

# Underspecification and Vowel Elisions In Southern Aymara

Omar Beas

University of Southern California

[obeas@usc.edu](mailto:obeas@usc.edu)

## 1. Introduction

Aymara is an agglutinative language, which is spoken by more than one million six hundred thousand speakers distributed between the territories of Peru and Bolivia, mainly surrounding the Titikaka Lake. One of its main remarkable and striking characteristics is so-called “vowel elisions”. This phenomenon has been well documented in the traditional-descriptive studies both classic (Bertonio, 1608) and modern Hardman (1987), Briggs (1993) and Cerrón-Palomino (1994).

From this perspective, the process consists of the deletion of one or more vowels in a morpheme boundary environment and in a CV syllable because of either the action or contiguous presence of a morpheme carrying of such capacity or by syntactic considerations. In this paper, I add a possible mechanics and motivation of the phenomenon to the discussion through the Theory of Radical Underspecification (Archangeli, 1988). In this sense, my main affirmation is that the underspecification and fixed content of Aymaran vowels play a relevant role in the explanation of the data.

According to the descriptive grammars of the language, vowel elisions are subject to two contexts: the morphological one that depends on the type of suffix or morpheme implied, namely, "conditioned by the morphology", and the syntactic one which happens in the environment of phrases, that is, "conditioned by the syntax " (Cfr. Cerrón-Palomino, 1994: 56). No general explanation to these behaviors has neither been proposed, nor has been established what relationship or connection could exist between them.

### 1.1. Morphological context:

In this context, the elisions are morphologically conditioned because they occur within a word and depend on the nature of involved morphemes and its capacity to delete the vowel of the preceding syllable and to maintain or not its own (Cerrón-Palomino, 1994: 56, Hardman, 1987: 22). At this point, it is necessary to note that the syllabic structure of the involved suffixes is not trivial anymore, since the proper elision context is always an open syllable or a sequence ended in CV. We represent these elisions between parentheses in the following examples:

(1) chinu.ña  
tie – INF  
“to tie”.

(2) chinu- + -thapi = chin(u).thapi-  
tie – CONGR  
“tie two things together”

In the case of (1)-(2), the stability of the vowels depends on the type of involved suffix. In that sense, the presence or absence of the root vowel depends on whether it is associated to the suffix *-ña* or to the suffix *-thapi*. In the first case, the root vowel is maintained whereas in the second one, it is required by the grammar to be deleted.

---

\* Abbreviations for this paper are:

INF	infinitivizer	REP	reportative
p	grammatical person	S	singular
DIR	goal	GEN	genitive
POS	possessive	MET	goal
LOC	locative	ABL	ablative
TOP	topic	NEG	negation

1.2. *Syntactic context:*

On the other hand, another type of elisions is syntactically conditioned in the grammar, since it operates in the domain of phrases and sentences. In this case, its behavior is much more predictable and subject to some kind of rule. In addition, Aymara native speakers are much more aware of their occurrence than in the previous case. The following examples illustrate different instances of the phenomenon:

- (3) a. jach'a qala  
big stone  
"big stone"  
b. ch'iyar(a) qala  
black stone  
"black stone"

Example (3) illustrates what happens to the vowel within a nominal phrase. Every nominal phrase consisting of a modifier and a nucleus undergoes deletion of the last vowel when the modifier bears more than two vowels as can be deduced from the comparison of (3)a with (3)b. The operation of this rule in the nominal phrase is illustrated with more complex examples:

- (4) a. naya-n(a) uta-xa  
1pS-GEN house-POS1p  
"my house"  
b. jach'a qut(a) taypi-na  
big lake middle-LOC  
"in the middle of the big lake"

Case (4)a shows that the application of the rule affects the word level (*naya*) without taking into account if it is inflected or not. On the other hand, example (4)b establishes that the deletion of the vowel can affect a complex complement. The same happens in (5), where the order of the brackets indicates the successive application of the rule:

- (5) juma-n(a)]<sub>1</sub> mama-ma-n(a)]<sub>2</sub> uta-pa-n(a)]<sub>3</sub> numiro-pa  
2pS-GEN mother-POS2p-GEN house-POS3p-GEN number-POS3p  
"its number of the house of his/her mother"

A different case occurs in the verbal phrase domain. Every complement of a VP loses its final vowel, but without considering the number of syllables:

- (6) a. t'ant'(a) munthwa  
bread want-1pS-REP1  
"I want some bread"  
b. quta-r(u) sari  
lake-MET ir-3pS  
"he goes to the lake"

In (6)a, the vowel of the direct object disappears although it only has two syllables. On the other hand, (6)b demonstrates that the application of the rule is blind to a syntactic motivation strictly speaking. It is not necessary for the complement to be subcategorized, because the presence of an adjunct, as in the previous mentioned case, must be validated by a surface representation that contain the application of the deleting process.

Aymara fulfills this same condition whenever the subject surfaces lexically. In that sense, *Tumasixa*, *Tuminkuxa* and *Katitaxa* undergo the same processing that subcategorized arguments as can be seen in the following examples:

- (7) a. Tumasix(a) wak(a)w(a) awati  
 Thomas-TOP cow-REP1 graze-3pS  
 “Thomas grazes the cattle”  
 b. Tuminkux(a) liwr(u)w(a) qillqi  
 Domingo-TOP book-REP1 write-3pS  
 “Domingo writes a book”

The main question that remains here is whether it is possible to find a connection between the two processes described above.

## 2. Underspecification and vowel elisions in Southern Aymara

Since any segment is made of a set of characteristics determined within the limits of Universal Grammar (UG), it is possible to conceive the phonological inventory of a particular grammar like an instantiation, selection, or a specific subset of these conditions.

In that sense, every surface representation contains at least three types of information: (1) Unpredictable and distinctive information, lexically encoded from the underlying representation. (2) Information that is predictable, specific to the particular grammar and that it is inserted taking into account the grammatical context and (3) Default rules from UG, that are in charge to assign the unmarked values for the non-contrastive features.

In the particular case of Aymara, the highly marked and idiosyncratic behavior of its vowels, immediately takes to think that their underlying representations have to be underspecified, that is, they do not contain all the features that are observed in the surface structure:

(8)

	[high]	[back]	[round]
/a/	0	0	0
/i/	+	0	0
/u/	+	+	0

The information that carries each one of these entries is the most optimal and minimal in order to account for the contrasts between vocalic segments. Somehow, the only condition that is required to know a given segment to be /u/ is to make sure that it bears the [+back] feature. If so, then, the complete filling of these features is obtained by the application of redundancy rules both complementary ones and by default. The former plays the role of inserting the unmarked features in Aymara, which are expressed through the following rules:

- (9) Complementary rules:  
 a. [0]→[-high]  
 b. [0]→[-back]  
 c. [0]→[-round]

On the other hand, the latter contains predictable redundancies by universal markedness common to all (human) grammars:

- (10) Default rules:  
 (+back)→(+round)

Next, I will present three main arguments (epenthesis processes, the distribution/frequency of Aymaran vowels occurrences and vowel harmony processes) to support the point of view that Aymaran vowels are underspecified then I will establish the impact on the syllabic structure, one of the more important prosodic schemes in the language.

### 2.1. Epenthesis

A well-known process is the existence of vowel epenthesis [a], predictable at the word level. This is clearly shown in the treatment of borrowings that come from both Quechua and Spanish:

(11) a.	lunisa	“lunes” (from Spanish)	Monday
b.	Huwanu	“Juan” (from Spanish. cf. Huwana “Juana”)	John
c.	arusa	“arroz” (from Spanish)	rice
d.	qunquri	“rodilla” (from “qunqur” in Quechua)	knee
e.	supaya	“diablo” (from “supay” in Quechua)	devil

At the level of root/word, it can never happen for the last segment to be a consonant. The Spanish (11)a-(11)c and Quechua (11)d-(11)e borrowings undergo the insertion of a vowel<sup>1</sup>.

In the extent to [a] represents a bundle of unmarked features and therefore predictable on the base of the complementary rules of (9), the epenthesis does not have to comprise of the underlying representation. In the same way, given the specification of [i] and [u], it is not completely predictable that both elements must inherently be specified for [+high] or [+back] value either inherently or by harmony with some vowel (of the root).

## 2.2. Frequency of the Aymaran vowels:

The frequency of occurrence of vowels in Aymara is overwhelmingly in favor of the phoneme /a/, that according to Martin (1987: 42), are four times more frequent than their immediate follower /i/ and definitively more usual than /u/ <sup>2</sup>. In other words, it is much more common and natural (“economic”) to have [a] in Aymara than any other vowel. On the contrary, having a segment [u] is a quite exceptional fact.

These contrasts of markedness have a relevant distributional correlate in the case of /a/. At the beginning and within roots/words, there seems to be no phonological restriction to its presence. However, this situation changes at end of the root/word<sup>3</sup>:

(12) a.	khari	*khara	cutting edge
b.	kurmi	*kurma	rainbow
c.	ali	*ala	plant
d.	q’axilu	*q’axilu	name of typic dance
e.	chinja		gift
f.	liwa		distribution
g.	q’aya		person which is respected
h.	qamani		sacristán
i.	kunturi		Condori, condor

<sup>1</sup> Another interesting fact is that the same words or others that are similar receive a treatment which is different in Jaqaru, the central dialect of Aymara:

(i)	Aymara	Jaqaru	
	birnisa	birnisi	“Friday”
	Diyusa	Diyusi	“God”
	juibisa	juibisi	“Thursday”
	martisa	martisi	“Tuesday”
	kunturi	kúntiri	“condor”
	papila	papili	“paper”
	lunisa	lúnisi	“Monday”

It is possible that historical evidence be determinant in order to clarify the grammatical processes and motivations for those data.

<sup>2</sup> Interestingly, Jaqaru central dialect of Aymara- also have the phoneme /a/ as more frequent element. However, the frequencies relative to /u/ and /i/ have been inverted, what it indicates that it seems that this dialect the underspecified values are very different (Hardman, 1983: 36-37).

<sup>3</sup> However, there is also exceptions such as *aymara*, *ch’iyara*, etc

What must be observed is that [a] appears at the end when the preceding consonantal segment is specified for the previous feature [anterior] or for [-anterior] as in (12)e, (12)f, (12)g. The distribution of the other vowels seems less subject to some rule.

So far it is possible to establish as generalization that the absence of /a/ at the end of root/word is conditioned to whether the sequences *n*, *r*, *l* (also confront the borrowings) appear. In other words, it is conditioned to whether the segment is marked as [+sonorant] [+consonant] and [+anterior]:

$$(13) *C[a] / \_ \#$$

$$\begin{array}{l} | \\ [+son] \\ [+cons] \\ [+ant] \end{array}$$

Somehow, these facts once again indicate an asymmetry between [a] and the rest of vowels.

### 2.3. Vowel harmony

A third relevant set of data is conformed by certain harmonic processes in Aymara grammar, which allow us to discuss the relation between underlying representation and surface representation again.

First, it must take into account that whenever the vowels of the base form do not appear in the derived counterparts, we can take it as an indication that those vowels do not belong to the underlying representation. In other words, they are predictable based on their alternating base-forms/ derived forms and the syllabic restrictions that are required by the epenthesis rule seen above:

(14) Base form		Derived form	
a.	chura-ña “to give”	chur-ita	“give me”
b.	juta-ña “to come”	jut-i	“he came”
c.	thuqu-ña “to dance”	thuqu-ri	“dancer”
d.	khiwi-ña “to pack”	khiwi-ri	“person who packs something”
e.	qhulli-ña “to plow”	qhullu-ri	“person who plows”

The contrast between (14)a-(14)b and (14)c-(14)d-(14)e is clear: base form vowels in the first group do not comprise of the phonological representation of the root<sup>4</sup>:

(15) Underlying form	Surface form
a. /chur-ñ/	[chur-ita]
“to give”	“give me”
b. /jut-ñ/	“to come”
[jut-i]	“he came”

On the other hand, in the three last cases is necessary to postulate the presence of some vowel at end of root/word, although the discussion can turn around the issue whether these vowels are or not the externalization of an underlying segment –obviously it would have to be /a/- that harmonizes with the segmental quality of the root<sup>5</sup>.

<sup>4</sup> It is interesting the case of *chaxwa-ña* ~ *chaxwi-ri* “fighter”, or also the one of *apaqa-ña* ~ *apaqi-ri* “someone who get down (something)” where we do not get the expected results. The role of the consonants in these processes could then be playing a relevant role that requires a more detailed study.

<sup>6</sup> Examples as /chur-/ + /-ri/ → churiri complicates the problem where it does not get \*churari nor \*churri or \*churi. Probably, the fact that alternative \*chururi does not exist, it is a sign that the Aymaran grammar inserts the next unmarked value for these vowels, which is definitively /i/. The motivation is not completely clear. It could be affirm that /a/ is not inserted because of the restriction to distribution before sonorants. However, the problem is then how to explain the presence of /a/ in *churaña*.

In any case, we took (16)a-(16)b as the exteriorization of a underspecified segment like  $V_{(0)}$  by the application of some kind of rule of vowel harmony, whereas in (16)c the underlying presence of /i/ can be postulated:

**(16) Underlying representation**

- a. /thuq $V_{(0)}$ -ñ/ “to dance”
- b. /khiw $V_{(0)}$ -ñ/ “to pack”
- c. /qhulli-ñ/ “to plow”

**Surface form**

- d. [thuqu-ri] “dancer”
- e. [khiwi-ri] “person who packs”
- f. [qhullu-ri] “someone who plows”

I have to make a remark (16)a-(16)b. Both cases could be part of a process of vowel harmony, by which the specifications for [+back ], [+high ] and [+high ] of the root vowel are transmitted to the non-specified vowel  $V_{(0)}$ . Note that potentially in this case, there are two possible candidates to trigger the harmonic process: the root vowel and the suffix vowel. The general rule that can be enunciated is that whenever *u*, *i* are in tension for a harmonic process, it is the specified segment by the root what triggers it. What does not happen something similar in (16)b and (16)c, can be an indication that the corresponding segments are already specified for the characteristic [+high ] from the lexicon.

Further pieces of evidence for the fact that we are not dealing with a process of harmony but with a coincidence in the lexical specification and for the direction of the harmonic process is of left-to-right, can be found in some dialectal varieties and the processing of compounds as we will see next:

- (17) a. thuqu- + -ri →thuquri  
 “to dance” agent/purpose  
 “dancer/to dance” (La Paz)
- b. thuqu- + -ri  
 “to dance” agent/purpose→thuquru  
 “dancer/to dance” (Salinas)  
 (Briggs, 1993: 66)

The dialectal evidence about the predominance of /u/ over /i/ in verbs shows two different results within the same process from vowel harmony. Examples (17)a-(17)b suggests –as we have seen- that the harmonization occurs from left to right and from the first underspecified vowel of the root.

On the other hand, the following alternating instances can be observed in the compounding formation. The sequences of vowels are not allowed in Aymara<sup>6</sup>:

- (18) a. chika aruma→ chikaaruma “midnight” (Cerrón-Palomino, 1994: 60)
- b. chika uru→ chikuuru “noon” (Cerrón-Palomino, 1994: 60)
- c. jichha uru→ jichhuuru “today”  
 (La Paz, Juli, Sitajara, Jopoqueri, Salinas, Morocomarca)  
 (Cerrón-Palomino, 1994: 60, Briggs, 1993: 67)
- d. qhara uru→ qharuuru “next day” (Cerrón-Palomino, 1994: 60)
- e. maya uru→ mayuuru “another day” (Salinas) (Briggs, 1993: 67)
- f. maya uru→ mayuru “another day”  
 (La Paz, Jopoqueri) (Briggs, 1993: 67)
- g. jayp’u uru→ jayp’uuru “afternoon” (Cerrón-Palomino, 1994: 60)
- h. taypi uru→ taypuuru “noon” (Cerrón-Palomino, 1994: 60)

Note that when two identical vowels co-occur (18)a-(18)g, the expected result arises: a vowel lengthening process is activated. This fact would not happen in the case we would assume an underlying /a/ as the vowel like in (17)a and (17)b. The presence of the segment [a] in these cases, definitively is licensed because of the compounding process is definitively postlexical.

<sup>6</sup> It is clear that the same argument has been employed in the case of the epenthesis examples before seen.

The case in which two different vowels occur is more interesting. As cases (18)b-(18)f show a sequence *a-u* is solved in favor of the most marked vowel: the one that undergoes the lengthening.

This suggests, somehow, that what has traditionally been interpreted as vowel elisions cannot be more than an *optical illusion*. Instead of this traditional proposal, we suggest that the underlying representation of the roots interacting with the one of the suffixes and the rules of specification determine the insertion and/or the quality of the vowels.

### 3. Autosegmental Analysis

From the previous data, I claim that given the high recurrence of roots of two syllables that contain one /a/ like second vowel in Aymara, and by virtue of the processes of epenthesis, the presence of this vowel is predictable and they are inserted or not instead of *being deleted*.

Additionally, another related affirmation is that the underspecification of the vocalic inventory of the Aymara determines that the roots in this grammar carry a null or empty specification or [0] like in (19)a in the underlying representation, or in favor of either the [+back] or [+high] feature like in (19)b or (19)c<sup>7</sup>:

- (19) a. 
$$\begin{array}{c} V \\ | \\ [0] \end{array}$$
- b. 
$$\begin{array}{c} V \\ | \\ [+back] \end{array}$$
- c. 
$$\begin{array}{c} V \\ | \\ [+high] \end{array}$$

In that sense, Aymaran roots of the form (C)V<sub>1</sub>C(V<sub>2</sub>), both V<sub>1</sub> and V<sub>2</sub> can take whatever values mentioned earlier<sup>8</sup>. Nevertheless, the motivations and operativity -and in that sense, quality of these values for each context- considerably vary according to the harmonic processes seen before. Only the vowels specified for some characteristic in the phonological representation can trigger a harmonic process<sup>9</sup>.

Summarizing, let us present the analysis of a very peculiar and interesting example of homophonic alternation. First, we establish the conditions of (20):

- (20) a. Universal Association Convention  
Parametrized: leftmost relevant segment
- b. *Spreading rule (feature [+high])*
- $$\begin{array}{ccc} V_1 & \rightarrow & V_1 \quad V_2 \\ | & & | \quad \cdot \\ [+high] & & [+high] \end{array}$$

Contrasts in (21) are taken from the traditional descriptions of the language as a conclusive evidence for the point of view that there is no more than morphophonemic lexical specification to explain vowel elisions:

<sup>7</sup> For a previous intuition about this way to account for the data, cfr. Cerrón-Palomino (1994: 40)

<sup>8</sup> In some manner, as well as it occurs in many grammars in the languages of the world, it seems like there is a fundamental distinction between the prosodic properties of the root and the ones of the respective suffixes.

<sup>9</sup> This underlying representation is in conflict with the rule of vowel insertion in the surface form. I the case of the suffixes, these, in general, are monosyllabic and have the form CV, whereas there are a small number whose structure is CVCV. The less frequent are CCV and VCV, which do not correspond to the favorite type of syllable nor the syllabification rules. On the other hand, the recurrence of /a/ in the suffixes is also high over their vocalic counterparts, what it suggests a similar solution to the proposed for the roots.

- (21) a. q'ipi-ta-wa  
 carry-PP-REP1p  
 “that is carried”  
 b. q'ip(i)-ta-wa  
 carry-2pS-REP1p  
 “you carry”  
 c. q'ip(i)-t(a)-wa  
 carry-1pS-REP1p  
 “I carry”  
 d. q'ipi-t(a)-wa  
 carry-ABL-REP1p  
 “about the bundle”  
 e. q'ip(i)-ta-ña  
 carry-DIR-INF  
 “to raise a bundle”

In each case, according to the value of the suffix *-ta*, the root vowel is erased like in (21)b, (21)c and (21)e or remains undeleted as in (21)a and (21)d. Nevertheless, also it is possible to write down that the vowel of this suffix is affected by morpheme that follows it. In (21)c and (21)d, before the first person reportative suffix *-wa*, the vowel of *-ta* deletes, but does not happen the same in (21)a and (21)b<sup>10</sup>.

(22)

<u>Past. Part.</u>	<u>2p. sing.</u>	<u>1p. sing.</u>	<u>ablative</u>	<u>goal</u>
v-ta	c-ta	c-ta-c	-v-ta-c	v-ta
q' ipi-ta-wa “what is carried”	q' ip(i)-ta-wa “you carry”	q' ip(i)-t(a)-wa “I carry”	q' ipi-t(a)-wa “about the bundle”	q' ip(i)-ta-ña “to raise a bundle”

Nevertheless, according to the assumptions taken above, we can assume that we are dealing with a root of the form:

(23) / q'ip - /

Underlying forms of suffixes play a fundamental role in this view:

(24) a. Past participle  
 / -V C V /  
 |  
 t

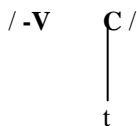
b. Second person singular and goal  
 / -C V /  
 |  
 t

<sup>10</sup> It is probable that because of this reason the suffix *-wa* be characterized in the traditional descriptions of Aymara like a suffix with an irregular performance, that is not subject to any rule and unpredictable, because it allows both a presence and absence of the vowel (Hardman, 1987: 77).

c. First person singular



d. Ablative

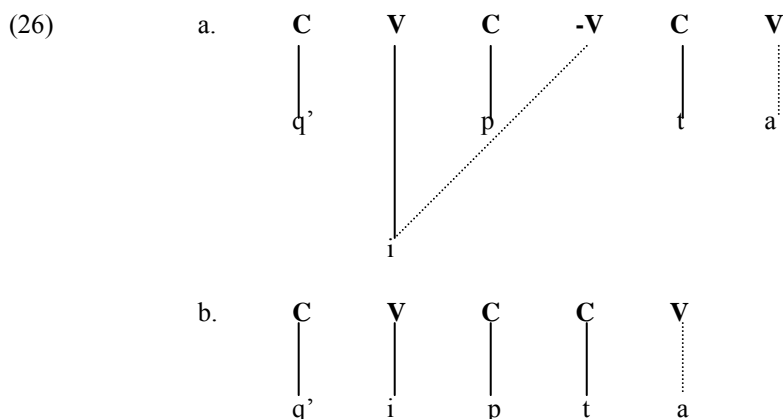


For example, the underlying representations for [qip-t-wa] (“I carry”) and [qip-ta-ña] (“to raise a bundle”) are (25)a and (25)b respectively:

- (25) a. /qip-t-wV<sub>1</sub>/  
 b. qip-tV<sub>1</sub>-ñV<sub>2</sub>/

For each instance, nevertheless, a different prosodic constriction is applied. In (25)a and (25)b, V<sub>1</sub> needs to be inserted obligatorily in order to avoid complex codas, (they are more marked than simple codas) in this grammar.

The positions that are not filled have to do with the way in which each of the morphemes is underspecified and how they are going to fill or not the empty positions interacting with the roots. We provided the representations of q'ipi-ta-wa (“that is carried”), q'ip(i)-ta-wa (“you carry”) and q'ipi-t(a)-wa (“about the bundle”).



The first non-specified vowel of the underlying representation of the suffix in (26)a is filled by harmony with the root vowel through a link. On the other hand, and as well as in (26)b, the following vowel is filled by default, since the vowel [a] is recurrent.

This possibility questions the status traditionally attributed to the phenomenon that was interpreted usually like elision of a vowel.

#### 4. Conclusions

Even though diverse analyses can appear debatable, what is difficult to question is that there must have a strong motivation for the behavior of the Aymaran morphophonemics because *this is the natural way grammars work*. In that sense, it is much more natural to suppose that there exist general patterns that determine whether vowels are or not inserted and whether a harmonic process needs to be applied to them.

The main argument of this paper has been that underspecification of the vowels in Aymara plays a relevant role in the characterization of the data and we have presented three pieces of evidence for this conception: epenthetic processes, frequency of vowels and harmonic processes. Behind those facts, our

conception argues against the existence of "generalized deletion processes" in the morphological context, which are very uncommon and unnatural between grammars and are subject to strong restrictions. What I would like to suggest instead is a conception where a very restrictive kind of mechanism (or the interaction of many of them –maybe prosodic considerations are working together) are the final responsible of the observed data.

In some sense, it is possible to say that the traditional point of view is descriptively adequate, but fails to provide a unitary explanation to some phenomena presented here. Speakers would need a large amount of memory to learn and store suffix-specific rules.

In terms of learnability, the proposed analysis has a clear advantage: speakers do not have to learn redundancy and default rules. They just have to learn language-specific rules like Vowel Harmony in Aymara.

## References

- APAZA SUCA, Nicanor y otros. *Diccionario Aymara-Castellano/Arunakan liwru Aymara-Kastillanu*. Puno: INIDE, 1984.
- ARANOVICH, Raúl. A Nonlinear Analysis of Lengthening and Hiatus in Aymara. En: Cole, P. y Gabriella Hermon (1994), pp.301-318.
- BRIGGS, Lucy. "Estructura del sistema nominal". En: Hardman y otros (1988), pp.171-264.
- BRIGGS, Lucy. *El idioma aymara: variantes regionales y sociales*. La Paz: ILCA, 1993.
- CERRON-PALOMINO, Rodolfo. *Quechumara: estructuras paralelas de las lenguas quechua y aimara*. La Paz: CIPCA, 1994.
- CERRON-PALOMINO, Rodolfo. "Dialectología del aimara sureño" en: *Revista Andina*, 13, 1 (1995)
- COLE, Peter y Gabriella Hermon (eds). *Language in the Andes*. University of Delaware: Newark, 1994)
- GOLDSMITH, John. *The Handbook of Phonological Theory*. Cambridge, MA: Blackwell Publishers, 1995.
- HARDMAN, Martha. *Jaqaru: Compendio de estructura fonológica y morfológica*. Lima: IEP, 1983.
- HARDMAN, Martha, Juana Vásquez y Juan de Dios Yapita (eds). *Aymara: compendio de estructura fonológica y gramatical*. La Paz: Gramma, 1988.
- KENSTOWICZ, Michael. *Phonology in Generative Grammar*. Cambridge: Blackwell Publishers, 1994.
- MARTIN, Laura. "Fonología". En: Hardman y otros (1988), pp.24-63.
- STERIADE, Donca. "Underspecification and Markedness". En: *The Handbook of Phonological Theory*. pp. 114-174. John Goldsmith (ed) Cambridge, MA: Blackwell Publishers, 1995.

Omar Beas  
Linguistics Department  
University of Southern California (USC)  
E-mail address: [obeas@usc.edu](mailto:obeas@usc.edu)