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An Apparent Time Investigation of an Ongoing Sound Change in Acif El Hammam Speech Community, Bejaia

A Dissertation Submitted in Partial Fulfillment of the Requirements for a Master's Degree in Linguistics

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Abstract

The Berber language has received little interest from variationist linguistics research. This language is still overlooked by dialectologists who are still merely interested in the study of its heterogeneity from a purely geographical perspective. The present study adopts the variationist paradigm to study language variation and change in the Kabyle speaking speech community of Acif El Hammam. It aims to understand the distribution of the variable [l] and its two variants (y) and (lr) in relation to the social factors of age, exogamy and gender. Extensive fieldwork has been carried to compile a corpus of 33 sociolinguistic interviews as well as a close observation of 323 speakers. The analysis of this data revealed an ongoing phonetic change led by younger speakers and in-married women. Results indicate that the variant (y) has been introduced recently into the Acif El Hammam speech community from the neighbouring region of Zekri through exogamy. Older speakers are not affected by this rapid change and are still maintaining the original variant (lr).

Keywords: Berber, Acif El Hammam, language variation, variationist linguistics, apparent time, sound change

Dedication

To the loving memory of my grandparents

Acknowledgement

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CHAPTER 1: General Introduction

1.1Overview

The variationist linguistic enterprise aims to investigate variability in language use in relation to social factors from a quantitative perspective. It originated in the pioneering work of William Labov on English on Martha's Vineyard, Massachusetts (1963) and the Lower East Side of New York City (1966) then spread to almost every corner in the world. However language variation in Kabyle speaking communities has not yet been investigated using this paradigm leaving a huge gap in the understanding of its massive heterogeneity. Therefore, the present research adopts this research paradigm for the study of a phonetic variation of the lateral [l] within Acif El Hammam speech community, Bejaia and makes use of the apparent time construct to discover whether this variation leads to language change.

This chapter provides an introduction to the study. This is done by coining a set of relevant questions and corresponding assumptions, this is followed by a description of the context of the study and its impending limitation and finally its significance and contribution.

1.2 The Present Research

The present study investigates a synchronic phonetic variation of the variable [l] and its two variants (y) and (lr) within Acif El Hammam speech community. It aims at discovering the social factors that influence the choice of a variant rather another. This research relies on the apparent time method to investigate a potential diachronic process of language change through quantitative analysis of the speech of participants from distinct age groups.

1.3 Research Questions

The study addresses three main questions in the attempt to arrive at a better exploration of the research problem**.**

- Is language variation within Acif El Hammam speech community indicative of an ongoing language change process?

- What are the social factors deciding about variants' choice?

- What are the causes that motivated the introduction of the variant (y) into Acif El Hammam Speech community?

1.4 Research Assumptions

Being an insider member of the speech community with a great interest in language and linguistics, it was relatively easy to gain a better understanding of the social life of the community and have a closer observation of its speech. Accordingly, many assumptions can be speculated to answer the present research questions, and the following are the core of our study:

- Language variation within Acif El Hammam speech community is indicative of an ongoing language change process since the speech of the older speakers varies considerably from the speech of the younger speakers.

- The use of the variants (y) and (lr) is governed by three social factors that are age, gender end exogamy.

- The variant (y) has been introduced into Acif El Hammam as a result of a custom of exogamy leading to a process of dialect accommodation.

1.5 Context of the Study

The Berber language is spread on a vast territory covering the totality of North Africa, the Sahel region and the Canary Islands resulting in a massive variation and heterogeneity. This has been investigated for many decades by dialectologists who aimed at reconstructing Atlases representing the geographic distribution of these varieties. On the other hand, there has been less concern with language variation within societies leading to an enormous gap in Berber language studies. The current study aims at investigating language variation and change within a Kabyle speech community using the variationist paradigm. The adoption of the apparent time method will help uncover a potential ongoing language change process that is taking place at present time within this speech community.

1.6 Limitations of the Study

The present research focuses on phonetic variation of the variable /l/ within Acif El Hammam speech community, Bejaia. It is worth noting that the Mouarabites living in the region are not grouped into the speech community due to social and religious considerations. The field work has been restricted to Hengued, the largest constituting village of the region. Results are then generalised to the whole speech community. The Covid-19 pandemic has constrained the data collection process by reducing the number of participants in the sociolinguistic interviews to three participants in each cell. Moreover, the research has been restricted by time limitations resulting in three missing male participants.

1.7 Orgnisation of the Study

The current study comprises five chapters. The first chapter offers a general overview of the present research including the addressed questions, the primarily assumptions as well as limitations and the significance of the study.

The second chapter is dedicated to the theoretical background of the research topic. The first section provides a description of the different disciplines interested in language variation including traditional dialectology and variationist sociolinguistics. The second section of this chapter presents the apparent time construct which is the theoretical framework of this research. It includes aspects related to this method including the real time construct, age grading and the stability of adults' vernaculars.

The third chapter presents Acif El Hammam speech community including its geographical localisation and the prevalent social life. It presents the methodology and the field-work process followed for data collection. Finally, it discusses the linguistic background of the /l/ variable and its different variants as well as the linguistic constraints inhibiting the lateral [l] from undergoing variation.

The fourth chapter deals with data analysis and a discussion of the results obtained from the pilot study and the two data collection tools: participants' observation and the sociolinguistic interview.

The final chapter is a general conclusion that summarise the findings and offer recommendations for future research.

1.8 Significance of the study:

Using the variationist paradigm offers a social insight into the study of the Kabyle dialect and contributes consequently to the existing body of knowledge about its varieties. Relating language variation in the Berber language and its different dialect with social factors mainly age, exogamy and gender will certainly reveal unexpected patterns and will offer helpful explanations and insights.

To the best of our knowledge, this research is the first attempt to use the apparent time construct for investigating language variation and change within the Kabyle dialect in Algeria. This method has mostly been applied to the study of Arabic speaking communities. Outstandingly, the approach has several promising advantages and will help bridge the gap in the realm of Berber language studies. This significance is further reinforced if we consider the lack of historical evidence for real time studies.

Finally, this study will shed light on the Acif El Hammam community that has not been previously covered by dialectologists and consequently contribute to a potential future linguistic Atlas.

CHAPTER 2: Theoretical Background

Introduction:

Language variation and change are two characteristics of any language. Often, they do not require any carful observation of a linguist to be detected since they can be easily noticed by random people who are either speakers or non-speakers of that language.

The first section of this chapter provides an overview of the different disciplines that have been preoccupied with the study of language variation and change including their methodologies and principals. A profound focus is attributed to the quantitative paradigm that revolutionised this field of study starting from the 1960s.

The second section focuses mainly on the apparent time method that made the shift from the diachronic to the synchronic approach for the study of language change. It provides the historical background of this method, its core principles, its numerous advantages and its great feasibility. This section includes the diachronic real time method by explaining its advantages and disadvantages as well as the notions of speech accommodation and dialects levelling that are potential causes of language change in Acif El Hammam speech community.

Section 1: On Linguistic Variation

2.1 Variationist Sociolinguistics

Usually referred to as quantitative sociolinguistics or the quantitative paradigm variationist sociolinguistics originated in the 1960s in the pioneering works of William Labov in Martha's Vineyard (1963) and New York City (1966). Since then, many linguists have followed this research trend across The United States of America and Europe then spread to other communities all over the world.

Variationist linguistics is based on many founding principles. Probably the most influential one it that of orderly or structured heterogeneity discussed by Weinreich, Labov and Herzog (1968) in their article "Empirical foundations for a theory of language change". It suggests that there are no random or free variations in language. Instead, they are systematically constrained by linguistic and /or extra-linguistic factors (p.99-100). Variations that could not be explained by linguistic constraints used to be marginalised by dialectologists who believed in the axiom of categoricity claiming that such variations are categorical and non-significant to language variation as a whole (Bayley,2002. p.117). In addition to this fundamental principle, Bayley (2002) explained two additional ones which are quantitative modelling and multiple causes. The latter principle indicates that one single contextual factor cannot be solely responsible for variation. Instead, it has been demonstrated by many variationist studies that it is always the result of multiple factors. Whereas for the former principle, it refers to the methodology used in the discipline. Before this era, linguists concerned with language variation mainly dialectologists and historical linguists relied on qualitative methods. However, variationists make use of appropriate quantitative methods to generate statistical results explaining the cause-effect relationship between contextual factors and the linguistic variable (p.117-118). Labov (1982) says that this is achieved via counting both the number of occurrences of a given variant and the situations where it could have occurred but it did not (p.30). Bayley (2002) added two other principles that are found in Guy (2001):

• Individual speakers may differ in their basic rate of use of a variable rule, that is, in their input probability for the rule.

• Individuals should be similar or identical in the factor values assigned to linguistic constraints on the rule. (This assumption is usually qualified to apply just to people who belong to the same speech community.) (p.120)

The first principle suggests that individuals can show some patterns of variation that are different from those of their speech communities. Thus, variationist sociolinguistics acknowledges the concepts of intra and inter-individual variation. The second principle argues that despite these two different levels of variation, individuals can be grouped into speech communities that share several common features and norms regarding language use in that same society or simply a sociolinguistic competence that is acquired by all the members of that speech community.

2.1.1Regional Dialectology

This field of linguistics is aimed at studying language variation and distribution across some particular geographical areas. It has been very prominent in the nineteenth and twentieth century across Europe and North America. Dialectologists represented their findings on maps called Linguistic Atlases. Such maps locate where a particular language form is found using different symbols and later colours to differentiate them. Then, isoglosses were drawn to separate each dialect from the other. Examples of such Atlases are found in Meyerhoff (2006). They include: Atlas Linguistique de la France, dialect atlases of North America and Linguistic Atlas of the Iberian Peninsula (p.11).

Regional dialectologists follow a set of common methodological principles in their sampling data collection and data interpretation. First, they insisted that one norm speaker suffuses to represent a whole population. As (Chambers & Trudgill 1998) explains, he has to be an old and non-mobile speaker who is believed to possess to most authentic language forms. In addition, they travelled into rural villages that are isolated from any possible external contact. Furthermore, whenever variation is found in the speech of certain speakers it was often ignored and considered categorical with no significance to the language of the region as a whole.

The Berber Language and its different dialects have been investigated following this paradigm as well. According to Chaker (1998), André Basset is the most prominent figure in the field with his very significant publications: Géographie Linguistique de La Kabylie (1929) Atlas Linguistique des Parlers Bèrbère (Algerie du Nord) (1936/1939) and Les Articles de Dialectologie Bèrbère (1959) (p.1). He argues that Basset's studies have covered only lexical forms mainly the names of body parts and domestic animals, and have investigated only few regions of a vast territory, consequently drawing clear isoglosses was not possible (p.2). In addition, Taine-Cheikh (2012) argues that within these maps, boundaries separating the different varieties differ from one map to the other (p.26). Since Basset's last publication in 1959, many small scale projects have been carried to investigate geographical variation in different Berber varieties. In the Kabyle dialect, only few studies are found. They include the study of K.Madoui (1995) covering six localities in Bejaia region Western Kabylia and that of O.Kirech (2010) that compared only two regions: Souk El Tenine in the extreme east Kabylia and Sidi Ali Bounab in the extreme West. Nait-Zerrad's study (2009) was more detailed and informative through covering 30 localities of the same region (Guerrab, 2014, p.15). Another study by Tigziri (2009) has been devoted to the phonological variation of the /l/ with the aim of reconstructing a geographical map for the distribution of this particular sound.

Recent studies shifted into the dialectometry method that makes use of different technologies to overcome the limitations of linguistic geography mainly the difficulty of drawing clear isoglosses for the separation of different varieties. They include Nait-Zerrad (2005)/ (2009) and Lafkioui (2009) (Guerrab, 2014, p.16). However, it was not until 2007 that a full linguistic atlas of a Berber variety was published. It was carried by Mena Lefkioui who investigated 141 different localities in the Rif region, northern Morocco. Her work covered phonetics, phonology, morphology, syntax and lexicon (Tain-Cheikh, 2012 p.27). This work is very systematic and detailed that it has bridged a large gap in all previous studies manly

Basset's (Lafkioui, 2018). This Study is followed by a Linguistic Atlas of Kabylia by Guerrab (2014) who made use of the dialectometry method to investigate 167 different locations in the Kabylia. It was based on a large corpus covering phonetics, lexis and morphosyntax.

Despite its simultaneous rise with the European one, Berber dialectology is still at its early stages because of this limited number of studies.

2.1.2. Social Dialectology

According to Meyerhoff (2006)" The first social dialect study was conducted in the summer of 1961 on Martha's Vineyard, an island off the coast of Massachusetts in the north-eastern United States" (p.16). Labov's study has widened the limits of regional dialectology by investigating variation in relation to social factors. Thus linguists become increasingly interested with the field.

Social dialectology rejected some of the core methodological components of regional dialectology and came with other principals that revolutionised the field. According to Meyerhoff (2006) Labov has demonstrated that there is a direct correlation between linguistic variation and a set of social factors that characterise the Island of Martha's Vineyard.
Consequently, free variation is not an accepted an explanation anymore (p.17). Moreover, unlike early dialectologists who investigated rural isolated regions, Labov's work took place in an urban centres and large cities with large and diverse populations. He interviewed people from different age groups and both genders. He designed the sociolinguistic interview to make his speakers feel comfortable while interviewed by careful selection of questions and topics of discussions. This method has facilitated the collection of huge corpora of authentic and natural speech. In contrast, more formal data collection tools such as reading tasks and minimal pairs have been applied to collect careful speech. The data obtained using these tools

is contrasted to natural speech to find any differences in language use regarding a change is situation or addressee. Labov has also made use of careful observations of peoples' speech in streets, markets, and bars to avoid any influence of the interviewer. In this respect Labov (1981) says," our aim is to observe how people talk when they are not being observed" (p.30).

Despite these different methods and principals, Labov (1981) acknowledges that early studies have maintained some principals of dialectology. He says, "Field methods used in Martha's Vineyard (Labov 1963) were modifications of earlier techniques used in dialectology and the New York City study (Labov 1966) still showed some focus on lexical items which reflected the dialectological tradition (p.28). These studies have also referred to early works of dialectology by supporting their findings with the Linguistics Atlas of New England.

2.2 Variationist Model of Sound Change

Sound change has been the concern of many disciplines for over a century and a half. During this long period of systematic investigation, researchers have focused on the process of change by looking for its origins and the reasons motivating its emergence, its adoption and spread in additions to the pre and the post stages of change to reveal innovations (Hinkens, 2020 and Cukor Avila & Bailey, 2013).

The oldest discipline that treated this phenomenon is historical linguistics through comparing languages at two or more periods of time. Kerswill (2010) argues that this approach takes a long view of the language change process starting from a specific points in time to reach a future state where the change's outcome is clearly observable (p.02). Labov (1963) compares this method to that of palaeontology or geology. He has also mentioned some historical linguistics that followed it such as Jespersen, Wyld and Kokeritz (p.274).

Hikens (2020) argues that regional dialectology followed starting from the 1880s attempting to represent this diachronic process by indicating on geographical maps of the different variations that are outcomes of that change. In the first half of the twentieth century instrumental phonetics and structuralist phonology added their contribution into the field as well (p.07).

In the 1960s, Labov initiated the quantitative approach to the study of language change. It was based on his claim that the process of change can be observed in a shorter period of time. He suggested moving from the traditional diachronic approach of historical linguistics to a synchronic approach that was believed to be impossible prior to that. Classifying speakers of the same speech community into groups based on social criteria such as gender, ethnicity, and educational level and most importantly age has allowed making comparison between the speech of older speakers representing the older language forms and the speech of the younger speakers representing the newer ones. Results are obtained using quantitative methods that show the patterns of variation. These patterns usually indicate that systematicity is found to be higher at the community level than individual level (Kerswill 2010, p03). He adds arguing that this method is very helpful since it allows understanding complex social patterns through studying them within the process of language change. Consequently, language that is shared by community is well investigated within the same community (p04).That was also the claim of Labov (1963) who believes strongly that a full understanding of the process of language change can never be obtained away from the community where it takes place (p.1963). Hinkens (1998) considers this point as the end of the Saussurian thinking of synchronic and diachronic approaches (p.157).

According to Kerswill (2010) the variationist model has treated language variation at all levels. Yet, sound change is the most investigated type of change in this filed. Besides,

linguistic variables that are meaning expressive are found to suite the aspect of phonology (p.6).

2.3 The Labovian Approach on Variationist Linguistics

According to Kerswill (2010), the Labovian approach constitutes the first wave of variationist linguistics (p4). Starting from his pioneering studies in Martha's Vineyard (1663) and New York City (1966) he has established a solid framework for the investigation of language variation and change. This approach has attempted to establish correlations between linguistic variables that were mainly phonological as dependent variables with different social factors mainly socioeconomic class, age, ethnicity, sex and educational level as independent variables. According to Wardhaugh & Fuller (2015) this study trend has been followed in other research within the United States and Great Britain and has reported socioeconomic and ethnic stratifications within speakers of the same speech communities (p.170).

Through the use of the apparent time construct, Labov has demonstrated that studying language change in one point in time is possible. The most influential social factor within this method is age that is used as methodological tool grouping speakers into groups then measure language differences across them. Whenever a difference between the older and the younger groups is found, it is interpreted as the existence of an ongoing language change within that community. Labov (1963) states that the study of the distribution of the variables /ai/ and /au/ in the Martha's Vineyard speech community has allowed reconstructing the history of the sound change process that was taking place at that time. This explanation is achieved when three issues are explored. The latter are the origin of variation, the spread of the linguistic change and finally its regularity in the speech community (p.273). Labov has combined in his study framework principals of both sociolinguistics and dialectology and made reference to

previous dialectological finding such as The Linguistic Atlas of New England as real time evidence to support his findings and consequently confirm his hypothesis.

2.4 The Linguistic Variable VS the Sociolinguistic Variable

The notion of the linguistic variable has been devised by Labov as an alternative for the term free variation that has been employed by dialectologist. Meyerhoff (2006) says, "a sociolinguistic variable can be defined as a linguistic variable that is constrained by social or non-linguistic factors, and the concept of a variable constrained by non-linguistic factors emerges straightforwardly from the traditions of dialectology" (p.11). It is defined by Wardhaugh & Fuller (2015):

A linguistic variable is a linguistic item which has identifiable variants, which are the different forms which can be used in an environment. For example, words like singing and fishing are sometimes pronounced as singin' and fishin'. The final sound in these words may be called the linguistic variable (ng) with its two variants [ŋ] in singing and [n] in singin' (p.149).

He distinguished between two main types of variables: a variable similar to (ng) with a list of possible variables with the possibility of zero variant and another type where variants are the different realisations of the variables such as the different allophones of a particular phoneme (p.149). Sankoff & Newmeyer (1988) believes that the notion of the sociolinguistic variable has been originally designed for the study of phonological variation. Then, it has been used in syntax, grammar, semantics, and vocabulary (Watt, 2006, Chapter 1).

Section 2: Diachronic Change

2.2.1 The Apparent Time Contrast

According to Bailey (2002), prior to Labov's study of language change in Martha's vineyard linguists believed in Hockett's claims that the process of language change cannot be seen while it is taking place in the present time (p.312). Therefore, they had to examine data from two separate time periods looking for possible changes that might have occurred.

In his 1963 study, Labov demonstrated that studying this diachronic process is possible when examining synchronic variation. Labov (1963) stated, «by studying the frequency and distribution of phonetic variants of /ai/ and /au in the several regions, age levels, occupational and ethnic groups within the island, it will be possible to reconstruct the recent history of this sound change» (p.273). The most contributing social factor to this synchronic approach to the study of language variation is age. As cited in Bailey et al.1991, Chambers and Trudgill argue:

the validity of [apparent time] hinges crucially upon the hypothesis that the speech of, say, 40-year-olds today directly reflects the speech of 20-year-olds twenty years ago and is thus comparable for diffusion research to the speech of 20-year-olds today. Discrepancies in the speech of 40-year-olds and 20-yearolds are attributable to the progress of a linguistic innovation in the twenty years that separate the two groups. (p. 242)

This contrast did not only indicate that a language change is ongoing but it offered a detailed explanation of the whole process that it takes. Labov (1963) says that investigating language variation using this method will offer a detailed insight into the hole process starting

from the reasons motivating its emergence to the its spread and stratification in the speech community.

According to Bailey et .al (1991), explaining diachrony with synchrony is acknowledged by Labov himself to be the invention of Gauchat (1905) who used the apparent time to study of phonological change in the Swiss village of Charmey. This study was reinvestigated by Herman (1929) and thus provided the first support for the validity of this contrast (p.241). Labov (1963) says,

Gauchat observed and tabulated differences in six phonological features in the speech of three generations: speakers over 60 years old, those between 30 and 60, and those under 30. Hermann returned to the scene in 1929, one generation later, to investigate four of these features: his results confirmed the interpretation of Gauchat's data as evidence for historical change, since three of the four had advanced considerably in the same direction.

(p.292)

This method has offered many advantages for studies of language variation including mainly time and effort saving. Linguists became able to understand the process of language change within one study. Besides, Hansen (2018) says, "This method is especially promising for the investigation of esl varieties where diachronic data are still largely missing. Here, the apparent-time method may be an effective method for obtaining empirical evidence for ongoing language change and thus for bridging the ‘diachronic gap" (p.8).

The apparent time construct is challenged by three main issues that are listed by Bailey (2002) including its generality, the stability on individual’s vernaculars and the possibility of age grading patterns beside the ongoing language change possibility (p.314).

2.2.2 The Real Time Construct

This method is used to study language change at two different points in time. According to Bailey (2002), this can be achieved via consulting pre-existing evidence in the literature or through reinvestigating apparent time studies. The latter option can take two forms depending on the sampling procedure used. A panel study re-surveys the same participants whereas a trend study uses different participants within the same speech community (p.325).

Labov (1982) notes that that using a diachronic method for the study of language variation by describing different period in real time is the most recommended approach (p.218). In fact it is viewed as the only possibility for differentiating an ongoing language change from the age grading possibility. According to Meyerhoff (2006), using evidence from the Linguistic Atlas of New England has clarified the nature of language change that was taking place in Martha's Vineyard and offered a better interpretation of the findings (p.138).

Real time studies come with methodological limitations as well. As discussed in Bailey et.al (1991) and Bailey (2002), existing evidences are scares and even when available they either lack detailed description or are limited to old male participants regarding the methodology of regional dialectology of that time. On the other hand, conducting longitudinal studies is really challenging. Tracking the same participants in panel studies is most of the time impossible since they could pass away, immigrate or simply refuse to participate. Trend studies can be difficult as well since communities' characteristics are continuously changing over time.

2.2.3 The Stability of Adult's Vernaculars

The stability of adult's vernacular is probably the basic assumption on which the apparent time construct is based. It is believed that the language acquired in early childhood remains largely stable through lifespan. Meyerhoff (2006) argues that this belief is derived from the notion of critical period when language acquisition is easier. After that period, the acquisition of new forms becomes harder (p.133). Baxter (2016) refers to this process as a decline in flexibility of speaker he says, "Speakers are flexible in their linguistic behaviour up through adolescence, the so-called critical period for language acquisition, but after adolescence their linguistic behaviour is more or less fixed. This is an essentially cognitive/biological phenomenon" (p.15).Labov & Harris (1994) supported the apparent construct by saying that phonological categories remain stable.

Bailey (2002) has also reported the results of Chukor-Avilla (2000) panel study. He came to the conclusion that adults' vernacular is stable whereas adolescents' cannot be stable yet (p.320). According to Meyerhoff (2006), panel studies that became recently available indicate an affirmation for the stability of adults' vernacular mainly at the level of phonology: One of the clearest findings emerging from panel studies is that not all linguistic variables behave the same across a speaker's lifespan. As a general rule, a speaker's phonology is more stable than their vocabulary *(p.140).* Sankoff (2019) argues the same: "Much of both syntax and phonology appears to be set in early first language acquisition "(p.198). According to Sankoff (2018*)* longitudinal studies have revealed three trajectories of individual language change. The most common trajectory is stability where individuals maintain to a great degree their vernacular forms (p.297). When reporting the results from Blondau (2003), Meyerhoff (2006) says:

In general, people remained relatively stable in their use of one variant or another. Not completely stable, but relatively stable, and where there were changes in individuals' speech, they were consistent with the overall direction of the change in the speech community, thus affirming the usefulness of the apparent time method. (p.141)

2.2.4 Age Grading and Language Change

As mentioned in Turell (2003), Hockett (1950) acknowledges that the difference in the distribution of a certain variable across different age groups may represent age grading instead of ongoing language change. Hence, this possibility has been considered in the structuralist era before the variationist paradigm (p.1).

As previously mentioned, one of the challenges of the apparent time construct is the existence of Age grading possibility beside the ongoing language change possibility. The differences in the speech of age groups could indicate a pattern where younger generation adjust their speech as they grow older. This pattern is repeated in every generation. Chambers (1995) defines it as "pattern that repeats itself in a community in generation after generation" (p.203). Consequently, the whole community remains stable. However, he adds saying that only few changes of this kind have interpreted as age grading and they are usually found in the speech of the younger age groups i.e. teenagers and children. He provided an example of Canadian children who change their pronunciation of the letter Z from 'zee' to 'zed' when they grow up. This pattern of change has been seen to repeat itself with different generation (p.207). Consequently, age grading variations do not affect language change that occurs at the level of the community as a whole.

2.2.5 Interspeaker and Intraspeaker Variation

It has been demonstrated that language variation can be the result of both linguistic and non-linguistic factors .The latter factors have been further divided into social and stylistic ones. Bell (1984) argues that social factors demonstrate the differences that might exist among the members of a given speech community whereas the stylistic factors are indicative of differences within the speech of an individual speaker belonging to that community (p. 145).

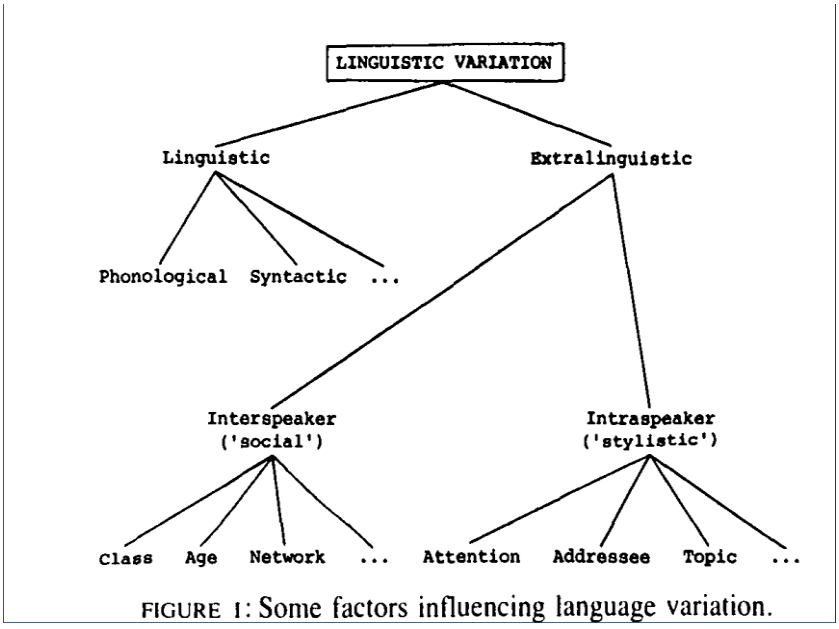


FIGURE 1: Some factors influencing language variation.

Figure 1: Factors influencing language variation

Bell (1984, p.146)

The traditional focus of variationist studies has been essentially on variable's distribution at the level of the community. This focus was based on the believe that the sociolinguistic competence that includes stylistic variation is automatically acquired by individual members of a speech community. In New York City Department Store Study (1966) the /r/ production is found to be higher in minimal pairs, less high in reading tasks and very low in natural speech (Schleef, 2010 p, 1). In the same respect, Romaine (1980) says,

the classic sociolinguistic finding that socially diagnostic variables will exhibit parallel behaviour on a stylistic continuum: that is to say, if a feature is found to be more common in the lower classes than in the upper classes, it will also be more common in the less formal than the most formal styles, with each social group occupying a similar position in each continuum. (P.228)

This belief is derived from the concept of Orderly or structured heterogeneity assuming that members of a speech community share common rules of grammar that constrain the production of a linguistic variable. In this respects Labov (2012) says: "individual variation is reduced below the level of linguistic significance" (p. 265). Yet, within this uniformity variation at the level individual speakers might occur. Labov (1972) argues that efforts have been made in the attempt to quantify and measure the notion of style through the analysis of careful speech as it has been done in Martha's Vineyard (1963) and New York City department store study (1966) where both careful and spontaneous speech have been collected then comparisons have been made between the two types of data to look for possible style shifting in formal situations.

As for the relationship between the two levels of variation, Bell (1984) considers it to be more than an interrelation as it can go beyond to reach derivation where intraspeaker variation

is directly derived from inter-speaker variation (p.151). He believes that this cause-effect relationship takes three stages:

First, it operates synchronically for an individual speaker who, in specific situations, shifts style to sound like another speaker. Second, it operates diachronically for individual speakers who, over time, shift their general speech patterns to sound like other speakers (e.g., after moving to a different dialect region). Third, it operates diachronically for an entire group of speakers which, over time, shifts its speech to sound like another group.

(p.151)

Stevens & Harrington (2014) have identified four types of individual differences that might lead to sound change. They are cited in Mackenzie (2019),

> (i) articulatory differences in how speakers produce sounds; (ii) cognitive differences in how listeners perceive sounds; (iii) differences in how speakers link perception and production; and (iv) the extent to which individuals are sensitive to the range of variation they hear over their lifetimes (which may itself be driven by individual differences in susceptibility to imitation) (p.1)

In his paper Mackenzie (2019) added two more aspects where individuals can differ and hence affect their production of sociolinguistic variables: mental representation of some surface structure and the person's ability to plan his speech (p. 2). He believes that sound change takes place when a speaker takes a divergent path by adopting certain pronunciations that are different from those he acquired in their community (p. 6).

2.2.6 Accommodation and Dialect Levelling

The notions of accommodation and dialect levelling have been developed by Giles and his associates. According to Wardhaugh and Fuller (2015), accommodation is a situation where speakers of distinct varieties of one language accommodate their speech to meet their

audience expectations. This process can be either conscious or unconscious and can take two distinct forms. A speaker may converge to another dialect by avoiding features that are salient to his own dialect. By doing so, he reduces the differences to show solidarity with his audience and seek their acceptance. The other possible form is divergence. A speaker may aim to differentiate himself from his audience through the use of forms that are not understood by them (p.98). Consequently, accommodation leads to dialect levelling that is defined by Meyerhoff (2006) "the gradual erasure or loss of the differences that have traditionally distinguished very local or highly regionalised varieties of a language" (p.239). According to her, linguists and regional dialectologists have become increasingly interested in this field mainly in Europe and Japan. These two parts of the world have witnessed massive destruction during the Second World War. Following that, new cities have been build which led to a massive urbanization and social contact. In other parts of the world the same contact situation is taking place with people leaving their villages and towns to settle in big urban centres and cities. Regional dialect levelling/supralocalization leads to a reduction in the amount of regional variation across a given area; it is characterized by the adoption of new forms, or an increase in existing forms, which thereby gain currency across a wider area than before.

Conclusion:

This chapter has demonstrated how big the jump variationists have made in the field of linguistics. During the last 6 decades of extensive research, they succeeded to establish solid and reliable basis for the study of language variation and change. The shift toward the study of languages within the communities where they are used has provided a better understanding of the process as well as the circumstances of this phenomenon. The invention of apparent-time construct is clearly an optimistic and promising method for reconstructing the history of

change in any language particularly those lacking historical evidence like the Berber Language.

CHAPTER 3: Methodology and Fieldwork

1. Introduction

This chapter provides a description of the methodology followed in this research including the sampling procedure and the data collection tools. It begins with a description of the Acif El Hammam region and an overview of its social characteristics. Then, it offers a detailed narration of the field work experience in Hengued that is a constituting village of the speech community. Finally, the chapter includes a linguistic background of the variable /l/ and its variants (lr) and (y).

2. The Data

The data set is gathered using two data collection tools: participants' observation and the sociolinguistic interview. The participants' observation has been carried all along the research process starting from April 2021 until July 2021 and allowed observing 323 speakers. A corpus of 33 sociolinguistic interviews has been compiled on June 2021 and July 2021.

2.1 Fieldwork Location

Acif El Hammam is a constituting region of Adekar commune and located at 60km to the west of Bejaia city. It is bordered by Ighil n Zekri (Tizi Ouzou) to the north, Adekar (Bejaia) to the east, Yakouren to the west (Tizi Ouzou), Idjeur (Tizi Ouzou) and Akfadou (Bejaia) to the south. This strategic location made of the region a linking point of the two major parts of Kabylia. The population of Acif El Hammam is estimated at around 10 000 inhabitants living in 10 villages: Hengued, Ait Yahia, Kiria, Ait Malek, Timri Mahmoud, Aghoulad, Ighil Qroun, Tazrout, Hriz and Tighzert.

Due to its geographic location, Acif El Hammam is characterised by a strong attachment to the neighbouring regions of Tizi Ouzou mainly Zekri, Idjeur, Yakouren and Azazga. The later town is at only at 29 km from the region and offers a large set of accommodations including a Hospital, a big market place, Doctors' offices and Banks that attract the local inhabitants.

The population of the region is characterised by the existence of the Mouarabites who settled in the distinct village of Tazrout, Hriz, and Tighzert. Few other Mourabite families are found in Kiria and Ait Yahia living among the local inhabitants. Despite this co-existence exogamy between these two social groups has been banned for many centuries making of Mouarabites a close social group with limited contact with the rest of the inhabitants. Consequently, they cannot be grouped into the speech community despite living in the region.

Map1: The Geographical Location of Acif El Hammam region.

2.2 Recruiting Informants

Data collection has been restricted to the village of Hengued where I was born and raised until 2011 when I moved to a small town at 16 km. My parents are both from the village as well. Thus, recruiting informants was not a challenging task since I maintained strong connections with the village and the neighbourhoods. I am a regular visitor on weekends vacations and different occasions such as weddings and cultural celebrations. People were very understanding, cooperative and generous. They did not mind being interviewed as long as it was for academic purposes. Most of the time, they would even volunteer to be interviewed and ask their children, parents and siblings to participate as well. This was very helpful in recruiting additional participants since it created a snow ball effect.

A slight difficulty has been encountered when recruiting younger participants who have been very young or not yet born when I was living there. To overcome that, I attended training sessions of the village's Greco-Roman wrestling club. The age range of the club members ranges from 5 to 18 years old which happens to fit the age groups classification I previously designed. The training sessions take place on weekends (Friday and Sunday in Algeria). They start at 9 am with the younger members and continue until 6 pm with an alternation of different groups every two hours. Sitting there and discussing with the young athletes has been a very precious experience since I succeeded to observe closely the speech of these age groups which has subsequently helped me select some of them to be interviewed later.

2.3 Sampling Procedure

35 participants were selected including 23 females and 12 males based on a judgment sampling method. The participants are all residents of Hengued. The sample was stratified by age (children, adolescents, young adults, adults, and old age) and gender (male, female).

Based on pilot study findings, female participants belonging to adults (35-58) and old age (<59) age groups were further stratified based on their origin: insiders from Hengued or outsiders coming from three (03) neighbouring villages of the same speech community (Kiria, Ait Malek and Ait Yahia).

Table 1: The sociolinguistic interview sample stratified by age and gender

Age groups	Female		Male	Total
5-11	3		3	6
12-18	4		1	5
19-35	4		3	7
	Insider	Outsider		
36-58	3	3	2	8
<59	3	3	3	9
Total	23		12	35

2.3.1 Age

The adoption of the apparent time method for the study of language change requires the classification of the research participants into different age groups. Bailey et al (1991) argue that speakers of each age group represent the language forms that existed when they acquired the language. Consequently, differences between these groups reflect an ongoing language change process (p.241).

According to Cheshire (2020) there is no standard classification of age groups. Instead, every researcher has to design a suitable classification for every particular speech community

regarding its social and the cultural characteristics. For instance, in The Philadelphia Neighbourhood Study, Labov designed seven age groups to represent the life stages of the modern American Society. Therefore, a unique classification of age groups has been designed to serve the purpose of this study. It was based on the social characteristics of the Algerian society as a whole and those of the Acif El Hammam community in particular.

- Childhood (5-11): at this phase of life, children attend primary school located inside the village (Hengued) and have a very limited contact with the neighbouring villages.

- Adolescence (12-18): this phase starts when children accomplish their 5 years of primary school education and move to study in the middle school and the secondary school located outside the village. This movement results in new friendships and connections and consequently frequent contact with outsider speakers from the neighbouring regions.

- Young adults (19-35): by the age of 19, the majority of these young adults succeed at passing their baccalaureate examination then join different universities and schools. Following that, most of them struggle with finding jobs because of the economic crisis of the country.

- Adults (36-58): generally, at this phase of their life people manage to find stable occupations. They get married and make their own families. It is the phases where they experience stability.

- Old age (<59): the cut has been made at this particular age based on a pattern extracted from an early observation where we noticed that speakers belonging to this age group use rarely the variant (y) that is largely spread among speakers of the remaining groups.

Though Feagin (2002) recommends focusing on extreme age groups by contrasting the speech of the oldest group with that of the youngest group to overcome time and costs limitations, this study has covered all age groups because it aims at gaining a complete understanding of the stratification of the variants (lr) and (y) .In addition, this full coverage will allow us to exclude possible patterns of age grading change.

2.3.2 Gender

The factor of gender has been discussed widely in the variationist paradigm. Many studies sought to investigate its effect on language variation. The findings revealed a tendency of women to lead this change in various monolingual speech communities (Labov, 2001). He argues: "any theory of the causes of change must deal with the general finding that in the good majority of linguistic changes, women are a full generation ahead of men" (p.501). This is due to women's tendency to use formal and prestigious language forms and avoid local nonstandard ones. This claim can be applied to bilingual communities as well. A study of has revealed an ongoing language change led by Latin American Women in Spanish-English bilingual community of New York City (Shin, N. L,2013).

The current research aims at discovering any differences in the choice of the variants (y) and (lr) caused by the factor of gender by attempting to recruit equal numbers of participants from the two genders.

2.3.3 Exogamy

Contrary to the factor of gender, exogamy has not received a great interest in variationist studies since western societies do not have systematic traditions of exogamy. However, this factor can be very influential in other societies that have customs exogamy resulting in great mobility of women and consequently frequent contact of different language varieties (Stanford & Pan, 2013).

The present research assumes that this factor is responsible for the recent introduction of the variant (y) into Acif El Hammam speech community. Therefore, female participants from the adults age group (35-58) and the old age group (<59) have been further divided into insiders who were born, raised and married in Hengued and outsiders who are in-married spouses coming from the three neighbouring villages of Ait Malek, Kiria and Ait Yahia. This allows establishing a comparison between the speech of each group and hence discover the significance of this factor.

2.4 Ethical considerations

To make sure our filed work agrees to ethical norms, many precautions have been taken. First, every potential participant has been informed about the general aim of the study that is the History and the social life in the village. They have been clearly explained that they will be recorded so that I could later access their recordings. I never revealed the exact interest of the research to avoid any modification and change in their speech. When interviewing women, I always asked if their parents or husbands would not mind their participation. Before attending the training sessions with the sport club, I previously contacted its responsibles and explained for them the purpose of my visits before getting their consent. After selecting some potential participants from the two younger age groups, I sought to get the consent of their

parents before interviewing them. Later on, every participant has been told when the recording starts and when it finishes.

2.5 The Sociolinguistic Interview

The sociolinguistic interview has been chosen as the primary data collection tool because of the two advantages of permanency and accountability. While the latter expresses the possibility of generating statistical results through extracting a number of tokens from each interview, and accountability to count the number of times every variant has or has not occurred and consequently understand its correlation with social factors. The former advantage refers to the ability to store the data and retrieve at any time for further analysis. In addition to these advantages, the sociolinguistic interview is very practical when investigating phonological variation that is characterised by an abundance of tokens occurring in natural and daily speech (Feagin 2002).

31 one-to-one and 2 group interviews have been conducted. The later type of interview has been used in situations where two participants preferred to speak together narrating common experiences. Each interview lasted approximately 30 minutes. This period of time considered sufficient for the type of variable we investigated (Llamas, 2006, Chapter 2).

All interviews were conducted in places selected by interviewees themselves either at their houses, public places, training room or any other informal setting. Most of the time they knew the importance of having a good quality recording. Consequently, they selected places that are quiet. However, in some cases the noise couldn't be avoided nor controlled. The questions were adjusted to meet the local culture as well as participants' gender, age and background. Generally, participants were asked questions that elicit narration and storytelling. They were

encouraged to carry on talking about whatever topic they enjoyed. I maintained eye contact to express my interest and appreciation to what they said and contributed as much as necessary to every conversation to maintain its flow.

2.6 Participant Observation: Overcoming the Observer's Paradox

Participant observation has been used as a complementary method for the sociolinguistic interview that might in some cases be subject to the observer's paradox. It was used by Labov (1963) as a supplementary check on Vineyard Island. He argues that the main rational behind this method is: "to observe the way people use language when they are not being observed" (Labov, 1972, p.61).

Observations have been carried all along the research process from April 2021 until July 2021. For this purpose, I reintegrated myself in the speech community through constant visits. I seased every opportunity and moment to observe peoples' interactions in natural settings. The social characteristics of the speech community as a whole and those of Hengued in particular bearing the fact that I was considered as an insider were all of extreme importance to the study. All in all, people are very sociable, friendly and extrovert i.e. inhabitants like going out and sitting in neighbourhoods and public yards to watch their children while playing and have long conversations with friends and neighbours. Observations took place in different places and at different occasions including: grocery stores, streets, neighbourhoods, public transportation, the village's water source, the sports club's training room, wedding celebrations and family gatherings.

A table has been designed to take note on. However, once in the field surrounded by people the idea of taking a pen and a note book seemed very inappropriate and unnatural. Therefore, in order to avoid causing any discomfort to the participants, another technique has

been improvised, that was the use of a smart phone to take note where I wrote directly the speaker's full name and the variant used. Then at the end of each day the notes were re-written on a note book with detailed information about the speakers' exact age and family background.

This data collection tool has been very useful and helped understanding the variable distribution regarding the affecting social factors and consequently it inspired the age group classification. Moreover, it has helped selecting potential participants for the sociolinguistic interviews.

Table2: The observation sample characteristic

	5-11	12-18	19-35	36-58	<59	Total
Female	29	34	40	58	35	196
Male	27	25	35	30	10	127
Total	56	59	75	88	45	323

2.7 The Variable /l/ In Berber

The first common phonological system of the Berber language was introduced by A. Basset then Galand (190) and Prasse (1972). This system was very limited and didn't take into account the different variations that are found in the different dialect (Chaker, 2015, p.4). Boukous (2009) argues that establishing a common phonological system for the Berber language is very challenging because of various reasons mainly the fact that this language is spread on a vast territory which creates a great variation from one region to another. Besides these varieties are not yet systematically studied in isolation. Consequently, they cannot contribute to the creation of a common phonological system that takes into account every existing variation. Based on this realisation, Chaker proposed a phonological system for the Kabyle dialect. It is very detailed and contains 80 phonemes that is the double of the Berber

phonological system proposed earlier by A. Basset. It includes around 100 consonants were classified as allophones of these phonemes (Guerrab, 2014).

According to Guerrab (2014), the Berber language varies considerably at the level of phonetics more than any other level. The lateral liquid [l] has the largest number of variants than any other consonant (p.77). Tigziri (2009) has dedicated a complete study to the variation of this sound in Kabylia with the aim of constructing a phonetic map. A corpus of 200 interviews has been collected in different regions. Her study results have revealed the following list of twelve variants of [l] classified as its allophones:

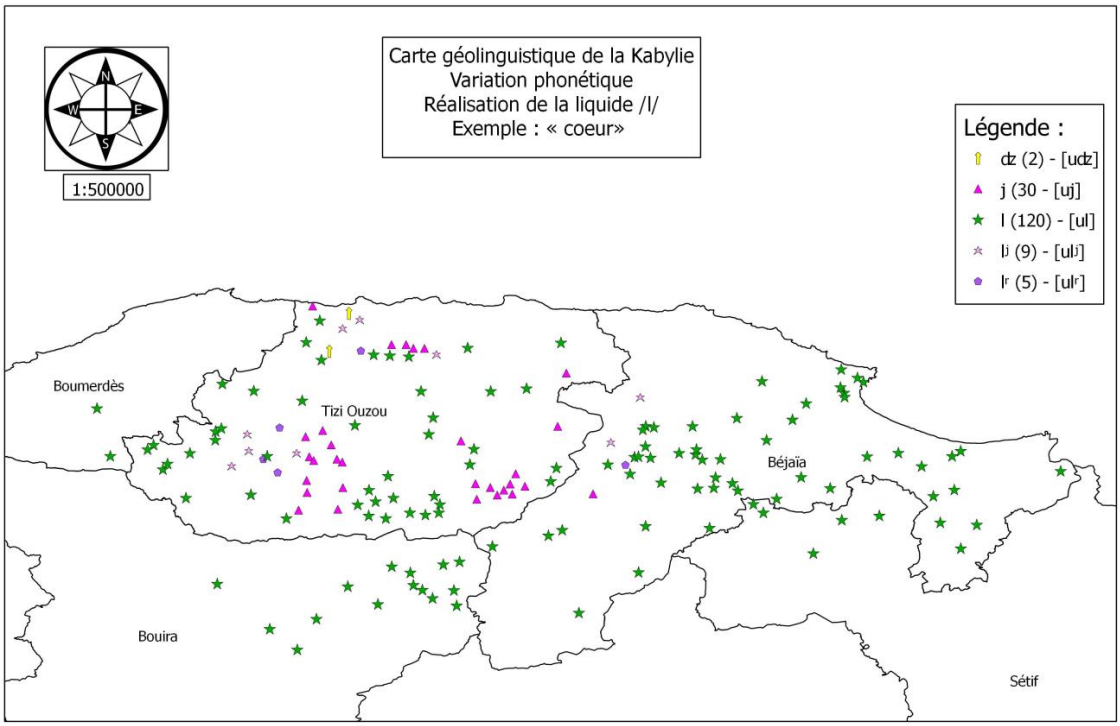
(1) [l], [lj], [l], [lr], [lw], [ldʒ]

(2) [j], [jʒ], [jr],

(3) [dʒ]

(4) [z], [r] (p.33)

The same variants are found in Guerrab (2014) dialectometry investigation in the region. The distribution of these variants is well illustrated in the following map.



Map2: The phonetic variation of the liquid /l/in Kabylia

(Guerrab, 2014, p. 234)

Hassani (2011) argues that variation in the Kabyle dialect is the result of mutation. This process can be either a simple transformation of a certain phoneme into another or an evolution caused by phonetic assimilation of two different phonemes. The evolution of [l] to [r] in an example of a simple transformation in addition to the other variations revealed in Tigziri's study (p.70-71).

Tigziri (2009, p.32) has reconstructed the following list of lexical and phonological constraints where the variable [l]is immune to change and transformation:

- When the lateral is doubled [ll]: this form occurs usually at the medial position of words .It could be found alone in words such as (yella: there is) or with another simple lateral [l] in words like (timellalin: eggs). Corpus analysis has revealed that change is systematic in simple /l/ but it does never affect the

doubled /ll/. Consequently, timellalin (eggs) can be pronounced: timellalin, timellayin; timellarin, timellalrin depending on regions.

- Loan words: /l/ does not show any change in loan words. In all regions, lal bbexxam (the owner of the house) is pronounced exactly the same way in every investigated region.
- When followed with /t/ the sign of feminine nouns. For example: tasebbalt (a jar), taqecwalt (a basket), tamellalt (an egg)...

However, Guerrab (2014, p.35-36) argues that Arabic words are integrated differently in the Kabyle dialect depending on regions. When these word are not phonologically or morphologically integrated, they start with the definite article /l/ when the word's root starts with a moon letters like (/q/, /k/, /b/,/m/, /ʤ/…). On the other hand, it starts with a /ll/ that is caused by a process of assimilation of the definite article with the initial consonant when the first letters is a sun one like (/s/, /n/, /d/, /ʃ/, /l/, /z/, ...).

2.8 The Variants of /l/ in Acif El Hammam

The speech of Acif El Hammam community is known for the use of the stereotype variant (y). This variant is the second most common after (l). It is found in 30 location out of 160 that were investigated by Guerrab (2014) and very common in Tizi Ouzou than Bejaia. It is the result of the process of palatalisation that affects the lateral [l] in the Berber Language where it can either be fully transformed into a [j] or partially as in [lj]. The (y) variant has been evoked by A. Basset in his article « Mouillure de «l» aux Ait-Aissi (Grande Kabylie) » (Guerrab, 2014). On the other hand, the variant (lr) seems to be unnoticed even by the members of the Acif El Hammam speech community since it requires a careful listening to be distinguished from (y). It is found in the speech of older speakers. Consequently, the word Tala (water source) is pronounced (Taya) by a young speaker and (Talra) by an older speaker.

Accordingly, these two distinct phonetic variants represent a discrete variation (Gordon, 2006, Chapter 3).

Conclusion:

This chapter has offered a necessary description of the speech community and the methodology that was adopted to investigate language variation within it. It has also introduced phonetic variation in the Berber Language as a hole and the Kabyle dialect in particular by reporting related dialectology and dialectometry findings.

CHAPTER 4: Data Analysis and Discussion

Introduction

The major aim of the present research is investigating the effect of three social factors that are age, gender and exogamy as independent variables on the choice of the variants (y) and (lr) as a dependent variable within Acif El Hammam speech community. To this end, a factorial design was adopted through investigating the effect of each social factor in isolation from the other (Boukhechba, 2019). Results are reported in percentages that are considered as the most direct tool for investigating language variation in a social setting (Hazen, 2017).

The present chapter reports the findings obtained from the pilot study carried before the research process. Then, it highlights the results obtained through the two data collection tools: participants' observation and the sociolinguistic interview as well as their discussion.

4.1 Pilot study:

Using a small scale pilot study was necessary to help planning the research process (Feagin, 2002). The overall aim of this pilot investigation is understanding the distribution of the variants (y) and (lr) in Acif El Hammam speech community in correlation to potential social and linguistic factors that might influence the variants choice decision. Getting this understanding was very helpful in deciding about the following research steps.

A total of 10 participants were selected using a judgment sampling procedure based on their age, gender and origin. The sample includes 2 females and 2 males aged between 30 to 44 representing the adult age group who are experiencing stability in their speech and consequently will allow uncovering any age grading pattern.

In addition, 3 older women (78, 85, and 77) were chosen based on their origin (Hengued, Kiria, Ait Malek) to investigate a potential influence of exogamy. For further investigations of this factor, 3 male participants aged (85, 84, and 92) have been selected to represent norm speakers of three villages: Ait Malek, Kiria and Ait Yahia.

Participants were approached and asked to name objects illustrated in photos (see Appendix). Then, their answers were recorded for later analysis. These objects were carefully selected to meet the following criteria:

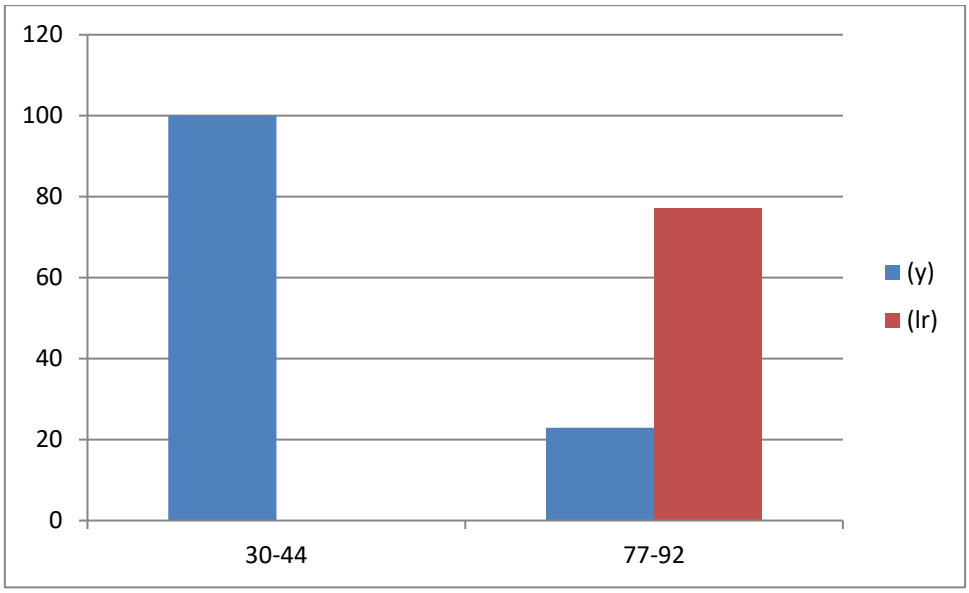
- Simple and could be identified by looking at a photo such as animals, food and furniture.

- Their names contain the variable [l] that is placed at every possible linguistic environment: in French and Arabic loans, when doubled /ll/, followed by /t/, placed at different positions (initial median and final position).

4.1.1 Variants distribution by age:

Table 3**:** Percentages of the variants (y) and (lr) distribution in correlation with age

	30-44	77-92
(y)	100%	22.88%
(lr)	0%	77.11%
Total	100%	100%



Graph 1**:** Percentages of the variants (y) and (lr) distribution in correlation with age

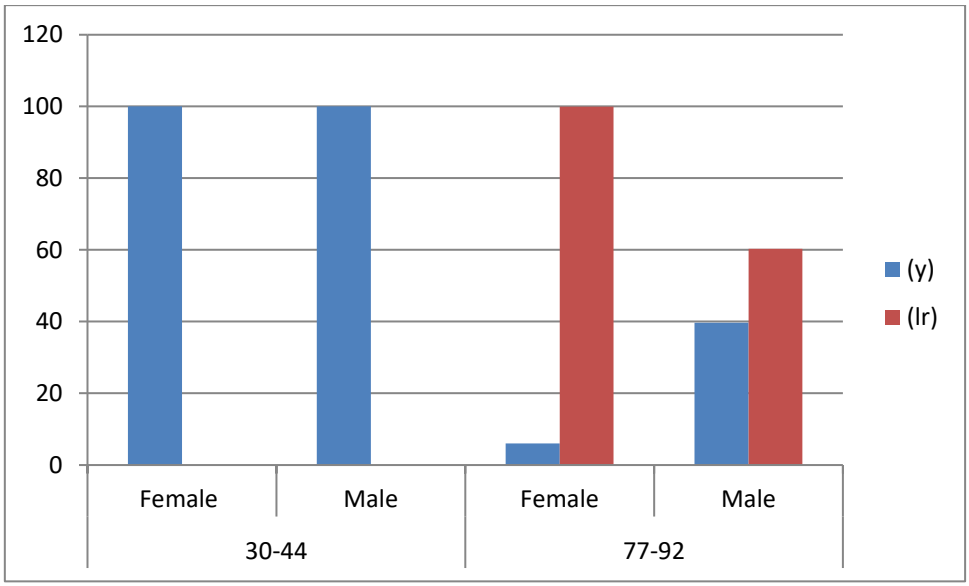
The results from Table3 and Graph 1 indicate the significance of age in variants' choice. The variant (lr) is completely absent in the speech of the adult age group then dramatically increases to 77.11 % in the speech of the older age group. On the other hand, the variant (y) is at 100% in the speech of the adult age group and only at 22.88 % in the speech of the older age group. This suggests that (lr) represents a minority variant maintained by the older speakers only whereas the variant (y) is widely spread.

The use of the variant (y) by the adult age group whose speech is stable compared to adolescents' infers that the present pattern represents an ongoing language change not an age grading possibility.

4.1.2 Variants distribution by gender:

Table 4**:** Percentages of variants(y) and (lr) distribution in correlation with gender

	30-44		77-92		
	Female	Male	Female	Male	Total
(y)	100%	100%	6.06%	39.7%	61.44%
(lr)	0%	0%	99.94%	60.3%	40.06%
Total	100%	100%	100%	100%	100%



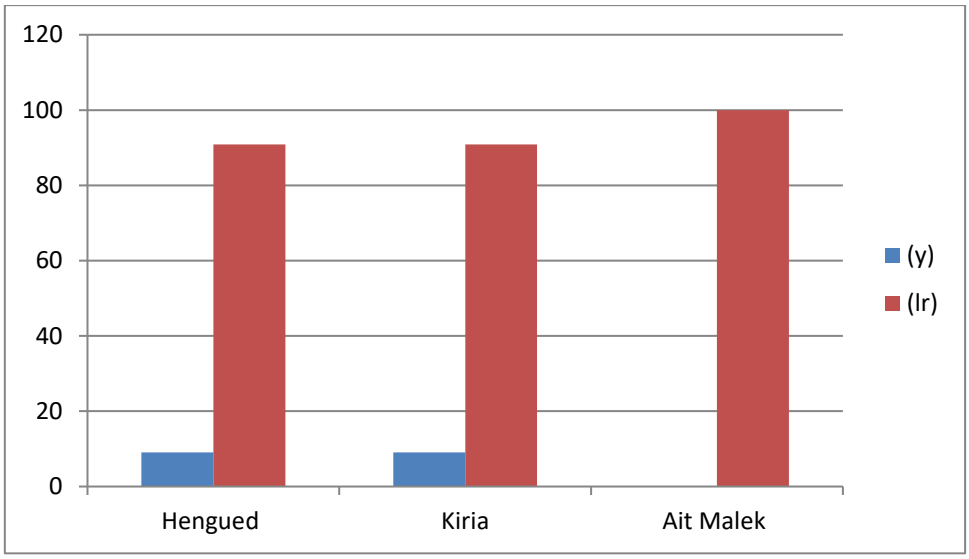
Graph 2: Percentages of variants(y) and (lr) distribution in correlation with gender

Graph 2 indicates an equal distribution of the two variants in the adult age group contrary to the older age group where female participants have a higher percentage of (lr) use than male participants. This difference can be understood through looking at Table5 and Graph4 where a male participant from Ait Malek scored 100% variants (y) frequency in his speech. Consequently, it could be inferred that gender differences have to be further discussed in the following results of participants' observation and the sociolinguistic interviews.

4.1.3 Variants distribution by exogamy:

Table 5: Percentages of variants (y) and (lr) distribution in correlation with exogamy

	Hengued	Kiria	Ait Malek
(y)	9.10%	9.10%	100%
(lr)	90.90%	90.90%	0%
Total	100%	100%	100%

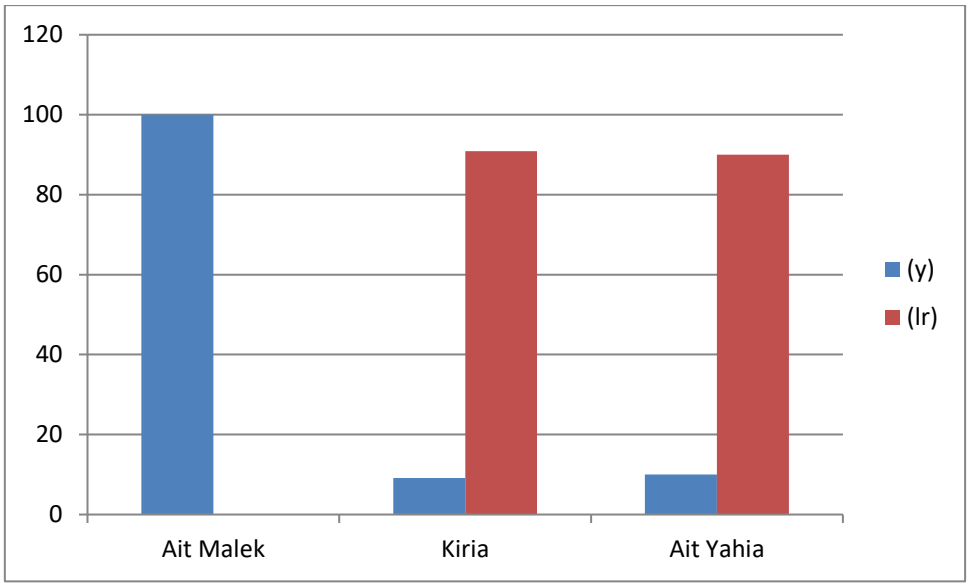


Graph 3**:** Percentages of variants (y) and (lr) distribution in correlation with exogamy

These results do not show significant differences in the speech of an insider woman and that of the in-married spouses coming from Ait Malek and Kiria. Consequently, there was a need for investigating the speech of norm participants from each village to uncover any differences.

Table 6**:** Percentages of variants(y) and (lr) distribution in correlation with villages

	Ait Malek	Kiria	Ait Yahia
(y)	100%	9.10%	10%
(lr)	0%	90.90%	90%
Total	100%	100%	100%



Graph 4: Percentages of variants (y) and (lr) distribution in correlation with villages

The results of this further investigation of exogamy show clearly that the variant(y) is dominant in the speech of Ait Malek norm speaker at 100% occurrence. On the other hand, speakers from Ait Yahia and Kiria show very low scores of this variant. This indicates that exogamy is indeed an influencing social factor on variants choice. Moreover, the results indicate that the variant (y) is introduced into the speech community through the village Ait Malek that is located at the borders with the neighbouring villages belonging to the commune of Zekri, Tizi Ouzou where this variant is documented in recent dialectology findings (See Map 1 and Map 2).

4.2 The observation:

The data collected through the participants' observation are statically analysed to provide a clear image of variants distribution by age, gender and exogamy.

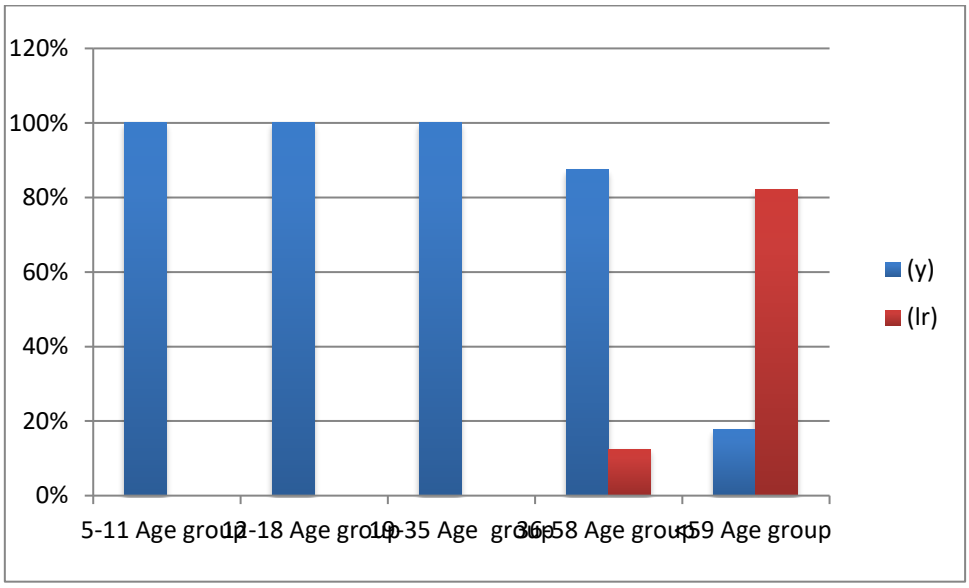
4.2.1 Variants distribution by age:

Table 7: Scores of the variants (y) and (lr) distribution in correlation with age

	5-11	12-18	19-35	36-58	<59	Total
(y)	56	59	75	77	8	275
(lr)	0	0	0	11	37	48
Total	56	59	75	88	45	323

Table 8: Percentages of the variants (y) and (lr) distribution in correlation with age

	5-11	12-18	19-35	36-58	<59	Total
(y)	100%	100%	100%	87.5%	17.78%	81.056%
(lr)	0%	0%	0%	12.5%	82.22%	18.944%
Total	100%	100%	100%	100%	100%	100%



Graph 5: Percentages of the variants (y) and (lr) in correlation with age factor

The results shown in graph 5 indicate that the variant (y) is present in the speech of all the five age groups. It is at 100% in the speech on the three younger age groups the then decreases to 87.5 % in the speech of the adult age and 17.78 % in speakers over 59 year old. This indicates that the use of this variant is a salient feature in the Acif El Hammam speech community. On the other hand, the variant (lr) is present not only in the speech of the older age group as found in the pilot study but also in that of the adult age group where it constitutes 12.5 % of the total occurrences.

The overall distribution of these two variants in correlation to age indicates an ongoing language change led by younger participants using the variant(y).

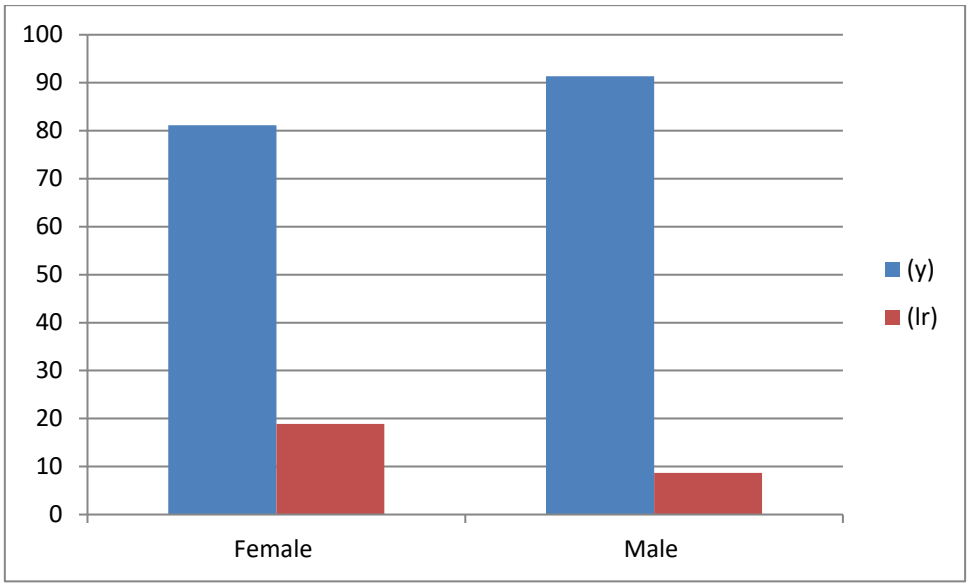
4.2.2 Variants distribution by gender:

Table 9: Scores of variants (y) and (lr) distribution in correlation with gender

	Female	Male	Total
(y)	159	116	275
(lr)	37	11	48
Total	196	127	323

Table 10: Percentages of variants (y) and (lr) distribution in correlation with gender

	Female	Male	Total
(y)	81.12%	91.34%	100%
(lr)	18.88%	8.66%	100%
Total	100%	100%	100%



Graph 6: Percentages of variants(y) and (lr) distribution in correlation with gender

The observation sample could not be controlled. Consequently, there is no uniform distribution of gender. Despite that, Graph 6 does not show a significant difference in the variants distribution that might be caused by this factor.

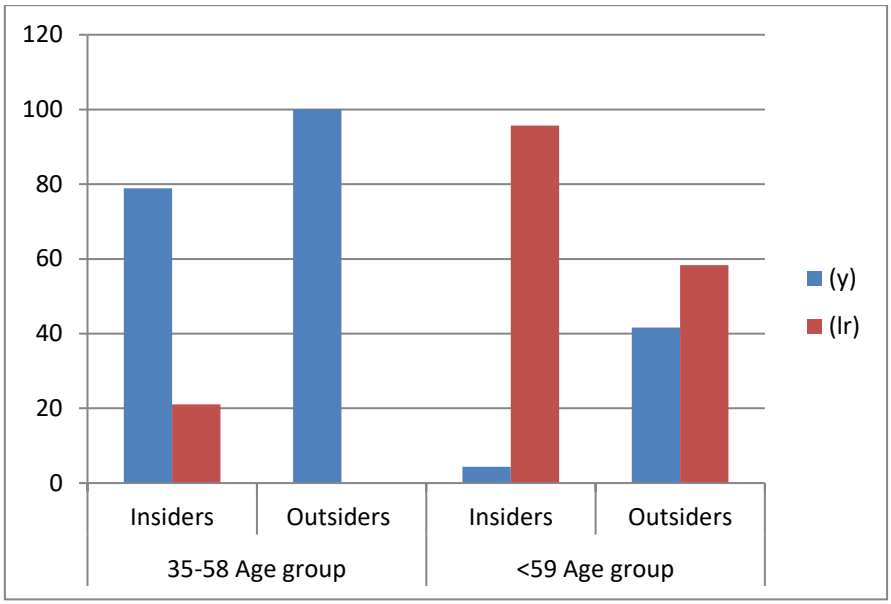
4.2.3 Variants distribution by exogamy:

Table 11: Scores of variants (y) and (lr) distribution in correlation to exogamy

Age	35-58		<59		Total
Background	Insiders	Outsiders	Insiders	Outsiders	
(y)	30	20	1	5	56
(lr)	8	0	22	7	37
Total	38	20	23	12	93

Table 12: Percentages of variants (y) and (lr) distribution in correlation with exogamy

Age	35-58		<59		Total
Background	Insiders	Outsiders	Insiders	Outsiders	
(y)	78.94%	100%	4.34%	41.66%	43.76%
(lr)	21.06%	0%	95.66%	58.33%	56.24%
Total	100%	100%	100%	100%	100%



Graph 7: Percentages of variants (y) and (lr) distribution in correlation with exogamy

Results of the adult age group (35-58) indicate that the use of the variant (y) is at 100% in the speech of in-married spouses and 78.94 % in the speech of insiders who are still showing a minority use of the (lr) variant at 21.06 %. Similarly, in the older age group, outsiders have taken the lead of variant (y) use with 41.66% compared to insiders who are at a very low score of 4.34%.

This pattern suggests that outsiders are the leaders of the (y) variant introduction to the village of Hengued in particular and the speech community as a whole.

4.3 The sociolinguistic interview:

The interview sample is more balanced and controlled than that of observation. The cells are filled with relatively equal numbers of participants allowing a better comparison based on the social factors of age, gender and exogamy (see Table 1).

In order to provide a clearer snapshot of the sociolinguistic correlates of variants choice the 33 sociolinguistic interviews were analysed using an auditory coding technique. The tokens were carefully extracted from each interview following the following precautions:

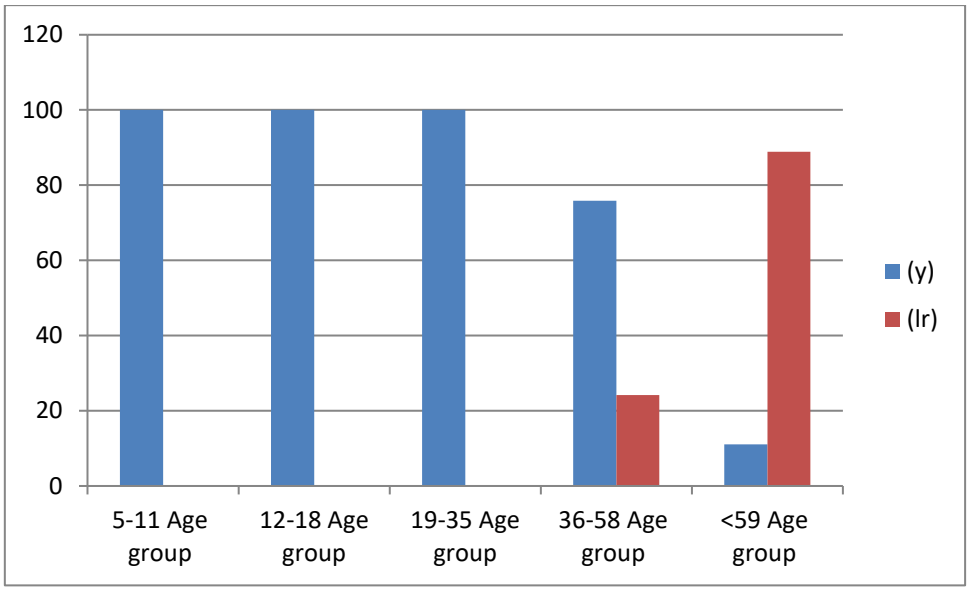
- Discard ambiguous tokens that could not be distinguish auditorily.
- Exclude tokens that are influenced by the interviewer.
- Discard tokens appearing in reported speech that may involve an imitation of others' speech.
- Consider only the last form of a token that is repeated.
- Exclude proper names of places and people.

In respect to the Principle of accountability (Labov, 1972.p.72), every context of occurring variant has been identified (variant frequency) as well as every context where it could have occurred but did not. The relative frequency of each variant is calculated in proportion to the total number of potential occurrences through dividing the raw token count of that particular variant by the overall frequency of the variable.

4.3.1 Variants distribution by age:

Table 13: The variants (y) and (lr) distribution in correlation with age

	5-11	12-18	19-35	36-58	<59	Total
(y)	100%	100%	100%	75.84%	11.11%	77.4%
(lr)	0%	0%	0%	24.16%	88.88%	22.6%
Total	100%	100%	100%	100%	100%	100%



Graph 8: The variants (y) and (lr) distribution in correlation with age

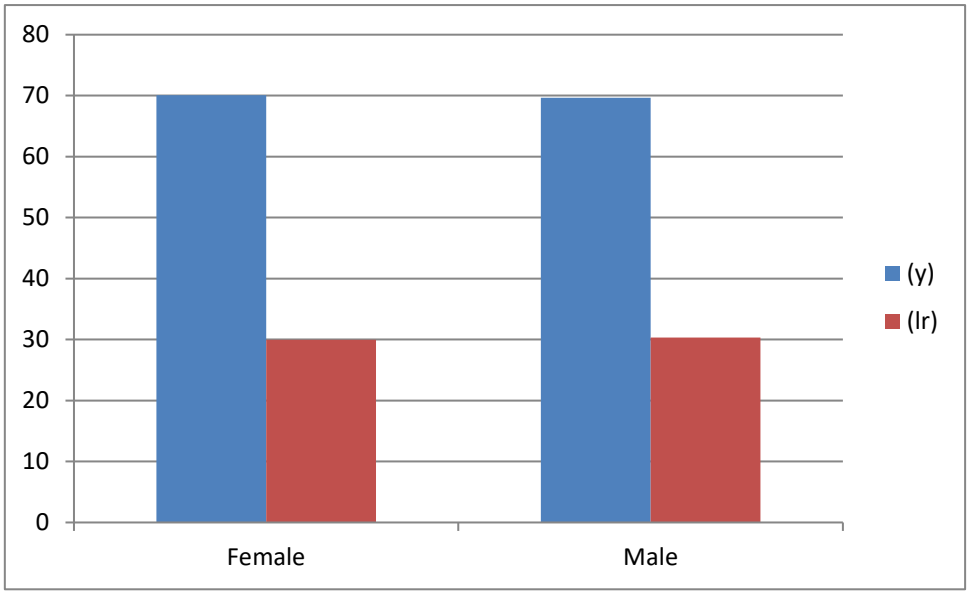
Similarly, to the previous findings from the pilot study and the observations, the results in Table 13 and Graph 8 show that the variant (y) is present in the speech of all age groups. This variant is at 100% in the three younger age groups then drops into 75.84 % in the adult then decreases significantly to reach 11.11% in the older age group. On the other side, the variant (lr) is totally absent in the speech of the three younger age groups then reappears in that of the adult age group at 24.16 % and then more significantly at 88.88 % in the older age group.

This overall pattern suggests that the variant (y) is on the rise in real since it is used more significantly by younger members of the speech community whereas the variant (lr) is on the decrease in real time since its use is restricted to older members of the same community (Hansen ,2018).

4.3.2 Variants distribution by gender:

Table 14: The variants (y) and (lr) distribution in correlation with gender

	Female	Male	Total
(y)	70.05%	69.65%	69.85%
(lr)	29.95%	30.35%	30.15%
Total	100%	100%	100%



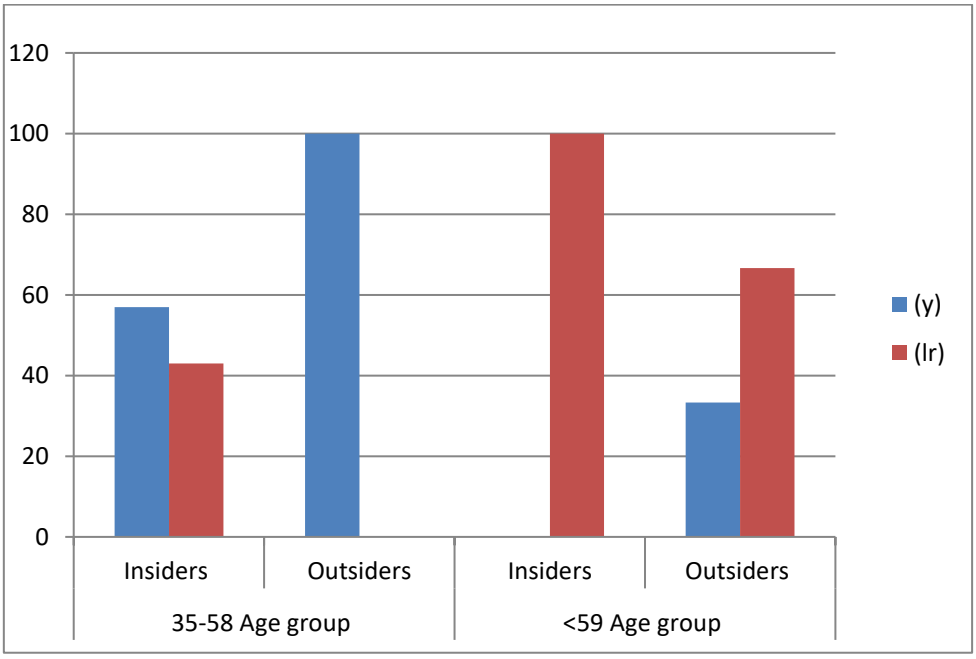
Graph 9: The variants (y) and (lr) distribution in correlation with gender

The relatively balanced sample allows making a fair comparison between the two genders. The Graph 9 shows an equal distribution of the two variants regarding the gender affiliation. This confirms that gender is not a decisive social factor on variant choice in the investigated speech community.

4.3.3 Variants distribution by exogamy:

Table 15: The variants (y) and (lr) distribution in correlation with exogamy

Age	35-58		<59		
Background	Insiders	Outsiders	Insiders	Outsiders	Total
(y)	56.99%	100%	0%	33.33%	47.58%
(lr)	43.01%	0%	100%	66.66%	52.41%
Total	100%	100%	100%	100%	100%



Graph 10: The variants (y) and (lr) distribution in correlation with exogamy

In the adults age group, outsiders still show a lead in the use of the variant(y) at 100% frequency whereas outsiders show a lower frequency of 56,99%. In the older age group, the outsiders' frequency of the (y) variant use drops to 33.33% but still they lead the change compared to insiders who show 0% frequency of this variant.

These findings reaffirm the assumption that language variation in Acif El Hammam speech community is highly influenced by exogamy. Furthermore, these results indicate that the variant(y) was introduced into the community through this factor.

Conclusion

The chapter has brought significant results that directly answer the research questions. Investigating variants use in correlation with age revealed a remarkable pattern of an ongoing phonetic change. Similarly, exogamy is found to be responsible for this process through introducing this variant into the speech community. Finally, gender seems to be non-affective in this variation since no apparent variation has been recorded between the speech of males and that of females.

Chapter 5: Conclusion and recommendations

This research aimed at investigating language variation and change in Acif El Hammam speech community, Bejaia using the variationist paradigm. The distribution of the variants (y) and (lr) has been correlated with three social factors including gender, exogamy and age. The latter is crucial so as to discover an ongoing process of language change which is contradictory to age-grading effect. The data set has been gathered using both the sociolinguistic interview and the participants' observation. These two tools have worked excellently and helped collect a significant amount of data in a limited timeline. The final results provided clear answers to the research questions and to some extent compatible with the primary assumptions.

The results of variants distribution in correlation with age indicate a clear distinction between the speech of older speakers and that of younger speakers. This definitely reveals an ongoing phonetic change in Acif El Hammam speech community whereby the (y) variant is on the increase whereas the variant (lr) is on the decrease.

Investigating exogamy has offered a valuable insight to the distribution of the two variants. The findings revealed that in-married spouses have significantly shaped the speech community. In all situations, outsiders have higher scores of the use of the variant (y) than insider women who are still maintaining the original variant (lr). These results are reinforced by the pilot study investigation where a norm speaker from Ait Malek scored 100 %variant (y) frequency indicating that this village constituted the transit point for the introduction of this variant into the whole speech community.

As for gender differences, it was primarily assumed that this factor will be decisive on the choice of variants as this has long been a general tendency in the majority of variationist studies. However, the findings do not show any significant differences between the speech of

women and men. Consequently, gender is non-significant for the variant's distribution in this particular speech community.

The overall findings show that the quantitative paradigm can help understand language variation and change within the Berber language known for its massive heterogeneity through relating variations at all language levels to social factors. The apparent time method can be used to achieve this aims within short periods of time and with minimal expenses.

Certainly, future research is highly necessary in order to establish a solid literature for the study of the Berber language within the variationist linguistic enterprise. Researchers in the field may consider replicating this study in other Berber speaking communities in order investigate synchronic language variation. Others may consider investigating language variation in relation to different social factors such as the educational level and profession. A long term project would be reinvestigating the Acif El Hammam speech community using a trend or a panel study to bring real time evidence for the present study.

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Appendix

Pilot study

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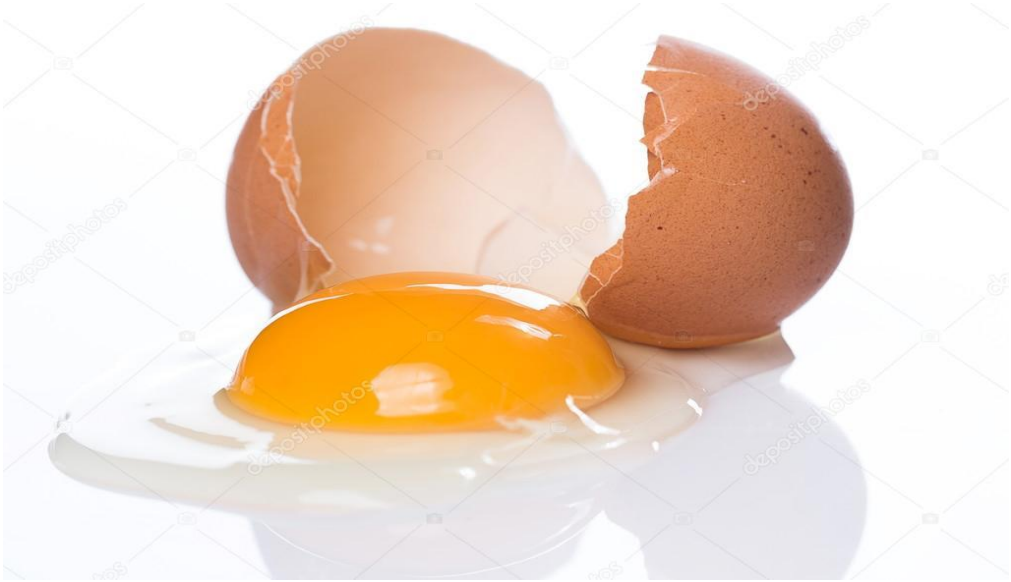

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