

The Maximally Unspecified Vowel In Farsi

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A significant body of L2 acquisition research has centered on repair strategies L2 learners use to deal with syllable structures in the TL that are not present in their NL. One of these strategies is the use of epenthetic vowels to break up illegal consonant clusters. In this paper, I will attempt to demonstrate that for speakers of Farsi, the choice of the epenthetic vowel is not random but is, in fact, predictable from the NL. Specifically, I will show that these speakers insert an empty V slot, the features of which are filled in by NL redundancy rules.

The following analysis makes use of the theoretical approach to underspecification provided by Archangeli (1988) and Pulleyblank (1988) by which only idiosyncratic features are specified and predictable information is provided by rule. It is within this framework that asymmetrical behavior can be fruitfully examined to provide insight into the grammar. For the purpose of developing a tentative hypothesis based on L2 data, I will adopt the position taken by Broselow (1987), Weinberger (in press) and others that L2 acquisition information can also open a window onto the grammar of the NL.

L2 Data¹

Karimi (1987) provides the following vowel insertion data from her study of English initial consonant clusters produced by Farsi speakers:

1a)	proved progressive drink Fred three	p[u]roved p[o]rogressive d[i]rink F[e]red th[i]ree
1b)	proud plastic statistic	p[e]roud p[e]lastic [e]statistic
1c)	street spring	[e]st[i]reet [e]sp[i]ring

From these data, one can assert that Farsi speakers break up illegal initial consonant clusters by the insertion of a vowel between the two consonants. If the cluster consists of [s] plus a stop, the cluster is broken up by the insertion of a vowel to the left of the [s].

The data yield additional information relevant to this discussion. In the examples in 1a and the second inserted V slot in 1c, there is evidence of vowel harmony. One hypothesis to be derived from this is that Farsi has a productive rule of vowel assimilation which has been transferred from the NL to supply the epenthetic vowel. An alternative assumption is that these speakers have developed an interlanguage rule of vowel harmony independent of any native language rules. Having postulated that there is vowel harmony at work, a further implication can be made that this assimilation process is blocked in some way by the st/sp clusters. As a result of this blockage, Farsi redundancy rules are free to fill in the empty V slot.

From this we can hypothesize that [e] is the default vowel in Farsi.² To explore this hypothesis further, an examination of the NL is necessary.

NL Data

The approach to underspecification suggested by Archangeli provides one means of explaining why a segment behaves asymmetrically in one language but not in another.³ Following along these lines, Pulleyblank utilizes a number of asymmetry arguments to demonstrate that /i/ is the completely unspecified vowel in Yoruba. Farsi has six vowels: [a], [æ], [e], [i], [o], [u] (Lazard, 1992).⁴ Of these, [e] is typically the vowel that participates in asymmetrical behavior as the following data will show.

Deletion:

Lazard provides evidence that in colloquial Farsi⁵ [e] is deleted in the second of two open syllables in a word of three or more syllables:

2a)	minevisam ---> minvisam	I write
	benevis ---> benvis	write (imp)
	motesakker-am ---> motsakker-am	I thank you
	midaham ---> midaham	I give
	manzel + eman ---> manzel-mun	our residence
	pesar + esân ---> pesar-sun	our son

The same rule is evident in loan words such as:

2b)	telefun ---> telfun
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Insertion:

In addition to deletion, insertion phenomena provide additional evidence of the asymmetrical behavior of segments. Karimi states that Farsi has no rule of epenthesis. Conversely, Lazard provides evidence that Farsi speakers insert a vowel [e] between two consonants when they are preceded by a long vowel (â, i, u):

3a)	âftâb --->	âfetâb	sun
	kârgar --->	kâregar	laborer
	ruzgâr --->	ruzegâr	eternal
	afkandan --->	afkandan	to throw

- 3b) This rule can be stated as: $\emptyset \rightarrow V / VVC_C$
 -low
 -hi
 -bk

Loan Phonology

Loan phonology is also a fruitful source of data for identifying default vowels (Pulleyblank, Weinberger). It has already been stated that Farsi does not permit initial consonant clusters. Both Kirimi and Lazard show that [e] is the vowel used to repair unacceptable consonant clusters in loan words:

4)	(Karimi)		(Lazard)	
	kelâs	class	pelâtin	platinum
	estatistic	statistic	Ferânse/Farânse	France
	eski	ski	beronz/boronz	bronze
			eskelet	skeleton
			esport	sport

It should be noted here that Lazard makes a specific note (p 24ff) of the fact that the inserted [e] may change under the influence of the following vowel as in Farânse and boronz. It will be recalled that a similar process is visible in the vowel epenthesis strategies of our Farsi speakers.

The preceding examples have demonstrated the [e] exhibits asymmetrical behavior in deletion and insertion phenomena and in loan phonology. Having adopted the position that such behavior is a diagnostic for lack of underlying features, it is now possible to conclude the [e] is the underlying unspecified vowel in Farsi. From this, the following underspecified matrix can be constructed:

5) Underspecified Matrix for [e] in Farsi

	a	æ	e	i	o	u	Redundancy rules:
high				+		+	[] -> [-hi]
low	+	+					[] -> [-lo]
back	+				+	+	[] -> [-bk]

The rule in 3b) can now be restated more simply as:

- 6) $\emptyset \rightarrow V / VVC_C$

Vowel Assimilation

Examples of vowel harmony were exhibited in both the L2 data and in loan phonology. A further search of Farsi shows that the short vowels [æ], [e], and [o] are regularly subject to assimilation to the following vowel when they are in an open syllable position. Some examples follow:

7a)	[jelow] ⁶	[jolow]	before
	[devist]	[divist]	two hundred
	[forus]	[furus]	sale

The rule can be formulated as in 7b):

7b)	cvcv...
	o o root node

It should be noted that with *benevis* --> *benvis* (2a above), vowel deletion is ordered before vowel harmony.

These data provide convincing evidence that the vowel harmony processes exhibited by L2 learners are, indeed, an example of direct transfer from Farsi. The conclusion that these speakers have inserted an empty V slot to break up the offending clusters is also supported by this information.

CONCLUSION

At the beginning of this paper, I proposed that the strategy used by Farsi speakers to address initial consonant clusters in English is the insertion of an empty V slot, the features of which are filled in by a rule. An examination of the vowels used by these speakers led to the hypothesis that [e] is the default vowel in Farsi. Examples of asymmetry were then found in deletion, insertion, and loan phenomena in the NL to support this hypothesis. The L2 data also clearly showed evidence of the transfer of a productive rule of vowel assimilation in Farsi. The question of whether or not the behavior of [s] + stop clusters resisting intercluster insertion and blocking vowel assimilation are also examples of language specific transfer, though tantalizing, is outside the scope of this paper and awaits further research.⁷

Finally, this paper utilized L2 data to develop a hypothesis about the NL. Confirmation of this hypothesis further supports the conclusions of Broselow, Weinberger, and others that L2 data, in and of itself, provide a useful diagnostic for uncovering NL information.

Notes

1. The data were provided by four speakers, all of whom had three to six years of English before coming to the United States, and all had lived more than seven years here. The data were taken from reading and discussing a passage from a textbook and a word list.
2. It is unclear from these data whether insertion of [e] in *plastic* and *proud* is also the result of a block to assimilation, or an assimilation rule specific to low vowels. In either case, it would support the present hypothesis.
3. See Weinberger (in press) for a useful comparison of the behavior of epenthetic vowels in Spanish and Kannada. See also Archangeli for a concise discussion of the Asymmetry Effect and Radical Underspecification.
4. [a] = â and [œ] = a in Lazard's transcription.
5. The term *colloquial* is used here to distinguish spoken Farsi from the literary

language, hereafter referred to as *classical* Farsi.

6. Lazard uses classical Farsi forms against which to compare colloquial Farsi.

7. Karimi offers several possible explanations for the erratic behavior of the [s]C clusters. Although no evidence of NL transfer was found, Karimi suggests that further research is necessary. Evidence in the NL that these clusters are treated as linked in some way might be worth exploring.

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