

Intonational primitives - beyond pitch accents and edge tones

Martine Grice

In current autosegmental-metrical accounts of intonation, there is a dichotomy between tones (or clusters of tones) that are associated with heads and those that are associated with the edges of prosodic constituents. These are referred to as pitch accents and edge tones respectively. In addition to the association properties of these tones, reference is often made to their function. Pitch accents are prominence-lending or prominence-marking, whereas edge tones have a delimitative function. In this talk I shall revisit this dichotomy, presenting intonation patterns in a number of languages that pose a challenge to current autosegmental-metrical practice in categorising tones.

Our first case explores the properties of tones in Tashlhiyt Berber question word constituents. F0 peaks corresponding to these tones are highly variable in their alignment (Bruggeman, Roettger & Grice 2017, Bruggeman 2018), with no clear preference for a particular syllable or edge, as long as they are within the constituent. These tones are best analysed as having an association to a constituent but with no further association, neither to a TBU, such as a lexical head nor to a phrasal edge. Association without head or edge association may be a way forward for analysing further languages that – like Tashlhiyt – lack lexical stress.

Maltese poses a further challenge to the current understanding of tune-text association in the form of a High tone that occurs at the beginning of words in questions, imperatives and vocatives (Vella, 2007, Grice et al., in prep). Although the language has regular pitch accents that associate with lexically stressed syllables, the stressed syllable does not appear to bear a tone in these cases. The same question word has a word-initial tone in direct questions and a tone associating with the lexical stress in indirect questions. An analysis in terms of a tone marking the edge of a larger prosodic constituent (ip/IP) is ruled out by the fact that question words can occur in different positions in the phrase. The language thus appears to make use of both the word edge and the word head for the association of tones, although there is no evidence for one having a delimitative function and the other a prominence lending one. This calls for a separation of form and function when categorising tones.

A further case that questions the pitch accent – edge tone dichotomy is Spanish (Torreira & Grice 2018). Here a tune can consist of a number of tones that may be associated differently depending on the availability of tone bearing units. Thus, tones alternate between occurring on the lexical head or at the edge of constituents. This relates to work on secondary association of tones (Pierrehumbert & Beckman, 1988) and on phrase accents (Grice et al., 2000), where tones have associations to both heads and edges, except that in these Spanish cases it is not a double association, but an alternation between associations.

It will be argued that a transcription system for intonation should be flexible enough to account for a range of different association properties. These association properties are abstract, with evidence from multiple dimensions including shape of F0 contour, height of F0 targets and their synchronisation with supralaryngeal events. The weighting of these dimensions are often speaker-specific, with no dimension being primary across the board. I show examples from Egyptian Arabic (Cangemi et al., 2016, Bruggeman et al., 2018) and from German (Cangemi et al., 2015, Grice et al., 2017) to illustrate how these dimensions can contribute towards prosodic representation.

References

- Bruggeman, Anna, Timo B. Roettger & Martine Grice (2017). Question word intonation in Tashlhiyt Berber: is 'high' good enough? *Laboratory Phonology: Journal of the Association for Laboratory Phonology*, 8(1), 5.
- Bruggeman, Anna (2018). Lexical and postlexical prominence in Tashlhiyt Berber and Moroccan Arabic. PhD thesis, University of Cologne.
- Bruggeman, Anna, Francesco Cangemi, Simon Wehrle, Dina El Zarka & Martine Grice (2018). Unifying speaker variability with the Tonal Centre of Gravity. In Belz, Malte et al. *Proceedings of the Conference on Phonetics & Phonology in German-speaking countries (P&P 13)*. <https://edoc.hu-berlin.de/handle/18452/19531>
- Cangemi, Francesco, Dina El Zarka, Simon Wehrle, Stefan Baumann & Martine Grice (2016). Speaker-specific intonational marking of narrow focus in Egyptian Arabic. *Proceedings of Speech Prosody 2016*, 335-339.
- Cangemi Francesco, Martina Krüger & Martine Grice (2015). Listener-specific perception of speaker-specific productions in intonation. In Fuchs, S., D. Pape, C. Petrone, & P. Perrier (eds.): *Individual differences in speech production and perception*, Frankfurt: Peter Lang, 123-145.
- Grice, Martine, D. Robert Ladd, and Amalia Arvaniti (2000). On the place of phrase accents in intonational phonology. *Phonology* 17(2), 143-185.
- Grice, Martine, Simon Ritter, Henrik Niemann & Timo B. Roettger (2017). Integrating the discreteness and continuity of intonational categories. *Journal of Phonetics* 64(1), 90-107.
- Grice, Martine, Sandra Vella and Anna Bruggeman (in prep.). Postlexical word tones and pitch accents in Maltese question-word questions.
- Pierrehumbert, Janet & Mary Beckman (1988). *Japanese tone structure*. Cambridge, MA: MIT Press.
- Torreira, Francisco & Grice, Martine (2018). Melodic constructions in Spanish: Metrical structure determines the association properties of intonational tones. *Journal of the International Phonetic Association*, 48(1), 9-32.
- Vella, Sandra (2007). The phonetics and phonology of wh-question intonation in Maltese. *Proceedings of the International Congress of Phonetic Sciences XVI*, pp. 1285-1289.