

Some Dissimilatory Processes in Tamazight Dialect

بعض الحالات الصوتية المغايرة في اللغة الأمازيغية

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Abstract:

The present paper looks at the problem of dissimilation in Tamazight of Kella Mgouna (TKM) from a constraint based, Optimality-theoretic approach. The basic fact is that dissimilation is motivated by a need to avoid the repetition of the features [labial] and [round] within a specified domain.

KeyWords: Phonology, dissimilation, labial dissimilation, round segments, OT, constraints.

المخلص:

تتناول هذه الدراسة ظاهرة المغايرة الصوتية في اللغة الأمازيغية لقلعة مكونة من منظور النظرية الأمثلية النظرية. واضحاً من سياق الدراسة أن الحقيقة الأساسية للمغايرة تتمثل في التبرير لتفادي التكرار للسمات المتماثلة للشفاه وتدويرها أثناء حالات صوتية خاصة.

الكلمات المفتاحية: علم الأصوات، التشويه، تشويه الشفوي، الأجزاء المستديرة، الوقت الإضافي، القيود.

Introduction:

In this article, we will try to present some dissimilatory processes in Tamazight of Kella Mgouna (henceforth, TKM) from an optimality theoretic approach. The first process that we will cover is labial dissimilation. More precisely, we will deal with the process of dissimilation which affects the labial m. We will see that this process applies in a contact situation or at a distance whenever **m** finds itself within the stem domain with another labial consonant (**b, f, m**). In the second part of the analysis, we will explore the phonological dissimilation affecting round segments in TKM. Here again, we will assume that identity avoidance is the main impetus driving dissimilation in TKM. In this paper, we are going to answer these research questions:

1. Does the dissimilation process affect all labials in TKM?

2. What are the environments in which the dissimilation process apply?
3. What is the main motivation that drive the process of dissimilation in TKM?

In order to answer these research questions, we conduct a qualitative approach. Qualitative research is defined as *“the study of the nature of phenomena”*, including *“their quality, different manifestations, the context in which they appear or the perspectives from which they can be perceived”*, but excluding *“their range, frequency and place in an objectively determined chain of cause and effect”* (Philipsen & Verooij–Dassen (2007)). This formal definition can be complemented with a more pragmatic rule of thumb: qualitative research generally includes data in form ‘of words rather than numbers’ (Punch (2013)).

We believe that qualitative research is a method that focuses on obtaining data through open-ended interviews. To obtain reliable results, we have applied different types of qualitative research methods like in-depth interview, focus groups and ethnographic research. Following Gill, P., Stewart, K., Treasure, E. *et al.* (2008), We use qualitative research because it can answer specific research questions that cannot to be adequately answered using (only) quantitative designs.

An Overview on Dissimilation

Amazigh language is subdivided into a number of dialects or languages spoken all across North Africa. The geographical distribution of Amazigh dialects is, on a west to East axis, from the Atlantic Coast in the west to the Oasis of Siwa (Egypt) in the East. On the north to south axis, Amazigh is spoken from the Mediterranean to Senegal, Mali and Niger (Basset, 1952).

The largest population of Amazigh speakers can be found in Morocco. According to Kossman and Stroemer (1997), 26 million of the total Moroccan population speak Amazigh language as a mother tongue. At this point, it is worth to mention some of the Amazigh– speaking regions for more understanding. First, in Morocco, spoken Amazigh¹ is spread into three large dialectal areas that cover the totality of the mountain regions: in the north is the Rif (Tarifiyt dialect), in the center, the Mid– Atlas and a part of HighAtlas (Tamazight dialect) and in the south/ high– Atlas, Anti–Atlas and under, the Chleuh domain (Tashelhiyt dialect).

At this point, it is very important to define what do we mean by dissimilation² as it is the main concern of this analysis.

The process of dissimilation refers to the influence exercised by one sound segment upon the articulation of another, so that sound becomes less similar or different from the neighboring sounds (Crystal, 2008). In the same while, Kenstowicz (1999: 638) defines dissimilation as follows “Phonological processes fall into two broad categories: sound change and prosodic grouping. We briefly illustrate each type. In in–articulation versus im–possible the prefixal nasal assimilates the labial feature of the [p] thereby changing from [n] to [m]. Dissimilation alters neighboring sounds that share the same feature so that they become more distinct from one another ... For example, the vocalic nucleus and the offglide comprising the [au] diphthong of “how” share a retracted tongue position in the most English dialects. In broad Australian English the nucleus is fronted to the [œ] vowel

¹– There is plenty of literature on Amazigh and Amazigh phonology/ morphology, of which we can cite (Saib (1976), Bensoukas (1994, 2004), Anasse (1994), Hdouch (2005), Ansar (2005), etc.).

²– Dissimilation is not a new term used in language studies. It is mentioned for example in March (1877), Churchil (1909) and Carnoy (1918).

of “cat”: h[œu]. Assimilation and dissimilation are subject to a strict locality condition requiring that they apply in the context of the closest sound with the appropriate feature”. (1999: 638).

As has been mentioned above, dissimilation¹ is the phenomenon where two sounds in a given or phrase become less similar to each other. This process, i.e. dissimilation, happens due to a variety of reasons, some of which are ascribed to language borrowing when a word makes its way from one language to another. For example, when the French words are used in English, they may undergo dissimilation as when the word ‘marble’, take an /l/ sound, while its original French word was ‘marbre’. Latin words are famous in undergoing this process when come to be used in English (Denham and Labeck, 2010).

Labial Dissimilation

The dissimilation process affecting primary labiality is manifest in the dissimilation of agentive noun formation and reciprocal and reflexive verb affixes. The examples are given in the sets (1), (2) and (3). The alternation is quite systematic: the reciprocal morphemes and agentive noun forms, both underlying represented as [m], change to [n] whenever the verbal consonants, [b], [f] or [m], segment adjacent notwithstanding (Bensoukas, 1994; Jebbour, 1996). And in TKM, we can notice the same operation. The labial dissimilation process observes a domain requirement binding it to the stem (Lasri, 1991; Elmedlaoui, 1992; Selkirk, 1993, 1995; cited in Bensoukas, 1994). Clearly, co-occurring round vocoids and round velar

¹– Dissimilation is not very much discussed in Sound Pattern of English (SPE) phonology. One reason for saying so is that the index of the SPE (Chomsky and Halle, 1968) for example, does not contain the term of dissimilation (Bensoukas, 2004). Furthermore, some early textbooks introducing Generative phonology do not mention dissimilation.

consonants do not trigger primary labial consonant dissimilation. What matters is the co-occurrence of the two labials in the same domain.

The first case of primary labial dissimilation¹ in TKM is provided by the morpheme used in forming reciprocal and reflexive verb forms. Basically, the relevant aspect of reciprocal/reflexive formation is the alternation affecting its place of articulation so that a similar situation to the agentive noun morphemes holds: the affix is a labial consonant that is realized as a coronal consonant in the contexts where it co-occurs with another primary labial.

(1)

UR	Gloss	Reciprocal
1. /ɣwn/	‘help’	mɣawan
/ɣr/	‘invite’	mɣra
2. /xlf/	‘change’	nɣlɔf
/bɔa/	‘break up’	nɔa

In (1a), we can notice that there is no dissimilation as there is no co-occurrence of two labials (i.e. f, m, b) in the same domain. However, in (1b), there is a process of dissimilation because we can observe two labials in the same stem. That is, the alternation is quite systematic: the underlying [labial] feature of reciprocal/reflexive consonant morphemes changes to the

¹– There is consensus in the literature of Amazigh that labial dissimilation is a sort of avoidance of the repetition specifications within a given morphological domain (Bensoukas 2015)).

[coronal] feature whenever the verbal base these morphemes are affixed to contains any one of the Tamazight primary labial consonants **b**, **f** or **m**.

As a morphological category, the agentive noun (AN) is generally defined as the word that refers to the doer of the action expressed by the corresponding verb, the reason why this nominal category is referred to as a deverbal noun (see Bensoukas, 1994). According to Bensoukas, early studies characterize agentive nouns as the deverbal nouns beginning in **am-** or **in-** or even **im-** or **in-**.

The main point that matters in this study is to show the ways in which the agentive noun morpheme alternates.

(2)

UR	Gloss	AN
/ssu/	‘to water’	‘Imswi’
/kssu/	‘inherit’	‘imkisi’
/ns/	‘spent night’	‘imnsi’
/Çs/	‘sephered’	‘amÇsa’
/aÇ ^w r/	‘steal’	‘amxar’

In (2) above, we could refer to the set as the non-dissimilating type of agentive nouns¹. These are opposed to the dissimilating ones, as will be shown in (3).

¹ . According to Bensoukas (2015), early studies characterize agentive nouns as the deverbal nouns beginning in am- or an-, or even im- or in

(3)

UR	Gloss	AN
/lmd/	‘learn’	‘anlmad’
/Çrf/	‘tie’	‘anÇraf’
/ɣlf/	‘feed’	‘anɣlaf’
/mgr/	‘harvest’	‘anmgar’

The allomorphy displayed by the agentive morpheme is viewed as the result of a dissimilation process affecting place of articulation. It is triggered by a radical labial consonant b, f or another m.

The ultimate goal of this study is to provide an analysis of TKM on the basis of the interaction of markedness and faithfulness constraints as laid out in OT (Prince & Smolensky, 1993/2004; McCarthy & Prince, 1993a, 1995, 1999).

The central claim in this analysis is that TKM labial dissimilation¹ is the result of basic interaction between markedness and faithfulness constraints. The constraints that we need in our analysis are the general faithfulness

¹– Previous pre-OT scholarship devoted to the analysis of labial dissimilation assumes two different theoretical backgrounds. The first background is the linear model of generative phonology (Chomsky and Halle, 1968), and the second background is the non-linear model (Clements, Sagey, McCarthy among others, cited in Bensoukas, 2015).

constraint MAX (lab) and the more specific instantiation of it MAX–ROOT (lab), both given in (4) (Bensoukas, 1994):

(4) Faithfulness constraints related to labial:

- a. MAX (lab): An input labial specification should be present in output.
- b. MAX–ROOT (lab): An input root labial specification should be present in the output.

Since the feature [labial] is equally attested in Tamazight roots and affixes, it should be ranked above the markedness constraint *labial, which stands against specifying any segment for the feature [labial].

(5) Markedness constraints

*labial: avoid [labial place]

The interaction between the faithfulness constraints MAX (lab)/ MAX–ROOT (lab) and markedness constraint is displayed in two by two tableaux (6) and (7) respectively.

(6) MAX (lab) >> *lab

/m/= (affix)	MAX(lab)	*lab
m		*
n	*!	

MAX–ROOT (lab) >> *lab

(7)

/m/= (Root)	MAX-ROOT(lab)	*lab
n	*!	
 m		*

On the assumption that specific root faithfulness dominates general faithfulness, the ranking established in (6) and (7) is MAX-ROOT (lab) >> MAX (lab) >> *Lab. This ranking predict that by virtue of its being outranking by both general and specific faithfulness constraints, the markedness constraint (*lab) would not prevent any primary labial features specified underlying in roots or affixes alike from surfacing. For faithfulness to underling labiality to be scarified, some dominating markedness constraint must force violation of faithfulness. That is to say, a constraint that dominates the two faithfulness constraints.

The major drive for dissimilation in Tamazight is a need to avoid the repetition of the feature [labial]. This is referred to as an Obligatory Contour Principle (OCP) (Selkirk,1995) and is construed as a markedness effect through constraint conjunction (Alderete, 1997, 2004; Bensoukas, 2004b).

OT treatment of this phenomenon (Selkirk, 1995; Alderete, 1997; Bensoukas, 2004b) rely on the interaction of the constraint [*pl/lab & *pl/lab]_{STEM} banning the co-occurrence of two like labial features within the domain of the stem. This constraint is formulated in Alderete (1997) as in (8):

(8) Constraint on the markedness of multiple labial specifications:

*Pl/lab²_{stem}: Ban any stem with two segments with independent place specifications [labial] (Alderete, 1997).

The ranking argument present in Selkirk (1995), establishes the higher rank of markedness over general faithfulness, which is the only ranking which can force a faithfulness violation to spare a markedness violation.

$$(9) *PI/lab^2_{stem}: MAX(lab)$$

(10)

/m+ag ^w m/ (draw water)	*PI/lab ² _{stem}	MAX(lab)
a. ma a-n-agam		*
b. a-m-agam	*!	

It is clear from the study of the candidates in (10) that markedness satisfaction is more important than general affix faithfulness and is accordingly ruled out.

In accounting for the details of primary labial dissimilation from a constraint based approach, it is wise to start with showing what possible interaction there is between the faithfulness constraint MAX-ROOT(lab) and the markedness constraint *PI/lab²_{stem}. For more details, let us consider the following tableau in (11):

(11)

/m+ag ^w m/	*PI/lab ² _{stem}	MAX-ROOT (lab)	MAX (lab)
a. a-m-agam	*!		
b. ma a-n-agam			*
c. a-m-agan		*!	*

Although completely faith by the virtue of satisfying both MAX-ROOT(lab) and MAX(lab) constraints, candidate (11a) incurs a fatal violation of conjoined markedness constraint ($*PI/lab^2_{stem}$). The second and the third candidates both resolve the labiality clash each one in its own way. Candidate (11c) dissimilates the root labial consonant; ergo, fatally failing at MAX-ROOT (lab), but it satisfies the two higher constraints $*PI/lab^2_{stem}$ and MAX-ROOT (lab) respectively. From the discussion above, we could claim that the basic insight is that labial dissimilation is driven by identity avoidance. The domain of the conjunction has been limited to the stem level. Also, we have seen which consonant is dissimilated is a dictate of root faithfulness.

After analyzing labial dissimilation in TKM, now it is high time to analyze round dissimilation on the basis of the interaction of markedness and faithfulness constraints as laid out in OT. According to Amazigh literature, the consonantal system of TKM contains five consonants with double articulation, involving the dorsum and the lips simultaneously: $\zeta^w(k^w)$, γ^w , x^w , g^w and q^w . These sounds are commonly referred to in the literature as round velar or labio-velar consonants (Bensoukas, 2006).

Round Dissimilation:

As a continuation of the argument built above, round dissimilation¹ is conceived of as the result of a reduction in the output structure of the number of round specifications as Tamazight does not tolerate the repetition of certain features. In order to fully appreciate the round dissimilation

¹– Two divergent analyses of the round consonant alternative are proposed in the pre-OT literature (Elmedlaoui, 1985, 1992, 1995; Selkirk, 1993; see also the linear analysis in Jebbour, 1985 cited in Bensoukas, 2006).

affecting verb forms in TKM, the set in (12) of perfective (perf) form¹ show the issue.

(12)

UR	Aorist	Perf.	Gloss
/ʧ ^w nu/	ʧnu	ʧ ^w ni/a	‘bend’
/x ^w lu/	xlu	x ^w li/a	‘demolish’
/g ^w nu/	gnu	gni/a	‘sew’

Here the round specification underlying associated with the consonant does not surface in the aorist form, because the aorist has a final round vowel u. That is, the UR of these verbs contains the final vowel u; therefore, there is a co-occurrence restriction on round specifications.

(13)

UR	Singular	Plural	Gloss
/tag ^w rut/	tagrut	tig ^w ra	‘frog.fem’
/ag ^w ru/	agru	ig ^w ra	‘frog.masc’
/aɣ ^w ruj/	aɣruj	iɣ ^w raj	‘stick’
/aq ^w bu/	aqbu	iq ^w ba	‘wood’

What can be noted from the data in (13) is that if the round feature is absent from the singular by the effect of the presence of a round vowel, the

¹– For more details on perfective form of verbs in Amazigh see (Elmedlaoui, 1991; Lazzi, 1991; Bensoukas, 1994; among others

round specification re–appears when the vowel of **u** of the singular is changed to **a** as a result of plural¹ morphology.

Here again, the analysis will be based on constraint self–conjunction. In the example, (12) and (13), it is clear that there is a constraint calling for the avoidance of two round specifications within the same domain, which is formulated in (14):

(14) *[Round & Round]_{stem}: Any two independently specified round specifications in a stem are banned (Bensoukas, 2006).

Another constraint that will be needed is MAX (Rnd), which is given in (15):

(15) MAX (Rnd): An input round specification should be present in the output.

Since the feature [round] is equally attested in Tamazight roots, it should be ranked above the markedness constraint *Round, which stands against specifying any segment for feature [Round].

(16) Markedness constraint

*Round: Avoid [Round place].

The markedness constraint *[Round & Round]_{stem} should be ranked above the faithfulness constraint since no output form contains two round specifications².

(17)

¹– In the literature of Tamazight, plural formation has recourse to either concatenative or non–concatenative morphology. Many terms have been used to refer to plural formation such as external plural and broken or internal plurals (Saib, 1986; Jebbour, 1988; Idrissi, 2000 cited in Bensoukas, 2006).

² . There are some exceptions which have two round specifications in Tamazight

/Ç ^w ru/ 'hire'	*[Round & Round] _{stem}	MAX (Rnd)
a. Ç ^w ru	*!	
b.  Çru		*

It is worth to note that round dissimilation crucially differs from labial dissimilation by being bi-directional. That is to say, applying from left to right and from right to left (Jebbour, 1985).

The main findings of this analysis is that round dissimilation always affects the consonant and not the vowel, and also round dissimilation may target the consonant on the left as well as the one on the right. In order to see clearly those finding, it is necessary to splinter the markedness constraint *[Round & Round]_{stem} into two more specific constraints, which are given in (18):

(18) Markedness constraint on the feature [Round]

*Vrnd: Ban any round specification in vowels.

*Crnd: Ban any round specification on consonants.

(Bensoukas, 2006).

The ranking of markedness constraint on rounding is as follow: *Crnd >> *Vrnd , since round dissimilation always affects the consonant and the vowel.

The first ranking argument is based on the fact that no affix in the language contains a round velar consonant. Ergo, the markedness constraint *Crnd should be ranked higher than the faithfulness constraint MAX (Rnd). Furthermore, since round velar consonants are attested in the

language, it is obvious that MAX–Root (Rnd) will outrank the markedness constraint *Crnd. The Max–Root (Rnd) is given in (19):

(19) MAX–RT (Rnd): An input rounding specification in the root must have a correspondent in the output.

Therefore, the ranking of the constraints that we have seen so far is: MAX–Root (Rnd) >> *Crnd >> MAX (Rnd).

(20)

/aÇ ^w r/ ‘steal’	MAX–ROOT (Rnd)	*Crnd
a. aÇr	*!	
b. aÇ ^w r		*

The candidate (20a) is ruled out as it violates the higher constraint MAX–Root (Rnd). The candidate (20b) that bears the rounding outdoes the one (20a) that does not.

The last ranking, we are interested in is the one involving MAX–ROOT (Rnd) and MAX (Rnd) with respect to the markedness constraint *Vrnd. According to Bensoukas (2006), since both roots and affixes in the language may have their vocalic constituents specified for rounding features, then both specific and general faithfulness have to outrank markedness constraint.

(21) MAX–ROOT (Rnd) >> MAX (lab) >> *Vrnd

In a much similar spirit to the *Pl/lab²_{stem} constraint, *[Round & Round]_{stem} is made to dominate root faithfulness as means ensuring the co-occurrence restrictions of the two round specifications within the stem domain. Therefore, the hierarchy elaborated so far is as follows:

(22) *[Round & Round]_{stem} >> MAX-ROOT (Rnd) >> *Crnd >> *Vrnd

The next stage will be an illustration of some results for the instances of TKM round dissimilation. Let us start with the input /ç^wru/ ‘hire’ containing two round specifications. The function of generator dispenses many candidates the most of informative of which are evaluated in (23):

(23)

/ç ^w ru/ hire	*[Round & Round] _{stem}	MAX-ROOT (Rnd)	*Crnd	*Vrnd
a. ç ^w ru	*!		*	*
b. ç ^w ri		*	*!	
c. ɣ ^w ru		*		*

Candidate (23a), although fully faithful, fatally fails at identity avoidance. Emanating from consideration of the candidates are two possible way of satisfying *[Round & Round]_{stem}. In fact candidate (23b) equally satisfying the constraint *[Round & Round]_{stem} by dissimilating the root round segment. Therefore, the choice between the two candidates (23b) and (23c), is a dictate of markedness constraint considerations. The candidate incurring violation of consonant rounding being disfavored in front of the one incurring violation of vowel rounding. Hence, the candidate (23c) is seen as the optimal one as it satisfies the markedness constraint *Crnd.

Round dissimilation has been analyzed as identity avoidance, viz. the avoidance of the repetition of the feature specifications [Round]. TKM applies its avoidance strategy by the application of a round velar

dissimilation process that mends the offending co-occurrence of the two round segments in the same domain.

Conclusion:

A commonality between labial dissimilation and round dissimilation then emerges, so much that the two processes can be thought of as two facets of the same general identity avoidance effect. Round dissimilation and labial dissimilation do, however, differ in certain respects. For example, as we have seen, labial dissimilation observes root faithfulness. Round dissimilation, on the other hand, is detrimental to the rounding of a root segment, showing at first blush that root faithfulness is violated, and hence has to be dominated.

Results

In this part, we will try to sum up the main results of our study.

1. The basic insight is that labial dissimilation is driven by identity avoidance.
2. The domain of the conjunction has been limited to the stem level. Also, we have seen that which consonant is dissimilated is a dictate of root faithfulness.
3. Tamazight of Kella Mgouna applies its avoidance strategy by the application of a round velar dissimilation process that mends the offending co-occurrence of two round segments in the same domain.
4. Dissimilation in TKM is formalized in terms of the interaction between the various output well-formedness OT constraints with constraint against the repetition of the offending feature. The general formulation of the latter constraint is *FD, i.e. two violations of the same constraint in a domain D are not allowed.

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