7 Synthesis

This final chapter first summarizes the results on the prosody of Huari Quechua and Huari Spanish individually, and then presents some conclusions on how they can be brought together. I will begin by summarizing the findings on Huari Quechua and then move on to Huari Spanish.

7.1 Huari Quechua result summary

7.1.1 Word prosodic profile of Huari Quechua

In answer to research question (34)d about the influence of prominent positions at the word level on pitch events in Huari Quechua, the analysis in this study has found Huari Quechua to be an example of a language that can be said to "care" very little about word stress in the sense of Hyman (2014). That is to say, there is evidence for stress, but it is quite subtle. Of the suprasegmental cues for stress, it is known from the literature that in this variety of Quechua duration is employed for lexical distinctions independent of stress, non-culminatively and non-obligatorily. Pitch contours have been found to be assigned at the level of the phonological phrase (PhP) / accentual phrase (AP), as e.g. in Japanese, French, or Korean, with a rate of 1.27 lexical content words per such phrase in a sample of 457 words (cf. section 6.2.3.2). Phrase-final tonal movements show temporal alignment behaviour that is more indicative of boundary tones than of pitch accents associated with word stress (cf. section 6.1.6). Duration does often seem to serve as "phonetic enhancement" of the syllable on which the phrase-final peak is realized, but this is independent of whether that syllable is the word penult or not. Consequently, in accordance with the theoretical framework laid out in section 3.5, the assumption is that the H tone at least sometimes associates with the syllable on which it is realized, but since this is not related to a metrically strong position, alignment rather than association constraints create the relevant differences between the variants in the OT-analysis. Observations of phrase-final devoicing patterns (cf. section 6.1.3) further support the conclusion that tonal events are due to boundary phenomena, since they show the same final tonal movement as fully voiced phrases, but "displaced" to the left, with the putatively stressed word penult position often realized low or entirely devoiced.

However, stress has also been shown not to be entirely disregarded: in a subset of the tonal alignment patterns identified (the word penult-variant), the position at which a tonal transition occurs (from L to H or vice versa) must make reference to the

penult of a word, so that in these patterns, the word penult should be seen as prominent or stressed insofar as it serves as the anchoring point for tonal movement. No evidence for prominence on the initial syllable of words could be found. In one of the alignment configurations, initial syllables of a word were found to be high. However, this is better explained (and modeled in the OT analysis as such) via alignment of the H tone to the word boundary. This is a better analysis because falls are also attested at boundaries between words. By assuming alignment to a word boundary, these two phenomena can be explained via a single mechanism in the OT analysis. Furthermore, initial syllables were only ever found to be high as part of a high plateau extending across the entire word, never as the only high syllable, whereas the word penult was found to be the only high syllable in a subset of realizations. In sum, this suggests that the word penult is a possible and variable anchoring site for tonal transitions, which seems to be the only way that regular word stress manifests in this variety of Quechua.

7.1.2 Observed patterns of intonational variation

A lot of intonational variation has been found in the data, much of it without accompanying identifiable differences in meaning. I summarize the main strands of variation that were identified.

7.1.2.1 Three tonal patterns

The Huari Quechua tonal inventory (cf. research question (34)a) consists of three observed PhP/AP-level tonal patterns: a rising (LH), a falling (HL), and a rising-falling (LHL) pattern. In terms of paradigmatic choice for the signaling of pragmatic meanings (cf. research question (35)a), the distribution of these patterns is only marginally influenced by utterance type, with declaratives, wh-questions, and polar questions not mainly differentiated by them. Some evidence (section 6.2.1) indicates that within polar questions, contour choice of either falling or rising interacts with tag particles such as *aw* and suffixes such as –*ku* to differentiate neutral from various types of biased questions.

The rising pattern was found to be linked with what can broadly labeled as "incompleteness" or "continuation" (section 6.2.2): this includes indication that a topic or turn is to be continued, that a coherent unit has not ended, or that no separate discourse commitment is made. The falling patterns (with no differentiation found between the two subpatterns) are related to "completeness" or "finality": indication that a topic, turn, or other coherent unit is finished, or that a discourse commitment has been made. The relation between these meanings and the tonal

patterns was only found to be statistical, with context serving for specification and speakers' stylistic choices also playing a role. The rising pattern was found on a little more than half of all phrases in a subset of the data consisting only of nominal elements (section 6.2.3.2). The rising-falling pattern makes up a little less than a third, and the only-falling pattern, the least frequent, the remainder. In all patterns, a tendency exists to create long stretches of pitch effectively at the same level, in particular also longer high plateaus extending across several syllables, with pitch declining not or only very gradually.

7.1.2.2 Alignment variants

The three tonal patterns are all observed to follow several different alignment variants, formalized in an OT-analysis. This analysis (section 6.3) showed that the alignment variants can be differentiated mainly by three factors: 1) whether tones align only with the boundaries of prosodic units or additionally with a word stress position, 2) whether the H tone is allowed to align with more than one edge, 3) whether the word stress position in loan words from Spanish is ignored or not.

In the **word-boundary variant**, tonal transitions (between L and H in the rising pattern, between H and L in the falling contour, and between both in the rising-falling pattern) occur at word or phrase boundaries, i.e. tones are aligned only with prosodic edges. This variant is further differentiated by whether the H tone is allowed to align with more than one edge or not, i.e. whether some of the constraints effecting its alignment to more than one edge dominate the constraints effecting the multiple alignment of the L tone. Contours are here represented schematically, with the arrows with dashed line representing multiple alignment of the tone the arrow originates from. Its head marks the position to which its alignment (and the pitch level it effects) is allowed to extend, based on the constraint ranking underlying each variant.

Rising patterns (without multiple H alignment)
(198)

> L--------------------------->H
> pinkullupa hananpita (*pinkullu-pa hana-n-pita / flute-GEN above-3-ABL /* "from above the flute")

Rising patterns (with multiple H alignment)
(199)

> L-------------->< ----------H
> pinkullupa hananpita

(200)

      L <------------------------H

      pinkullupa hananpita

Rise-falling patterns (without multiple H alignment)

(201)

      L------------------------>HL

      pinkullupa hananpita

(202)

      L---------->H L----------->

      pinkullupa hananpita

Rise-falling patterns (with multiple H alignment)

(203)

      L-------------><----------HL

      pinkullupa hananpita

(204)

      LH----------><-----------L

      pinkullupa hananpita

(205)

      L------------> H L

      pinkullupa hanan~~pita~~

Only-falling patterns (with multiple H alignment)

(206)

      H------------><-----------L

      pinkullupa hananpita

(207)

      H------------------------>L

      pinkullupa hananpita

If tones cluster at the right edge of a phrase, the falling patterns can create contours in which the phrase-final penult stands out because it is high, while the following (and preceding, in (201)) syllable is low, due to tonal crowding constraints. These cannot normally be differentiated from similar contours arising from the word penult-variant, in which the word penult is specified as the place at which the H

tone is aligned. However, cases were observed where phrase-final devoicing takes place, sometimes up to and including the penult of the final word. In those, the pattern was found to be displaced to the left (cf. (205)): this is only explicable with an edge-seeking account. The contour in (201) is is the most frequent rise-falling contour observed (cf. section 6.2.3.2). That is additional evidence that it arises from both the word boundary- and the word penult variant.

In the **word penult-variant**, which constitutes the only instance of detectable word stress on native Quechua words in Huari Quechua, tonal transitions (between L and H in the rising pattern, between H and L in the falling pattern, and between both in the rising-falling pattern) occur at the edges of the penult of a word, which is taken to be the entirely regular word stress position, with the domain of stress assignment including all suffixes attached to a root. In this variant the H tone always aligns with multiple edges if possible.

Rising patterns
(208)

      L----------------------->H->
      pinkullupa hananpita

(209)

      L------>H------------------>
      pinkullupa hananpita

Rise-falling patterns
(210)

      L----------------------->H L
      pinkullupa hananpita

(211)

      L------->H L--------------->
      pinkullupa hananpita

Only-falling patterns
(212)

      H------------------------> L
      pinkullupa hananpita

Not all contours allow to distinguish which variant they belong to. Contours (210) and (212) are identical in form to (201) and (207), respectively. In contrast, with (198) and (208), and (202) and (211), respectively, the difference is one in alignment

of the H tone by only one syllable – and so that either the penult or the final syllable is realized with a H tone. This suggests that the quantitative findings on alignment in section 6.1.6 can be partially explained by the word-boundary and the word-penult variant occurring together in the sample.

No explanation in terms of function or meaning for the two alignment variants on native Quechua words was found (cf. section 6.1). They also do not seem to be preferentially used depending on the type of experiment. Regarding their relative frequency, it has to be noted that the word boundary-variant can in individually phrased words only be identified by the occurrence of the equivalents of (198), (200), and (205), and the word penult-variant only by that of the equivalent of (208). In such phrases, it is thus to a large degree impossible to say which contour is more frequent. In a sample of multi-word phrases (cf. section 6.2.3.2), the word penult-variant was overall found to be more frequent than the word boundary-variant, and considerable differences were found between speaker pairs in separate experiments, ranging from 0% to 74% occurrence of the word boundary-variant in multi-word phrases. Thus it seems that use of the variants is at least partially due to individual preferences.

The **marked variants** on Spanish loanwords are distinguished by tonal alignment oriented according to the position of the syllable bearing word stress in Spanish, instead of alignment to word or phrase boundaries, or the entirely regular word stress position of the penult. Two patterns are distinguished: the "inherited" pattern, and the "grafted" pattern. The "inherited" pattern functions like the word penult-variant, except that the position to which the H tone is aligned is determined by the syllable which bears word stress in Spanish (213). In the "grafted" pattern, two separate tonal movements occur: phrase-finally, a rise takes place, aligned on the penult of the phrase-final word, like a rising pattern in the word penult-variant. Additionally, a rising-falling movement occurs on the syllable bearing word stress in Spanish. This has been labeled as a LH* pitch accent, like in Huari Spanish, with the following low coming from what is ususally the phrase-initial L tone of Quechua (214).

"inherited" pattern
(213)

    L H------------>
    a**be**jakunapa (*abeja-kuna-pa* / *bee-PL-GEN* / "by the bees")

"grafted" pattern
(214)

    LH* L--->H->
    a**be**jakunapa

The marked loanword variants are not categorical on Spanish loanwords (cf. section 6.1.8.3). More frequently, loanwords from Spanish are realized with the same intonation as native Quechua words, i.e. either with tonal alignment according to the word boundary-variant or the word penult-variant, instead of aligned according to the position of the stressed syllable in the Spanish word. The incidence of the marked loanword variant ("inherited" and "grafted" together) differs greatly both between speakers and between lexical items. The highest rate of its use was found to be nearly 60% for one speaker in one of the experiments; most other speakers were found to exhibit far lower ratios, some not producing a marked token at all despite using several Spanish loanwords. Overall, Spanish loanwords are realized with a marked variant in somewhat less than a fifth of all cases, with nearly half not aligned according to the Spanish word stress, and the remaining third indeterminable. Amongst the same speakers, different lexical loanword items exhibited considerably different rates of being realized with the marked variants, suggesting that lexical identity also plays a role.

7.1.3 The role of prominence and information structure

Regarding the question of how meaning-related categories, especially IS, are cued by Quechua prosody (question (35)), this study has found that this is mostly achieved syntagmatically. In terms of which word will be realized with a high tone in a multi-word phrase, the findings suggest that this is due to which word is most prominent in such a phrase. Intonational cues for prominence and their relation to information status and structure were investigated on a subset of nominal sequences. In phrases with the rising and rising-falling pattern, final prominence was assumed to be cued only when the entire high stretch was within the final word. In only-falling phrases, final prominence was assumed to be cued only when the tonal transition occurred on the penult in the final word. If a nominal sequence extended across several phrases, prominence was assigned to the phrase with the highest excursion only if all phrases were of the same tonal pattern. This was compared with the relative information status (givenness/newness) of the individual words in the sequence and their information structure (focus/background) as determined from an analysis of the discourse context. The results support the hypothesis that prominence is final by default, as in Spanish. They also suggest that a deviation from this default is a marked strategy for signaling prefinal narrow focus or prefinal newness followed by given material (cf. section 6.2.3.3). The relation between phrasal prominence and information structure does not seem categorical, and instead probabilistic/distributional, as we saw to be the case for Spanish from the literature, and also for Cuzco Quechua (cf. the discussion in section 3.7.3). The rela-

tion between prosodic cues and phrasal prominence itself certainly needs further research. Assigning prominence across several phrases of the same tonal pattern according to highest excursion implies the assumption of a larger prosodic unit encompassing those phrases among which prominence is culminative.

The relation between information structure, prosody, and morphosyntax (word order and the use of the so-called evidential suffixes and –*qa*, the topic suffix) was also further investigated in a qualitative analysis of individual utterances in their conversational contexts (section 6.4), to complement the broad results of the preceding quantitative analyses (section 6.2.3.3). The findings from this analysis support the suggestion that tonal scaling at the level of local pitch span serves to demarcate larger prosodic units encompassing several PhPs, in that prefinal PhPs are realized with comparatively smaller pitch span than the final PhP. Such larger prosodic units with the greatest excursion on the final PhP were regularly found on utterances in broad focus contexts in the narrative task *Cuento* (section 6.4.1), again supporting the assumption that default prominence is rightmost, also at that higher prosodic level. No evidence was found that such a larger phrasal unit comes with its own separate boundary tones, so that in answer to questions (34)c and (35)d it is suggested that the PhP is recursive in Quechua and itself the largest unit. The examples analysed there suggest that phrasing and scaling of these larger phrasal units interact with syntax to signal discourse coherence. An analysis of examples from *Maptask*, for which context suggests a more complex utterance-internal information structure, supports the hypothesis that prosody cues information structural roles indirectly. Constituents interpretable as focal from the context were found to be most often aligned with right boundaries of PhPs. The findings suggest that a reduction in scaling of pitch level (downstep) from one phrase to the next cues a deviation from rightmost prominence, so that the last higher scaled phrase has highest prominence. This was found to occur in contexts that suggest an information structural separation such that the boundary between the last higher scaled phrase and the downstepped one aligns with the division between at-issue material and backgrounded material. These findings support the relation between material aligned with a high tone and prominence from section 6.2.3.3 and extend it to units larger than individual PhPs. Contour shape is also shown to cue information structure indirectly in accordance with the proposal made in section 6.2.2 that rising contours signal openness and falling contours completeness. The findings in this section were put into relation with proposals for a pattern or template by Weber (1989) and Sánchez (2010), which connects information structural roles with positions and morphological marking in a sentence, extending those proposals from a prosodic perspective.

In section 6.4.3, these findings were further complemented by an analysis which compared the individual contributions to cueing information structure from prosody, morphology, and word order against what is interpretable from the

context using a number of examples from the *Conc* corpora. It was shown that the cues from different domains are quite often in conflict with each other, and suggested that this might reflect that the information structural roles of referents in *Conc* are underspecified by the notions of topic-comment and focus-background. It was found that scaling as cue to prominence is probably quite reliable, even when it goes against contour type or word order. The picture of the relation between information structure and the cues to it from different formal domains that emerges is problematic for a view which takes information structural roles to be formal features that are categorically expressed via some kind of marking, and far more consistent with a view in which information structure is cued only indirectly and probabilistically, as laid out in the theoretical considerations in section 3.7.3. It enhances this view by exploring how each of the domains cueing information structure is subject to formal restrictions particular to that domain, and how the cues from the different domains can be seen to align and misalign to convey complex information structural configurations. Methodologically, it would not have been possible to make these observations if the principled contextual perspective on information structure from Riester et al. (2018); Riester & Shiohara (2018); Riester (2019) had not been adopted to serve as a third of comparison.

7.2 Huari Spanish result summary

7.2.1 Tonal inventory and encoding of pragmatic meaning via paradigmatic contrasts in Huari Spanish

The analysis of Huari Spanish has found a comparatively small inventory of paradigmatic tonal contrasts. Even though declaratives and interrogatives in pragmatically diverse discourse contexts were investigated, it seems likely that only a single bitonal pitch accent LH* is used in all of them. It is realized via a low elbow in the pretonic syllable, followed by a peak early or in the middle of the tonic vowel. This LH* pitch accent is thus regularized to prenuclear and nuclear position in declaratives, neutral and biased polar questions, alternative questions, and wh-questions, in marked difference to what has been described for many other Spanish varieties, including the "Andean Spanish" of Quito in Ecuador (cf. O'Rourke 2010; Hualde & Prieto 2015), but more similar to the findings on Cuzco Spanish by O'Rourke (2005). This study did not systematically investigate a number of pragmatic meanings that have been previously found to exert an influence on prosodic form, like e.g. imperatives and vocatives, so any conclusions about the full paradigmatic inventory of tones must be preliminary. However, we can compare the variation in nuclear configurations in Huari Spanish with those of Table 3 for Peninsular Spanish across

the same range of meaning, i.e. statements with finality, neutral polar questions and requests with confirmation bias (corresponding to a, b, f, g, in Table 3). Within this range, Huari Spanish was found to have only two nuclear configurations (LH* L% and LH* LH% under analysis II in section 5.1.2.1), while Peninsular Spanish has four (LH* L%, L* L%, L* H%, LH* HL%).[449] The only non-phonological context tentatively identified as changing pitch accent realization was when an utterance carried an additional non-at-issue meaning of challenging a salient presupposition in the context, in both assertions and clarification questions. In those cases, both the elbow preceding the peak and the peak itself on the constituent denoting the contested referent were considerably delayed. This could possibly be identified as a pitch accent different but derivable from LH*, like L*H or L+<H*, but further research is needed.

Table 50: Interactional meanings/functions and their encoding via formal means that include intonation in Huari Spanish and Quechua.

pragmatic function	Spanish	Quechua
continuation	LH* H-	LH
finality	LH* L%	(L)HL
declarative	LH* L%	LH/(L)HL
neutral polar question	LH* LH%	*-ku* LH/(L)HL
confirmation-seeking question	LH* + tag LH% (tag e.g. *no*)	$[(L)HL (-ku)]_\phi [LH tag]_\phi$ (tag = *aw*)
clarification request for intended content with confirmation bias	LH* L%	LH
question with [alternative 1] [alternative 2] (alternative question)	$[(LH^*) LH^* H\text{-}]_{iP}$ $[(\cancel{LH^*})\cancel{LH}^* L\%]_{iP}$	$[LH\ \text{-}ku]_\phi$ $![(L)HL\ \text{-}ku]_\phi$
wh-question	$[LH^*_{\text{wh-word}} (LH^*)]_{iP} ([\cancel{LH}^*]_{iP}) L\%$	$\dots [(L)HL]_{\phi\ \text{wh-word}} \dots$
presupposition reversal	delayed peak on LH* L%	?

The boundary tone inventory was also found to be comparatively small. Under the analysis which assumes an LH* pitch accent for all types of declaratives and interrogatives considered (cf. section 5.1.2.1), three boundary tones were identified, two monotonal ones (H-/% and L-/%), and a bitonal one (LH-/%). Table 50 summarizes the findings on how different pragmatic meanings apart from information struc-

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[449] According to O'Rourke (2010: 231–242), "Ecuadorean Andean Spanish" (based mostly on speech from Quito), has five different nuclear contours in this meaning range: L*L%, LH*L%, L*HH%, LH* HH%, L* HL%. That once again puts the homogeneity of what has been called "Andean" Spanish into question (cf. section 2.2).

tural separations are encoded via formal means that at least include intonation in Huari Spanish and Quechua.

Table 50 shows that purely on the basis of paradigmatic choice between what could be called nuclear configurations (cf. research question (35)a), Huari Spanish only has a three-way distinction. The differentiation between neutral and confirmation-seeking polar questions is achieved by the addition of a tag, while that between declaratives (assertions) and clarification requests with confirmation bias is likely purely achieved by context. Quechua makes even less use of paradigmatic tone contrasts, effectively only differentiating between continuation and finality (the results on the types of biased questions being rather preliminary). Instead, further morphosyntactic means like the polar question suffix –*ku* are employed, but context here also plays a crucial role.

7.2.2 Syntagmatic intonational contrasts: Deaccentuation and phrase accentuation

In contrast, syntagmatic intonational contrasts across utterances (cf. research question (35)b) were found to play a very important role in Huari Spanish. On the one hand, deaccentuation after the accent with the strongest metrical position is used to differentiate between the two alternatives in alternative questions in almost all cases and also very often some point after the wh-word in wh-questions (cf. Table 50). Deaccentuation was also found to occur on the noncontested material in partial denials/reversals. It did not occur on material that is only given following new material without a reversal. But it also occurred on other non-at-issue material following at-issue material, like postposed evaluatives or parentheticals. On the other hand, a marked accentuation mode labeled phrase accentuation was observed. On a larger prosodic unit containing several accentable prosodic words, only the final one receives a full pitch event, either in the form of an LH* pitch accent on the final stressed syllable (phrase accentuation I), or as a rising boundary tone (LH) at the right edge of the phrase (phrase accentuation II). This contrasts with previous descriptions of Spanish that assume a pitch accent on virtually every accentable (content) word (Hualde & Prieto 2015: 358) and also with what can be assumed to be the default or main accentuation pattern in the Huari Spanish data, where a pitch accent was found on nearly 90% of all content words in one sample (cf. section 5.1.1.2). It is much more similar to English or German, where a pitch accent usually only occurs on the most prominent prosodic word in a phrase. The phrase accentuation was found to occur in contexts in which it is plausible to assume an information structural partition such that the phrase which only has a final pitch event is either not internally partitioned in a relevant way (broad focus), or par-

titioned with narrow focus on the final element, both of which correspond to a metrical structure with rightmost prominence. It is thus phrase-optimizing in the sense that it makes the pitch event culminative in a phrase, and again similar to German or English in that this pitch event is located on the most prominent word. A third marked accentuation pattern was found only marginally. It is a plateau-like realization whereby pitch remains at a high level across a number of prosodic words in a phrase after rising on the first accentable syllable. This pattern is a rare variant and was systematically employed only by few speakers. Huari Spanish was thus found to exhibit two complementary syntagmatic intonational strategies for marking prominence contrasts that can be exploited for cueing relevant information structural partitions: deaccentuation, which compresses postnuclear pitch accents and thus can be used to cue at-issue – non-at-issue partitions, and phrase accentuation, which compresses prenuclear pitch accents and can be used to cue non-at-issue – at-issue partitions. They have in common that they impose a partition on an utterance based on postlexical metrical structure, and marking out parts of that utterance as coming before (phrase accentuation) or after (deaccentuation) the most prominent element. These accentuation modes both go at the expense of word-optimizing prosody. The difference between phrase accentuation I and II could in addition be described as moving between head-marking and edge-marking, in Jun (2005d, 2014b)'s typology. The phrase accentuation was not only found as a marked mode for the cueing of information structural contrasts, but for some speakers, it also seemed to constitute a kind of default. This was found to have consequences for how the prosodic units that structure utterances are cued.

7.2.3 Hierarchical scaling contrasts and recursive prosodic structure

Tonal scaling was found to play an important role in Huari Spanish intonational phenomena (cf. research question (35)d). Firstly, it is an essential part of the reality of the two syntagmatic intonational phenomena phrase accentuation and deaccentuation. The nonprominent pitch accent positions that are suppressed in them were found to exhibit variable degrees of tonal compression, ranging from moderate, but with still notably less local excursion than the pitch event at the prominent position, to total reduction, with no identifiable local excursion remaining.

Secondly, tonal scaling was found to be employed systematically in Huari Spanish for the cueing of hierarchical prosodic structure in a set of complex utterances. They were all double-topic constructions, consisting of two sequences of topic-comment each (cf. section 5.2). Tonal scaling is inherently a relative phenomenon, and the scaling of a local pitch event is relative with reference to at least two different values: the scaling of the utterance in which it occurs and other local pitch

events in that utterance, and the usual range of a speaker in a given social context. It therefore lends itself quite naturally to the cueing of prominence, which is also inherently relative. Tonal scaling on pitch accents was found to be significantly affected by whether a pitch accent was part of the first topic, the first comment, the second topic, or the second comment, with the first topic scaled higher than the first comment, and the second topic higher than the second comment. Crucially, the scaling difference between first comment and second topic was smaller on average than that between those other groups, but first comment and second topic were clearly separated by a boundary tone in most cases. These findings are incompatible with a simple local downstep model of tonal scaling. Instead, the number of pitch levels distinguished, the domain across which a local level is maintained, and the scaling difference that is sensitive to the type of utterance subpart it separates all suggest that tonal scaling here cues a hierarchical prosodic structure with several levels of embedding. This prosodic structure is subject to constraints that seek to faithfully map it to the information structural units involved on the one hand, and to ones seeking to reduce the number of its levels, on the other. It was found that only with a sufficient degree of length and complexity of the utterances involved did the first of these win out over the second, suggesting that genuinely rhythmic constraints play a crucial role. It was argued that the prosodic structure that best models these phenomena is recursive at the IP-level, to my knowledge the first time that this has been claimed on empirical grounds for Spanish.

In the discussion of a set of examples by three speakers that deviated in their scaling behaviour, it was shown that they employed phrase accentuation in these utterances. While this had the consequence of reducing the number of contrasts that could be achieved via local pitch accent scaling, it was shown that they use other cues, including boundary tones and their scaling as well as systematic differences in the phrasing of the constituents of the first and the second topic, to signal effectively the same prosodic and metrical structure. They were also the only speakers found to make occasional systematic use of the plateau-like realization, in that they used it on the second topic, while the first one was realized with individual pitch events on each constituent. These findings suggest that different cues, in particular pitch level scaling and boundary tones can be equivalent for the signaling of prosodic structure.

7.2.4 Relation between the observed variants

In an OT-analysis, the relationship between the different accentuation variants (main accentuation and the two phrase accentuation variants) was explored. It could be demonstrated that the main accentuation and the first phrase accentua-

tion variant only differed with regards to the number of minimal tone sequences of LH that are assigned per phonological phrase: while the main accentuation has one LH sequence per prosodic word in the PhP, the phrase accentuation has one per PhP. The different phrase accentuation variants, in turn, differed with regards to the ranking of their alignment and association constraints. The H tone that is the starred tone of a pitch accent in the main accentuation and phrase accentuation I is a boundary tone aligned with the right edge of the phonological phrase in phrase accentuation II. The plateau-like realization was shown to result from a reranking of two constraints in the phrase accentuation. The flexible nature of the tones involved was further demonstrated when IP-level boundary tones were considered: in IP-final position does the H tone that is an edge tone in non-final PhPs in the second phrase accentuation variant become the starred tone of a pitch accent again at least in final paroxytones, because it is pushed to that position by the encroaching IP-boundary tone. This result, as well as the findings on the variants observed for Quechua, supports the hypothesis that tones are at some level autonomous and independent of their relations with the segmental chain (cf. sections 5.3, 6.3), and in principle this implies consequences for the convention in much of the literature of giving the intonational inventory of a language as a list of paradigmatical choices of nuclear configurations in which theses relations are fixed. Yet the fact remains that tonal alignment differences can also encode differences in pragmatic meaning, in Huari Spanish as elsewhere (cf. section 5.1.3.3, Fliessbach 2023), but not in Huari Quechua, as far as we can tell. This poses an empirical and theoretical challenge for the future.
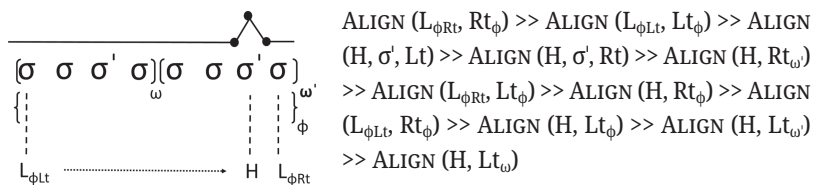
7.3 Conclusions and outlook

After the main results for each language have now been summarized, we are now in a position to synthesize them. The two analytical chapters 5 and 6 aimed at answering the first two main research questions, with in particular the OT-analyses also paving the way for an answer to the third main question of comparing Huari Spanish and Quechua prosody, providing the two halves necessary for it, as it were. In these conclusions, I want to reap the fruits of labour of the foregoing pages and fully focus on what consequences the results have for the third research question. I will integrate the results both from a typological perspective and from one that treats them as evidence of a shared prosodic grammar in a multilingual community.
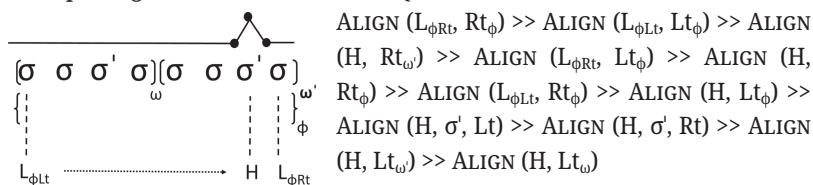
7.4 Bringing Spanish and Quechua together

In order to discuss what aspects of Huari Quechua and Spanish prosody are language-specific, and which are shared, I first want to briefly return to the OT-analyses. The descriptions and analyses in the preceding chapters have shown that bilingual Huari speakers employ a range of intonational variants both in their Spanish and their Quechua. Formulated in terms of constraint rankings, it becomes clear that considerable similarities exist between them that cross the boundary between the two languages. (215) and (216) repeat the alignment constraints of what I have called the word-penult and the word-boundary variant of Quechua rise-falls, while (217) gives the ranking for an IP with phrase accentuation of Spanish as exemplified by NQ01, with all association constraints removed. This is done to facilitate comparability, but in fact, as pointed out at the end of section 5.3.2.3, insofar as the phrase accentuation variant of Spanish is concerned that is exemplified in utterances by speaker NQ01, the assumption of association is a somewhat theoretical matter anyway. Linearity, MaxIO(T), NoCrowd are ranked above all other constraints in the rankings here and left out. Between the phrase accentuation of Spanish and the word boundary variant of Quechua, there are some differences that are due to the fact that the tones in Quechua are all taken to belong to the PhP, whereas the Spanish tones are a mixture of PhP- and IP-tones. In the Quechua ranking, there are also constraints referring to the boundary of the prosodic word that do not have a counterpart in the Spanish ranking, and the constraint aligning the H with the stressed syllable, Align (H, σ'), is split up in two constraints separately directing alignment with its right and left edges, Align (H, σ', Lt) and Align (H, σ', Rt). Then there are actual differences in ranking, such as the relative position of Align (L, Lt_ϕ) and Align (L, Rt_ϕ) in Spanish and their Quechua counterparts Align ($L_{\phi Lt}$, Lt_ϕ) and Align ($L_{\phi Lt}$, Rt_ϕ).

(215)   Alignment constraint ranking for the word-penult variant of Quechua (rise-falls)

Align ($L_{\phi Rt}$, Rt_ϕ) >> Align ($L_{\phi Lt}$, Lt_ϕ) >> Align (H, σ', Lt) >> Align (H, σ', Rt) >> Align (H, Rt_ω) >> Align ($L_{\phi Rt}$, Lt_ϕ) >> Align (H, Rt_ϕ) >> Align ($L_{\phi Lt}$, Rt_ϕ) >> Align (H, Lt_ϕ) >> Align (H, Lt_ω) >> Align (H, Lt_ω)

(216) Alignment constraint ranking for the word-boundary variant (without multiple alignment of the H tone) of Quechua (rise-falls)

$$(\sigma\ \sigma\ \sigma'\ \sigma)[\sigma\ \sigma\ \sigma'\ \sigma)_{\omega'}_\omega$$

$L_{\phi Lt} \cdots\cdots\cdots\rightarrow \quad H\quad L_{\phi Rt}$

ALIGN ($L_{\phi Rt}$, Rt_ϕ) >> ALIGN ($L_{\phi Lt}$, Lt_ϕ) >> ALIGN (H, Rt_ω) >> ALIGN ($L_{\phi Rt}$, Lt_ϕ) >> ALIGN (H, Rt_ϕ) >> ALIGN ($L_{\phi Lt}$, Rt_ϕ) >> ALIGN (H, Lt_ϕ) >> ALIGN (H, σ', Lt) >> ALIGN (H, σ', Rt) >> ALIGN (H, Lt_ω) >> ALIGN (H, Lt_ω)

(217) Alignment constraint ranking for the phrase accentuation variant of Spanish (NQ01's variant) without association constraints, on paroxytones

$$(\sigma\ \sigma\ \sigma'\ \sigma)_\omega[\sigma\ \sigma\ \sigma'\ \sigma)_{\omega'}$$

$\leftarrow\cdots\cdots\cdots\cdots\cdots L_\phi\ H_\phi\ L_\iota$

ALIGN (T_ι, Rt_ι) >> ALIGN (H, Rt_ϕ) >> ALIGN (H, σ') >> ALIGN (L, Rt_ϕ) >> ALIGN (L, Lt_ϕ) >> ALIGN (H, Lt_ϕ) >> ALIGN (T_ι, Rt_ι)
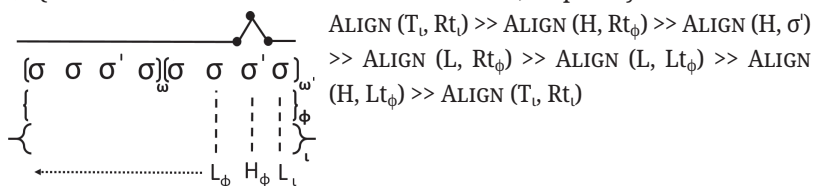
However, there is also considerable overlap: in both rankings, the H tone seeks to right-align and is blocked in that effort by the presence of an L whose right-alignment has precedence; the H tone also seeks to left-align, but the rightwards push of the left L tone is stronger, so that the H forms a peak on the phrase-final penult. Phenotypically, both rankings can be said to converge in that they result in an effectively identical pitch contour of a phrase-final peaked rise-fall in phrases with rightmost prominence. For both rankings, there are also attested variants in which the constraint that right-aligns the L and the one left-aligning the H are reranked relative to each other (cf. sections 5.3.2.1 and 6.3). These result in the attested plateau-like realizations that are more frequent in the Quechua data than in Spanish but are also similar phenotypically. Thus, the plateau-like realizations are also a convergence point for at least two different rankings from the two languages. The phrase-final peaked rise-fall is also generated from the word-penult variant in Quechua, and the main variant in Spanish on paroxytones in IP-final words, so that there are at least four different rankings from the two languages that converge in this contour if only the final word is considered. Equally, the ranking for Quechua rises in the word boundary-variant (cf. sections 6.3.1.1, 6.3.2.1, 6.3.3) and that for the Spanish phrase accentuation in the variant exemplified by XJ45 and NQ01 (cf. section 5.3.2.3) is similar enough that they result in phenotypically very similar contours. Thus both in terms of phenotypical contour shape and in terms of important aspects of the constraint rankings, there is a convergence for some of the described variants for both languages, while other variants are more divergent, independent of which language they belong to.

It is also clear, however, that both the underlying prosodic structures and the detailed phonetic realizations are not all the same. For one, section 6.1.6 showed that in the Quechua sample used there, peak alignment is affected by the relative syllable weight between the final two syllables independent of stress, a subtle interaction of quantity-sensitivity and tonal alignment not observed for Spanish. At a more structural level, for Quechua there has been no need in the analysis to propose more than one phrasal level in the prosodic structure that assigns tones, while for Spanish, both a smaller, PhP-like level and a larger IP-like one are taken to provide tones. Yet for both languages, there is some evidence that the highest level is recursive. Some pitch contour phenotypes are only attested for one of the languages, notably the "main" variant of Spanish and the only-falling contour of Quechua. Thus I do not suggest that Quechua and Spanish are "the same" at a relevant level of representation. Instead, I think that by applying an OT analysis to the observed variants from both languages it has been possible to decompose them into more fundamental variable properties that can assume at least two different values. For some of these properties, all values are shared, i.e. attested in both languages, while for others one or more are specific to one of the two languages. In other words, the variation of some of these properties is orthogonal to the separation between the two languages, extending across both of them, while that of others is parallel to it, keeping it only to one of the languages. In the overall variation space, these properties can assume converging or diverging configurations, which leads to the observed forms that are the result of such configurations being shared or language-specific. In the OT-analysis for each language I tried to model the constraint rankings in such a way that they are maximally specific for each language, making sure that their variation is consistent and plausible mainly within the language itself, by trying to reduce the number of changes from one variant to the next. In this way, what could be called the outer limits of the variation space were traced.

However, that different constraint rankings result in effectively the same contours suggests that a number of intermittent, less peripheral ranking variants also exist, a large number of which is presumably available for both languages. In this way, what I have tried to describe is a part of the shared prosodic resources available to the Huari speaker community as a whole. This can be described as having a core of shared elements, both in terms of constraint rankings and contour phenotypes, which cannot really be said to belong to either language. More peripheral elements that are specific to one of the languages also form part of these resources. Saying that this is a partial description of the linguistic resources of the Huari speaker community does not imply that they are all available to all speakers equally. This is another way in which these resources can be thought of as having a centre and a periphery. Central in this sense are those resources that are available and frequently used by

Table 51: Some of the points of prosodic variation differentiating the described intonational variants in Spanish and Quechua.

Language	Spanish				Quechua				
"Variant"	**main**	**phrase acc. 1**	**phrase acc. 2**	**plateau-like phrase acc.**	**word-boundary w/ mult. H alignment**	**word-boundary w/o mult. H alignment**	**word-penult**	**"inherited" Sp. Accent**	**"grafted" Sp. Accent**
Association of tones	stressed syllables				subordinate to alignment				stressed syllables
Alignment of H	ALIGN (H, σ') >> ALIGN (H, Rt)		ALIGN (H, Rt) >> ALIGN (H, σ')				ALIGN (H, σ') >> ALIGN (H, Rt)		
Stress effect on pitch	affects pitch alignment					does not affect pitch alignment	affects pitch alignment		
Word stress determined how?	lexical				fully regular			lexical (from Spanish)	
Minimal tone sequence identity (declaratives)	LH				LH, HL, LHL				
Number of possible mininal tone sequences in φ	>1	1							>1

all, while peripheral ones are those that are only available to some, and used infrequently. Table 51 relates some of the variable prosodic properties in both languages to the variants identified in this work. In it, the variable properties are given with the different values they have been shown to assume in the analysis. Gray shading is used to contrast these different values. At the top, the separation between the two languages is marked. For nearly all of the properties given in the table, the separation between the values does not coincide exclusively with the separation between the languages. At least for most of these points of prosodic variation, their variation space is not most usefully described by assigning one of the values to Spanish and the other to Quechua. So at least in this synchronic prosodic description, it is difficult to rigorously differentiate the data using the labels of Quechua and Spanish on a formal level.[450] The different variants as clusters of these values are perhaps more aptly described as prosodic variants available to the Huari speaker community.

7.4.1 Degrees of caring for stress in both languages and typological considerations

The main variational parametres in the OT analysis of both Quechua and Spanish can all be related to different degrees of "caring" for a culminative, obligatory position specified at the word level (word stress), even though they all move along different typological dimensions: alignment of tones with phrasal boundaries clearly serves delimitative, rather than culminative, functions. Alignment to word boundaries also at most serves to distinguish more from less prominent material at the word level, but not at the syllable level. Whether the H tone spreads or not can also be linked to this functional difference, since if a H tone is spreading across several syllables, it automatically loses some of its potential to call attention to a culminative position of syllabic size at the word level. Adjusting the tonal contour around the "inherited" stress position in a Spanish loanword of course aids in cueing the lexical identity of the word via intonation. This function is entirely absent in native Quechua words in any variant, because the fully regular word stress on the penult cannot distinguish between lexical items. For Spanish, it is the default in the main accentuation variant. Finally, minimal tone sequence distribution also plays a crucial role: only if tones are assigned in sufficient numbers

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450 Questioning "named languages" as an analytical instrument to describe a synchronic linguistic reality, especially in multilingual contexts, is a central notion in the field of translanguaging (García & Li 2014; Otheguy et al. 2015) as well as others. That does not diminish their usefulness in historical contexts or as heuristic descriptors, or negate that they have a sociolinguistic reality for many speakers.

can they be used to regularly cue the word stress position. The variants in both languages effectively occupy all of these positions. On a cline going from optimizing a culminative, obligatory and lexically specified word stress position to optimizing phrasal units via delimiting tonal movements, the main accentuation variant of Spanish would be at one extreme. The "grafted" and then the "inherited" patterns of Quechua follow after, but at a definitive distance, even though they also cue a lexically specified, instead of a regular, syllabic position. This is on the one hand because in the "grafted" pattern the phrasal tones are expressed in addition to the pitch accent on the word stress, arguably substracting from the culminativity of the pitch accent, and because the "inherited" pattern can still form plateaus. On the other, their optionality and indeed infrequency (cf. section 6.1.8.3) means that the condition of obligatoriness is not even fulfilled for their restricted subset of the lexicon. Further towards the other end we would find the first phrase accentuation variant of Spanish, and the word-penult variant of Quechua, both with only one tone sequence per a PhP containing more than one prosodic word. Fully at the other extreme there are the second phrase accentuation variant of Spanish as exemplified by NQ01, and the word-boundary variant of Quechua without multiple H tone alignment, in both of which constraints making reference to a syllabic prominent position play no role anymore and tonal alignment is purely oriented towards phrase edges. The variants however differ with regards to how they are weighted in terms of frequency: while the main accentuation pattern is the default for Huari Spanish, the "grafted" and "inherited" patterns of Quechua are infrequent and marked because they can only occur on a subset of the lexicon. The word-penult pattern is likely the most frequent pattern of Huari Quechua, and the purely edge-based variants are not the default in either language, but probably more frequent in Quechua. Recall also that while the word-penult variant might be the most frequent one for Quechua, the difference between it and the more edge-based word-boundary variant only really emerges in a subset of configurations (cf. sections 6.1.2, 6.1.3, 6.1.4). In addition, we have seen evidence throughout that Quechua often reduces penults via other prosodic parametres (duration, vowel quality) even if they bear the tonal transition. Thus even though both languages cover a wider range of possibilities with regards to this intonational optimization of word stress or phrasing, all of Huari Quechua as a whole (especially when regarding frequency of variants) can indeed be said to "care" considerably less about stress than Huari Spanish, with the main accentuation of Spanish occupying a position in this respect that could not be observed to be reached by any of the Quechua variants.

Also with regards to other typological parametres that were discussed in chapter 3.4.6, the findings have shown that the variants of both languages occupy positions covering a lot of the ground staked out by them. Huari Spanish in the main accentuation variant is comparable to Egyptian Arabic in that pitch accents

of the same regularized form (LH*) are realized on virtually each accentable word. In Jun (2014b)'s typology it would therefore be classed as head-prominent (marking prominence at the AP/PhP-level via pitch events on the heads of phrases), having word stress, and exhibiting strong (tonal) macro-rhythm because it produces the same rising pitch movements at intervals roughly corresponding to the length of a content word (cf. Jun 2014b: 526, 528). Huari Quechua in the word-penult variant marks both the heads of phrases (derived from the regular stress on the strongest word) and their edges, has word stress (even though it "cares" very little about it), and produces both falling and rising pitch movements on phrase heads spaced at intervals usually greater than prosodic words, with stretches of level tones in between. It is thus comparable perhaps to French or Japanese in Jun (2014b: 531), but with a weaker macro-rhythm because the edge tones of the PhP/AP are more variable (both can be either L or H depending on the type of contour). With the less frequent variants, their positions along these parameters shift substantially further in both languages. Arguably, both the second variant of the Spanish phrase accentuation as well as the word boundary-variant of Quechua are only edge-prominence marking, and at least with the word boundary-variant with multiple H tone alignment it is even questionable to class it as showing any evidence of having word stress, so that it is then most comparable to Korean (cf. Jun 2014b: 532). On the other hand, a sequence of words produced in the "grafted" pattern of Quechua would have a stronger macro-rhythm than the word penult-variant. The point here is not so much that applying the parameters is difficult, even though we have seen throughout that classifying Huari Quechua as a language with or without word stress is a complicated issue. I think that these parameters do capture some useful and intersubjectively describable properties, but applying them to the different variants of both Huari Quechua and Spanish puts in doubt that the objects to which these properties belong should really be taken to be "whole" languages. In Jun (2014b), different varieties of e.g. Japanese and Arabic that are spoken by geographically separate populations are also classified differently in the typology, but in our case, a large part of the spectrum is covered by variants of two languages spoken by the same speakers in the same locality. I think nevertheless that this doesn't mean that prosodically all languages or varieties are essentially "the same", just that these parametres perhaps are not fully apt to distinguish between languages in situations of extensive multilingualism.

Consider again pitch accent inventory and stress position optimization. Even though Jun (2014b) introduces them as independent typological parameters, her findings present what is effectively quite a strong correlation between the parameter of prominence-marking (head, edge, or head/edge) and that of macro-rhythm: the edge-marking languages she lists all have strong macro-rhythm, and the head/edge-marking languages have either strong or medium macro-rhythm. Only the

head-marking languages cover the full spectrum from strong to weak macro-rhythm, and whether a language has a large paradigmatic inventory of pitch accents is a decisive factor for it to have either medium or weak macro-rhythm. The property of word prosody (stress, lexical pitch accent, tone, or no word prosody) is also correlated: as she points out (Jun 2014b: 530), languages with a lexical pitch accent that occurs only on a subset of the lexicon, including Tokyo Japanese, some varieties of Basque, and arguably also Huari Quechua with Spanish loanwords (cf. section 6.1.8.2), rarely have more than a single pitch accent choice and thus are more likely to have a stronger macro-rhythm. In trying to explain this correlation in search of substantial typological parameters, we could speculate that a linguistic system can only be expected to reliably encode paradigmatic tonal differences at a non-peripheral position if this position is sufficiently present in the mind of speakers – presumably lexicalized – that it is possible to generate expectations associated with it, i.e. that "something" must happen there. Only with such a degree of salience might it then be possible to exploit the expectations connected to this position by varying the kind of pitch event occurring there in a systematic relation to meaning (including by varying tonal alignment relative to the temporal pivot that such a position provides). It seems that in systems where such a position is defined only in a subset of the lexicon, or is overall not very conspicuous (as in Huari Quechua), this threshold of salience for paradigmatic variation is not reached. This is of course a hypothesis as it stands and its claims need to be further corroborated empirically. However, it would point to the size of the paradigmatic tonal inventory and whether it encodes pragmatic meaning differences being one really substantial typological criterion. In this respect, should the findings about Huari Spanish and Quechua presented here hold up in future research, Huari Spanish could then be argued to be just as similar to Huari Quechua as e.g. to Peninsular varieties of Spanish. This is because even though Huari Spanish does have the possibility to express differences in pragmatic meaning beyond continuation and finality, this functional load is almost entirely born by the small boundary tone inventory (also via pitch accent alignment), since likely only a single pitch accent option is available. Thus this possibility is severely reduced compared to what has been described for Peninsular Spanish varieties (Hualde & Prieto 2015; Fliessbach 2023, cf. also section 3.4.3), in practice almost as much as in Huari Quechua, where it was not found (cf. Table 52).

7.4.2 Outlook

Table 52 resumes some further prosodic properties discussed in the analyses that have not been linked to any of the identified variants. The results in both tables should not be taken as definitive. What Table 51 asserts about the property of asso-

Table 52: Further points of prosodic variation between Huari Spanish and Quechua not specifically identified for any of the variants.

Property	Huari Spanish	Huari Quechua
Paradigmatic tone choice signals continuity/finality	✓	✓
Paradigmatic tone choice alone signals additional pragmatic meanings, e.g. utterance type	✓	✗
Tone choice plus particles signal additional pragmatic meanings, e.g. utterance type	✓	✓
Syntagmatic tone distribution signals utterance type	✓	✗
Syntagmatic tone distribution signals information structure	(more in phrase acc. variant than in main variant)	✓
Alignment differences relative to a stressed position cue additional pragmatic meanings	✓	✗
Number of phrasal levels above the prosodic word	2	1
Top level recursive	✓	✓
Devoicing in word- or phrase-final syllables	✓	✓
Devoicing leads to "displacement" of salient pitch movement	✗	✓
Interaction of syllable weight and tonal alignment independent of stress	✗	✓
Vowel reduction (centralization/devoicing)	✓	✓
Vowel reduction sensitive to word stress	✓	✗
Deaccentuation/dephrasing/tonal compression	✓	✓
Pitch scaling employed to express local prominence contrasts	✓	✓
Pitch scaling employed to express nonlocal structure	✓	?

ciation is based on extrapolation from the results of the peak alignment measurements and assumptions in the literature. It is probable that the H tone in Quechua sometimes associates, and sometimes doesn't, but it is unclear whether it does this variably in relation to the identified variants. In Table 52, the absence of a property for one language can only mean that in the data analysed here, no evidence for it was found. It should be clear that further research would be needed to consolidate these results. Nevertheless, here as well there are properties shared by both languages, while others are specific to one of them. It is a separate question which of the shared ones are universal or at least very frequent in the languages of the world, and which are perhaps specific to the Huari speaker community. For example, the signaling of something like continuity and finality via intonation is probably frequent overall. In contrast, in the case of vowel reduction it is well-known that many European varieties of Spanish hardly every reduce vowels, so

this is clearly not a universal feature. However, some kind of vowel reduction has also been reported for varieties of both Spanish and Quechua from other regions of Peru (Delforge 2008, 2011; Crignis 2018). That would suggest that some form of it might be a feature crossing the boundaries between the two languages in a wider area. The proposal that a grammar of a multilingual speech community is made up of elements that are specific to one language, elements that are specific to another, and elements that are community-specific, is also made in Höder (2014a, 2014b, 2018) in a construction grammar-based approach. This does not preclude that some of the community-specific features are potentially more broadly universal. Höder's approach rejects "the notion of pre-existing 'languages' in the sense of distinct language systems" (Höder 2014b: 216). He argues that the difference between bi- and multi-lingualism is gradual and that multilingualism in the sense of a speaker having command over several sociolinguistically differentiated varieties is ubiquitous. Grammar as a set of such socially distinct variants made up of specific values that communally relevant variables can assume is then seen as specific to a speaker community. Crucially, observable linguistic differences within a community are taken to be socioindexically meaningful, and the dynamic negotiation of these socioindexical meanings is the driving engine for conventionalization and change (Höder 2014b: 225, 2018: 44). In the present analysis, we have come to identify a number of variants that are specific to either language or the speaker community to different degrees. The results presented here demonstrate that the concept of a repertoire of shared grammatical resources for a multilingual community is meaningfully applicable also in the case of prosody and intonation and even when the two languages in question would normally be considered to be both genetically and typologically distant from each other. What has only been touched upon in passing is the social meaning of using these variants in the Huari speaker community. It has become clear throughout that even within the same elicitation task, there is a considerable degree of speaker-specific variation. This relates not only to the preferential use of the identified intonational variants in either language, but also to other areas of grammar and lexical choice, as well as more global prosodic stylistic choices such as speaking with a comparatively small pitch range. In a sense, this work has only been the first step of inspecting the inventory in terms of exploring the Huari speaker community. I began it by saying that it is a description of the prosody of two varieties of Spanish and Quechua spoken by the same speaker community. Perhaps a more accurate statement would have been that it is a description of the prosody of that community. It is a task for the future to truly relate its variability to community-specific sociopragmatic meanings.