harakta (χ^2 = 30.69, p < 0.001) and 54.17 to 1 compared to the region of Segnia (χ^2 = 15.15, p < 0.001).

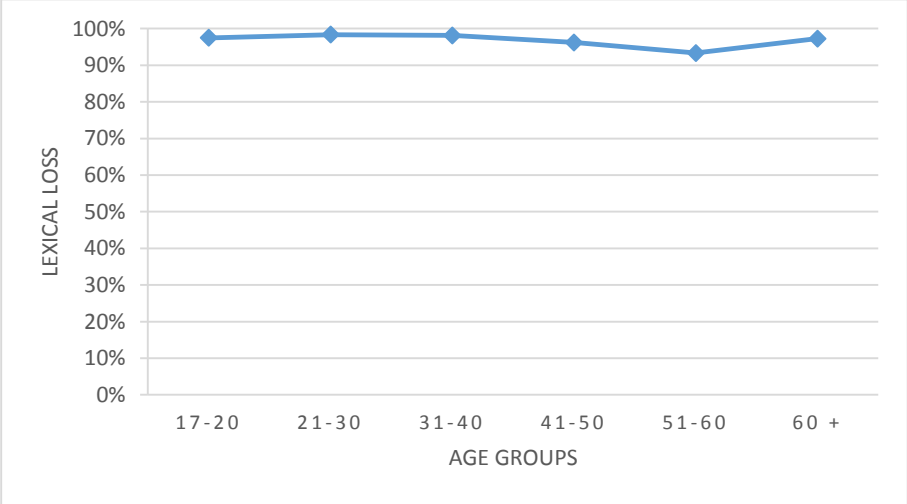
Map 4.50 Lexical loss of the Berber word(s) for ‘clean’ across Tashawit speaking area



The statistical analysis has revealed that the relationship between lexical loss and age is significant (χ^2 = 14.95, p = 0.011). The rate of lexical loss increases between the first age group ($L_{17\text{-}20}$ = 97.48%) and the second age group ($L_{21\text{-}30}$ = 98.36%) and, then, decreases for the third age group ($L_{31\text{-}40}$ = 98.15%). These changes turned out to be insignificant. Speakers of the second age group are only 1.56 times more likely to lose the Berber variant compared to those of the first age group (χ^2 = 1.14, p = 0.29) and 1.05 times less likely to lose it compared to those of the third age group (χ^2 = 0.007, p = 0.93). The rate of lexical loss decreases between the third and the fourth age group ($L_{41\text{-}50}$ = 96.22%). However, this decrease is not significant; the odds of lexical loss for

the third age group are 1.97 to 1 compared to the fourth age group (χ^2 = 1.23, p = 0.27). The rate of lexical loss also decreases between the fourth and the fifth age group (L_{51-60} = 93.33%). In a similar way, this change is insignificant; with relative odds of lexical loss of 1.76 to 1 respectively (χ^2 = 1.82, p = 0.18). However, the difference between the fifth and the third age group is significant. Speakers of the fifth age group are 3.46 times less likely to lose the Berber variant compared to those of the third age group (χ^2 = 4.89, p = 0.03). We observe an increase in the rate of lexical loss for the sixth age group (L_{+60} = 97.22%). Speakers of the sixth age, however, are only 2.85 times more likely to lose the Berber variant compared to those of the fifth age group (χ^2 = 3.46, p = 0.063).

Fig. 4.50 Lexical loss of the Berber word(s) for 'clean' across age groups



4.1.9. Spatial relations

4.1.9.1. Far

All Berber words that are used across the different varieties to denote the present item derive from one single root, **GǦ**[108]. A variant traced to this root, namely *yugej*, is found in Tibermacine (2009: 144). This word is not attested, to the best of our

[108] The resulting forms are attested in many Berber varieties: *yuǧeǧ* (Masqueray, 1893), *aǧeǧ* (Foucauld, 1951), *aggug*, (Destaing, 1938) *iaggug* and *iggugen* (Cid Kaoui, 1907; Destaing, 1938; Jordan, 1934), *gg^{w}ej* (Serhoual, 2002), *yaggug* (Bossoutrot, 1900), etc.

knowledge, in any other Tashawit text. The derivatives of the Berber root that are attested in Tashawit have a different, though not totally unrelated, meaning: *gajj* 'to travel', 'to emigrate', 'be nomad' and 'to leave' (Huyghe, 1907: 216; cf. Dallet, 1982; Serhoual, 2002; Roux and Chaker, 2019).

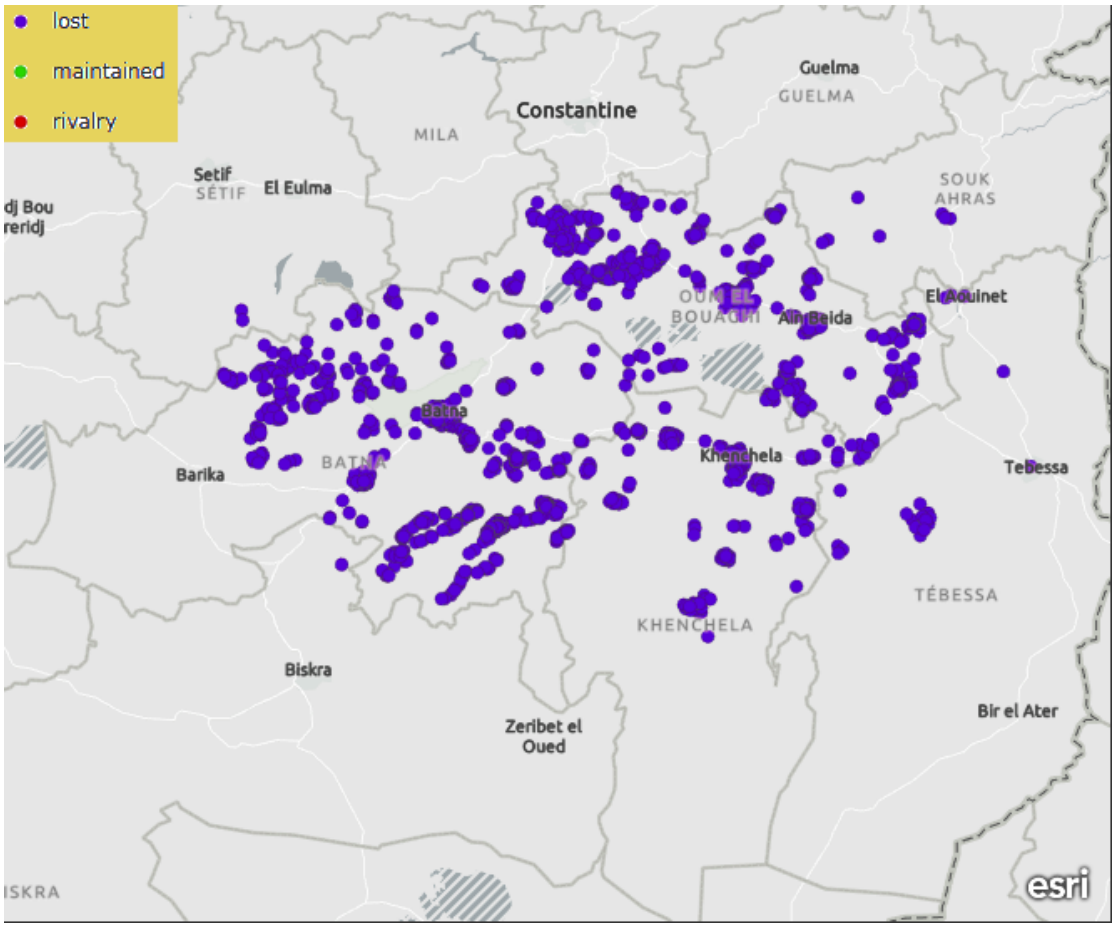
The analysis of the data has revealed a complete absence of the Berber variant. The great majority of the subjects have produced the Arabic loanword *yebɛed* (98.83%). The remaining informants have either avoided responding to the present item or resorted to the use of circumlocutions, such as *dun*, *duren* and *ɣadi* 'there', *awerdin* 'over there', etc.

Table 4.51 'far': frequencies of lexical variants

lexical variant	**number of tokens**
yebɛed	1690
others	19
NR	113
Total	1822

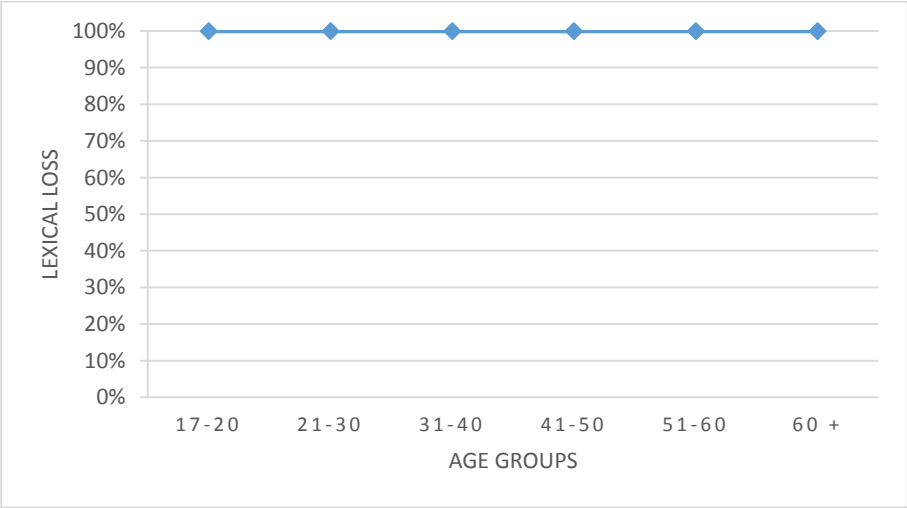
Based on the findings reported above, it can be said that the Berber word for 'far' has gone obsolete in Tashawit: L (far) = 100% ($\chi^2 = 1820$, $p < 0.001$). The Berber variant is, with no exception, lost all over the regions covered in the present study ($\chi^2 = 1820$, $p < 0.001$). The absence of the Berber variant in the earliest works on Tashawit indicates that the Berber variant has fallen into disuse for a long time.

Map 4.51 Lexical loss of the Berber word(s) for ‘far’ across Tashawit speaking area



As can be clearly noticed in Fig. 4.51 below, the Berber variant has also declined for all speakers regardless of their age ($\chi^2 = 1820$, $p < 0.001$).

Fig. 4.51 Lexical loss of the Berber word(s) for ‘far’ across age groups



4.1.9.2. Near

The most common Berber equivalent for 'near' stems from the Berber root **HẒ**[109]. In Tashawit, the verb *aẓ* 'to approach' or 'to come near or nearer' is attested, e.g. *aẓed ɣer.i* 'come near me' (Huyghe, 1907: 92). Tibermacine (2009) reported the word *yezzamaz* 'to approach' (p. 142). Expressions like *tazi hna* 'approach', *tazi lhih* 'go away' and the like are attested in Algerian vernacular Arabic. A less widely used Berber variant that denotes the present notion is traced to the Berber root **DS**[110]. The variant *yudes*, according to Tibermacine (2009: 144) is still used in Tashawit. This word, however, was not reported in other Tashawit texts.

The analysis of the data obtained for the present item has revealed a complete absence of any of the two Berber variants mentioned above. The overwhelming majority of the participants have produced the Arabic loan *yeqṛeb* (97.95%). It is predominantly used all over the regions covered in this study.

A number of circumlocutions were also produced to denote the notion in question. These include *s.tma, sma* 'besides', *f.idis* 'besides', *awra* 'over here', etc.

Table 4.52 'near': frequencies of lexical variants

lexical variant	number of tokens
yeqṛeb	1662
others	29
NR	136
Total	1827

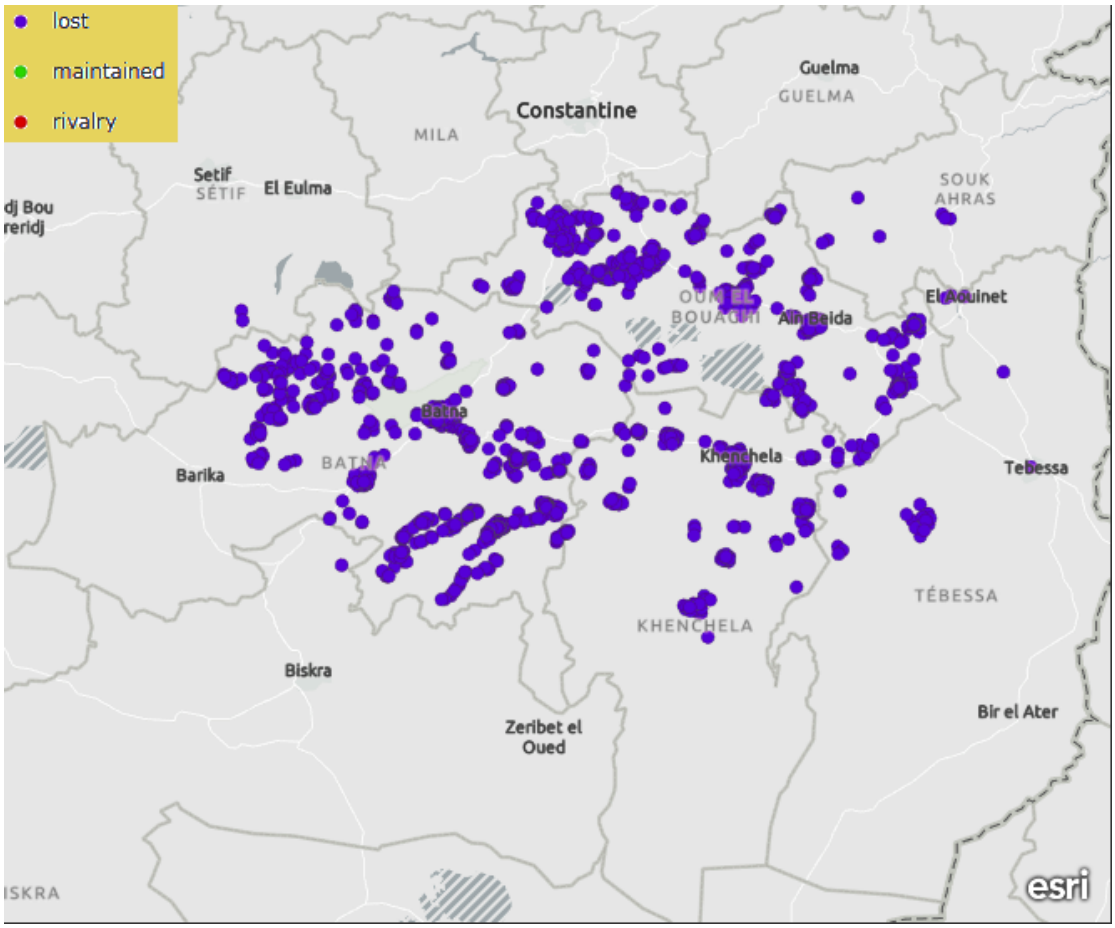
Based on the data elicited for the present item, we can regard the Berber words for 'near' as obsolete in Tashawit: L (near) = 100% ($\chi^2 = 1825.14$, $p < 0.001$). It is possible,

[109] **Cognates**: *yuẓ* 'to be near' (Basset, 1909), *yuhaẓ* 'to be near (to)' (Masqueray, 1893; Foucauld, 1951), *aẓ* 'to be near' (Destaing, 1938).

[110] A derivative of this root is attested in Tarifit: *yudis* 'to be near' (Basset, 1897) *yudes* 'close, near' (Serhoual, 2002).

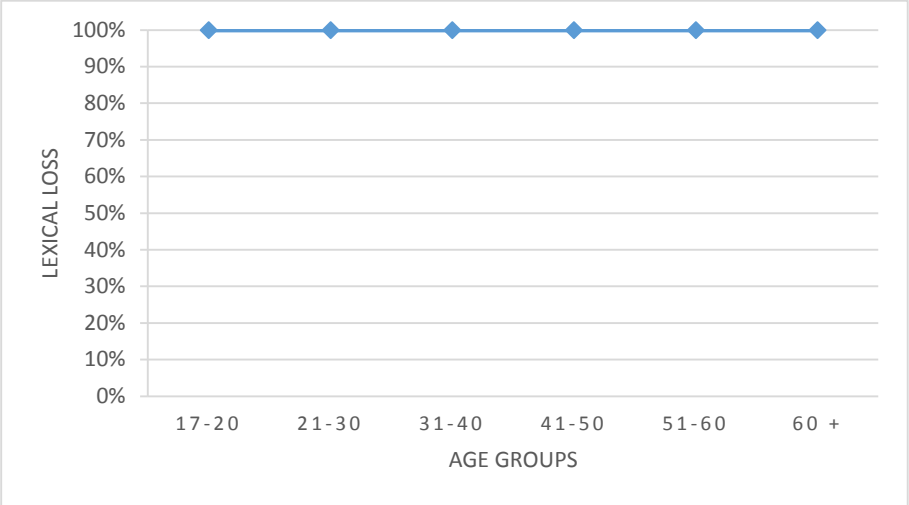
nonetheless, to regard the second Berber variant, i.e. *yudes*, as outdated or archaic taking into account that it was reported in one Tashawit text at least. It is evident, based on the rate of lexical loss calculated for the present notion, that there is no regional variation with regard to the use of the Berber variants. The above judgment holds true for all regions ($\chi^2 = 1825.14$, $p < 0.001$).

Map 4.52 Lexical loss of the Berber word(s) for 'near' across Tashawit speaking area



By the same token, it can be stated with great certainty that there is no relationship between age and the loss of the Berber variants ($\chi^2 = 1825.14$, $p < 0.001$). This also indicates that the Berber variant has fallen into disuse for a long period of time.

Fig. 4.52 Lexical loss of the Berber word(s) for 'near' across age groups



4.1.10. Speech and language

4.1.10.1. **Repeat** (a word, an utterance, etc.)

The present notion is denoted by Arabic loanwords in the majority of Berber languages. Only few Berber varieties seem to have preserved the Berber equivalent[111]. According to Haddadou (2007), the Berber variant, *ales*, is attested in Tashawit (p. 116). However, this claim is not supported by textual evidence. By contrary, the Berber variant was proven to be missing in almost all Tashawit texts. It was reported only in Saad (2013): *yulles* (aor. *alles*) (p. 94). The word *yules* (aor. *ales*) was assigned a different, though not unrelated, meaning, that is 'to tell (a story)' (Saad, 2013: 94; cf. Delheure, 1984).

A close examination of the data elicited in response to the present item has revealed a complete absence of the Berber variant. The overwhelming majority of the subjects have produced the Arabic borrowing *ɛawed* (Huyghe, 1906: 594; Ben Sedira, 1910: 569). It accounted for 97.91% of the total number of tokens produced. This loan is used

[111] The Berber word for 'to repeat' stems from the root **LS**. Derivatives of such a root are attested in a limited number of Berber texts: *ales* (Cid Kaoui, 1894, 1907; Destaing, 1938; Taifi, 1991) and *sniles* (Dallet, 1982).

in a predominant way in all regions. A second Arabic loan was also recorded in the data, namely *keṛṛeṛ* (Ben Sedira, 1910: 569). This was produced only by a tiny minority of respondents (1.67%). Based on its frequency and its absence in Tashawit texts, this response can only be regarded as a nonce borrowing. However, it is important to note that this word is used in a rather restricted sense in Tashawit, i.e. *ḳeṛṛeṛ (lquṛan)* 'to repeat the Qur'an already learned' (Basset, 1961: 41).

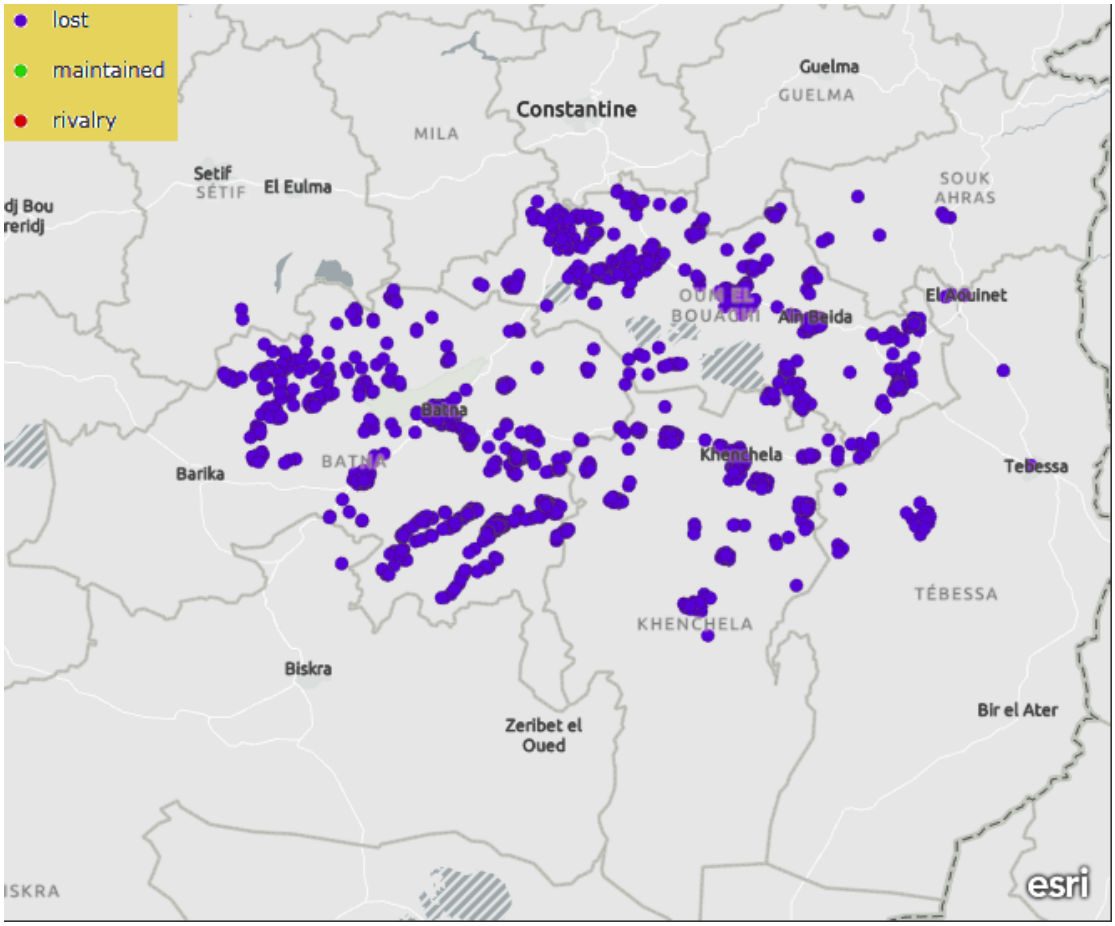
A good number of informants have resorted to the use of circumlocutions to denote the present item. These include *ittutlay labas*, *itcax labas*, *ihedder labas* 'he talks a lot', etc.

Table 4.53 'to repeat': frequencies of lexical variants

lexical variant	**number of tokens**
ɛawed	1644
keṛṛeṛ	28
others	7
NR	141
Total	1820

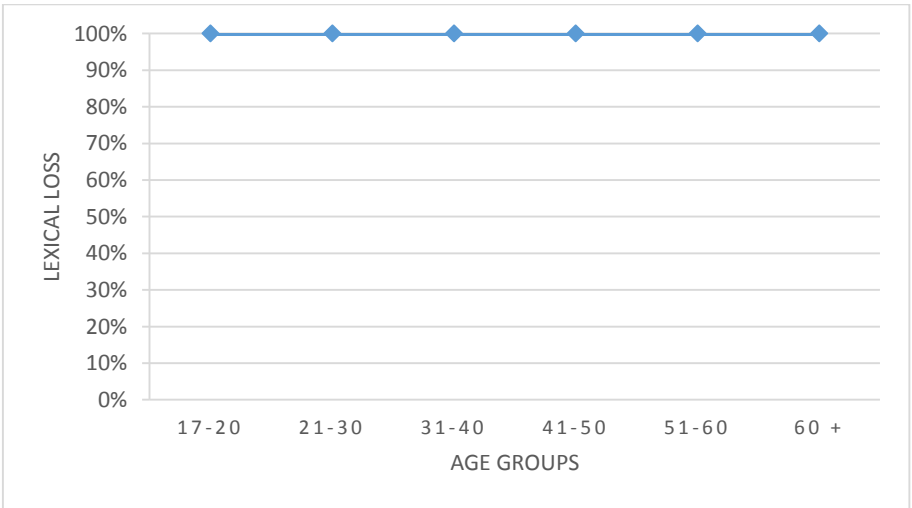
Based on the literature and the data obtained for the present item, it is reasonable to state that the Berber variant has gone obsolete in Tashawit: L (repeat) = 100% (χ^2 = 1818, $p < 0.001$). It is evident, based on the result obtained, that there is no regional variation with regard to the loss of the Berber variant (χ^2 = 1818, $p < 0.001$).

Map 4.53 Lexical loss of the Berber word(s) for ‘to repeat’ across Tashawit speaking area



As displayed in Fig. 4.53 below, the Berber variant is unknown for all the subjects who took part in the present study, the young as well as the elderly (χ^2 = 1818, p < 0.001).

Fig. 4.53 Lexical loss of the Berber word(s) for ‘to repeat’ across age groups



4.1.11. Motion

4.1.11.1. Arrive (v.)

The most common Berber equivalent for the present notion is traced back to the Berber root **WḌ**[112]. Other words traced to other Berber roots are also attested although they sometimes denote different meanings[113]. In Tashawit, the Berber variant *aweḍ* is also attested (Ounissi, 2003).

The Berber variant was produced by a small proportion of speakers (12.15%). It is used mainly in the region of Nemamcha (91.57%) and, less frequently, in Oriental Aurès (65.8%). In the remaining regions, the Berber variant was produced only by a minority of speakers: Harakta (6.97%) and Occidental Aurès (3.79%).

Another variant that was produced in the data is the word *eɣṭeṣ*[114]. In contrast to all other responses produced in response to the present item, the etymology of this variant is rather unclear. This does not seem to be of Arabic origins and it is not attested, to the best of our knowledge, in any Berber variety. It accounted for a small proportion of the total number of tokens produced (6.33%). It was produced mainly in the region of Bellezma (35.47%), in particular the central localities. The number of occurrences of this variant in Bellezma alone accounts for 84.68% of the total number of tokens produced for this variant. It was produced by a handful of speakers in Batna city and

[112] Derivatives of this root are attested in a number of Berber varieties: *aweḍ* (Foucauld, 1951), *aweḍ* (Taïfi, 1991), *awuḍ* (Serhoual, 2002), *aweḍ* (Destaing (1914), *aweḍ* (Basset, 1885), *aweḍ* (Delheure, 1984, 1987), *aweḍ* (Dallet, 1982), *aweṭ* (Motylinski, 1898), *aweḍ* (Lanfry, 1973), etc.

[113] The word *elkem* is attested in Tachelhiyt and TCM (Cid Kaoui, 1907; Destaing, 1938; Jordan, 1934). Another word is attested in TCM, namely *gulu* (Taifi, 1991), etc.

[114] The word *eɣṭeṣ* is attested with the meaning 'to cut' in Tuareg (Masqueray, 1893; Foucauld, 1951). Souag suggested that its use in Tashawit to mean to 'arrive' could be a result of a semantic shift; the word could have undergone a semantic narrowing, i.e. from 'cut' (v.) to 'cross' (v.) and have later undergone some semantic shift to mean 'to arrive'; to cross a river or a valley is to arrive to the other side.

the region of Segnia. It is completely, or almost completely, missing in the remaining regions.

The most frequent variant in the data is the Arabic loan *exleḍ* (67.03%). It prevails over the Massif (91.74%) and the regions of Segnia (90.38%) and Harakta (76.78%). It is less common in Bellezma (26.88%), where it is used in the northwestern and southern localities of the region, and even less common in Oriental Aurès (10.24%). The Berber variant is totally missing in the region of Nemamcha. The second Arabic loan that was recorded in the data, namely *elḥeq*, is much less recurrent than the former Arabic loanword (7.36%). It was recorded, though in small frequencies, in most regions: Bellezma (19.67%), Harakta (6.25%), Nemamcha (4.82%), the Massif (3.35%) and Oriental Aurès (1.78%). The third Arabic loan that was recorded in the data, *ewṣel*, was produced only by a tiny fraction of informants. It represents 4.68% of the total number of tokens produced by the participants in response to the present lexical item. It was recorded in Bellezma (15.85%), Oriental Aurès (6.9%) Harakta (4.06%), Segnia (1.51%) and Occidental Aurès (1.12%).

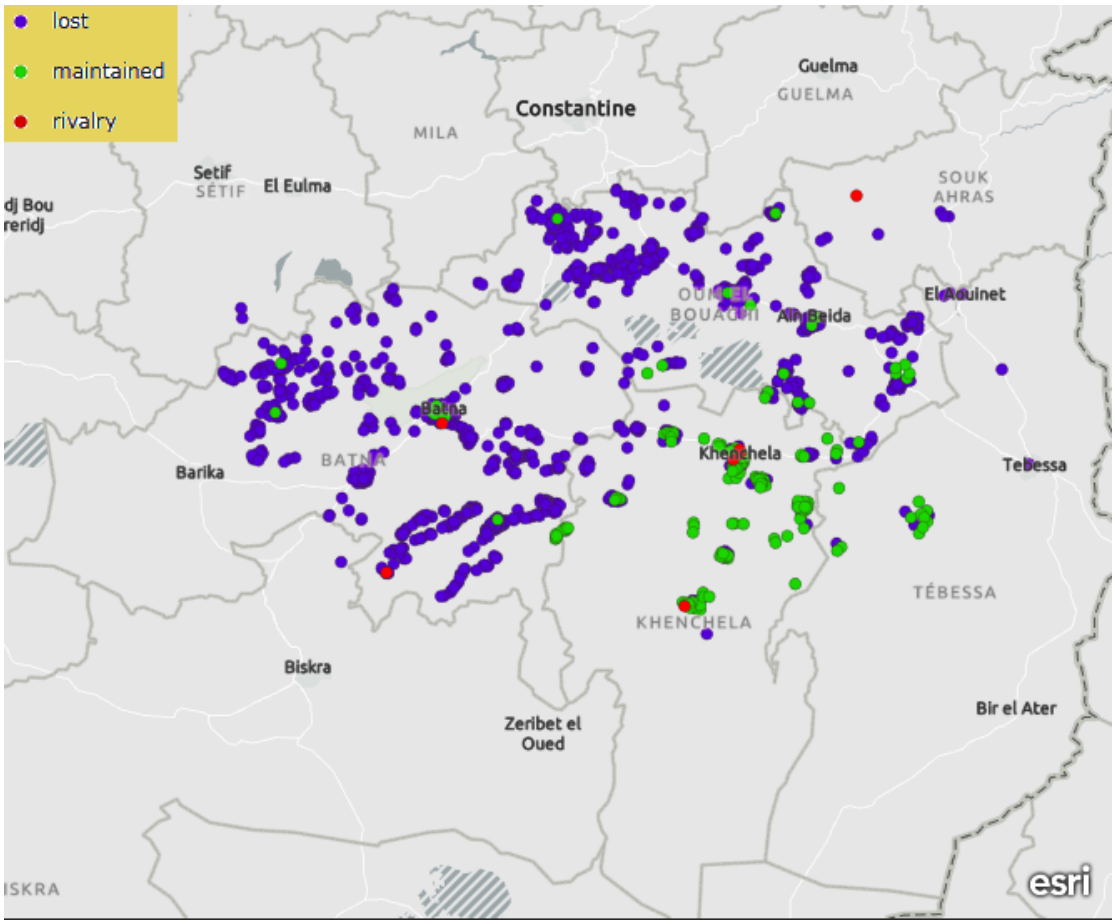
Other responses were recorded in the data, though all of them are irrelevant. These include *as* ‘come’, *rewweḥ* ‘return home’, etc.

Table 4.54 ‘to arrive’: frequencies of lexical variants

lexical variant	**number of tokens**
aweḍ	213
eɣṭeṣ	111
exleḍ	1175
elḥeq	129
wṣel	82
others	43
NR	105
Total	1858

The overall rate of lexical loss calculated for the present variable indicates that it is marginally maintained: L (arrive) = 88.54% (χ^2 = 1102.14, p < 0.001). Region is an important predictor of lexical loss (χ^2 = 22.14, p = 0.003). The lowest rate of lexical loss was recorded in the region of Nemamcha (L = 15.56%). Lexical maintenance is also the dominant trend in Oriental Aurès (L = 40.69%). It is important to mention, nonetheless, that the analysis has revealed a significant difference in the currency of the Berber variant between these two regions. The odds of lexical loss in the region of Nemamcha are 3.72 times lower than Oriental Aurès (χ^2 = 22.14, p < 0.001).

Map 4.54 Lexical loss of the Berber word(s) for 'to arrive' across Tashawit speaking area



The rates of lexical loss recorded in other regions are much higher: Harakta (L = 93.33%), Occidental Aurès (L = 96.35%), Bellezma (L = 99.22%) and Segnia (L = 99.62%). The analysis has revealed some regional variation across these regions. The

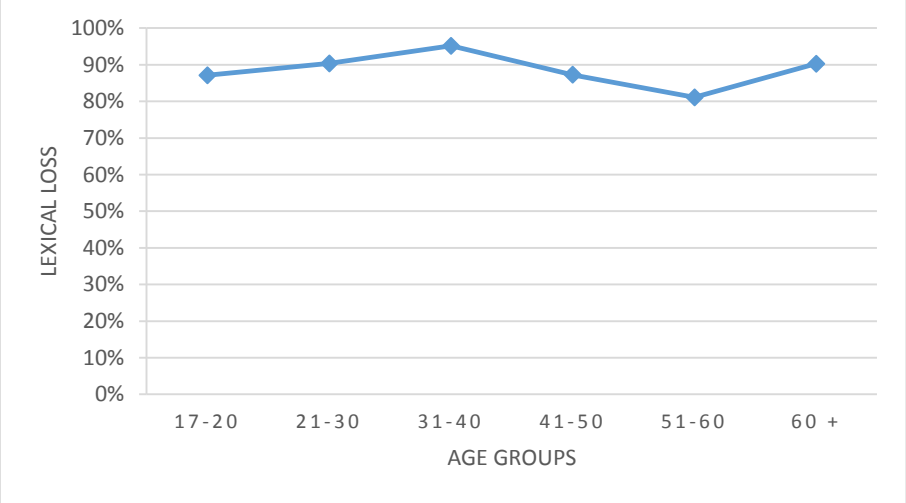
odds of lexical loss in the region of Harakta are significantly lower than the other three regions: 1 to 1.89 compared to the Massif ($\chi^2 = 3.94$, $p = 0.047$), 1 to 9.14 compared to Bellezma ($\chi^2 = 8.98$, $p = 0.003$) and 1 to 18.57 compared to the region of Segnia ($\chi^2 = 8.17$, $p = 0.004$). The relative odds of lexical loss in the Massif are also significantly lower than Bellezma and the region of Segnia: 1 to 4.85 compared to the former ($\chi^2 = 4.41$, $p = 0.036$) and 1 to 9.84 compared to the latter ($\chi^2 = 4.91$, $p = 0.027$). However, the analysis has revealed that the odds of lexical loss in Bellezma are only 2.03 times lower compared to the region of Segnia ($\chi^2 = 0.33$, $p = 0.56$).

Greater differences were obtained between the rates of lexical loss recorded in the southeastern regions and the rest. The relative odds of lexical loss in Oriental Aurès are 1 to 20.41 compared to the region of Harakta ($\chi^2 = 130.33$, $p < 0.001$), 1 to 38.5 compared to the Massif ($\chi^2 = 148.69$, $p < 0.001$), 1 to 186.58 compared to Bellezma ($\chi^2 = 51.35$, $p < 0.001$) and 1 to 378.98 compared to the region of Segnia ($\chi^2 = 34.15$, $p < 0.001$). The relative odds of lexical loss in the region of Nemamcha are even much lower: 1 to 76 compared to the region of Harakta ($\chi^2 = 149.09$, $p < 0.001$), 1 to 143.38 compared to Occidental Aurès ($\chi^2 = 169.3$, $p < 0.001$), 1 to 694.86 compared to Bellezma ($\chi^2 = 72.76$, $p < 0.001$) and 1 to 1411.3 compared to the region of Segnia ($\chi^2 = 48.32$, $p < 0.001$).

The analysis of the data showed a significant relationship between lexical loss and age ($\chi^2 = 20.31$, $p = 0.001$). The rate of lexical loss increases slightly between the first age group ($L_{17\text{-}20} = 87.12\%$) and the second age group ($L_{21\text{-}30} = 90.37\%$). Speakers of the first age group are only 1.27 times less likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 1.31$, $p = 0.25$). However, the increase observed between the second and the third age group ($L_{31\text{-}40} = 95.18\%$) turned out be significant; the odds of lexical loss for speakers of the latter are twice higher compared to the former

(χ^2 = 4, p = 0.045). Moreover, a speaker from the third age group is 2.56 times more likely to lose the Berber variant compared to another from the third age group, but the difference is insignificant (χ^2 = 6.57, p = 0.01). The rate of lexical loss, then, decreases in a significant way for the fourth age group ($L_{41\text{-}50}$ = 87.23%). The odds of lexical loss for speakers of this age group are 2.71 lower in comparison with those of the third age group (χ^2 = 6.84, p = 0.009). The rate of lexical loss continues decreasing between the fourth and the fifth age group ($L_{51\text{-}60}$ = 81.08%). However, this decrease is statistically insignificant; speakers of this group are only 1.47 times more likely to preserve the Berber variant compared to those of the fourth age group (χ^2 = 2.25, p = 0.13). The rate of lexical loss increases once again between the fifth and the sixth age group (L_{+60} = 90.25%). This increase was proven to be significant; the odds of lexical loss for speakers of the sixth age group are 2.09 times higher than those of the fifth age group (χ^2 = 4.46, p = 0.02).

Fig. 4.54 Lexical loss of the Berber word(s) for ‘to arrive’ across age groups



4.1.11.2. Follow (v.)

The most common Berber equivalent for the present item stems from the root **DFR / ḌFR**[115]. A derivative of the same Berber root is also attested in Tashawit: *eḍfer* (Huyghe, 1906: 671). Other words attested in Berber include *elkem*, *ilal*, *eheğ, esteγ*, *huret*[116] and *akel*[117]. These are not attested in Tashawit.

The Berber variant, realized as *eḍfeṛ* and *eṭfeṛ,* was produced only by a tiny fraction of informants (3.02%). The subjects who produced it reside in the northwestern localities of Bellezma (9.09%) and the southwestern part of the Aurès Massif (3.21%). It was also produced by a handful of speakers in some other localities in Oriental Aurès and the region of Nemamcha.

The most frequent response in the data is the Arabic loan *tebbeɛ*. This accounted for over half of the total number of tokens produced (50.43%). This variant was produced mainly in the eastern regions: Harakta (82.32%), Nemamcha (88.31%), Segnia (71.89%) and Oriental Aurès (63.26%). It is also common, though much less frequently, in the western regions: Occidental Aurès (30.73%) and Bellezma (18.69).

The second most frequent variant in the data is the Arabic loan *elḥeq* (41.54%). It prevails mainly over the western regions: Bellezma (70.13%) and Occidental Aurès (62.38%). Its use in the eastern regions is very insignificant, barring a narrow territory in the northern part of the region of Segnia (20.82%).

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[115] *dfur* (Destaing, 1938) *dfaṛ, tfaṛ* (Taïfi, 1991), *dfer*, *eḍfar* (Serhoual, 2002; Lafkioui, 2007), *edfer* (Destaing (1914), *dfer* (Laoust, 1912), *eḍfaṛ* (Basset, 1885), *eḍfer* (Dallet, 1982), *eḍfer* (Motylinski, 1898), *oḍfar* (Sarnelli, 1924), etc.

[116] These five variants are attested in Tuareg in particular. Some of these have rather specific designations. The word *elkem* is used as a cover term for 'to follow' (Motylinski, 1908; Masqueray, 1893; Foucauld, 1951), *ellil*/*ilal* has the same meaning as *eḍfer*, i.e. following a person or an animal (Motylinski, 1908), *eheğ* and *esteγ* are used to mean 'to follow quickly' (Foucauld, 1951) and *huret* is used to mean 'to follow someone or something using his traces' (Motylinski, 1908; Masqueray, 1893; Foucauld, 1951).

[117] See Delheure (1987).

Some participants resorted to the use of circumlocutions, instead of single words, to denote the meaning intended, for example *yuɣa.s tgara* ‘he went after him/her’, *iggur tgara nnes* ‘he walks behind him/her’, etc.

Table 4.55 ‘to follow’: frequencies of lexical variants

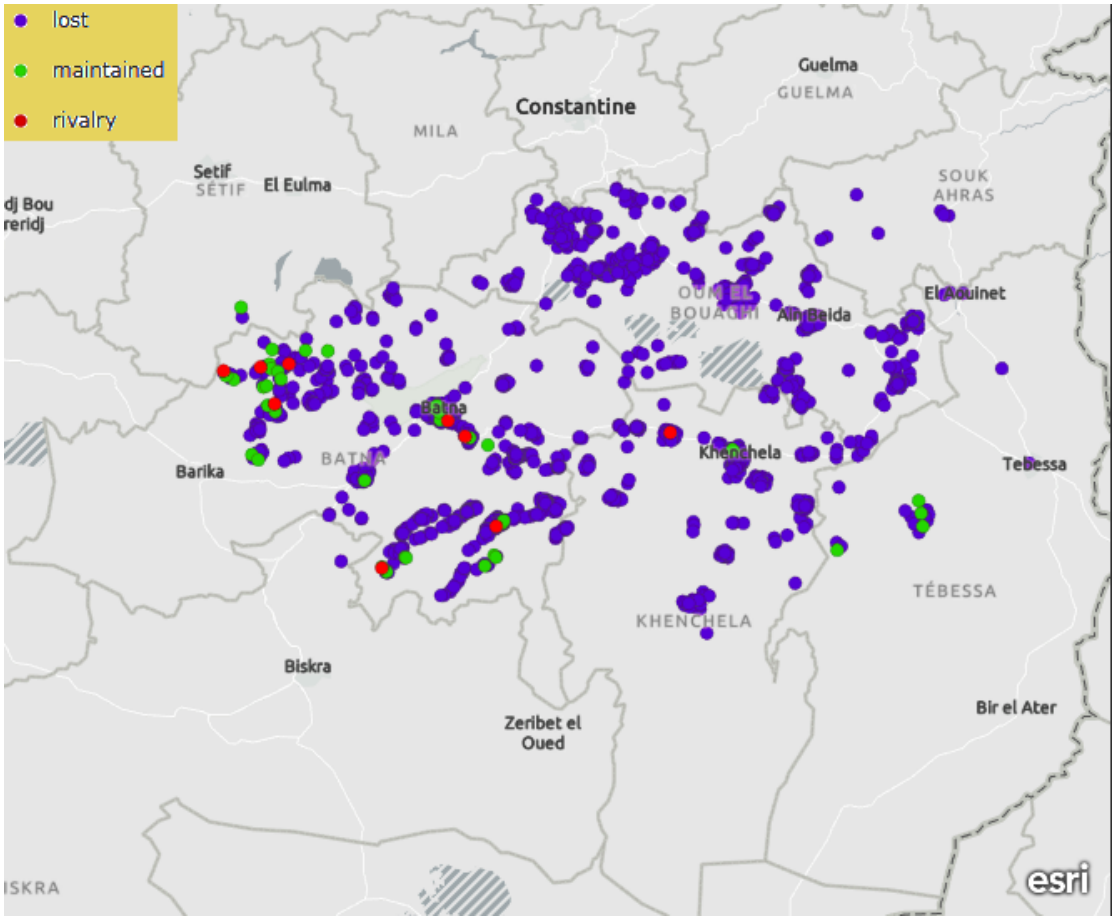
lexical variant	**number of tokens**
eḍfeṛ, eṭfeṛ	49
tebbeɛ	817
elḥeq	673
others	81
NR	234
Total	1854

The rate of lexical loss calculated for the present lexical item is extremely high: L (follow) = 97.36% (χ^2 = 1661.28, p < 0.001). Yet, the analysis has revealed some degree of variation across the regions covered with regard to the rates of lexical loss (χ^2 = 21.28, p = 0.002).

The lowest rates of lexical loss were recorded in Bellezma (L = 91.86%). A higher rate was recorded in Batna city (L = 96.6%) and Occidental Aurès (L = 97.00%). Logistic regression has shown that speakers of Bellezma are 2.52 times less likely to lose the Berber variant compared to those residing in Batna city (χ^2 = 4.27, p = 0.039) and 2.86 times less likely compared to those of the Massif (χ^2 = 8.8, p = 0.003). The odds of lexical loss in the Massif are 1.14 times higher than Batna city (χ^2 = 0.07, p = 0.79). Close rates of lexical loss were recorded in the southeastern regions: Nemamcha (L = 95.55%) and Oriental Aurès (L = 97.93%). The relative odds of lexical loss between these two regions are 1 to 1.02 respectively (χ^2 = 1.035, p = 0.31). The statistical analysis has revealed that lexical loss in the region of Nemamcha is 1.5 times less likely than Occidental Aurès (χ^2 = 0.49, p = 0.48), but 1.9 more likely than

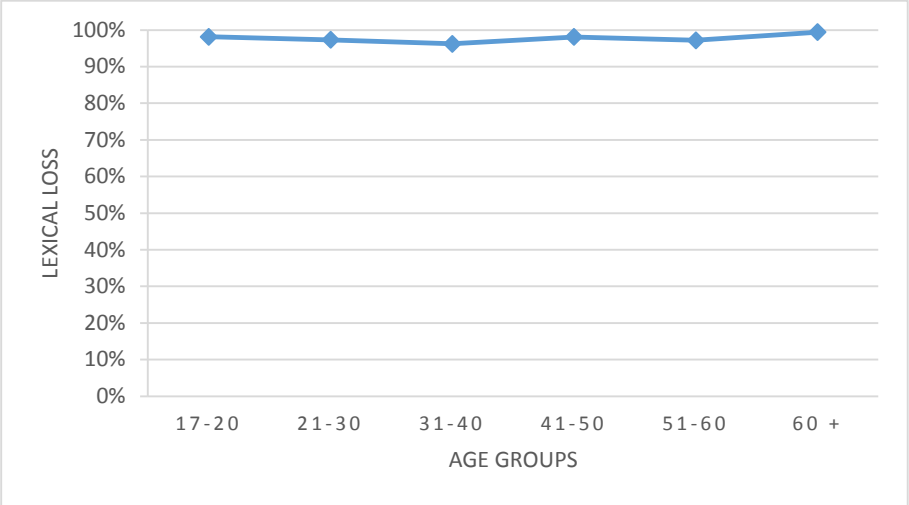
Bellezma ($\chi^2 = 1.32$, $p = 0.25$). The odds of lexical loss in Oriental Aurès are 1.47 times higher than the Massif ($\chi^2 = 0.35$, $p = 0.55$) and 4.2 times higher than Bellezma ($\chi^2 = 5.24$, $p = 0.022$). As can be noticed in the Map 4.55 above, the Berber variant turned out to be completely obsolete in the northeastern regions: Harakta (L= 100%) and Segnia (L = 100%).

Map 4.55 Lexical loss of the Berber word(s) for 'to follow' across Tashawit speaking area



The statistical analysis has revealed that the relationship between lexical loss and age is statistically insignificant ($\chi^2 = 3.4$, $p = 0.64$). The rate of lexical loss varies within a small range (R = 3.17%), with a minimal rate of 96.24%, a maximal rate of 99.41% and a mean of 97.74%.

Fig. 4.55 Lexical loss of the Berber word(s) for ‘to follow’ across age groups



4.1.11.3. **Send** (a letter)

The data obtained for the present item is dominated by two Arabic borrowings. The first, and most frequent, of the two is the loan *eṣṛef* (58.66%). In Classical Arabic, the word *ṣaṛafa* is used to mean ‘to spend’, ‘to dismiss’, ‘to send away’, ‘to set free’, etc. (Lane, 1968). The word *ṣaṛṛafa* means, among other things, ‘to change’, ‘to transfer’ and, probably more relevantly, ‘to direct things’ (Lane, 1968). The source could also be a word in vernacular Arabic which has undergone a semantic change to mean ‘to send’. This loan is the most recurrent variant in the northern regions: Bellezma (62.66%), Harakta (79.65%) and Segnia (92.08%). It is also used, though much less frequently, in Oriental Aurès (38.23%) and the Massif (34.8%), but it is totally missing in the region of Nemamcha.

The second Arabic loan, *ebɛet*, in contrast to the previous, is more attested in Arabic (Ben Sedira, 1910; Lane, 1968). Its occurrence in the data, however, is less frequent than the first loan (21.54%). It is used mainly in the Massif (54.29%). It was also recorded, if less recurrently, in other regions: Oriental Aurès (18.63%), Harakta (11.05%), Bellezma (4.29%), Segnia (3.75%) and Nemamcha (2.47%).

Two other Borrowings were recorded in the data, *ersel* and *duzz*. The former is copied after the Arabic word denoting the same meaning. Considering its extremely insignificant frequency (0.7%), however, it can be regarded as a nonce borrowing. The second loan was also produced by a small proportion of speakers, accounting only for 3.91% of the total number of tokens. It is used almost solely in the region of Bellezma (24.46%).

Of the Berber words used to denote the item under analysis, the variant *azen* is probably the most common[118]. This variant is missing in most Tashawit texts, including Sierakowsky (1871), Mercier (1896), Huyghe (1906, 1907), Joly (1912), Basset, 1961, etc. It is found only in Ounissi (2003: 153) who gives special attention to the variety of Tashawit spoken in the regions of Nemamcha and Oriental Aurès. In the data, this variant accounted only for a small proportion of the tokens produced (6.58%). The data shows that the Berber word is used on a regular basis only in the region of Nemamcha (85.18%). It was also recorded, though much less frequently, in the neighboring region of Oriental Aurès (17.65%). In the remaining regions, the frequencies of the Berber variant are very insignificant: Bellezma (3.86%), in particular among A. Ali, Harakta (0.87%), Segnia (0.42%) and Occidental Aurès (0.23%).

Another response that was produced, and which is not likely an Arabic loan, is *enki* (Tibermacine, 2009: 130; cf. Brugnatelli, 2011). It also accounted for a tiny fraction of the data (4.1%). This variant was recorded in Oriental Aurès (23.53%), in particular Chechar and Khenchela city, the Massif (6.26%), mainly Msara and Bouhmama, in

[118] Words traced to the first root include: *azen* (Taïfi, 1991), *azen* (Serhoual, 2002), *azen* (Ounissi, 2003), *azen* (Basset, 1885), *azen* (Delheure, 1984, 1987), *azen* (Dallet, 1982), *uzen* (Basset, 1890), *azen* Lanfry, 1973), etc.

addition to Batna city and Ain Touila. It is completely missing in the regions of Bellezma, Segnia and Nemamcha.

Other words used to denote the meaning targeted through the present item, such as *ssifeḍ*[119], which is attested in the Berber varieties of Morocco, *saglu*, *zemmizel*, *sis* and *suku*, of Tuareg varieties, do not appear in the data. Another word that is missing is *mekken* (see Huyghe, 1906, 1907).

A number of other words were recorded in the data, for example *sekker* which accurately means 'to send someone' rather than 'to send something' (cf. Foucauld, 1951), *egr tabṛaṭṭ* literally 'threw a letter', etc.

Table 4.56 'to send': frequencies of lexical variants

lexical variant	**number of tokens**
azen	106
enki	66
ebɛet	347
eṣṛef	945
ersel	11
duzz	63
others	73
NR	228
Total	1839

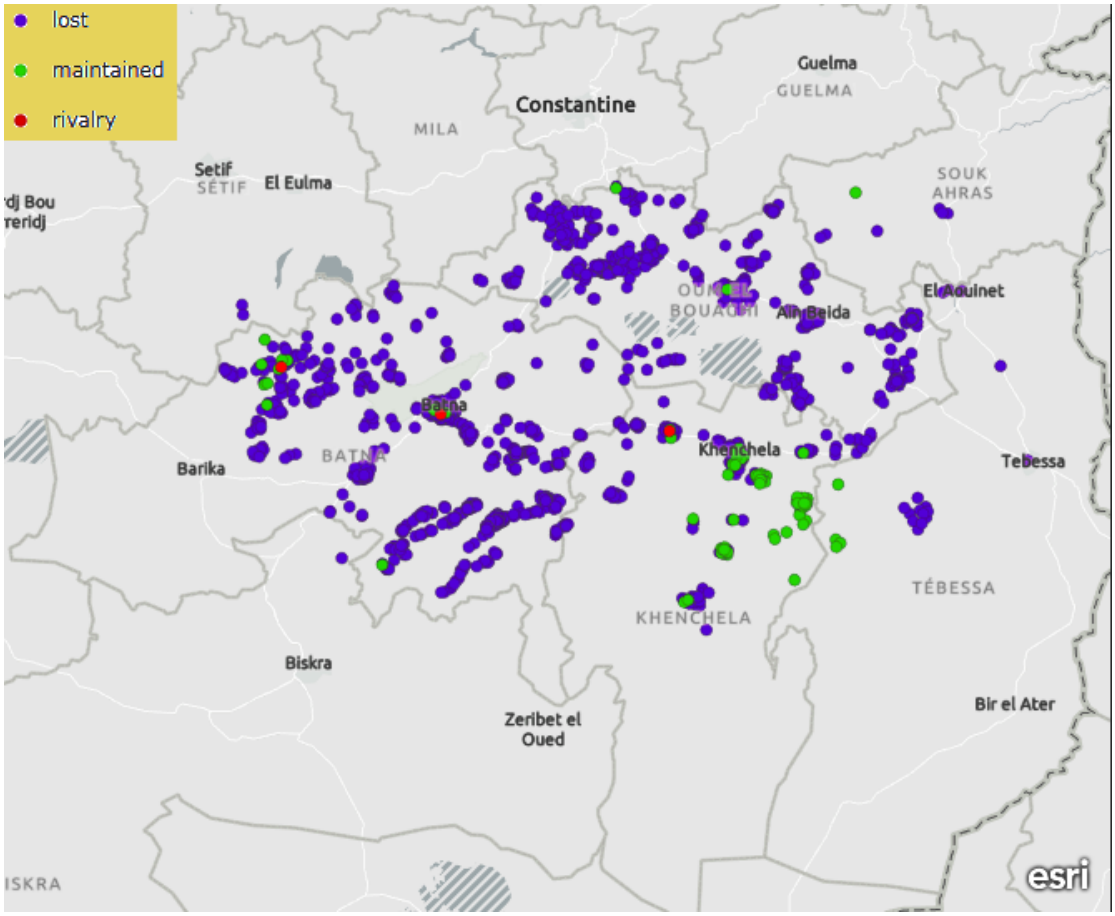
The analysis has revealed a very high rate of lexical loss for the present lexical item: L (send) = 94.24% (χ^2 = 1437.68, p < 0.001). The use of the Berber variant, namely *azen*, is regionally determined (χ^2 = 73.68, p < 0.001). It is maintained mainly in the region of Nemamcha (L = 23.33%). The Berber variant survives to some extent in Oriental Aurès (L = 87.59%) and, only marginally, in Bellezma (L = 96.51%). The

[119] This variant is attested mainly in the Berber varieties spoken in Morocco and West of Algeria: *ssifeḍ* (Destaing, 1914, 1938; Taifi, 1991; Serhoual, 2002).

analysis has revealed that the odds of lexical maintenance in the region of Nemamcha are 23.18 times higher compared to Oriental Aurès (χ^2 = 87.71, p < 0.001) and 90.9 times higher compared to Bellezma (χ^2 = 114.75, p < 0.001). The relative odds of lexical maintenance in Oriental Aurès are 3.92 to 1 compared to the region of Bellezma (χ^2 = 10.46, p = 0.001).

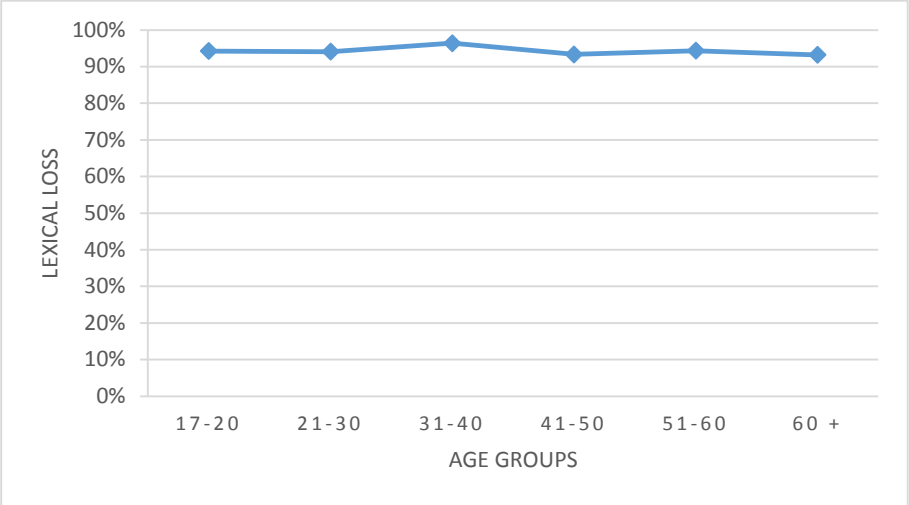
The Berber variant can be considered obsolete or virtually obsolete in the remaining regions: Harakta (L = 99.23%), Segnia (L = 99.62%) and Occidental Aurès (L = 99.79%). No significant differences were obtained between these rates. The odds of lexical loss in the Massif are only 1.79 times higher compared to the region of Segnia (χ^2 = 0.17, p = 0.68) and 3.61 times higher compared to the region of Harakta (χ^2 = 1.23, p = 0.27). In a similar way, the odds of lexical loss in the region of Segnia are only 2.02 times higher compared to the region of Harakta (χ^2 = 0.37, p = 0.54). Greater differences were obtained between these three regions and the previous ones. The odds of lexical loss in Bellezma are 4.66 times lower than the region of Harakta (χ^2 = 5.25, p = 0.022), 9.4 times lower compared to the region of Segnia (χ^2 = 4.49, p = 0.034) and 16.81 times lower compared to Occidental Aurès (χ^2 = 7.13, p = 0.008). The odds of lexical loss in Oriental Aurès are 18.28 times lower than the region of Harakta (χ^2 = 21.15, p < 0.001), 36.85 times lower compared to the region of Segnia (χ^2 = 12.19, p < 0.001) and 65.91 times lower compared to Occidental Aurès (χ^2 = 16.46, p < 0.001). The relative odds of lexical loss in the region of Nemamcha are much lower compared to such regions: 1 to 423.86 compared to the region of Harakta (χ^2 = 91.94, p < 0.001), 1 to 854.29 times lower compared to the region of Segnia (χ^2 = 42.75, p < 0.001) and 1 to 1527.86 times lower compared to Occidental Aurès (χ^2 = 50.51, p < 0.001).

Map 4.56 Lexical loss of the Berber word(s) for ‘to send’ across Tashawit speaking area



In contrast to region which was proven to be an important predictor of lexical loss, the analysis has revealed no significant relationship between lexical loss and age (χ^2 = 2.35, p = 0.8). The rate of lexical loss varies within a range of 3.2%, with a minimal rate of 93.21% (recorded for the sixth age group) and a maximal rate of 96.41% (recorded for the third age group) and an average rate of 94.28%.

Fig. 4.56 Lexical loss of the Berber word(s) for 'to send' across age groups



4.1.12. Warfare and hunting

4.1.12.1. Defeat (v.)

Most of the Berber words used across the different Berber varieties to denote the present item are traced to the root **RNH**[120]. The form preserved in Tashawit is similar to those attested in other Zenati languages, i.e. *erna* (Huyghe, 1906, 1907; Basset, 1961; Ounissi, 2003). This is the most frequent variant in the data (61.64%). It is prominent in the eastern regions: Nemamcha (92.31%), Segnia (89.26%), Oriental Aurès (83.02%) and Harakta (76.18%). It is also common, if less widely, in the western territories: Occidental Aurès (39.67%) and Bellezma (39.19%).

The Arabic loanword, *eγleb*, is less frequent than the Berber variant (34.45%). It is used over a narrower speaking area, in particular the western localities of Bellezma (56.31%) and Occidental Aurès (54%), mainly in O. Labiod and some of its surroundings. It is also used, though less frequently, in the eastern regions: Harakta (20.77%), Oriental Aurès (16.04%), Segnia (9.92%) and Nemamcha (5.13%).

[120] **Cognates**: *erna* (Faidherbe, 1877), *ernu* (Foucauld, 1951), *ernu* (Destaing, 1938) *nru* (Taïfi, 1991), *erna* (Serhoual, 2002), *erna* (Delheure, 1984), *eṇṇa* (Delheure, 1987), *ernu* (Dallet, 1982), *erni* (Motylinski, 1898), *ernu* Lanfry, 1973), etc.

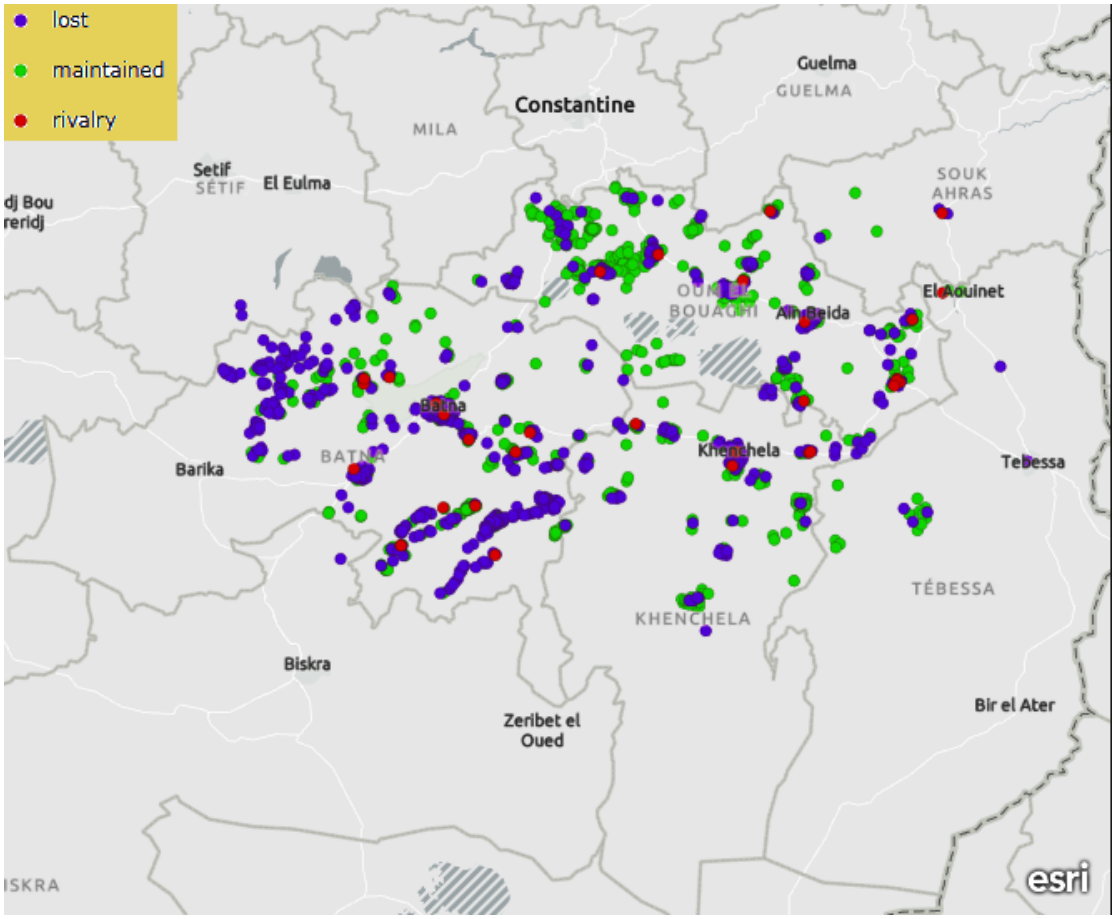
A number of other responses were also recorded in the data. These include *erbeḥ* ‘to win’, *ezmer* ‘to be able to’, etc.

Table 4.57 ‘to defeat’: frequencies of lexical variants

lexical variant	**number of tokens**
erna	993
eγleb	555
others	63
NR	242
Total	1853

The analysis of the data has revealed that the Berber variant is fairly maintained in Tashawit: L (defeat) = 46.41% ($\chi^2 = 9.4$, $p = 0.0022$). The analysis has also revealed a significant relationship between lexical loss and region ($\chi^2 = 29.47$, $p = 0.0003$). The Berber variant is preserved mainly in the eastern regions. The lowest rate of lexical loss was recorded in the regions of Segnia (L = 17.24%) and Nemamcha (L = 20.00%). The analysis has revealed an insignificant difference between the rates of lexical loss obtained in these first two regions; speakers living in the region of Segnia are only 1.2 times more likely to maintain the Berber variant compared to those living in the region of Nemamcha ($\chi^2 = 0.34$, $p = 0.56$). Relatively higher rates of lexical loss were recorded in the regions of Harakta (L = 29.49%) and Oriental Aurès (L = 39.31%). The odds of lexical loss in the region of Harakta are only 1.67 times higher than the region of Nemamcha ($\chi^2 = 3.24$, $p = 0.07$) but two times higher than the region of Segnia ($\chi^2 = 12.39$, $p < 0.001$). The odds of lexical loss in Oriental Aurès are 1.55 times higher than the region of Harakta ($\chi^2 = 4.64$, $p = 0.031$), 2.59 times higher than the region of Nemamcha ($\chi^2 = 9.21$, $p = 0.002$) and 3.11 times higher than the region of Segnia ($\chi^2 = 23.08$, $p < 0.001$).

Map 4.57 Lexical loss of the Berber word(s) for ‘to defeat’ across Tashawit speaking area

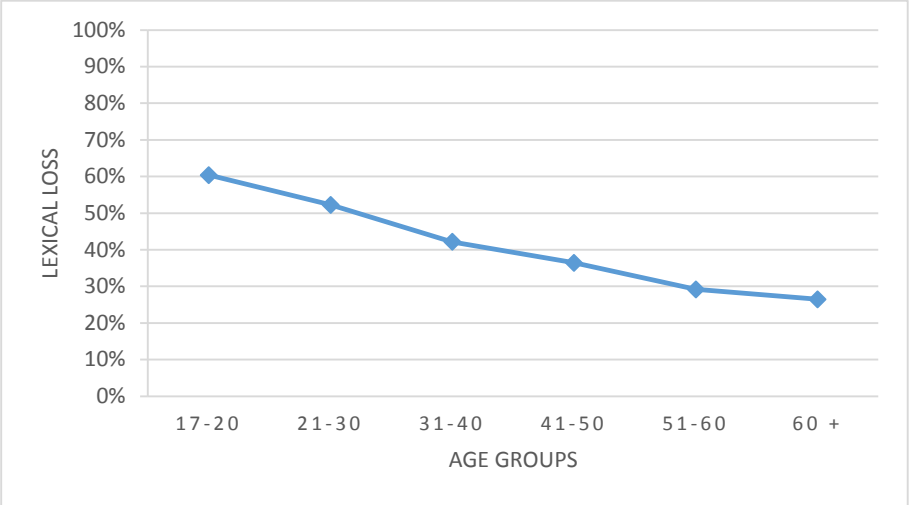


There is little regional variation across the western regions: Occidental Aurès (L = 63.73%) and Bellezma (L = 66.28%). The odds of lexical loss in Bellezma are only 1.12 times higher than Occidental Aurès (χ^2 = 0.47, p = 0.49). However, logistic regression analysis has revealed a considerable degree of regional variation when we compare the rates obtained in these regions to those recorded in the eastern ones. The relative odds of lexical loss in Occidental Aurès are 2.71 to 1 compared to Oriental Aurès (χ^2 = 26.08, p < 0.001), 4.2 to 1 compared to the region of Harakta (χ^2 = 95.35, p < 0.001), 7.04 to 1 compared to the region of Nemamcha (χ^2 = 48.3, p < 0.001) and 8.4 to 1 compared to the region of Segnia (χ^2 = 125.84, p < 0.001). In a similar way, the analysis has revealed that the relative odds of lexical loss in Bellezma are 3.03 to 1 compared to Oriental Aurès (χ^2 = 26.64, p < 0.001), 4.69 to 1 compared to the region of

Harakta (χ^2 = 80.71, p < 0.001), 7.87 to 1 compared to the region of Nemamcha (χ^2 = 49, p < 0.001) and 9.43 to 1 compared to the region of Segnia (χ^2 = 113.98, p < 0.001).

As Fig. 4.57 below shows, the relationship between lexical loss and age is perfectly straightforward for the present item. The younger the age group the higher the rate of lexical loss (χ^2 = 20.147, p < 0.001). The rate of lexical loss decreases in a significant way between the first age group ($L_{17\text{-}20}$ = 60.39%) and the second age group ($L_{21\text{-}30}$ = 52.26%), χ^2 = 12.284, p = 0.023. The rate of lexical loss decreases significantly between the first age group ($L_{17\text{-}20}$ = 60.39%) and the second age group ($L_{21\text{-}30}$ = 52.26%). A speaker from the first age group is 1.37 times more likely to maintain the Berber variant compared to a speaker from the second age group (χ^2 = 5.11, p = 0.024). The decrease observed between the second and the third age group ($L_{31\text{-}40}$ = 42.15%) is also significant; speakers of the third age group are 1.48 more likely to preserve the Berber variant compared to those of the second age group (χ^2 = 5.55, p = 0.018). However, the change observed between the third and the fourth age group ($L_{41\text{-}50}$ = 36.42%) is statistically insignificant. The relative odds of lexical loss are 1.29 to 1 respectively (χ^2 = 4.376, p = 0.036). In a similar way, the decrease recorded for the fifth age group ($L_{51\text{-}60}$ = 29.18%) is not significant. Speakers of the fifth age group are only 1.37 times less likely to preserve the Berber variant compared to those of the fifth age group (χ^2 = 2.52, p = 0.11), but 1.77 times more likely compared to those of the third age group (χ^2 = 1.88, p = 0.005). The lowest rate of lexical loss was recorded for the sixth age group (L_{+60} = 26.47%). The analysis has revealed that speakers of this age group are only 1.16 times more likely to preserve the Berber variant compared to those of the fifth age group (χ^2 = 0.43, p = 0.51), but 1.59 times more likely compared to those of the fourth age group (χ^2 = 4.02, p = 0.045).

Fig. 4.57 Lexical loss of the Berber word(s) for 'to defeat' across age groups



4.1.13. Basic action and technology

4.1.13.1. Squeeze (v.)

The most common Berber equivalent for the present item is traced to the root **ZM**[121]. A derivative of this root, namely *ẓem*, is attested in Tashawit (Huyghe, 1906: 532). The Berber variant is the most frequent response in the data (48.14%). It was produced mainly in the Massif (72.8%), the southern and eastern localities of Bellezma (44.5%) and the region of Segnia (58.05%). It was also produced, though less frequently, in the regions of Harakta (26.71%) and Oriental Aurès (12.22%).

The second most recurrent response to this item is the Arabic loan *eɛṣeṛ* (46.22%). It was produced mostly in the regions of Nemamcha (97.4%), Oriental Aurès (86.67%), Harakta (63.5%), in particular the western localities, and Bellezma (52.86%). It is also common, though to a lesser degree, in the regions of Segnia (38.13%) and the Massif (20%), mainly in the southeastern part of the region.

[121] **Cognates**: *eẓmu* (Foucauld, 1951), *ẓem* (Destaing, 1938) *ẓemm* (Taïfi, 1991), *ẓem* (Serhoual, 2002), *ẓemm* (Destaing (1914), *ẓemm* (Delheure, 1984, 1987), *eẓm* & *ẓem* (Dallet, 1982), *eẓm* (Lanfry, 1973), etc.

An extremely tiny fraction of respondents produced the words *eɛmeẓ* and *eḥmez* (0.96%). The exact meaning of this word is ‘to grip’ (see Huyghe, 1906: 532; cf. Lane, 1968: 642).

Table 4.58 ‘to squeeze’: frequencies of lexical variants

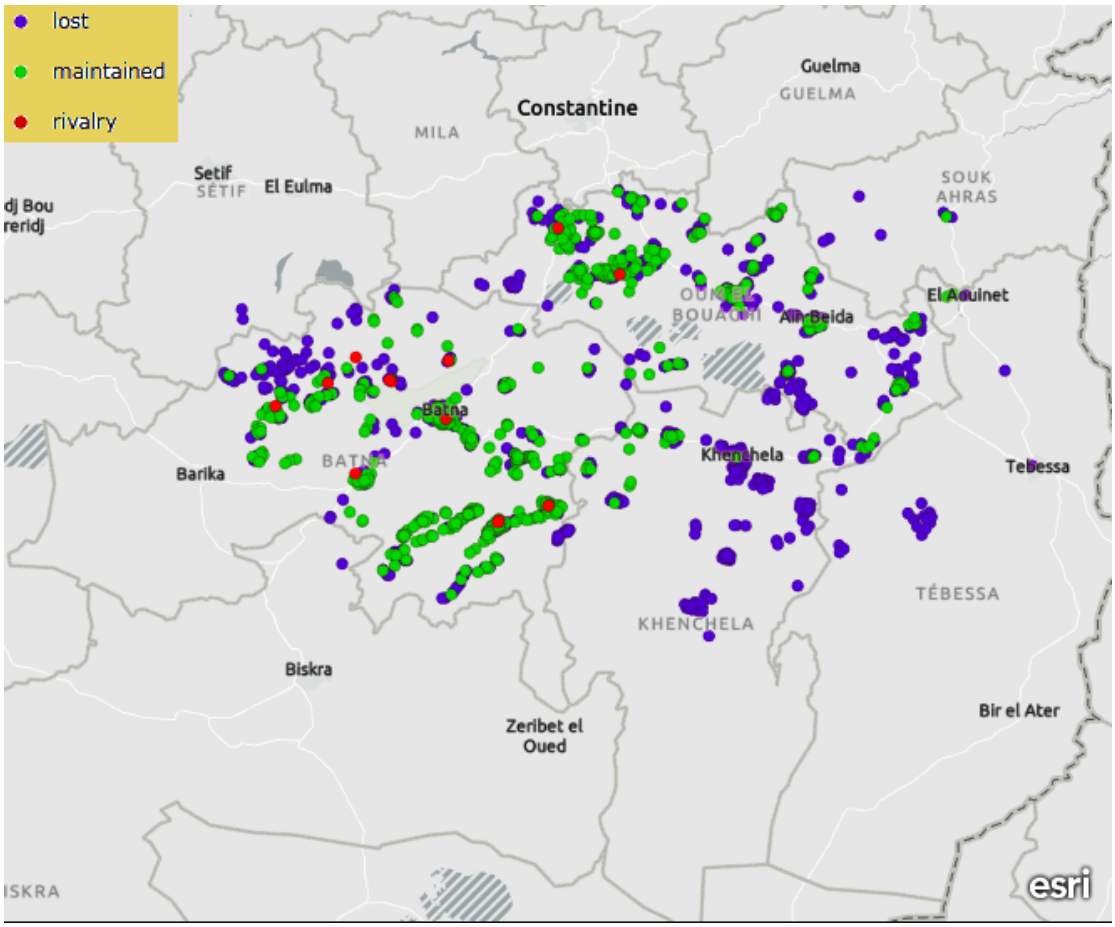
lexical variant	**number of tokens**
ẓem	751
eɛṣeṛ	721
others	87
NR	271
Total	1830

The Berber word for the present item is maintained considerably. However, lexical loss is still the dominant trend: L (squeeze) = 58.96% (χ^2 = 58.44, p < 0.001). The analysis has revealed a considerable regional variation in the use of the Berber variant (χ^2 = 67.22, p < 0.001). The region maintaining the Berber variant the most is Occidental Aurès (L = 32.83%). The Berber variant is also preserved moderately in the region of Segnia (L = 47.51%). The analysis has revealed a significant difference between the rates of lexical loss obtained in these two regions. Speakers living in Occidental Aurès are 1.85 times more likely to use the Berber variant compared to those living in the region of Segnia (χ^2 = 15.12, p < 0.001). Lexical loss is dominant in Bellezma (L = 60.85%). The statistical analysis has revealed that the odds of lexical loss in this region are significantly higher than the two previous regions: 1.72 to 1 compared to the region of Segnia (χ^2 = 9.25, p = 0.002) and 3.18 to 1 compared to the Massif (χ^2 = 51.47, p < 0.001).

A higher rate of lexical loss was obtained in the region of Harakta (L = 76.92%). The analysis has revealed that the odds of lexical loss in this region are 2.15 times higher than the region of Bellezma (χ^2 = 18.95, p < 0.001), 3.68 times higher than the

region of Segnia (χ^2 = 57.02, p < 0.001) and 6.8 times higher than the Massif (χ^2 = 152.44, p < 0.001). Speakers of the region of Harakta, however, are 3.65 times less likely to lose the Berber variant compared to those of Oriental Aurès (L = 92.41%) (χ^2 = 14.89, p < 0.001). The odds of lexical loss in Oriental Aurès are 7.81 times higher than Bellezma (χ^2 = 36.97, p < 0.001), 13.51 times higher than the region of Segnia (χ^2 = 59.42, p < 0.001) and 25 times higher than the Massif (χ^2 = 95.66, p < 0.001). The Berber variant can be described as fully obsolete in the region of Nemamcha (L = 100%).

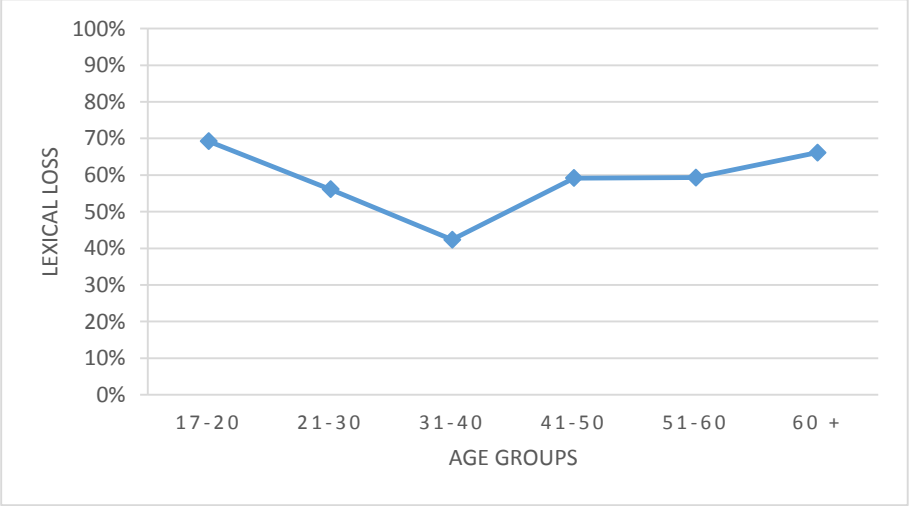
Map 4.58 Lexical loss of the Berber word(s) for 'to squeeze' across Tashawit speaking area



The relationship between age and lexical loss is significant (χ^2 = 37.45, p < 0.001). The rate of lexical loss decreases in a significant way between the first ($L_{17\text{-}20}$ = 69.23%), the second ($L_{21\text{-}30}$ = 56.12%) and the third age group ($L_{31\text{-}40}$ = 42.37%).

Speakers of the first age group are 1.71 times more likely to lose the Berber variant compared to those of the second age group ($\chi^2 = 13.82$, $p < 0.001$), and 2.97 times more likely compared to those of the third age group ($\chi^2 = 31.86$, $p < 0.001$). The odds of speakers of the second age group losing the Berber variant are 1.73 times higher than those of the third age group ($\chi^2 = 10.72$, $p = 0.001$). The rate of lexical loss increases abruptly and significantly between the third and the fourth age group ($L_{41\text{-}50} = 59.17\%$). The relative odds of speakers of the fourth age group losing the Berber variant are 1.92 to 1 compared to those of third age group ($\chi^2 = 10.34$, $p = 0.001$). The rate of lexical loss remains almost constant between the fourth and the fifth age group ($L_{51\text{-}60} = 59.31\%$); the odds of a speaker from the fifth age group losing the Berber equivalent compared to a speaker from the fifth age group are only 1.02 times higher ($\chi^2 = 0.013$, $p = 0.91$). The rate of lexical loss increases once again between the fifth and the sixth age group ($L_{+60} = 66.15\%$). This increase, nonetheless, is statistically insignificant. Speakers of the sixth age group are only 1.37 times more likely to lose the Berber variant compared to those of the fifth age group ($\chi^2 = 2.15$, $p = 0.14$) and 1.4 times more likely compared to those of the fourth age group ($\chi^2 = 2.31$, $p = 0.13$) (see Fig. 4.58 below).

Fig. 4.58 Lexical loss of the Berber word(s) for ‘to squeeze’ across age groups



4.1.14. Possession

4.1.14.1. Beg

The Berber equivalent for 'to beg' is attested in Tashawit and most other northern Berber varieties (Huyghe, 1906: 410)[122]. The Berber variant, realized in Tashawit as *etter*, accounted only for a tiny fraction of the total number of tokens produced in response to the present item (3.6%). It was produced mainly in the region of Nemamcha (30.12%). It was also produced, though much less frequently, in Oriental Aurès (7.41%) and the region of Segnia (6.58%). Its frequency in other regions is completely insignificant.

The most frequent variant in the data elicited in response to the present item is the Arabic loan *eṭleb* (86.68%). It is the dominant variant in most of the regions covered in this study: Occidental Aurès (92.04%), Bellezma (91.42%), Harakta (90.71%), Segnia (80.89%) and Oriental Aurès (81.48%). Although it is still the most frequent variant, the Arabic loan was found to be much less recurrent in the region of Nemamcha (39.76%).

Another variant that was produced in the data to designate the present item is *sasa* (see Huyghe, 1906: 410; Ben Sedira, 1910). This, nonetheless, was produced only by a tiny fraction of respondents (1.3%). It was recorded mainly in the regions of Nemamcha, in particular the locality of Cheria, and Harakta. A second Arabic loan was also recorded in the data, namely *sewwel*. This response, nevertheless, does not seem to be an established borrowing, taking into account its frequency (0.62%).

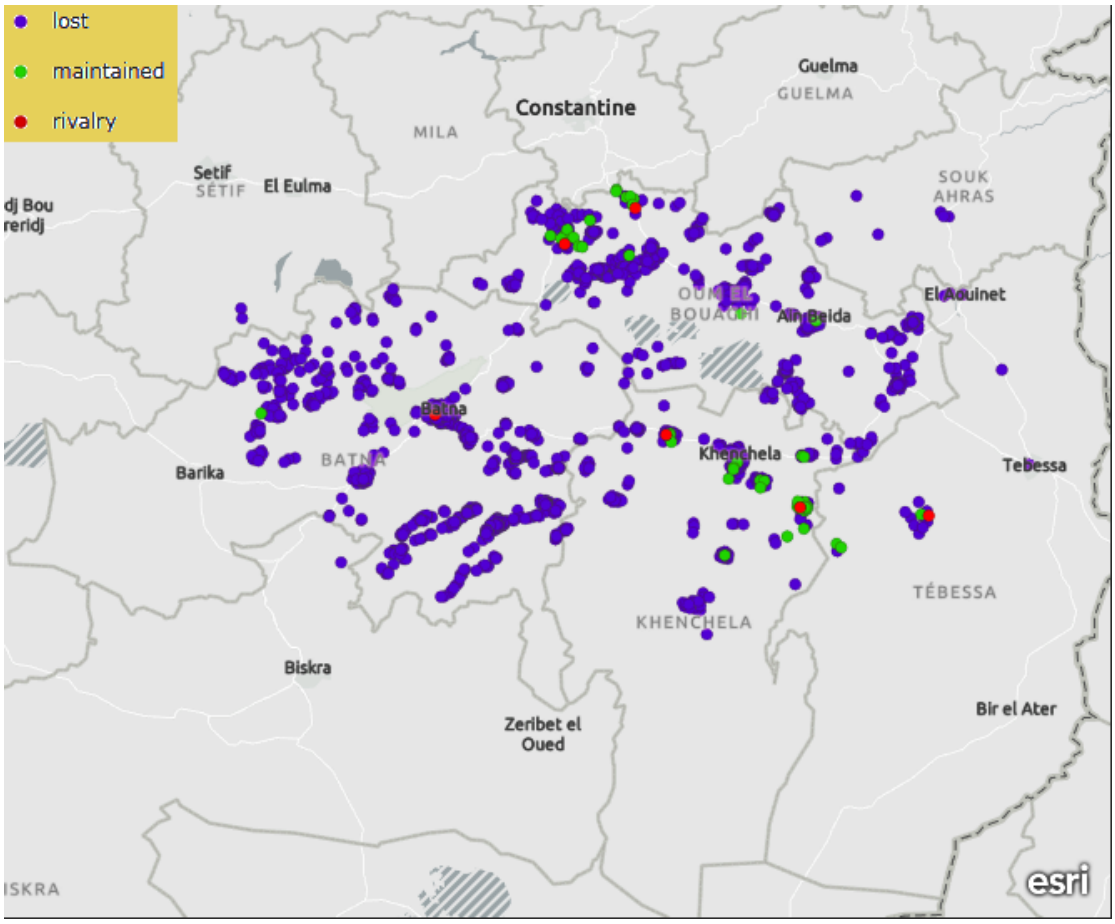
[122] **Cognates**: *mmetra* (Destaing, 1938) *sutter* (Taïfi, 1991), *etter*, *ettar* and *etta* (Serhoual, 2002) *etter* (Destaing (1914), *emter* (Delheure, 1984), *etter* (Delheure, 1987), *emmter*, *suttur* (Dallet, 1982), *etter* (Motylinski, 1898), *etter* (Lanfry, 1973), etc.

Table 4.59 ‘to beg’: frequencies of lexical variants

lexical variant	**number of tokens**
etter	58
eṭleb	1399
sasa	21
sewwel	10
others	126
NR	225
Total	1839

The Berber equivalent for the present notion has clearly lost its currency in Tashawit: L (beg) = 96.84% (χ^2 = 1609.46, p < 0.001). Although lexical loss is the dominant trend in all regions, the analysis has revealed that the use of the Berber variant is regionally determined (χ^2 = 84.09, p < 0.001). The Berber variant is maintained to some degree in the region of Nemamcha (L = 70.00%). It also survives, though only marginally, in the region of Segnia (L = 93.87%). The analysis shows a significant difference between the two regions. Speakers of the former region are 6.15 times less likely to lose the Berber variant in comparison with those of the second region (χ^2 = 28.49, p < 0.001). A close rate to the one obtained in the region of Segnia was recorded in Oriental Aurès (L = 94.48%). The odds of lexical loss in Oriental Aurès are only 1.19 times higher than the region of Segnia (χ^2 = 0.16, p = 0.69), but 7.35 times higher compared to the region of Nemamcha (χ^2 = 21.45, p < 0.001).

Map 4.59 Lexical loss of the Berber word(s) for ‘to beg’ across Tashawit speaking area

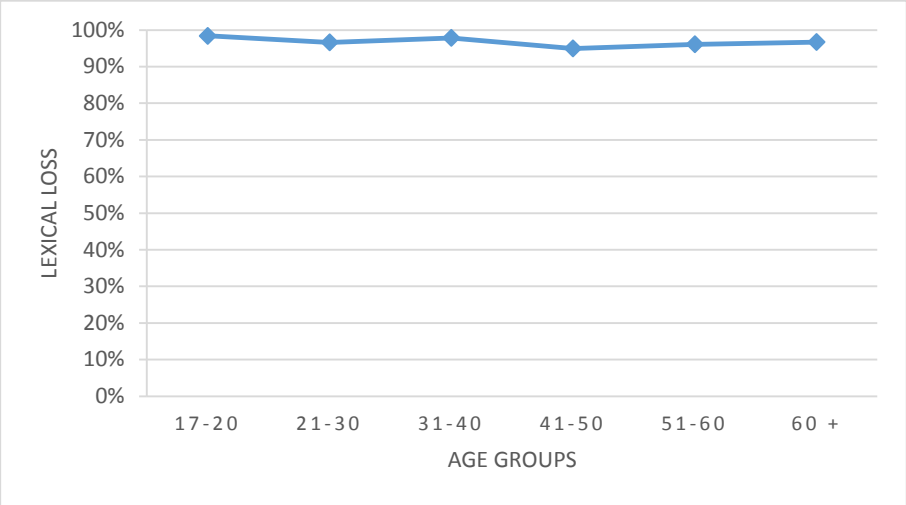


The rates of lexical loss obtained in the remaining regions indicate that the Berber variant is obsolete or virtually obsolete: Harakta (L = 98.97%), Bellezma (L = 99.61%) and Occidental Aurès (L = 100%). The differences obtained between these rates are statistically insignificant. The relative odds of lexical loss between Bellezma and the region of Harakta, for instance, are only 2.67 to 1 respectively ($\chi^2 = 0.76$, $p = 0.38$). However, the analysis has shown significant differences between these regions and the ones addressed earlier. The odds of lexical loss in the region of Harakta are 5.65 times higher than Oriental Aurès ($\chi^2 = 7.77$, $p = 0.005$), 6.71 times higher compared to the region of Segnia ($\chi^2 = 11.51$, $p = 0.001$) and 41.67 times higher compared to the region of Nemamcha ($\chi^2 = 45.35$, $p < 0.001$). The odds of lexical loss in Bellezma are 14.92 times higher than Oriental Aurès ($\chi^2 = 6.46$, $p = 0.01$), 17.86 times higher than the

region of Segnia (χ^2 = 7.8, p = 0.005) and 111.11 times higher than the region of Nemamcha (χ^2 = 20.92, p < 0.001).

Generally speaking, the analysis has revealed no significant association between lexical loss and age (χ^2 = 5.9, p = 0.32). The rate of lexical loss decreases slightly between the first age group ($L_{17\text{-}20}$ = 98.42%) and the second age group ($L_{21\text{-}30}$ = 96.63%). The odds of lexical loss for the first group are only 2.65 times higher compared to the second age group (χ^2 = 2.4, p = 0.12). The rate of lexical loss increases insignificantly for the third age group ($L_{31\text{-}40}$ = 97.84%). Speakers of the third age group are only 1.58 times more likely to lose the Berber variant compared to the second age group (χ^2 = 0.71, p = 0.4). The rate of lexical loss decreases again for the fourth age group ($L_{41\text{-}50}$ = 94.95%). The odds of lexical loss for this group are lower compared to the two previous groups, but the difference is insignificant: 1 to 2.43 compared to the third age group (χ^2 = 2.24, p = 0.13) and 1 to 1.53 compared to the second age group (χ^2 = 1.29, p = 0.26). In comparison with the first age group, however, the analysis has revealed a significant difference. Speakers of the fourth age group are 3.31 times less likely to lose the Berber variant compared to those of the first age group (χ^2 = 4.79, p = 0.029). We observe a slight increase for the fifth age group ($L_{51\text{-}60}$ = 96.12%). This increase, however, was proven to be insignificant. Speakers of this age group are only 1.3 times more likely to lose the Berber variant compared to those of the fourth age group (χ^2 = 0.35, p = 0.55). In a similar way, the increase recorded between the fifth and the sixth age group is statistically insignificant; with relative odds of lexical loss of 1 to 1.21 (χ^2 = 0.12, p = 0.73).

Fig. 4.59 Lexical loss of the Berber word(s) for ‘to beg’ across age groups



4.1.15. House

4.1.15.1. Reside (v.)

The Berber equivalent for this item that is attested most in the literature is traced to the root **ZDΓ**[123]. A variant which derives from the same root is also attested in Tashawit texts (Huyghe, 1906: 100). Of all the speakers who responded to this item, only fifteen informants managed to produce the Berber variant *ezdeɣ* (0.9%) (see Map 4.60 below).

An alternative Berber variant that was produced by a considerable proportion of respondents to denote the notion in question is *ili* (30.38%) (cf. Basset, 1909, p. 126;). The original meaning of this word is ‘to be’, ‘to exist’ or ‘to be located’ (Huyghe, 1907: 276). However, in Tashawit it is also used to mean ‘to reside’ (Huyghe, 1907: 276). This variant is prominent in the Massif (83.4%). The number of its occurrences in this region alone accounted for 75% of the total number of its tokens. It is also common, though less frequently, in a number of surrounding localities.

[123] **Cognates**: *ezdeɣ* (Motylinski, 1898; Provotelle, 1911; Destaing, 1914; Dallet, 1982; Delheure, 1987); *zdeɣ* (Destaing, 1938; Taïfi, 1991; Nouh-Mefnoune & Abdessalam, 2011); *ezdaɣ* (Renisio, 1932; Serhoual, 2002); *ezdeɛ* (Lanfry, 1973); *ezzeɣ* (Foucauld, 1951), etc.

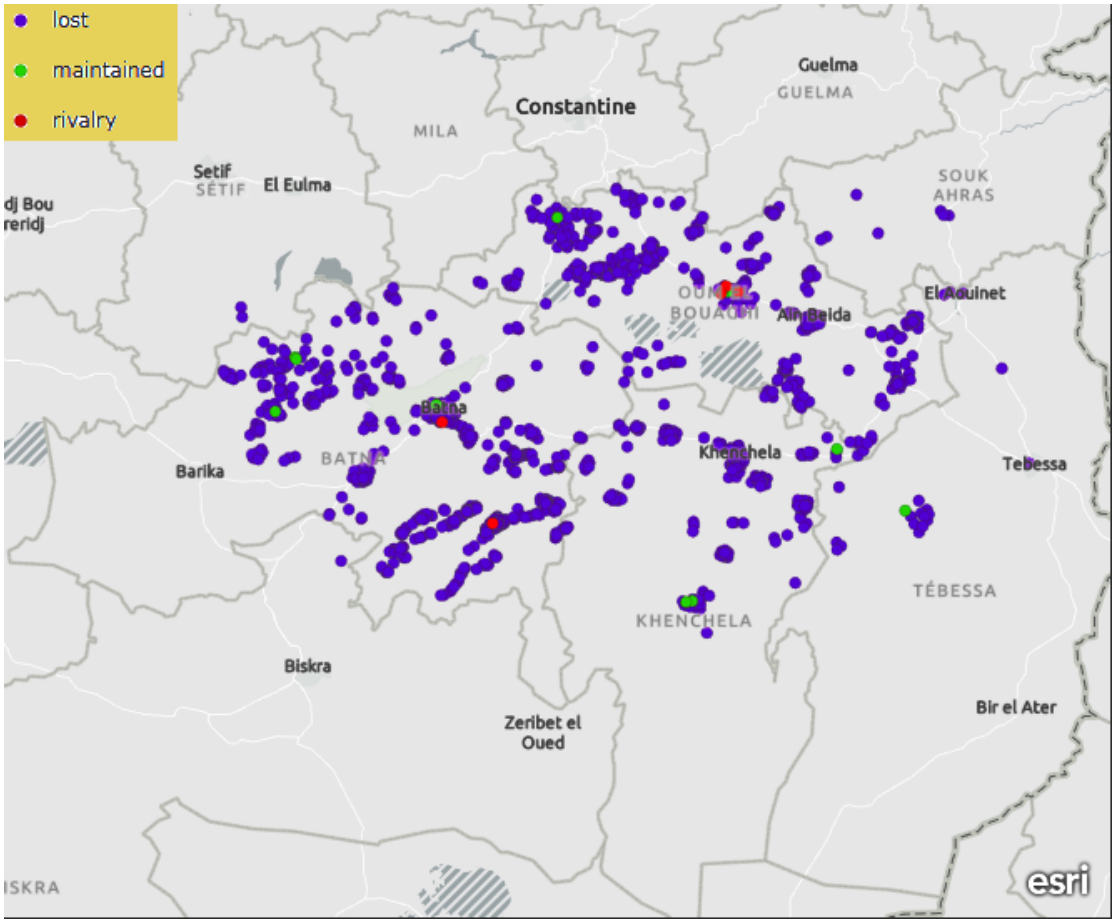
The most frequent response in the data is the Arabic loanword *esken* (63.57%). This is the most prominent variant in the northern and southeastern regions: Bellezma (77.78%), Segnia (91.2%), Oriental Aurès (96.34%) and Harakta (96.88%). However, it was produced only by a small minority in the Massif (15.09%). A small proportion of informants have produced another Arabic borrowing, *ɛac* (3.7%). This Arabic loan is originally used to mean 'to live', but it seems to be used to mean 'to live in' or 'to reside' as well. This response was recorded mainly in the regions of Segnia (9.2%) and Bellezma (9.78%). Table 4.60 below shows the frequencies of the main responses produced in reaction to the present item.

Table 4.60 'to reside': frequencies of lexical variants

lexical variant	**number of tokens**
ezdeɣ	15
ili	517
esken	1083
ɛac	63
others	25
NR	160
Total	1863

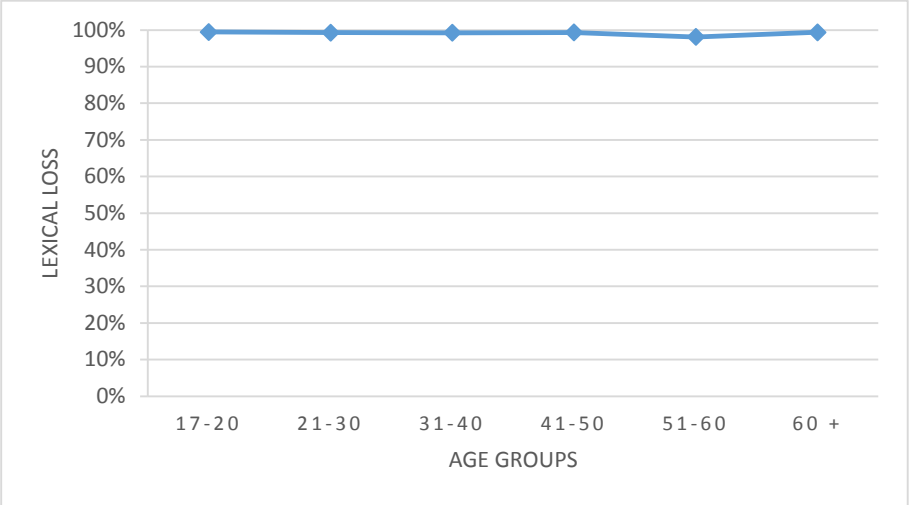
The Berber equivalent for the present item seems to be on the verge of obsolescence: L (reside) = 99.19% (χ^2 = 1801.52, p < 0.001). The statistical analysis has revealed that, from a synchronic point of view, the decline of the Berber variant is not regionally determined (χ^2 = 3.91, p = 0.69). The Berber variant, as Map 4.60 below clearly displays, has fallen into disuse in all regions.

Map 4.60 Lexical loss of the Berber word(s) for ‘to reside’ across Tashawit speaking area



The analysis has also revealed that there is no association between lexical loss and age. The differences obtained between the rates of lexical loss calculated for the different age groups are statistically insignificant ($\chi^2 = 3.35$, $p = 0.65$). The range of variation is extremely small (1.33%), with a minimal rate of 98.12% (recorded for the fifth age group), a maximal rate of 99.45% (recorded for the first age group) and an average rate of 99.14%.

Fig. 4.60 Lexical loss of the Berber word(s) for ‘to reside’ across age groups



4.1.16. Cognition

4.1.16.1. Who?

The words used in Berber to denote the present item derive from the Berber root **M**[124]. Two interrelated Berber forms were recorded in the data, *manni* (f. *manti*) (realized also as *mann* and *mammi*) and *magmes* (f. *mahmes*). The former variant accounted for around one quarter of the total number of the tokens produced (25.9%). It was produced mostly in the compound form *manni wa* ‘who is this?’ (f. *manti ta*), etc. (cf. Destaing, 1914). This first variant is used primarily in the region of Nemamcha (87.36%). It was also produced, though less frequently, in the Massif (48.92%), in particular the western part, the southern localities of Oriental Aurès (38.23%) and Bellezma (10.67%). It was produced by a tiny fraction in the region of Harakta (1.79%) and is almost totally missing in the region of Segnia (0.39%).

[124] **Cognates**: *mi* (Foucauld, 1951), *ma* (Masqueray, 1893; Destaing, 1938; Taifi, 1991), *may* (Taïfi, 1991), *mayn* (Serhoual, 2002), *maïems* (Provotelle, 1911,), *mages* (Destaing, 1914), *mamui* (Huyghe, 1906, 1907; Basset, 1961), *mammu* (Motylinski, 1898; Delheure, 1987), *mammun* (Brugnatelli, 2011), *manayu* (Delheure, 1984), etc.

The second Berber variant is less frequent than the former (3.08%). It is important to note that this word is a compound of two morphemes: *mag* + *mes* (f. *mah* + *mes*) 'who is' (see Chafik, 1990). This second Berber variant is used primarily in the Massif (6.83%), in particular the localities of Tagoust and Maafa, Batna city (6.93%) and the southwestern part of Bellezma (3.95%), namely in the locality of Ain Touta.

The majority of the participants who responded to the present item have produced the Arabic loanword *men-hu* (67.15%). This borrowing is prominent in the regions of Segnia (96.87%), Harakta (94.56%) and Bellezma (82.61%). It is also used, though less frequently, in Oriental Aurès (56.62%), in particular the southern part, and the Massif (40.73%). The lowest frequency of this loan was recorded in the region of Nemamcha (8.04%).

Other responses that were recorded in the data include words like '*witilan*?', literally 'to whom does s/he belong to?', but it could be used to mean 'who is s/he?', *matta* 'what?', *mumi* 'what for?' or 'to whom?', etc..

Table 4.61 'who': frequencies of lexical variants

lexical variant	**number of tokens**
manni …	462
magmes …	55
men-hu	1198
others	69
NR	44
Total	1828

Although the Berber variant is preserved to some degree, lexical loss is the dominant trend for the present item: L (who?) = 71.72% ($\chi^2 = 344$, $p < 0.001$). The use of the Berber variant is, to a great extent, regionally determined ($\chi^2 = 268.84$, $p < 0.001$). The Berber variant is maintained mainly in the southern regions. The lowest rate of

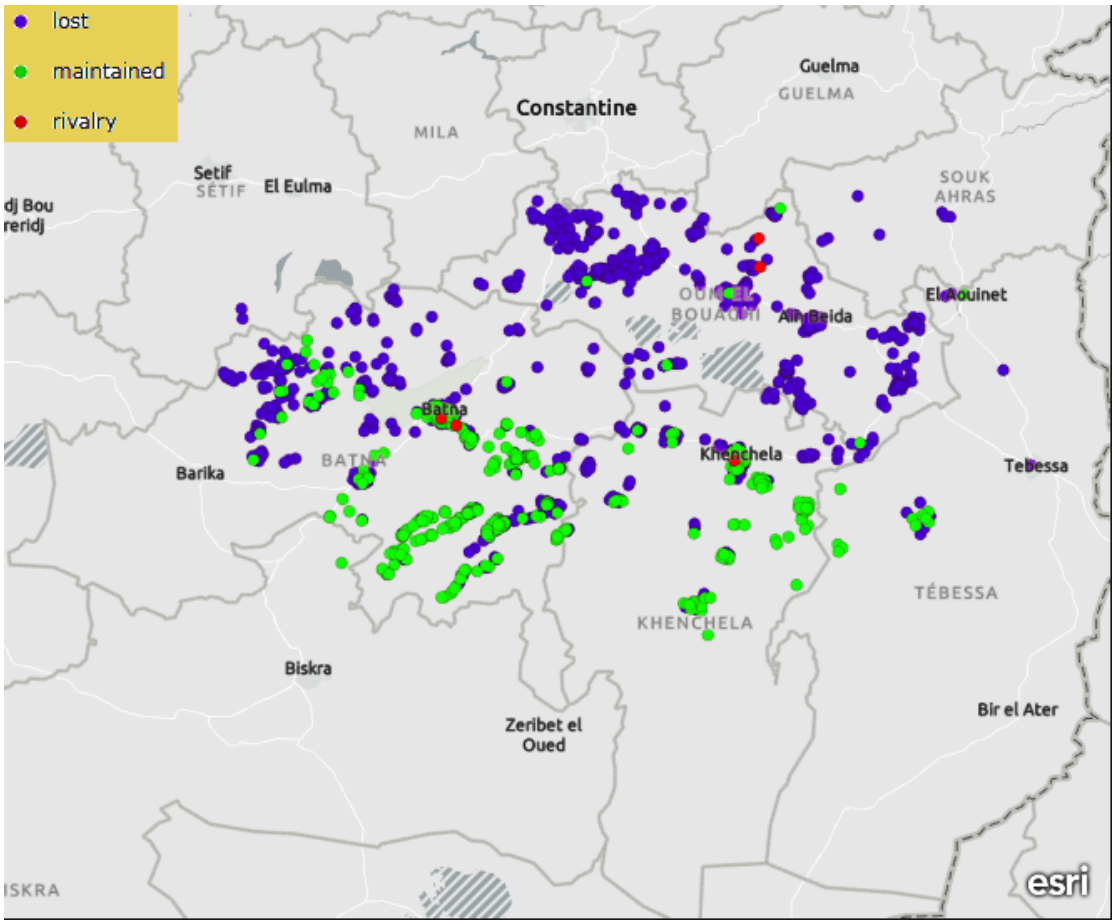
lexical loss was obtained in the region of Nemamcha (L = 15.56%). The second lowest rate was obtained in the Massif (L = 45.28%). The difference calculated between these two rates is statistically significant. The odds of lexical maintenance in the region of Nemamcha are 4.49 times higher than Occidental Aurès ($\chi^2 = 24.2$, $p < 0.001$). In Oriental Aurès, the rate of lexical loss is much higher than the two previous regions (L = 64.14%). Speakers of this region are 2.16 times more likely to lose the Berber variant compared to those of the Massif ($\chi^2 = 15.37$, $p < 0.001$) and 9.71 times more likely compared to those of the region of Nemamcha ($\chi^2 = 45.1$, $p < 0.001$).

The Berber variant is maintained marginally in Bellezma (L = 85.66%). This rate is significantly higher than those recorded in the southern regions. The odds of lexical loss in Bellezma are 3.34 times higher than Oriental Aurès ($\chi^2 = 23.63$, $p < 0.001$), 7.19 times higher than the Massif ($\chi^2 = 97.16$, $p < 0.001$) and 32.42 times higher than the region of Nemamcha ($\chi^2 = 104.21$, $p < 0.001$). Speakers of the region of Bellezma, however, are 9.16 times more likely to preserve the Berber variant compared to those of the region of Harakta ($\chi^2 = 27.71$, $p < 0.001$) and 43.53 times more likely compared to those of the region of Segnia ($\chi^2 = 13.75$, $p < 0.001$).

The highest rates of lexical loss were recorded in the northeastern regions: Harakta (L = 98.21%) and Segnia (L = 99.62%). The analysis has revealed no significant difference between these two regions, with relative odds of lexical loss of 1 to 4.75 respectively ($\chi^2 = 2.11$, $p = 0.15$). Greater differences were obtained between the rates of lexical loss recorded in these regions and the southern regions. The odds of lexical loss in the region of Harakta are 30.3 times higher than Oriental Aurès ($\chi^2 = 66.69$, $p < 0.001$), 66.67 times higher than the Massif ($\chi^2 = 114$, $p < 0.001$) and 333.33 times higher than the region of Nemamcha ($\chi^2 = 140.92$, $p < 0.001$). The relative odds of lexical loss in the region of Segnia are even higher: 142.86 to 1 compared to Oriental Aurès ($\chi^2 =$

23.98, $p < 0.001$), 333.33 to 1 compared to the Massif ($\chi^2 = 32.65$, $p < 0.001$) and 1000 to 1 times compared to the region of Nemamcha ($\chi^2 = 48.32$, $p < 0.001$).

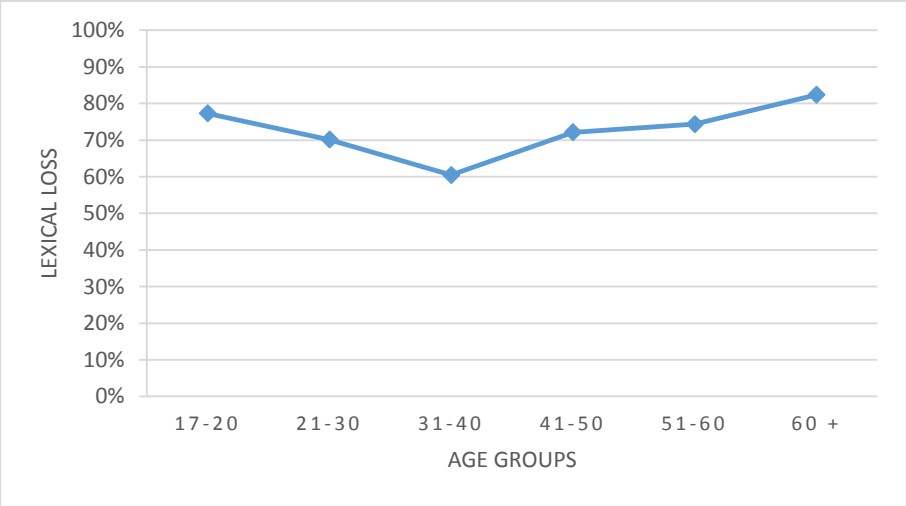
Map 4.61 Lexical loss of the Berber word(s) for 'who?' across Tashawit speaking area



The relationship between age and lexical loss, as Fig. 4.61 below shows, is significant ($\chi^2 = 25.26$, $p < 0.001$). The rate of lexical loss decreases between the first ($L_{17\text{-}20} = 77.3\%$), the second ($L_{21\text{-}30} = 70.12\%$) and the third age group ($L_{31\text{-}40} = 60.46\%$). Speakers of the first age group are 1.42 times less likely to preserve the Berber variant compared to those of the second age group ($\chi^2 = 5.04$, $p = 0.025$), and 2.2 times more likely compared to those of the third age group ($\chi^2 = 15.4$, $p < 0.001$). Speakers of the second age group are 1.55 times less likely to maintain the Berber variant compared to those of the third age group ($\chi^2 = 6.4$, $p = 0.01$). The rate of lexical loss increases significantly between the third and the fourth age group ($L_{41\text{-}50} = 72.15\%$). The odds of

lexical loss for speakers of the fourth age group are 1.74 times higher compared to those of third age group (χ^2 = 6.68, p = 0.001). The rate of lexical loss increases slightly for the fifth age group ($L_{51\text{-}60}$ = 74.63%). Speakers of this group are only 1.09 times more likely to lose the Berber variant compared to those of the fourth age group (χ^2 = 0.17, p = 0.68), but 1.9 times more likely compared to those of the third age group (χ^2 = 9.49, p = 0.002). The highest rate of lexical loss was recorded for the sixth age group (L_{+60} = 82.37%). A speaker from this age group is only 1.57 times less likely to preserve the Berber variant compared to a speaker from the fifth age group (χ^2 = 3.18, p = 0.075), but 1.71 times less likely compared to another from the fourth age group (χ^2 = 4.34, p = 0.037).

Fig. 4.61 Lexical loss of the Berber word(s) for 'who?' across age groups



4.2. Summary of the Findings

We can group the lexical items in the wordlist, based on the findings obtained earlier, into a number of sets.

- **Less than 40% Loss**

The first set comprises notions for which the Berber variants are fairly maintained and used in Tashawit. Although the degrees of maintenance of theses notions vary from one region to another, the Berber variants are used over most of the territories covered

in the present study. The rates of lexical maintenance of the Berber equivalents for these notions are significantly higher than the rates of lexical loss. Only four notions fall under this first set: *summer* (L = 27.95%), *to vomit* (L = 29.5%), *spring* (L = 33.95%) and *heavy* (L = 38.02%).

- **40 to 60% Loss**

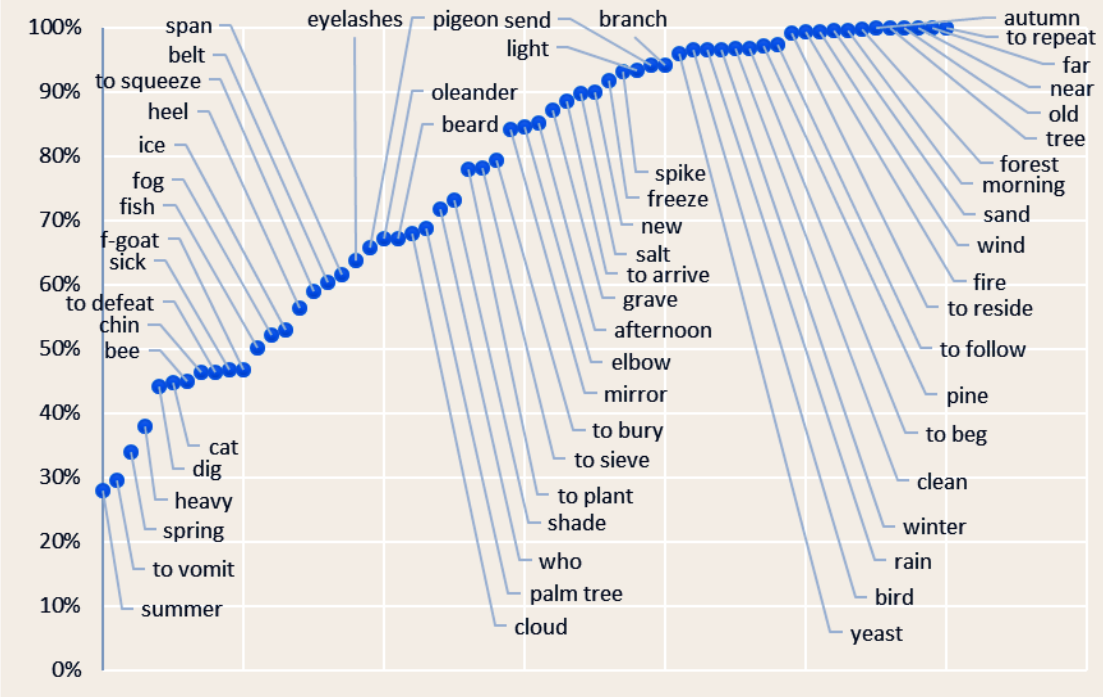
Under this second set, we include notions for which there exists a sort of balance or rivalry between lexical maintenance and lexical loss. This rivalry was inferred from the fact that the analysis has revealed no statistically significant differences between such rates. The notions included under this set can be grouped under two subsets, the first includes notions for which the rates of maintenance are higher than the rates of loss whereas the second includes notions for which the rates of loss are higher. The first subset comprises seven notions: *to dig* (L = 44.17%), *cat* (L = 44.64%), *bee* (L = 44.94%), *chin* (L = 46.31%), *to defeat* (L = 46.41%), *sick* (L = 46.68%) and *female goat* (L = 46.7%). The second subset, on the other hand, comprises five notions: *fish* (L = 50.11%), *fog* (L = 52.2%), *ice* (L = 52.88%), *heel* (L = 56.32%) and *to squeeze* (L = 58.96%). It is important to remind the reader that the rivalry that exists between lexical maintenance and lexical loss within each notion does not necessarily hold in all regions. By contrary, the maintenance and loss of the Berber variant(s) of most of the notions under this set are regionally determined.

- **60 to 80% Loss**

The third set includes notions for which the loss of the Berber variants is the dominant trend, but ones for which the Berber variant is still used in a dominant way in at least one region or territory. Thirteen notions fall under this category: *belt* (L = 60.44%), *span* (L = 61.52%), *eyelashes* (L = 63.76%), *pigeon* (L = 65.74%), *oleander* (L = 67.16%), *beard* (L = 67.21%), *cloud* (L = 68%), *palm* (L = 68.77%), *who* (L =

71.72%), *shade* (L = 73.16%), *to plant* (L = 77.9%), *to sieve* (L = 78.22%), and *to bury* (L = 79.44%).

Fig. 4.62 Overall rates of lexical loss



- **80 to 100% loss**

The Berber words for some of the notions included under this set are preserved only in narrow territories, namely *mirror* (L = 84.25%), *elbow* (L = 84.61%), *afternoon* (L = 85.27%), *grave* (L = 87.26%), *to arrive* (L = 88.63%), *salt* (L = 89.8%) and *new* (L = 89.89%). The Berber words for some other notions are only preserved in a limited number of localities, namely *to freeze* (L = 91.83%), *spike* (L = 93.12%), *light* (L = 93.36%), *send* (L = 94.24%), *branch* (L = 94.26%), *yeast* (L = 95.93%), *bird* (L = 96.56%), *rain* (L = 96.68%), *winter* (L = 96.68%), *clean* (L = 96.81%), *to beg* (L = 96.84%), *pine* (L = 97.16%) and *to follow* (L = 97.34%). The Berber words for the remaining notions can be described as virtually obsolete, namely *to reside* (L = 99.2%), *fire* (L = 99.34%), *wind* (L = 99.37%), *morning* (L = 99.62%), *sand* (L = 99.62%) and *forest* (L = 99.7%), or obsolete, namely *autumn* (L = 100%), *tree* (L = 100%), *old* (L =

100%), *far* (L = 100%), *near* (L = 100%) and *to repeat* (L = 100%). The rates of lexical loss that were calculated for the different notions in the wordlist are shown in Fig. 4.62 above.

The overall value of lexical attrition for each participant can be calculated by adding up the values of lexical loss obtained for the different notions in the wordlist. The analysis of the data has revealed a wide range of values of lexical attrition (***R*** = 39.5), with a minimal value of 21.5 and a maximal value of 61 (***M*** = 46.03 ± 0.15, ***SD*** = 6.54). As it has been pointed out earlier, the use of the Berber words is regionally determined for most notions. In a similar way, the analysis has revealed that lexical attrition is regionally determined ($F = 135.35$, $p < 0.001$). The values of lexical attrition obtained across the localities of the study are displayed in Map 4.62 below. It is clear from the map that lexical attrition is less dominant in the western regions, that is Bellezma and, more importantly, the Massif. It is more prominent in the eastern regions, Oriental Aurès, Nemamcha and, in particular, Segnia and Harakta.

The relationship between lexical attrition and age was shown to be less significant compared to region. Nevertheless, there is some association between the two variables ($F = 45.24$, $p < 0.001$). There are only three scores that are higher than 55 for speakers aged between 55 and 65, and only two scores beyond 55 for speakers aged between 65 and 75. However, all the values of lexical attrition that were obtained for speakers whose age is seventy-five years or older are lower than the score of 53. The correlation between lexical attrition and age is negative (**r** = - 0.16, $p < 0.001$). In other words, the values of lexical attrition decrease as age increase. As it can be noticed, however, this relationship is still weak.

Map 4.62 Lexical attrition across Tashawit speaking regions

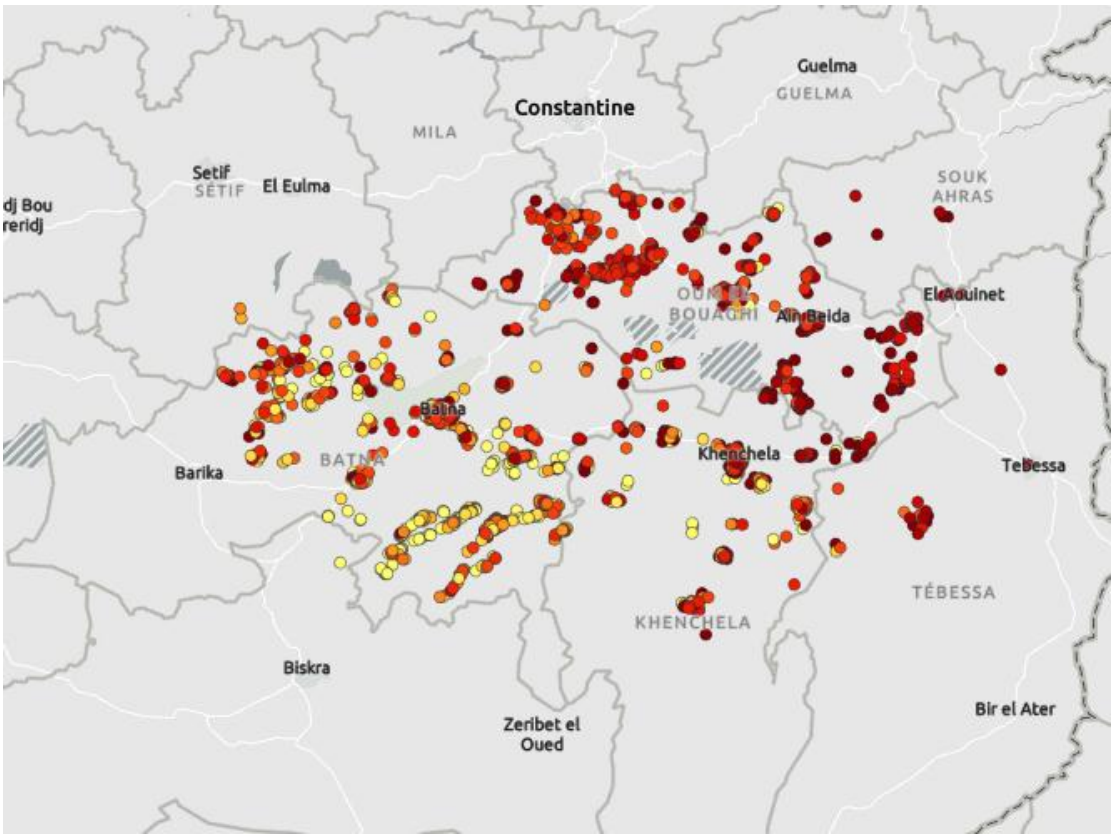
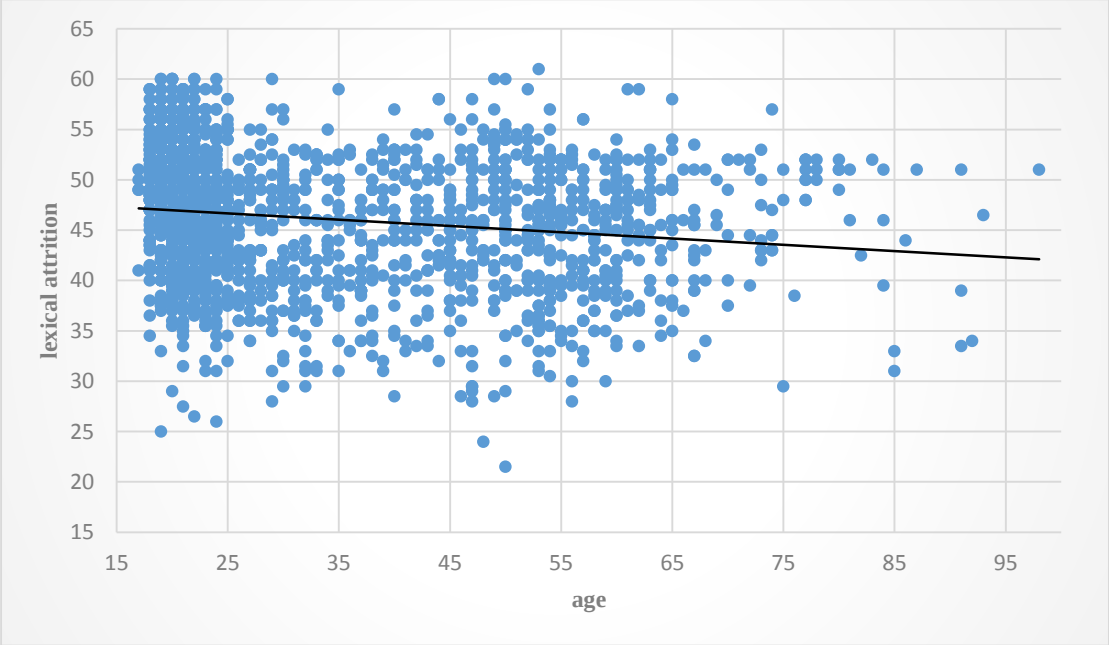


Fig. 4.63 Lexical Attrition and Age



Conclusion

The concern of this chapter was to display the main results of the present study. We have observed that lexical loss was recorded for every single notion that was studied. Nonetheless, the rates of lexical replacement vary from one notion to another. For a number of the notion investigated, the Berber variants turned out to be completely, or almost completely, obsolete. The Berber words for the remaining notions vary between 'poorly maintained', 'fairly maintained' and 'highly maintained'. More importantly, the analysis has revealed that there is a considerable regional variation in terms of the loss of the Berber words for most of the notions addressed. Some regions exhibit lexical loss more than others, although some of the notions that are poorly maintained were only preserved in regions with lower overall rates of lexical maintenance. The next chapter will be concerned with the discussion and interpretation of the findings obtained in this chapter.

Chapter Five: Discussion

Chapter Five: Discussion

Introduction

This final chapter is concerned with the discussion of the results obtained in the present study. We will account for the different tendencies of lexical loss that were observed in the data, like avoidance, lexical borrowing, the use of alternative Berber words, approximations, circumlocutions, and the like. We will also provide an assessment of lexical loss in each region, particularly in comparison with the overall findings obtained in this study, and an assessment of the relationship between lexical loss and age. Some of the stages of lexical obsolescence will be accounted for, illustrated with examples from the data.

5.1. Aspects of lexical loss

Lexical obsolescence, as it has been pointed out in the first chapter, is a complex phenomenon. It does not occur in the same manner all the time. Instead, it is manifested in a number of ways that differ from one notion to another, from one speaker to another and from one setting to another. We will account in the subsequent section for some of these ways as reflected in the findings of the present research work.

5.1.1. Avoidance

Missing responses are treated in a number of ways in research. One of the most widely used techniques is *listwise deletion*. This involves deleting all the cases that contain missing data and then carrying out the analysis for the remaining complete data (Allison, 2001). *Pairwise deletion*, aka *available case analysis*, involves excluding the variables that contain missing data from the analysis, and conduct the analysis by using the variables for which the data is fully available (Allison, 2001). Another technique that is used to deal with missing data is *imputation*. In this technique, all the cases are

preserved, but the missing values are replaced with estimated values obtained from available data, such as the mean, the value of the preceding cell, etc. (Allison, 2001).

In the analysis of the present work, we applied listwise deletion only when missing data in a subject's response are prevailing, something that may indicate that the respondent does not have a minimum competence in the language. The responses of participants to whom not responding is not the dominant trend were included in the analysis. We treated the data obtained from informants as responses to a vocabulary test because the construct addressed differs in its essence from other constructs that can be measured through a similar data collection tool, such as language attitudes, lexical variation, and the like.

Not responding is regarded as an avoidance strategy, which, as we have seen in the first chapter, is an important indicator of lexical attrition (Andersen, 1982). The reasons for avoidance differ from one informant to another. A speaker may avoid to respond to a given lexical item simply because s/he does not know the Berber word that designates it. Avoidance can also be a result of uncertainty. A speaker can be somewhat familiar with the Berber word that denotes a given notion, but because s/he is not quite certain that it designates it accurately, s/he avoids running any risks and, thus, provides no response.

In some cases, where we had the opportunity to ask informants about the reasons for not providing responses to some lexical items, we found out that some of those participants were not willing to produce responses that are not of Berber origin. This purist attitude on the part of the subjects seems to be a result of a lack of understanding of the instructions of the questionnaire. It is likely that such informants assumed that the researcher considered as valid responses only those providing Berber variants and no other alternatives, namely loanwords. Avoidance seems to be the best way to explain

why some informants chose not to provide any response to a basic item like ‘salt’ when Arabic loans, *lmelḥ* or *rrebḥ*, are at their disposal. Aware of the fact that the word they use to denote something is not of Berber origin, subjects may choose not to respond to a given lexical item as a way of expressing their ignorance of the Berber word used to designate it. It is important to note here that the instruction given to the subjects was to provide the words they use in Tashawit to refer to the notions in the wordlist, and not necessarily words of purely Berber origin.

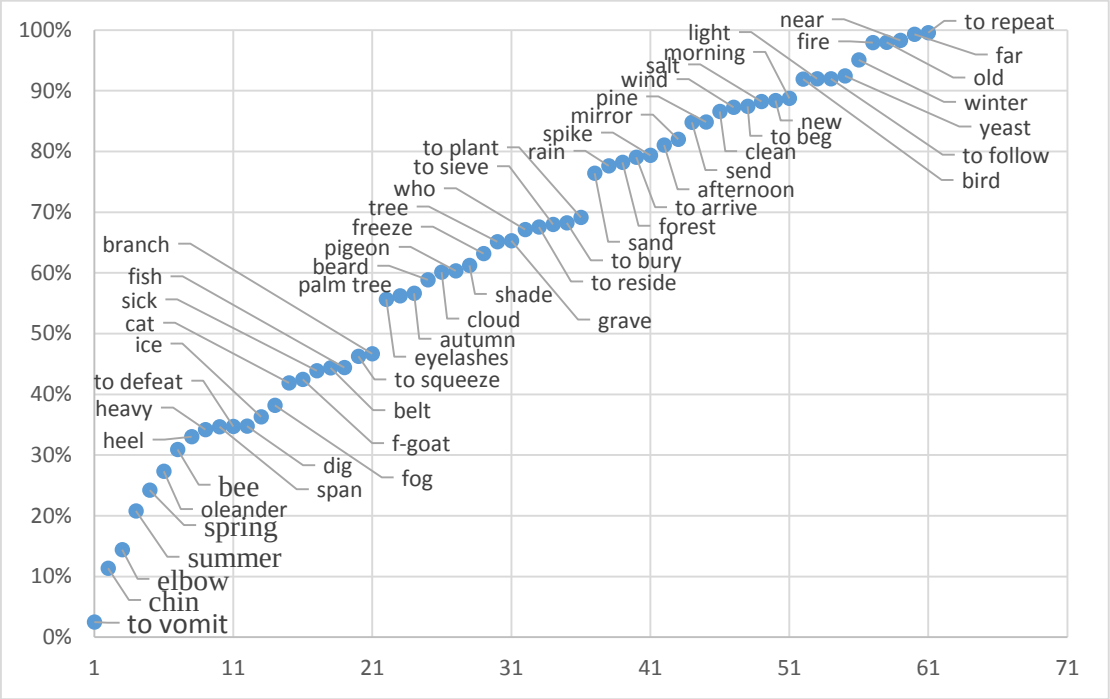
Avoidance can also be an outcome of forgetting or lexical retrieving problems that some subjects have experienced owing to the lack of regular exposure to, or use of, the language, in particular those who live in places where Tashawit is less used or where language shift is the dominant trend. Some of the participants whom we managed to get into contact with were able to recognize the Berber variants once they were mentioned to them. It seems that such Berber variants, which those subjects were not able to recall but were capable of recognizing later, are part of their receptive vocabulary.

5.1.2. Lexical borrowing

The strategy that the subjects used most in order to compensate for not knowing the Berber variants is, by far, the use of loans. Loanwords, as we have seen in the previous chapter, were produced for every single item in the wordlist. The proportions of loans to the total number of responses differed from one lexical variable to another. We can group the lexical variables, in terms of the rates of borrowing, into three sets. The first set covers notions where the Berber variants are significantly more frequent than the loanwords. The rates of loans in this first set range between 27.95% and 38.18%. The notions that fall under this first set include: *to vomit* (2.5%), *chin* (11.37%), *elbow* (14.43%), *summer* (20.81%), *spring* (24.22%), *oleander* (27.34%),

bee (30.89%), *heel* (33.04%), *heavy* (34.19%), *span* (34.66%), *to defeat* (34.7%), *dig* (34.77%), *ice* (36.28%) and *fog* (38.18%). The second set includes notions for which neither the Berber variants nor the loans are significantly dominant, but the two are shown to be in rivalry. The rates of loans in this second group range between 41.86% and 58.88% of the total number of tokens produced for each notion. Eleven notions in the wordlist fall under this second category: *cat* (41.86%), *female goat* (42.48%), *sick* (43.87%), *belt* (44.34%), *spring* (44.42%), *squeeze* (46.25%), *branch* (46.66%), *eyelashes* (55.63%), *palm* (56.24%), *autumn* (56.62%), and *beard* (58.88%). The third, and larger, set covers lexical variables for which loans are significantly more frequent than the Berber variants. The rates of loans in this third set range between 60.14% and 99.58%. The notions included in this category are: *cloud* (60.14%), *pigeon* (60.32%), *shade* (61.22.), *to freeze* (63.17%), *tree* (65.13%), *grave* (65.27%), *who* (67.15%), *to reside* (67.57%), *to sieve* (67.96%), *to bury* (68.24%), *to plant* (69.13%), *sand* (76.44%), *rain* (77.65%), *forest* (78.23%), *to arrive* (79.06%), *spike* (79.38%), *afternoon* (81.07%), *mirror* (82%), *to send* (84.79%), *pine* (84.87%), *clean* (86.58%), *wind* (87.27%), *to beg* (87.47%), *salt* (88.23%), *new* (88.4%), *morning* (88.76%), *bird* (91.9%), *light* (91.96%), *to follow* (91.97%), *yeast* (92.44%), *winter* (95.06%), *fire* (97.91%), *old* (97.97%), *near* (98.28%), *far* (99.3%) and *to repeat* (99.58%). The rates of loans obtained for all the notions in the wordlist are displayed in Fig. 5.1 below.

Fig. 5.1 Rates of lexical Borrowing in the wordlist



5.1.2.1. Motives for Lexical Borrowing

Most of the loans produced in response to the items in the wordlist are core borrowings. The loans, in other words, do not add new meanings to the recipient language. Instead, they duplicate signifiers that are already attested in Tashawit and many other Berber varieties. Moreover, the notions duplicated are culture free; they exist in most of the world's languages. Accordingly, it seems fair to state that the borrowing motive for most lexical transfers observed in the data is prestige, and not need. The loans were originally imported due to the high status associated with the source language and because of the cultural pressure exerted by the source culture.

The existence of a large number of core borrowings in Tashawit, such as the ones elicited in the present research, is an indicator of the intensity of language contact between Tashawit and the source languages from which the loans were imported, chiefly Arabic. The core borrowings elicited could have not been imported due to a casual temporary contact with the source languages.

It is important to note that there are few exceptions to the general tendency exposed above. Some of the loans produced cannot be regarded as clear-cut instances of prestige-motivated borrowing, namely *salt*, *yeast*, *autumn* and *summer*. The Arabic loan *lmelḥ* can be considered as a cultural rather than a core borrowing. Instead of regarding such a loan as a duplication of the Berber word *tisent*, one can consider it as a loan imported in order to designate the commercial type of salt. Speakers of Tashawit might have felt the need for a new word to distinguish between rock salt (halite), which seems to be the form of salt they used in the past and which they most likely referred to as *tisent*, and commercial salt that was introduced later. The use of rock salt seems to have declined with time and, accordingly, the use of the variant *tisent*. The word *lmelḥ*, on the other hand, seems to have taken over the old signification as well.

The justification for the need to borrow the Arabic loan for 'salt' that was provided above can also be advanced to explain the importation of the Arabic loan for 'yeast'. The loan *taxmirt* could have been imported in order to differentiate between the homemade type of yeast, referred to as *amtun*, and the commercial type of yeast. As the homemade yeast ceased to be made and used and was replaced by the commercial one, the word *amtun* fell gradually into disuse.

A problem is also faced in identifying the type of lexical borrowing that took place in the sub-domain of seasons, in particular concerning the items of 'autumn' and 'summer'. The Berber words attested with the meaning 'autumn' include *amaris* (Cid Kaoui, 1894) and *amewan* (Foucauld, 1951). The accurate denotations of these two words are probably the ones provided by Masqueray (1893), i.e. 'the first half of autumn' and 'the second half of autumn' respectively. The variant *ɣarat* which is also used to refer to this season was also assigned a rather specific meaning, in particular 'the season immediately following wet season' (Heath, 2006). This, according to Prasse

et al. (2003), falls accurately between the 15th of September and the 25th of October. The Berber word used in Tashawit to denote 'autumn' is *tamenzut*. This word seems to have been extended from 'fruit that appears early' to cover 'the period of time when such a fruit appears', i.e. 'early autumn', and further to cover the season as a whole. On the other hand, the word *tmaẓuẓt* which designates 'fruits that appear late' was extended to denote 'late autumn'. It seems fair to assume, based on the variation attested with regard to this notion, that there is no one-to-one correspondence between Berber and Arabic with concerning the notion of 'autumn'. In other word, there is no true equivalent for 'autumn' in Berber, i.e. one that covers the season as a whole. If this assumption is correct, the Arabic loanword *lexrif* can then be considered as a cultural, rather than a core, borrowing because it introduces a new meaning to the borrowing language.

The above interpretation can be offered to justify the need for importing Arabic words to designate 'summer'. In Berber, two words are used to refer to this season, *anebdu* and *iwilan*. Although used today to denote 'summer' as a whole, *anebdu* is also used to refer to the period of harvesting wheat or barley in summer (Destaing, 1938; Basset, 1961; Taifi, 1991). If the original meaning of *anebdu* is the one specified here, its use to denote 'summer' as a whole would then be an instance of semantic extension. Accordingly, the Arabic borrowings *ṣṣif* and *lḥumman* would then be examples of cultural borrowing and not core borrowing.

We also recorded in the data obtained for the present study instances of taboo-motivated borrowing (see section 1.1.1.2 above). This involved the replacement of a number of words that were perceived to have negative connotations or bring bad omen with loans that were perceived to have positive connotations or bring good omen. We can refer here to the motive offered by Kossmann (2013) to justify the need for

borrowing the Arabic loan *lɛafit* ‘fire’. He argued that this word was imported into Berber in order to avoid using the word *timess*, which is also used to refer to ‘hellfire’. It is thought, however, that *lɛafit* ‘fire’ in Berber and *lɛafya* ‘fire’ in Maghribian Arabic took their meanings from the association that exists between ‘fire’, which is used in cauterization, and *lɛafya* ‘health’ that people aim to regain from such a medical practice. It is very likely, based on this interpretation, that the euphemism *lɛafya* ‘fire’ emerged first in dialectal Arabic and was later imported into Berber as a core borrowing.

Two examples of taboo-motivated borrowing that were observed in the data are traced to the Arabic root **RBḤ**, which signifies ‘profit’ and ‘gain’ (Lane, 1968). The first borrowing is *rrbeḥ*/*rrebḥ* ‘salt’. Some speakers, in particular the elderly, augur good by using this loan, as opposed to the other Arabic loan *lmelḥ*/*lemleḥ*. In some Tashawit varieties, in particular the one spoken in O. Abdi, speakers augur good by using the loan *rebbeḥ* ‘to sieve’[1].

Taboo-motivated lexical change is not fulfilled through borrowing only, but also by means of internal lexical replacement. The Berber word *alili* ‘oleander’ is associated with bad omen because of its bitter taste. Tashawit speakers sometimes use expressions like *yirẓag d.alili* or *yirẓag am.lili* ‘it is bitter like oleander’. In order to avoid this association, the word *alili* is substituted in some contexts with the Berber word *miziṭ* ‘sweet’. The word *miziṭ* is used because it brings about a sense that is the exact opposite of the one associated with ‘oleander’. It is possible that the borrowing of the Arabic word *ddefla* to denote ‘oleander’ has the same motive, at least in the varieties where such an association with bad omen is common.

Borrowing also seems to take place sometimes to reduce or eliminate a certain confusion that occurs due to polysemy. It is possible that the loanword *yxeff*/*yexfif* was

[1] In the same variety, speakers prefer to use *erbeḥ* ‘to go out’ in the place of *ruḥ* for alike considerations.

first borrowed to denote an ‘agile’ person, already denoted using the Berber word *yfess* or *yefsis* and which also means ‘light’ (adj.). The significance of such a loan seems to have broadened to denote ‘light’ as well and, subsequently and gradually, displaced the Berber variant.

5.1.2.2. Loan Sources

The data collected for the present study revealed three source languages for the loans produced by the participants, Arabic, French and Latin. Arabic loans are more prominent. They were recorded for every single lexical item in the wordlist. Although it is not always possible to identify the variety of Arabic from which such loans were borrowed, most of them seem to be copied after corresponding equivalents in colloquial Arabic. Loans like *lɛafit* ‘fire’, *ljemmada* ‘ice’, *lḥumman* ‘summer’, *lmecta* ‘winter’ *tasejṛit* ‘tree’, *tasbult* ‘spike’, *ɛaref* ‘branch’, *aṭeyyar* ‘bird’, *ccwafeṛ* ‘eyelashes’, *tamrayt* ‘mirror’, *rrebḥ* ‘salt’, *ɛawed* ‘repeat’, *lḥeq* ‘to arrive’ and *eṣref* ‘send’ are most likely borrowed from dialectal Arabic. The variety of Arabic that gave rise to the rest of Arabic loans is not clearly decided.

If Tashawit have borrowed words from CA or MSA, this should have taken place in contexts of communicative events where such Arabic varieties is used, such as Friday sermons, reciting or listening to recitations of Qur’an, etc. This seems true, however, before the spread of modern media, which have now increased the chances of borrowing words from CA or MSA and from Arabic vernaculars as well. It is important to note, however, that many of the loans produced by the subjects have entered Tashawit before the introduction of modern media (see Sierakowsky, 1871; Masqueray, 1879, 1885; Mercier, 1896, 1900; Huyghe, 1906, 1907, Joly, 1912, etc.). In addition to media, the spread of literacy has also increased the chances of borrowing words from Classical and Modern Standard Arabic.

There are three loanwords in the data that are traced to Latin, *tayda* ‘pine’, *awessu* ‘summer’ and *lqeṭ* ‘cat’. The first loan is traced to the Latin word *taeda*, the second to *Augustus* ‘August’ and the third to *catus* (Kossmann, 2013). The third loan was preserved in some Tashawit varieties, in particular the one used in the region of Harakta, in a form that is so similar to the Latin word, namely *aqeṭṭus*. Based on their morphology, however, the forms *lqeṭ* and *lgeṭ* are more likely to have entered the language through the intermediacy of Arabic. It is worth noting, nevertheless, that the ultimate source of the word in question is not Latin or Indo-European. Its furthest origin is most likely an Afroasiatic language, most likely Nubian *kadis* or Berber *kadiska*, both of which mean ‘cat’ (Quiles and Lopez-Menchero, 2011; Kurtz, 2013)[2].

Three loans in the data are traced to French, *laglaṣ* ‘ice’, *eglaṣa* ‘to freeze’ and *ssantura* ‘belt’. As can be clearly noticed, the source of the first loan is the French noun phrase ‘la glace’. The form imported into Tashawit, nevertheless, is unanalyzable; it is treated as one single word (see Haspelmath, 2009). It is not clear whether the first two loans were borrowed directly from French or through the intermediacy of Arabic. However, the marker of feminine form in the third loan, i.e. ***–a***, indicates that it was imported from dialectal Arabic and not directly from French.

5.1.3. Other Aspects

5.1.3.1. Using Alternative Berber words

Participants have produced a number of alternative Berber words in response to some of the notions in the wordlist. By ‘alternative’, we refer to those words whose original meaning is, more or less, different from the notions targeted. Such words differ in the extent to which they are accepted by fluent speakers of the language as relevant words that can be used to refer to the notions in question. Some of these alternatives

[2] Check also the online etymology dictionary (https://www.etymonline.com).

are attested in Tashawit with the meanings intended and, accordingly, figure in the texts of this Berber variety in such meanings. Any of such words has either undergone a process of semantic shift, i.e. extending its significance but losing its original meaning, or semantic broadening, i.e. extending its significance without losing its original meaning (Crowley and Bowern, 2010).

We have encountered few instances of this first category of words in the data. The first example is the word *tametna* 'rain'. This word is attested in a number of Tashawit texts, namely Mercier (1900) (cited in Lafkioui and Merolla, 2002: 86), Huyghe (1906, 1907), Ounissi (2003), Lounissi (2011) and Boudjellal (2015). Apart from Tashawit, this word seems to be attested only in TCM. In this Berber variety, *ametna* designates 'persistent rain' or 'repeated showers' (Taifi, 1991). However, it is also attested with the meanings 'snowfall', 'snow storm' and 'steam rising from the ground in summer after rain' (Taifi, 1991). According to Chafik (1990), it designates 'snow storm' or 'hail storm'. The plural form of this word, *imetniwen*, is used to denote the 'period of rain in winter' (Taifi, 1991). The word *tametna* in Tashawit seems to be an instance of semantic shift.

The second example is concerned with a set of words that were produced in response to the items of 'ice' and 'to freeze'. For the former, the participants produced *lqeṛṛaif*, *lγeṛṛaif*, *aqṛaf* and *aγṛaf*, and for the latter they produced *qṛef* and *γṛef* (see Huyghe, 1906)[3]. In most other Berber varieties, these words are missing. In Gourara, the word *aqraf* is used to designate 'cold wind' (Boudot-Lamotte, 1964). According to Chafik (1990), the word *aqṛaf* denotes 'bitter cold', whereas the verb *qṛef* is used to

[3] The verb *qṛef* is also used to refer to the freezing of other things, such as 'fat' (Basset, 1961) and to the coagulation of blood. It also means to accidentally hit one's finger, hand, etc., or someone else's with a hard object (such as a door, stone, hammer, etc.) (Basset, 1961), which causes injury or, interestingly, blood to coagulate.

mean ‘to be very cold’. The meanings associated with the words attested in Tashawit seems to have resulted from a semantic shift from the meanings provided by Chafik (1990).

Semantic extensions were also encountered in the domain of time. We observe a slight semantic extension with regard to the item of ‘morning’. The word *tifawt* which designates ‘morning’ in Berber is also used to refer to ‘light’ or ‘daylight’. The obsolescence of this word in its first sense could be due to confusion resulting from polysemy. In order to avoid such a confusion, Tashawit speakers seem to have resorted to the borrowing of the Arabic loan *taṣebḥit* or the extension of the meaning of the Berber word *tanezzayt* which originally denoted ‘early morning’ (Huyghe, 1906). The word *tanezzayt* seems to have undergone a semantic shift to cover ‘morning’ as a whole, but it is possible that it has undergone semantic broadening in some Tashawit varieties.

Semantic broadening was also observed in the data obtained in response to ‘autumn’. The Berber word used in Tashawit to denote ‘autumn’, *tamenzut* (Huyghe, 1906), was extended from a word that denotes something precocious like ‘the fruits that mature early in autumn’ to cover ‘the early phase of autumn when such fruits appear’, and further to cover ‘autumn’ as a whole. The word which was most likely used in Tashawit to denote ‘late autumn’ is *tmaẓuẓt*. This word was extended from the meaning of something that appears late like ‘the fruits that mature late in autumn’ to cover ‘the late phase of autumn when such fruits appear’. Nevertheless, this variant was produced by an extremely tiny fraction of respondents in the present study. It seems to have fallen into disuse and was displaced either by the previous Berber variant or by the Arabic loanword.

Another example of an established semantic broadening is observed in the data produced in response to the item ‘to reside’. The Berber equivalent of this verb is *ezdeɣ*.

It is attested in most Berber varieties. In the data obtained for the present study, this variant was only produced by an extremely tiny fraction of informants. Instead, the most frequent Berber variant in participants' responses is *ili*. The exact meaning of this word is 'to be', but it was extended to mean 'to reside' as well (Huyghe, 1906).

The second category of alternative Berber words covers those that are used with the meanings in question only in some regions, but are not attested with such meanings in other regions. They are not as established as the words discussed earlier and, therefore, are not attested as well in the literature with the meanings intended. For example, in response to a lexical variable in the domain of physical world, namely 'forest', some subjects produced a number of words that originally denote other notions. The first of these words is *adrar*. This word is used in Berber to designate 'mountain' (Huyghe, 1906; Zerrad, 1999). It seems the participants have resorted to this semantic broadening in order to avoid using an Arabic loanword. They chose a word that is not unrelated to the notion in question. Although the notions of 'forest' and 'mountain' are clearly distinct in meaning, they are most often inseparable in terms of the physical space that they occupy. Another Berber word that was produced to denote the same notion is *malu*. Derived from the same root as *tili* 'shade', this word is most commonly used to designate a shady place, usually a mountain slope and is an antonym of *sammer* 'the slope of a mountain that faces the sun' (Basset, 1961; Haddadou, 2007). It takes its designation in place names from this original meaning. The word *malu* seems to have broadened from 'shady place' to 'the shady slope of a mountain' to 'the forest that exists on such a slope' to 'forest' as a whole.

A rather more interesting example in this category is the use of the word *taṣeṭṭa* to denote 'tree', in particular in the regions of Bellezma, Segnia and Harakta. The accurate meaning of this word in the different Berber varieties, including Tashawit, is 'branch'

(Huyghe, 1906), more precisely, a ‘branch with leaves’ (Huyghe, 1907). The word *taṣeṭṭa* has seemingly undergone a semantic shift from ‘branch with leaves’ to ‘branch’ to ‘tree’. Today, the word *taṣeṭṭa* is no longer used to mean ‘branch’ in the varieties of Tashawit spoken in the regions mentioned earlier. Conversely, it is used in its original meaning, and rarely if ever to mean ‘tree’, in the Massif.

Within the domain of agriculture and vegetation, we find another example of semantic extension. This concerns the use of the word *tacuwaṭṭ* to denote ‘spike’. This word is common in this meaning in Bellezma, but not in other regions. The Berber variant used in Tashawit to denote ‘spike’, and which is common in other Berber varieties, is *tiydert* (Huyghe, 1906). The accurate meaning of *tacuwaṭṭ* in Tashawit is ‘bundle of spikes (to be grilled)’. It is also attested with close meanings in other Berber varieties (see Zerrad, 1999). The word *tacewaṭṭ* has certainly extended from one of the meaning attested in the different Berber varieties, most likely ‘bundle of spikes (to be grilled)’ to ‘spike’.

In another semantic domain, namely body, a good number of participants produced the Berber word *ɣbeṛ* ‘to bury’. The original signification of this word in Berber is ‘to hide’, as in Tuareg (Foucauld, 1951) and Teggargrent (Delheure, 1987) or ‘hiding under the ground’ as in Tumzabt (Delheure, 1984). It is clear that the word *ɣbeṛ* was broadened to mean ‘to bury the dead’ as well.

The third category of alternative words covers responses that would not be used by most other fluent speakers of the language, but would rather be considered as unacceptable or wrong. They can be referred to as irrelevant. The responses which are close in their meaning to the notions targeted are referred to as approximations. These show lexical loss or attrition at the level of individual speakers. Most, but not all, of such responses were produced by tiny fractions of participants. Most of them belong to

the same semantic domain of the notion targeted and few of them belong to other semantic domains.

The first example of such responses is the word *cal*, which was produced to denote 'sand'. This word is used in Tashawit, as in other Berber varieties, to designate 'soil' instead of 'sand'. It should be noted that this response was recorded more frequently among young speakers. We assume that some of the subjects, in particular the elderly, have resorted to the use of this word because they did not want to provide an Arabic loan. Therefore, they produced a word with a meaning that somehow encompasses the meaning of the word in question, i.e. its hypernym. Some informants were a bit more precise, using the phrase *cal n ṣṣeḥra* 'soil of Sahara/desert'.

In the same domain, we encounter other examples of these irrelevant responses, e.g. *tirrjin* 'embers' for 'fire', *ajenna* 'sky' and *tagut* 'fog' for 'cloud', *akerra* 'hail' and *asegna* 'cloud' for 'rain', *asegna* for 'fog', *adfel* 'snow' and *aṣemmiḍ* 'cold' for 'ice' and 'wind', etc. Some informants produced the names of types of wind to denote wind in general, *abeḥri* 'cold wind, coming from the sea', *aḍehṛawi* 'north wind' and *cchili* 'hot, southwest wind' (see Huyghe, 1906: 731).

In the domain of time, we encounter responses like *ajris* 'ice' *aṣemmiḍ* 'cold', *jember* 'December' and *anebdu* 'summar' for 'winter', *anebdu* and *ssammet* for 'autumn', *anebdu, tamenzut* 'autumn' and *brir* 'April' for 'spring'. Other participants failed to produce the accurate word for 'morning' and 'afternoon', instead providing words like *ass* 'day' and *tafukt* 'sun' for 'morning' and *tanezzakt* 'early morning', *sallas* 'darkness', *iḍ*, 'night' and *amensi* 'evening' for 'afternoon'.

Lexical variables covered under the domain of agriculture and vegetation showed no exception to the ones mentioned above. By contrary, this domain showed more of these irrelevant responses than most other domains. Some participants provided

responses like *tajebbart* ‘palm tree’, *tazwit* ‘raceme’ and *cctelt* ‘seedling’ for ‘tree’, *izuggaren*/*teyni* ‘dates’ *lejrid* ‘palm branch stripped of its leaves’ and *tayda* ‘pine’ for ‘palm’, *irden* ‘wheat’, *timẓin* ‘barley’, *iger* ‘field’ and *ideɣ* ‘handful of wheat, barley, etc.’ for ‘spike’, and *azwer* ‘root’, *akeccuḍ* ‘piece of wood’ and *aqebbal* ‘stick’ for ‘branch’. Irrelevant responses in this domain were also produced in response to less basic notion, namely ‘pine’ and ‘oleander’. These include *ṣṣerwel* ‘cypress’, *idgel*/*idyel* ‘cedar’, *uxlif* ‘kermes oak’, *aṣefṣaf* ‘willow’, *aywal* ‘spanish juniper’, *lhendi* ‘prickly pear’, *taqqa* ‘common juniper’, *alili* ‘oleander’, *tabɣa* ‘dog rose’ for ‘pine’ and *aɛric* ‘vine’, *tayda* ‘pine’ and *tayzelt* ‘raspberry’ for ‘oleander’.

In the domain of animals, we recorded irrelevant responses for ‘bird’, ‘pigeon’, ‘bee’ and ‘female-goat’, but not for ‘cat’ and ‘fish’. For example, *ẓẓawec* ‘sparrow’, *menqeb* ‘goldfinch’ (full name *menqeb sennan*, lit. thorn-pecker; syn. *a.meqnin*) and *adbir* ‘pigeon’ for ‘bird’, *aẓḍuḍ* ‘wood pigeon’, *tmilli* ‘dove’ *tasekkurt* ‘partridge’ and *tamergust* ‘quail’ for ‘pigeon’; *ireẓẓi*, *irẓeẓẓi*, *iwerẓeẓẓi* and *aberzezzu* ‘wasp’, *tusna* ‘insect like a big wasp that produces honey’ (Azdoud, 2011: 482), *tagemt*, ‘horsefly’ *abexxuc* ‘insect’ for ‘bee’, and *izmer* ‘lamb’, *ikerr* ‘ram’ and *tixsi* ‘ewe’ for ‘female-goat’.

Irrelevant responses were also recorded a lot in the domain of body parts. We obtained in the data responses like *zaw* ‘hair’, *udem* ‘face’ and *cclaɣem* ‘moustache’ for ‘beard’, *iri* ‘neck’ *magg* ‘cheek’ and *timmi* ‘forehead’ for ‘chin’, *aẓi* ‘shoulder’ *fud* ‘knee’ *fuss* ‘hand’, *tazelmemmut* ‘calf’ and *aɣil* ‘arm’ for ‘elbow’, *ḍar* ‘foot’ and *fud* ‘knee’ for heel, *tiṭ* ‘eye’ for ‘eyelashes’, and *ɣil* ‘arm’ and *fus* ‘hand’ for ‘span’.

Other irrelevant responses that were produced in the data include *tasɣunt* ‘rope’, *tazellumt* ‘hair rope’ and *fuli* ‘thread’ for ‘belt’, *aɣṛum* ‘bread’ and *arekti* ‘dough’ for ‘yeast’, *yezzur* ‘thick’ for ‘heavy’, *azdad* ‘thin’ and *iless* ‘smooth’ for ‘light’, *dun*

'there' for 'far', *awra* 'over here', *fidis* 'besides' and *sma* 'next to' for 'near', *atrar* 'new' and *yirid* 'washed' for 'clean', etc.

5.1.3.1.1. Confusions due to Phonological Resemblance

A number of participants produced irrelevant responses to a number of the items in the wordlist because they confused between two Berber words that have some phonological resemblance. For instance, some respondents produced *taguft* instead of *tagut* to denote 'fog'. In a similar way, others confused the Berber words *tisent* and *tisit* for one another, some providing the former where the latter should be the relevant answer, whereas others produced the latter to denote the notion designated by the former. The same was also recorded regarding the words *taɣmeṛt* 'elbow' and *taɣesmart* 'chin'. Still, some other respondents produced *tadmert* instead of *tmart* to denote 'beard' or 'chin'. Some other participants failed to provide the accurate Berber word for 'fish' and instead produced a number of responses which could only be considered as deviations of the Berber form (viz. *imselmen*, *izermen*, *asnem*, *asman*, and *aslu*).

5.1.3.2. Circumlocutions

One of the strategies used by speakers to compensate for not knowing the Berber word in question is paraphrasing. This is known in the literature as the use of Circumlocutions (Andersen, 1982). Incapable of recalling the Berber variant or aware of the fact that they do not know it, some informants resorted to the use of a paraphrase that expresses a similar or a close meaning to the notion in question. These types of responses were recorded for a number of lexical items in the present study. Some of the examples of such circumlocutions are listed in table 5.1 below.

Table 5.1. Circumlocutions

Notion	**Circonlocution**	**Translation**
sand	*cal n ṣṣeḥṛa*	soil of Sahara/desert
	cal n tlaxt	clay soil
palm	*tacejṛit/taseṭṭa n teyni*	date tree
	tacejṛit/taseṭṭa n ihebba	date tree
	taseṭṭa n-uɛeṛjun	raceme tree
morning	*dugg ass*	during the day
afternoon	*degg iḍ*	at night
pine	*tacejṛit n aṣelɣaɣ*	sap tree
	tacejṛit n izumbeyyen	tree of cones
oleander	*taseṭṭa n newwar*	tree of flowers
	taseṭṭa di lwad	the tree in the ravine
bee	*abexxuc n leɛsel*	insect of honey
	abexxuc n tamemt	insect of honey
beard	*zaw n w-udem*	facial hair
elbow	*ɣil d fus*	arm and hand
	takɛebt nu-ɣil	ankle of arm
	takɛebt nu-fus	ankle of hand
	lmefṣel nu-ɣil	arm joint
heel	*takɛebt nu-ḍaṛ*	ankle
	tamceḍt nu-ḍaṛ	instep
	ḍfeṛ nu-ḍaṛ	rear of foot
eyelash	*zaw n tiṭ*	hair of eye
light	*ud yiẓay c*	It is not heavy.
near	*f idis*	besides
sick	*ud izmir c*	He is not well.
	ud iṣeḥḥ c	He is not healthy.
to repeat	*yetcax xir lla*	He talks a lot.
	yettutla labas	He talks a lot.
to follow	*di tgara*	behind
	yeggur tgara nnes	He walks behind him/her.

yeggur ur nnes	He walks behind him/her.
iṛuḥ tgara (*nnes*)	He went with (him/her).
yuɣa-s tgara	He went after him/her.

5.3. Factors Affecting Lexical Loss

The findings of the present study have revealed that lexical loss varies according to a number of factors. We will focus here on the association between lexical loss and the two predictor factors chosen for the present study, i.e. region and age.

5.3.1. Region

There is a substantial regional variation with regard to lexical loss. The Berber variants for some lexical variables were shown to be obsolete in all regions. These can be grouped into two sets. The first set includes variables for which the Berber variant was completely lost, i.e. no single informant managed to produce it in any region. There are six lexical items which belong to this category: *tree*, *old*, *autumn*, *near*, *far* and *repeat*. The second set comprises lexical variables for which only minute traces of the Berber variant were recorded in one or more regions. It includes *fire*, *wind*, *sand* and *forest*. With regard to the remaining variables, we observed different tendencies across the different regions. The section below will attempt to account for such tendencies in each region.

- **Aurès Massif**

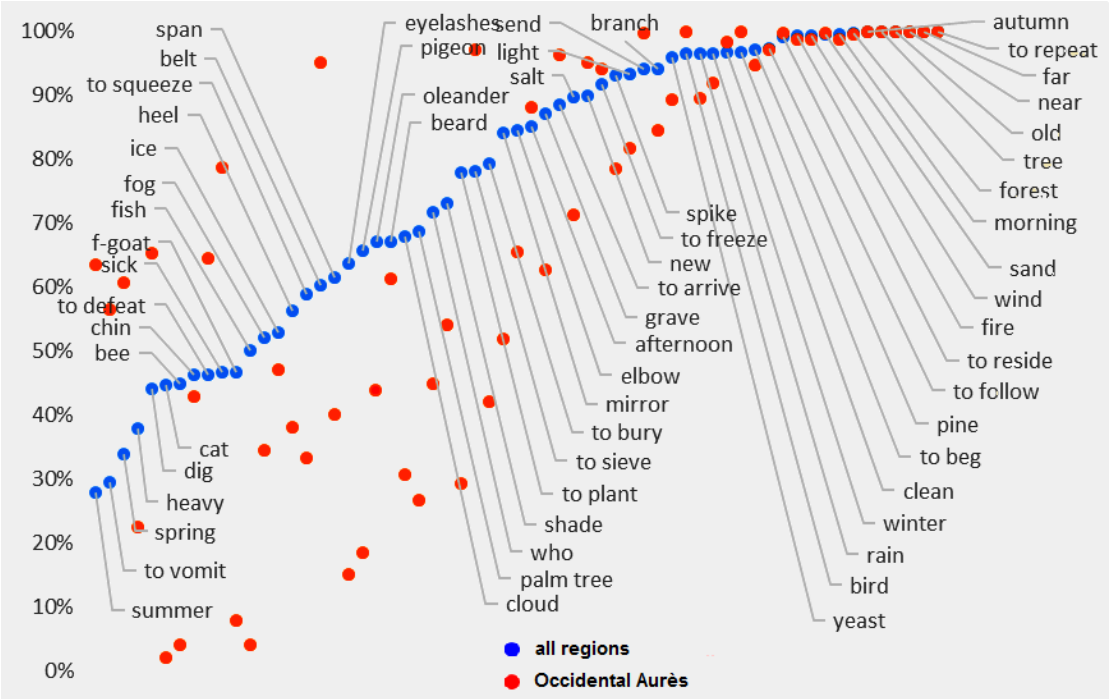
Of the sixty-one items addressed in this study, lexical maintenance was revealed to be significantly dominant for nineteen items in this region, namely *cat* (L = 2.15%), *bee* (L = 4.07%), *fish* (L = 4.08%), *female goat* (L = 7.82%), *to vomit* (L = 10.21%), *eyelashes* (L = 15.02%), *pigeon* (L = 18.47%), *heavy* (L = 22.3%), *palm tree* (L = 26.8%), *to plant* (L = 29.27%), *cloud* (L = 30.8%), *squeeze* (L = 33.26%), *fog* (L = 34.46%), *heel* (L = 38.2%), *span* (L = 40.21%), *to bury* (L = 42.12%), *chin* (L = 42.89%), *oleander* (L = 43.76%) and *who* (L = 44.99%). The Berber variants of three

other lexical variables were found to be in rivalry with other responses: *ice* (L = 47.19), *mirror* (L = 51.93%), and *shade* (L = 54.11%). However, it is important to note that although the Berber variants for these three variables were not dominant across the Massif, they are the prominent variants in some territories of the region. The rates of the Berber variants for the remaining thirty-nine lexical items were found to be diverse. They include notions for which the Berber variants are fairly maintained, others for which the Berber variants have gone archaic and many others in between: *spring* (L = 60.78%), *beard* (L = 61.32%), *grave* (L = 62.78%), *summer* (L = 63.58%), *to defeat* (L = 64.5%), *to dig* (L = 65.26%), *elbow* (L = 65.53%), *salt* (L = 71.35%), *spike* (L = 78.65%), *sick* (L = 78.71%), *light* (L = 81.78%), *branch* (L = 84.62%), *morning* (L = 86.4%), *afternoon* (L = 88.21%), *yeast* (L = 89.4%), *rain* (L = 89.48%), *winter* (L = 92%), *to freeze* (L = 94.16%), *pine* (L = 94.69%), *belt* (L = 95.09%), *new* (L = 95.11%), *to arrive* (L = 96.36%), *to follow* (L = 97.1%), *to sieve* (L = 97.12%), *clean* (L = 98.31%), *fire* (L = 98.73%) and *wind* (L = 9.73%), *forest* (L = 99.59%), *sand* (L = 99.79%), *to send* (L = 99.79%) and *to reside* (L = 99.79%). The Berber variants of eight notions were shown to be totally missing in the Massif, namely *autumn* (L = 100%), *bird* (L = 100%), *tree* (L = 100%), *near* (L = 100%), *far* (L = 100%), *old* (L = 100%), *to beg* (L = 100%) and *to repeat* (L = 100%).

In the Massif, lexical erosion was shown to be less dominant than all other regions: L (Massif) = 67.04%. The items in the lexical list can be grouped, in this regard, into two sets. The first covers lexical items with rates of lexical loss that are higher than, or equal to, the corresponding overall rates calculated for all regions. There are twenty tree lexical items that fall under this first category: *spring*, *summer, to defeat*, *to dig*, *sick, afternoon*, *to freeze*, *belt*, *new*, *to arrive*, *to sieve*, *clean*, *to send*, *to reside*, *sand*, *bird*, *to beg*, *autumn*, *tree*, *old*, *far*, *near* and *to repeat*. The second set comprises lexical

items with rates of loss lower than the corresponding overall rates. There are thirty eight lexical items that fall under this second category: *cat*, *bee*, *fish*, *female-goat*, *to vomit*, *eyelashes*, *pigeon*, *heavy*, *palm*, *to plant*, *cloud*, *squeeze*, *fog*, *heel*, *span*, *to bury*, *chin*, *oleander*, *who*, *ice*, *mirror*, *shade*, *beard*, *grave*, *elbow*, *salt*, *spike*, *light*, *branch*, *morning*, *yeast*, *rain*, *winter*, *pine*, *to follow*, *fire*, *wind* and *forest*. The status of the maintenance of the Berber variants of all the notions in the wordlist in the Massif, exhibited in red dots, in comparison with their status in Tashawit as a whole, exhibited in blue dots, is displayed clearly in Fig. 5.2 below.

Fig. 5.2. Rates of Lexical Loss in the Aurès Massif



- **Bellezma**

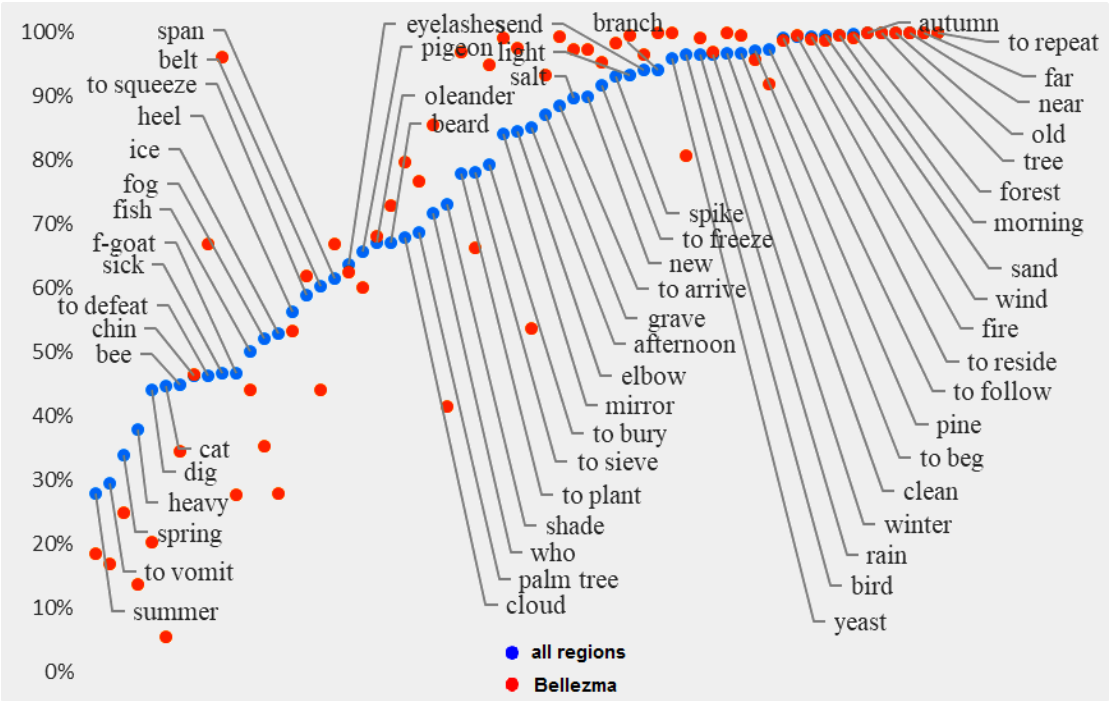
Barring the Massif, the region of Bellezma was shown to be maintaining the Berber variants better than all other regions. The findings revealed that the Berber variants of eleven items were found to be significantly maintained in Bellezma: *cat* (L = 5.43%), *heavy* (L = 13.69%), *to vomit* (L = 15.77%), *summer* (L = 19.56%), *to dig* (L = 21.31%), *spring* (L = 25%), *female goat* (L = 27.72%), *ice* (L = 27.86%), *bee* (L = 34.62%), *fog*

(L = 35.25%) and *shade* (L = 41.51%). The Berber variants for five other lexical variables were found to be in rivalry with other responses: *fish* (L = 44.11%), *belt* (L = 44.15%), *chin* (L = 46.51%), *heel* (L = 53.44%), and *afternoon* (L = 53.7%). As to the rest of the lexical variables in the wordlist, the findings revealed that the rates of lexical loss were dominant compared to those of lexical maintenance. Nonetheless, the variables concerned are by no means alike. The Berber variants for a number of them were completely lost: *autumn* (L = 100%), *yeast* (L = 100%), *tree* (L = 100%), *branch* (L = 100%), *clean* (L = 100%), *far* (L = 100%), *near* (L = 100%), *old* (L = 100%) and *repeat* (L = 100%). For a number of other variables, the Berber variants were produced by a very insignificant number of speakers, namely *mirror* (L = 99.23%), *forest* (L = 99.24%), *to arrive* (L = 99.29%), *light* (L = 99.61%), *fire* (L = 99.62%), and *beg* (L = 99.62%). The frequencies of the Berber variants for the remaining lexical variables vary between very weak to moderate. Some of them are used exclusively in some areas and others were shown to be less used regardless of territory or tribe: *pigeon* (L = 61.07%), *to squeeze* (L = 61.89%), *eyelashes* (L = 62.55%), *to sieve* (L = 66.42%), *span* (L = 67.05%), *to defeat* (L = 67.05%), *oleander* (L = 68.17%), *beard* (L = 72.93%), *palm tree* (L = 76.81%), *cloud* (L = 79.70%), *bird* (L = 81.67%), *who* (L = 85.66%), *morning* (L = 91.99%), *to follow* (L = 92.05%), *new* (L = 92.37%), *grave* (L = 93.41%), *to bury* (L = 95.04%), *to freeze* (L = 95.41%), *pine* (L = 95.82%), *sick* (L = 96.15%), *to send* (L = 96.58%), *to plant* (L = 96.90%), *winter* (L = 96.95%), *new* (L = 97.31%), *salt* (L = 97.31%), *elbow* (L = 97.68%), *spike* (L = 98.47%), *sand* (L = 98.86%), *rain* (L = 98.86%), *reside* (L = 98.87%) and *wind* (L = 98.92%).

Although the average rate of lexical loss obtained in Bellezma is lower than most other regions, it remains considerably high: L (Bellezma) = 74.79%. The rates of lexical loss for more than half of the items in the wordlist were found to be higher than, or

equal to, the corresponding overall rates. These include: *to vomit*, *chin*, *to squeeze*, *to defeat*, *span*, *oleander*, *beard*, *palm*, *cloud*, *who*, *morning*, *to follow*, *grave*, *to bury*, *to freeze*, *sick*, *to send*, *to plant*, *winter*, *salt*, *elbow*, *spike*, *rain*, *mirror*, *to arrive*, *light*, *to beg*, *fire*, *branch*, *yeast*, *clean*, *autumn*, *tree*, *old*, *far*, *near* and *to repeat*. The rates of lexical loss obtained for the remaining items were shown to be lower than the corresponding overall rates, namely *cat*, *heavy*, *summer*, *to dig*, *spring*, *female-goat*, *ice*, *bee*, *fog*, *shade*, *fish*, *belt*, *heel*, *afternoon*, *pigeon*, *eyelashes*, *to sieve*, *bird*, *to follow*, *pine*, *sand*, *to reside* and *forest*. The comparison between the rates of lexical loss obtained in Bellezma and the overall corresponding rates is displayed in Fig. 5.3 below.

Fig. 5.3. Rates of Lexical Loss in Bellezma



The findings obtained in Bellezma are different to some degree from the Massif, but the two regions are still similar in many respects (**r** = 0.64). There is one particular locality that exhibits features of both regions, in terms of lexical maintenance and loss, that is Batna city. This city situates in the south-central edge of the region of Bellezma,

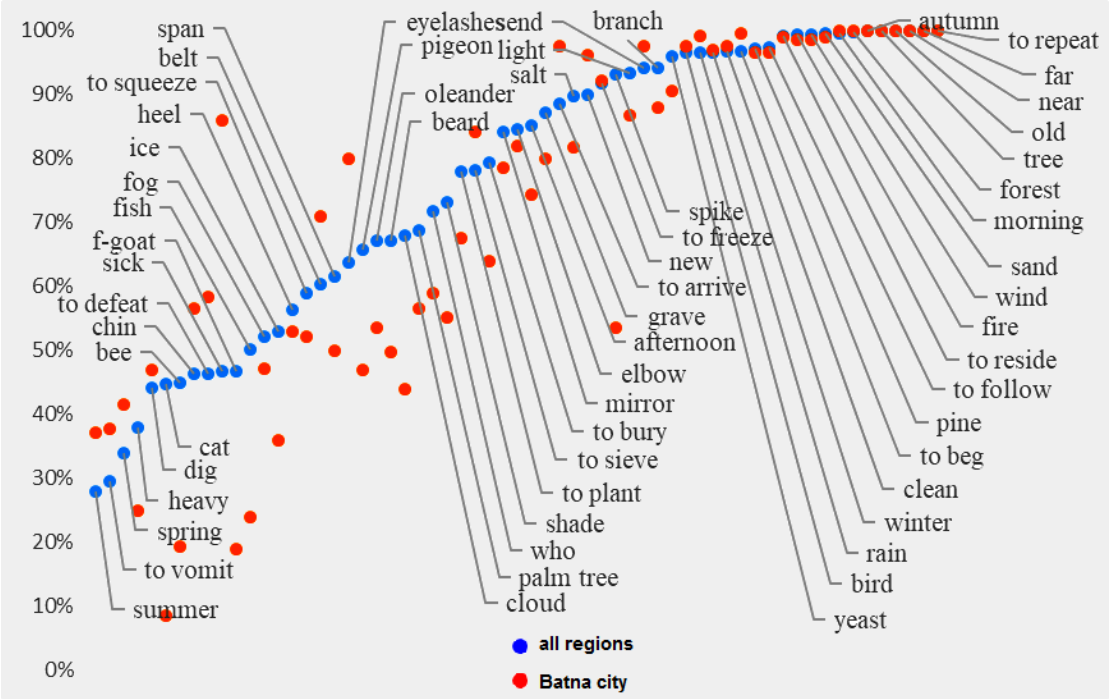
adjacent to the northeastern localities of the Massif and southwestern localities of the region of Harakta. It is the capital city of a province that covers most of the localities of the Massif and Bellezma, in addition to a number of localities from the southeastern part of the region of Harakta. It is also an urban center that attracts settlers from all the localities of the province and even from outside. Accordingly, it was judged as inappropriate, for sociolinguistic considerations, to treat this city as a locality of the region of Bellezma.

The results obtained in this city have shown rates of lexical loss that usually fall between those recorded in the Massif and Bellezma. There is a strong positive correlation between the finding obtained in Batna city and those obtained in the Massif on the one hand (**r** = 0.87) and between Batna city and Bellezma on the other (**r** = 0.85). The rates of lexical maintenance in Batna city were shown to be dominant for nine notions: *cat* (L = 8.6%), *female goat* (L = 19%), *bee* (L = 19.4%), *fish* (L = 24%), *heavy* (L = 25%), *ice* (L = 35.88%), *summer* (L = 37.14%), *to vomit* (L = 37.79%) and *spring* (L = 41.63%). The differences between the rates of maintenance and loss were shown to be insignificant for a number of other notions, namely *cloud* (L = 44%), *to dig* (L = 46.9%), *pigeon* (L = 47%), *fog* (L = 47.14%), *beard* (L = 49.7%), *span* (L = 50%), *to squeeze* (L = 52.17%), *heel* (L = 52.88%), *oleander* (L = 53.6%) and *spike* (L = 53.6%). Lexical loss is the dominant tendency for the remaining lexical variables. For seven notion in the wordlist, the Berber variants were shown to be completely lost: *autumn* (L = 100%), *morning* (L = 100%), *tree* (L = 100%), *far* (L = 100%), *near* (L = 100%), *old* (L = 100%) and *repeat* (L = 100%). In a similar way, for a number of other notions, the Berber variants can be referred to as archaic or virtually obsolete in that only a handful of speakers produced them: *to beg* (L = 99.52%), *rain* (L = 99.09%), *sand* (L = 99.05%), *to reside* (L = 99.02%), *wind* (L = 98.6%), and *fire* (L = 98.6%). The

remaining notions show rates of maintenance that vary between extremely insignificant to fairly lost. The majority of notions fall under this category: *to arrive* (L = 97.63%), *to send* (L = 97.62%), *bird* (L = 97.6%), *clean* (L = 97.57%), *winter* (L = 96.95%), *to follow* (L = 96.68%), *pine* (L = 96.6%), *new* (L = 96.12%), *to freeze* (L = 92.17%), *yeast* (L = 90.5%), *branch* (L = 87.98%), *light* (L = 86.8%), *sick* (L = 86%), *to sieve* (L = 84.1%), *elbow* (L = 82%), *salt* (L = 81.7%), *grave* (L = 80%), *eyelashes* (L = 80%), *mirror* (L = 78.6%), *afternoon* (L = 74.4%), *belt* (L = 70.9%), *to plant* (L = 67.5%), *to bury* (L = 64%), *who* (L = 58.85%), *to defeat* (L = 58.25%), *palm* (L = 56.6%), *chin* (L = 56.5%) and *shade* (L = 55.24%).

Overall, the rates of lexical loss obtained in Batna city are among the lowest, second only to the Massif: L (Batna) = 71.57%. The rates of lexical loss for twenty-nine notions in the wordlist were found to be higher than, or equal to, the corresponding overall rates. These include: *to dig*, *forest*, *to freeze*, *rain*, *summer*, *spring*, *winter*, *morning*, *new*, *bird*, *chin*, *eyelashes*, *sick*, *to vomit*, *belt*, *clean*, *defeat*, *to arrive*, *to beg*, *to defeat*, *to send*, *to sieve*, *forest*, *autumn*, *tree*, *far*, *near*, *old* and *to repeat*. The rates of lexical loss obtained for the remaining items were shown to be lower than the corresponding overall rates: *cloud*, *fire*, *fog*, *ice*, *sand*, *shade*, *wind*, *afternoon*, *branch*, *oleander*, *palm*, *pine*, *to plant*, *spike*, *bee*, *cat*, *fish*, *female goat*, *pigeon*, *beard*, *to bury*, *elbow*, *heel*, *grave*, *span*, *salt*, *yeast*, *mirror*, *heavy*, *light*, *to follow*, *to reside*, *to squeeze* and *who* (see Fig. 5.3 below). The rates of lexical loss of the Berber variants in Batna city in comparison with the overall rates of lexical erosion are displayed in Fig 5.4 below.

Fig. 5.4 Rates of Lexical Loss in Batna city



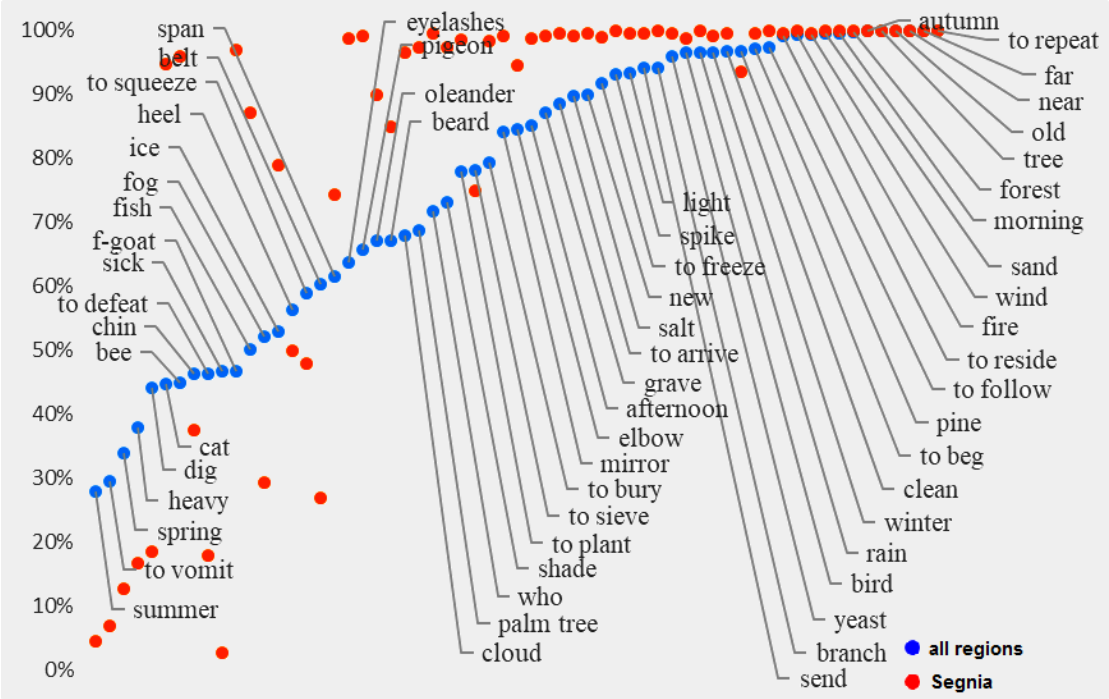
- **The Region of Segnia**

The region of Segnia show results that are different from the previous regions to a considerable extent. The Berber variants preserved in this region are somewhat different from the previous regions: *sick* (L = 2.7%), *summer* (L = 4.58%), *to vomit* (L = 6.82%), *spring* (L = 12.64%), *heavy* (L = 16.7%), *to defeat* (L = 17.87%), *to dig* (L = 18.5%), *belt* (L = 27%), *fog* (L = 29.37%) and *chin* (L = 37.5%). We have noticed a rivalry between maintenance and loss for two notions, *to squeeze* (L = 47.91%) and *heel* (L = 50%). For most of the notions addressed, however, lexical loss is the dominant trend. The currency of the Berber variants for most of the notions varies within a relatively narrow interval compared to the previous regions. Thirty five items of the wordlist vary between less used, occasionally used, outdated and virtually obsolete: *span* (L = 74.4%), *to sieve*, (L = 74.9%), *ice* (L = 79%) *beard* (L = 84.9%), *fish* (L = 87.1%), *oleander* (L = 90%), *to beg* (L = 93.54%), *elbow* (L = 94.6%), *cat* (L = 94.7%), *bee* (L = 96%), *cloud* (L = 96.58%), *female-goat* (L = 96.99%), *palm* (L = 97.3%),

shade (L = 97.36%), *to bury* (L = 98.4%), *to plant*, (L = 98.5%), *eyelashes* (L = 98.8%) *bird* (L = 98.8%), *afternoon* (L = 98.85%), *to freeze* (L = 98.92%), *pigeon* (L = 99.2%), *mirror* (L = 99.2%), *grave* (L = 99.2%), *salt* (L = 99.2%), *winter* (L = 99.24%), *who*? (L = 99.6%), *light* (L = 99.6%), *yeast* (L = 99.2%), *clean* (L = 99.6%), *pine* (L = 99.6%), *wind* (L = 99.6%), *to arrive* (L = 99.62%), *new* (L = 99.62%), *to send* (L = 99.62%) and *to reside* (L = 99.63%). The number of words that were shown to be completely obsolete in the region of Segnia is greater than the number of obsolete words in the previously handled regions: *spike* (L = 100%), *branch* (L = 100%), *rain* (L = 100%), *to follow* (L = 100%), *fire* (L = 100%), *sand*, (L = 100%) *forest* (L = 100%), *morning* (L = 100%), *autumn* (L = 100%) *tree* (L = 100%), *far* (L = 100%), *near* (L = 100%), *old* (L = 100%) and *to repeat* (L = 100%).

The average rate of lexical erosion that was calculated for the region of Segnia is also greater than the average rates that were obtained for the previous regions: L (Segnia) = 80.83%. As can be noticed from Fig. 5.5 below, the rates of lexical loss obtained for the majority of the items in this region were shown to be higher than, or equal to, the overall corresponding rates. This concerns the following lexical items: *span, ice, beard, fish, oleander, elbow, cat, bee, cloud, female-goat, palm, shade, bury, to plant, eyelashes, bird, afternoon, to freeze, pigeon, mirror, grave, salt, winter, yeast, light, who, clean, pine, wind, morning, new, to arrive, send, reside, forest, fire, sand, rain, branch, spike, autumn, tree, near, far, old* and *to repeat*. The rates of lexical loss obtained for the remaining items were shown to be lower than the corresponding overall rates: *sick, summer, vomit, spring, heavy, to defeat, to dig, belt, fog, chin, squeeze, heel, to sieve* and *to beg*.

Fig. 5.5 Rates of Lexical Loss in Segnia



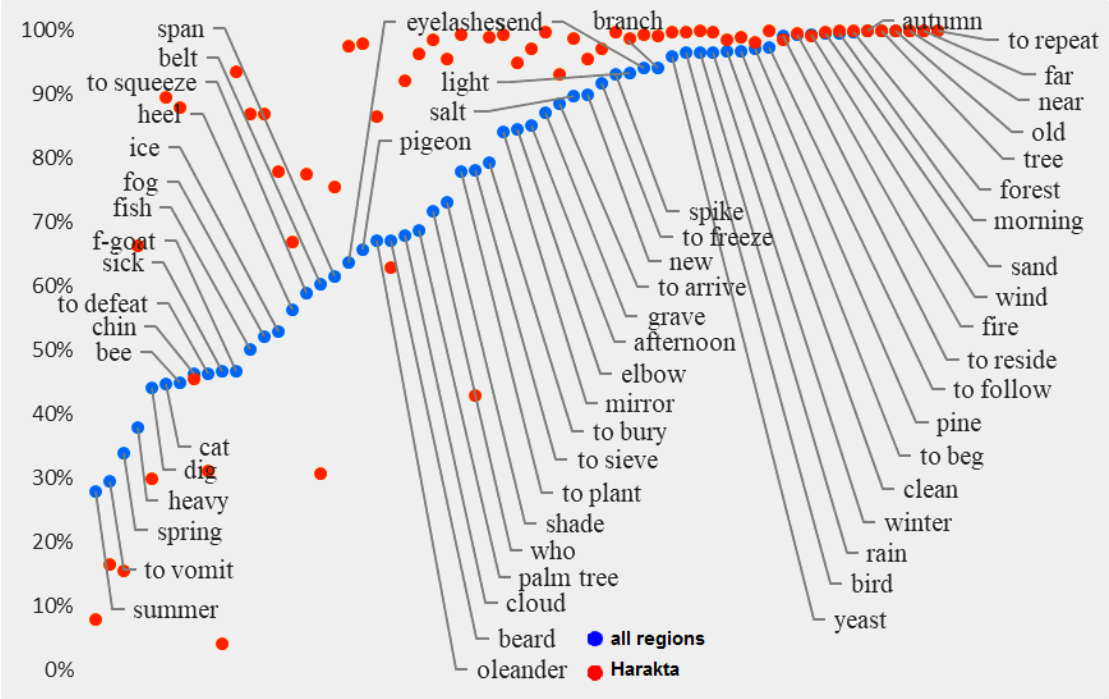
- **The Region of Harakta**

The findings obtained in the region of Harakta was similar to a great extent to those obtained in the region of Segnia; the correlation between the rates of lexical loss obtained for the two regions is very strong (**r** = 0.92). Eight Berber variants were found to be preserved significantly in this region: *sick* (L = 4.1%), *summer* (L = 7.99%), *spring* (L = 15.48%), *to vomit* (L = 16.46%), *to dig* (L = 29.9%), *belt* (L = 30.7%) *to defeat* (L = 31.2%), *to sieve* (L = 43%) and *chin* (L = 45.5%). With the exception of the eighth item, all other notions were also shown to be considerably preserved, though in different degrees, in the previous region. Lexical loss was shown to be dominant for the vast majority of the lexical variables: *heavy* (L = 66.3%), *heel* (L = 66.9%), *beard* (L = 74.4%), *span* (L = 75.6%), *to squeeze* (L = 77.62%), *ice* (L = 78%), *oleander* (L = 86.5%), *fish* (L = 86.9%), *fog* (L = 87.05%), *bee* (L = 88%), *cat* (L = 89.6%), *cloud* (L = 92.1%), *to arrive* (L = 93.15%), *female-goat* (L = 93.49%), *elbow* (L = 95%), *shade* (L = 95.62%), *new* (L = 95.62%), *palm* (L = 96.4%), *to freeze* (L = 97.26%), *afternoon*

(L = 97.27%), *eyelashes* (L = 97.5%), *pigeon* (L = 98%) and *pine* (L = 98.1%), *clean* (L = 98.6%), *who* (L = 98.63%), *to reside* (L = 98.63%), *salt* (L = 98.8%), *light* (L = 98.8%), *to bury* (L = 98.9%), *to beg* (L = 98.9%), *branch* (L = 99.18%) *wind* (L = 99.2%), *to plant* (L = 99.4%), *mirror* (L = 99.4%), *to send* (L = 99.45%), *fire* (L = 99.5%), *grave* (L = 99.7%), *spike* (L = 99.7%), *yeast* (L = 99.7%), *bird* (L = 99.7%), *winter* (L = 99.72%) and *sand* (L = 99.73%). The number of notion for which no trace of the Berber variant was recorded are less than the region of Segnia, ten to be exact: *rain* (L = 100%), *to follow* (L = 100%), *morning* (L = 100%), *forest* (L = 100%), *autumn* (L = 100%), *tree* (L = 100%), *old* (L = 100%), *near* (L = 100%), *far* and to *repeat* (L = 100%).

The average rate of lexical erosion that was calculated for the region of Harakta is the highest: L (Harakta) = 82.93%. The rates of lexical loss for fifty notions were shown to be either absolute, as the case for all other regions, or higher than the corresponding overall rates: *to vomit*, *heavy*, *heel*, *span*, *to squeeze*, *ice*, *oleander*, *fish*, *fog*, *bee*, *cat*, *cloud*, *to arrive*, *female-goat*, *elbow*, *shade*, *new*, *palm*, *afternoon*, *eyelashes*, *morning*, *freeze*, *pigeon*, *pine*, *clean*, *who*, *salt*, *light*, *to bury*, *to beg*, *branch*, *to plant*, *mirror*, *to send*, *fire*, *grave*, *spike*, *yeast*, *bird*, *rain*, *winter*, *sand*, *to follow*, *forest*, *autumn*, *tree*, *near*, *far*, *old* and *to repeat*. With regard to the remaining notions, i.e. *sick*, *summer*, *spring*, *to dig*, *belt*, *to defeat*, *to sieve*, *chin*, *beard*, *to reside* and *wind*, the rates of lexical loss were shown to be lower than the corresponding overall rates.

Fig. 5.6 Rates of Lexical Loss in Harakta



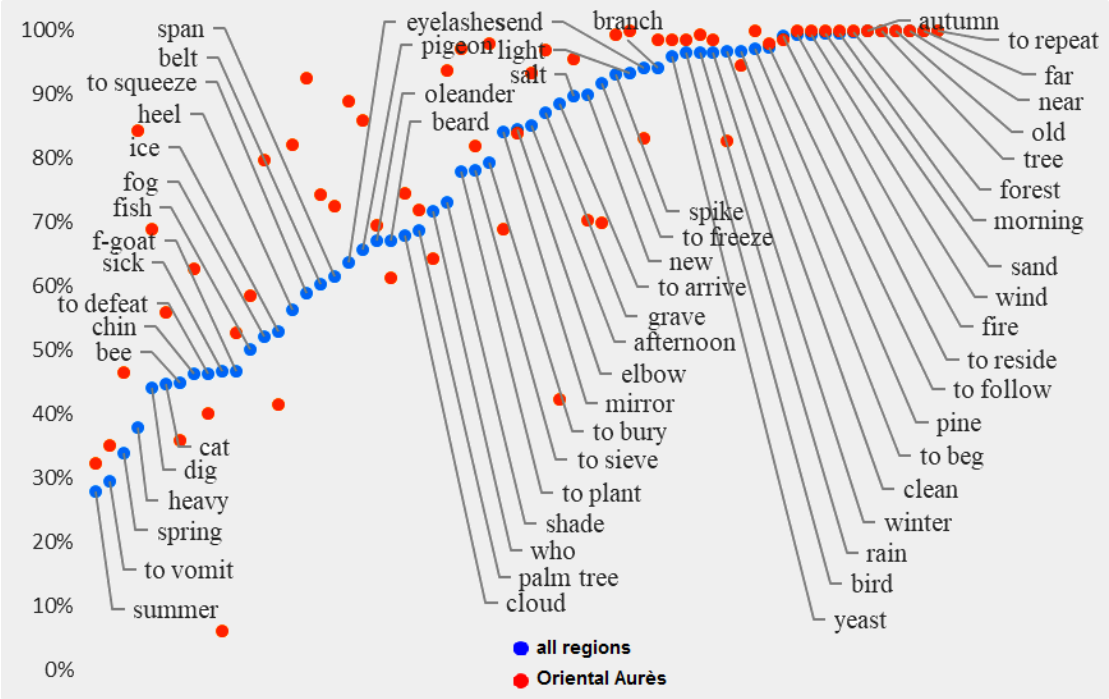
- **Oriental Aurès**

The number of Berber variants that are preserved in Oriental Aurès show results that differ from those obtained in the previous regions to a considerable extent. The correlation of the findings obtained in this region with those obtained in the Massif showed a moderate positive relationship (**r = 0.42**). The Berber variants preserved in this region are different from the ones highlighted earlier: *sick* (L = 6.2%), *summer* (L = 32.4%), *to vomit* (L = 35.17%), *bee* (L = 35.86%), *to defeat* (L = 40.14%), *ice* (L = 41.61%), *to arrive* (L = 42.28%) and *spring* (L = 46.57%). A rivalry between the rates of maintenance and loss was observed for two lexical variables, *female goat* (L = 52.7%) and *cat* (L = 56%). Lexical loss was shown to be the dominant trend for all other notions: *fish* (L = 58.6%), *beard*, (L = 61.32%), *chin* (L = 62.7%), *who* (L = 64.4%), *mirror* (L = 68.9%), *to dig* (L = 69%), *oleander* (L = 69.6%), *to freeze* (L = 69.87%), *new* (L = 70.27%), *palm* (L = 71.9%), *span* (L = 72.6%), *belt* (L = 74.3%), *cloud* (L = 74.5%), *fog* (L = 79.73%), *to sieve* (L = 82), *heel*, (L = 82.1%), *clean* (L =

82.7%), *to send* (L = 83.26%), *elbow* (L = 84%), *heavy* (L = 84.3%), *pigeon* (L = 86%), *eyelashes* (L = 88.9%), *to squeeze* (L = 92.64%), *afternoon* (L = 93.29%), *shade* (L = 93.83%), *to beg* (L = 94.95%), *salt* (L = 95.6%), *grave* (L = 97%), *to plant* (L = 97.2%), *to bury* (L = 97.93%), *to follow* (L = 98.01%), *yeast* (L = 98.6%), *bird* (L = 98.6%), *branch* (L = 98.62%), *winter* (L = 98.64%), *to reside* (L = 98.64%), *spike* (L = 99.3%) and *rain* (L = 99.3%). In addition to these notions, there are thirteen notions for which the Berber variants were found to be totally missing in the data elicited from Oriental Aurès: *light* (L = 100%), *pine* (L = 100%), *fire* (L = 100%), *wind* (L = 100%), *sand* (L = 100%), *morning* (L = 100%), *forest* (L = 100%), *autumn* (L = 100%), *tree* (L = 100%), *far* (L = 100%), *near* (L = 100%), *old* (L = 100%) and *to repeat* (L = 100%).

The average rate of lexical loss obtained in Oriental Aurès was shown to be among the highest obtained in all regions: L (Oriental Aurès) = 79.46%. As can be noticed from Fig. 5.7 below, the rates of lexical loss obtained for the majority of the items in this region were shown to be higher than, or equal to, the overall corresponding rates. This concerns the following lexical items: *to vomit, spring, female-goat, cat, fish, chin, to dig, oleander, palm, span, belt, cloud, fog, to sieve, heel, heavy, pigeon, eyelashes, morning, to squeeze, afternoon, shade, salt, grave, to plant, to bury, to follow, yeast, bird, branch, winter, spike, rain, light, pine, fire, wind, sand, forest, autumn, tree, near, far, old* and *to repeat*. The rates of lexical loss obtained for the remaining items were shown to be lower than the corresponding overall rates: *sick, summer, bee, to defeat, ice, to arrive, beard, who, mirror, to freeze, new, clean, to send, elbow, to beg* and *to reside*.

Fig. 5.7 Rates of Lexical Loss in Oriental Aurès



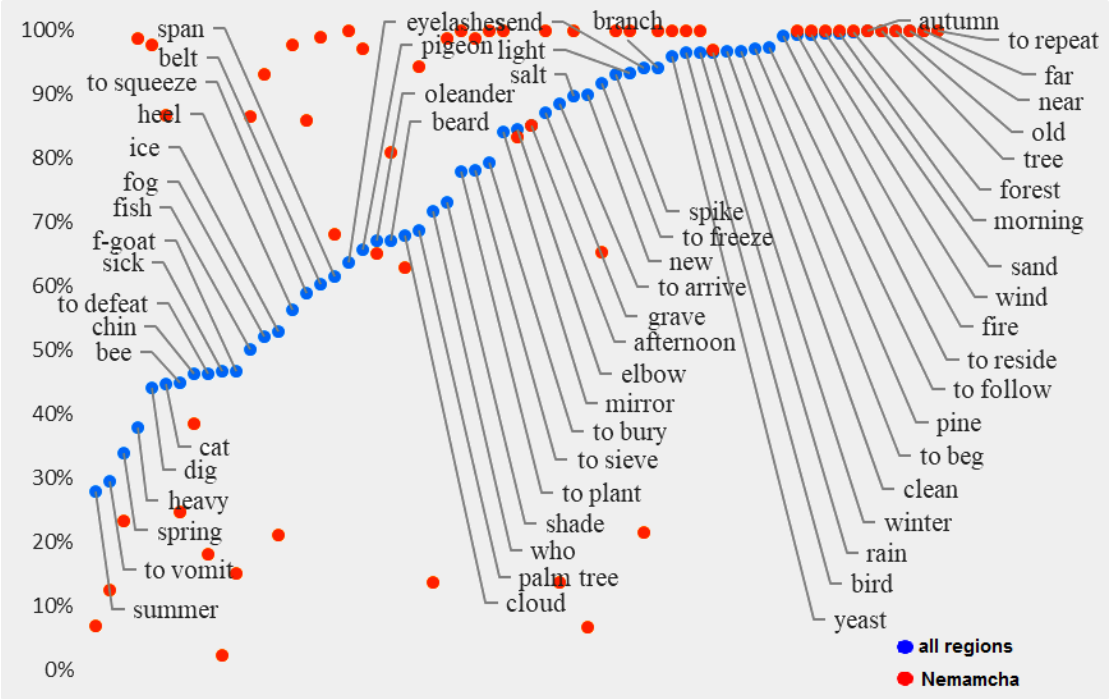
- **The region of Nemamcha**

The findings obtained in this region are quite different from those obtained in all other regions. The closest region to it is Oriental Aurès (**r = 0.21**). The Berber variants for fourteen notions were found to be fairly preserved in Nemamcha: *sick* (L = 2.3%), *new* (L = 6.74%), *summer* (L = 6.82%), *to vomit* (L = 12.5%), *who* (L = 13.64%), *to arrive* (L = 13.64%), *female-goat* (L = 15.2%), *to defeat* (L = 18.18%), *ice* (L = 21.11%), *to send* (L = 21.59%), *spring* (L = 23.33%), *bee* (L = 24.7%) and *chin* (L = 38.6%). For the remaining notions, lexical loss was shown to be more prominent: *cloud* (L = 63%), *oleander*, (L = 65.2%), *to freeze* (L = 65.42%), *span* (L = 68.1%), to beg (L = 70.65%), *beard* (L = 81%), *elbow* (L = 83.3%), *clean* (L = 84.2%), *afternoon* (L = 85.11%), *to squeeze* (L = 86.02%), *fish* (L = 86.5%), *cat* (L = 86.7%), *fog* (L = 93.29%), *palm* (L = 94.4%), to follow (L = 95.45%), *winter* (L = 96.95%), *pigeon* (L = 97.2%), *heel* (L = 97.7%), *to dig* (L = 97.8%), *heavy* (L = 98.8%), *to sieve* (L = 98.8%), *shade* (L = 98.88%), *belt* (L = 98.9%) and *to reside* (L = 98.95%). The number of

obsolete Berber variants in the region of Nemamcha is higher than any other region: *eyelashes* (L = 100%), *to plant* (L = 100%), *to bury* (L = 100%), *mirror* (L = 100%), *grave* (L = 100%), *salt* (L = 100%), *spike* (L = 100%), *pine* (L = 100%), *light* (L = 100%), *branch* (L = 100%), *yeast* (L = 100%), *bird* (L = 100%), *rain* (L = 100%), *fire* (L = 100%), *wind* (L = 100%), *sand* (L = 100%), *morning* (L = 100%), *forest* (L = 100%), *autumn* (L = 100%), *tree* (L = 100%), *old* (L = 100%), *near* (L = 100%), *far* (L = 100%) and *to repeat* (L = 100%).

The average rate of lexical loss obtained in this region remains high: L (Nemamcha) = 76.47%. For twenty-two notions, the rates of lexical loss were shown to be lower than the corresponding overall rates: *sick, new, summer, to vomit, who, to arrive, female-goat, to defeat, ice, to send, spring, bee, chin, cloud, oleander, to freeze, to beg, elbow, clean, afternoon, to follow* and *to reside*. The rates of six notions in the wordlist were found to be identical to overall corresponding rates, whereas the rates of lexical loss obtained for the majority of the items in this region were shown to be higher. These notions are: *span, beard, to squeeze, fish, cat, fog, palm, winter, pigeon, heel, to dig, heavy, to sieve, shade, belt, eyelashes, to plant, to bury, mirror, grave, salt, spike, light, branch, yeast, bird, rain, pine, fire, wind, sand, forest, morning, autumn, tree, near, far, old* and *to repeat*. The rates of lexical loss of the Berber variants in the region of Nemamcha in comparison with the overall rates of lexical erosion are displayed in Fig 5.8 below.

Fig. 5.8 Rates of Lexical Loss in Nemamcha



5.3.2. Age

The findings of the present study have shown the existence of a significant relationship between age and lexical loss. It would sound more rational and more congruent with the literature to assume that, in a language contact situation involving a dominant and a minority language, older speakers undergo less lexical loss than younger speakers. The analysis of the data obtained for the present work has shown that such an assumption does not hold true for all lexical variables. The relationship between age and lexical loss changes from one lexical variable to another.

Overall, lexical variation that was observed across the different age groups can be categorized into three main patterns. The first pattern conforms, more or less, with the assumption stated above. We observe a decrease in the rate of lexical loss as we move from younger to older age groups. This is observed clearly in the findings obtained for a number of notions, namely *to defeat*, *summer*, *chin*, *to sieve*, *span*, *sick*, *spring*, *belt*, *beard*, *oleander*, *to vomit*, *to dig*, *ice*, *elbow* and *heel*.

In the second pattern, we observe a rather irregular relationship. Lexical loss decreases between the first and the third, or occasionally the fourth, age group, and then increases again, though not always in a steady or significant manner, for older age groups. The first part conforms perfectly with the assumption stated earlier whereas the second shows the opposite. The items that fit into this second pattern are: *to plant*, *fish*, *shade*, *eyelashes*, *heavy*, *to bury*, *to squeeze*, *who*, *pigeon*, *female goat*, *bee*, *palm*, and *sand*.

The reasons behind the increase in the rate of lexical loss in the second part are not fully understood. Two main reason can be put forward. The first has to do with the mobility and the residential history of the speakers. Speakers who showed less lexical attrition, in particular the third, the second or the fourth, could have learned the Berber variants through contact with speakers from other regions. The mobility of the elderly, on the other hand, seems to be limited; speakers of Tashawit who belong to different regions are more likely to get into contact with each other in these days than in the past. Therefore, the elderly produced variants that are more common in their variety instead of producing those used in other varieties. Even if speakers engage in contact with speakers of other Tashawit varieties at an advanced age, they are unlikely to produce other variants because the variants they have acquired in the early stages of their lives will fossilize and, hence, will be hard to displace. It is also not unlikely that the older speakers have undergone some retrieving difficulty and could not produce the Berber variant that is still preserved in their variety as opposed to younger speaker, in particular those of the third and fourth age group.

The second interpretation of the increase in lexical loss that is observed in the second part is related to the evidence itself. Due to considerations of feasibility, random sampling was not used in the present study. Accordingly, the data collected is not fully

representative. If old speakers who use the Berber variant are represented less than speakers of other regions who do not use it and less than their younger fellow speakers, the analysis would yield results that refute the previous assumption.

The majority of the notions addressed in the present research fall under a third pattern, which maintain that the relationship between lexical loss and age for such notions is either insignificant or inconsistent.

5.4.1. Stages of Lexical Loss

As it has been pointed out in the first chapter of this dissertation, lexical loss is not an abrupt incident but rather a process that takes place over a long period of time. This is true both at the level of the individual speaker as well as the speech community. The findings obtained for the present work have proved this fact at both levels. At the level of individual speakers, the graduality of lexical loss was exhibited in learners' ability to produce both Berber and non-Berber variants at the same time. The Berber and alternative variants, therefore, were not mutually exclusive. This behavior was recorded for most of the notions investigated, but in different degrees. For example, there are thirty-three speakers who produced the word *erna* 'to defeat' and the Arabic borrowing *ɣleb*, thirty-two who produced the Berber word for 'mirror', *tisit*, along with the Arabic loan *alemmaɛ*, thirty-two subjects who produced both the Berber variant for 'beard', i.e. *tmart*, and the Arabic loan *lleḥyet*, etc. Other examples include salt (32), ice (34), grave (29), cloud (26), fog (22), and others more. Based on these findings, we can say that both the Berber variant and its alternative variant(s) are stored in the mental lexicon of such informants. However, this does not necessarily suggests that the frequencies of such variants are close in actual use. We can only guess the variant that is used more frequently in the speech of one of such informants based on the frequency of such

variants within the community that he or she lives in, but such a guess can simply be erroneous in the absence of sufficient data.

Rivalry between Berber variants and alternatives has also been noticed at the level of the community. Besides the notions for which the Berber variants are obsolete or outdated, the Berber variants for most other notions were shown to be in rivalry with other variants, in particular Arabic loans. This rivalry is induced from the data elicited from the respondents in general and from the data produced in each region.

The graduality of lexical loss was also reflected in respondents' lack of the mastery of certain indigenous forms. This was observed, for instance, in the data obtained in response to the item 'to dig'. In Berber, the formation of the imperfective (intensive aorist) is achieved by strengthening one of the consonants of the root in the aorist, e.g. *erg* → *rrag* 'to go out'. In case the consonant of the verb in the aorist happened to be the voiced uvular fricative [*ɣ*], it is strengthened through the long voiceless uvular stop [qq] (e.g. *neɣ* → *neqq* 'to kill'). Accordingly, the imperfective of the verb *eɣz* 'to dig' is *qqaz*. A number of participants who responded to the item in question produced forms such as *ɣɣaz* or *tɣaz* instead of the correct form *qqaz*. It is important to note that informants' awareness of their lack of mastery of such irregular forms may have led them to avoid using such forms that they do not master and instead resorted to the use of forms that they master better, i.e. the Arabic loanwords.

Lexical loss is sometimes reflected in respondents' preference to produce one form of a word rather than the other, for example the plural instead of the singular. In response to the item 'spring', a considerable number of speakers, mainly in the Massif, offered the plural form *tifeswin* instead of the singular *tafsut*. This suggests that the singular form is less used to denote 'spring' in this particular region. We have also observed this tendency, though in a less prominent way, in the responses produced in

reaction to ‘morning’. Though the singular form was still there, some participants provided the plural *tifawin* instead of the singular form *tifawt*. A possible reason for the use of the plural in this example is the need to avoid confusion, given that the word *tifawt* also denotes ‘light’ or ‘daylight’. We also need to understand why some informants preferred to produce the plural form *iselmen* instead of the singular *aslem* ‘fish’.

The number and the nature of lexical variables included in the wordlist is not sufficient to decide on which lexical category becomes obsolete first. The Berber variant for ‘ice’, ‘winter’ and ‘to freeze’, which are traced to the same root, are preserved differently in Tashawit. The variant *ajris* (n) is maintained much better than *tajrest* (n) and *ejres* (v). By contrary, the variant *tanḍelt* (n) ‘cemetery’ is less maintained than *enḍel* (v) ‘to bury’. The data collected for some other lexical items suggest that adjectives fall into disuse before nouns and verbs. For example, the Berber variants elicited in response to ‘heavy’ and ‘light’ were most often realized in the verb form deriving from the same Berber root. Therefore, we have responses like *iẓag/y* ‘to be heavy’ and *fess*/*efsis* ‘to be light’. The corresponding adjectives were revealed to be almost completely missing in the data. The adjective was recorded in the data produced in response to this item is *miẓag*/*miẓay*, but it was only provided by two informants. In a similar way, the variant *mifsis* was only produced once in the data in response to the item ‘light’. In response to the item ‘clean’, the data was shown to be different from that produced for the two previous notions. Both the adjective *azeddag*/*azedday*, and the verb *ezdeg*/*ezdey* were produced by the participants.

In connection to this point is the idea that the obsolescence of a word does not necessarily entail the obsolescence of words deriving from the same root. For example, the word *aḍu*, as revealed through the data is obsolete across almost all Tashawit

speaking regions, but the verb *ṣuḍ*, which derives from the same root and means ‘to blow’, is still widely used. In a similar way, although the word *tameddit* is still used in Tashawit, its corresponding verb *eddu*, meaning ‘to go in the afternoon’, is lost.

Lexical loss also does not affect all the senses covered by a given word. Instead, at a certain time one meaning becomes obsolete whereas others persist in the language. For example, while the word *timess* meaning ‘fire’, as shown in the previous chapter, was found to be archaic, the word is still widely used to mean ‘fever’. Sometimes a Berber word is lost in its primary meaning, but is preserved in some other expressions or phrases which denote a different, but not totally unrelated, meaning, i.e. in lexical fossils. The best illustration for this case is the word *anẓaṛ*. As revealed in the previous chapter, this word, which designates ‘rain’, was lost in this sense in the vast majority of Tashawit speaking areas. It is used however in the phrase *taslit n anẓaṛ* or *taslit n anẓaṛen* to denote ‘rainbow’ (Huyghe, 1906). The second example is related to the word *aḍu* ‘wind’. As it has been pointed out in the previous chapter, this Berber variant has gone obsolete in most Tashawit speaking areas. In some of those localities where it has suffered such an obsolescence, e.g. Menaa, it was preserved in the compound *tɣiṛḍemt n w.aḍu* ‘centipede’ (lit. ‘wind scorpion’, cf. Brugnatelli, 2009, 2014). In such localities, the Berber word is not understood in isolation by the speakers. In the variety of Tashawit spoken by Ait Nacer, the word *aḍu* appears in the fossil *yutit w.aḍu* (lit. ‘it was hit by the wind’) to refer to some sort of wheat/barley disease (probably take-all root disease).

At other times, a Berber variant lose its primary signification and acquires a new, somewhat related, one. We observed this in the way the word *anẓaṛ* is used in the Tashawit variety of Ait Frah. In this particular variety, the word is used to refer to ‘rain water that remained in rocks’ (Basset, 1961). The use of the word *tafsut*, or *tifeswin*, to

denote the feast celebrated at the beginning of spring season could be a reason for the loss of this word in its original sense. In order not to confuse two meanings with one another, speakers might have resorted to lexical borrowing, in particular the Arabic word *ṛṛbiɛ*, to denote the season in question and clarify the confusion. It is probably the best reason to explain why the word *tafsut* is used less in the Massif, where the people have preserved the celebration. The celebration of Tafsut, however, was abandoned for some time. It was only restored recently in a number of places, in the Massif particularly. With this restoration, speakers, in particular younger ones who were not familiar with the word, seem to have become aware of its original signification regardless of whether they use in their daily language use or not.

It is interesting to note that some of the Berber words that were proven to be obsolete in the daily use of Tashawit speakers were sometimes preserved in toponyms. For example, the Berber variant *agus*, which stems from the same root as *abeggas* and which denotes the same object, 'belt', was not recorded in the data. Nevertheless, it is preserved in the toponym Tagoust, a village in the southwestern part of Batna province.

The word *ijdi*, as pointed in previous chapters, is one of the Berber variants that denote 'sand'. This word was found to be virtually obsolete all over Tashawit speaking areas. It seems to be preserved, however, in a number of toponyms in Aurès, namely *Ijdi*, *Ijedian* and *Tijedday*. These toponyms are often used to name places near a river.

Zaway is the name place of a forest and a mountain (Mt. Zaway) situated south of the city of Arris in the Aurès Massif. According to Saad (2017), the word *zaway*, also *zawag*, (pl. *izawayen, izawagen*), signifies a 'wind passage' or 'a place in a mountain that faces wind and cold'. The word *zaway*, following the same author, stems from the Berber word *azwu* 'wind'. Other toponyms that can be related to the same Berber root are Zoui city in Khenchela, and Tazoult city in Batna, pronounced in Tashawit as *tazzut*.

A less common toponym is *zzqaq*, as in Zqaq Forest in the municipality of Larbaa in the Aurès Massif. The word *zzqaq* is traced to the Berber word for forest *tiẓgi*. According to Chafik (1990), this word signifies in particular a dense forest, which is a good description of the actual place mentioned above.

The word *tisekla* is the plural form of *taseklut*. In Berber, it is used to denote 'tree', in particular a little one (Taifi, 1991; Chafik, 1990). It is preserved in the toponym Tisekla, a name of a place around Maafa. Another Berber word that seems to be preserved in place names is one that denote 'tree', i.e. *axliğ*, namely in the names of the localities of *Akhlidj* and *Bouyakhligène* in the region of Bellezma.

Conclusion

It is difficult to account for all the linguistic as well as the extralinguistic factors that cause lexical obsolescence. Although, in the case of contact-induced lexical obsolescence contact itself is the main cause, other factors need to be taken into account to better understand the phenomenon. The two factors considered for analysis in the present study, region and age, have an important role in predicting lexical loss. Nonetheless, other factors, such as residential history, mobility, experience and others also seem to have important roles to play in affecting or moderating lexical loss. These factors need to be paid more attention in future research.

General Conclusion

General Conclusion

Vocabulary is the aspect of language most susceptible to change. Compared to phonological elements and syntactic structures, lexical units seem to be relatively less stable. This is largely due to the fact that lexicon is different in its nature from the phonological, morphological and syntactic aspects of the language; it is an open system that remains vulnerable to continuous modification and renewal. Lexical change becomes even deeper and more intense whenever two languages or more come into contact with one another. The lexical changes that take place in language contact situations are mainly fulfilled through lexical borrowing. Although both minority and dominant languages borrow from each other, the nature and the rate of borrowing differs depending on the direction of transfer. In a way, lexical change through borrowing is seen as an innovative force that keeps the language updated to extralinguistic changes. In another, however, especially when borrowing is massive and when it occurs within basic lexicon, it becomes a sign of a language losing ground to a more dominant one, i.e. a sign of death.

The present study showed the dominance of Arabic loans compared to native Berber variants with regard to most of the notions in the wordlist. The spread of Arabic loans in basic vocabulary, as the one included in the wordlist used, reflects the intensity of language contact between Tashawit and Arabic. The study showed significant differences in terms of lexical loss across the regions covered in the present work. As it has been established in the two previous chapters, lexical loss was shown to be common to most of the lexical variables covered in the present research. Yet, it is easy to notice that lexical loss is more common in some regions than others. In the eastern regions, i.e. Segnia, Harakta, Oriental Aurès and Nemamcha, lexical loss was shown to be more prevalent compared to western regions, in particular the Massif and the western

part of Bellezma, where lexical loss was revealed to be less intense. Age was revealed to be an important predictor of lexical loss. For a number of notions, lexical loss was observed more frequently among younger age groups whereas the elderly were found to be more maintaining. For a number of other notions, younger age groups, in particular those in their thirties and forties, were found to be more maintaining whereas the elderly showed a tendency towards lexical loss. The association between age and lexical loss for a number of other notions were shown to be insignificant or unstable.

Lexical loss also differs from one lexical variable to another. For some lexical variables, the Berber variants were found to be completely obsolete, namely *autumn, tree, old, far, near* and *to repeat*, or almost completely lost, for instance *fire, wind, sand* and *forest*. For some other lexical variables, the rates of lexical loss of the Berber variants were shown to be very high whereas they were marginally preserved in a limited number of localities. These include *winter, pine, yeast, to follow, clean* and *to beg*. Still, for a group of other lexical variables, the Berber variants were found to be lost in most localities, but are preserved in a considerable number of localities or a particular region, for example *bird, spike, light, branch* and *to send*. The fourth category of lexical variables includes words for which there is a clear spatial clustering of the Berber and non-Berber variants. The results obtained for lexical variables such as *afternoon, to plant, shade, span, pigeon*, etc. allows them to be grouped under this category. For a number of other variables, the Berber variants were found to be more frequent, prevailing over a larger area. These include items such as *to vomit, summer, spring, heavy, to dig, ice, cat, bee, chin, to defeat, sick* and *female goat*.

Limitations of the Study

The present study suffers from a number of limitations which need to be considered when interpreting the results yielded and when attempting to generalize its findings.

The first major problem, in our estimation, is the size of the sample. Although the number of informants who took part in the present study can be considered large, in particular when compared to those involved in other studies on Tashawit or Berber in general, it is still not large enough to allow us to draw the sort of conclusions needed for a study with a geographical scope as wide as the one covered in the present work. Closely related to the size of the sample is the representation of the participants across the localities involved. Indeed, for a good number of places, the number of participants can be considered sufficient. However, for a number of other research localities, the number of informants is not sufficiently representative, as in some of the localities of the region of Nemamcha. It is important to note, however, that the lack observed in the number of informants in such a region or some other localities in other regions is due mainly to low response rates obtained in them. Although the number of the copies of the survey administered to the participants is abundant (around 5000 copies or more), less than half of the subjects filled and returned it back. Had all or most of the copies returned back, the findings would have much more external validity. It is important to mention that the results yielded in the present work are still fairly valid and reliable, considering that the analysis is built mainly on comparisons of the rates of lexical loss between regions rather than isolated localities. The lack of a sufficient number of informants in one locality is often compensated for by informants from neighboring localities of the same region.

The second limitation of the present study has to do with the length of the wordlist used. A list of sixty-one lexical items can be viewed as not long enough to generalize the findings obtained on Tashawit lexicon as a whole. Although the findings obtained based on the wordlist used could be used to draw conclusions regarding the rates of lexical loss across the regions covered, claims cannot be made regarding the

rates of loss of notions that are not present in the list. The results should be only considered within the boundaries of the wordlist used. This limitation is not exclusive to our study. Most of the studies carried out in this domain face the same challenge. Linguists find themselves torn between two alternatives, either to use a long list but a small number of participants (e.g., Kossmann, 2009) or a short list with a large number of speakers. A fair treatment of the problem is probably to use a fairly long list and a fairly representative sample. More practically, many studies need to be carried out focusing on particular semantic domains in order to yield more reliable results.

Suggestions for Further Research

In order to obtain more reliable results on lexical erosion in Tashawit, in particular, and Berber, in general, further research needs to be carried out. With regard to Tashawit, it is important to conduct studies which engage more informants from the different regions, in particular those regions which are not or less represented in the present study. Not only is there a need to include more localities, but the number of informants from such localities should be sufficient and representative. This would yield interesting results regarding the rates of lexical loss and the findings obtained in terms of the relationship of region and lexical loss. It is important, however, to acknowledge that it is of serious difficulty to conduct a single study which would cover all the Tashawit speaking area and which responds to the conditions of sample size and representativeness. Therefore, such a research work would be more practical if it is conducted via replication studies each of which would be concerned with a single region.

It is important also to broaden the semantic scope of the study by using a longer lexical list. In order to understand lexical erosion better, the lexical list needs to be diverse, covering as much as possible of semantic domains, as well as lexical

categories, basic and advanced vocabulary, and so forth. Studies that would focus on particular semantic domains are also recommended. It is equally important to conduct comparative studies between Tashawit and other Berber varieties in terms of the rates of lexical loss as well as the nature of the words which are maintained or lost. Studies such as the one suggested here will not only lead to more reliable findings on lexical erosion in Tashawit, but we believe would allow us to understand the existing tendencies of lexical obsolescence in Berber as a whole. If conducted with fine validity and reliability, such studies would make it possible to get a deeper understanding of lexical erosion as a phenomenon common to all world languages. Other extralinguistic factors (e.g., gender, mobility, etc.) need to be taken into account to have a deeper understanding of the nature of this phenomenon.

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Appendices

Appendix I: Questionnaire (Arabic Version)

عـزيـــزي المشارك: يـهدف هذا البحث إلى دراسة استعمال الشاوية بمنطقتك. نرجو منك تحديد الكلمة الشاوية التي تقابل كل كلمة عربية في الجدول.

الـــعـمـــر: ..... الـجـنس: ☐ ذكـر / ☐ أنثـى / مكان الميلاد: .....

السكن الحالي/ قـريـة: ..... بـلـديـــة: ..... عـــــرش: .....

اذكر الأماكن التي سكنت بها موضحا عمرك في كل مرة

المكان 1: ..... من عمـر ..... إلى عمـر .....

المكان 2: ..... من عمـر ..... إلى عمـر .....

المكان 3: ..... من عمـر ..... إلى عمـر .....

المكان 4: ..... من عمـر ..... إلى عمـر .....

الـعـربـيـــة	**الـشـــاويـــة**	**الـعـربـيـــة**	**الـشـــاويـــة**
الـــنـــــار	.....	**الـسـحـــاب**	.....
الـــرمـــــل	.....	**الـمـطـــــر**	.....
الـــريـــــح	.....	**الـضـبـــاب**	.....
الـغـابـــة	.....	**الـجـلـيـــد**	.....
يـتـجـمـــد (الماء)	.....	**الـظـــــل**	.....
جـديـــــد	.....	**قـــديـــــم**	.....
الـصـبـــاح	.....	**الـــمـــســـاء**	.....
الـصـيـــف	.....	**الـشـتـــاء**	.....
الـخـريـــف	.....	**الـــربـيـــع**	.....
شـجـــــرة	.....	**غـــصـــــن**	.....
يـحـفـــــر	.....	**يـغـــــرس** (شجرة)	.....
نـخـلـــــة	.....	**الـصـنـوبـــر**	.....
سـنـبـلـــة	.....	**الـــدفـلـــى**	.....

عصفور .....

القط .....

حمامة .....

يتقيأ .....

الذقن .....

المرفق .....

عقب القدم .....

القبر .....

حزام .....

الملح .....

خميرة .....

ثقيل .....

بعيد .....

يكرر (الكلام) .....

يتبع (شخصا) .....

يغلب (الخصم) .....

يتسول .....

من (هـذا؟) .....

سمكة .....

نحلة .....

عنزة .....

مريض .....

اللحية .....

يدفن (الميت) .....

أشفار العين .....

الشبر .....

مراية .....

يغربل .....

نظيف .....

خفيف .....

قريب .....

يصل .....

يرسل (رسالة) .....

يعصر (الملابس) .....

يسكن .....

شكرا

Appendix 2: Questionnaire (English version)

Dear informant:

The aim of the present study is to investigate the use of Tashawit in your region. Please provide the equivalent from Tashawit for each of the Arabic words in the table.

Age: ……	Gender: male / female	Place of birth: ……
Residence / town: ……...	Municipality : ……	Tribe: ……

Indicate the places where you have lived and the age interval for each place

Place 1: ……	From …. Years old to … years old
Place 1: ……	From …. Years old to … years old
Place 1: ……	From …. Years old to … years old
Place 1: ……	From …. Years old to … years old

The wordlist

fire (n.)	cloud (n.)
sand (n.)	rain (n.)
wind (n.)	fog (n.)
forest (n.)	ice (n.)
freeze (water –)	shade (n.)
new (adj.)	old / ancient (adj.)
morning (n.)	afternoon (n.)
summer (n.)	winter (n.)
autumn (n.)	spring (n.)
tree (n.)	branch (n.)

dig (v.)	plant (a tree)
palm tree (n.)	pine (n.)
spike (n.)	oleander (n.)
bird (n.)	fish (n.)
cat (n.)	bee (n.)
pigeon (n.)	female-goat (n.)
vomit (v.)	sick (adj.)
chin (n.)	beard (n.)
elbow (n.)	bury (the dead)
heel (n.)	eyelashes (n.)
grave (n.)	span (n.)
belt (n.)	mirror (n.)
salt (n.)	sieve (v.)
yeast (n.)	clean (adj.)
heavy (adj.)	light (adj.)
far (adj.)	near (adj.)
repeat (words)	arrive (v.)
follow (a person)	send (a letter)
defeat (v.)	squeeze (clothes)
beg (v.)	reside (v.)
who?	

Thank you.

Résumé

Le présent travail rend compte d'une étude analytique descriptive de l'érosion lexicale induite par le contact en chaoui, la variété de tamazight parlée dans l'est Algérien. Il retrace l'utilisation d'un certain nombre de variantes berbères dans les différentes régions où cette variété est parlée, dans le but d'identifier les régions où ces variantes sont conservées et où elles sont perdues et de savoir si leur maintien et leur perte sont déterminés au niveau régional. Il s'agira également d'enquêter sur ce maintien lexical et la perte en cours, c'est-à-dire à travers les différentes générations, pour identifier s'il existe des différences significatives entre les différents groupes d'âge dans le maintien et la perte des variantes berbères. Une liste de 61 notions couvrant une variété de domaines sémantiques a été élaborée en arabe et a été administrée, sous la forme d'un questionnaire sociolinguistique, à un grand nombre de locuteurs de différentes localités de la région Chaouia. Les résultats de la présente étude ont été obtenus à partir de l'analyse des réponses de 1816 informateurs qui ont répondu et renvoyé le questionnaire. L'analyse statistique a révélé que l'érosion lexicale est déterminée régionalement pour la plupart des notions dans la liste. Alors que certaines notions ont subi un remplacement lexical massif dans toutes les régions, d'autres se sont maintenues dans un ou plusieurs territoires ou régions. En général, l'érosion lexicale s'est révélée moins sévère dans les régions occidentales, à savoir l'Aurès Occidental et Bellezma, en particulier la partie sud de la région, par rapport aux régions orientales, l'Aurès Oriental, Nemamcha, Segnia et Harakta. Néanmoins, un certain nombre de variantes berbères se sont avérées mieux entretenues dans les régions orientales. L'analyse statistique a également révélé une forte association entre la perte lexicale et l'âge pour la plupart des notions de la liste de mots. Les résultats obtenus pour un

certain nombre de notions sont conformes à l'hypothèse du temps apparent, tandis que pour d'autres notions, l'analyse a révélé d'autres tendances.

Mots clés: *chaoui*, *contact des langues*, *emprunt lexical*, *érosion lexicale*, *région*, *âge*.

ملخــص

تتناول هذه الأطروحة ظاهرة الاندثار المعجمي في اللهجة الشاوية. وتهدف الدراسة بالتحديد إلى مقارنة استعمال عدد من البدائل المعجمية الأمازيغية الأصلية في مختلف المناطق الناطقة بهذه اللهجة في الشرق الجزائري لتحديد أثر تباين حدة اتصال اللغات على استعمال أو إهمال هذه البدائل. كما تهدف هذه الدراسة إلى مقارنة تداول الكلمات الأمازيغية الأصلية في أوساط أفراد الجيل الناشئ مقارنة مع جيل الآباء والأجداد. ولتحقيق هذه الأهداف تم استحداث قائمة معجمية تضم 61 متغيرا لفظيا من حقول دلالية متنوعة أدرجت في استبانة تم توجيهها إلى عينة من المتحدثين باللهجة الشاوية في مختلف المناطق. تستند نتائج هذا البحث إلى بيانات 1816 متحدثا الذين تمكنوا من ملء وإعادة ارسال نسخ الاستبانة. وقد أظهر التحليل أن الاندثار المعجمي سائد في أغلب المتغيرات اللفظية التي تم إدراجها في القائمة المعجمية. كما أظهرت الدراسة تباينا في حدة الاندثار المعجمي في المناطق التي تمت معاينتها. إذ تم التوصل إلى أن زوال البدائل الأصلية عموما أقل حدة في المناطق الغربية وخاصة الأوراس الغربي الجنوبي والمنطقة الغربية لأوراس بلزمة، بينما تزداد حدة الزوال في المناطق الشرقية – الأوراس الشرقي، أوراس نمامشة، ومنطقتي حراكتة وسقنية. تجدر الإشارة إلى أن عددا من الكلمات الأمازيغية الأصلية لا تزال مستعملة في المناطق الشرقية بينما اندثرت كليا أو بشكل كبير في المناطق الغربية. كما أظهرت الدراسة تباينا في استعمال الكلمات الأمازيغية لأغلب المتغيرات التي تناولتها الدراسة بين مختلف الفئات العمرية. إذ تبين أن عددا من الكلمات الأصلية يتم تداولها أكثر في أوساط المتحدثين الأكبر سنا، بينما يتم استعمال الكلمات الأصلية لمتغيرات أخرى بشكل أكثر في أوساط الفئات العمرية المتوسطة. وقد تبين أن فئة الشباب عموما أقل استعمالا للكلمات الأمازيغية الأصلية، بينما يوجد عدد من الكلمات الأصلية التي سقطت من استعمال جميع المتحدثين أبناء وآباء وأجدادا.

الكلمات المفتاحية: الشاوية، الاتصال اللغوي، الاقتراض المعجمي، الاندثار المعجمي، المنطقة، العمر.