

Vowel epenthesis in Persian and the Coda Condition

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A recurring discussion in Optimality Theory concerns the universality of constraints: are they emergent or part of UG? Beckman (2004) argues that the Coda Condition (Itô 1988; henceforth C-Cond) is non-existent as an OT constraint. The C-Cond could easily be argued to be emergent, as a by-product of perceptual/articulatory challenges, such as lack of acoustic cues due to the absence of a following vowel. In this paper I present experimental data from Farsi that suggest that the C-Cond is a universal, violable constraint. The Farsi epenthesis pattern can be explained by an analysis relying on the C-Cond. The condition doesn't play any role in the language elsewhere though.

Farsi avoids complex syllable onsets by vowel epenthesis, as many other languages do (see, e.g., Fleischhacker 2002, Shademan 2002 on Farsi; Itô 1989, Gouskova 2002). In the data presented in the literature, the epenthetic vowel precedes the cluster if it starts with /s/ and separates the consonants in all other clusters (1a vs. 1b). The same strategy is attested in Farsi speakers of English as L2 (Boudaoud & Cardoso 2009).

Gouskova's (2002) Optimality Theory analysis of similar patterns attributes the split to the Syllable Contact Law (SCL; informally, "sonority should fall or at least not rise from one syllable to the next"; Hooper 1976, Vennemann 1988). This analysis is problematic since it doesn't explain prothesis in cases where /s/ is followed by a more sonorous segment, as in the Farsi realizations of words such as *snack* and *slang* (1a). In [ʔesnæk] sonority rises from the 1st to the 2nd syllable, which violates the SCL. Fleischhacker (2002) proposes a series of perceptually grounded positional constraints against epenthesis of the type DEP-V/X_Y to account for asymmetric epenthesis patterns in complex onsets. With such constraints the pattern can be analysed by stipulating the appropriate DEP constraints.

In this paper, I present the results of a nonce-word production experiment with 9 native speakers that tests rising and falling sonority clusters. While some speakers display prothesis only for /sC/ clusters, others prefer prothesis as well for clusters in which the first segment is a nasal homorganic with the following consonant and yet other subjects use prothesis with all nasal-initial clusters or all sonorant-initial clusters (see 2). This split pattern resembles surprisingly the typological variation in coda conditions and is thus attributed to an interaction of the constraint against string-internal insertion, CONTIGUITY, with constraints demanding the licensing of features by onsets (short: CODA COND), which allow only a restricted set of consonants in the syllable coda. Italian, for example, tolerates /s/, sonorants and the initial half of geminates in the coda, while other languages tolerate only sonorants or only nasals (Itô 1988, Blevins 1995, Zec 1995, Piggott 1999). The Farsi CODA COND varies between the Italian one, banning stops and any place of articulation (PoA) that is not shared with a following onset and the patterns found in Ojibwa and other languages, tolerating coronal fricatives and sonorants.

The effect of this constraint in Farsi is surprising, since the language allows all sorts of consonants in coda position, see (3) and (4). The analysis is illustrated in the tableaux in (5) and (6). The initial consonant in (5) does not violate CODA COND when brought into coda position. CONTIGUITY decides for prothesis. The initial consonant in (6) violates CODA COND if in coda position, because it has a marked PoA. Thus, anaptyxis is preferred, in violation of CONTIGUITY.

In summary, prothesis is the default strategy to avoid complex onsets, while anaptyxis is triggered by the coda condition. Since the coda condition (or any specific onset faithfulness) otherwise doesn't play a role in Farsi phonotactics it has to be concluded that the Coda Condition is present in the grammar of Farsi even though it can't have been learned from primary linguistic data in first language acquisition.

(1) Onset cluster avoidance in Farsi

a. *Prothesis*

ʔestandard	'standard'	ʔesnæk	'snack'
ʔeski	'ski'	ʔeslæŋg	'slang'

b. *Anaptyxis*

pelastik	'plastic'	terafik	'traffic'
kelas	'class'	felæf	'flash'
berezil	'Brazil'	firizer	'freezer'

(2) Persian implicational prothesis preference hierarchy

VS.C > VM.P > VN_x.C_y > VL.C > VR.C

(3) Farsi codas

a. tʃæp	'left' (hand)	b. saf	'smooth, soft'	c. fekæm	'belly'
tʃɑq	'fat'	mix	'nail'	pær	'feather'
dud	'smoke'	tiz	'sharp'	bal	'wing'
d. poʃt	'back'	e. qænd	'cube'	f. ʃæxs	'person'
xoʃk	'dry'	sorx	'red'	ʔæbr̥	'cloud'
pust	'bark, skin'	qælb	'heart'	ʔesm	'name'

(4) Word-internal codas

pæ.ræn.de	'bird'	ʔeq.te.sad	'economics'	pæ.vos.gær.dæn	'to fly'
ʃe.kof.dæn	'split'	tox.me.morq	'egg'	mæd.rese	'school'

(5)	/snæk/	*CPLX _{ONS}	ONS	MAX	DEP-V	CODACOND	CONTIGUITY	DEP-C
a.	[snæk]	*!				*		
b.	[næk]			*!		*		
c.	[senæk]				*	*	*!	
d.	[es.næk]		*!		*	*		
e.	[ʔes.næk]				*	*		*
(6)	/flæʃ/							
c'.	[fe.læʃ]				*	*	*	
e'.	[ʔef.læʃ]				*	**!		

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