New Perspectives in Word-Prosodic Typology

The study of word prosody is in flux. The typology determined by the word-prosodic systems of the world’s dominant languages is being challenged by an increasing number of exceptional languages. This research project focuses on one of these exceptional types: a hybrid word-prosodic system featuring contrastive lexical stress in addition to distinctive tone. The results will enrich our understanding of the form languages can take.

In the study of speech, it is useful to make a distinction between segmental and prosodic features. The vowels and consonants that make up utterances constitute the segmental part of speech. Prosody, on the other hand, comprises the properties of speech that are unpredictable on the basis of the sequence of vowels and consonants. The prosodic properties are fundamental frequencies (f0, the acoustic correlate of perceived pitch), duration, intensity (the acoustic correlate of perceived loudness) and, to some extent, vowel quality. These prosodic parameters serve a wide range of functions in speech communication: flagging word boundaries, encoding pragmatic differences, such as statement versus question, expressing emotion, and so forth.

Table 1: Minimal pair examples of lexical stress in Ma’ya. Stress is marked by a symbol below the stressed syllable. In English, stress is fixed on the first syllable, like in Czech. A speaker of Czech can infer word boundaries from the lexically stressed syllable. Thus, within the category of lexical accent, it is useful to make a further distinction between lexical pitch accent and lexical stress. A language features lexical pitch accent when the lexical accent is made prominent by means of a single, specific f0-pattern. This is the case in Japanese, where the syllable /be/ means ‘fire’ when f0 is low. A language features lexical stress when the stressed syllable can be marked by intonational parameters other than f0. A case in point is English, where stressed syllables are marked by duration and vowel quality.

Table 2: Minimal pair examples of lexical stress in Ma’ya. Stress is marked by a symbol below the stressed syllable.

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Penultimate stress Final stress

Ma’ya

English

'ta’aj

‘k.a.

‘manaj

‘believable

final

final

'sing

'sing

'tell

'tell

Data from: Remijisen (2004).

Finally, there are to be hybrid word-prosodic systems, which combine lexical stress with tonal or lexical pitch accent. In most of these, stress is fixed, but at least two of these hybrid systems feature one of these: the above-mentioned Ma’ya language. Ma’ya features lexical stress in addition to the three-tone tone system. Examples of minimal pairs for lexical tone and lexical stress in Ma’ya are listed in tables 1 and 2, respectively. It has been demonstrated (Remijisen 2004) that in Ma’ya stress and tone each have their own acoustic encoding: as expected, the tonal contrast is encoded by f0. Additionally, stress is encoded by duration and vowel quality. The other hybrid word-prosodic system with contrastive lexical stress is the Creole language Papiamentu, whose prosodic system has not yet been subjected to a detailed phonetic analysis.

There is a striking similarity between Ma’ya and Papiamentu: both have developed in a contact situation where members of different language families share linguistic features. Ma’ya lies on the geographic boundary between the Austronesian language family and the Papuan languages of New Guinea. Papiamentu is the result of contact between West-African languages and Indo-European languages. In both cases, one of the source language(s) involved in the contact situation has contributed the lexical stress feature, and another has given rise to the tonal contrast. In other words, the limited data available suggest that hybrid word-prosodic systems with contrastive stress cannot develop through spontaneous language-internal development, but only through contact between languages with stress and languages with a tonal feature.

Hybrid word-prosodic systems with lexical stress are interesting because they show how languages can exploit prosody: without evidence that such systems exist, one could assume that lexical stress, lexical pitch accent, and lexical tone are mutually exclusive. The main focus of this project is to determine exactly how Ma’ya and Papiamentu use prosody. For example, is it possible for such languages to encode intonational contrasts, in addition to the two word-prosodic contrasts they feature? Also, research will also be carried out on other atypical word-prosodic systems (e.g. the Papuan language Kaut, in cooperation with descriptive linguists.

In conclusion, the discovery of more and more ‘atypical’ patterns in recent years constitutes a challenge to word-prosodic typology: we will need to move beyond classifying such systems as atypical and arrive at a new synthesis of what kinds of word-prosodic systems are possible in languages of the world. To arrive at that stage, however, we need detailed phonetic studies on the word-prosodic systems of less-studied languages. Obviously, the typology outlined above reflects the world’s dominant languages, and that is its limitation. But now that a laptop and a microphone can constitute an adequate speech lab, there is no reason to exclude such analyses from fieldwork research on minority languages, which is where the surprises will be found. In short, it is impossible to know what word-prosodic typology will be like twenty years from now, but it will be a very different picture from the one outlined above.

References


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