

Connection Between Lexical Processing and Phonological Regularity: A Comparison Between English and Turkish

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1. Regular and Exceptional Phonology

Phonological rules change pronunciation of adjacent sounds based on language-specific constraints

Typically apply consistently to same types of units

EXCEPTION: Rules applied across morpheme boundaries vary

(1) <u>English Stress Shift</u>: Word prominence shifts rightward when suffixes are added

a. rigid → rigid-ity regular application ©

b. rigid → rigid-ness no application ⊗

(1) <u>Turkish Vowel Harmony</u>: Suffix vowels match backness features of stem vowels

a. gøl + lar → [gøl-ler] 'lake-PL' regular application ©

b. mest + ane → [mest-ane] 'drunken-ly' no application ⊗

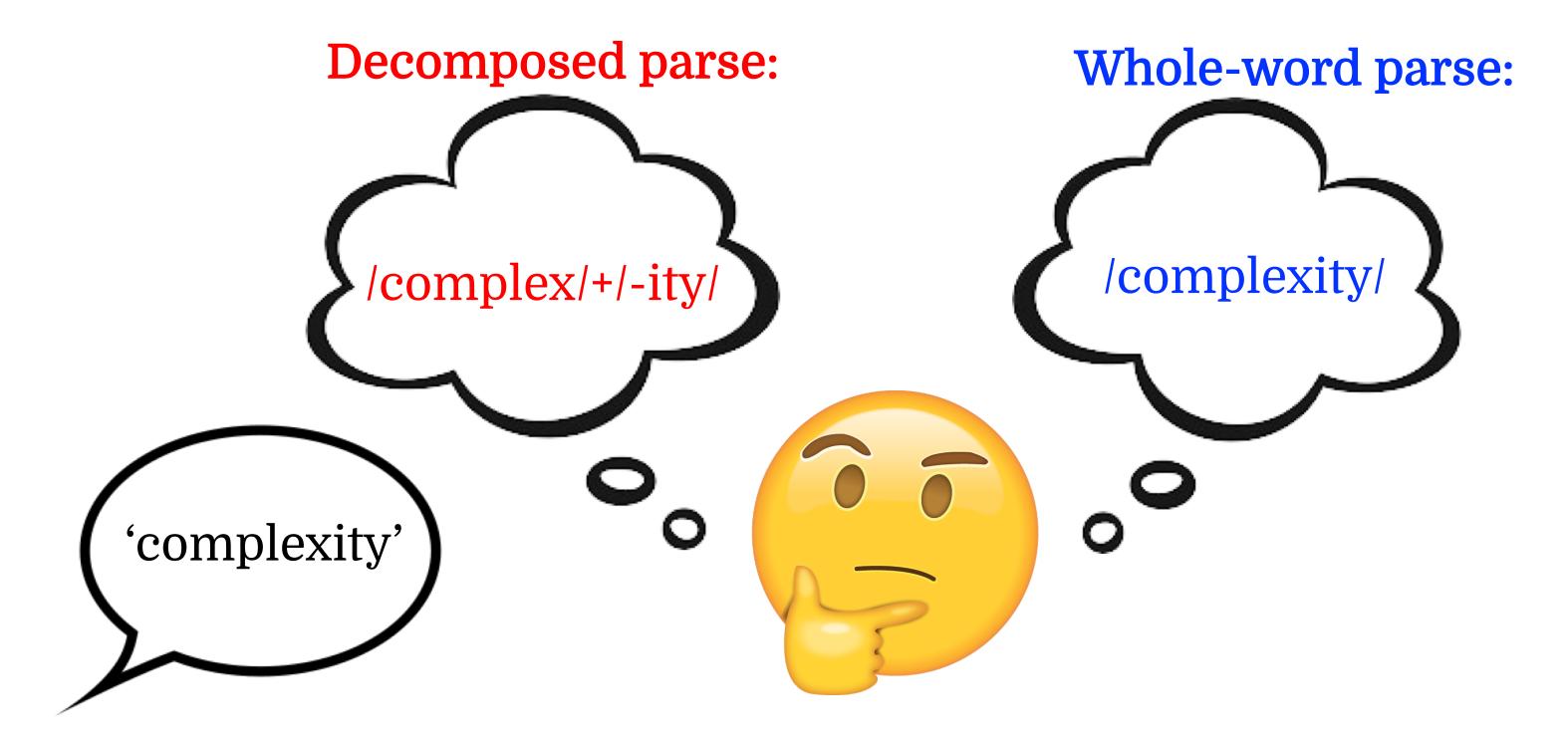
Previous accounts derive correct surface forms, but rely on predetermined *a priori* categorization of affixes (Chomsky and Halle, 1968; Kiparsky, 1982)

Main question: Can we predict when phonological processes apply across morphological boundaries without appealing to pre-determined categories?

2. Interaction with Decomposability

Morphological productivity studies show morphological decomposition connected to morphophonological behavior (Hay, 2001; Hay and Baayen 2002; 2003)

Words with multiple subparts can be recognized as composite parts (decomposed) or whole word form (parsed whole)



Recent studies show more decomposable affixes are less likely to undergo regular phonological rules (Dabouis, 2019; Zuraw et al., 2021)

Can decomposition also predict varied phonological behavior in (1) English stress shift and (2) Turkish vowel harmony?

Hypothesis: Phonological exceptionality and morphological decomposition are linked

Affixes which do not follow expected phonological rules should be decomposed more often

3. Corpus Analyses

Used indicators of decomposition to compare between regular and exceptional affixes

Frequency variables indicate predicted decomposability

English: relative frequency \rightarrow LN (f(base) / f(whole word))

Turkish: affix frequency \rightarrow LN (f(suffix))

GOAL: Test whether exceptional suffixes have higher decomposition rates than regular suffixes

PREDICTIONS:

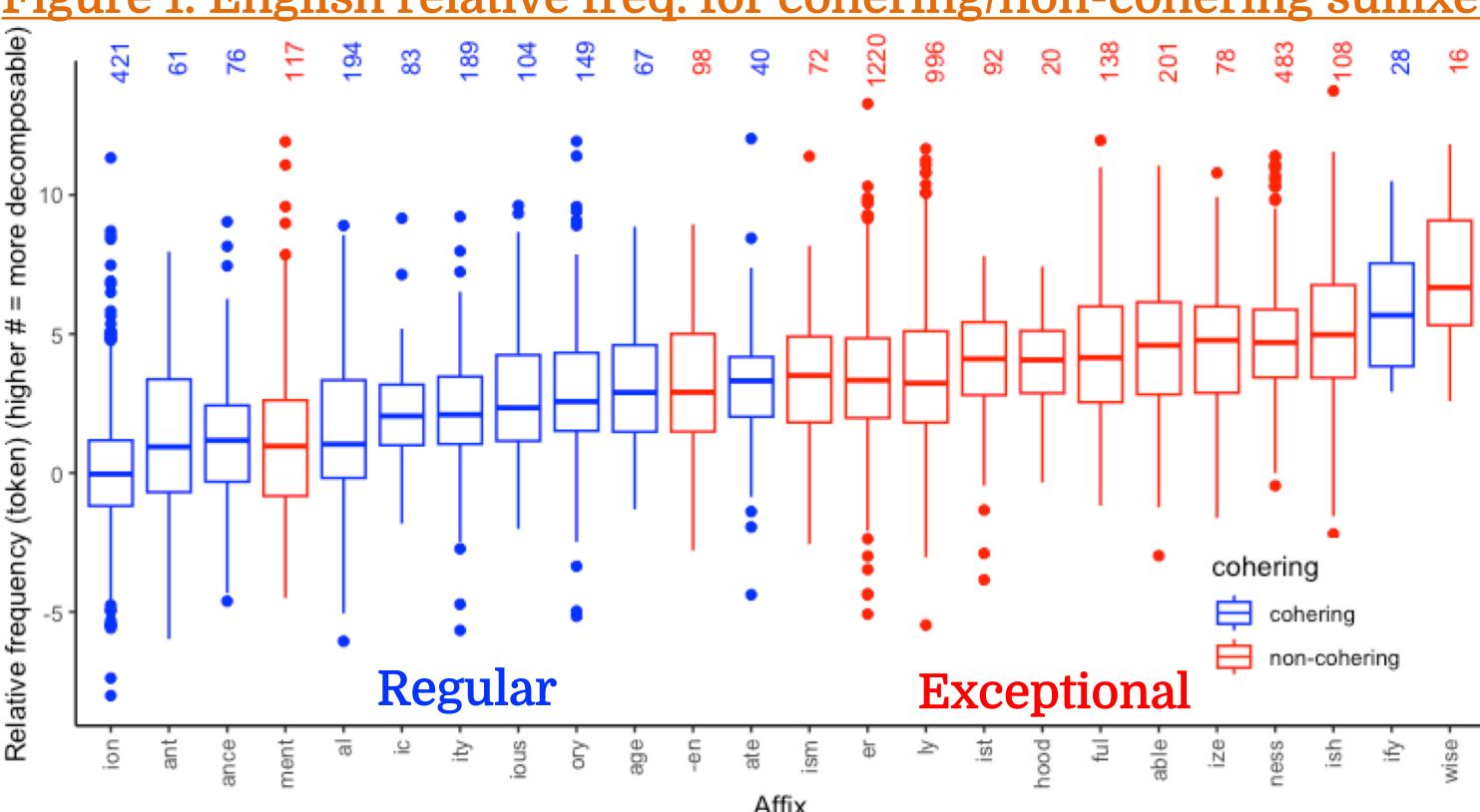
Exceptional suffix = More decomposable

Regular suffix = Less decomposable

4. Results and Conclusions

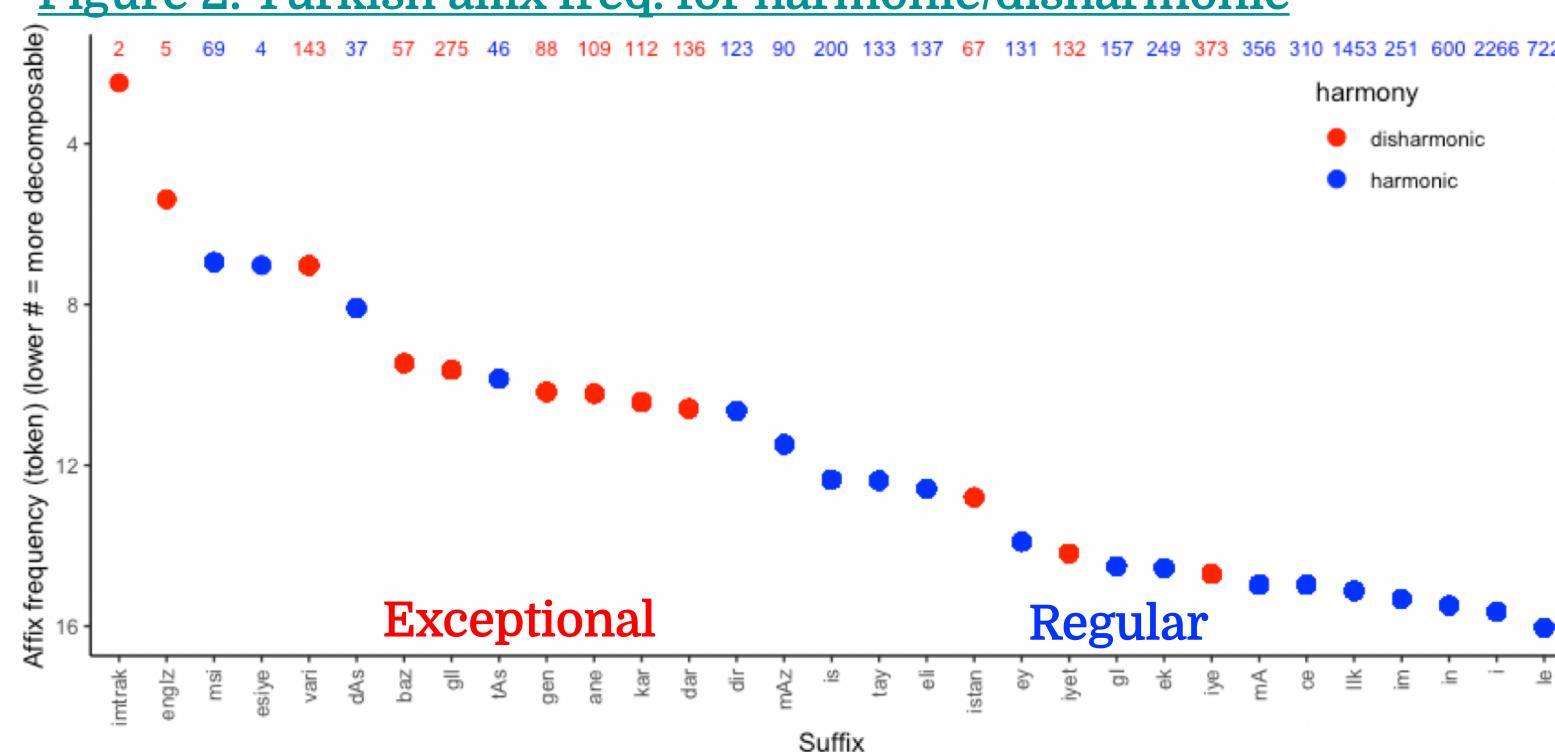
Highly decomposable suffixes are significantly more likely to be exceptional (p = 0.006)

Figure 1: English relative freq. for cohering/non-cohering suffixes



Highly decomposable suffixes more likely to be exceptional with marginal significance (p = 0.06)

Figure 2: Turkish affix freq. for harmonic/disharmonic



Takeaways: Factors predicting decomposition also predict exceptionality in both English and Turkish Suggests connection between way complex words are processed in lexicon and their phonological behavior

Acknowledgements