

Contrast Preservation in dialects of North Levantine Arabic

This paper examines data drawn from two regional dialects of Levantine Arabic (Tripoli, and Old-City Tripoli) that show evidence of active contrast preservation. Contrast Preservation Theory (PCT, Lubowicz 2009) postulates that preservation of contrast exists as an independent principle in the grammar. The theory represents contrast preservation as a set of rankable constraints over candidate scenarios (Lubowicz 2003), rather than the result of the interaction between standard Optimality Theory (OT) constraints over individual candidate outputs (Prince & Smolensky 1993). Scenarios (Flemming 1995), are candidate sets of input-output mappings, where the evaluation of a scenario takes place not only by comparing each output to its input, but also comparing outputs to each other, and inputs to each other, and evaluating the sets of mappings based on the overall optimality, rather than in isolation.

One of the strengths of PCT is its ability to account for opaque processes (McCarthy 1999, *inter alia*), which standard OT cannot capture on its own. This paper provides two sets of such data.

The first set of data is a paradigmatic chain shift of the form [A→B, B→C] in the Old-City Tripoli dialect. Specifically, words of underlying form CVCC undergo epenthesis of /a/, becoming CVCaC (1a), and words of underlying form CVCaC become CVCɔC, where the underlying /a/ acquires a [+back] feature, becoming /ɔ/ (1b).

In the proposed analysis, a markedness constraint (no complex coda: *CC[coda]), ranking higher than the faithfulness constraint 'no epenthesis' (DEP) causes the vowel epenthesis, resulting in an impending ambiguity between words whose underlying form is CVCC and those whose underlying form is CVCaC. However, crucially, a high ranking Contrast Preservation constraint (PC_v: Lexical items contrasting in vowel quality in the input must contrast in vowel quality in the output, Lubowicz 2003) that outranks the faithfulness constraint, IDENT-IO(F) (preserve quality of segments in the output, McCarthy & Prince 1995) causes the /a/→/ɔ/ shift, thus preserving the contrast. Why this change in particular occurs is further discussed in the paper. The core of the analysis is summarized in (2).

Alternatives using standard OT are evaluated in comparison with the PCT alternative. Crucially, the former all fail to capture a key fact: When all else is equal, the same words that undergo the /a/→/ɔ/ shift when bare (and hence ambiguous), do not do so when a disambiguating verbal suffix is added (1c, 1d). Arguments that the addition of suffixes causes the syllable containing an underlying /a/ to be in a more prominent position by changing the topology of the word such that /a/ would be in a stressed syllable, do not hold, as the addition of yet more suffixation changes its position relative to the word yet again, and the /a/ still does not change to /ɔ/ (1d).

| (1) Data | INPUT | OUTPUT | GLOSS | INPUT | OUTPUT | GLOSS | |
|----------|-------|--------------------|-------|----------|--------------|-------------|-------------------|
| a. | ʔakl | —Epenthesis→ | ʔakal | 'food' | c. ʔakalu | → ʔakalu | 'they ate' |
| b. | ʔakal | —PC _v → | ʔakɔl | 'he ate' | d. ʔakalulna | → ʔakalulna | 'they ate for us' |

| (2) Tableau | Scenarios | Mappings | PC _v | IDENT-IO(F) |
|-----------------------|-----------|-------------------------------|-----------------|-------------|
| Contrast neutralizing | | ʔakl → ʔakal ʔakal → ʔakal | *! | |
| ☞ Contrast preserving | | ʔakl → ʔakal ʔakal → ʔakɔl | | * |

The second data set favoring a PCT analysis is the past tense verbal paradigm for form-I verbs in the Tripoli dialect (e.g. 3), where a chain shift of type A→B→C, B→D takes place.

| (3) Data | INPUT | OUTPUT | GLOSS | |
|----------|-------------------------|--------------------------------------|--|-------------------|
| a. | ɖ ^h a.rabt | —Epenthesis→ ɖ ^h a.ra.bət | —FtBin→ ɖ ^h ra.bət | 'I hit'/'you hit' |
| b. | ɖ ^h a.ra.bət | ɖ ^h a.ra.bət | —FtBin→ ☞ ɖ ^h ar.bət | 'She hit' |
| | | | NOT * ɖ ^h ra.bət (neutralizes contrast) | |

The same high ranking "no complex coda" constraint argued for in the Old-City Tripoli dialect shows up in the Tripoli dialect causing the epenthesis of /ə/ in the first person singular conjugation of form-I verbs (CV.CVCC → CV.CV.CəC). In words with epenthetic /ə/, like (3a), the high ranking FtBin constraint (A foot must have two syllables/moras; McCarthy & Prince 1986; Prince & Smolensky 1993) results in the deletion of the vowel in the first syllable, rendering the word disyllabic (CV₁.CV₂.CəC → CCV₂.CəC). Words with underlying /ə/, however, like (3b), do not undergo the same deletion, and instead delete the second vowel (CV₁.CV₂.CəC → CV₁C.CəC), resyllabifying into a disyllabic foot. An independently motivated ranking of *Coda > *CC[onset] tells us that the output in (3a) is preferred over that of (3b). However, Tokenized Markedness (Lubowicz 2003) is used to explain why it is the epenthetic words that show the less marked deletion: the conjugation of the form /Darabt/ is used for both first person and second person singular masculine, whereas those like (3b) are for third person singular feminine only (i.e. half as many occurrences in the lexicon).

In conclusion, the patterns under study demonstrate evidence of phonological patterns that are driven by the need to preserve lexical contrasts. The patterns are formally problematic for standard OT, whereas augmenting the framework with PCT allows for a straightforward account.