The Impact of Extralinguistic Factors on Linguistic Variation and Change in the Berber Variety of Beni Mzab

تأثير المتغيرات اللالغوية على التباين والتغيّر اللغوي في المجتمع المزابي

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Abstract

The present study analyses linguistic variation and change in the Mzabi community. The objective is to understand how extralinguistic variables determine linguistic variation and language change. The first research instrument is a glossary translated to Mzabi dialect showing linguistic variation and change. The second is a questionnaire that elicits data about the participants' attitudes towards their ethnic variety. The study is supported with an interview designed to observe the linguistic behaviour of the participants. The sample consists of 62 Mzabi. The translation of the glossary shows that there are many instances of contact-induced language change that is mostly from Arabic. The findings also reveal that there are some differences between the participants' attitudes with regard to their age and education while gender remains of a peripheral impact. Finally, the study concludes that the young educated male participants are the leaders of linguistic change in the Mzabi community.

Keywords: Linguistic Change; Sociolinguistic Variation; Mzabi Dialect; Berber Language; Linguistic Variation.

ملخص:

تحلل الدراسة الحالية التباين والتغيير اللغوي في المجتمع المزابي. أما الهدف من الدراسة هو فهم كيف تحدد المتغيرات اللالغوية التباين اللغوي وتغير اللغة. إنّ أداة البحث الأولى عبارة عن مسرد مترجم إلى لهجة الميزابي يوضح التباين اللغوي والتغيير، والثاني هو استبيان يستخرج بيانات حول مواقف المشاركين تجاه تنوعهم العرقي. وقد دُعِّمت الدراسة بمقابلة مصممة لمراقبة السلوك اللغوي للمشاركين. العينة مكونة من 62 مزابي. تظهر ترجمة المسرد أن هناك عديد من حالات التغيير الناجم عن الاتصال والتي تكون في الغالب من اللغة العربية. وتكشف النتائج أيضًا عن وجود بعض الاختلافات بين مواقف المشاركين فيما يتعلق بعمرهم وتعليمهم بينما يظل الجنس ذو تأثير هامشي. وأخيرًا، خلصت الدراسة إلى أن المشاركين الشباب المتعلمين هم قادة التغيير اللغوي في المجتمع مزابي.

كلمات مفتاحية: التغير اللغوي، التباين اللغوي، اللهجة الميزابية، اللغة الأمازيغية، التغيرات اللسانية.

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1. Introduction

The common agreement upon contentions in sociolinguistics is that no linguistic system is in a complete state of stability. Languages are bound to change; yet, the motives, degree, extralinguistic implications and the rate of change are predominantly determined by a set of variables that are linguistic and extralinguistic. The essence of sociolinguistic research is to offer a principle model that cannot only explain why linguistic variables change in relation to the social context of the investigated variety but also offer predictability measures that allow researchers to foresee change in the most accurate possible way. Based on this, the current research aims at analysing the influence of the extralinguistic factors on the direction of change within this close-knit speech community. In order to account for this, a systematic integration of qualitative and quantitative data is used to answer our research questions.

The idea that change is inevitable, regardless of how conservative a community (hence the linguistic system) is entertained in variationist sociolinguistics to the extent that it relates to long-term change primarily to real time observable variations (Labov, 2001; Friðriksson, 2008). In view of that, the current study seeks to answer the following questions:

- What are the contact-induced instances of sociolinguistic variation in the Mzabi community?
- What social implications do these instances offer to the sociolinguistic theory?
- How do these instances interact with paralinguistic variables, such as attitude, nationalism and sense of identity?

2. Theoretical Background

2.1 Approaches to Language Change

The first approach to the study of language change is referred to as *Croft's Evolutionary Approach* (Croft, 2000). Croft (ibid) makes the claim that the actuation (innovation) and propagation (transmission) of change are, by and large, motivated by social factors. His approach is very comparable to the evolutionary theory of biology where DNA is the linguistic element. Speakers replicate linguistic features, and, during replication, some mutations occur resulting in new DNA forms. The actuation of change, here, is synchronic, whereas the propagation thereof is a diachronic process that "occurs sometimes over a very long period of time, even centuries" (Croft, 2000, p. 5). Language is a form-function mapping system, and change is a process wherein new forms are mapped unto old functions, or vice versa. The discussion of all niceties of the approach is beyond the scope of this study. What is noteworthy is that Croft's approach makes some terminological borrowing from evolutionary biology to explain the different types and stages of language change, without reference to the function or social context thereof.

The second approach is the *Functional Approach*. Here, researchers believe that change occurs not only due to an inherent feature of instability in language but also

due to the speakers' need to achieve certain social or linguistic functions that the current linguistic layout does not warrant (Gvozdanovic, 1997). These functions can be the need to: acquire certain terms, lose unneeded synonymous relations or resolve some ambiguities that are found in the actual structures. The grammaticalisation process is believed to be motivated by purely functional reasons. A very important piece of trivia is that later proponents of the functional approach aver that it is language users, who are on the lookout for certain functions, and it is not the language that lacks these functions. This is made blatantly by Keller (1997), who argues that "the claim that speakers have goals is correct, while the claim that language has a goal is wrong" (pp.14-15). The major criticism that is levelled against the functional approach is that all cases of change are intentional and predicated upon the speakers' desire to achieve, or communicate, certain functions (Labov, 1994).

The *Sociolinguistic Approach* to language change views the multilingual speaker as the locus of linguistic variation and change (Weinreich, Labov & Herzog, 1968; Lass, 1980; Milroy & Milroy, 1985; Milroy, 1993), where linguistic innovation ensues variation, which, in turn, envelops language change. Innovation is purely speaker-based, as it is initiated by the speaker and eventually embedded in the system of language as change. Put differently, "speaker innovation is . . . capable of influencing the linguistic structure" (Milroy, 1993, pp. 221-222). Here, innovation refers to "any elements of usage or grammar that differ from previous usages or grammars" (Anderson, 1989, p. 13). This definition is compatible with Croft's view of form-function mapping. Innovation is, essentially, the mapping resulting in a new pair. The sociolinguistic approach is predicated upon the premise that neither change nor variation are predictable, and they are, at bottom, social.

It has been mentioned that there is a dispute among researchers regarding whether change is initiated because of an inherent feature in the system of language causing it to be unstable and in a constant state of fluctuation or because of the humanistic nature of language users causing not only language but also everything around them to change. However, there is a consensus that the transmission of change is carried out by social rather than linguistic vehicles. In view of that, Trudgill and Chambers (1998) discuss transmission in their *social diffusion* model, which is heavily influenced by Labov's (2001) *leaders of change*. The bottom line of the two models is that, while change is carried out by social factors, it is some social groups within the larger society that are responsible for the transmission and propagation of innovated forms. Labov (2001, p. 516) argues that social groups have sets of norms, which are sometimes defied by some subgroups within society. These subgroups feel the nonconformity with the larger community, hence the *Nonconformity Principle*, and the group most defiant of old forms is most likely to embrace linguistic innovation. Nonconformity and innovation will be spread, constructively, by this group to the larger community, hence the *Constructive Nonconformity Principle*.

2.2 Factors that Trigger Change

Given the highly social aspect of language change, it is the sociolinguist's scientific liability to explain why or how some groups embrace change but not others. This, in fact, translates to an exhaustive account for the social factors that are associated with nonconforming and most conforming social groups. One of the factors that are often liaised with linguistic innovation is language contact. It is mostly through contact with other varieties that new forms are acquired. However, it should be noted that contact occurs most through multilingual speakers. It is, therefore, often stated that multilinguals are the locus of language change. In fact, Auer, Hinskens and Kerswill (2005, p. 91) make the claim that language contact ultimately refers to the multilingual speaker's reconstruction of his multilingual repertoire coupled with his interaction with his society through his sociolect. Many linguists prefer to refer to this kind of change as ***contact-induced change*** (Thomason, 2008).

It is, generally, accepted that language change involves a cognitive dimension, where multilingual speakers have to make choices from their multilingual repertoire with reference to the language choice, types of features, and the communicative event contextual cues (Matras, 2009). These choices create a linguistic burden on the speaker, which they attempt to reduce by converging some linguistic features to lower the cognitive demand of the locution (Hoder, 2012; Matras, 2009). Moreover, some political interventions can be mirrored unto the structure of language. Language planning and standardisation of some varieties result in minimisation of forms in order to create unified structural patterns. Haugen (1972) argues that once a variety is codified, its changeability, drastically, decreases. This means that standardisation is a factor that contributes to the stability of languages through "the imposition of uniformity upon a class of objects" (Milroy, 2001, p. 531).

Empirical research refers to numerous instances, where there is an instance of variation. The direction of this variation is more often than not towards the variant with higher level of prestige. In other words, "the language with more status influences that with less" (Hickey, 2010, p. 8). Prestige is, essentially, a sociocultural construct that involves social networks and social ties of dominance, power and access to social platforms (education, decision-making and media). It should be noted that the speaker's awareness of change can have an influence on the outcome of variation in the sense that there can be a conscious decision of embracing or resisting change.

The outcome of language change is also affected by the attitudes that language speakers bear towards certain linguistic variables per se or certain varieties. Some members of the speech community may consider language change to be a decay of their language and, thus, a threat. So, there grows a desire to resist language change. In extreme cases, these speakers look up to the old forms of the "unchanged" language. This gives rise to the notion of correct and incorrect language (Hickey, 2010). The attitudes of speakers are related to other factors, such as the prestige of the superstrate variables and also to some social factors, such as speakers' age, gender, education and

residence. The discussion of attitude is very intricate inasmuch as it involves a discussion of sense of identity, attitude towards change and nationalism.

The essence of the discussion above is that language change is a highly convoluted phenomenon that involves a set of variables at play. The extent to which one of these variables overrides the effect of other variables determined by other sociocultural cues, and the literature does not offer clear-cut accounts of which factor is more dominant than the other in constraining language change. The present study is, thus, an attempt to project the theoretical knowledge available on the local context of the Mzabi dialect hoping that this projection would add more to our understanding of linguistic variation.

3. Research Problematic and Design

3.1 Research Problem

The Algerian context offers a sociolinguistic wealth of data inasmuch as the Algerian community is miscellaneous in terms of linguistic, ethnic and sociocultural affiliations that consist a society that extends over a large geographical area. This is an opportunity for researchers to investigate social and linguistic behaviours in different contexts and answer questions in their immediate contexts. The present study enjoys the diversity of the Algerian community and seeks to investigate the paralinguistic parameters that are associated with linguistic variation and, by default, change in one of the under-investigated communities/varieties in Algeria. The Mzabi community is, rarely, reported in the literature despite the interesting peculiarities of the community with reference to conservatism and high level of ethno-linguistic patriotism. The Mzabi variety is bound to subsume levels of linguistic variation that have social implications and are, ultimately, indices of linguistic change in the motion.

3.2 Methods

The methodological design in the present study makes use of both qualitative and quantitative measures that elicit date using several research tools. First, the sample of the study consists of 62 male and female native speakers of Mzabi selected using stratified random sampling across variables of age, gender and education as follows:

Table 01: Distribution of participants across the sampling strata

Age	**Young**				**Middle-Aged**				**Old**			
Education	**Educated**		**Uneducated**		**Educated**		**Uneducated**		**Educated**		**Uneducated**	
Gender	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Number	10	0	9	0	6	6	6	5	6	5	4	5
Percentage	16%	0%	14.5 %	0%	9.67 %	9.67 %	9.67 %	8.06 %	9.67 %	8.06 %	4.45 %	8.06%
Code	**YEM**	**YEF**	**YUM**	**YUF**	**MIEM**	**MIEF**	**MIUM**	**MIUF**	**OEM**	**OEF**	**OUM**	**OUF**

The table 01 above shows that there are twelve strata in the sample groups. The research sought to even out the number of participants in each sample group; yet, it was not attainable, for example, to find young uneducated participants given the highly urban lifestyle in the target community. In order to obtain the data, a glossary translation, a questionnaire and an interview are administered on the sample population.

The glossary translation is a tool used to identify areas of possible lexical variation. A list of 260 words is developed and translated from Arabic to Mzabi. The translation is carried out by using sociolinguistic interviews with several Mzabi participants, who provide different lexical variations for some variables. For the sake of brevity, only some instances of lexical variation will be included in the analysis. The list of words is inspired by Swadesh List (Swadesh, 1952), which is commonly used to investigate language change in philological and glottochronological studies.

The questionnaire aims at providing insight into the participants' level of proficiency in other languages, attitudes towards other languages, sense of identity and nationalism. Moreover, the sociolinguistic interview aims at identifying actual language use by the participants; it consists of ten (10) informal questions that are expected to elicit one of the variants representing the linguistic variable. The participants' answers to the questions are expected to give insight into whether the used form underwent change or not, which helps understand which social group is leading the linguistic change. The answers obtained from each method are cross-referenced and analysed for correlational patterns. This stage of analysis allows the understanding of how the above mentioned factors affect language variation, thus, prospectively ensuing language change. It should be noted that the correlational analysis is purely quantitative using SPSS.

4. Findings and Discussion

4.1 The Glossary Translation

The analysis of the translated glossary shows that the Mzabi dialect underwent some sort of linguistic change. This is evident in the fact that many of the translated items are marked with Arabic and French traces that are readily identifiable as changed lexicons. What is noteworthy is that the analysis revealed that the way words changed does not seem to bear any implications with regard to lexical categories or semantic fields. In other words, the changed words are neither from the same words (adjectives, adverbs, particles, etc.) nor are they related in terms of semantic content (numbers, animals, etc.). The following table shows the words from the glossary and the language that is believed to a source of influence:

Table 02: Lexical Categories in the Mzabi Dialect

source language		**Br**	**Ar**	**Fr**	**Ar-Br**	**Fr-Br**	**Total**
descriptive statistics	**number**	166	70	12	7	4	260
	percentage	63.8%	26.9%	4.6%	2.7%	1.5%	100%

The table 02 above shows that 63.8% of the translated lexical items are not observably influenced by Arabic or French. Examples of these items are /damkurra:z/ (ⴰⵎⴽⵓⵔⴰⵣ) "narrow" or /di:nnɪ/ (ⴷⵉⵏⵏ) "there". Moreover, Arabic seems to be the most prolific language of influence in the sense that more than a quarter of the items have a representation that is influenced by Arabic without any counterpart from the Berber, which is indicative of a lexical loss. Examples of words with clear trances of Arabic influence include 70 items, such as /lħu:t/ "fish", /txa:tməṯ/ "ring" (ⵜⵅⴰⵜⵎⵜ) or /xima:r/ "veil" (ⵅⵉⵎⴰⵔ).

French influence is observed in twelve (12) items from the translated list. In this category, French words that have no Berber or Arabic representations in the Mzabi dialect constitute 4.6% of the total 260 items. Examples of these items include /ddissɜ:r/ "fruits" (ⴷⵉⵙⵙⵔ). These items are loan words that are fully integrated in the dialect's morpho-syntactic patterns. What is interesting about this case of change is that some morpho-phonetic process accompanied linguistic change. The French word "dessert" /disɜ:ɤ/ is affected by the Arabic definite article resulting in first onset geminantion. This is exemplary of language change being a complex process that does not involve binary opposition but rather cumulative adaptation of items from the source language into the local variety.

The two reported cases of change that is influenced by Arabic and French represent cases of ***replacive change***, where the form imported from the source language, completely, replaces the proto-form resulting in a loss of the original item. Linguists, here, consider these cases as examples of ***change at the final state***. However, what would be of more interest is ***change in the motion*** inasmuch as it is more informative of the nature and mechanisms of change. Change in the motion can be investigated through instances of ***additive change***, where the original form is not lost, but it is used variably with a new form that is influenced by another language. The table above shows two cases of additive change: cases, where the Mzabi form exists along with an Arabic-influenced alternative, and cases, where the other alternative is from French. These cases are, probably, more important for sociolinguistics as they can constitute cases of sociolinguistic variation, which predates and ensues linguistic changes. Coexisting Arabic and Mzabi variants constitute seven (7) cases while coexisting French and Mzabi variant constitute four (4) cases.

What the glossary translation indicates is that almost two thirds of the Mzabi words from the Swadesh List are, at the moment of the study, stable elements, being of pure Berber origins. Moreover, less than a third of the lexical items (31.5%) are stable by dint of being already changed. It should be noted that the Labovian model of language change is predicated upon the premise that changes starts with innovation, variation (*additive change*), dominance of one variable, complete change (*replacive change*) and, finally, stability. Items that are complete changed with a loss of the original variant fuel for new cycles of change. The remaining items (4.2%) constitute examples

of prospective change, which are important for the subsequent stage of the present study.

4.2 The Questionnaire

The goal of the questionnaire is to offer insight into some extralinguistic factors that are discussed in the literature as relevant to linguistic variation and change. The first section of the questionnaire revolves around participants' proficiency in Standard Arabic, Algerian Arabic and French. Proficiency is self-reported by the participants on a five point scale (0-4). The data shows that 43 participants are native speakers of Mzabi alone while 19 are native speakers of Mzabi and Algerian Arabic. No participants reported native speaking proficiency in French. The data obtained is represented in the following table:

Table 03: Participants' Linguistic Proficiency

level / language	None (00)	Weak (01)	Average (02)	Good (03)	very good (04)
MSA	13 (21.3%)	13 (21.3%)	00 (00%)	15 (24.6%)	20 (32.8%)
AlgAr	00 (00%)	08 (13.1%)	01 (1.6%)	08 (13.1%)	44 (72.1%)
French	25 (41%)	03 (4.9%)	11 (18%)	19 (31%)	03 (4.9%)

The table 03 above shows that the participants are almost equally distributed across the two sides of the spectrum with regard to the mastery of MSA. This is attributable to the fact that MSA proficiency is almost equated with educational background. Given that the participants are stratified almost equally across the education spectrum, it is then conceivable that this stratification translates to an analogous one with regard to MSA proficiency. Moreover, the data indicates that none of the participants reports a complete lack of proficiency in Algerian Colloquial Arabic, which is supported by the mean calculation of α=3.4426 and a standard deviation value of σ=1.04123. The mean value shows that the average proficiency of participants is above the value corresponding to good (03) with a low standard deviation value, which indicates that the participants' answers seem to cluster around the mean value with little cross-group variation. Finally, the data suggests that the participants' mastery of French is more clustered around below average values with a mean calculation of α=1.5410 and a standard deviation value of σ=1.42096. This implies that the average proficiency of the participants is a little above 01, which is the value corresponding to **bad**. The low standard deviation value is indicative of a low level of variation across the participant groups. Given that French is also indicative of education, it would be expected to observe similar patterns with MSA. However, Standard Arabic entertains a highly esteemed position that is supported by religious beliefs. It is, therefore, expected to see uneducated individuals, who have some level of mastery in Standard Arabic but not necessarily in French. In fact, the analysis of correlation between education and MSA/French proficiency indicates a higher value of Pearson Correlation Coefficient in

the case of French (+.950**) indicating the statistically significant positive correlation between education and mastery of French.

The second section of the questionnaire aims at offering insight into the variables of attitude, nationalism and sense of identity. In order to investigate the attitudes towards MSA, Algerian Arabic, Berber and French, the participants are given a set of attributes to which they ascribe a value of 0 to 4 corresponding to levels of emphasis (***not at all*** to ***extremely*** respectively). The visual representation of all findings with regard to each sample group would be arduous. Instead, an illustration of means and standard deviations are illustrated in the following table:

Table 04: Attitudes towards other Varieties

		important	prestigious	patriotic	rich	ethnic	Useful	intrusive
MSA	means	2.2131	2.1148	3.2295	2.2295	1.8197	2.3934	0.21804
	std dev.	1.19859	1.42729	1.25689	1.5426	1.76549	0.97089	0.21804
Berber	means	04	3.9672	04	04	04	04	00
	std dev.	00	0.17956	00	00	00	00	00
French	means	1.9344	1.9344	0.0328	0.3934	0.000	1.4426	2.9016
	std dev.	0.86255	0.89198	0.25607	0.8016	0.000	1.21826	1.41073
AlgAr	means	2.1967	0.5410	1.1639	0.9836	0.8197	2.9016	0.1311
	std dev.	1.22229	0.92329	1.11326	0.9745	1.10315	1.41073	0.49918

The table 04 above shows different results with regard to attitudes towards different linguistic varieties. Starting with Algerian Arabic, the data indicates that with regard to positive attributes, the participants do not demonstrate highly positive attitudes towards this variety. This is represented in the fact that the mean evaluation values range between $0.54<\sigma<2.9$, with the highest value corresponding to *useful* and the lowest to *prestigious*. This means that Algerian Arabic does not have any positive connotations of richness, importance, and it is learnt for pragmatic purposes at best. The low value does not imply that the participants have negative attitudes towards the dialect. In fact, the lowest value corresponds to intrusive ($\sigma\approx0.13$), suggesting that the participants do not necessarily view the Algerian Arabic as an intrusive dialect that jeopardises their dialect. The standard deviation values are low, which calls for no additional cross-group correlational analysis. The attitudes towards French represent more curvilinear patterns. The data show that none of the participants attributes an ethnic value to French. In fact, the highest value obtained corresponds to the attribute

intrusive (σ≈2.9). The participants, however, acknowledge the importance, prestige and usefulness of French in the Algerian community.

The results obtained from the questionnaire shows highly positive attitudes towards Berber. The reason Berber, and not Mzabi, is used for the questionnaire is motivated by the intuitive judgment about the target community's affiliation with the more general Berber identity. This intuitive judgment is predicated upon the extensive discussions with several educated Mzabi native speakers. The results show that the participants, unanimously, agree on the Berber dialects: importance, patriotic and ethnic symbolism, richness, usefulness and non-intrusiveness, and almost all agree on its prestigious status (σ≈3.7).

The highest scores, obtained from the analysis of the participants' attitudes towards MSA, correspond to *patriotic* (σ≈3.23). This implies that the participants acknowledge the nationalistic symbolism Arabic enjoys in the Algerian community. The remaining attributes are organised in the following descending order: ***useful*** < ***rich*** < ***important*** < ***prestigious*** < ***ethnic***. These findings show that the participants' relatively positive attitudes are built on the view of Arabic as an important language for education, religion and business. What is interesting is that the richness of Arabic is evaluated by the participants to be of a lesser degree than Berber. These findings have explanatory capacity in the framing of an accurate account for variation and change.

4.3The sociolinguistic Interview

The questions of the interview aim at eliciting one of the variants from the Ar-Br and Fr-Br categories in table 02 above. This means that answering the questions with one of the variants (the original or the Arabic/French influenced) is indicative of whether the participant are propagating linguistic change by using the newly introduced variant or are resisting change by using the originally Mzabi dialect variant. The questions of the interview are illustrated in the following table along with the prospective variations within the answers. What is noteworthy is that the questions are asked with a context of connected discourse, and direct questions in isolation are asked only when necessary.

Table 05: Interview questions

Questions	Target Variables		English Gloss
	Changed	Unchanged	
What does a family consist of?	/ʔatˤefli/	/ʔajzˤiːw/	Child
Where does wood come from?	/ʃəʒrat/	/tazdajət/	Tree
How do birds travel fast?	/tˤaːr/	/jfərfər/	Fly
What happens to hot water when put in the fridge for hours?	/jəteglaːsˤa/	/əaquːr/	Freeze
Where did the Mujahidin hide from the French army?	/ʒbəl/	/ʔaːwriːr/	Mountain
Four weeks is a month. Twelve months is…?	/ʕaːm/	/ʔazuggaːs/	Year
Meat exposed to the sun for days is inedible, why?	/jəfsəd/	/duʃtiːm/	Rotten
Which hand should we use for eating?	/dərwaːt/	/ʔafusaːj/	Right
What do you call the other hand?	/goʃ/	/zəlmˤaːd/	Left
What are the jewels women wear in weddings?	/brassli/	/tiːsɣədriːn/	Bracelet

In order to quantify linguistic variation and change, the possible variants are given indexes, where the proto-Berber variant is scored 0 and the changed variant is scored 1. This means that a participant gets a score out of 10, with 10 representing speech that is all influenced by innovated forms and 0 representing speech that is most resistant of innovation and change. The descriptive statistics shows a mean value of σ=6.5082 and a standard deviation value of α=3.3097. The mean value is higher than the average mean σ=5, which means that, holistically, the speech community is more inclined toward the use of innovated variables. However, it is noticed that the standard deviation value is high, which is indicative of a high level of volatility across the participant groups' answer. This calls for a more specific correlational analysis with the objective of identifying the participant group that is leader of change. To achieve that, Pearson Correlation Coefficient is calculated and illustrated in the following table 06:

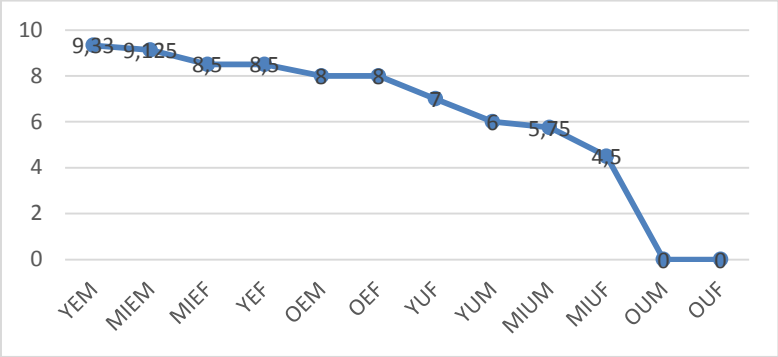
Table 06: The Correlation between Linguistic Variation and the Social Variables

Age	**Pearson Correlation**	-.464**
	Sig. (2-tailed)	.000
Gender	**Pearson Correlation**	-.108
	Sig. (2-tailed)	.408
Education	**Pearson Correlation**	+.749**
	Sig. (2-tailed)	.000
**. Correlation is significant at the 0.01 level (2-tailed).		

The table 06 above shows that there is a statistically significant inverse correlation between age and the use of innovated variants, where younger participants are more likely to lead linguistic change. Moreover, with regard to gender, the analysis shows that the correlation is not statistically significant. Education, however, is the most statistically significant indicative of innovation. The table above shows a very high coefficient value that is indicative of a high level of positive correlation between education and linguistic innovation. Educated learners use more innovated variants while less educated participants demonstrate linguistic behaviour that is resistant of change.

The participants are divided into twelve strata that are representative of social groups from the target population. It is necessary to analyse linguistic variation at the micro level of each group, for the macro-analysis represented in the table above does not capture the exact image that allows for the reliable interpretation of the findings. The quantitative data is illustrated in the figure 01 below:

Figure 01: Sociolinguistic Variation Means across the Sample Strata



The figure 01 above shows that there is a pattern with which sociolinguistic variation is distributed. With regard to education, the data indicate that educated participants use the innovated forms, significantly, more than the uneducated regardless of the age and education. Moreover, the data suggest that, unexpectedly, all things being equal, educated males use the innovated forms more often than their female counterparts. The pattern among uneducated females is not very clear; young uneducated females use the innovated forms more frequently than their male counterparts while the opposite is true among middle-aged participants. With regard to old uneducated participants, male, again, use the innovated forms more frequently. The case, therefore, is not clear with regard to the impact of gender within the uneducated participant groups calling for more research endeavour. One possible, although not empirically tested, explanation is that gender often corresponds to prestige; educated individuals are more aware of prestigious forms. Therefore, the use of prestigious forms, among educated individuals, is more influenced by gender than among the uneducated individuals, who have less awareness of prestige. With regard to age, the date suggests that there is an inverse correlation between age and the use of innovated forms. One exception is among educated middle-aged females, who use the innovated forms as frequently as their young counterparts. Patterns, like this, are attested to be common among educated females, whose speech is less effected by age due to the fact that the females exert more conscious efforts to adhere to prestigious forms to the extent that it overrides the impact of age. The study of Milroy (1976) in Ballymacarrett, Belfast showed that there is an almost uniforms pattern of variation with female communities regardless of their ages, which indicates that age is a lesser determinant variable within females, who are more conscious of social acceptability and prestige norms.

Sociolinguistic variation is, closely, related to social variables of age, gender and education. However, other extralinguistic variables can have implications for the better understanding of factors that constrain it. The analysis of attitudes, multilingualism and nationalism shows some correlational patterns with the scores obtained from the variation analysis. First, the analysis of attitude among the Mzabi community shows

some patterns when tested against the selected social variables. This is illustrated in the following table:

Table 07: Correlation between Attitudes and Social Variables

Mzabi		**Important**	**Prestigious**	**Patriotic**	**Rich**	**Ethnic**	**Useful**	**Intrusive**
Age	Pearson Correlation	-.701**	-.482**	-.012	-.775**	-.501**	-.575**	0.307**
	Sig. (2-tailed)	.000	.000	.925	.000	.000	.000	.005
Gender	Pearson Correlation	.019	-.238	-.192	-.121	.087	.015	.031
	Sig. (2-tailed)	.886	.065	.138	.351	.507	.906	.815
Education	Pearson Correlation	-.523**	.106	-.308*	-.020	.021	-.555**	.307*
	Sig. (2-tailed)	.000	.415	.016	.880	.873	.000	.016

The table 07 above shows that there is a statistically significant level of correlation between age and the linguistic attributes representing attitudes. The inverse correlation between age and the attributes: *important, prestigious, rich, ethnic and useful* indicates that younger participants have more positive attitudes towards Arabic. In the case of the attribute *intrusive*, the data show that the correlation is less statistically significant; yet, the correlation is positive. This means that older participants are more inclined to view Arabic variants as intrusive in their local dialect. Interestingly, the table above shows that the correlation between attitude and gender is not statistically significant. Finally, the projection of the results, obtained from the analysis of education on the results obtained from the analysis of age, shows an almost exact match. The way education correlates with attitude is similar to the way age does. Educated participants report more positive attitudes towards other languages.

5. Conclusion

The goal of the present study is to offer a principled account for linguistic variation in the Mzabi community. It is predicated upon the variationist belief that it is only through such accounts that linguistic change can be modelled and predicted. The selection of variables in the present study is motivated by extensive readings of the scholarly publications in the field coupled with exploratory pilot studies conducted prior to the finalisation of the research protocol. The analysis of the translated glossary showed that many of the selected words have retained their Berber origin; yet, some of the lexical items have been influenced by language contact, more substantially by Arabic. The findings showed that while many words have one-to-one form-meaning mapping, some lexical items are represented with different variants, which represent a state of linguistic variation that has social and attitudinal implications. The existence of these variants represents important raw materials for sociolinguists to work with.

The analysis of the questionnaire showed that there are some statistically significant variations across participant groups with regard to their attitude and nationalism apropos Arabic and French. The attitudes have some social implications that are strongly liaised with age and education. Interestingly, the analysis showed that gender does not seem to be a crucial variable in determining attitude and, hence, variation, more particularly so among the less educated participant groups. The analysis of variation, on the other hand, shows that there are some instances of linguistic innovation that caused some variation within the linguistic behaviour of Mzabi speakers. This innovation is lead most by young education male participants. The analysis shows that gender is not a determinant factor in sociolinguistic variation among the selected population. This is most attributable to the closely-knit social network leading the Mzabi community to have equal norms of social acceptability and prestige among males and females.

It is noteworthy that the Mzabi community is a highly conservative and closely-knit social network that has a very high sense of identity and nationalism and is marked with strong social ties. These factors are reported in the literature to cause resistance to language change. The findings, however, show that the Mzabi dialect is influenced by contact with Arabic dialects. The positive attitude and the affiliation that younger Mzabi speakers have towards Arabic and Algerian Arabic culture, probably, motivate and propagate language change.

The present study does not make the claim of capturing the precise picture of linguistic variation and change in the Mzabi community; yet, it is a first step in a thousand mile journey for the theoretical conceptualisation of the linguistic profile of Algerian, particularly the under-investigated varieties, such as the Mzabi dialect. Therefre, the study recommends that more research endeavour be dedicated to the analysis of the Mzabi dialect, not only at the level of lexical variation but also at the level of formal description of the linguistic system. Research on phonology, morpho-syntax and formal semantics in the Mzabi and other Algerian dialects, however purely structural, can feed into the more functional analysis of language and linguistic behaviour within the social contexts.

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6. Appendices

Appendix 1

Questionnaire

Dear Informant,

This questionnaire is designed as a tool to understand the factors that govern language change and stability in the Berber (Mzabi) community in Algeria. The answers you provide will be taken with the utmost secrecy and will be used only for research purposes. Your identity will remain anonymous.You are kindly requested to fill in the following questionnaire according to your personal opinion. Your help is highly appreciated.

I. Section One: Personal Background

Age: ……..

Gender: Male ◯ Female ◯

Highest Educational Degree: ……

Region: ……

Where did you spend your childhood and adulthood?

…….

II. Section Two: Linguistic Proficiency

Mother Tongue:

- Berber
- Standard Arabic
- Colloquial Arabic
- French

◯
◯
◯
◯

- Please use the scale below to rate the level of mastery of the language you write in the left column. Put a cross in the right column.

Excellent = 1	Very good = 2	Bad = 5
Good = 3	Average = 4	

Level / Language	1	2	3	4	5
Mzabi					
Algerian Arabic					
MSA					
French					

III. Section Three: Language Use

- Please use the scale below to rate the frequency you use the languages with the groups of people listed in the left column.

Always = 4	Sometimes = 2	Never = 0
Most of the time = 3	Rarely = 1	Not Applicable = NA

	Algerian Arabic	Mzabi Variety	Standard Arabic	French
Family				
Friends				
Neighbors				
Officials				
At work				
At mosque				
At school				
speakers of Arabic				
Berber speakers from other communities				

IV. Section Four: Attitudes Towards Languages

- Please use the same scale to rate how much you think each attribute in the list applies to each language in the table.

0 = not at all	1 = little	2 = average
3 = very	4 = extremely	

	Algerian Arabic	Tamazight	Mzabi	Standard Arabic	French
Important					
Prestigious					
Patriotic					

Rich					
Ethnic					
Useful					
Intrusive					

- The importance of French in education is:

None ◯ Little ◯ Much ◯ Extreme ◯

- The importance of Standard Arabic in education is:

None ◯ Little ◯ Much ◯ Extreme ◯

- The importance of Tamazight in education is:

None ◯ Little ◯ Much ◯ Extreme ◯

- The importance of Algerian Arabic in education is:

None ◯ Little ◯ Much ◯ Extreme ◯

- Which language should be given the most importance in Algeria?

……..……

Reasons:

1. denotes the country's national identity ◯
2. denotes your ethnic identity ◯
3. Prestige ◯
4. Used frequently in all life domains ◯
5. Fits the country's policies ◯

- Do you think French has a negative influence on the use of Berber in Algeria?

Yes ◯ No ◯

- Do you think French should be abolished in Algeria?

Yes ◯ No ◯

- Do you think that using Standard Arabic words distorts your identity or your language? ◯

Yes ◯ No

- Do you think that using Algerian Arabic words distorts your identity or your language? ◯

Yes ◯ No

- Do you think that using French words distorts your identity or your language?

Yes ◯ No ◯

Thank you for your collaboration

Appendix 2
The Mzabi Interview Questions

Questions	Target Variables		
	Changed	**Unchanged**	**English**
What does a family consist of?	/ʔatˁefli/	/ʔajzˁiːw/	Child
Where does wood come from?	/ʃəʒrat/	/tazdajət/	Tree
How do birds travel fast?	/tˁaːr/	/jfərfər/	Fly
What happens to hot water when put in the fridge for hours?	/jətegla:sˁa/	/əaquːr/	Freeze
Where did the Mujahidin hide from the French army?	/ʒbəl/	/ʔaːwriːr/	Mountain
Four weeks is a month. Twelvemonthsis…?	/ʕaːm/	/ʔazugga:s/	Year
Meat exposed to the sun for days is inedible, why?	/jəfsəd/	/duʃtiːm/	Rotten
Which hand should we use for eating?	/dərwaːt/	/ʔafusaːj/	Right
What do you call the other hand?	/goʃ/	/zəlmˁaːd/	Left
What are the jewels women wear in weddings?	/brassli/	/tiːsɣədriːn/	Bracelet