

Hallmark nuclear contours and the expression of indexical versus propositional content

Q: Why might one tune map to many meanings?

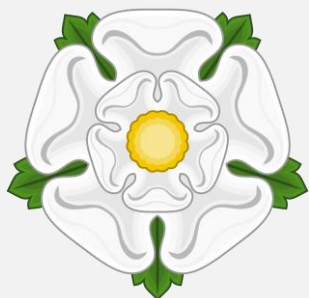
Background: Ladd (2014)

- Two types of indexical content conveyed by gradient phonetic variation:
 - paralinguistic and sociophonetic (Ladd 2014 ch4)
- Two types of gradience:
 - physical e.g. pitch range expansion
 - statistical e.g. variation in frequency of "categorically definable event[s]" (ibid. p88)
- Hypothesis: systems in which a **single indexical hallmark nuclear contour** commonly **maps to many propositional contexts** are a case of *statistical gradience* in the incidence of categorical intonational events (nuclear contours)

Case Study 1: York(shire) rise fall [Figs 1-2]

- a characteristic rise-fall nuclear contour (Hellmuth & Farrelly, 2022)
 - on declaratives (*dec*), wh-questions (*whq*), yes/no-questions (*ynq*)...

“The subtleties of a ‘broad Yorkshire’ accent – [...] in particular the intonation – are not easily imitated by someone from outside the region.” Kellett (1992:1)



Case Study 2: Syrian Damascus Arabic low-rise [Figs 3-4]

- a characteristic low-rise nuclear contour (Hellmuth & Almbark, 2019)
 - on declaratives (*dec*), wh-questions (*whq*), yes/no-questions (*ynq*)...
 - boundary tone rises higher in *ynqs* (thus labelled L* H%) due to realisation in an expanded pitch span, but the timing of the rise is similar across contexts



“speakers of Damascene Arabic rather “sing” than speak” Kulk et al. (1992:1)

Discussion

- These hallmark contours occur across a range of propositional contexts but are not obligatory; contours which are less indexically salient are also used
 - when used, the non-indexical contours display a more typical distribution, with different contours typically occurring in different propositional contexts
- other cases in the literature?
 - Belfast English: characteristic rise-plateau nuclear contour seen in *dec/whq/ynq* contexts (Grabe et al., 2005) & is a well-known feature of the Belfast accent (Smith, 2012)

Do you know of further similar cases?

Conclusion

- Hallmark ‘all-purpose’ nuclear contours fall at one end of a **continuum of variation** in form-meaning mappings:
 - in these systems intonation is deployed to express indexical content as well as (or instead of) propositional content

A: To achieve the statistical gradience needed to convey indexical meaning, one nuclear contour must occupy the nuclear accent position across many propositional contexts.

- Exploration of the full range of one-to-many mappings in intonational phonology should encompass mapping of phonetic form to all classes of meaning: that is, not only to propositional content but also to indexical content of various kinds.

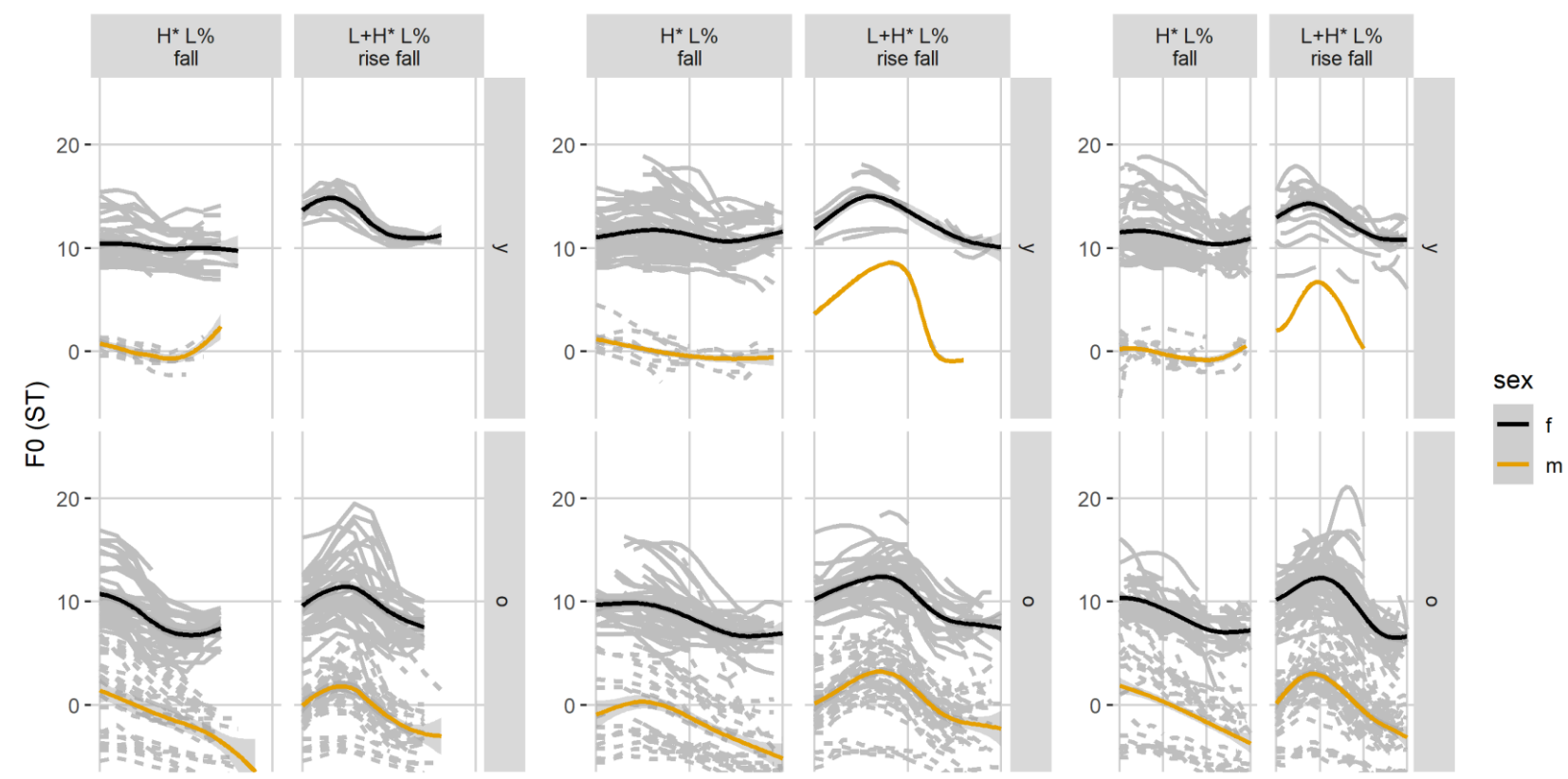


Figure 1: Time-normalised individual + smoothed average F0 in falls and rise-falls in York data (N=727) by age, sex and # syllables; each vertical section = 1 syllable.

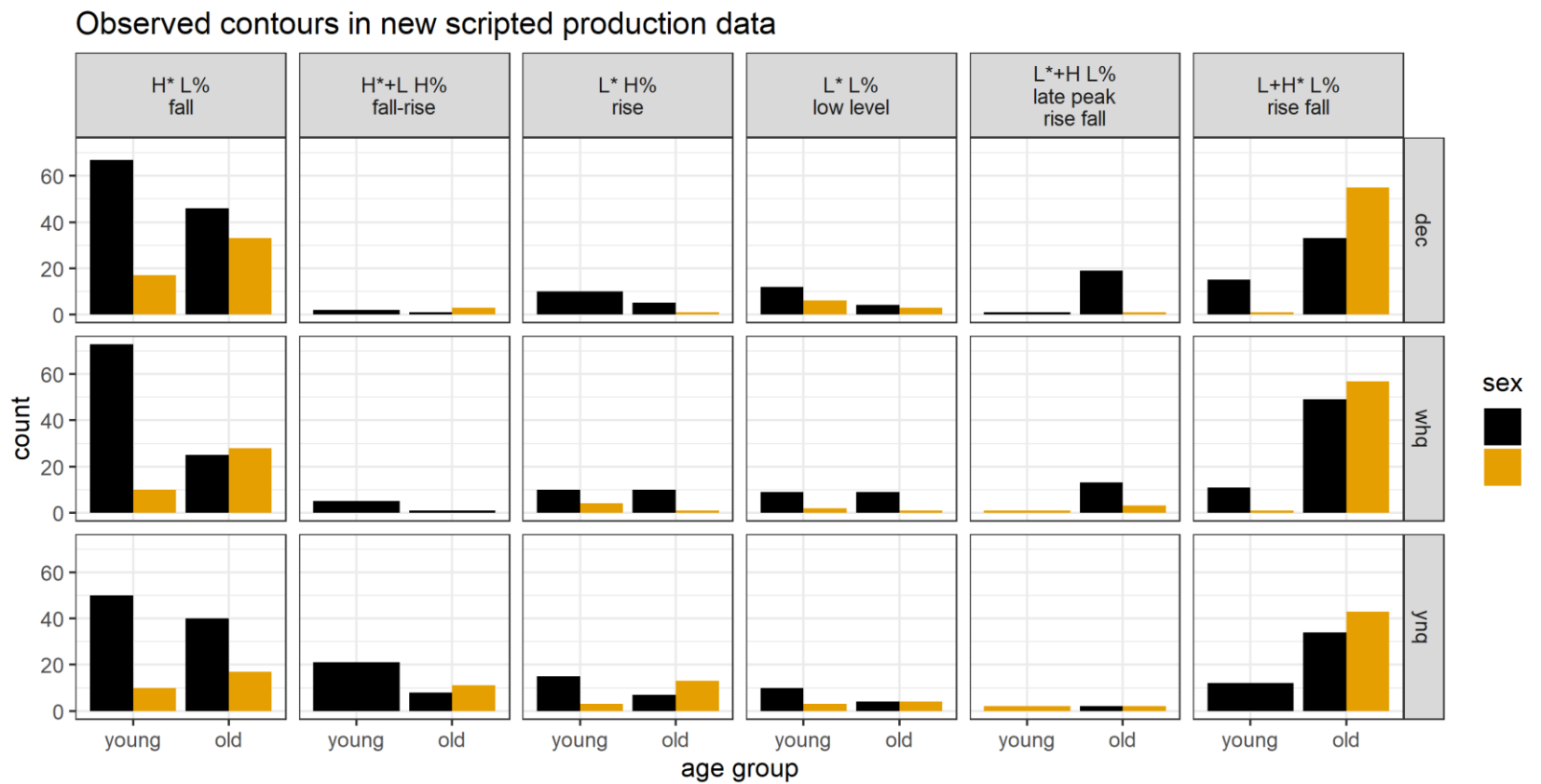


Figure 2: Counts of all contours in York data (N=969) by contour, sex and age.

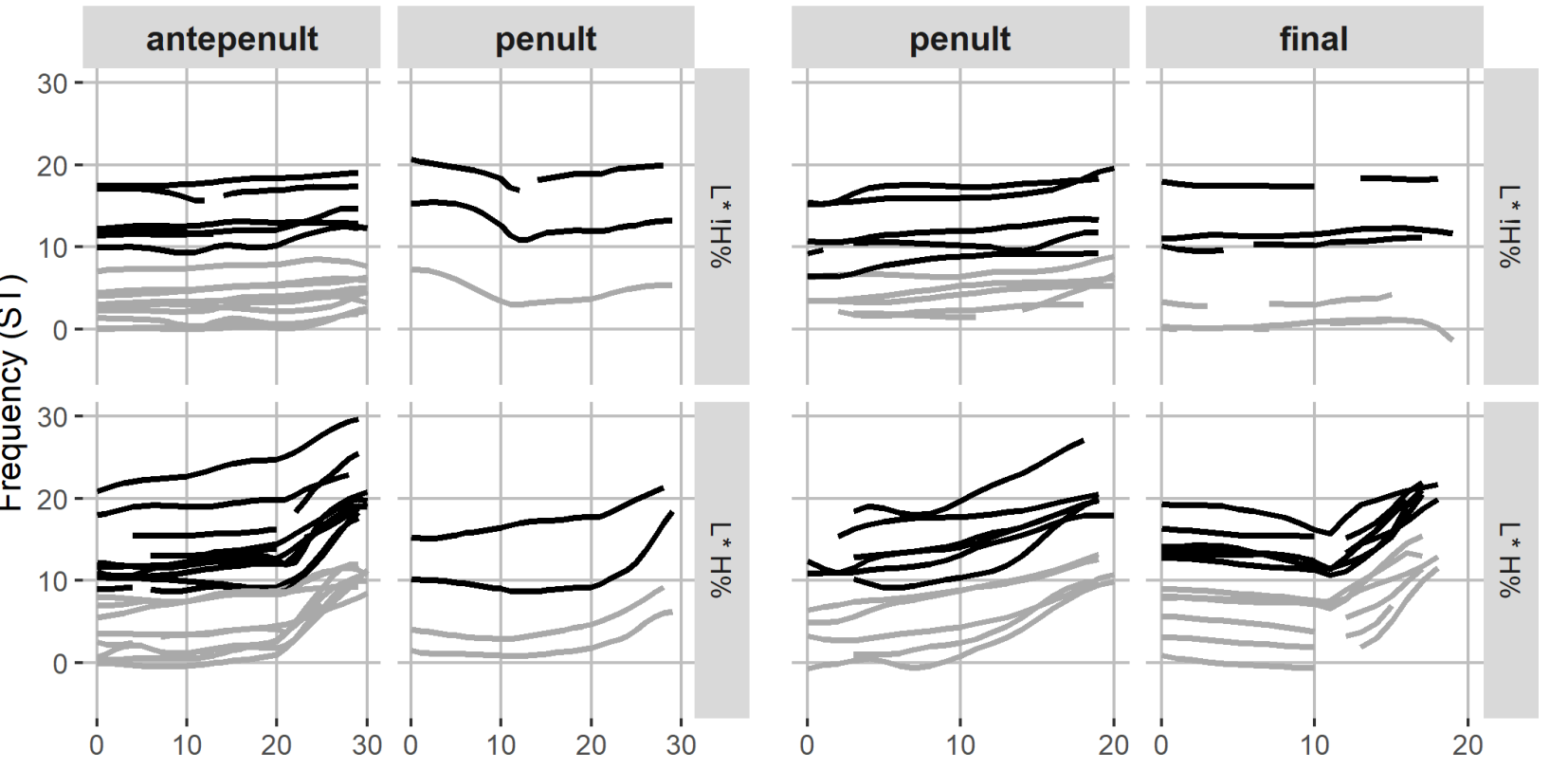


Figure 3: Time-normalised smoothed F0 in last lexical item in Syrian Damascus Arabic read-speech *dec/whq* read speech L* !H% (top) and *ynq* L* H% (bottom) in di- and tri-syllables by word stress position. Data: Hellmuth & Almbark (2019)

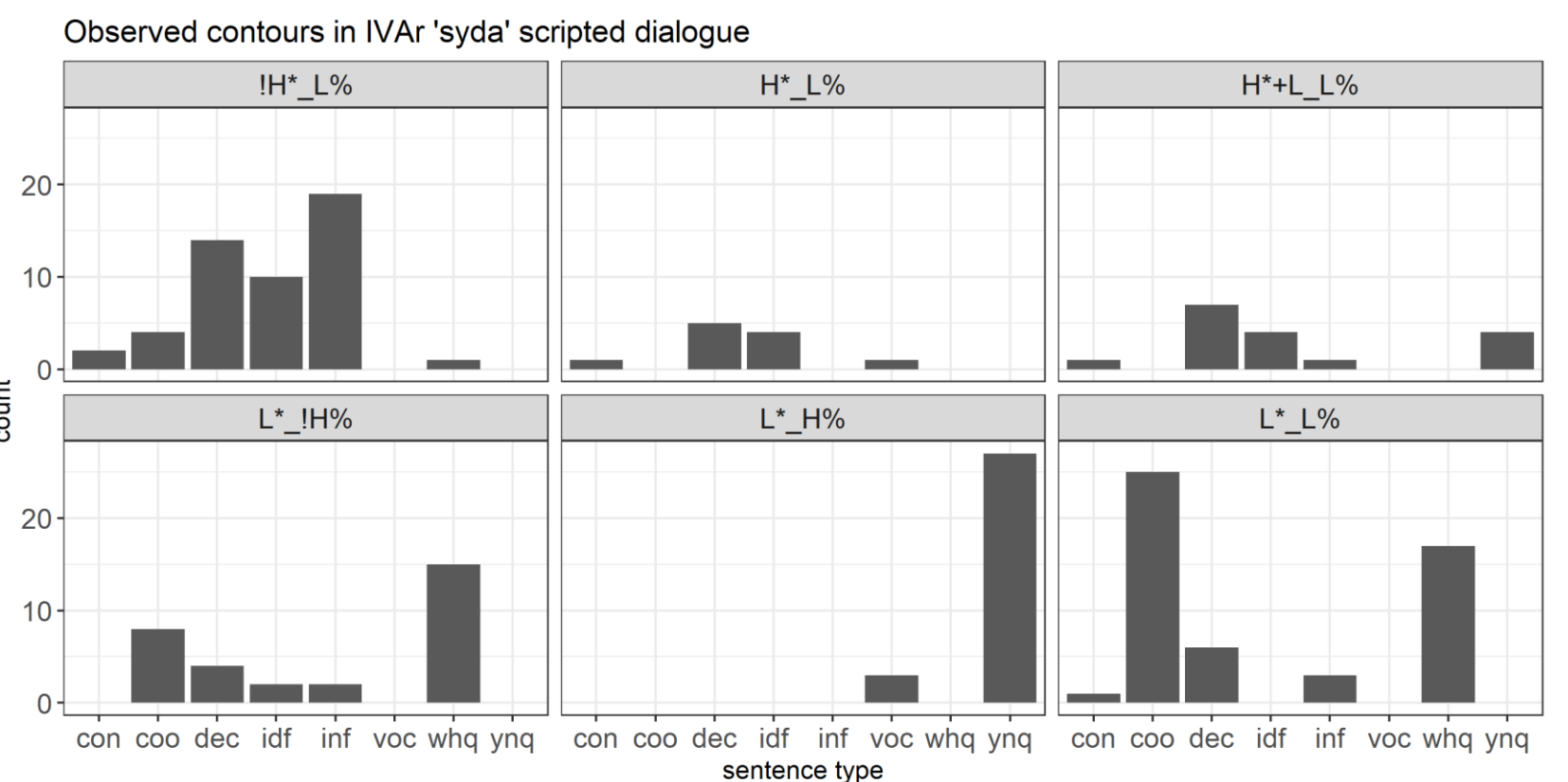


Figure 4: Most common contours in IVAr ‘syda’ scripted dialogue (N=308).