

Lenition and Fortition in Shul Dialect

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ABSTRACT--- *This study deals with lenition and fortition processes according to the theoretical framework of generative phonology to answer the cited questions: how do the data support the application of lenition and fortition processes in shul dialect? In which contexts do lenition and fortition processes apply in shul? Finally, what are the most frequent lenition and fortition processes in this dialect?*

Shul is a village located in the northeast from Genave County in Bushehr province. Data were collected by interviewing 3 male and 2 female speakers aged between 20 and 60. The corpus primarily contains free conversation and life stories. This dialect is similar to Luri dialect.

Surveying phonological processes in this dialect shows that lenition and especially deletion are more active than the other processes due to ease of articulation principle. The data show that the lenition processes tend to occur in postvocalic, intervocalic and the final position has the highest frequency for lenition processes to occur. Also the fortition processes tend to occur in inter-consonantal, pre-consonantal positions and morpheme, word and syllable initial positions. These results support Kenstowicz's idea that mentions : 'final position in the word is the typical position for lenition'.

Key words--- Shul dialect, lenition, fortition, compensatory lengthening, deletion.

1. INTRODUCTION

Shul is a village located in the northeast from Genave County in Bushehr province in Iran. Based on statistic on 1385, the population in this village is 1225 persons (268 families). This dialect is a kind of Luri. Windfuhr (2009:418) said that: In SW Iran there is two groups which can be recognized as "Per side", i.e. they continue numerous features that evolved from Southern Early New Persian, though each evolved differently: (1) The Luri-type dialects (Luri proper, Bakhtiari, Boyer-Ahmadi, Mamasani-Kohgeluye). (2) The Fars dialects stretching from the Gulf into western and central Fars. In order to conduct the study, 5 native speakers, selected from different age groups (from 20 to 60 year-old ones) and different educational levels, were interviewed. The corpus primarily contains free conversation and life stories. The data presented in this article bring to light a rich inventory of natural phonological processes in Shul dialect. However, in order to understand the phonological status of these processes and what the underlying forms are, and whether the processes are synchronic or diachronic, it is essential to come to terms with the relationship between standard Persian and Shul dialect. As is the case in most areas of Iran, Standard Persian exercises a profound Impact on the character of the language spoken in Shul. Like standard Persian, Shul has evolved from early New Persian, and there are many linguistic similarities between the two varieties. However, some of the natural processes exhibited by Shul are lacking in Standard Persian.

2. RESEARCH QUESTIONS AND THEORETICAL FRAMEWORK

I'm going to study fortition and lenition according to the theoretical framework of generative phonology to answer the following questions: 1) how do the data support the application of fortition and lenition processes in Shul's dialect ? 2) In which contexts do fortition and lenition processes apply in this dialect?

We first discover the existent phonetic alternations. According to represented data, when one of the alternations appears in a place and the presence of the other is not possible, the alternation between two features is cleared. Then it turn to discover the underlying representation of alternation. We use corpus internal evidence to reach this aim. First, two

hypothesis are considered in this method. In one of the hypotheses, it is hypothesized that the first feature is the underlying feature, unless there is some evidence to violate this idea. In the other hypothesis, it is hypothesized that the second feature is the underlying feature, unless there is some evidence to violate this hypothesis. The next step is Formalizing of phonological rules. In this step, the derivation of surface representation from the underlying form is shown.

In the literature of Natural Phonology, phonological processes are divided into lenition and fortition on the basis of the functions they serve and the context in which they appear (Luschützky 2001). Lenition and fortition are differentiated on the basis of the strength of sound, or energy expended in its production. Voiced sounds are called lenis (weak), whereas voiceless ones are called fortis (strong). The dualistic typology of processes reflects the force of articulation and involves its modification. Therefore, the processes of the lenition type substitute the fortis sounds with the lenis ones, whereas the processes of the fortition type substitute the lenis sounds with their fortis counterparts. Crystal 2008 defined fortition and lenition in the following way: “fortition is a term used in phonology to refer to a strengthening in the overall force of a sound, whether diachronically or synchronically; opposed to lenition. Typically, fortition involves the change from a fricative to a stop, an approximant to a fricative, or a voiced to a voiceless sound (as in the devoicing of final obstruents in German)”. The above definition highlights the nature of the fortition processes which affect the lenis sounds, transforming them into the fortis ones. Lenition is a term used in phonology to refer to a weakening in the overall strength of a sound, whether diachronically or synchronically; opposed to fortition. Typically, lenition involves the change from a stop to a fricative, a fricative to an approximant, a voiceless sound to a voiced sound, or a sound being reduced (lenite) to zero. For example, the initial mutation in Celtic languages shows lenition in such cases as Welsh *pen* ‘head’ becoming *ben* (his) ‘head’ Both lenition and fortition operate on a segmental level, as opposed to prosodic processes which are located at a suprasegmental level (Luschützky2001). Two types of weakening are distinguished. (a) Consonant weakening (also lenisization): this denotes a weakening of consonant strength (through a reduction in air pressure and muscle tension or an increase in sonority) to the complete loss of a segment [...] (b) vowel weakening: this is a term for all processes that lead to a weakening of the articulatory movement in the sense of an increasing centralization of vowels and finally a total loss of the vowel (Bussmann 1996: 519). Fortition processes, also referred to as strengthening or centrifugal, perform the listener-friendly function. Since fortition strengthens the clarity of perception, they enhance contrast for the sake of a better, sharper perception. They have a perceptual teleology. They operate independently of the context (rely on the system inventory) and are style-sensitive (appear in formal/lento/emphatic speech). They regulate our notion about what a suitable or an affordable utterance is (Goman 1979: 43).

The optimality approach (Boersma1998, Kirchner 1998) advocates articulatory effort as the motivation of lenition and fortition. For instance, fortition is effort-based and driven by a natural need to maximize articulatory effort (Kirchner 1998). Within the NP framework, the lenition/fortition definition is based on the needs of the speaker as well as the listener and offers an operational procedure: if the phonological material is deleted for the benefit of the speaker, it is a lenition; when the material is added for the sake of the listener, it is a fortition.

Evaluating the current debate on phonological processes, it appears that although lenition and fortition have an extensive literature, a number of controversial issues can still be identified. So to define the fortition and lenition processes more accurately in Shul dialect, we concentrate on a combination of the above mentioned-approaches.

3. DATA PRESENTATION AND DISCUSSION

Before the representation of data, it seems necessary to represent Shul dialect consonants and vowels table:

Table 1- Vowel distinctive features of Shul dialect

	a	ɑ	e	o	i	u	ə
back	-	+	-	+	-	+	-
high	-	-	-	-	+	+	-
low	+	+	-	-	-	-	-
tense	-	+	+	+	+	+	-
round	-	+	-	+	-	+	-

Table 2- Consonant distinctive features of Shul dialect

	p	b	t	d	c	ʃ	q	ʔ	m	n	f	v	s	z	ʃ	χ	h	ʃ	ɟ	ʒ	l	r	j
consonantal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
continuant	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	-	-	+	+	+	+
sonorant	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	+	+
approximant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+
nasal	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
delayed release	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-
strident	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	+	+	+	-	-	-
lateral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
labial	+	+	-	-	-	-	-	-	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-
labiodental	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-
coronal	-	-	+	+	+	+	-	-	-	+	-	-	+	+	+	-	-	+	+	+	+	+	+
anterior	+	+	+	+	-	-	-	-	+	+	+	+	+	+	-	-	-	-	-	-	+	+	-
distributed	-	-	-	-	+	+	-	-	-	-	-	-	-	-	+	-	-	+	+	+	-	-	-
dorsal	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
high	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
back	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
voice	-	+	-	+	-	+	+	-	+	+	-	+	-	+	-	-	-	-	+	+	+	+	+
spread glottis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
constricted glottis	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: In shul phonetic system like Persian, there are two palatal plosives /c/ and /j/, but before back vowels they are pronounced [k] and [g], respectively; such as [kur] “blind”, [ʔangur] “grips”. So [k] and [g] are allophones of /c/ and /j/ that make no meaning distinction. There is no /ʒ/ in this dialect and plosive uvular /G/ has two allophones: [q] and [ɣ].

3, 1 Lenition

3, 1, 1 Spirantization

Spirantization refers to a process in which plosives become fricatives, and this often occurs in environments containing vowels. In particular, it is common for Consonants between two vowels and consonants in the presence of high vowels (Burquest 2001:126). Examples of this process, which has applied diachronically in Shul dialect, are shown in the following table:

Table -3- Alternation of b ~ v

Shul dialect	Standard Persian	Pahlavi	Gloss
zavun	zaban	zuwān	tongue
moveil	mobail	?	cell phone
tava	tabe	?	pan
xoʃvaxt	xoʃbaxt	farrox	blest
ɣarval	Garbal	we xtan	scalp
darvun	darban	?	Janitor
tavar	tabar	tabar zad	chopper
ʔavesan	abestan	ābestan	pergnant
sevil	sebil	?	mustache
neJa:van	neJahban	pānag	watchdog

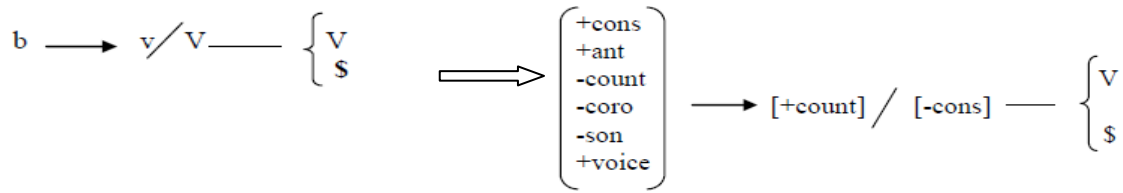
There are two hypotheses for the alternation of “b ~ v”:

H₁: The stop consonant /b/ which is the underlying form between two vowels or end of syllable changes to /v/ in the adjacent fricative consonant.

H₂: The consonant /v/ which is the underlying form changes to /b/ in adjacent a stop consonant, between two vowels and end of the syllable.

The only difference between /b/ and /v/ is in the manner of articulation. Since articulation of fricatives is simpler than stops and with regard to this principle that speakers tend to try less in pronouncing the word, we can choose H₁. This process is seen in many dialects of Persian such as: Qaeni, Kurdish. Since the stop consonant /b/ is placed after a vowel, features of the vowel (sonority and continuity) are transferred to consonant and it becomes continuant. So this reasons support H₁. The rule is as following:

Rule (1): Stop bilabial consonant /b/ is changes to fricative adjacent pair [v], between two vowels or the end of syllable.



3, 1, 2, Assimilation

Sometimes a consonant loses some of its phonetic features in syntagmatic with another consonant and takes the phonetic features of its adjacent consonant instead. This process, perhaps one of phonetic universals, is called "Assimilation". If this process causes one of the consonants to turn completely into another consonant, it is called "Complete Assimilation". However, if the assimilation does not end in complete assimilation, then it is called "Partial Assimilation."

Assimilation can be progressive or regressive. In the progressive assimilation of two syntagmatic consonants, the one in the first place remains fixed and unchanged and the one in the second place is assimilated. In the regressive assimilation of two syntagmatic consonants, the one in the second place remains fixed and unchanged and the one in the first place is assimilated.

Table 4- Alternation of G ~ x

Shul dialect	Standard Persian	Pahlavi	Gloss
raxs	raGs	?	dance
maʃx	maʃG	?	homework
vaxt	vaGt	?	time
noxtē	noGte	?	dot
naʃʃe	naGʃe	ašškōb	map
taxtʃa	taGtʃe	?	lumber
baxtʃa	baGtʃe	?	garden

By taking the above data into consideration, there are two hypotheses for the alternation of "G ~ x".

H₁: The consonant /x/ which is the underlying form changes to /G/ in adjacent a voiceless consonant, the end of a word or a syllable.

H₂: The consonant /G/ which is the underlying form changes to /x/ in adjacent a voiceless consonant, the end of a word or a syllable. There are so many words in these dialects in which the phoneme /x/ doesn't change to /G/ before a voiceless consonant, the end of a word or a syllable such as the following data adopted from Shul dialect: [baxt](luck), [raxt](clothes), [saxt](hard), [rixʃ](he/she pours), [baxʃ](county).

So, the second hypothesis is proved and the phoneme /G/ is the underlying form. The other reason for accepting the second hypothesis is that a stop consonant usually changes to a fricative one after a vowel. Consonant /G/ becomes voiceless because it is adjacent to a voiceless consonant; and it becomes fricative because it is affected by the nuclear vowel as all vowels are [+continuant]. In other words, this process takes place because of a consonant cluster in which the first consonant is plosive and voiced phoneme /G/, and the next consonant is a voiceless and obstruent consonant, consonants show a strong tendency to assimilate in [voice] and [continues] features. At first, in this change the plosive-voiced consonant /G/ loses its voicing feature because of being adjacent to a voiceless consonant and changes to its voiced pair /q/. Then in the next phase this consonant through lenition process changes to voiceless-fricative consonant [x]. The assimilation process of /G/ in [voice] feature is feeding for the occurrence of lenition process of /q/ and changing it to proportionate fricative:

Rule (2): Stop uvular consonant /G/ changes to uvular fricative consonant [x] in adjacent a voiceless consonant, the end of a word or a syllable.

Changes that is happening to word /taGsir/:

/#taGsir#	UR
taqsir	A- Assimilation Rule
<u>taxsir</u>	<u>B- Lenition Rul</u>
[taxsir]	PR

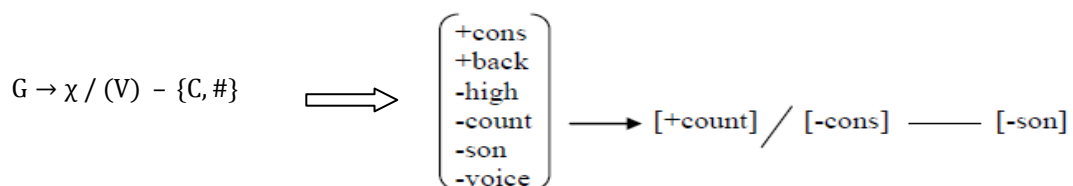


Table 5- Alternation of b ~ w

Shul dialect	Standard Persian	Pahlavi	Gloss
ʔasijow	asejab	āsyāb	mill
ʔowse	abse	ʔ	abscess
ʔowr	abr	abr	cloud
ʔowriʃam	abriʃam	abrešōm	silk
kowc	cabc	kabk	partridge
ʔowʃan	aviʃan	ʔ	thyme
tow	tab	tab, tabišn	fever
ʃow	ʃab	šab	night
xow	xab	xwāb	sleep

The above data shows a phonological alternation between “b ~ w”. There are two hypotheses to define the underlying form:

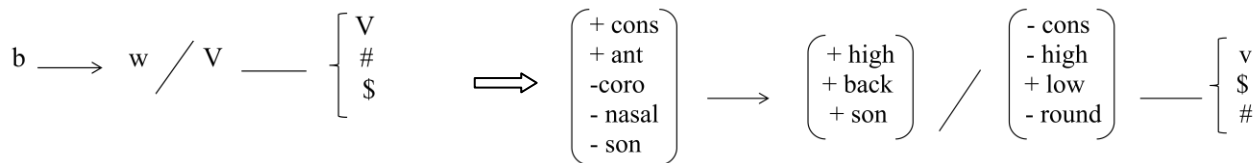
H₁: if /b/ is underlying, a rule is needed to change it to /w/ between two vowels or after the vowel or the end of the word.

H₂: if /w/ is underlying, a rule is needed to change /w/ to the stop [b] between two vowels or after the vowel or the end of the word.

Phonological changes on the mentioned data are in lenition positions. With regard to phonetic acceptability; this kind of phonological changes is lenition in that phonic structure become more open and a stop consonant change to fricative approximant consonant. thus in mentioned data stop bilabial consonant /b/ changes to adjacent glide /w/. considering the data in table (5) we can say that /b/ always changes to /w/ after vowels {a, a} at the end of word.

With accepting H₁, the underlying form is /b/ that became approximant at the end of word and this process is natural and is seen in many dialect of Persian such as: Kermani, Mazandarani, Luri(cited from kambuzia,2011:402), Surani Kurdish (cited from kambuzia:404), Sabzevari and dialects of Kurdish in Ilam(Sobati 2013:137-141).

Rule (3)



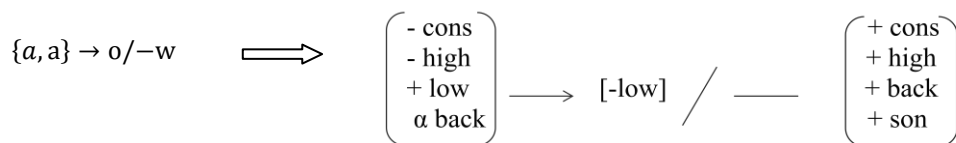
In the mentioned data, there is another process in that low vowels {a, a} changes to /o/. The glide /w/ has features (+ high +back + round) and raising of the adjacent vowel is for this reason. They assimilate in height feature with glide. This rule is “raising”. Crystal (2008:427) said that: a vertical process affecting tongue height; opposed to lowering. For example, in the study of vowel harmony, a vowel might be said to raise (e.g. from mid to high) in the context of a following high vowel. In the course of language change, a vowel in an originally low position might be raised to a relatively high position.

Since feature (+high) in this dialect like Farsi is gradient, if this feature is transferred to another phonological segment, in each process we have one degree change in height. This rule can be shown as following:

Changes that is happening in word [ʔab]

/ # ab # /	UR
ʔab	A- Insertion of consonant before the initial vowel
ʔaw	B- Lenition (stop changes to glide)
ʔow	C- Assimilation (between vowel and glide)
[ʔow]	PR

Rule (4)



The above representation shows “feeding rule”. Crystal (2008:213) says that: a feeding relationship is one where the application of one rule (A) creates a structural representation to which another rule (B) is applicable, and thus increases (feeds) the number of forms which can be generated. If rule B is X ⇒ Y, then rule A must be of the form W ⇒ X. In these circumstances, rule A is called a feeding rule in relation to B, and the linear order of these rules is called a feeding

order. If the rules are applied in the reverse order, A is said to counter-feed B. Counter-feeding results in a non-affecting interaction in which a rule fails to realize its potential to increase the number of forms to which another rule applies. We can see that application of rule B (Lenition (stop changes to glide) creates the structural representation that rule C (Assimilation between vowel and glide) is applicable.

Table 6- Alternation of e ~ a

Shul dialect	Standard Persian	Pahlavi	Gloss
miva	mive	me wag,bar,bār	fruit
xassa	xaste	māndag	tired
gosna	gorosne	gursag	hungry
rija	rije	re šag	root
dara	darre	āhi d	valley
rana	rande	randi dan	shaver
ciṭfa	kuṭfe	kōy	alley
kuza	kuze	xumb	pitcher
pindza	pandze	panjag	paw
hala	hale	?	corona

The above data shows a phonological alternation between “e ~ a”. There are two hypotheses to define the underlying form:

H₁: We should consider the vowel /a/ as the underlying representation in Shul’s dialect . In this case, a rule is needed to change the feature [+low] of the vowel to the feature [-low] in standard Persian.

H₂: We should consider the vowel /e/ in the final position as the underlying representation in standard Persian. In this case, a rule is needed to change the feature [-back, -low] of the vowel to the feature [-back, +low] in Shul dialect.

To find the reason of changing /e/ in final position of the words of standard Persian into/a/ in the words of Shul dialect, first we should take a historic point of view into consideration. The historic considerations (MacKenzie 2000) show that some of the modern Persian words ended to the suffix [-ag] in Pahlavi words such as /panjag/, /re šag/, /xān(ag)/.

By passing the time and through the deletion of –g (a kind of lenition process), these kinds of Pahlavi and middle Persian words ended to the vowel [a] in modern Persian. There is no letter to show [a] in modern Persian writing system, so the grapheme “h” was used which is technically called “inarticulate or hide h”. In this case the remained vowel /a/ is pronounced [e] in standard Persian such as the above data. Based on the cited information, we can conclude that the final vowel /a/ is the underlying form and it is preserved in Shul dialect; but it changes to the vowel [e] in standard Persian.

3, 1, 3, deletion

Table 7- deletion of “t” from “st” sequence between two morphemes or from final cluster

Shul dialect	Standard Persian	Pahlavi	Gloss
dasban	dastband	dastband	cuff
sos	sost	sust	lax
xas	xast	xwāst	want
mas	mast	mast(ōg)	yogurt
dasandaz	dastʔandaz	?	ramp
divis	devist	?	Two hundred
doroskar	dorostkar	ardā,frārōn	upright
bas	bast	bast	shut

The above data shows a phonological alternation between “t ~ Ø”. There are two hypotheses to define the underlying form:

H₁: consonant /t/ is the underlying form and a rule is needed for deletion of this consonant.

H₂: there is no consonant /t/ in underlying structure so a rule is needed to the insertion of /t/.

Based upon phonetic acceptability from two hypotheses that mentioned in alternation, the one is accepted that for underlying representation has phonological logic. There is no reason for insertion of /t/ or another consonant before vowel .The end of word id position of omission not insertion. The rule that insert /t/ after /s/ at the end of word is not common. There are many word that ended in consonant /s/ and no insertion of /t/ is happening, Such as: [nafas] (breath), [toxs] (headstrong), [pas](backside). So the rule is as following:

Rule (5): stop coronal consonant /t/ from consonant cluster /st/ at the end of word or in the morpheme boundary is deleted.

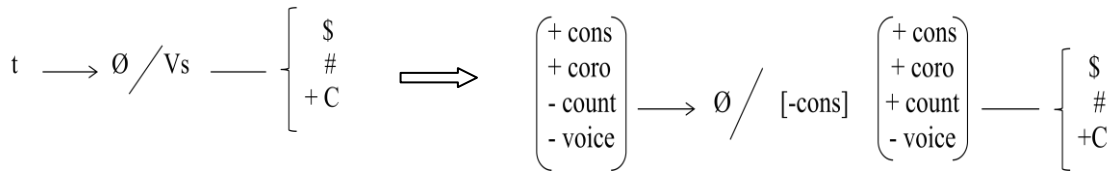


Table 8- deletion of “d”

Shul dialect	Standard Persian	Pahlavi	Gloss
tʃaran	tʃarand	?	jive
camarban	camarband	kamar-band	belt
tʃan	tʃand	čand	several
ʃan	ʃand	gand	stink
bolan	boland	bālisti g ,buland	high
ten	tond	tund,tēz	spicy

We can consider the “d~ Ø” alternation in Shul dialect. There are two possible hypotheses of this alternation, depending on whether the /d/ is underlying or /Ø/ is posited as underlying.

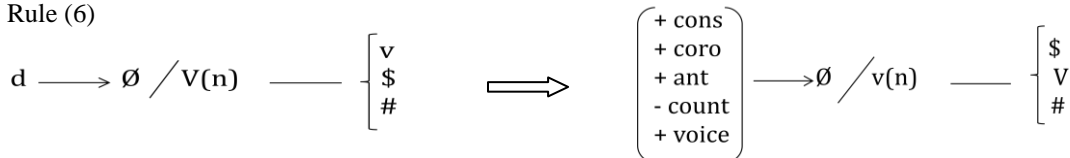
H₁: if /d/ is underlying, a rule is needed to delete it at the end of the word: /d/ → /Ø/ --- #.

H₂: if /Ø/ is underlying, a rule is needed to change /Ø/ to the stop /d/ at the end of the word: /Ø/ → /d/ --- #.

There are facts that motivate the H₁ analysis. The first is that pieces of evidences from many languages show that word-final position is usually the context for deletion rather than insertion. The second reason is that as Haghshenas (1977, p.158) explains, if the combination of sounds in a string causes difficulties of pronunciation, certain sounds may delete in casual speech. Clearly from the articulatory point of view, the pronunciation of the cluster [-nd] poses difficulties of pronunciation. The third reason is that if we consider /Ø/ as underlying it is unclear why it changes to [d] and not to any other sounds. There is no phonological plausibility for the rule that can changes /Ø/ to [d] in the examples and in this dialect there are some words that have /n/ in final position but there is no insertion of /d/. For example: [xin](blood), [dumen](beneath), noxon (nail).

And finally to support the idea of /d/ as underlying, we can say that the process of deletion of /d/ is very common, as Finch (2000) writes /d/ and /t/ are the most frequently elided consonants. With the acceptance of H₁, we can say that with the omission of /d/ from final two consonants, the final syllable is made shorter. This process is seen in many dialects of Persian such as: Sabzevari, Kermani, Mazandarani and Eqlidi.

Rule (6)



3, 2 Fortition

3, 2, 1 compensatory lengthening

Crystal (2008: 91-92) said that: “compensatory lengthening” in phonology, is an effect in which the deletion of one segment is accompanied by an increase in the length of another, usually adjacent to it, thus preserving syllable weight. Typically, a vowel is lengthened when a syllable-final segment is lost, as in old English [gōs] ‘goose’, which comes from Germanic [gans] through the loss of the nasal and the lengthening of the preceding vowel. The phenomenon is of importance in phonological theories which recognize the role of syllabic weight (such as auto segmental phonology).

Table 9- deletion of “h” or “?” and compensatory lengthening

Shul dialect	Standard Persian	Pahlavi	Gloss
tʃa:	tʃah	čāh	shaft
ra:	rah	rāh	way
ma:	mah	māh	moon
ca:	kah	kāh	straw
tura:	rubah	?	fox
qa:t	Gat?	?	rescission
ma:ni	ma?ni	?	meaning
kola:	kolah	kulāf	hat
pa:li	pahlu	pahlu g	side

in Shul dialect fricative glottal/h/ and stop glottal consonants /ʔ/ in the final position of the word, syllable and after the vowel or between words is deleted and in some words the vowel before become long. The symbol for compensatory lengthening is [:]. Compensatory lengthening always occurs in syllables that are heavy in regard to syllable weight. There are alternations between /h/ ~ /∅/ and /ʔ/ ~ /∅/.

H₁: glottal consonant /h/ and /ʔ/ are underlying forms and a rule is needed to delete these consonants after the vowel or end of the syllable.

H₂: glottal consonant /h/ and /ʔ/ are not underlying forms and a rule is needed to insert these consonants after the vowel or end of the syllable.

For some reason H₁ is accepted. In case of its acceptance, it cannot be generalized. End of the syllable and texture after the vowel are position of deletion and usually a deleted consonant are not inserted in this position. Some of the words that mentioned are loan words. So fricative glottal consonant /h/ and stop glottal /ʔ/ consonant are in underlying forms of these words and delete from surface representation in Shul dialect and finally compensatory lengthening happened. By acceptance H₁, the rule is as following:

Rule (7): Rule of compensatory lengthening in moraic theory.

Rule (8): deletion of /h/ or /ʔ/.

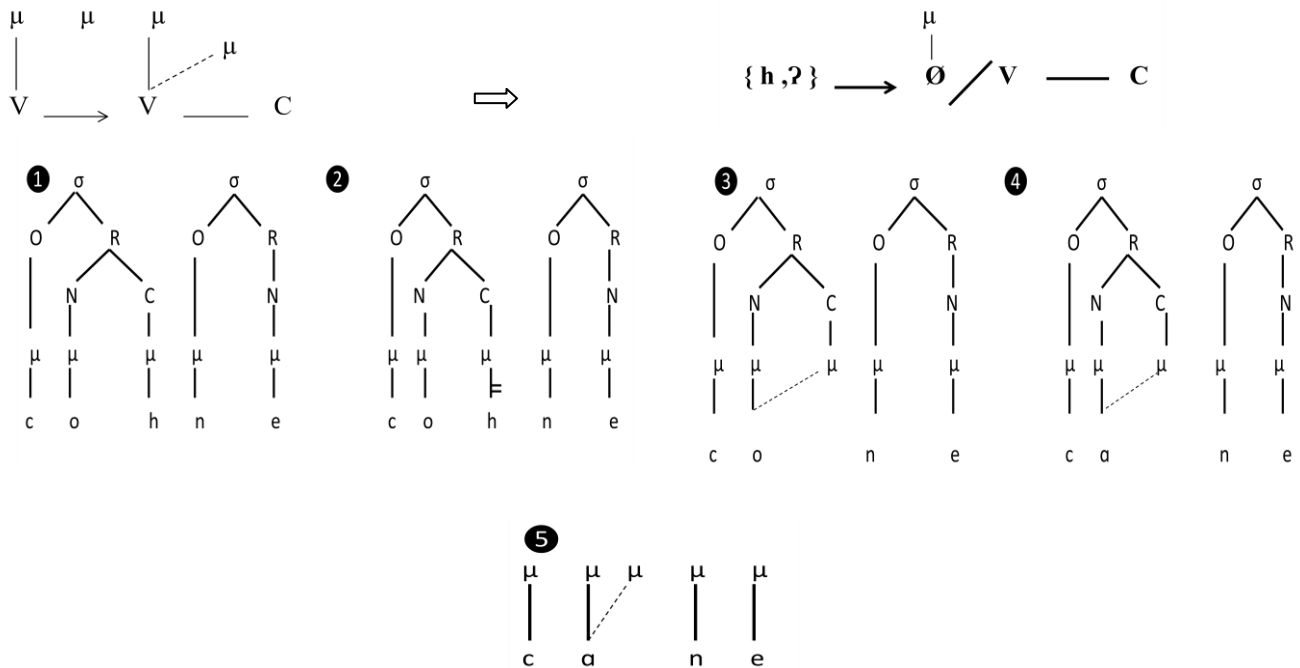


Fig1. Representation of word [cohne] in moraic theory.

Sometimes this process is happening to another consonant. As we can see in table (9) the consonant deleted and instead of that, compensatory lengthening happened.

3, 2, 2 Insertion

The common insertions in Persian and related dialects are the glides [j] and [w] which are inserted between two vowels for hiatus avoidance and ease of articulation. In Shul's dialect, the glides [j] or [w] and sometimes [n] are inserted when a suffix or a connective is added.

Table 10- Insertion of “w” or “j” before suffix “-al”

Shul dialect(sigle)	Shul dialect(plural)	Standard persian	Gloss
merd	mer.dal	mard.ha	man
ne.mec	ne.me.cal	na.mac.ha	salt
ka.hu	ka.hu.wal	ca.hu.ha	lettuce
tʃu	tʃu.wal	tʃub.ha	wood
tʃa.qu	tʃa.qu.wal	tʃa.qu.ha	knife
do.a	do.a.jal	do.a.ha	pray
ha.na	he.ne.jal	ha.na.ha	henna
tʃa:	tʃa:.jal	tʃah.ha	shaft

Table 11- insertion of ‘w’ or ‘j’ when adding suffix ‘-ku¹’

Shul dialect	word+/-ku/	Standard Persian	Gloss
batʃa	betʃejku	batʃtʃe	child
kuza	cuzejku	kuze	pitcher
merd	merdeku	mard	man
ʔasb	ʔasbeku	asb	horse
dʒu:ma	dʒu:mejku	lebas	clothing
tʃaqu	tʃaquku	tʃaGu	knife
kahu	kahuku	kahu	lettuce

H₁: The glides /j/ and /w/ are underlying forms, and a rule is needed to delete them in word final position.

H₂: The glides /j/ and /w/ do not exist in underlying form, and they are inserted between two vowels for hiatus avoidance. There are some reasons in favor of H₂. Since the words that mentioned in tables (10 and 11) ended in the vowel and the suffix begins with vowel too, the glides /j/ or /w/ are inserted between two vowels for hiatus avoidance. These glides are known as meditating consonants.

Sadeghi (1886) writes “meditating consonant” is a consonant used for taking apart two adjacent vowels where the first vowel comes in final position of previous morpheme and the next one comes in initial position of the next morpheme. One can see in the above data, by adding the suffix /-al/ to the word that ending in /u/ and /o/ the glide /w/ is inserted; because both the glide and the vowel in final position of word, share the feature [+round], and by adding the suffix /-al/ to the word that ending in /a/ or /ɑ/ or /e/, the glide /j/ is inserted; because both the glide and the vowel in final position of word, share the feature [-round]. So choosing of either of these two glides between two vowels depends on the characteristics of a final vowel. Also we can see that there are words in the table that ended in consonants, so no insertion happened.

Rule (9)

$$\emptyset \rightarrow \{j, w\} / v _ v \quad \Rightarrow \quad \emptyset \rightarrow \left(\begin{array}{l} +\text{cons} \\ +\text{high} \\ \alpha \text{ back} \end{array} \right) / \left(\begin{array}{l} -\text{cons} \\ \alpha \text{ back} \\ \beta \text{ round} \end{array} \right) _ \left(\begin{array}{l} -\text{cons} \\ -\text{back} \\ -\text{high} \end{array} \right)$$

The data in table (12) show an insertion of [ʔ] in the onset of the words which begin with a vowel. To understand the reason, let’s have a look at the data in the table (12) adapted from Mackenzie’s Pahlavi dictionary (2000):

Table 12- insertion of “ʔe” before “j” in some verbs

Shul dialect	Standard Persian	Pahlavi	Gloss
ʔeʃnoftan	ʃenoftan	āšnu dan	hearing
ʔeʃnaxtan	ʃenaxtan	šnāxtan	recognizing
ʔeʃmardan	ʃomardan	ōšmurdi g	enumerating
ʔeʃkoftan	ʃekoftan	škuftan, wiškuftan	bursting
ʔeʃcassan	ʃecastan	škastan	breaking
ʔosara	setare	sta rag	star
ʔespid	sefid	speēd-da r	white
ʔoʃtor	ʃotor	uštār	camel

Most of the words in the middle era had a consonant cluster in their initial position which has been disappeared by an insertion process between two members of the cluster (like standard Persian) or at the first position of the cluster through the evolution from old and middle to modern era. The existence of a vowel in the initial position leads to the insertion of glottal stop in words initial position. We can mention three steps of change in the words from Pahlavi to standard Persian and the existent forms in Shul dialect: A) The Pahlavi forms of mentioned words had consonant clusters. B) Insertion of the mid vowel between two members of the initial cluster in standard Persian. C) There is an insertion of a vowel before

¹. Note: in case of affix /-ku/, when the word ended in vowel /e/, glide /j/ is inserted and when the word ended in consonant, the vowel /e/ is inserted.

the initial cluster in Shul dialect, and because of the particular characteristic of Persian syllable system we have also an insertion of glottal stop in early initial position. Figure 1 shows the Pattern of anaptyxis and prosthesis in Farsi based on initial consonants features.

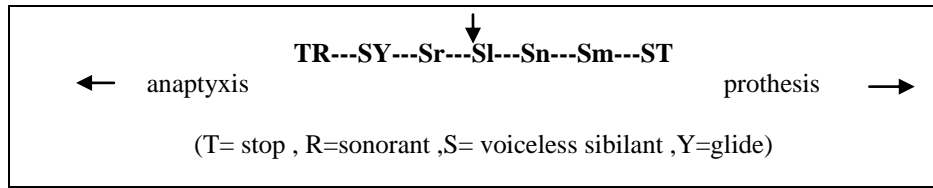


Fig2. Pattern of anaptyxis and prosthesis in Farsi based on initial consonants features.

In order to justify the insertion of glottal stop in early initial position, kambuziya (2006:281) said: “The insertion of glottal stop in initial position of the words which begin with a vowel is because of the particular characteristic of Persian syllable system. All of the Persian syllables have onset in which a consonant element exists. In case a morpheme or a word begins with a vowel in Persian, this empty onset is filled by a glottal stop.” The following derivations are in accordance with the above information:

/#ʃecastan#/	UR
eʃcastan	A- Fortition Rule (insertion of vowel before the initial cluster):
<u>ʔeʃcastan</u>	<u>B- Fortition Rule (insertion of glottal stop)</u>
[ʔʃcastan]	PR

4. CONCLUSION

In this article some active phonological processes in Shul dialect were discussed. Surveying this processes show that in this dialect lenition and deletion are more active than the other processes due to ease of articulation principle. Assimilation in vowels and consonant confirms these results.

All processes that studied were for reaching to acceptable and simpler syllable and word structures in Shul phonotactics, Such as: making simpler consonant cluster of /st/ with deletion of /t/ at the end of the word or syllable, assimilation in vowels and consonant for ease of articulation, insertion of glide to interdiction of vowels.

The data show that the lenition processes tend to occur in postvocalic, intervocalic and final positions. The final position has the high frequency for lenition processes to occur. These result support Kenstowicz’s idea (1994, p.35) which mentions that final position of the word is the typical position for lenition.

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