Ecuadorian Andean Spanish Intonation

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1. Introduction

The purpose of this chapter is to present the basic intonational patterns found in Ecuadorian Andean Spanish according to the methods previously discussed (this volume). Prior research on Ecuadorian Spanish intonation is relatively scarce in comparison to other Spanish varieties. However, the foundational work by Toscano Mateus (1953) on Ecuadorian Spanish does describe dialect zones within Ecuador as also showing distinctions in the use of intonation patterns. In addition, Toscano Mateus notes amongst gente rústica or ‘rural speakers’ a similarity in the use of intonation between Quechua and Spanish (1953: 42). Also, in her examination of Ecuadorian Spanish dialects that employ the fricative [\牺牲], Argüello (1978) provides an analysis of the intonation contours of several utterance types according to the height or levels reached (e.g. 1, 2, etc.) by employing the notation used within the Americanist tradition. While broad focus statements are characterized by a final drop in pitch, interrogatives show a final rise, including both yes-no questions and wh- questions such as ¿De dónde eres? ‘Where are you from?’ Specifically, Argüello indicates that “In the interrogatives formed with an interrogative pronoun, generally a suspension /→/ occurs and many times a final rise, the same as absolute interrogatives, especially in long phrases” (1978: 155-156, my translation). Another characteristic feature described by Argüello that is also found in the current data set is the extensive use of utterance-final devoicing: “This halting of phonation causes devoicing of the last unstressed vowel and many times of the whole syllable” (1978: 153, my translation). Other biased utterance types, such as some emphatic utterances and imperatives, are described as ending with the suspension of a mid-level tone (rather than a final fall or rise).

The present description of Ecuadorian Spanish intonation is based on the recordings of speakers from the Andean region, from Quito in particular. However, Ecuador itself can be divided linguistically into several dialect zones, including the coastal region, the extreme north-central region, the central highlands, the areas comprising the provinces of Cañar and Azuay, the extreme southern province of Loja and the Amazon as a final emerging dialect

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1 “En las interrogaciones formadas con pronombres interrogativos, generalmente ocurre suspensión /→/ y muchas veces se da la terminación ascendente propia de la interrogación absoluta, especialmente en frases largas” (Argüello 1978: 155-156).

2 “Este cese de la fonación causa el ensordecimiento de la última vocal inacentuada y muchas veces de toda la sílaba” (Argüello 1978: 153).
zone (Lipski 1994: 245-249; Toscano Mateus 1953: 41-42). Some characteristic features cited by Lipski (1994: 248-249) of Ecuadorian Spanish in the central highland region where Quito is located are: unstressed vowel reduction, especially in contact with /s/; nasal velarization word-finally; assimilation of rhotics word-initially and word-finally; maintenance of /ʌ/ as a phoneme pronounced as a palatoalveolar fricative [z] (in contrast with /y/); retention of /s/ syllable-finally; and sonorization of /s/ across word boundaries when followed by a vowel. Also, the labiodental fricative /f/ is often realized as [h] by Quechua-Spanish bilinguals. Further description of Spanish in Ecuador and the effects of language contact can be found in Quilis (1992), Büttner (1993), Haboud (1998) and Guion (2003), among others. The present analysis of Ecuadorian Andean Spanish intonation is therefore offered as a means to describe in more detail one of several Ecuadorian Spanish dialects and to offer a point of comparison with other dialects of Spanish spoken in the Andes (e.g. Venezuelan Andean Spanish, this volume), as well as with other non-Andean varieties of Spanish.

The structure of the remainder of this chapter is as follows. In section 2, a general overview of the pitch accents and boundary tones observed for Ecuadorian Andean Spanish is given. In section 3, a more detailed analysis of the intonation patterns found is provided, including an analysis of statements, yes-no questions and wh-questions. Both broad focus and biased utterances are considered. In addition, imperatives and vocatives are examined. In section 4, we offer a summary of the characteristic features of Ecuadorian Andean Spanish, including a listing of the nuclear configurations (final pitch accent and boundary tone) for each of the utterance types.

2. Ecuadorian Andean Spanish intonational phonology

In this section we present an inventory of the pitch accents and boundary tones observed in Ecuadorian Andean Spanish. For each item, a schematic configuration is provided along with the Sp_ToBI labeling which follows the notation system described in Beckman et al. (2002) for Spanish and later revised in Estebas-Vilaplana and Prieto (2008). A description of the tonal configuration along with the types of utterances in which these configurations appear is also given.

2.1. The pitch accents

The following pitch accents have been observed in Ecuadorian Andean Spanish. Table 1 includes monotonal and bitonal pitch accents.

<table>
<thead>
<tr>
<th>Table 1: Inventory of monotonal and bitonal pitch accents in Ecuadorian Andean Spanish and their schematic representations</th>
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</thead>
<tbody>
<tr>
<td><strong>Monotonal pitch accents</strong></td>
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</tbody>
</table>

228
in yes-no questions, including information-seeking, echo, counterexpectational, invitation and confirmation yes-no questions, in wh- questions, including information-seeking, echo and irritated imperative wh- questions, and in commands and requests.

<table>
<thead>
<tr>
<th>H*</th>
<th>This accent is phonetically realized as a high plateau with no preceding F0 valley. In the current data set, it is observed in prenuclear position in broad focus statements, statements of the obvious, uncertainty statements, information-seeking wh-questions, imperative wh-questions, commands and requests; in nuclear position it appears in exclamative statements and (irritated) imperative wh-questions.</th>
</tr>
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</table>

**Bitonal pitch accents**

<table>
<thead>
<tr>
<th>L+H*</th>
<th>This accent is phonetically realized as a rising pitch movement during the accented syllable with the F0 peak located at or before the end of this syllable. In prenuclear position, this accent is used in exclamative statements, statements of the obvious, uncertainty statements, disjunctive questions, imperative yes-no questions, echo wh-questions, and imperative wh-questions; in nuclear position this accent is found in narrow focus statements, contradiction statements, information-seeking, imperative and invitation yes-no questions, information-seeking wh-questions and vocatives.</th>
</tr>
</thead>
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<thead>
<tr>
<th>L+H*</th>
<th>This accent is phonetically realized as a rising pitch movement on the accented syllable with the F0 peak aligned with the posttonic syllable. It is attested in prenuclear position in broad focus statements, exclamative statements, contradiction statements; it appears also in information-seeking, echo, counterexpectational, imperative and invitation yes-no questions, and in commands.</th>
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<thead>
<tr>
<th>L*+H</th>
<th>This accent is phonetically realized as a F0 valley on the accented syllable with a subsequent rise on the posttonic syllable. It is found in prenuclear position in yes-no questions, including information-seeking, counterexpectational, invitation and confirmation questions.</th>
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<tr>
<th>H+L*</th>
<th>This accent is phonetically realized as a F0 fall within the accented syllable. It is found in prenuclear position for imperative wh-questions and in nuclear position for commands.</th>
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</thead>
</table>

**2.2. The boundary tones**

The following boundary tones have been observed in Ecuadorian Andean Spanish. Table 2 includes monotonal and bitonal boundary tones. It should be noted that final rises have been marked as HH%. In this data set, the height of HH% that is observed is phonetically lower than that found in other dialects of Spanish (e.g. Castilian, Chilean and Puerto Rican.
Spanish, this volume), where speakers may show a sharper rise to the highest point of the speaking range. However, since the height of the high boundary tone in Ecuadorian Andean Spanish is relatively consistent, and it does not contrast with an even higher boundary tone in the same dialect, we have transcribed the high boundary tone at HH% in order to allow for cross-comparison between dialects.

Table 2: Inventory of monotonal and bitonal boundary tones in Ecuadorian Andean Spanish and their schematic representations

<table>
<thead>
<tr>
<th>Monotonal boundary tones</th>
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</tr>
</thead>
<tbody>
<tr>
<td>L%</td>
<td>L% is phonetically realized as a low sustained tone or a falling tone at the baseline of the speaker’s range. It is found at the end of broad focus statements, narrow focus statements, contradiction statements, statements of the obvious, uncertainty statements, disjunctive questions, invitation yes-no questions, irritated imperative wh-questions, commands and requests.</td>
</tr>
<tr>
<td>M%</td>
<td>M% is phonetically realized as a rising or falling movement to a target mid point. It appears at the end of exclamative statements, information-seeking wh-questions, imperative wh-questions and vocatives.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bitonal boundary tones</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HH%</td>
<td>HH% is phonetically realized as a rising pitch movement coming from a low or a high pitch accent. It is found at the end of information-seeking, imperative and confirmation yes-no questions, and information-seeking wh-questions.</td>
</tr>
<tr>
<td>HL%</td>
<td>HL% is phonetically realized as a F0 followed by a fall. It appears in echo, counterexpectational and invitation yes-no questions, and in echo wh-questions.</td>
</tr>
</tbody>
</table>

3. Basic intonational patterns in Ecuadorian Andean Spanish

In order to analyse Ecuadorian Andean Spanish intonation, recordings were made using a modification of the intonation guided questionnaire from Prieto (2001) adapted for the Atlas interactivo de la entonación del español (Prieto and Roseano coords. 2009-2010). The speakers, one male and one female, were from Quito and were between 20-35 years of age at the time of the recording. In the questionnaire, the speakers were given a specific context and then asked to state how they would respond in a particular context or produce a target utterance. In addition to the 69 contexts from the original guided questionnaire, two more contexts intended to produce broad focus statements were included. A total of 71 contexts were presented; the current analysis is based on a combined total of 142 recorded utterances total from these two speakers. The data were analysed using the Praat acoustic analysis software (Boersma and Weenink 2010). As previously stated, the notation system used is the Sp_ToBI system (Beckman et al. 2002) and its revised version (Estebas-Vilaplana and Prieto 2008), which adopts the Autosegmental-Metrical (AM) approach to analyse intonation contours as a series of targets (Pierrehumbert 1980, among others).
3.1. Statements

3.1.1. Broad focus statements

In broad focus statements, a number of pitch accents appear in prenuclear position, which may depend in part on the amount of segmental material available for the tones to surface. In figure 1, we see that a late peak appears on the posttonic syllable in the first word in prenuclear position, María, giving the pitch accent L+H* (the stressed syllable is shown here as underlined). Next, the pitch remains high on the tonic syllable of the second word in prenuclear position, come ‘eats’, so that a H* pitch accent may be postulated. Finally, in nuclear position, the accented syllable in mandarinas ‘tangerines’ appears to have a low target L* since the low is maintained during this syllable. The utterance ends in a low fundamental frequency, which may be considered to have a low boundary tone L%. Note that in this example there was devoicing of the posttonic vowel so that at the end of the utterance voicing occurs only in the consonant n immediately following the stressed syllable. Utterance-final devoicing was typical of this data set, such that boundary tones were realized closer to the last stressed syllable. However, the notation is given at the end of the utterance.

3.1.2. Biased statements

3.1.2.1. Narrow focus statements

For biased utterances with narrow focus and emphasis, a peak appears during the stressed syllable of the word receiving focus or emphasis. In the narrow focus statement in figure 2, the response No, de limones ‘No, of lemons’ is given to contrast limones ‘lemons’ with another option in a previous utterance. A low fundamental frequency (F0) is observed followed by a peak during the stressed syllable, giving a L+H* pitch accent. Since the F0 then drops, a final low boundary tone L% is noted.

Similar to narrow focus correction statements are contradiction statements. In these statements, the utterance is an affirmation of what is considered to be correct. In figure 3, the speaker of this statement was given two location options and indicated that, of the two, Lima was the destination. The prenuclear pitch accent on the verb vamos ‘we are going’ is L+>H* including a posttonic peak, while the element being confirmed Lima has a rise and peak during the tonic syllable L+H*.

3.1.2.2. Exclamative statements

In exclamative statements, such as in figure 4 ¡Qué bien que huele el pan! ‘The bread smells great!’ the same L+H* is observed for the word receiving most emphasis, in this case bien ‘great.’ The following word huele ‘smells’ shows a posttonic peak or L+>H*, while the last word in the utterance pan ‘bread’ maintains a high F0, so that H* is given as the pitch accent. The last word in the utterance is monosyllabic, and in this case the F0 does not drop. Therefore a boundary tone M% is given. Examples of similar utterances with posttonic syllables for the word in nuclear position are needed to examine whether the speaker would still employ M% as a target or if, with more segmental material available, a fall would be observed.
Figure 1: Waveform, spectrogram and F0 trace for the broad focus statement María come mandarinas ‘Maria is eating tangerines’ produced with a L+→H* prenuclear accent and a L* nuclear accent followed by a L% boundary tone.

Figure 2: Waveform, spectrogram and F0 trace for the narrow focus statement No, de limones ‘No, of lemons’ produced with nuclear accent L+H* and L% boundary tone.
Figure 3: Waveform, spectrogram and F0 trace for the contradiction statement *No, nos vamos a Lima* 'No, we are going to Lima' produced with a *L+H* nuclear accent and *L%* boundary tone.

Figure 4: Waveform, spectrogram and F0 trace for the exclamative statement *¡Qué bien que huele el pan!* 'The bread smells great!' produced with *L+H* on the word being emphasized.
3.1.2.3. Statements of the obvious

Two types of biased statements present in the corpus which employ similar pitch accents are statements of the obvious and contradiction statements (previously described). For statements of the obvious, the pitch accent L+H* is observed with a peak present during the stressed syllable of the element considered to be obvious, such as Guillermo in figure 5. Phonetically, the peak is realized in the middle of the syllable as opposed to the end. The posttonic syllable drops to a low pitch at the end of the word, although there is no other intonational break or slowing at the end of the phrase, which is indicated by a break index of 2. This statement with the following affirmation pues ‘of course’ and the rhetorical question that follows end in a low L% boundary tone. Note that in this data set we do not see the LM% boundary tone observed in other varieties of Spanish. Further examination of statements of the obvious is needed for Ecuadorian Andean Spanish to determine if the LM% may also be employed in these contexts.

3.1.2.4. Uncertainty statements

Uncertainty statements are those uttered to express a certain degree of doubt on the part of the speaker. The statement that appears in figure 6 was produced in response to the context given that the speaker was asked to buy a gift for another person and the speaker was not sure if the purchased gift would be well received or liked. The first half of the utterance is informative, but the second half, including pero no sé ‘but I don’t know’ demonstrates the uncertainty. A prenuclear H* pitch accent appears on the verb followed by a low L* nuclear accent and L% boundary tone.

3.2. Questions

3.2.1. Yes-no questions

In information-seeking yes-no questions, the intended response is either an affirmation or a negation. Prenuclear accents appear to be bitonal, with the peak occurring after the offset of the stressed syllable for the first word in prenuclear position in figure 7, or L+>H*; the second prenuclear pitch accent demonstrates a relatively lower pitch throughout the stressed syllable followed by a rise or L*+H. The nuclear pitch accent in figure 7 also shows a low target or L* followed by a rise to the end of the utterance, giving a HH% boundary tone. This configuration is similar to contours observed for information-seeking yes-no questions in other Spanish varieties (e.g. Castilian Spanish and Cantabrian Spanish, this volume).

This same type of contour can be observed in information-seeking yes-no questions that are uttered with the phrase por favor ‘please’ which have the pragmatic function of a polite request. Both speakers produced similar contours for yes-no questions in which information was being sought. Figure 8 demonstrates this type of yes-no question, in which L* HH% can be observed in the first part of the question, while the second portion or phrase por favor, shows a higher pitch range and also ends in a high HH% boundary tone.

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3 If these differences were phonological, the additional notation < could be added to the pitch accent to signify the earlier placement of the peak L+<H*. However, for the present time, these tonal configurations will be represented as L+H* since more work is needed to investigate the potential phonological nature of these distinctions.
Figure 5: Waveform, spectrogram and F0 trace for the statement of the obvious ¡De Guillermo, pues! ¿De quién más va a ser? ‘Guillermo’s [of course]! Who else’s would it be?’ produced with L+H* on the word considered to be obvious.

Figure 6: Waveform, spectrogram and F0 trace for the uncertainty statement Eh, compré esto pero no sé si le guste ‘Uh, I bought this but I’m not sure if s/he will like it’ produced with prenuclear H* pitch accents followed by a L* L% nuclear configuration.
Figure 7: Waveform, spectrogram and F0 trace for the information-seeking yes-no question ¿Ya ha llegado María? ‘Has María arrived already?’ produced with a final HH% boundary tone.

Figure 8: Waveform, spectrogram and F0 trace for the information-seeking yes-no question ¿Tiene mermelada, por favor? ‘Please, have you got any jam?’ produced with final HH% boundary tones.
There are other instances in which a high boundary tone is observed. In yes-no disjunctive questions, two or more options are given. In these examples, after the second-to-last option, a high HH- is used along with a break index level of 3 in order to indicate an intermediate phrase boundary. For the word *melón* ‘melon’ in figure 9, the pitch accent is L+H*, after which a HH- is given to indicate the high level obtained at the end of the intermediate phrase, as also observed in other dialects of Spanish (e.g. Castilian Spanish, among others, this volume). This type of disjunctive question ends in a nuclear configuration of L* followed by L%.

### 3.2.2. Biased yes-no questions

#### 3.2.2.1. Echo yes-no questions

In echo yes-no questions, the speaker is repeating what s/he thinks was heard in order to verify if what was understood is correct (or not). The echo question in figure 10 shows a nuclear configuration with a low L* target during the stressed syllable and a boundary tone that begins high and then drops lower. The notation HL% is used since this configuration is similar in shape to other contours that end in an even lower pitch level; the difference is then considered to be part of the phonetic implementation (cf. figure 11).4

Other yes-no questions that express incredulity can be considered counterexpectational yes-no questions. The example shown in figure 11 was produced as a response to the given context in which an adult observed that his/her son was shivering in a hot restaurant. Similar to the echo yes-no question, in this counterexpectational yes-no question the nuclear configuration is also L* followed by HL%. The pitch accent in prenuclear position is L*+H.

The bitonal boundary tone HL% is observed for several biased question types in Ecuadorian Andean Spanish and can also be compared to other dialects of Spanish. In Puerto Rican Spanish, for example, the nuclear configuration L* HL% is employed for incredulity echo questions. In Cantabrian Spanish, the nuclear configuration for yes-no echo questions H* HL% shares the same boundary tone. However, Venezuelan Andean Spanish employs a different nuclear configuration H+L* L% for the same question type.

An utterance that may be considered to express a greater degree of incredulity can be seen in the counterexpectational yes-no question in figure 12. The target levels of the boundary tone HL% seem to vary in height. (Note that in figures 10-12 the H target in the HL% boundary tone is higher than the peak in the previous pitch accents.) However, more data are needed to determine how many levels should be postulated for boundary tones and what notation would be appropriate to signify these differences. While counterexpectational yes-no questions demonstrate a L* HL% nuclear configuration in Ecuadorian Andean Spanish, the nuclear configuration for Venezuelan Andean Spanish is L+H* H%.

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4 Alternative, this configuration could be considered HM%; however, the usage of HM% as phonologically distinct would need to be established in contrast to HL%.
Figure 9: Waveform, spectrogram and F0 trace for the disjunctive question ¿Qué prefieren? ¿Melón o helado? ‘What do you prefer? Melon or ice cream?’ produced with a HH- between question options and a L% boundary tone.

Figure 10: Waveform, spectrogram and F0 trace for the echo yes-no question ¿Son las nueve? ‘It is nine o’clock?’ produced with a L* nuclear pitch accent and HL% boundary tone.
Figure 11: Waveform, spectrogram and F0 trace for the counterexpectational yes-no question ¿Tienes frío? ‘You’re cold?’ produced with a HL% boundary tone.

Figure 12: Waveform, spectrogram and F0 trace for the counterexpectational yes-no question ¿Y te dieron carne de llama? ‘And they served you llama meat?’ produced with a L* nuclear pitch accent and HL% boundary tone.
3.2.2.2. Imperative yes-no questions

In other biased yes-no questions, a high H% or low L% boundary tone may be found or a bitonal HL% boundary tone may be observed. For example, in a typical imperative yes-no question, such as figure 13, a high boundary tone is found. The question in figure 13 was produced for the given context of a grandparent wanting grandchildren to stop making noise so s/he can watch the news. In this imperative yes-no question, the speaker also includes the tag por favor ‘please’ as well as some additional exhaling to express exasperation or laughter perhaps in order to soften the degree of insistence in the imperative. In this case, the pitch accent L+H* is used at the end of the first and second phrases, on collar ‘to become quiet’ and por favor ‘please’. Note that these words have word-final stress. The final boundary tone is a high HH%, which may not be realized as phonetically high as in other Spanish dialects. (Note that if we were to consider the portion that contains the exhalation as well, then the utterance would end in a low L% boundary tone.)

In the example in figure 14, the imperative yes-no question was uttered in an exhortative sense in order to convince the listener to agree to the request, i.e. as an invitation. While the prenuclear pitch accent L*+H is the same as those previously observed in other biased yes-no questions, the nuclear configuration is L+H* followed by a low boundary tone L%.

In figure 15, we see another yes-no question asked as an invitation. In this case, a bitonal pitch accent on the first prenuclear word is observed with the rise beginning during the stressed syllable but reaching the F0 maximum in the posttonic syllable, or L+H*. In nuclear position, the low tone L* is maintained throughout the stressed syllable. At the end of the utterance, we see a higher level reached during the posttonic syllable which then drops, noted as HL% (with undershoot of the low portion of the bitonal boundary tone).

3.2.2.3. Confirmation yes-no questions

In confirmation questions, such as that illustrated in figure 16, the nuclear configuration is L* followed by a high boundary tone or HH%. The pitch accent in prenuclear position is L*+H, similar to other biased yes-no questions. This confirmation yes-no question was produced for the following context: Someone has come inside bundled up (with a warm coat) and the speaker knows that it is very cold outside. So s/he asks if the other person is cold (or not).

3.2.3. Wh- questions

In information-seeking pronominal or wh- questions the final contour in this data set shows a higher F0, which in some cases may be considered to correspond to a M% boundary tone, and in others, to a HH% boundary tone. In figure 17, the utterance begins with a high F0 or H* prenuclear pitch accent, and then drops until it rises again at the end of the question. Since the rise appears to take place during the last stressed syllable, the pitch accent is analysed as L+H*. The boundary tone is given as M% since the F0 does not rise even more or fall at the end. In figure 18, a prenuclear pitch accent of H* is given since the stressed syllable in cuánto ‘how much’ is higher than the beginning of the utterance. However, the F0 at the end of the word is even higher, suggesting a possible high intermediate phrase boundary tone or H-, even though there is no slowing or other juncture detected as indicated by the use of the break index of 2. The nuclear pitch accent appears to be a low L* target, while the end of the question ends in a higher level or HH%. Further examination of these types of contours is needed since in figure 17 the last word in the utterance is monosyllabic; other examples of information-seeking wh- questions with additional posttonic syllables are needed to corroborate these findings related to the final boundary tone. However, the data do support the observation by Argüello (1978) related to mid-level tones and final rises at the end of information-seeking wh- questions for this dialect.
Figure 13: Waveform, spectrogram and F0 trace for imperative yes-no question ¿Se pueden callar, por favor? ‘Would you please be quiet?’ produced with a L+H* nuclear pitch accent and HH% boundary tone.

Figure 14: Waveform, spectrogram and F0 trace for the invitation yes-no question ¿Quieres venir? ‘Do you want to come?’ produced with a L+H* nuclear pitch accent and L% boundary tone.
¿Podrían venir todos?

'Could everyone come?' produced with a HL% boundary tone.

¿Tienes frío?

'Are you cold?' produced with a HH% boundary tone.
**Figure 17:** Waveform, spectrogram and F0 trace for the information-seeking wh-question ¿Qué hora es? ‘What time is it?’ produced with a L+H* nuclear pitch accent and M% boundary tone.

**Figure 18:** Waveform, spectrogram and F0 trace for the information-seeking wh-question ¿Y hace cuánto llegaste? ‘And how long ago did you arrive?’ produced with a L* nuclear pitch accent and HH% boundary tone.
As previously indicated, the final contour in information-seeking wh- questions in Ecuadorian Andean Spanish is distinct from those described for other Spanish varieties (e.g. Castilian or Mexican Spanish this volume, among others) which show a fall instead of a rise. However, since these are information-seeking questions, the speakers in this study demonstrated additional request-like strategies, such as adding the phrases disculpe ‘pardon’ or por favor ‘please’. In this way, the speakers provide an ‘appropriate’ level of courtesy for the context provided, which in some cases was a presupposed chance conversation between strangers. In research on shop interactions in Quito and Madrid, Placencia (2004, 2005) examines request strategies and finds more preambles among Quito speakers, indicating an enhanced orientation to the interlocutor rather than the task (i.e. the shop transaction). In figure 19, we can see an example of a higher level at the end of a wh-question indicated here as M%. In these cases, the shape of the contours which include por favor ‘please’ may be used as an implied level of politeness even in wh-questions in which the phrase por favor itself is absent (see figure 7 for a yes-no question with usage of por favor).

3.2.4. Biased wh-questions

3.2.4.1. Echo wh-questions

When low boundary tones are observed, they are often found in biased wh-questions, either as a simple L% or as part of a bitonal boundary tone HL%, such as in echo wh-questions and counterexpectational wh-questions. In echo questions in which the person is repeating what was heard as a comprehension check, the final contour appears to end in the mid or lower level of the speaker’s range. In figure 20, the question word receives a L+H* prenuclear pitch accent. The nuclear contour is considered to be L* followed by a bitonal boundary tone HL%. The final contour is similar to that found in echo yes-no questions, as seen in figure 10. Also, in some counterexpectational wh-questions, a bitonal boundary tone is observed with a very high level dropping to a mid or low level, which may depend on the degree to which a particular topic in question is not expected by the speaker.

3.2.4.2. Imperative wh-questions

In this section both imperative wh-questions and irritated wh-questions are analysed. In figure 21, we see an imperative wh-question that was uttered for the given context of a parent asking a child when housework or other chores will be done, even though this is not the first time the child has been asked and the parent is somewhat annoyed. In the part of the utterance beginning with cuándo mismo ‘when finally’ a number of bitonal pitch accents are used in the portion that expresses a greater degree of insistence. The utterance ends with a H* nuclear pitch accent and mid-level M% final boundary tone.

The question shown in figure 22 can be considered an irritated wh-question. The question word received a high pitch level or H*. This peak is followed by a fall to a low target L* in the stressed syllable of the following word. The question ends in a low L% boundary tone.

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5 An alternate analysis would be to consider these also to be cases of HH% with undershoot of the high target. As previously stated, the relative final pitch height needs to be examined further to determine whether these distinctions appear only with certain pragmatic meanings or if instead they are more dependent upon local phonetic features.
Figure 19: Waveform, spectrogram and F0 trace for the information-seeking wh-question Disculpe, ¿qué horas tiene? ‘Pardon me, what time do you have?’ produced with a L* nuclear pitch accent and M% boundary tone.

Figure 20: Waveform, spectrogram and F0 trace for the echo wh-question ¿Qué adónde voy? ‘[You want to know] where am I going?’ produced with a L* nuclear pitch accent and HL% boundary tone.
**Figure 21:** Waveform, spectrogram and F0 trace for the imperative wh-question ¡¿Ya pues, Juan Fernando, cuándo mismo vas a hacer lo que te pedí?! ‘Alright already, Juan Fernando, when are you finally going to do what I asked you?!’ produced with a H* nuclear pitch accent and M% boundary tone.

**Figure 22:** Waveform, spectrogram and F0 trace for the irritated imperative wh-question Ay, ¿qué quieres? ‘Come on! What do you want?!’ produced with a L* nuclear pitch accent and L% boundary tone.
3.3. Imperatives: commands and requests

3.3.1. Commands

For the commands observed in this data set, the final tonal level is generally L%. The nuclear pitch accent is L* in figure 23 and also in the second command in figure 24. However, the first command in figure 23 shows a fall during the stressed syllable of the word in nuclear position, so a H+L* pitch accent is given. Stronger imperatives may show a different configuration, but these were not found in the recordings.

3.3.2. Requests

Requests in this data set tended to show final devoicing and other pharyngeal modifications, such as creak at the end of the utterance in order to soften usage of the imperative verb form, often appearing with the phrase por favor ‘please’ and one or more hesitations. In addition to final devoicing, figure 25 shows a low nuclear pitch accent L* and a L% final boundary tone. In this way, requests were similar to commands in terms of tonal configuration although other mechanisms described above were also used to differentiate between a command and a more gentle request.

3.4. Vocatives

The vocatives produced by the Quito speakers demonstrate a rise during the stressed syllable, or L+H*. In the posttonic syllable, the F0 drops slightly, as opposed to rising to a HH% tone. Given this drop in pitch and the cross-linguistic similarity with several other dialects (e.g. Castilian, Chilean and Venezuelan Andean Spanish, this volume), a M% boundary tone is noted. Figure 26 shows L+H* M% for the vocative ¡Andrea! which is used in the context of the speaker entering a house and calling for a person in order to produce a ‘tentative call’. In figure 27, this configuration also appears in a type of ‘sharp summons’ produced when the speaker is calling for a pet dog that has run off while s/he was walking it: ¡Bobi! ¡Bobi! The first iteration shows less of a drop between the peak and the following pitch, ending somewhat higher than the second iteration. Comparing the two instances of ¡Bobi!, the first may sound like a slightly more ‘insistent call’ than the second, which may seem slightly more resigned.
Figure 23: Waveform, spectrogram and F0 trace for the command ¡Ay! ¡Déjalo para mañana! ‘Come on! Leave it for tomorrow!’ produced with a L* nuclear pitch accent and L% boundary tone.

Figure 24: Waveform, spectrogram and F0 trace for the commands ¡No te alejes! ¡No juegues muy lejos! ‘Don’t go far! Don’t play very far away!’ produced with a L% boundary tone.
Figure 25: Waveform, spectrogram and F0 trace for the request Eh, por favor, rellenen este formulario ‘Uhm, please fill out this form’ produced with a L% boundary tone.

Figure 26: Waveform, spectrogram and F0 trace for the vocative ¡Andrea! produced with a L+H* M% nuclear configuration.
Figure 27: Waveform, spectrogram and F0 trace for the vocatives ¡Bobi! ¡Bobi! produced with a L+H* M% nuclear configuration.

4. Conclusions

In the previous sections, the prenuclear and nuclear pitch accents have been described for different utterance types in Ecuadorian Andean Spanish, as well as the shape of the final contour. In table 3 below, a summary of the nuclear configuration which includes the last pitch accent and boundary tone is given for these utterances. Previous descriptions of Ecuadorian Spanish indicated the use of a mid or higher level in wh- questions as opposed to a drop in pitch, frequent utterance-final devoicing, along with a suspension in imperatives and other emphatic utterances (Argüello 1978). The present study supports these findings in that wh- questions were observed with a HH% boundary tone (or M% for utterances with a monosyllabic word in nuclear position). Broad focus statements were often devoiced after the tonic syllable in nuclear position. Since these utterances typically end in a fall, less additional segmental material may be needed (in contrast to questions and other biased utterances, which may show more pitch movement with the use of HH% or HL% boundary tones). Imperative yes-no questions were seen to end in a HH% boundary tone while imperative wh- questions ended in a M% boundary tone and commands in a L% boundary tone.

Additional observations can be made in comparison to other Spanish dialects. First, the high final boundary tone HH% in yes-no and wh- questions is not as high as is characteristic of other varieties. Second, the use of the bitonal HL% boundary tone is found to be used extensively in Ecuadorian Andean Spanish for several types of biased questions, including echo, counterexpectational, and invitation yes-no questions, and in echo wh- questions. Third, while there are similarities with Venezuelan Andean Spanish in the nuclear configuration of narrow focus statements, statements of the obvious and vocatives, Ecuadorian Andean Spanish differs from the former for several utterance types, including
yes-no questions, wh- questions, echo and counterexpectational questions. Additional data are needed to examine in greater detail the alignment of peaks in L+H* pitch accents and the interaction of voice quality with the realization of final boundary tones. Finally, research on Andean Spanish intonation in other regions is needed in order to determine if certain patterns are shared between varieties and the extent to which these patterns may be due to language contact.

Table 3: Inventory of nuclear pitch configurations in Ecuadorian Andean Spanish and their schematic representations

<table>
<thead>
<tr>
<th>Statements</th>
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<tbody>
<tr>
<td>Broad focus statements</td>
<td>L* L%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Biased statements</td>
<td></td>
</tr>
<tr>
<td>Narrow focus statements, contradiction statements</td>
<td>L+H* L%</td>
</tr>
<tr>
<td>Exclamative statements</td>
<td>H* M%</td>
</tr>
<tr>
<td>Statements of the obvious, uncertainty statements</td>
<td>L* L%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes-no questions</td>
<td></td>
</tr>
<tr>
<td>Information-seeking yes-no questions</td>
<td>L* HH%</td>
</tr>
<tr>
<td>Biased yes-no questions</td>
<td></td>
</tr>
<tr>
<td>Echo yes-no questions, counterexpectational yes-no questions</td>
<td>L* HL%</td>
</tr>
<tr>
<td>Imperative yes-no questions</td>
<td>L+H* HH%</td>
</tr>
<tr>
<td>Invitation yes-no questions</td>
<td>L+H* L%</td>
</tr>
<tr>
<td></td>
<td>L* HL%</td>
</tr>
</tbody>
</table>
### Confirmation yes-no questions
- L* HH%

### Wh- questions
- **Information-seeking wh-questions**
  - L* M%
  - L+H* M%
  - L* HH%

### Biased wh- questions
- **Echo wh- questions**
  - L* HL%

- **Imperative wh- questions**
  - H* M%

- **Irritated imperative wh-questions**
  - L* L%

### Imperatives: commands and requests
- **Commands and requests**
  - L* L%
  - H+L* L%

### Vocatives
- **Vocatives and calling contours**
  - L+H* M%
References


