



Lexical access and its relevance to phonological exceptions in Turkish vowel harmony

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1. Regular and Exceptional Phonology

Phonological rules typically apply consistently to the same types of units

EXCEPTION: Rules applied across morpheme boundaries vary

(1) Turkish Vowel Harmony: Suffix vowels match backness features of stem vowels (Polgárdi, 1999)

a. göl + lar → [göl-ler] b. mest + ane → [mest-ane] *[mest-ene]
 'lake-PL' 'drunken-ly'

regular application 😊

no application ☹️

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

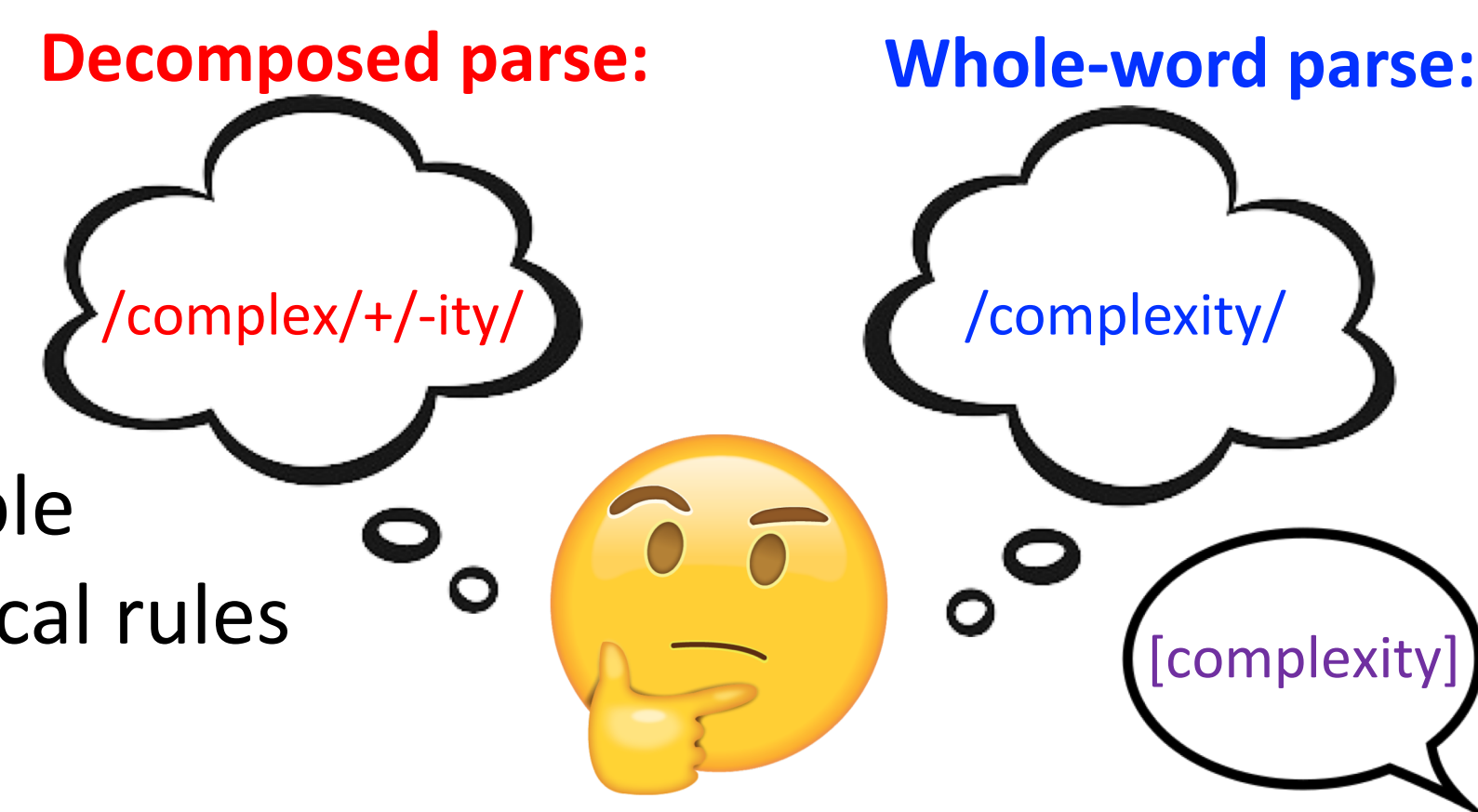
Main question: Can we predict when phonological processes apply across morphological boundaries without appealing to pre-determined categories?

2. Interaction with Lexical Decomposability

Words with multiple morphemes can be recognized during lexical access as composite morphemes (decomposed) or whole-word form

Lexical decomposition connected to varied affix behavior in English (Hay, 2001; Hay and Baayen 2002; 2003)

Recent studies on English show more decomposable affixes are less likely to undergo regular phonological rules (Dabouis, 2019; Zuraw et al., 2021; Grachek, 2025)



Can lexical decomposition also predict varied phonological behavior in Turkish vowel harmony? Or is this effect only present in English?

3. Corpus analysis

Used indicators of decomposition to compare between **regular** and **exceptional** suffixes

Proxy measure: Token affix frequency → **ln (token frequency (suffix))** (Gürel, 1999)

Bimorphemic words with derivational suffixes in Taner Sezer (TS) Corpus (Sezer, 2017)

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

PREDICTIONS:

Exceptional suffix = More decomposable (less frequent)

mest + ane → [mest-ane]

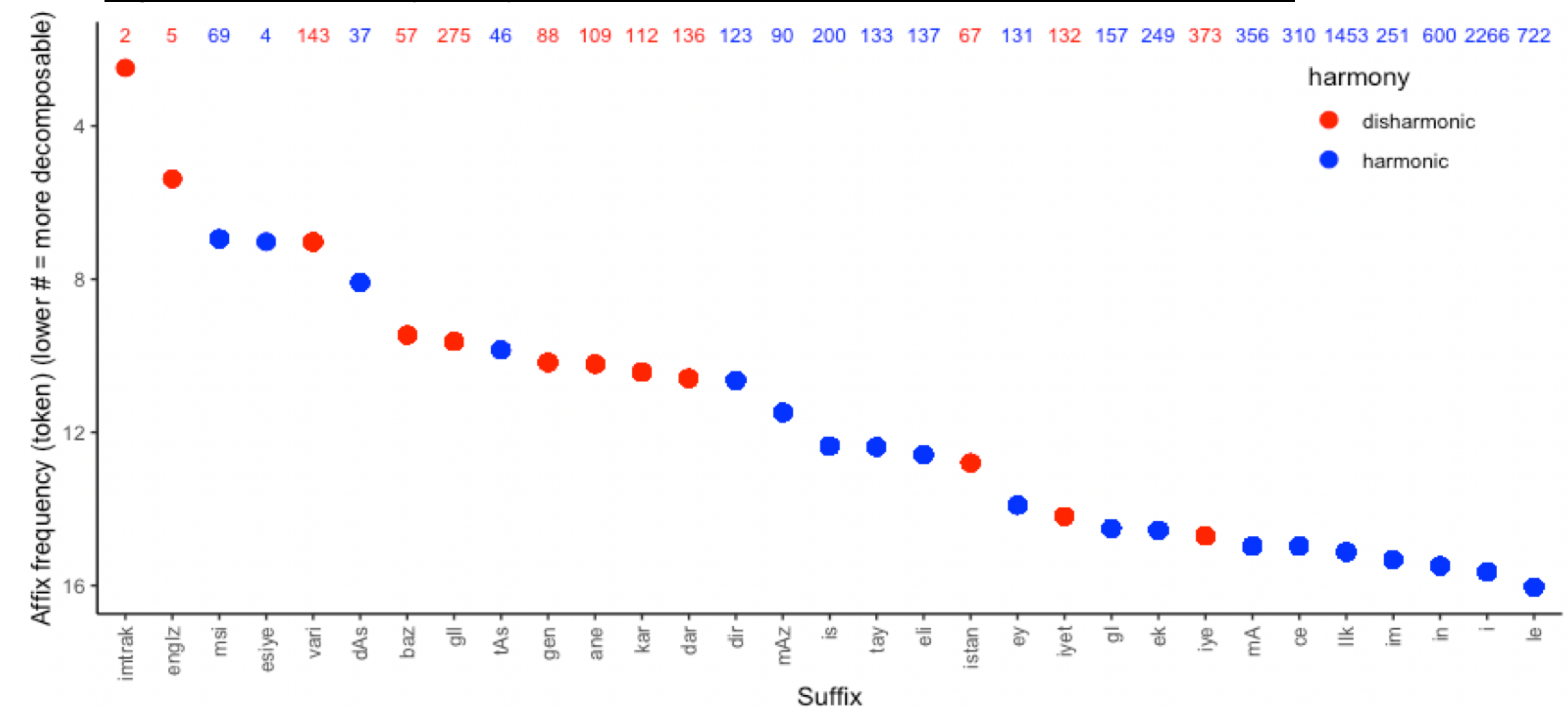
Regular suffix = Less decomposable (more frequent)

göl + lar → [göl-ler]

4. Results and Discussion

Highly decomposable suffixes more likely to be **exceptional** with marginal significance ($p = 0.06$ in logistic regression analysis)

Figure 1: Affix frequency for individual harmonic/disharmonic suffixes



Previous work on English finds correlation between phonological exceptionality and indicators of decomposition using relative frequency (Dabouis, 2019; Zuraw et al., 2021; Grachek, 2025)
→ Proxy measure: Token frequency (stem form) / token frequency (derived form)

Affix frequency, not relative frequency, is effective indicator of decomposition in Turkish

Why are indicators of decomposition different between English and Turkish?

- Differences in morphological structure (Turkish has more affixation)
- Higher productivity of affixation = higher rates of decomposition (Ladányi et al., 2020)

What do differences in decomposition indicators tell us about interaction between phonology and the lexicon?

Takeaways: Factors predicting decomposition also predict exceptionality in Turkish complex words, though less robustly than English

Suggests connection between way complex words are accessed in lexicon and their tendency to undergo varied phonological processes

Speakers possibly use distributional factors (among other factors) like token affix frequency when learning from exception-filled phonological patterns

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