

A probabilistic approach to the information structure-prosody interface.

Themes in Egyptian Arabic

It is frequently assumed that information structural categories are coded by prosody/intonation. One commonplace assumption is that focus is coded by accent or metrical prominence in intonation languages such as English or German (Jackendoff 1972, Truckenbrodt 1999, Calhoun 2010, inter alia). Another claim is that certain types of pitch accent encode topics or foci (e.g. Jackendoff 1972, Büring 2003, inter alia). However, empirical investigations, specifically of spontaneous speech data, have shown considerable variation and no one-to-one mapping of information structural and prosodic categories (e.g., Hedberg and Sosa 2008). This suggests that the actual prosodic shape of an utterance and consequently an information structural constituent (e.g., topic/theme) is influenced by a number of additional (semantic, pragmatic and formal) factors. These factors put constraints on the prosodic realization of a linguistic utterance, which interact in a language-specific and speaker-specific way (Calhoun 2010).

Obviously, claims made in the literature that were mostly based on introspection have been largely refuted by empirical research. But are these claims really false? I don't think so. Rather, the intuitions researchers have, correspond to tendencies that can be observed across languages. These tendencies are grounded in a more global semantics of intonational categories and their harmonic alignment with categories of information structure. Thus, a narrow focus is preferentially associated with the strongest prominence in an utterance, and a topic/theme, for instance, is preferentially associated with rising intonation. These universal tendencies may be conventionalized to different degrees in individual languages.

In the present talk I will briefly outline the basic ideas of this approach and provide evidence for a probabilistic view from a corpus study of themes in Egyptian Arabic (El Zarka and Schuppler, Ms). For this study, we annotated naturalistic conversational data for a number of factors (information status, contrast, syntactic and phonological factors) and submitted the annotated data to statistical analysis. We investigated the individual factors that are expected to have an impact on the prosody as separate independent variables. Crucially, we did not test the impact of these factors on pre-established prosodic categories but on individual prosodic features (accentuation, phrasing, register, tonal features) separately by running logistic regression models for each of these dependent variables. The results of the study suggest that the individual 'shaping' factors influence the prosodic features in different ways and to different degrees.

References:

- Büring, Daniel (2003). On D-Trees, Beans, and B-Accents. *Linguistics and Philosophy*, 26, 511–545.
- Calhoun, Sasha (2010). The Centrality of Metrical Structure in Signaling Information Structure: A Probabilistic Perspective. *Language*, 86, 1–42.
- El Zarka, Dina and Barbara Schuppler (Ms). On the interplay of formal and pragmatic factors in the prosodic realization of themes in Egyptian Arabic.
- Hedberg, Nancy and Juan Sosa (2008). The prosody of topic and focus in spontaneous English dialogue. In C. Lee, M. Gordon, & D. Büring (Eds.), *Studies in Linguistics and Philosophy. Topic and Focus. Cross-Linguistic Perspectives on Meaning and Intonation* (pp. 101–120). New York, NY: Springer.
- Jackendoff, Ray (1972). *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.
- Steedman, Mark (2000). Information structure and the syntax-phonology interface. *Linguistic Inquiry*, 31, 649–689.