

Epenthesis in Egyptian and Iraqi Arabic: An Output-Output Correspondence Analysis

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Egyptian and Iraqi Arabic both prohibit clusters of three consonants. Both repair this illicit structure with an epenthetic vowel, but the epenthesis site differs between the two varieties (Broselow, 1980; Farwaneh, 1995; Kiparsky, 2003; among others). Crucially, when CCC clusters arise from verbal affixation, each dialect preserves the prosodic shape of its respective base verb. Therefore, I propose an Output-Output (OO) Paradigm Correspondence analysis that repairs CCC clusters by way of verbal paradigm uniformity (Benua, 1997; McCarthy, 2005). Previous analyses of differences in epenthesis site rely on directionality and syllabification, considerations that account for the data only indirectly, and that are not otherwise motivated.

(1) *said* + 1S + *to her* → *I told her*

Egyptian: /ʔul + t + la/ → [ʔultila]

Iraqi: /gil + t + la/ → [gilitla]

The data in (1) illustrate the difference in epenthesis site between Egyptian and Iraqi Arabic. Itô (1989) and Farwaneh (1995) analyze this phenomenon as the result of directional syllabification, wherein each language syllabifies a given word from one word edge to the other, epenthesizing a vowel along the way when necessary in order to create licit syllables. Rose (2000) also uses syllable structure to analyze the data in (1), claiming that the difference in epenthesis site derives from each variety's preference, formulated as a constraint in an Optimality Theory (OT) framework, for syllables to be aligned to one edge or the other of the prosodic word.

By calling on directionality and syllabification, the above analyses predict epenthesis site indirectly, without making specific reference to the markedness violation (*CCC) and its repair. In addition, directional epenthesis has been shown to make incorrect predictions about repairing illicit word-initial consonant clusters in Iraqi Arabic (Broselow, 1992). Furthermore, under the directional syllabification analysis, speakers must syllabify all words in the given direction, not knowing at the outset whether they will encounter an illicit CCC structure; in the many cases in which they do not, the syllabification process is superfluous. A more direct approach is in keeping with that in Steriade (1999), which argues that segmental analyses are to be preferred over syllable-based analyses in general. The OO-correspondence analysis proposed below accounts for the difference in epenthesis site without indirectly relying on directional syllabification, but instead by making explicit reference to the illicit structure and its segmental repair.

An OO-correspondence analysis, as proposed in Benua (1997) and McCarthy (2005), evaluates paradigms of morphologically related words in an OT framework. Relevant here are the markedness and faithfulness constraints of the language, as well as a third type of constraint, which favors phonological faithfulness of a derived form to its morphological base. Paradigm members are evaluated together, with *a.* and *a.'*, for example, forming one paradigm candidate.

(2) Egyptian Arabic: BD-CONT, *CCC » IO-DEP(V)

/ʔul + t/	BD-CONT	*CCC	IO-DEP(V)	»	/ʔul + t + la/	BD-CONT	*CCC	IO-DEP(V)
a. ʔul-t					a'. ʔul-t-i-la			*
b. ʔul-t					b'. ʔul-i-t-la	*!W		*~
c. ʔul-i-t			*!W		c'. ʔul-t-i-la	*W		*~
d. ʔul-i-t			*!W		d'. ʔul-i-t-la			*~

(3) Iraqi Arabic: BD-CONT, *CC#, *CCC » IO-DEP(V)

/gil + t/	BD-CONT	*CC#	*CCC	IO-DEP (V)	»	/gil + t + la/	BD-CONT	*CC#	*CCC	IO-DEP (V)
☞ a. gil-i-t				*		☞ a'. gil-i-t-la				*
b. gil-i-t				*		b'. gil-t-i-la	*!W			*~
c. gil-t		*!W		L		c'. gil-i-t-la	*W			*~
d. gil-t		*!W		L		d'. gil-t-i-la				*~

The forms in (2) and (3) are representative of Arabic verbal affixation; most object affixes have the CV shape and attach to a C- or CC-final verb, depending on the variety. Militating for the faithfulness between the base and its derivative in both varieties is the OO-faithfulness constraint, BD-Contiguity. The most harmonic candidate in both cases is paradigm a./a.', the paradigm in which both forms satisfy the highest-ranked phonotactic constraints of the language, and the derived form has the same contiguous segments as its base. Given the base forms [ʔult] and [gilit], respectively, the OO-correspondence constraint correctly predicts the epenthesis site in both varieties of Arabic without reference to syllabification, directionality, or gradient alignment, but instead by responding only to the segmental constraints of the variety in question. Therefore, an OO-correspondence analysis avoids the indirect approach of directional syllabification relied upon by previous analyses, taking advantage of morphologically related forms in both Egyptian and Iraqi Arabic to more directly account for the attested difference in epenthesis site.

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