The Prosody of Information Structure in Paraguayan Guarani

Cynthia G. Clopper & Judith Tonhauser
Ohio State University
Email: {clopper.1,tonhauser.1}@osu.edu

Introduction

• In Paraguayan Guarani, as in other languages, information structural meaning can be expressed prosodically and morphosyntactically.
• Higher overall pitch and more frequent rises on stressed syllables mark emphasis or correction (Gregores & Suárez 1967).
• Contrastive focus on subjects can be expressed by independent pronouns.
  (1) [Maria asks Rossani to go turn on the water. Arturo says:]
  A-nà-ta ché!
  I-go-will I
  'I'll go!' (2) [The old woman wants me to marry her daughter...]
  che níko n-a-menda-se-i gusteri.
  I however not-I-marry.want-not still
  'I, however, still don’t want to get married.'
• Pre-verbal objects are less topical than post-verbal objects (Velázquez-Castillo 1995) and topical objects are more likely to be marked with -pe than non-topical objects (Shain 2009).
• Word order does not encode topicically or focus for subjects (Tonhauser & Collijn to appear).
• Note: Guarani has lexical stress, but not lexical tone. Lexical stress is marked orthographically by a tilde on nasal vowels in all positions (e.g. vâg ‘house’), by an accent on oral vowels in non-final positions (e.g. ñá ‘house’), and is unmarked on oral vowels in final position (e.g. yâ-ke ‘yesterday’).

Research Questions

Big picture question
How is information structure coded prosodically in Paraguayan Guarani, and how do the prosodic and morphosyntactic coding interact?

Current research question
In subject-verb sentences (with fixed word order), how are new and contrastive focus of the subject and the verb prosodically marked?

Methods

Talkers
• 18 pairs of native speakers of Guarani in San Lorenzo, Paraguay

Stimulus Materials
• 9 target utterances elicited in response to questions about pictures from A Boy, A Dog, and A Frog (Mayer 1967)
• 3 target utterances for each of three sentence types: Who fell into the water, Fernando or Frog? Fernando fell into the water.
  Subject contrastive focus, verb old information
  Subject old information, verb contrastive focus
  Subject old information, verb new focus
 3. Subject old information, verb new focus
  [Context: Fernando walking or sitting on the leaf!]
  Fernandez is walking.
  [Context: Who fell into the water, Fernando or Frog?] Fernando fell into the water.
  1. Subject contrastive focus, verb old information
  2. Subject old information, verb contrastive focus
  3. Subject old information, verb new focus

Of the 162 total utterances, 84 were selected for analysis
• subject-verb or subject-verb-PP structure
• composed of a single intonational unit
• no pauses, disfluencies, or excess background noise

<table>
<thead>
<tr>
<th>Sentence Type</th>
<th>Number of Utterances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject contrastive</td>
<td>33</td>
</tr>
<tr>
<td>Verb contrastive</td>
<td>37</td>
</tr>
<tr>
<td>Verb new</td>
<td>14</td>
</tr>
</tbody>
</table>

• In all three conditions, the same contour was observed: a valley on the stressed syllable of the subject followed by a rise to a peak, and a fall onto the stressed syllable of the verb.

Analysis

• Tentative phonological analysis (based on these and other data):
  • L+H on the subject (pre-nuclear)
  • H+L on the verb (nuclear)

• Acoustic analysis:
  • duration of the stressed syllable of the subject and the verb
  • alignment of the valley [not significant]
  • f0 range, duration, and slope of the rise [not significant]
  • alignment of the peak

Results

Stressed Syllable Duration
• The stressed syllable of the subject was longer in the subject contrastive condition than in the verb contrastive condition. The duration of the stressed syllable of the subject did not differ in the verb contrastive and verb new conditions.
• The stressed syllable of the verb was longer in the verb contrastive and verb new conditions than in the subject contrastive condition. The duration of the stressed syllable of the verb did not differ in the verb contrastive and verb new conditions.

Peak Alignment
• The peak occurred more frequently on the subject in the subject contrastive condition and more frequently on the verb in the verb contrastive and verb new conditions, despite a significant correlation between peak alignment (relative to the stressed syllable of the subject) and the duration of the stressed syllable of the subject.

Discussion

1. Focus (contrastive or new) does not affect the overall shape of the intonation contour.
2. Focus (contrastive or new) lengthens the stressed syllable of the focused element.
3. The peak of the contour is aligned earlier in the subject contrastive condition than in the verb contrastive and verb new conditions.
4. Focus (contrastive or new) does not affect f0 range, in contrast to the observations reported by Gregores and Suárez (1967).

Future Directions

1. Analysis of the falling pitch accent on the verb, the intonation contour on the PP, and the use of intonation phrase breaks to indicate focus.
2. Analysis of read discourse data in which the number of syllables and the stressed syllable position in the verb were manipulated to tease apart pitch accent and boundary tone effects.
3. Perception experiment examining native Guarani listeners’ use of the observed acoustic differences in judging the felicity of question-answer pairs.

References

Hague: Mouton.

Acknowledgments

This work was supported by a Faculty and Scholars Study Grant from the Ohio State University Office of International Affairs. We wish to thank our participants for their cooperation and patience and Jo.-Lisbeth Petersen-Petersen for assistance with data collection.