

Alien Phonotactics:

What can science fiction tell us about implicit knowledge?

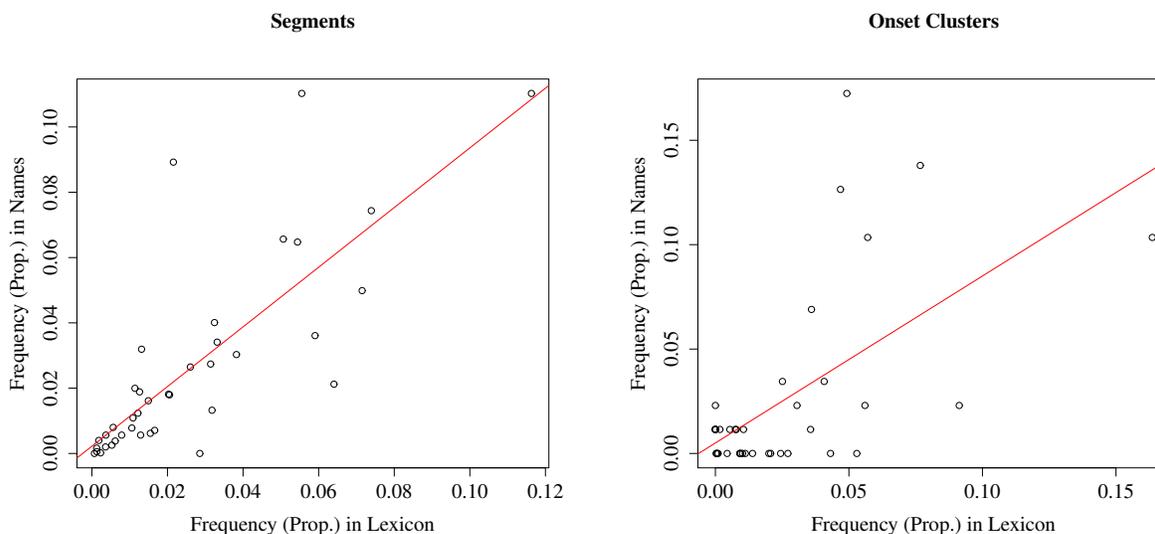
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Linguistic behaviour outside the context of ‘ordinary’ language use can provide insights relevant to phonological theory — language games (Bagemihl, 1988, and others), puns and rhymes (Zwicky and Zwicky, 1986; Kawahara, 2007; Katz, 2015, and others), infixation and other forms of word play (see e.g. McCarthy 1982; Yu 2004; Elfner and Kimper 2008) have been used to probe the nature and extent of language users’ implicit phonotactic knowledge. The present study recruits naming practices in science fiction to that cause.

Martin (2007) found that naming practices for both children (in the US) and prescription drugs exhibited (phonetically-grounded) phonotactic trends similar to those of the English lexicon. In science fiction, however, there is often a contradictory objective: in names of non-terrestrial characters, an element of ‘alien-ness’ contributes to their narrative function. In written texts, orthography may be exploited for this purpose — e.g. *R’lyeh* and *Cthulhu* (Lovecraft, 1928) — but in audiovisual media, orthography is largely absent and only the actual phonotactic properties of the names are available. Cueing ‘alien-ness’ in this context requires exploiting viewers’ implicit phonotactic knowledge (of markedness, lexical frequency, or both).

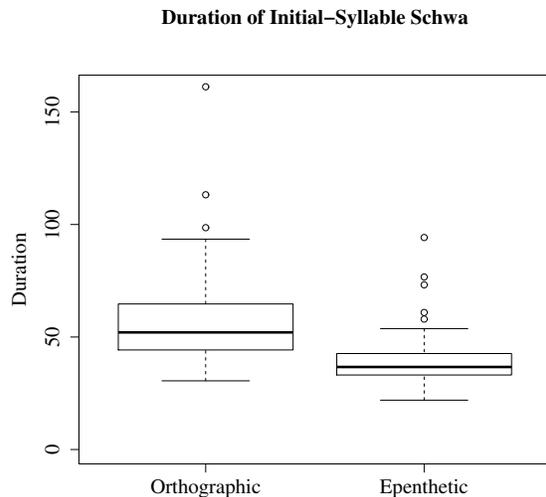
Data for this exploratory study come from a corpus of phonemic transcriptions of more than a thousand names of non-human characters from the Star Trek film and television franchise. The BLICK phonotactic probability calculator (Hayes, 2012) was used to generate phonotactic probabilities for each name; no overall difference in phonotactic well-formedness ($p > 0.05$) was found when the names were compared with the BLICK English lexicon. However, names belonging to more ‘alien’ species (categorised on a 3-point scale from ‘very nearly identical to humans’ to ‘heavy use of prosthetic make-up’) tended to have worse well-formedness scores ($p < 0.01$).

Phonological Corpus Tools (Hall et al., 2015) was used to calculate the frequencies of individual segments and word-initial consonant clusters. For both, frequency in alien names was highly correlated with frequency in the BLICK lexicon ($r = 0.79$ for segments and $r = 0.60$ for onset clusters). The correlation was somewhat weaker for onset clusters — while the difference between correlations was marginally non-significant ($p = 0.0546$), the names did include a number of clusters that were unattested in the English lexicon.



While some illicit onset clusters were included in the names, most apparent phonotactic violations present in the orthographic representation of the names were repaired in actual use. Duration measure-

ments were taken for initial-syllable instances of [ə]; those which corresponded with an orthographic vowel were longer than those which did not ($p < 0.001$), suggesting that the phonotactic repair of epenthesis may be reconstructible (95% of non-orthographic [ə] repaired an otherwise illicit onset cluster).



To summarise, while alien names as a class do not show an overall higher degree of phonotactic ill-formedness, there are nonetheless some interesting departures from native-language phonotactic probability. The inclusion of infrequent or unattested onset clusters, recoverable repairs to illicit sequences, and a relationship between human-like appearance and phonotactic well-formedness all suggest that language users' implicit knowledge plays a role in the construction of 'alien-ness'. Further examination of the data set has potential to shed light on distinctions between language-specific knowledge of lexical statistics and more 'universal' knowledge of phonetically-grounded markedness.

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