
Vowel Length in Modern Farsi

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I. Introduction

Abstracting away from length, the modern Farsi¹ surface vowel system consists of three front vowels and three back vowels:

(1)

<i>i</i>	<i>u</i>
<i>e</i>	<i>o</i>
<i>a</i>	<i>a</i>

Difficulties, however, arise in positing an underlying system that takes into account vowel length. The modern Farsi vowels *e*, *o*, and *a* are reflexes of the three Classical Persian short vowels **i*, **u*, and **a* respectively. These historically short vowels have undergone diachronic changes resulting in qualitative differences with respect to the historically long vowels *i*, *u*, and *a*, of which the two former are the result of a merger of Classical long vowels, **i*: and **e*: and **u*: and **o*: respectively, and the latter is a reflex of the Classical long vowel **a*²

While in Classical Persian the underlying opposition of quantity was realised on the surface, differentiating the corresponding qualitatively-identical short and long vowels, in modern Farsi the length opposition is realised only in certain limited environments on the surface. In most environments, *a*, *e*, and *o* match the length of *a*, *i*, and *u*. We therefore cannot *a priori* consider *a*, *e*, and *o* to be underlyingly short. As a result, the term “short”, when used in reference to these modern Farsi vowels, is likely to cause confusion, though for descriptive purposes we have to recognise that *a*, *e*, and *o* behave as a group with respect to their variable length. Therefore, until such a point as their true status has been revealed, I will refer to these vowels as “unstable” following Lazard.³ Conversely, *a*, *i*, and *u*, whose durations remain the same in all environments, I will refer to simply as “stable” vowels (12).

¹ Persian has various dialects, of which the three main representative dialects are: (1) Farsi, spoken in Iran, (2) Dari, spoken in Afghanistan, and (3) Tajik, spoken in Tajikistan. I will be analysing standard Farsi, the socially prestigious dialect spoken in Tehran, specifically, the colloquial Farsi spoken in quotidian life, not the more formal language used in literature and speeches.

² F. Thiesen, *A Manual of Classical Persian Prosody* (Wiesbaden, 1982), pp. 2-3.

³ G. Lazard, *Grammaire du persan contemporain* (Paris, 1957).

In open, non-final, unstressed syllables, the unstable vowels are realised as short, while elsewhere, in closed syllables for example, they are realised as long⁴:

(2)

<i>se.dá</i>	<i>se:f.tár</i>
‘sound’	‘harder’
<i>xo.dá</i>	<i>xo:fk.tár</i>
‘god’	‘dryer’
<i>qa.bá</i>	<i>ga:rm.tár</i>
‘clothes’	‘warmer’

As a result, in open, non-final, unstressed syllables, the stable and unstable vowels contrast in quantity in addition to quality:

(3)

<i>č̣e.dá:r</i>	<i>bí:.dá:d</i>
‘wall’	‘oppression’
<i>f̣o.dá:n</i>	<i>bu:.dá:n</i>
‘to become’	‘to be’
<i>ba.dá:n</i>	<i>ba.dé:</i>
‘body’	‘wine, alcohol’

The stable and unstable vowels also contrast quantitatively in an additional environment on the surface – non-final, open, stressed syllables. The following word pairs illustrate the surface length contrast in this environment:⁵

(4)

<i>hó.sejn</i>	<i>hú:.fang</i>
‘Hosseyn!’	‘Hushang!’
<i>bé-deh</i>	<i>bí:-adab</i>
‘give!’	‘impolite!’
<i>ná-kon</i>	<i>l’á:-maz(h)ab</i>
‘don’t!’	‘infidel!’

To summarise, the three unstable vowels, *a*, *e*, and *o*, are realised as short only in open, non-final syllables. Elsewhere, they are realised as long like the stable vowels, *a*, *i*, and *u*, which, in contrast, always maintain their long length.

Analyses of these data take two opposing approaches. The “quantity only” analysis maintains that the feature distinguishing the stable and unstable vowels in the underlying system is, as in Classical Persian, length. In this analysis, the different qualities of the stable and unstable vowels, as well as the variable durations of the unstable vowels, are derived from this primary distinction of length by rule. The existence of a length distinction on the

⁴ V. S. Sokolova *et al.*, ‘Novye svedenija po fonetike iranskix jazykov [New information on the phonetics of Iranian languages]’, *Trudy Instituta jazykoznanija NN SSR (Moskva)*, 1 (1952), pp. 178–192.

⁵ G. L. Windfuhr, *Persian Grammar: History and State of its Study* (The Hague, 1979), pp. 136–137.

surface, though limited, would seem to validate the “quantity only” analysis to some extent. But since length is only realised limitedly on the surface, other linguists assert the “quality only” analysis, which abandons length as a feature of the underlying system altogether. It instead attempts to unify the two vowel subsets, for the purposes of deriving the different quantities of the unstable and stable vowels, on the basis of qualitative differences. In what follows, I demonstrate that neither analysis is in fact capable of describing the underlying system and the associated phenomena both completely and efficiently. I therefore present an alternate analysis, a synthesis of the two approaches that integrates both quantity and quality in its underlying vowel system.

2. “Quantity only” analysis

The “quantity only” analysis was originally proposed by Krámský⁶, but it has been restated more recently by Windfuhr.⁷ It posits the following underlying vowel system mirroring that of Classical Persian:⁸

$$(5)$$

<i>i</i>	<i>u</i>	<i>i:</i>	<i>u:</i>
<i>a</i>			
	<i>a:</i>		

According to this analysis, the unstable vowels are distinguished from the stable vowels on the basis of a quantitative opposition, even though length is partially neutralised on the surface. From this primary distinction of length, the variable duration and surface vowel qualities of the unstable vowels are derived by rule.

Windfuhr writes the rule realising the variable duration of the unstable vowels as (6a).⁹ I have rewritten the rule autosegmentally in (6b):

(6) “Quantity Only” Analysis Lengthening Rule

$$(a)$$

$$[-\text{length}] \rightarrow [+length] / \left[\begin{array}{c} \text{---} \\ +\text{vocalic} \\ -\text{conson.} \end{array} \right] \left\{ \begin{array}{l} \text{CC} \\ (\text{C})\# \end{array} \right\}$$

(b)

$$\begin{array}{c} \text{X} \\ \downarrow \\ \text{V} \end{array} \rightarrow \begin{array}{c} \text{X} \quad \text{X} \\ \diagdown \quad \diagup \\ \text{V} \end{array} / \left\{ \begin{array}{l} \text{---C}]_{\sigma} \\ \text{---}]_{\sigma} \end{array} \right\}$$

⁶ J. Krámský, ‘A study of phonology in Modern Persian’, *Archiv Orientální*, 11 (1939), pp. 66–83.

⁷ Windfuhr, *Persian Grammar*.

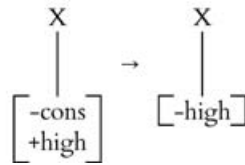
⁸ Krámský, ‘A study of phonology’, pp. 68–69.

⁹ Windfuhr, *Persian Grammar*, p. 136.

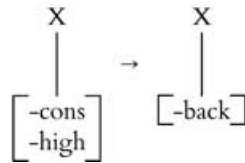
The existence of length in the underlying system conveniently allows us to generalise the process realising the variable duration of the unstable vowels as a group process. As described in rule (6), all short vowels become long in closed syllables and word-finally; elsewhere, they are realised as short.

Complications arise when the “quantity only” analysis must derive the surface qualities of the unstable vowels from the underlying distinction of length. Windfuhr does not write the necessary rules explicitly, though they can be stated as (7) and (8):

(7) “Quantity Only” Analysis Lowering Rule



(8) “Quantity Only” Analysis Fronting Rule



Since *i* and *u* relate to *e* and *o* differently from how *a* relates to *a*, two rules are necessary. *e* and *o* are derived by a lowering rule (7) and *a* by a fronting rule that fills in the [-back] feature (8).¹⁰ We can see that both rules lack conditioning environments and consequently constitute an appeal to universal neutralisation. The language learner, when confronted with such an abstract system, would have to analyse the system in considerable detail before being able to ascertain, if at all, the underlying inventory. Though the “quantity only” analysis is able to generalise unstable vowel lengthening as a group process, its qualitative opacity requires us to reject it.

3. “Quality only” analysis

The “quality only” analysis proposed by Lazard, Nye, Rastorgueva, and Thiesen, among others,¹¹ attempts to eliminate a quantitative opposition completely from the underlying vowel system because of its limited realisation on the surface. Instead, it posits as underlying

¹⁰ [-back] is not an underlying distinctive feature of *a* and *a* in this analysis.

¹¹ Lazard, *Grammaire du persan contemporain*; G. E. Nye, *The phonemes and morphemes of modern Persian: A descriptive study* (Dissertation, University of Michigan, 1955); V. S. Rastorgueva, *A Short Sketch of the Grammar of Persian* (Bloomington, 1964); Thiesen, *A Manual of Classical Persian Prosody*.

the surface qualitative features of the unstable vowels:¹²

(9)

		<i>i</i>	<i>u</i>
<i>e</i>	<i>o</i>		
<i>a</i>			<i>a</i>

While this analysis achieves transparency in the underlying quality of the unstable vowels, it is unable to articulate a clear rationale for the variation in their duration. It is inadequate to the task of creating a formal division between the stable and unstable vowels, as I have done artificially in (9), based solely on vowel quality. This is because the unstable vowels do not form a natural class distinguishable from the stable vowels. For the unstable vowels: 1) *e* and *a* are [–back] while *o* is [+back]; 2) *e* and *o* are [–low] while *a* is [+low]; and 3) *e*, *o*, and *a* share the [–high] feature with the stable vowel *a*. Conversely, for the stable vowels: 1) *u* and *a* are both [+back] while *i* is [–back]; 2) *u* and *i* are [–low] while *a* is [+low]; and 3) *i* and *u* share the [+high] feature while *a* does not. Without a common feature unifying the unstable vowels, the “quality only” analysis cannot generalise the unstable vowel lengthening phenomenon as a group lengthening process. This analysis does not make a maximal generalisation and so must be rejected in favour of one that does.

4. Synthetic analysis

By now it should be evident that length is an essential feature of the modern Farsi vowel system and cannot be eliminated. Such an analysis (“quality only”) is not able to generalise the variable duration of the unstable vowels as a group process. Nor can we completely ignore the difference in quality of the stable and unstable vowels, as such an analysis (“quantity only”) is abstract and opaque to the language learner. I therefore posit an underlying vowel system that synthesises both these analyses and integrates quantity and quality:

(10)

		<i>i:</i>	<i>u:</i>
<i>e</i>	<i>o</i>		
<i>a</i>			<i>a:</i>

The appropriate feature specifications are then:

(11)

	<i>e</i>	<i>o</i>	<i>a</i>	<i>i:</i>	<i>u:</i>	<i>a:</i>
high				+	+	
low			+			+
back		+			+	+

¹² Lazard: “C’est principalement par leur timbre que les voyelles se différencient” (12). Nye: “The contrasting componential features of the six Persian vowel phonemes are different tongue positions and rounding versus not-rounding” (5). Rastorgueva: “The basic differentiation of vowels, however, now consists in their qualitative characteristics” (4). Thiesen: “In Modern Persian a distinction of vowel quality has taken the place of the Classical Persian distinction of vowel quantity” (3).

The synthetic vowel system presented here was proposed by Krámský,¹³ though this analysis was motivated by different concerns. It attempts to reconcile the vowel system previously proposed by Krámský¹⁴ with new acoustic studies. The original (1939) “quantity only” analysis justified the abstractness of its underlying vowel system by the unified derivation of *e* from *i* and *o* from *u* that the parallel structure of these vowel pairs permits. Subsequent acoustic studies by Gaprindashvili and Giunashvili identified acoustic articulations for *e/i* and *o/u* that did not allow their unification for the purposes of the lowering rule (7).¹⁵ Since Krámský could not make any generalisations to justify the abstractness of the “quantity only” analysis, he abandons it for a system identical to that of (10). If acoustic studies had been more accommodating, the author would have surely preferred the more abstract “quantity only” analysis. It is my position in contrast that the “quantity only” analysis is unsuitable because of its abstractness.¹⁶

The proposed vowel system compromises the symmetry of the “quantity only” analysis for the qualitative concreteness of the “quality only” analysis, while maintaining quantity as an underlying feature of the vowel system. I will now show how the synthetic analysis is capable of formalising the variable duration of the short vowels, as well as another phenomenon not considered elsewhere, short vowel quality assimilation.

5. Short vowel quality assimilation

In colloquial Farsi, modulation in the quality of the short vowels is relatively common. The short vowels *e* and *o* are raised, for example, when followed by their corresponding long vowel. This assimilation of height from the following environment is not obligatory but conditioned stylistically. The more formal the social situation, the more frequently the non-raised form is heard. Examples of the *e* ~ *i* alternation are given in (12a) and the *o* ~ *u* alternation in (12b):¹⁷

	(12)		
a.	<i>refi:q</i>	<i>rifi:q</i>	‘companion’
	<i>devi:st</i>	<i>divi:st</i>	‘two hundred’
b.	<i>foru:f</i>	<i>furu:f</i>	‘sale’
	<i>fozu:l</i>	<i>fuzu:l</i>	‘impertinent’
	<i>folu:q</i>	<i>fulu:q</i>	‘crowded’
	<i>xoru:s</i>	<i>xuru:s</i>	‘rooster’

¹³ J. Krámský, ‘Some remarks on the problem of quantity of vowel phonemes in modern Persian’, *Archiv Orientální*, 34 (1966), pp. 215–220.

¹⁴ Krámský, ‘A study of phonology’.

¹⁵ S. Gaprindashvili and J. Giunashvili, *Fonetika persidsogo jazyka* [The phonetics of the Persian language] (Tbilisi, 1954).

¹⁶ According to more recent acoustic studies (M. A. Sanamrad and H. Matsumoto, ‘Characteristics of Persian vowels’, *Journal of the Acoustic Society of Japan*, 6 (1985), pp. 135–136), the articulations of the *e/i* and *o/u* vowel pairs are parallel. Gaprindashvili and Giunashvili’s acoustic study, *Fonetika persidsogo jazyka*, on which Krámský, ‘A study of phonology’ relies, may have been tainted by data from speakers of Tajik Persian (Windfuhr, *Persian Grammar*, p. 134).

¹⁷ Lazard, *Grammaire du persan contemporain*, p. 16.

This same non-obligatory assimilation is observed across morpheme boundaries. For example, the imperative prefix *be-* alternates with *bi-* as follows:

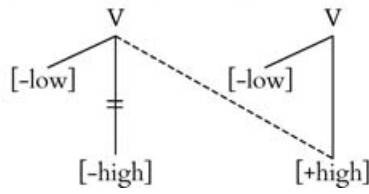
- (13)
- | | | |
|----------------|----------------|---------|
| <i>be-bi:n</i> | <i>bi-bi:n</i> | ‘see!’ |
| <i>be-gi:r</i> | <i>bi-gi:r</i> | ‘take!’ |
| <i>be-fi:n</i> | <i>bi-fi:n</i> | ‘sit!’ |

The imperative prefix *be-* can also be realised as *bo-* before *u* and *o*. Height assimilation is observed in this environment as well, for example in (14):

- (14)
- | | | |
|----------------|----------------|---------|
| <i>bo-gu:</i> | <i>bu-gu:</i> | ‘say!’ |
| <i>bo-bu:s</i> | <i>bu-bu:s</i> | ‘kiss!’ |

Under the analysis proposed here, a single rule assimilating the [+high] feature from the following vowel accounts for both alternations, as shown in (15):¹⁸

(15) Synthetic Analysis Height Alternation Rule



The synthetic analysis is able to conceptualise the height alternations in rule (15) as a single well-motivated assimilatory process subsuming both *e* and *o*. The “quantity only” analysis must, in contrast, conceptualise the alternations as two separate dissimilatory processes. Underlying *i* and *u* lower to *e* and *o* in all environments *except* before their corresponding long vowels, *i:* and *u:* respectively. I write the rules for the “quantity only” analysis in (16); their incoherency as processes is immediately apparent:

(16) “Quantity Only” Analysis Height Alternation Rules

- | | | | | | | |
|----------|---|----------|---|-------|-----|---|
| <i>i</i> | → | <i>e</i> | / | _____ | (C) | $\left\{ \begin{matrix} V \\ a \\ u: \end{matrix} \right\}$ |
| <i>u</i> | → | <i>o</i> | / | _____ | (C) | $\left\{ \begin{matrix} V \\ a \\ i: \end{matrix} \right\}$ |

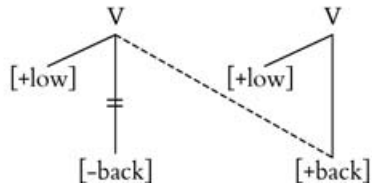
The vowels *a* and *a* undergo an equivalent alternation; *a* assimilates the backness of a following *a:*, e.g. [*baha:*r] ~ [*baha:*r] ‘spring’^{18a}. A rule like (15) above can be

¹⁸ It must be noted that the “quality only” analysis would formalise this process identically to the synthetic analysis, though this is to be expected since qualitatively their underlying vowel systems are the same.

^{18a} Lazard, *Grammaire du persan contemporain*, p. 16.

written for assimilation of the [+back] feature:

(17) Synthetic Analysis Backness Alternation Rule



Again, the “quantity only” analysis would have to conceptualise this alternation as a dissimilatory process; low short vowels front before all vowels except low long vowels:

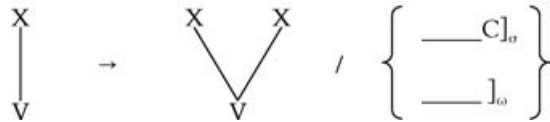
(18) “Quantity Only” Analysis Backness Alternation Rule

$$a \rightarrow a / \text{---} (C) \left\{ \begin{array}{l} V \\ i: \\ u: \end{array} \right\}$$

6. Short vowel quantity variation

The rule lengthening the short vowels everywhere except in non-final, open syllables is easily written as (19):¹⁹

(19) Synthetic Analysis Lengthening Rule



The motivation for why such a rule would exist in Farsi is not as readily apparent, however. The world’s languages tend to preserve a syllable’s timing structure, a tendency exemplified by the phenomenon of compensatory lengthening, in which the deletion of a coda consonant results in concomitant vowel lengthening so that a syllable’s weight is maintained (XVC>XV:). The Farsi lengthening rule (19) reflects no such economy and in fact gives rise to an increase in syllable weight. The solution lies in the process’ phonological nature.

7. Phonological length

Until now, I have been referring to underlying short vowels found in closed, unstressed syllables as unequivocally long on the surface, but phonetic studies indicate that in fact short

¹⁹ The “quantity only” analysis’ conceptualisation of this process is identical to that of the synthetic analysis since they are identical in underlying quantity.

vowels in this environment (20b) are intermediate in length between those in closed, stressed syllables (20a) and those in open, unstressed syllables (20c). To illustrate more tangibly the differences, duration has been calculated in (21) as a percentage of a short vowel's length in a stressed monosyllable.²⁰

(20)

		“long”			“short”		
		<i>a</i>	<i>i</i>	<i>u</i>	<i>a</i>	<i>e</i>	<i>o</i>
a.	C <u>Y</u> C	18.3	20.8	19.8	20.9	19.6	19.1
b.	C <u>V</u> C.C <u>V</u> (C)	17.2	11.4	18.7	12.4	11.7	12.2
c.	C <u>V</u> .C <u>V</u> (C)	20.2	18.0	18.4	10.1	9.5	9.4

(21)

		<i>a</i>	<i>e</i>	<i>o</i>
a.	C <u>Y</u> C	100%	100%	100%
b.	C <u>V</u> C.C <u>V</u> (C)	60%	60%	64%
c.	C <u>V</u> .C <u>V</u> (C)	48%	48%	49%

In closed, unstressed syllables (21b), short vowels are realised with a length only 60–64 per cent of that in stressed monosyllables but longer than that in open, unstressed syllables (21c). On the basis of phonetic evidence alone then, the surface length of short vowels in closed syllables can be analysed as either phonologically long or short. That is to say that the surface length of short vowels in closed syllables does not, on the basis of these acoustic data alone, place them into either the long or short categories.

Certain phonological processes like short vowel quality assimilation and the short vowel exchanges, however, do indicate such a division, as they treat short vowels in closed syllables as long. The term “unstable” refers not only to the variable length of the underlying short vowels, but also to their variable quality. Lazard states that the stable vowels, *a*, *i*, and *u*, “... ne subissent généralement pas l’assimilation vocalique. Sauf cas particuliers, elles ne sont pas sujettes à s’amuir”^{20a}. In contrast, for the unstable vowels, *a*, *e*, and *o*, he finds that “... la durée de ces voyelles en position faible se réduit au point qu’il est difficile de saisir leur timbre... [Elles] subissent facilement des altérations de timbre sous l’influence de l’entourage phonétique”^{20b}. The stable vowels according to Lazard have neither the tendency to undergo vocalic assimilation nor the tendency to weaken in an unstressed environment as the unstable vowels do.

The “altérations de timbre” that Lazard identifies are of two types. The first we saw in section 5 and involves the optional assimilation, by a short vowel, of quality to a following long vowel, e.g. *re.fi:q* ~ *ri.fi:q* ‘companion’, *fo.ru:f* ~ *fu.ru:f* ‘sale’. The second consists of “exchanges” between the short vowels, again optional. The short vowel *a* can be exchanged

²⁰ Sokolova, *et al.*, ‘Novye svedenija po fonetike iranskix jazykov’, p. 191.

^{20a} Lazard, *Grammaire du Persan Contemporain*, p. 12.

^{20b} Lazard, *Ibid.*

for *e* as in (22a), *a* for *o* as in (22b), *e* for *a* as in (22c), or *e* for *o* as in (22d)^{20c}:

(22)

a.	<i>ka.fidan</i>	<i>ke.fidan</i>	‘pull’
	<i>ra.sidan</i>	<i>re.sidan</i>	‘arrive’
	<i>ra.fiq</i>	<i>re.fiq</i>	‘companion’
b.	<i>ba.hune</i>	<i>bo.hune</i>	‘pretext’
	<i>na.mudan</i>	<i>no.mudan</i>	‘show’
c.	<i>ɕe.han</i>	<i>ɕa.han</i>	‘world’
	<i>se.farat</i>	<i>sa.farat</i>	‘travel’
	<i>mide.ham</i>	<i>mida.ham</i>	‘I give’
d.	<i>ne.hoftan</i>	<i>no.hoftan</i>	‘hide’
	<i>ɕe.lo</i>	<i>ɕo.lo</i>	‘in front of’

As the data given in (22) and in section 5 make clear, only short vowels in open syllables undergo alternations of quality. In closed syllables, underlying short vowels do not alternate, patterning with the long vowels. The short vowels in closed syllables therefore form a phonological class with the long vowels, the members of which are characterised by long phonological length and a resistance to vocalic alternation. Conversely, underlying short vowels in open syllables belong to a phonological category categorised by high qualitative variability and short phonological length. The short vowel lengthening rule (19) has, thus, been correctly stated here: short vowels are long in closed or word-final syllables and short elsewhere.

The lengthening rule’s output is not on the surface, however. The rule has been revealed as a truly phonological process, operating between the underlying representation and another level in the phonology. It maps underlyingly short vowels in closed syllables onto the phonological long category for the purposes of other phonological processes like short vowel quality assimilation (15) and (17) and the short vowel exchanges (22).

What does it mean for the short vowel lengthening rule to be a “phonological” process? It means that though “it may have originated in the exigencies of articulatory dynamics . . . when it is incorporated under the control of the cognitive system which is at the heart of Language, these factors no longer limit or prescribe its content. The motivations for subsequent evolution of such a process are quite different, and internal to the system of language”.²¹ Since the lengthening rule is so essentially a phonological process, it is not necessary, nor expected, that it conform to surface constraints of syllable economy.

8. Conclusion

Modern Farsi requires oppositions of both quantity and quality in the underlying vowel system in order to describe the observed distributional facts and alternations adequately. If one posits underlying quality alone, the underlying system is attractively concrete but

^{20c} *Ibid.* pp. 16–17.

²¹ S. R. Anderson, ‘Why Phonology Isn’t “Natural”’, *Linguistic Inquiry*, 12 (1973), p. 514.

a reasonable explanation of surface vowel length becomes impossible. On the other hand, positing a primary underlying opposition of length alone yields an elegant, but abstract vowel system. The synthetic analysis given here compromises symmetry and parsimony in the underlying representation in order to express what appear to be the most pressing linguistically significant generalisations.

We can perhaps speculate about the changes that Farsi has undergone to arrive at the current situation. Classical Persian possessed a vowel system that was both underlyingly and on the surface based on a distinction of length. Short vowels were opposed to qualitatively-identical long vowels. By modern Farsi, surface diachronic forces had changed the quality of the short vowels such that, in order to avoid abstractness in the underlying vowel system, we must reanalyse the qualitative features of the underlying representation to mirror those of the surface.

But the realisation of the underlying opposition of length has changed as well. It is no longer realised completely on the surface. “Short” vowels are only short in non-final, open syllables. Why is the presence of a quantitative opposition in modern Farsi’s underlying vowel system not excessively abstract? Why cannot the vowel system be reanalysed eliminating length from the underlying source? While length distinctions are only realised minimally on the surface, a number of phonological processes depend on the presence of a length contrast in the underlying representation for their realisation, namely short vowel lengthening and short vowel height and backness assimilation.

These latter processes are moreover dependent on the re-categorisation of short vowels in closed syllables as long by the short vowel lengthening rule, whose phonological status has significant consequences for how we view the Farsi vowel system’s past and future development. A phonological process is not restricted by physical constraints and so “[t]he motivations for subsequent evolution of such a process are quite different, and internal to the system of language”.²² I hypothesise that the vowel system of modern Farsi is a transition state between Classical Persian’s system, which possessed a distinction of quantity alone, and the system of a future Farsi that will have eliminated quantity from its surface and underlying representations and will only distinguish qualitative differences among the vowels. Thus, at some future stage in the language, internal forces that have been decreasing the surface realisation of length will have gone to completion. It will then be necessary to reanalyse Farsi’s vowel system as possessing underlying quality alone.

²² Anderson, *Ibid.*