THE PROSODY OF FOCUS IN PARAGUAYAN GUARANÍ

Cynthia G. Clopper and Judith Tonhauser

Ohio State University

In many languages, prosodic prominence indicates which expressions of an utterance are focused. This study explores the prosody of focus in Paraguayan Guaraní (Tupí-Guaraní) through two production and two perception experiments conducted with native speakers of Guaraní in Paraguay. The results of the production experiments suggest that prosodic prominence is realized by stressed syllable duration, f0 slope, and pitch accent type. While the perception experiments provide evidence that Paraguayan Guaraní listeners attend to these properties in prosodic prominence perception, they also show that listeners are not at ceiling in identifying the prosodically most prominent expression from the acoustic signal alone. These results are consistent with recent findings about prosodic prominence perception in other languages and provide empirical support from an American indigenous language for the hypothesis that non-acoustic factors, such as word frequency and information status, also play a role in prominence perception.

[Keywords: Paraguayan Guaraní, focus, prosody, prominence perception]

1. Introduction. In many languages, prosodic prominence indicates which expressions of an utterance are in focus (e.g., Jun 2005 and Ladd 2008), with languages differing in the phonetic and phonological means by which prosodic prominence is indicated. Prosodic prominence is marked by pitch accenting in some languages, including English (ISO code: eng) (Bolinger 1958) and Spanish (ISO code: spa) (Face 2002). In these languages, different pitch accent types distinguish focused expressions from non-focused expressions. In addition, lack of prosodic prominence can be signaled by deaccenting in English and other West Germanic languages (Ladd 2008). Continuous phonetic properties can also be used to mark prosodic prominence, including duration, pitch range, and pitch accent alignment (e.g., Cooper, Eady, and Mueller 1985 on English, Face 2002 on Spanish, Braun 2006 on German [ISO code: deu], Xu 1999 on Mandarin [ISO code: cmn], and Venditti, Maekawa, and Beckman 2008 on Japanese [ISO code: jpn]).

1 This work was partially supported by a Faculty and Student Study Grant from the Ohio State University Office of International Affairs. J. Tonhauser also gratefully acknowledges financial support from the National Science Foundation (grant no. 0952571). We thank Joe Marulli, Akinjide Famoyegun, Nicole Holliday, Sara Weigand, and Emily Williamson for research assistance, and the Paraguayan Guaraní speakers who participated in the experiments.

2 Cross-linguistically, focus is also indicated morphologically and syntactically (e.g., Truckenbrodt 1995 and Büiring 2009).
Research on prosody in indigenous languages of the Americas has primarily investigated word-level prosody (e.g., Leman 1981 on Cheyenne [Algonquian, ISO code: chy], Demers, Escalante, and Jelinek 1999 on Yaqui [Uto-Aztecan, ISO code: yaq], Gordon 2004a on Chickasaw [Muskogean, ISO code: cic]). While the utterance-level prosody of indigenous languages of the Americas is comparatively understudied, similar phonetic and phonological means appear to be used to realize prosodic prominence in these languages as in better-studied languages. For example, pitch accents mark prominent syllables in Klamath (Penutian, ISO code: kla) (Underriner 2002), and duration and pitch range expansion mark prominence in a range of indigenous languages of the Americas, including Unangan (Eastern Aleut, ISO code: ale) (Taff 1999), Tenango Otomi (ISO code: otn) (Blight and Pike 1976), Kokama-Kokamilla (Tupí-Guaraní, ISO code: cod) (Vallejos Yopán 2009), Émérillon (Tupí-Guaraní, ISO code: eme) (Gordon and Rose 2006), Karitiana (Tupí, ISO code: ktn) (Everett 2008), and Mbyá Guaraní (Tupí-Guaraní, ISO code: gun) (Dooley 1982).

This study explores the utterance-level prosody of Paraguayan Guaraní (Tupí-Guaraní, ISO code: gug) through two production and two perception experiments conducted with native speakers of Paraguayan Guaraní in Paraguay. While other parts of the grammar of Paraguayan Guaraní (henceforth Guaraní) are comparatively well described (see, e.g., Gregores and Suárez 1967, Shain and Tonhauser 2010, Tonhauser 2006; 2007, Tonhauser and Colijn 2010, and Velázquez-Castillo 1995; 1996; 2002; 2004a; 2004b on the morphology, [morpho]syntax, and semantics of the language), the prosody of the language has received relatively less attention in previous research. The lexical stress system of Guaraní is well documented and lexical stress is reflected in the orthography (Gregores and Suárez 1967 and Adelaar 1994). The canonical position for lexical stress is the final syllable of the word, in which case it is not orthographically marked (e.g., apyka ‘chair’). If lexical stress occurs in another position or is associated with a nasal vowel, it is marked by an acute accent or a tilde, respectively (e.g., óga ‘house’, hatã ‘hard’). Some suffixes attract lexical stress, such as the desiderative modal suffix -se (a-ha-se [1sg-go-des] ‘I want to go’, *a-há-se), while others do not, including the prospective aspect/modal marker -ta (a-há-ta [1sg-go-prosp] ‘I am going to go’, *a-ha-ta) and the perfect aspect marker –ma (a-há-ma [1sg-go-PERFECT] ‘I have gone’, *a-ha-ma).

Gregores and Suárez’s (1967) reference grammar of Guaraní provides an impressionistic description of utterance-level prosody in the language, including phrasing, intonation, and the meanings conveyed by different tunes. The right edges of prosodic phrases are marked in Guaraní by a pause and final lengthening. The tunes described by Gregores and Suárez (1967) suggest that a rising f0 is associated with most stressed syllables, but phrase-final stressed syllables can also be realized with a falling f0. Declarative utterances and yes/
no questions typically end with an f0 fall, whereas content questions typically end with an f0 rise. Preliminary evidence that prosodic prominence conveys information structure in Guaraní comes from Gregores and Suárez’s (1967) description of two of their intonation contours. Contour III is described as involving a higher pitch on the stressed syllable of a focused word relative to a non-focused word and as expressing “emphasis,” “making important or calling attention to what is being said,” or “correcting something previously said” (1967:76). Similarly, Contour VI involves a higher pitch and “extra-strong stress” on the stressed syllable of the focused word and f0 compression after the focused word for utterances “stating something in contradiction or as a reproach” (1967:77). The goal of the two production experiments in the current study was to build on Gregores and Suárez’s (1967) observations and provide a phonetically informed description of how focus is conveyed prosodically in Guaraní. Given the documented cross-linguistic variability in the realization of prosodic prominence and how little is known about the prosody of Guarani, we examined a wide range of prosodic properties to determine how prominence is marked in Guaraní. We also constrained our investigation to two-word utterances, in which the meaning of one of the words was in focus, to facilitate the interpretation of the relationship between the observed prominence patterns and the information structure of the utterances.

A complete understanding of the relationship between prominence and focus in a given language requires more than an analysis of production data, however, because the properties associated with perceived prosodic prominence may be language-specific (Jun 2005:chap.16). The standard view in contemporary formal semantic theories of focus interpretation (e.g., Rooth 1992, Schwarzschild 1999, Kadmon 2001, and Féry and Samek-Lodovici 2006) is that the prosody of an utterance constrains the focus. In particular, an utterance is felicitous if the prosodically most prominent expression corresponds to the focused expression. With respect to the question/answer pair in (1a), for example, the assumption is that the prosody of the answer A1 (prosodic prominence indicated by capital letters) identifies the verb sang as the focus of the answer. The question/answer pair Q1/A1 is thus predicted by these theories to be acceptable, or congruent, because the verb is identified as the focus by both the prosodic structure of the answer and by the question (because the verb answers the question under discussion, i.e., corresponds to the question word [Ginzburg 1996 and Roberts 1996]). The question/answer pair Q2/A2 in (1b) is similarly predicted to be congruent. The question/answer pair Q2/A1, on the other hand, is predicted to be unacceptable because the

3 This study does not address the (morpho)syntactic realization of focus in Guaraní, which is also underexplored. For a discussion of the (morpho)syntactic realization of topicality, see Velázquez-Castillo (1995), Shain and Tonhauser (2010), and Tonhauser and Colijn (2010).
An alternative view has recently emerged from experimental research on the perception of prosody, which demonstrates that the extent to which listeners can identify prosodic prominence and interpret the information structure of the utterance from the acoustic signal alone is highly variable (e.g., Bartels and Kingston 1994 and Braun 2006 on interpreting information structure and Mo, Cole, and Lee 2008 on identifying prominence). The results of this research suggest that other factors, including position in the utterance, information status, and word frequency, also contribute to the perception of prosodic prominence (e.g., Pierrehumbert 1979, Gussenhoven and Rietveld 1988, Wagner 2005, Bishop 2010, Breen et al. 2010, and Cole, Mo, and Hasegawa-Johnson 2010). The goals of the two perception experiments in the current study were to identify which prosodic cues to prominence native listeners of Guaraní attend to and to bring data from an American indigenous language to bear on the question of the extent to which listeners across languages can use information in the speech signal to identify prosodically prominent expressions and interpret the intended information structure of an utterance.

2. Experiment 1: read discourses task. In the first production experiment, pairs of Guaraní speakers read a set of discourses that were specifically designed for the current study. The reading task allowed us to control the context, segmental elements, and structure of the target utterances in a way that tasks involving more spontaneous utterances would not. Strict control over the materials was essential for this initial experiment, given that Guaraní prosody is underexplored and, cross-linguistically, the prosody of utterances is known to interact with sentence type, context, utterance length, word order, and lexical material.

2.1. Talkers. Eighteen Guaraní speakers (eight males, ten females) were recruited from San Lorenzo, Paraguay, a city about 15 kilometers east of the capital Asunción. They were paid to participate in the read discourses task. Although Guaraní is widely spoken in Paraguay, many speakers are not comfortable reading or writing the language. Spanish is the major language of literacy in Paraguay and literacy in Guaraní is generally low (see, e.g., Engelbrecht and Ortiz 1983 and Gynan 2001). Guaraní has been a required subject in school since 1994, but Paraguayans still generally acquire literacy by learning to read and write in Spanish. Therefore, the participants in
our study included young adults who learned to read and write Guaraní in school, parents who learned to read and write Guaraní when their children learned it in school, and people who taught themselves to read the bible in Guaraní.

All of the participants were also fluent speakers of Spanish. According to the 1995 census, about 50% of Paraguayans lived in bilingual Spanish/Guaraní households, 40% in monolingual Guaraní households, 5% in monolingual Spanish households, and 5% in households that spoke other languages (Gynan 2001:64). The percentage of Paraguayans living in bilingual Spanish/Guaraní households was higher in urban areas (73.2%) than in rural areas (24.5%) (Gynan 2001:63). Thus, two factors contributed to the inclusion of Guaraní/Spanish bilinguals in this experiment. First, the participants were recruited in an urban environment, where most Guaraní speakers also command Spanish. Second, the participants were required to be literate in Guaraní, which typically presupposes command of and literacy in Spanish.

One of the female talkers was paired with each of the remaining 17 talkers, for a total of 17 talker pairs. Prior to the analysis, data from one talker who did not self-identify as a native speaker of Guaraní and from one talker who was not a fluent reader were excluded. The remaining 15 talkers (eight males, seven females) were all native speakers of Paraguayan Guaraní and ranged in age from 18–66 years old (median age: 39 years).

2.2. Stimulus materials. The stimulus materials consisted of 45 discourses constructed to elicit test sentences in three focus conditions, which are illustrated in (2) below for Guaraní utterances of Maléna i-tarová-ma (Malena 3-crazy-already) ‘Malena is already crazy’. We assume that an expression is in focus if it answers the question under discussion (Ginzburg 1996 and Roberts 1996). The question under discussion may be implicit in the discourse context but was explicitly given for all of our stimulus materials. In particular, the Guaraní test sentences were presented with questions that would elicit one of the three focus conditions shown in (2). (2a)—where the explicitly given question under discussion is the Guaraní version of How is Malena?—illustrates the “verb new focus” condition where the verb is the focus of the utterance and no possibly relevant properties of Malena are explicitly given in the discourse context. (2b)—where the question is the Guaraní version of How is Malena, is she already crazy or is she happy?—illustrates the “verb contrastive focus” condition. It differs from

---

4 The Guaraní examples are given in the standardized orthography of Guaraní used in Paraguay (Ministerio de Educación y Cultura 2004 and Velázquez-Castillo 2004b:1421ff.), except that all postpositions are attached to their host. Glosses used in the Guaraní examples are 1sg = first-person singular, 3 = third person, DES = desiderative modal, MUST = necessity modal, NOM. prosp = nominal prospective aspect/modal, PERFECT = perfect aspect, PL = plural, pron.S/O = subject/object pronoun, prosp = prospective aspect/modal, QU = question, RC = relative clause.
the verb new condition in that the domain of possible properties of Malena is explicitly restricted in the discourse context, because two alternatives are given in the question. (2c)—where the question is the Guaraní version of *Who is already crazy, Maria or Malena?*—illuminates the “subject contrastive focus” condition.  

(2a) Verb new focus condition  
A: $Mba'ë$-icha-pa o-ĩ Maléna?
   what-like-QU 3-be Malena
   ‘How is Malena?’
B: Maléna i-tarová-ma.
   Malena 3-crazy-PERFECT
   ‘Malena is already crazy’.

(2b) Verb contrastive focus condition  
A: $Mba'ë$-icha-pa o-ĩ Maléna, ha’e o-vy’u o
   what-like-QU 3-be Malena pron.S.3 3-happy or
   i-tarová-ma?
   3-crazy-PERFECT
   ‘How is Malena, is she happy or is she already crazy?’
B: Maléna i-tarová-ma.
   Malena 3-crazy-PERFECT
   ‘Malena is already crazy’.

(2c) Subject contrastive focus condition  
A: Móva-pa i-tarová-ma, María o Maléna?
   who-QU 3-crazy-PERFECT Maria or Malena
   ‘Who is already crazy, Maria or Malena?’
B: Maléna i-tarová-ma.
   Malena 3-crazy-PERFECT
   ‘Malena is already crazy’.

Each test sentence was composed of a proper name subject and an intransitive verb in that order, as in B’s utterances in the examples in (2). Our study is limited to test sentences with subject-verb word order. Preverbal subjects are frequent in naturally occurring discourse (Velázquez-Castillo 1995), and Tonhauser and Colijn (2010) found a slight preference (55%) for preverbal over postverbal subjects in their Guaraní corpus. Crucially, sentences with subject-verb word order were judged by native speakers to be felicitous in all

---

5 A subject new focus condition was not included because proper names can be felicitously used only in discourse contexts where the referent of the name has been previously established.
three focus conditions explored in this study. All of the proper name subjects were three syllables long with stress on the penultimate syllable (María, Maléna, Fernándo, and Aléjo). The subjects in the test sentences were cross-referenced on the verb with a third-person cross-reference prefix, which is i-, as in B’s utterances in (2), or o- (see, e.g., Velázquez-Castillo 2002 for details on the cross-referencing system of the language). The number of syllables between the lexical stress on the proper name subject and the verb was varied by including verb roots consisting of one, two, or three syllables with lexical stress on the final syllable. Three verb roots were selected for each verb root length: -ho ‘go’, -hai ‘write’, and -u ‘come’ (one-syllable verb roots); -mano ‘die’, -ñani ‘run’, and -guahé ‘arrive’ (two-syllable verb roots); and -tarova ‘crazy’, illustrated in (2), -rambosa ‘breakfast’, and -paruhei ‘sing’ (three-syllable verb roots). The number of syllables between the last lexical stress in the utterance and the end of the utterance was varied by combining the verb roots with verbal suffixes that do not attract lexical stress to elicit final, penultimate, and antepenultimate stress. The verbal suffixes in each condition were: none (word-final stress), the perfect aspect suffix -ma (penultimate stress), as in the examples in (2), and the prospective aspect/modal marker -ta in combination with -ma (antepenultimate stress).

Each of the nine verb roots was paired with one of the four proper names and was presented with each of the three stress patterns (final, penultimate, and antepenultimate) in each of the three focus conditions (subject contrastive, verb contrastive, and verb new), for a total of 81 test sentences. Prior to the analysis, five of the test sentences were excluded because they did not clearly elicit the target focus condition. The remaining 76 test sentences included 25 subject contrastive, 25 verb contrastive, and 26 verb new sentences.

The test sentences were embedded in four- and six-turn discourses, which were written in English by the authors and translated into Guaraní by the second author in collaboration with two native Guaraní consultants. The first consultant (female, 18 years old) provided a sentence-by-sentence translation of the discourses. This translation was then refined in collaboration with the second consultant (female, 49 years old) by ensuring that only commonly used words were included and that the transitions between sentences within the same discourse were natural. To encourage relatively natural speech, the variety of Guaraní used in the discourses reflects the spoken variety, which incorporates Spanish borrowings. The second native speaker consultant was particularly aware of the differences between the formal Guaraní taught in Paraguayan schools and the spoken variety because she offers private tutoring in Guaraní to Paraguayan schoolchildren. The final translation of the stimulus materials was also read to two members of the second consultant’s family, who provided feedback on the naturalness of the discourses. The Guaraní
discourses and their English translations are provided in the Appendix, published online only.

The four-turn discourses elicited one test sentence in the first sentence of Speaker B’s second turn. The six-turn discourses elicited one test sentence in the first sentence of each of Speaker B’s second and third turns. A sample six-turn discourse is shown in (3) with English glosses and translations. The discourses were presented to the experiment participants in Guaraní only and without the hyphens separating the Guaraní morphemes. The test sentences in Speaker B’s second and third turns are shown in boldface in the example but were not highlighted for the participants. The first sentence in Speaker B’s second turn illustrates the subject contrastive condition, because Speaker A’s preceding turn is a question about whether Maria or Malena is writing. The first sentence in Speaker B’s third turn illustrates the verb new condition because Speaker A’s preceding turn is a more general question about how Malena is doing.

(3) Sample six-turn read discourse

A: *María ha Maléna o-reko projéktö pyahu?*  
María and Malena 3-have project new  
‘Do Maria and Malena have a new project?’

B: *Heē, mokoi-vé-va o-hai líbro*  
yes two-of-rc 3-write book  
*mitā-nguéra-pee-ğua-rā.*  
child-PL-at-for-NOM.PROSP  
‘Yes, the two are writing a children’s book’.

A: *Máva-pa o-hai, María o Maléna?*  
who-QU 3-write Maria or Malena  
‘Who is writing, Maria or Malena?’

B: *María o-hai, Maléna o-dìbuja.*  
Maria 3-write Malena 3-draw  
‘Maria is writing. Malena is drawing’.

A: *Añete? Mba’é-icha-pa o-ī Maléna?*  
really what-like-QU 3-be Malena  
‘Really? How is Malena doing?’

B: *Maléna i-tarová-ta-ma. María o-kambia ha*  
Malena 3-change-PROSP-PERFECT Maria 3-change and  
o-kambia la istória, ha ha’e  
3-change the story and pron.S.3  
o-japo-jey-va’erā la dibújo tre vése.  
3-do-again-MUST the painting three times  
‘Malena is about to go crazy. Maria is changing the story over and over, and she already had to redo the illustrations three times’.
The 45 discourses were supplemented with ten filler discourses consisting of light, playful exchanges taken from Guaraní literature and other sources. Four different random orders of the 45 discourses were constructed. The ten fillers were inserted before the first discourse and after every five discourses in the same order for each of the four lists. Each of the lists was read by approximately one-quarter of the participants.

2.3. Procedure. The participants were given a copy of the discourses in advance of the recording session to familiarize themselves with the material. The recordings were made in a quiet room in Speaker A’s home. The two talkers were seated at a table and each had their own copy of the discourses in front of them. Each talker wore a head-mounted microphone (Shure SM10A) and was recorded on one channel of a digital stereo recording with a sampling rate of 22,050 Hz and 16-bit resolution using a compact flash recorder (Marantz PMD671). The stereo recordings obtained from each pair of participants thus consisted of two time-aligned channels, with Speaker A on the right channel and Speaker B on the left channel. All of the participants completed the read discourses task first and then the picture book task described in 3 below.

2.4. Analysis. The read discourses data were analyzed in two ways. First, the intonation contours of the utterances were annotated for local f0 minima and maxima. An inspection of the intonation contours revealed that f0 rises and falls were clearly associated with the stressed syllables of the subject and the verb. The contours of the target utterances were therefore characterized in terms of pitch accents associated with the stressed syllables.

Second, the duration, alignment, and f0 scaling of the hypothesized pitch accents were analyzed acoustically. The measures examined included the duration of the stressed syllable of the subject and the verb, the alignment of the start and end of the rises and falls with the onset of the associated stressed syllable, the duration of the rises, plateaus, and falls, the f0 scaling of the local f0 minima (low targets) and local f0 maxima (high targets) of the rises and falls, the f0 range of the rises and falls, and the slope of the rises and falls. The onsets and offsets of the syllables were identified by hand from waveform and spectrogram displays. The onsets and offsets of the f0 rises and falls were identified by hand from f0 tracks in Praat. The f0 measurements were extracted automatically from Praat and hand-corrected using waveform and spectrum displays as necessary.

Prior to the analysis, 56 target utterances that were misread or produced with disfluencies were excluded. In addition, 31 target utterances from one talker were not recorded due to an equipment failure. The analysis is therefore based on a total of 1,053 utterances.

2.5. Results. The analysis of the intonation contours revealed two primary contours that account for 86% of the data. The first contour, the hat contour, was observed in 531 (50%) of the target utterances and is illustrated
for an utterance of *Maléna i-tarová-ta-ma* (Malena 3-crazy-prosp-perfect) ‘Malena is about to go crazy’ on the left in figure 1 and for an utterance of *Fernándo ou* (Fernando 3-come) ‘Fernando came’ on the right in figure 1. The hat contour is characterized by a rise out of the stressed syllable of the subject, a high plateau, and a fall onto the stressed syllable of the verb. The rise is consistently aligned with the stressed syllable of the subject and the fall is consistently aligned with the stressed syllable of the verb, regardless of the number of preceding or following unstressed syllables, as shown in the two examples in figure 1. We therefore analyzed the contour as being composed of pitch accents on the subject and the verb. The pitch accent associated with the subject is rising and the pitch accent associated with the verb is falling.

The second contour, the two-peak contour, was observed in 382 (36%) of the target utterances and is illustrated in figure 2 for the same two sentences as the hat contour shown in figure 1. The two-peak contour is characterized by a rise out of the stressed syllable of the subject, a high plateau, a fall onto the stressed syllable of the verb, and a second rise out of the stressed syllable of the verb. Rises associated with the verb were typically smaller than rises associated with the subject and were sometimes difficult to distinguish from local inherent f0 perturbations in the consonants and vowels. Based on an

---

6 An alternative possible analysis of this contour would involve a rising pitch accent on the subject and a low or falling phrase accent associated with the stressed syllable of the verb (similar to Standard Greek [ISO code: ell] and Standard Romanian [ISO code: ron] question intonation) (Grice, Ladd, and Arvaniti 2000).

7 The low target of the rise associated with the stressed syllable of the subject was consistently aligned with the stressed syllable and the high target occurred on the following syllable. In the ToBI framework (Beckman, Hirschberg, and Shattuck-Hufnagel 2005), the pitch accent on the subject could therefore be characterized as L*+H. Similarly, the low target of the fall associated with the stressed syllable of the verb was consistently aligned with the beginning of the stressed syllable and the high target occurred on the preceding syllable. The pitch accent on the verb could therefore be characterized as H+L* in the ToBI framework.
The prosody of focus in Paraguayan Guarani

Initial analysis of the read discourses data, a rise was defined as requiring an f0 increase of at least 10 Hz. For both the subject and the verb, the rise was consistently aligned with the stressed syllable, regardless of the number of preceding or following unstressed syllables. We therefore analyzed this contour as being composed of rising pitch accents on both the subject and the verb. Thus, the pitch accent on the subject is rising in both the hat and two-peak contours, but the pitch accent on the verb differs across the two contours.

Of the remaining 140 utterances, 115 (11%) were realized with a prosodic phrase break between the subject and the verb, including 30 in the subject contrastive condition, 36 in the verb contrastive condition, and 49 in the verb new condition. Prosodic phrase breaks were characterized by pauses and final lengthening (see also Gregores and Suárez 1967). These utterances were not analyzed further because it is impossible to distinguish intentional phrase breaks from breaks due to disfluencies in reading aloud. The remaining 25 utterances were produced with a heterogeneous set of intonation contours and were not analyzed further because not enough tokens of any one pattern were observed to allow for a meaningful analysis. The relationship between prosodic prominence and focus is therefore analyzed only for the 913 target utterances that were produced with either the hat or the two-peak contour.

The number of target utterances produced with each of the two contours in each of the three focus conditions is shown in table 1. A logistic mixed-effects model on intonation contour (hat or two-peak) with talker, verb, and stress position as random factors revealed significant differences between the subject contrastive condition and the verb contrastive ($z = 3.4, p < .001$) and verb new ($z = 4.7, p < .001$) conditions. The hat pattern was produced

In both cases, the low target of the rise was consistently aligned with the stressed syllable and the high target occurred late in the syllable for verbs with phrase-final stress and on the following syllable for subjects and all other verbs. In the ToBI framework (Beckman, Hirschberg, and Shattuck-Hufnagel 2005), the pitch accents on both the subject and the verb could therefore be characterized as L*+H.
more often in the subject contrastive condition than in the verb contrastive and verb new conditions, suggesting that a rising pitch accent on the verb is produced more often when the verb is in focus than when it is not in focus in the discourse context.

To explore how prosodic prominence conveys focus in Paraguayan Guarani, we built a logistic mixed-effects regression model to predict the focused expression (subject or verb) based on the intonation contour of the utterance and the duration, alignment, and f0 scaling of the hypothesized pitch accents. A previous analysis of the effects of focus condition, verb root length, and stress position on each of the phonetic properties did not reveal substantial prosodic differences between utterances where the verb was a new focus and utterances where the verb was contrastively focused (Clopper and Tonhauser 2011). Thus, the verb contrastive and verb new utterances were combined into a single verb focus group for this analysis.

The preliminary model included 14 fixed effects (contour, duration of the stressed syllable of the subject and the verb, duration of the high plateau between the subject and the verb, alignment of the start and end of the rise on the subject and the fall on the verb, f0 at the start and end of the rise on the subject and the fall on the verb, and the slope of the rise and the fall) and three random effects (verb, stress position, and talker). Log-likelihood tests were used to obtain the smallest possible model that did not fit significantly worse than the preliminary model. The final model accounts for 69% of the variance in the data and includes the contour, the duration of the stressed syllable of the subject and the verb, the duration of the high plateau, the slope of the rise on the subject, and the f0 at the start of the fall associated with the verb as fixed effects and verb as a random effect. A summary of the coefficients for the fixed effects in the final model is shown in table 2. A positive coefficient indicates that the factor contributes to a greater likelihood of a subject contrastive utterance, whereas a negative coefficient indicates that the factor contributes to a greater likelihood of a verb focus utterance.

As shown in table 2, utterances with subject contrastive focus were more likely to exhibit a longer subject stressed syllable and a steeper rising pitch.

### Table 1

<table>
<thead>
<tr>
<th>Focus Condition</th>
<th>Hat</th>
<th>Two-Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject contrastive</td>
<td>213</td>
<td>103</td>
</tr>
<tr>
<td>Verb contrastive</td>
<td>165</td>
<td>130</td>
</tr>
<tr>
<td>Verb new</td>
<td>153</td>
<td>149</td>
</tr>
<tr>
<td>Total</td>
<td>531</td>
<td>382</td>
</tr>
</tbody>
</table>
The prosody of focus in Paraguayan Guarani

accent associated with the subject than utterances with verb focus. The average duration difference between the stressed syllable of the subject for subject contrastive utterances and verb focus utterances was 3 ms. The average slope difference between subject contrastive utterances and verb focus utterances was 15 Hz/s. The utterances with verb focus were more likely to exhibit the two-peak contour and a longer verb stressed syllable than utterances with subject contrastive focus. The two-peak contour was realized on 47% of the verb focus utterances but on only 33% of the subject contrastive utterances (see table 1). The average duration difference between the stressed syllable of the verb for subject contrastive utterances and verb focus utterances was 14 ms. The effects of the duration of the high plateau and the f0 at the start of the fall associated with the verb were marginal and are not discussed further.

2.6. Discussion. The productions in the read discourses task revealed two primary intonation contours for utterances consisting of a proper name subject followed by an intransitive verb. Both contours were characterized by a rising pitch accent on the stressed syllable of the subject. The stressed syllable of the verb was realized with a falling pitch accent in the hat contour and with a rising pitch accent in the two-peak contour. In all of these utterances, pitch accents were associated with both the subject and the verb, regardless of focus condition. This analysis of the intonation contours is consistent with Gregores and Suárez’s (1967) description of rising pitch movements on non-final stressed syllables and either rising or falling pitch movements on the right-most stressed syllable in a phrase.

The logistic regression analysis revealed that focus condition can be predicted by the type of pitch accent on the verb, the duration of the stressed syllables of the subject and the verb, and the slope of the rising pitch accent associated with the subject. For both the subjects and the verbs, focused

<table>
<thead>
<tr>
<th>Factor</th>
<th>Coefficient</th>
<th>Wald’s z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of the stressed syllable of the subject</td>
<td>9.01</td>
<td>4.57 (p &lt; .001)</td>
</tr>
<tr>
<td>Duration of the stressed syllable of the verb</td>
<td>–6.25</td>
<td>–4.19 (p &lt; .001)</td>
</tr>
<tr>
<td>Two-peak contour</td>
<td>–0.65</td>
<td>–4.19 (p &lt; .001)</td>
</tr>
<tr>
<td>Slope of the rise on the subject</td>
<td>0.002</td>
<td>2.39 (p = .017)</td>
</tr>
<tr>
<td>f0 at the start of the fall on the verb</td>
<td>–0.003</td>
<td>–1.72 (p = .085)</td>
</tr>
<tr>
<td>Duration of the high plateau between the subject and the verb</td>
<td>–1.26</td>
<td>–1.65 (p = .100)</td>
</tr>
</tbody>
</table>

The model accounts for 69% of the variance (baseline verb focus: 65%).
expressions had longer stressed syllables than non-focused expressions. Subject contrastive utterances were also realized with a steeper slope of the f0 rise out of the stressed syllable of the subject. Thus, the pitch accent associated with the focused proper name subject was realized with a steeper f0 slope than the pitch accent associated with a non-focused proper name subject. In Guaraní, the slope of the pitch accent on the subject is correlated with the f0 range of the pitch accent ($r^2 = .65$, $p < .001$), suggesting that Guaraní is similar to other Tupí languages such as Émérillon (Gordon and Rose 2006), Karitiana (Everett 2008), and Mbyá Guaraní (Dooley 1982) that mark prominent expressions with an expanded pitch range. Verb focus utterances were realized with more rising pitch accents on the verb. Thus, the pitch accent associated with the focused verb was more likely to be rising than the pitch accent associated with a non-focused verb. Taken together, the results of the read discourses task reveal that both phonological pitch accent differences and continuous phonetic properties related to duration and f0 slope were associated with focused expressions in Guaraní, and suggest that focus is conveyed by prosodic prominence in the language.

3. Experiment 2: picture book task. The second production experiment was designed to provide additional evidence for the realization of prosodic prominence in Guaraní using more naturally produced utterances. In this task, native Guaraní speakers answered questions about pictures in a picture book. The questions were designed to elicit responses in each of the focus conditions examined in the read discourses task. Unlike the read discourses task, the picture book task did not require the participants to read Guaraní.

3.1. Talkers. The 18 talkers from the read discourses task also participated in the picture book task in the same 17 pairs. An additional three participants (one male, two females) were recruited from San Lorenzo for the picture book task only and were paired with a different female talker from the original 18 participants. All of the participants were paid for their time. Prior to the analysis, the data from the talker who did not self-identify as a native speaker of Guaraní were excluded. The remaining 19 talkers (nine males, ten females) were all native speakers of Guaraní and ranged in age from 18–66 years old (median age: 40 years). All of the participants were also fluent speakers of Spanish.

3.2. Stimulus materials. The stimulus materials consisted of ten pictures from *A Boy, a Dog, and a Frog* (Mayer 1967), a children’s book depicting a culturally appropriate story through pictures without any text. Each of the ten pictures was associated with a question designed to elicit a response in one of the three focus conditions: subject contrastive, verb
contrastive, or verb new. The first question–picture pair was used as a practice trial. Of the remaining nine test trials, three question–picture pairs were presented in each focus condition.

3.3. Procedure. The 17 pairs of participants who completed the read discourses task also completed the picture book task in a quiet room in Speaker A’s house. The additional three participants completed the picture book task in a quiet room in the guesthouse where the authors were staying in San Lorenzo. Prior to the presentation of the test materials, the practice question–picture pair was presented to the participants to familiarize them with the task. For each trial, the participants were shown one of the pictures and were asked the question associated with that picture. Participants were instructed to respond with sentences consisting of at least a subject and a verb so that the relative prominence of the two words could be examined. All of the participants were shown the pictures and asked the questions in the same random order. The recording setup was the same as in the read discourses task.

3.4. Analysis. The intonation contours and the duration, alignment, and f0 scaling of the pitch accents were analyzed for the picture book data, following the analysis procedures for the read discourses data described in 2.4 above. The utterances produced in the subject contrastive and verb contrastive conditions were relatively consistent across participants because the questions constrained the answers. However, the answer utterances in the verb new condition were more lexically and syntactically variable, including responses consisting only of a proper name subject and an intransitive verb, as in the sample answer in (4a), but also responses with transitive verbs and direct objects, as well as a range of temporal and spatial verbal modifiers, as in the sample answers in (4b) and (4c). Thus, in the statistical analysis, syntactic structure was included as a random factor with two levels: SV, for utterances consisting of only a proper name subject and an intransitive verb, as in (4a), and SVX, for more complex utterances, like those in (4b) and (4c). As in Experiment 1, the verb contrastive and verb new utterances were combined into a single verb focus group for analysis.

(4) Context: Speaker A shows Speaker B a picture in which the boy (Fernándo) is in the water, the frog (Ju’i) is sitting on a lily pad in the water, and the two are looking at each other.

Speaker A:

Mba’é-pa o-japo ju’i?
what-QU 3-do frog

‘What is Frog doing?’
Speaker B:

(4a) *Ju’i o-puka.*
frog 3-laugh
‘Frog is laughing’.

(4b) *Ju’i o-guapy togue-’ári.*
frog 3-sit leaf-on
‘Frog is sitting on the leaf’.

(4c) *Ju’i o-maña Fernándo-re.*
frog 3-look Fernando-at
‘Frog is looking at Fernando’.

Prior to the analysis, 64 target utterances were excluded that were produced with disfluencies or excessive background noise, that did not contain at least a proper name subject and a verb, or that did not consist of a single, complete prosodic phrase. In addition, all of the target utterances from one talker were not recorded due to an equipment failure and seven target utterances were excluded because the questions and the pictures were not appropriately matched when they were presented to the participants. Finally, two utterances that were produced with verb-subject word order were also excluded because not enough tokens were produced with that word order to permit an analysis of the effects of word order on the realization of prominence. The analysis of the picture book data is therefore based on a total of 89 utterances produced by 16 talkers (eight males, eight females) that include 33 utterances in the subject contrastive focus condition, 39 utterances in the verb contrastive condition, and 17 utterances in the verb new focus condition. Forty-five of the utterances had an SV structure and 44 had an SVX structure.

### 3.5. Results

As in the read discourses data, rising pitch accents were observed on all of the proper name subjects in the picture book data and falling and rising pitch accents were observed on the verbs. As shown in table 3, the hat contour was observed more frequently in the subject contrastive condition than in the verb focus condition, as in the read discourses task. This difference was confirmed by a logistic mixed-effects model with sentence type and talker as fixed effects ($z = -2.42, p = .02$).

---

9 Eleven of the 18 utterances that were excluded for containing a prosodic phrase break were SVX utterances produced with a break between the verb and the remainder of the complex verb phrase. Additional research is needed to explore prosodic phrasing in Guaraní for utterances longer than two words.

10 An analysis of the intonation contours associated with the remainders of the complex verb phrases in the picture book task suggests a wider range of pitch accent types than the two observed in the read discourses data, including monotonous high and low categories, but utterances are too lexically and syntactically variable to permit a more detailed analysis.
To explore the relationship between focus and prosodic prominence in the picture book task, we built a logistic mixed-effects regression model to predict the focused expression (subject or verb) based on the intonation contour of the utterance and the phonetic realization of the hypothesized pitch accents. Given the relatively small number of observations, the preliminary model included only the four fixed effects that were found to be significant in Experiment 1 (contour, duration of the stressed syllable of the subject and the verb, and the slope of the rise out of the subject) and two random effects (sentence type and talker). Log-likelihood tests were used to obtain the smallest possible model that did not fit significantly worse than the preliminary model. The final model accounted for 90% of the variance in the data and included the durations of the stressed syllable of the subject and the verb as fixed effects and sentence type as a random effect. A summary of the coefficients for the fixed effects in the final model is shown in table 4. A positive coefficient indicates that the factor contributes to a greater likelihood of a subject contrastive utterance, whereas a negative coefficient indicates that the factor contributes to a greater likelihood of a verb focus utterance.

As shown in table 4, utterances with subject contrastive focus were more likely to exhibit a longer stressed syllable of the subject than utterances with verb focus. The average duration difference between the stressed syllable of the subject for subject contrastive utterances and verb focus utterances was 84 ms. The utterances with verb focus were more likely to exhibit a longer stressed syllable of the verb than utterances with subject contrastive focus. The average duration difference between the stressed syllable of the verb for subject contrastive utterances and verb focus utterances was 72 ms.

3.6. Discussion. As in the read discourses task, pitch accents were associated with all of the lexically stressed syllables, more rising pitch accents were produced on the verb when it was the focus than when it was not the focus, and focused expressions had longer stressed syllables than non-focused expressions. Although the analysis of the data in table 3 revealed a significant relationship between contour shape and focus condition, a significant effect of contour shape was not observed in the logistic mixed-effects model predicting focus condition (see table 4). The slope of the F0
rise associated with the subject was also not a significant predictor of focus condition in this experiment, although it was found to be significant in Experiment 1. The number of utterances analyzed in this experiment was less than 10% of the number of utterances in the read discourses task, however, and the utterances themselves were more variable with respect to lexical items and syntactic structures. The two tasks also differed with respect to speaking style (read vs. spontaneous speech) and may have exhibited different interference effects from Spanish. These differences between the two experiments may account for the smaller number of significant effects obtained in the picture book task relative to the read discourses task, as well as the relatively larger effect of stressed syllable duration in the picture book task than the read discourses task (72–84 ms vs. 3–14 ms).

Taken together, the findings from the two production tasks suggest that prosodic prominence in Guaraní is associated with a combination of gradient phonetic properties (duration of the focused expression and slope of the pitch accent associated with the subject), as well as phonological pitch accent type (rising vs. falling). Specifically, prosodic prominence in the language is realized with longer stressed syllable duration, a steeper f0 slope on the subject (if the subject is prosodically prominent), and a rising pitch accent on the verb (if the verb is prosodically prominent). As noted in 2.6 above, Guaraní thus patterns like other Tupí languages in marking focus through variation in syllable duration and f0 excursion (Dooley 1982, Gordon and Rose 2006, and Everett 2008).

In addition to the generalizations that can be drawn from our statistical analysis of the production results, an examination of our data also revealed substantial variability in the prosodic realization of utterances in the two focus conditions (see also Gordon 2004b on Chickasaw, Xu and Xu 2005 on English, and Baumann et al. 2007 on German). In particular, although the Guaraní utterances with focus on the verb were produced in Experiments 1 and 2 with statistically significantly longer stressed syllables of the verb than the utterances with focus on the subject, it is not the case that all of the focused verb stressed syllables were longer than all of the non-focused verb stressed syllables. On the contrary, the distributions revealed substantial overlap, suggesting that the distinction between “long” focused verbs and “short”

---

<table>
<thead>
<tr>
<th>Factor</th>
<th>Coefficient</th>
<th>Wald’s z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of the stressed syllable of the subject</td>
<td>49.21</td>
<td>3.57 (p &lt; .001)</td>
</tr>
<tr>
<td>Duration of the stressed syllable of the verb</td>
<td>–51.85</td>
<td>–3.49 (p &lt; .001)</td>
</tr>
</tbody>
</table>

The model accounts for 90% of the variance (baseline verb focus: 63%).
non-focused verbs is a statistical regularity rather than a categorical difference. Figure 3 illustrates the overlap between the distributions of the duration of the verb stressed syllable in the two focus conditions in Experiment 1.

In addition, whereas utterances in which the verb was focused were realized with a rising pitch accent on the verb statistically more often than utterances in which the subject was focused, utterances in the verb focus condition were produced with a falling pitch accent on the verb more than 50% of the time (see tables 1 and 3). Likewise, the two-peak contour was realized on 33% of the utterances with a focused subject in Experiment 1 and 24% of the utterances with a focused subject in Experiment 2. Thus, as in the case of the phonetic properties associated with focus in Guarani, the type of pitch accent realized on the verb reflects a statistical regularity rather than a categorical difference between focus conditions.

This variability across utterances from the same focus condition is also evident in the results of the logistic mixed-effect models in Experiments 1 and 2.
In the read discourses task, the final model accounted for 69% of the variance in the data. That is, based on the six factors shown in table 2, the model correctly predicted the focus condition of 69% of the utterances. The final model in Experiment 2 fared better; it correctly predicted the focus condition of 90% of the utterances based on the two factors shown in table 4. However, the picture book data set was substantially smaller than the read discourses data set, which may account for the better fit of the model, even with fewer predictor variables. Taken together, these observations suggest that other properties of the discourse that were not examined in this study may contribute to the expression of focus in Guaraní.

4. Experiment 3: question/answer congruence task. Two perception experiments were conducted to explore which prosodic properties native Guaraní listeners attend to when making judgments about focus (Experiment 3) and prominence (Experiment 4). The first perception experiment was designed to determine which properties of the signal native Guaraní listeners attend to in a question/answer congruence task. Listeners were required to identify which of two lexically identical answers was the preferred response to a given question. Given a question that focuses either the subject or the verb, we expect that listeners will choose the answer whose prosodic cues identify the subject or the verb, respectively, as the focus of the answer utterance. Based on the results obtained in the two production experiments, Guaraní listeners were expected to attend to pitch accent type, as well as stressed syllable duration and f0 slope, in determining which answer is more acceptable.

4.1. Listeners. Thirty-three Guaraní listeners (17 males, 16 females) were recruited from San Lorenzo (N = 4) and San Isidro (N = 29), a small farming community in the department of Guairá, to participate in Experiment 3. The participants ranged in age from 18–52 years old (median: 25 years) and were all also fluent speakers of Spanish. They were paid for their time. Prior to the analysis, data from one listener who did not self-identify as a native speaker of Guaraní were excluded. Two participants had also participated in Experiments 1 and 2 approximately one year earlier. One participant heard six trials in her own voice and one participant heard eight trials in her own voice. Neither participant performed more accurately on trials in her own voice than on trials in other voices or reported that it was distracting to hear her own voice.11

11 These participants were not explicitly asked if they recognized their own voices among the stimulus materials and it is possible that they did not have enough experience hearing recordings of their own voices to have recognized them.
4.2. Stimulus materials. The stimulus materials consisted of 106 sequences of a question followed by two answers extracted from the read discourses data in Experiment 1. In each sequence, the two answers were lexically identical and uttered by the same talker but were produced in response to different focus conditions in the read discourses task. One of the answers matched the focus condition elicited by the question in the sequence and one did not. A sample trial is shown in (5): the question Q elicits the verb contrastive condition; the answer A1 was extracted from the subject contrastive condition in the read discourses task; and the answer A2 was extracted from the verb contrastive condition in the read discourses task. Thus, the second answer matches the question in focus condition and the first answer does not. The intonation contours of the answers are shown in figure 4. The answer extracted from the subject contrastive condition was realized with the hat contour and the answer extracted from the verb contrastive condition was realized with the two-peak contour. Thus, the intonation contours of these two utterances are consistent with their respective target focus conditions. If Guaraní listeners attend to intonation contour when judging question/answer congruence, they are expected to choose answer A2 as better than answer A1, because the two-peak contour of answer A2 is more likely to be produced in the context of question Q, which elicits verb focus.

(5) Sample trial in the perception task

Q:  
\begin{verbatim}
Ha’e  o-henóí  chupe  o  o-hái  peteĩ  kárta
pron.S.3  3-call  pron.O.3 or 3-write one card
chupe-gua-rã?
pron.O.3-for-NOM.PROSP
\end{verbatim}

‘Did s/he call them or did s/he write them a card?’
The stimulus set included 35 trials comparing subject contrastive and verb contrastive answer utterances, 35 trials comparing subject contrastive and verb new answer utterances, and 36 trials comparing verb contrastive and verb new answer utterances. For each focus condition comparison, the questions in approximately half of the trials elicited one focus condition and the other half elicited the other focus condition. The intonation contour and duration of the stressed syllables of the subjects and the verbs in the answers were varied across trials to provide consistent, ambiguous, and inconsistent cues to the target focus condition. For example, in a subject contrastive–verb contrastive comparison, a consistent trial would include a hat contour on the subject contrastive utterance, a two-peak contour on the verb contrastive utterance, a relatively long stressed syllable of the subject in the subject contrastive utterance, and a relatively long stressed syllable of the verb in the verb contrastive utterance. An ambiguous trial would consist of either hat contours or two-peak contours on both utterances, and relatively similar stressed syllable durations for the subject and verb across the two utterances. An inconsistent trial could consist of either internally inconsistent cues, such as a long subject stressed syllable but a two-peak contour on the subject contrastive utterance, or globally inconsistent cues, such as a two-peak contour and relatively short subject stressed syllable for the subject contrastive utterance and a hat contour and relatively short verb stressed syllable for the verb contrastive utterance. Crucially, all of the stimulus materials in this experiment were drawn from naturally produced utterances from the read discourses task. Thus, the variability that was observed in the production data was not artificially eliminated or reduced in selecting the stimulus materials for the question/answer congruence task.

Four separate random orders of the 106 trials were constructed and each list was presented to one-quarter of the participants. Three additional question-answer-answer sequences were constructed to familiarize the participants with the task. The familiarization trials were presented in the same order to all participants.

4.3. Procedure. The participants were tested individually by the second author in a quiet location. The presentation of the stimulus materials was controlled by the second author on a Macintosh laptop. The trials were
presented one at a time over high-quality circumaural headphones (Sony MDR-7506). The listeners were asked to identify whether the first or second response was a better answer to the question. They indicated their answer verbally in Spanish or manually and their responses were coded by the second author. Participants were permitted to listen to each trial as many times as they wanted before responding but usually listened to trials only once.

4.4. Analysis. As in the two production experiments, the verb contrastive and verb new conditions were combined into a single verb focus condition and the responses from the verb contrastive–verb new focus trials were not analyzed. The analysis was therefore limited to the responses from the subject contrastive–verb contrastive and subject contrastive–verb new focus trials. Three trials were excluded that contained answers later reanalyzed as having been produced with an intonational phrase break between the subject and the verb and one trial was excluded that contained an answer from a context that did not clearly elicit the target focus condition. The analysis was therefore based on responses to 66 trials from each of the 32 listeners. Thirty-five of the trials contained a target question eliciting a contrastively focused subject (subject contrastive trials) and 31 of the trials contained a target question eliciting a focused verb, i.e., either a contrastively focused verb or a verb that was new (verb focus trials). Approximately half of the trials in each trial condition involved subject contrastive–verb contrastive comparisons and half involved subject contrastive–verb new comparisons.

4.5. Results. Mean overall accuracy in the question/answer congruence task was only 48%, which is significantly lower than chance performance ($t(31) = -2.07$, $p < .05$). However, accuracy did not differ significantly among the congruent, ambiguous, and incongruent trials. An inspection of the individual subject and item data revealed substantial variability between items, and somewhat less variability between participants. Average accuracy for the listeners ranged from 32–59% (median: 48%) and average accuracy for the items ranged from 31–69% (median: 47%). Thus, the low overall accuracy was not due to a subset of the participants or items but rather reflects more general subject and item variability.

To examine the properties of the signal that the listeners attended to in this task, we built logistic mixed-effects regression models to predict the response (subject contrastive answer utterance or verb focus answer utterance) based on the fixed effects that were found to be significant in Experiment 1. Separate models were constructed to predict responses to the subject contrastive trials and the verb focus trials. The preliminary models included six fixed effects (the contours of the two answer utterances and their interaction, the difference in the duration of the stressed syllable of the subject in the two answer utterances, the difference in the duration of the stressed syllable of the verb in the two
answer utterances, and the difference in the slope of the f0 rise on the subject in the two answer utterances) and two random effects (item and listener).

The final model for the subject contrastive trials correctly predicted 63% of the responses and included the contour of the subject contrastive utterance as a fixed effect ($z = -2.10, p = .035$) and listener as a random effect. The listeners were less likely to select the subject contrastive answer as the better answer if it was produced with a two-peak contour than if it was produced with a hat contour. This finding is consistent with the results of Experiment 1, which showed that two-peak contours are less likely to occur in the subject contrastive condition than in the verb focus condition.

The final model for the verb focus trials correctly predicted 60% of the responses and included the difference in the slope of the f0 rise on the subject in the two answers as a fixed effect ($z = .77, p = .44$) and listener as a random effect. Although the coefficient for the rise slope difference is in the expected direction in this model (listeners were more likely to select the verb focus answer as the better response as the difference between the slopes increased), it is not significantly different from zero.

4.6. Discussion. The stimulus materials in Experiment 3 were designed to explore the role of specific cues in question/answer congruence judgments and therefore presented the listeners with consistent, ambiguous, and inconsistent cues to the target focus condition. The low overall accuracy in the question/answer congruence task can be attributed to this variability in the stimulus materials. The poor performance in this experiment is also consistent with previous research on the perception and identification of focused expressions in other languages. For example, Braun (2006) found that German listeners were unable to identify which of two utterances was originally produced in a contrastive or non-contrastive focus context. As in our question/answer congruence task, which also required listeners to select the appropriate utterance for a given context, the listeners in Braun’s (2006) study did not perform significantly better than chance. Gussenhoven (1983) used a task similar to our question/answer congruence task to explore whether English listeners were able to match answer utterances differing only in focus marking with the correct question contexts. Performance was at chance when listeners were asked to distinguish between VP focus and object NP focus, as predicted, given that both types of focus are marked in English by a nuclear pitch accent on the object NP. However, even when listeners were asked to distinguish between utterances with different nuclear pitch accent locations, their performance was not at ceiling, and they only achieved approximately 85% accuracy. Similarly, Breen et al. (2010) asked listeners to select the appropriate question from a set of seven possible questions after hearing a target utterance. Listeners in their task performed significantly above chance, but overall accuracy ranged from 50–80% in
the different focus conditions. Breen et al.’s (2010) experimental design also differed from ours in several crucial ways that may have facilitated listener performance in their task. First, the talkers in their study were instructed to mark the focused expression prosodically, which may have encouraged hyper-articulation, whereas the talkers in our Experiment 1 were not given any specific instructions regarding prosody. Second, Breen et al.’s (2010) experiment was interactive and the listeners received feedback about whether their answers were correct. This feedback was also audible to the talker, which may have further encouraged the talkers to provide stronger prosodic cues to focus condition. The authors even acknowledged that the listeners performed at chance in a pilot version of their experiment in which no feedback was provided. Our perception task involved recordings from Experiment 1, in which the talkers did not have an experiment-internal motivation to provide clear prosodic cues to focus condition. Third, Breen et al. (2010) excluded data from talker/listener pairs where the listener did not perform as well as the experimenters expected, whereas our stimulus materials were specifically designed to include highly variable natural Guaraní productions that included incongruous cues to focus condition.

The listener variability observed in Experiment 3 is also consistent with previous research examining the perception of focused expressions. For example, Bartels and Kingston (1994) observed substantial inter-listener variability in the cues that English participants used to distinguish between contrastive and non-contrastive focus.

Despite the low overall accuracy and high degree of listener variability, however, the mixed-effects models revealed that Guaraní listeners attend to the intonation contour to identify subject contrastive utterances. The results of the verb focus analysis are much weaker, but they do provide a preliminary indication that Guaraní listeners may also attend to the slope of the f0 rise associated with the stressed syllable of the subject to identify verb focus utterances. These results are consistent with previous research demonstrating that listeners can use these cues to interpret the information structure of utterances in other languages (see, e.g., Ito and Speer 2008 and Isaacs and Watson 2010 for English) and suggest that the differences in production between the focus conditions that we observed in the read discourses and picture book tasks reflect perceptual cues to prosodic prominence for native listeners of Guaraní. The listeners were particularly attentive to intonation contour and f0 slope cues in the question/answer congruence task, suggesting that these prosodic cues may be the primary cues for interpreting focus in Guaraní.

5. Experiment 4: perceived relative prominence task. The question/answer congruence experiment involved an indirect assessment of the perception of prosodic prominence by native Guaraní listeners. The second
perception experiment was designed to elicit explicit prosodic prominence judgments to further explore the prosodic cues that Guaraní listeners attend to. The task required listeners to identify which of two words in an utterance, the subject or the verb, was more prominent. Given the results obtained in the two production experiments and in the question/answer congruence task, we expected Guaraní listeners to attend to pitch accent type, as well as f0 slope, and possibly stressed syllable duration, in assessing relative prosodic prominence.

5.1. Listeners. Fifteen Guaraní listeners (seven males, eight females) were recruited from San Lorenzo to participate in Experiment 4. Data from three participants (one male, two females) who did not follow the experimental instructions were excluded from the analysis. The remaining 12 participants ranged in age from 18–69 years old (median: 25 years). The participants were all also fluent speakers of Spanish and were paid for their time. One listener had participated in Experiments 1 and 2 approximately two years earlier, two listeners had participated in Experiment 3 approximately one year earlier, and one listener had participated in both Experiments 1 and 2 and Experiment 3. One participant heard six trials in her own voice. She did not perform more accurately on trials in her own voice than on trials in other voices or report that it was distracting to hear her own voice.

5.2. Stimulus materials. The stimulus materials consisted of 100 target utterances extracted from the read discourses data in Experiment 1. The stimulus set included 50 utterances produced in the subject contrastive condition and 50 utterances produced in one of the two verb focus conditions. The intonation contour and duration of the stressed syllables of the subjects and the verbs in the utterances were varied across trials. The trials were presented in one random order to half of the participants and in the reverse order to the other half. Prior to the analysis, one verb focus trial was excluded because the target utterance was obtained in a context that did not clearly elicit the target focus condition.

5.3. Procedure. The participants were tested individually by the second author in a quiet location. The stimulus presentation setup was the same as in the question/answer congruence task. The listeners were asked to identify whether the first or second word sounded more important. The listeners responded verbally in Spanish or manually and their responses were coded by the second author. Participants were permitted to listen to each trial as many times as they wanted before responding but usually only listened once to each trial.

5.4. Results. The listeners correctly identified the focused expression as more prominent than the non-focused expression on 52% of the total
trials. As in Experiment 3, performance was not significantly above chance and was variable across participants and items. Individual participant accuracy ranged from 45–62% (median: 52%). Individual accuracy on items ranged from 0–83% (median: 50%). Thus, the low overall accuracy was not due to a subset of the participants or items but rather reflects more general subject and item variability. In addition, an inspection of the response patterns confirms that the chance levels of performance were not due to overall response biases, such as consistently identifying the subject (which was produced with a higher f0 than the verb) or the verb (which was produced with a longer relative duration than the subject) as more prominent.\textsuperscript{12}

To examine the properties of the signal that the listeners attended to in this task, we built a logistic mixed-effects regression model to predict the response (subject or verb) based on the fixed effects that were found to be significant in Experiment 1. The preliminary model included four fixed effects (the contour, the durations of the stressed syllable of the subject and the verb, and the slope of the rise on the subject) and two random effects (item and listener). The final model correctly predicted 56% of the responses and included the duration of the stressed syllable of the subject as a fixed effect ($z = 1.52, p = .13$) and listener as a random effect. Although the effect of the subject stressed syllable duration is very weak, it is in the expected direction. Listeners were more likely to identify the subject as more prominent than the verb as the duration of the subject increased.

5.5. Discussion. The stimulus materials in Experiment 4 were selected to be somewhat variable so that the role of specific cues in prosodic prominence judgments could be examined. The low overall accuracy in the perceived prosodic prominence task can be attributed to this variability in the stimulus materials. In addition, the chance performance in this experiment is consistent with previous research examining the perception of prosodic prominence by naïve listeners. For example, in a real-time prominence identification task, Mo, Cole, and Lee (2008) found that naïve English listeners differed substantially from trained listeners in their prominence judgments. The naïve listeners identified only 31% of the pitch accents labeled by the trained listeners as prosodically prominent. Similarly, Streefkerk, Pols, and Bosch (1997) observed substantial variability across Dutch (ISO code: nld) listeners in a prominence identification task. Although individual listeners marked an average of 236 words in the stimulus set as prominent, only 104 target words were marked as prominent by the majority of the listeners. Thus, between-listener variability is not uncommon in these kinds of explicit prominence perception tasks.

\textsuperscript{12}Two of the participants whose data were excluded for failing to follow the instructions identified either the subject (one participant) or the verb (one participant) as more prominent on more than 80% of the trials, consistent with these kinds of response biases.
The mixed-effects model provides modest evidence that the listeners in the perceived prominence task attended to the duration of the stressed syllable of the subject in making their responses. However, no effects of the intonation contour or the slope of the rise associated with the subject were observed. We attribute the weak statistical result to the relatively small number of participants (N = 12) in this task and expect that the effect would be statistically robust with a larger sample. Taken together, the combined findings from the two perception tasks suggest that native Guaraní listeners attend to intonation contour and f0 slope cues in making explicit judgments about focus (Experiment 3) and to duration cues in making explicit judgments about prosodic prominence (Experiment 4).

6. General discussion. The current set of experiments explored the prosody of focus in Guaraní in production (Experiments 1 and 2) and perception (Experiments 3 and 4). The results of these experiments suggest that prosodic prominence is used to convey focus in Guaraní. In production, the duration of the stressed syllable of the focused expression, the slope of the rising pitch accent associated with the subject, as well as the pitch accent type associated with the verb are significant predictors of focus condition. In perception, Guaraní listeners attend to contour shape and f0 slope in interpreting focus in question/answer pairs and to duration in identifying the prosodically most prominent expression in two-word utterances. Guaraní is thus similar to other Tupí languages that convey focus through duration and pitch range expansion (Dooley 1982, Gordon and Rose 2006, and Everett 2008).

In addition to the statistical regularities observed in the production and perception experiments, we also observed substantial variability, both in the way in which prosodic prominence is realized in production and in the perception of prosodic prominence. Given that the stimulus materials used in the two perception experiments were highly variable natural utterances produced by non-expert talkers, it is not surprising that the performance of the Guaraní listeners was not at ceiling in either of the two perception experiments. The finding that Guaraní listeners do not reliably and consistently identify the focused expression in an utterance based on the acoustic signal alone is also consistent with the results of focus interpretation experiments in other languages (e.g., Gussenhoven 1983 and Braun 2006). This finding from Guaraní and other languages presents a challenge to the assumption underlying many contemporary formal semantic theories of focus interpretation that focus interpretation is triggered by the prosodic prominence of a focused expression (e.g., Rooth 1992, Schwarzschild 1999, Kadmon 2001, and Féry and Samek-Lodovici 2006). Applied to the Guaraní examples in (2b) and (2c), repeated below, such theories would assume that the verb *i-tarová-ma* 'is already crazy'
in B’s utterance in (2b) and the subject Maléna in B’s utterance in (2c) are marked prosodically as the focus of their respective utterances. B’s utterance in (2b) would be predicted to be an acceptable answer to A’s question in (2b) because both the question and the prominence pattern of the answer identify the verb as the focus (i.e., the question/answer pair is congruent). However, B’s utterance in (2b) is predicted to not be an acceptable answer to A’s question in (2c) because the question and the prominence pattern of the answer identify different expressions as the focus.

(2b) Verb contrastive focus condition

A: *Mba’-ē-icha-pa o-ī Maléna, ha’e o-vy’a o i-tarová-ma?*
   what-like-qu 3-be Malena pron.S.3 3-happy or 3-crazy-PERFECT
   ‘How is Malena, is she happy or is she already crazy?’

B: *Maléna i-tarová-ma.*
   Malena 3-crazy-PERFECT
   ‘Malena is already crazy’.

(2c) Subject contrastive focus condition

A: *Máva-pa i-tarová-ma, María o Maléna?*
   who-qu 3-crazy-PERFECT Maria or Malena
   ‘Who is already crazy, Maria or Malena?’

B: *Maléna i-tarová-ma.*
   Malena 3-crazy-PERFECT
   ‘Malena is already crazy’.

The results of Experiment 4 suggest, however, that phonetic and phonological cues do not suffice to uniquely identify the verb of (2b) and the subject of (2c) as the most prominent expression of their respective utterances. Thus, whether or not the question/answer pairs in (2) are congruent cannot be determined solely on the basis of the meaning of the questions and the phonetic and phonological properties of the answer utterances, contrary to assumptions made by contemporary theories of focus interpretation.

Several recent studies have begun to identify additional factors that may contribute to the realization and identification of prosodic prominence in English. For example, Cole, Mo, and Hasegawa-Johnson (2010) found that word frequency (in the Switchboard corpus) and repetition (the number of times a word had been repeated in the preceding portion of the discourse segment) play a role in prominence perception. Frequent words that are repeated in the discourse are less likely to be perceived as prominent than are less...
frequent words that are repeated relatively less often. Crucially, these effects of frequency and repetition on prominence judgments are independent of the effects of the acoustic properties of the words. Cole, Mo, and Hasegawa-Johnson (2010) argued that the non-acoustic effects reflect listeners’ expectations about the relationship between information and prominence (see also Gussenhoven and Rietveld 1988, Straub 1996, Calhoun 2010a; 2010b, and Nenkova et al. 2007). High-frequency words and repeated words are relatively more expected in a discourse than low-frequency words and new words, and are therefore perceived as less prominent.

Listener expectations may also explain the effects of other factors on prominence perception. For example, Bishop (2010) found that when listeners were presented with acoustically identical utterances in different contexts, they were more likely to rate an expression as more prominent if the expression was the answer to the contextually given question than if it was not. In the context of a given question, the listeners expected the focus of the answer to be most prominent and their responses reflected this expectation. Talkers also seem to exhibit some knowledge of listeners’ reliance on prosodic and non-prosodic cues to prominence. In particular, Allbritton, McKoon, and Ratcliff (1996) and Snedeker and Trueswell (2003) found that in syntactically ambiguous sentences, talkers are more likely to mark the relevant expression as prosodically prominent (through pitch accenting or phrasing) if they are aware of the ambiguity than if they are not (cf. Kraljic and Brennan 2005 and Speer, Warren, and Schafer 2011). If the utterance is not ambiguous in the given context, it is not necessary to resolve the ambiguity prosodically because listeners can use other sources of information to identify the prominent expression.

These recent findings for English suggest that multiple prosodic and non-prosodic factors collectively conspire to identify which expressions in an utterance are perceived as prosodically prominent and interpreted as in focus, which has important implications for theories of focus interpretation (see also Calhoun 2010b). In the current experiments, lexical frequency and repetition were not strictly controlled and the fact that both talkers in the read discourses task were aware of the intended information structure of the target utterances may have resulted in relatively less prosodic prominence marking than might be observed in other contexts with different utterances. Thus, additional research is essential to determine the full range of lexical, syntactic, semantic, and discourse factors that contribute to the realization and interpretation of prosodic prominence in Paraguayan Guaraní.

REFERENCES


Vallejos Yopán, R. 2009. The focus function(s) of =pura in Kokama-Kokamilla discourse. IJAL 75:399–432.


APPENDIX

THE PROSODY OF FOCUS IN PARAGUAYAN GUARANÍ

CYNTHIA G. CLOPPER AND JUDITH TONNHAUSER

[IJAL, VOL. 79, NO. 2, APRIL 2013, PP. 219–51]

Guaraní Discourses from Experiment 1
with English Translations

The Paraguayan Guaraní discourses were read by the experiment participants in the transcription given below. The discourses were presented to each of the participants in one of four random orders without discourse numbers and with ample space between them. English translations were not included. The transcription of the discourses did not follow the standardized orthography of Paraguayan Guarani as established by the Paraguayan Ministry of Education and Culture in 2004 (see the reference in footnote 3 of the paper) since not all affixes longer than two syllables were written separately from their hosts. The decision to deviate from the standardized orthography was made by the second author in consultation with the second native speaker of Paraguayan Guarani who assisted in translating the discourses to facilitate reading. Many materials published in Paraguayan Guarani also do not separate affixes longer than two syllables from their hosts. Furthermore, since the nasal diacritic ( ~ ) was not available for several symbols in the word processing program we used to finalize the discourses in Paraguay, the labio-velar voiced approximant / w / was transcribed with ĝ, the nasal mid front vowel was transcribed with ê, and the nasal high back vowel was transcribed with ŭ. These transcriptions are not uncommon in Paraguayan Guarani texts in Paraguay. Target utterances by speaker B that were excluded from the analysis are marked with with an exclamation mark ( B !).

1.
A: Rehendúpa Fernándo rembireko Maléna orekohá mítã?
B: Hee, ahendu. Fernándo noĩri aja hógapé, ha’e oĩ mombyry jave.
A: Ha’e oikuaáma Maléna imemby hague, mba’épio ha’e ojapo?
B: Fernándo ou. Ha’e ndovy’ai ndoikatiugui ohecha imemby pyahu.
A: Ha’e niko orêkóma seis mítã! Fernándo itarováma?

A: Did you hear that Fernando’s wife Malena had a baby?
B: Yes, I heard. Fernando wasn’t at home then, he was far away.
A: When he found out that Malena had the baby, what did he do?
B: Fernando returned. He wasn’t happy because he couldn’t see his new child.
A: They already have six children! Is Fernando already crazy?
B: No, Malena is already crazy. Fernando is a teacher. He knows how to deal with children.

2.
A: Mba’e nde rejapóta ko árape?
B: Che aha va’erā Aeropúertope ko ka’arúpe. Fernándo oreko otro viáje de trabájo.
A: Ha’ e oho ha ou jey ko árape?
B: Fernándo ou. Ha’ e ohóma lúne ikoléga Palómandive, che avy’a ha’ e ou jeýma.
A: Mba’e ojehu ikoléga Palómape? Che ahendu ha’ e hasyha. Ha’ e oï porâma tera omano ra’n?
B!: María omano. Che ambyasy, ha’ e oreko 35 año ramo.

A: What are you going to do today?
B: I have to go to the airport this afternoon. Fernando has another business trip.
A: Is he leaving or returning today?
B: Fernando is returning. He’s been gone since Monday with his colleague Paloma, I’m glad he’s coming back.
A: What happened to his colleague Paloma? I heard she was sick. Did she get better or did she die?
B: Maria died. I am so sorry, she was only 35 years old.

3.
A: Mboy tiémpopa ojapo Fernándo ha Maléna ova hague Misiónpe?
B: Sei año ojapo.
A: Ha’ ekuéra araka’ eve ndouvéi?
B: Fernándo ou. Maléna ndorekói tiémpo ou hağua.
A: Ha’ e ndorekói tiémpo la ou hağua?! Ndikatúi! Ha’ épa oñeñandu porâ?
B!: Nahániri. Maléna itarova. Ha’ éma akue isýpe aréma.

A: How long has it been since Fernando and Malena moved to Misiones?
B: Six years.
A: Have they ever returned?
B: Fernando returns. Malena is too busy to come back to visit.
A: She’s too busy to come home? That’s crazy. Is she feeling well?
B: No, Malena is crazy. I’ve been telling her mother that for years.

4.
A: Nde nerehenduí mba’ eve Fernándo ha Mariagui?
B: Hee, ha’ ekuéra kuehe ombou chêve peteï kárta.
A: Mavapa ohai, Fernándo o María?
B: María ohaïma. Fernándo operdémia la itrabájo Búenos Àirespe.
A: Mba’ épa ha’ e ojapóta ko ’âga? Ha’ e omantene arâ la ifamília.
B: Fernándo oúma. Ha’ e oimo’ à ko ’ápe iporâvèta chupe ou hağua.
A: Have you heard from Fernando and Maria?
B: Yes, I received a letter from them yesterday.
A: Who wrote, Fernando or Maria?
B: Maria already wrote. Fernando just lost his job in Buenos Aires.
A: What is he going to do? He has to support his family.
B: Fernando returned already. He thinks it will be easier for him here.

5.
A: Fernándo ha María oĩ hógape? Ore roho hĩna sînepe.
B: Fernándo oho almasênepe.
A: La ipelîkula ningo oñeyrûta 30 minûtope!
B: Fernándo oîtama. Ha’e ohônte ojogua tomâte.
A: Ha María? Ha’e mba’e ojapo?
B!: María ohôma. Ha’e opyta va’erâ bûnkope oĩva tapère, ha upéi ohôta rojota pe ha ãu ja pe.

A: Are Fernando and Maria at home? We are going to go see a movie.
B: Fernando went to the store.
A: But the movie starts in a half hour!
B: Fernando will return soon. He was only going to buy some tomatoes.
A: What about Maria? What is she doing?
B: Maria went already. She wanted to stop by the bank on the way, and then she will meet us there.

6.
A: Emañami Horácio ou.
B: Nde rehendu ha’e ha María oñorairõ tuicha kuehe?
A: Che nahendúi mba’ eve. María ohose kuri ohecha isy Bûños Airespe. Mba’ëpa oiko?
B: María oho. Lûne ningo osê la ijavion. Ha’e opagáma la ipasáje kuri.
A: Aikuaase mba’ eîcha María oiko Bûños Airespe?
B: María ohaima. Ha’e kuehe ombou chëve peteï postal ha he’ i oĩ porâha.

A: Look, here comes Ignacio.
B: Did you hear that he and Maria had a big fight yesterday?
A: I hadn’t heard anything. Maria had wanted to go to Buenos Aires to see her mother. What happened?
B: Maria went. The flight was on Monday. She had already paid for the ticket.
A: I wonder how Maria is doing in Buenos Aires?
B: Maria already wrote. I got a postcard from her yesterday and she said she was fine.

7.
A: Che ahendu peteï pararã guasu angete. Ndëpa reime porâ?
B: Hee, Maria ha che roity peteï jarron tuicha pîsöpe.
A: María oĩ ko’âpe? Che aïmo’â ha’e ha Palôma oho bûnkope ko ârape.
B!: María oho. Palôma omba’apo va’erâ, ha’e ndoikattû oho.
A: Mba’ e oiko jarróngui? Maríapa opyta néndive omopotì ha’gu a ha’ e ohóma?
B: Marí a oho. Ore roikotevê peteï typycha kuri, ha’ e oho ojogua ha’gu.

A: I just heard a loud crash. Are you okay?
B: Yes, Maria and I dropped a big vase on the floor.
A: Maria is here? I thought she and Paloma were going to the bank today.
B: Maria went. Paloma had to work, she couldn’t go.
A: What about the vase? Did Maria stay to help clean it up or did she go?
B: Maria went. We need a broom, so she went to buy one.

8.
A: Nde repintáma nderóga?
B: Neiraïti, María ndoikatúi chepytyvô ko árape.
A: Mba’ êre ndoikatúi? Mba’ e ha’ e ojapo va’erâ?
B: Marí a ohótama. Ha’ e ojotopa va’erâ Ignáciondive osena ha’gu.
A: Che aimo à Márko ha Fernándo o oipetyvô chupe. Ha’ e oguahê?
B: Fernándo oguahê. Má rko omongaru guéteri umi kurépe.

A: Have you finished painting your house yet?
B: No, and Maria can’t help me today.
A: Why not? What does she have to do?
B: Maria is about to go. She has to meet Ignacio for dinner.
A: I thought Marko and Fernando were going to help you. Have they arrived?
B: Fernando arrived. Marko is still taking care of the pigs.

9.
A: María oñeñandu porã iňaksidénte rire?
B: Hee, ha’ e oho pohanohára rendápe ko árape.
A: María oujeýta?
B: Nahâni, María ohótama. Ha’ e oho va’erâ pohanohárandive ko ka’aripe.
A: Che agueraha va’erâ María tupaópe kuri. Ha’ e oikotevê che agueraha chupe o ha’ e ohóma?
B: María ohóma. Che agueraha chupe pono oguata asy la ijésorehe.

A: Is Maria feeling better after her accident?
B: Yes, she is going to the doctor’s today.
A: Will Maria be returning soon?
B: No, Maria will be going soon. She has to go to the doctor this afternoon.
A: I was going to take Maria to church. Does she need a ride or did she already go?
B: Maria went already. I gave her a ride so she didn’t have to walk in the cast.

10.
A: Ko’ápe oĩ la mbayru nde rejuraréva’ekue. Mba’ e nde rejapo hîna?
B: Má rko ha María oporandu chêve ikatûpa oipetyvô chupekuéra ova ha’gu a hóga py’ahûpe.
A: Máva ohótama, Márko o Maria?
B: María ohótama. Hákatu ndaikatūi che pytyvō ko’ága.
A: Mba’ère ndoikatūi? Mba’e ha’e ojapo ko’ága?
B: Maria ohai. Ha’e ojapopase ilíbro ova mboyve ha’ekuéra.

A: Here are the boxes you asked for. What are you doing?
B: Marko and Maria asked me to help them pack for their move to their new house.
A: Who will be going soon, Marko or Maria?
B: Maria will be going soon. But she can’t help me right now.
A: Why not? What is Maria doing?
B: María is writing. She is trying to finish her book before they move.

11.
A: Mba’épepa María omba’apo hĩna?
B: Ha’e ohai peteĩ libro agrikultúra Los Ándereheguare. Ha’e oĩ are bibliotékape ha olee agrikulturarehegua kuati’a.
A: María olee bibliotékape ko’ága?
B: Nahániri, María ohai. Ha’e ohaiseve pyhareve ha olee ka’arukue.
A: Mba’ère ha’e ko’ága omba’apoíterei ilíbrore?
B: María omanótama. Ha’e ohai pono opensa imba’asýre.

A: What is Maria working on these days?
B: She is writing a book on agriculture in the Andes. She spends a lot of time at the library reading agricultural documents.
A: Is Maria reading at the library now?
B: No, Maria is writing. She likes to write in the morning and then read in the afternoon.
A: Why is she working so hard on her book now?
B: María will die soon. She is writing to keep her mind off being sick.

12.
A: María ha Maléna oreko projékto pyahu?
B: Hee, mokoivéva ohai libro mitânguérapeguarā.
A: Mávapa ohai, Maria o Maléna?
B: Maria ohai. Maléna odiyua.
A: Añete? Mba’èichapa oĩ Maléna?
B: Maléna itarovâtama. María okambia ha okambia la istória, ha ha’e ojapo jey va’erã la dibújo tre vése.

A: Do Maria and Malena have a new project?
B: Yes, they are writing a children’s book together.
A: Who is writing, Maria or Malena?
B: Maria is writing. Malena is doing the illustrations.
A: Really? How is that going for Malena?
B: Malena will be crazy soon. Maria keeps changing the story, so she has had to redo the illustrations three times already.

13.  
A: Mba’e nde rejapóta ko pyharépe?  
B: Ajapo va’erã la séna ha aleéta peteĩ libro.  
A: Ha la eskritóra María mba’e ojapóta?  
B: María ohaitama. Ha’e oikotevê kuati’a oïva hóga rapére.  
A: Mba’ère Fernándo ndohói ogueru la kuati’a?  
B: Fernándo oñanítama. Ha’e oimo’ã ipytũ etereítama ohórama despénsape ra’e.

A: What are you going to do tonight?  
B: I have to make dinner and then I am going to read a book.  
A: What will Maria the writer be doing?  
B: Maria is about to write. She just needs to get some paper on her way home.  
A: Why don’t you send Fernando to get the paper?  
B: Fernando is about to run. He thinks that it will be too dark if he goes to the store first.

14.  
A: Amalicia ndajarekói ni peteĩ pan ñane rembi’u sénatyrarã.  
B: Che ndarekói tiémpo, ndaikatúi a ha despénsape. Ñande ndajaguerekomo’ãimante.  
A: Ha María? Ha’e ikatu oho la despénsape o ha’e ohaita?  
B: María ohaitama. Ha’e siémpre oho despénsape pyhareve, pêichha ha’e ikatu omba’apo ilíbro pyharépeve.  
A: Ilíbro oho porãnte? Che aguata hógapeve, ha ahendu iména Aléjo ojapo pararã, ha ndaikuuaí ha’e opurahéi o hasêpa.  
B: Aléjo opurahéi. Ha’e oipytvõ chupe ohai hağua.

A: It looks like we don’t have any bread for dinner tonight.  
B: I don’t have time, I can’t go to the store. We just won’t have any bread.  
A: And Maria? Can she go to the store or will she write?  
B: Maria is about to write. She always goes to the store in the morning so that she can work on her book in the evening.  
A: Is her book going well? When I walk by her house I hear her husband Alejo making noises but I can’t tell if he’s singing or crying.  
B: Alejo is singing. It helps her write.

15.  
A: Ahendu Maléna ha María oguerekó peteĩ komputadóra pyahu.  
B: Hee. Ha’ekuéra oñeturna omba’apo hağua inovélakuérare.  
A: Mávapa ohaitama ko pyhare, Maléna o María?  
B: María ohaitama. Maléna omopotța la hóga.
A: Maléna nomopotĩri la hóga kuehe?
B: Hee, Maléna itarova.

A: I heard Malena and Maria got a new computer.
B: Yes, they take turns using it to work on their novels.
A: Who will be writing tonight, Malena or Maria?
B: Maria will be writing. Malena will clean her house.
A: Didn’t Malena clean her house yesterday?
B: Yes, Malena is crazy.

16.
A: Nde rehecha Márkope angete?
B: Nahániri, che añe’ë hembirekondive kokuehe.
A: Mba’êíchapa Maria oí?
B: María omano. La kanser oho hihigadoopeve, ha la doktórkuéra ndoikatuvémai ojapo mba’eve.
A: Hasýne chupe he’i hašíia isýpe. Ha’o ohenói chupe o ohai peteï kárta chupeguarâ?
B: María ohaima. Isy teléfono ndoikóigu.

A: Have you seen Marko lately?
B: No, but I talked to his wife the day before last.
A: How is Maria doing?
B: Maria is dying. The cancer has spread to her liver and there is nothing more the doctors can do.
A: It must have been hard for her to tell her mother. Did she call her on the phone or write her a letter?
B: Maria already wrote. Her mother’s phone hasn’t been working.

17.
A: Kuehe María ha Ignácio oñeaksidenta kuri.
B: Hee, lúne oñeñotýta hĩna.
A: Mávapa omano?
B: María omanóma. Ignácio omope la hetymânte.

A: Maria and Ignacio were in a car crash yesterday.
B: Yes, the funeral is on Monday.
A: Who died?
B: Maria died. Ignacio only broke his leg.

18.
A: Mba’ê nde rejapóta ko árape?
B: Agueraháta Maléna despénsape.
A: Mba’ê ajeju Mariape? Che aikuaa ha’ë iğuaiģuí etereimaha, pero ha’ë ogueraha jepei Maléna despénsape?
B: María omanóma. Amby’asy Maléna oĩha ha’eño ko’áغا.
A: What are you doing today?
B: I’m taking Malena to the store.
A: What happened to Maria? I know she’s very old but didn’t she use to take Malena to the store?
B: Maria already died. It is so sad that Malena is all by herself now.
A: How is Malena doing?
B: Malena is already crazy. She misses Maria so much.

19.
A: Why was Maria so happy last week?
B: She thought she discovered a potion that would make her immortal.
A: Will Maria live forever?
B: No, Maria already died. There’s no such thing as a potion that can make you immortal.
A: Have her children Fernando and Marko already arrived for the funeral?
B: Fernando already returned. Marko will return tomorrow.

20.
A: I saw Roberto this morning, and he was upset. What happened?
B: His children have pneumonia and one died this morning.
A: Who already died, Maria or Alejo?
B: Maria omanóma. La doktor he’i Aléjo ikatu omano ko ‘éro.
A: Mba’e aikatu ajapo Aléjore? Che aikuaa ha’e oipotaha che rembi’u.
B: Aléjo orambosáma. Reikatu egueru chupe la sêna.

A: I saw Roberto this morning, and he was upset. What happened?
B: His children have pneumonia and one died this morning.
A: Who already died, Maria or Alejo?
B: Maria already died. The doctor said Alejo might die tomorrow.
A: What can I do for Alejo? I know he likes my food.
B: Alejo already breakfasted. You could bring him dinner.

21.
A: María família oime ospitálpe?
B: Hee, María hasyeteret. La doktórkuéra he’i ikatu omano, ifamilia oime upépe.
A: ¿María está en el hospital?
B: Sí, María está muy enferma. Los doctores dicen que puede morir, así que su familia está con ella.
A: ¿María volverá pronto a casa?
B: No, María morirá. No esperan que vuelva nunca al hospital.
A: ¿Ha regresado el hermano de María, Fernando?
B: Sí, Fernando ya regresó. Quiso ver a María antes de morir.

22.
A: ¿Qué estás viendo?
B: “Fuego en la sangre.” Alguien va a morir.
A: ¿Quién va a morir, Ignacio o María?
B: María va a morir. Escuché que la actriz que interpreta a María obtuvo un trabajo en otra serie de TV.
A: Me dijeron que van a traer de nuevo a uno de los otros personajes para que la historia no se haga aburrida. ¿Quién crees que volverá, Fernando o Paloma?
B: Fernando volverá pronto. Quieren que esté con Lilia.

23.
A: ¿Fernando está en forma? ¿Es atleta?
B: Sí, está entrenando para los Juegos Olímpicos.
A: ¿Swims o corre?
B: Fernando corre. Ella y Marko estarán en el equipo.
A: Oh, he estado buscando un compañero de running. ¿Ya corrieron Fernando y Marko hoy?
B: Fernando ya corrió. Marko prefiere correr en la noche, así que podrías correr con él.

This content downloaded from 128.146.172.107 on Thu, 28 Mar 2013 12:46:02 PM
All use subject to JSTOR Terms and Conditions
24.
A: Fernándo ha Palóma oho oikóvo gimnásiopé?
B: Hee, ha’ekúera ohó ofápóvo ejersísio.
A: Palóma oñani?

A: Fernando and Paloma have been going to the gym?
B: Yeah, they go to exercise.
A: Does Paloma run?
B: No, Fernando runs. Paloma prefers to swim.

25.
A: Fernándo okompeti triatlónpe?
B: Hee, ha’e okompletátama la karréra nataciónpegua.
A: Ha’e okompetita bisiklétape o oñaníta?
B: Fernándo oñanítama. Ha’e okompetíma bisikléta ariguápe.

A: Is Fernando competing in the triathlon?
B: Yes, he is about to complete the swimming portion of the race.
A: Will he be biking soon or running soon?
B: Fernando is about to run. The biking part already happened.

26.
A: Mba’èichapa? Che avy’a ejúgui ko atýpe.
B: Che avei. Ņaĩmapa ŋañepyrû ha ţu?
A: Ndaikatumo āi řañepyru oguahê mboye Fernándo. Ndahecháï chupe mamove. Mba’épa ojapo ha’e?
B: Fernándo oguahê. Ko’ágà ikatúma ņañepyru la aty.
A: Amalicia Fernándo ikane’ô. Mba’è ha’e ojapo kuri?
B: Fernándo oñani. Tapiatte oguahê óra rire ha oñani va’erà.

A: How is it going? I’m glad you could come to the meeting.
B: Me, too. Are we ready to start?
A: We can’t start before Fernando arrives. I don’t see him anywhere. What is he doing?
B: Fernando arrived. Now we can start the meeting.
A: He looks tired. What did he do?
B: Fernando ran. He is always late, so he always has to run.

27.
A: Aguijeterei ndève che konvida hagúere ŋasena haţua. Mba’è jafestejáta?
B: Fernándo ojedeha Malénaguí ha ha’e oikotevé ŋanderehe. Ha’è oî ha’eñoeterei.
A: Fernándo oguahêma o ha’è oî hógape?
B: Fernándo oguahê. Ha’è oîma mesápe.
A: Mha ’èré ha ’e ojedeja Malènagui? Ha ’e itarova o Malèna itarova?
B: Malèna itarova. Fernándo he ’i hasneterei jaiko itarovávandi.

A: Thanks for inviting me over for dinner. What are we going to celebrate?
B: Fernando just broke up with Malena and he needs us. He’s been spending too much time by himself.
A: Did Fernando arrive already or is he at his house?
B: Fernando arrived. He’s already at the table.
A: Why did he break up with Malena? Is Fernando crazy or is Malena crazy?
B: Malena is crazy. Fernando says it’s hard to live with a crazy person.

28.
A: Nde rereko microóndas ko ’ága? Fernándo ogueruka ndéve?
B: Hee, ha ’e ojogua iplátagui ogana va ’ekue Buenos Airespe.
A: Che aimo ’á ha ’e pya ’e oujeýta Paraguaýpe. Moô oî ha ’e?
A: Ha Navidápe, ha ’e opytáta Buenos Airespe o oútama Paraguaýpe?
B: Fernándo oútama. Ohasase Navida ñanendive.

A: You have a microwave oven now? Did Fernando send this to you?
B: Yes, he bought it with the money he earned in Buenos Aires.
A: I thought he was coming back to Paraguay soon. Where is he?
B: Fernando arrived already. He’s sleeping, he’s tired from the trip. He is going to return to Buenos Aires tomorrow.
A: And at Christmas, is he going to stay in Buenos Aires or will he come to Paraguay?
B: Fernando will come. He wants to spend Christmas with us.

29.
A: Avy ’a che invita haguère Palóma ha Fernándo kasamiêntope. Aretereima ndahechavéi chupekuéra.
A: Mávapa oguahêma, Palóma o Fernándo?
B: Fernándo oguahêma. Ha ’e oguapy pépe. Palóma ojeprepara ramo.

A: I’m happy you invited me to Paloma and Fernando’s wedding. I haven’t seen them in a long time.
B: I’m happy you came. We’re running a bit late. Only one of them has arrived.
A: Who arrived already, Paloma or Fernando?
B: Fernando arrived already. He’s sitting over there. Paloma just got dressed.
30.  
A: Ajapopáma la pan invitádope ġuarã. Oğuahêma kihuáî?  
B: Hetáma oğuahê ha oguupýpáma. Ambuekuéra oğuahêtama.  
B: Fernándo oğuahêtama. Ha’ê oho ogueru isy ha itúape.  
A: Ha màva oho ogueru Robèrta sýpe? Maria o Ignácio?  
B: Maria ohóma. Ignácio oñongatu asiénto chupekuérağuarã.  

A: I just finished baking the bread for the guests. Have they arrived yet?  
B: Many have arrived and are already sitting. Others are about to arrive.  
A: Is Fernando here already or is he about to arrive? He’s supposed to help me in the kitchen.  
B: Fernando is about to arrive. He went to pick up his parents.  
A: And who is picking up Roberta’s mother? Maria or Ignacio?  
B: Maria went already. Ignacio is saving them seats.

31.  
A: Aléjo ha Fernándo oî va’erâ ko’ápe chepytvô hağua rokosina hağua peteî tôrta. Ne’îra mavavéa oğuahê guéteri. Reikuaa môopa oîme ha’êkuéra?  
B: Che aje’î ahecha chupekuéra oguata kállere. Ha’ekuéra ou hîna håkatsu peteï oho va’erâ ovisita iñamígope ra’e. Ha la ótro oğuahêtama.  
A: Aléjo o Fernándo oğuahêtama?  
B: Fernándo oğuahêtama. Aléjo ovisita va’erâ iñamígope ha iñe’êngatu.  
A: Amalicia Fernándo o Aléjo orambosasêta ko’ápe. Nde reikuua mîvapa orambosáma?  
B: Aléjo orambosáma. Fernándo orambosasêta.  

A: Alejo and Fernando were supposed to help me bake a cake. They haven’t arrived yet. Do you know where they are?  
B: I saw them walking down the street earlier. They were on their way, but one had to visit a friend. And the other one is about to arrive.  
A: Is Alejo or Fernando about to arrive?  
B: Fernando is about to arrive. Alejo has to visit a friend and they are very chatty.  
A: I think Fernando or Alejo also want to eat breakfast here. Do you know which one already ate breakfast?  
B: Alejo already breakfasted. Fernando will want to have breakfast.

32.  
A: Maléna oipytvô eskuélape ko árape. Iporã la igésto. Che aháta ağave ha’e hağua chupete.  
B: Ha’ê ovy’î oipytvô haguêre mitânguêrape. Che ndatkuâái ha’ê oí pukütapu pépe. La mitânguêra ombotarova arâ chupe.  
A: Malénapa oî porâne che ağuahérôğuarã?  
A: Mâvapa opurahéitama, Aléjo o Ignácio?  
B: Aléjo opurahéitama. Ignácio ombopùta la mbaraka.
A: Malena is helping out at the school today. That’s so nice of her. I’m going to go by there later to tell her.
B: She was happy to help out with the children. But I’m not sure how long that will last. The children will drive her crazy.
A: Will Malena still be fine when I get there?
B: No, Malena is about to go crazy. She does not have much patience. Alejo and Ignacio are going to go over and sing with the children soon, so Malena will get a break.
A: Who is about to sing, Alejo or Ignacio?
B: Alejo is about to sing. Ignacio will play guitar.

33.
A: Ignácio ha Maléna oviaja ko árape kampáñape.
B: Hakueterei ko ’ágã. Ha’ekuéra oho kolektívope ha ndorekói áire akondicionádo. Ha’e itarovátama.
A: Mávapa itarovátama, Ignácio o Maléna?
B: Maléna itarovátama. Ignácio ojepejúta diáriope.

A: Ignacio and Malena are traveling to the countryside today.
B: But it’s so hot today. They are traveling in a bus without AC. S/he/they will be about to go crazy.
A: Who is about to go crazy, Ignacio or Malena?
B: Malena is about to go crazy. Ignacio will just be fanning himself with a newspaper.

34.
B: Mba’repa nde reguahê tardeteri?? Ore rokarupáma. La fiésta opáma avei!
A: Henyhe la kolektivo ha aha’arô va’erâ ambue. Mba’e ojehu fiéstape ra’e?
B: Aléjo opurahéima. Rejeperdepa.
A: Anichène. Ha Fernándo oguahéma o ha’e ndohechái avei Aléjo opurahéi jave?
B: Fernándo oguahéma. Ha’e o’guahê la primer kolektívope.

A: How is it going? I finally made it to the party. Alejo invited me.
B: Why are you so late?!? We already finished eating. The party is already over, too!
A: The bus was full and I had to wait for the next one. What happened already?
B: Alejo already sang. You missed him.
A: That’s too bad. Did Fernando arrive already or did he miss Alejo, too?
B: Fernando already arrived. He arrived with the first bus.

35.
A: Che diskulpa a’guahêma tárde la kasamiéntope. La pa’i omomendapáma chupekuéra?
B: Hee, omomendapáma.
A: Ndi. Che aikuaa Aléjo oaktua va’erã la mendápe. Ha’e opurahéi chupekuéra o oñembo’e hesekuéra?
B: Aléjo opurahéima. Ne’ira guéteri oñembo’e.
A: Ha la menda festéjo? Mávapa opurahéi, Aléjo o Terésa?
B: Aléjo opurahéi. Terésa ombopu la mbaraka.

A: I’m sorry I’m late to the wedding. Did the priest already marry them?
B: Yes, he just finished marrying them.
A: Too bad. But I know Alejo will contribute to the ceremony. Did he sing to them or did he pray for them?
B: Alejo already sang. He hasn’t prayed yet.
A: What about the wedding party? Who sang, Alejo or Teresa?
B: Alejo sang. Teresa played the guitar.

A: I’m so excited to finally see Alejo and Paloma sing! I know they’ve been practicing a lot.
B: You’re late! You didn’t see all of their show.
A: Who sang already, Alejo or Paloma?
B: Alejo already sang. Paloma is going to sing in a bit and you can see her.

A: I’m glad you were able to go to the concert with me.
B: Me, too, I reserved a seat for Alejo but he won’t be able to sit with us.
A: Why? What is he doing?
B: Alejo is about to sing. He’ll be on stage any second now.
A: Malena really wanted to sing the solo part this year. Is she happy about Alejo singing or is she already crazy because she won’t be able to sing?
B: Malena is already crazy. She doesn’t like competition.
38.
A: Che avy’aiterei ahecháta haguére Aléjo escenáriópe. Ha’e otarda hĩna?
B: Hee, ha’e opurahéima va’erã 10 minútoma kuri.
A: Mba’êpa ha’e ojapóta? Opurahéïta o ombopúta la mbaraka?
B: Aléjo opurahéïtama. Upéi ha’e ombopúta la mbaraka.
A: Mba’êpa Lilia ojapóta? Ha’êpa opurahéïta Alejondive?
B!: Aléjo opurahéïtama. Lilia hasy ha ndoïkatumo ‘âi ko pyharépe.

A: I’m so excited that I’ll soon see Alejo on the stage. But isn’t he a bit late already?
B: Yes, he was supposed to have sung 10 minutes ago.
A: What is he going to do? Is he going to sing or play the guitar?
B: Alejo is about to sing. And then he is going to play the guitar.
A: What is Lilia going to do? Is she going to sing with Alejo?
B: Alejo is about to sing. Lilia is sick and won’t be performing tonight.

39.
A: Mba’e nde rejapóta ko árape?
B: Añangareko hĩna che sobrîno Aléjore, che hermána omba’apo hĩna.
A: Mba’ê ha’ e ojapo?
B: Aléjo orambosa. Ha’e ojapo sarambi kosináme.
A: Ndi, ha avave nanepytyvôi pîko? Mba’ê ojapo ne amígo Fernándo?
B: Fernándo o ĝuahêtama. Che avy’a ha’ê oikuáagui mba’êicha oñangareko va’erã mitâre.

A: What are you doing today?
B: I’m watching my nephew Alejo, my sister is at work.
A: What is he doing?
B: Alejo is breakfasting. He is really making a mess in the kitchen.
A: Too bad, and nobody is helping you? What is your friend Fernando doing?
B: Fernando is about to arrive. I’m glad because he is very good at taking care of children.

40.
A: Fernándo ha Aléjo oînhâma oho haçuáicha párkepe?
B: Fernándo oîmbama. Aléjo oîmbâtama ağaïte.
A: Aléjo ojeprepara o ha’ê orambosa?
B: Aléjo orambosa. Ha’e oñemondepáma, ikatúma jaha ha’ê ojoheîpa rire umi tembipuru.
A: Máva ohôtama oñani parképe, Fernándo o Aléjo?
B: Fernándo oñanítama. Aléjo hetyma rasy, ha’ê oguatâtante.

A: Are Fernando and Alejo ready to go to the park?
B: Fernando is ready. Alejo will be ready to go in a few minutes.
A: Is Alejo getting dressed or breakfasting?
B: Alejo is breakfasting. He’s already dressed, we can leave as soon as he washes the dishes.
A: Who is about to run in the park, Fernando or Alejo?
B: Fernando is about to run. Alejo hurt his leg, he will only walk.
41.
A: Che ahendu Aléjo ha Fernándo ova peteĩ departaménto py’ahúpe.
B: Hee, michieterente. Peteĩnte ija kosináme.
A: Che ahetũ kafe hĩna. Máva orambosa, Aléjo o Fernándo?
B: Aléjo orambosa. Fernándo ho’úta aḡave.
A: Moō oime Fernándo? Ha’e oñanima o ojahu?
B: Fernándo oñanima. Ha’e ojahu hĩna.

A: I heard that Alejo and Fernando moved to a new apartment.
B: Yes, it’s very small. Only one person can be in the kitchen.
A: I smell coffee. Who is breakfasting, Alejo or Fernando?
B: Alejo is breakfasting. Fernando will eat later.
A: Where is Fernando? Did he already run or is he in the shower?
B: Fernando already ran. He is showering right now.

42.
A: Mb’aère Aléjo omoĩ ijaokuéra malétape?
B: Ha’e ohóta Hapónpe.
A: Ipukiţa la ijeho. Ha’e osenáma o orambosáma?
B: Aléjo orambosáma. Ha’e oñakostumbrase Hapon oráriope.

A: Why is Alejo packing that suitcase?
B: He is going to Japan.
A: That will be a long flight. Did he already eat dinner or breakfast?
B: Alejo already breakfasted. He is trying to get used to Japan time.

43.
B: Hee. Che aháta aguata avei aḡa.
A: Mba’ępa nememby Aléjo ojapôta?
B: Aléjo orambosátama. Ha’e opay asajepytéma ha ojesako ’iramo.
A: Mba’ę hyapu la ne bāňope?
B: Aléjo opurahēi. Ha’e katuetei opurahēi ojahu jave.

A: How is it going? I’m taking a walk. It is such a nice morning.
B: Yes. I’m going to take a walk soon, too.
A: What will your son Alejo be doing?
B: Alejo will be breakfasting soon. He slept late today and is still getting ready.
A: What’s the strange noise in your bathroom?
B: Alejo is singing. He likes to do that in the shower.
44.
A: Rehôta merkâdope ko pyharevépe?
B: Hee. Aléjo orambosapa rire, che ahâta merkâdope.
A: Ha’e ohótama omba’apo?
B: Nahániri. Aléjo orambosátama. Ha’e ho’u va’erâ oho mboyve omba’apo.
A: Ha la iñermâno Fernándo? Mba’e ha’e ojapo? Roikatu rojapo ejersisio oñondive?
B: Fernándo oñaníma. Ha’e oñani voi ojapo mboyve mba’ève.

A: Are you going to the market this morning?
B: Yes. After Alejo has had breakfast, I will go to the market.
A: Will he be going to work soon?
B: No, Alejo will be breakfasting soon. He has to eat something before he goes to work.
A: And his brother Fernando? What is he doing? Could we exercise together?
B: Fernando already ran. He likes to run first thing in the morning.

45.
A: Aléjo ha Palóma opu’âma?
B: Hee, ha ajapo va’erâ rambosarâ.
A: Mávapa orambosátama, Aléjo o Palóma?
B: Aléjo orambosátama. Palóma opu’â voi ha ha’e ndo’úi pyharevekue mba’ève.

A: Did Alejo and Paloma get up yet?
B: Yes, and I have to make breakfast.
A: Who will be breakfasting soon, Alejo or Paloma?
B: Alejo will be breakfasting soon. Paloma got up early and she doesn’t eat in the morning.