Coronal vowels in Persian*

Elham Rohany Rahbar
University of Toronto

Working within the framework of Modified Contrastive Specification (e.g., Avery and Rice 1989, Rice and Avery 1993, Walker 1993, Dresher, Piggott and Rice 1994), I assume that different features, across languages, may be determined as unmarked depending on the inventory of the language and the phonological contrasts the features show in that inventory and also according to phonological patterning as the main diagnostic for markedness. My goal in this paper is to investigate which place feature is unmarked in the two-place vowel system of Persian. Showing a range of phonological evidence, I argue that in the Persian vowel system, [coronal] is the unspecified place feature.

1. Introduction

The underspecified status of [coronal] is widely suggested in the literature (e.g., Kiparsky 1985, Paradis and Prunet 1991, Wilson 2001), but some studies have disputed this (see, e.g., Zhang 1996, Zhou 1999, and Dresher and Zhang (in press)). The question that I address in this paper is which place feature is unmarked in the vowel system of Persian. Persian has the following vowel inventory:

Table 1: The Persian vowel system

<table>
<thead>
<tr>
<th></th>
<th>i</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

Taking as a foundation several phonological processes that are proposed in the literature as diagnostics for determining the (un)marked status of a feature in a system, I argued in a study of vowel height in Persian (Rohany Rahbar 2007a) that mid vowels pattern as unmarked in this language. That is, in the three-height vowel system of Persian, the features [high] and [low] are marked while the feature [mid] is unmarked. This gives us the following underlying representation for height features in Persian.

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* I am grateful to Keren Rice for supervising my first generals paper, on which this work is based, and for her invaluable guidance and advice throughout. I also wish to thank Elan Dresher for helpful comments on contrast in place features. Any errors are, of course, my own.


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Table 2: *Representation of height features in Persian*

<table>
<thead>
<tr>
<th>[high]</th>
<th>i</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>e</td>
<td>o</td>
</tr>
<tr>
<td>[low]</td>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Considering [mid] as the unmarked height feature in Persian, I now turn to the markedness of place features in that inventory. Following Rice (1995, 2002), I consider [coronal] and [peripheral] —whose phonetic realization can be [labial] or [dorsal]— as place features for the Persian vowel inventory. The framework within which I present my analysis is Modified Contrastive Specification (e.g., Avery and Rice 1989, Rice and Avery 1993, Walker 1993, Dresher, Piggott and Rice 1994). Within this framework, there are two possibilities for markedness of place features in an inventory such as Persian’s. One possibility is that the feature [coronal] is unspecified. Within the framework assumed here, this would suggest that the feature [coronal] is absent phonologically, while the feature [peripheral] is present. Alternatively, the feature [peripheral] could be unmarked or phonologically absent, in which case [coronal] is marked or phonologically present. The underlying representations of the Persian vowel system based on these two possibilities are given in Tables 3 and 4.

Table 3: *[coronal] is unmarked*

<table>
<thead>
<tr>
<th>[peripheral]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[high]</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>[low]</td>
</tr>
</tbody>
</table>

Table 4: *[peripheral] is unmarked*

<table>
<thead>
<tr>
<th>[coronal]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[high]</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>[low]</td>
</tr>
</tbody>
</table>

I argue that [coronal] is unmarked in Persian, as shown in (3), based on the same evidence that provides support for the unmarkedness of [mid] in this language.

2. Evidence for unmarkedness of [mid] in Persian

Various diagnostics are proposed in the literature to determine the unmarkedness of a feature (see Rice 1999, Rice, forthcoming, for a summary). In particular, unmarked elements result from neutralization, are likely to be epenthetic, are targets of assimilation, and are lost in coalescence and deletion.

All of these processes indicate the unmarkedness of [mid] in Persian. We will see that in assimilation and deletion, in which the submergence of the unmarked is expected, [e] is assimilated/deleted. Epenthesis and neutralization, however, are processes that
involve the emergence of the unmarked; [e] is the epenthetic vowel as well as the result of neutralization in Persian.

However, the vowel [o], although a mid vowel, patterns in most cases with other vowels and not with /e/. This observation brings up the question as to why /e/ and /o/ behave differently in spite of sharing the same height feature. Taking [peripheral] as the marked place feature can provide an explanation in this regard: /e/ is unspecified for both place and height features while /o/ is unspecified only for height feature. Let us see how /e/ and /o/ behave in the mentioned phonological processes.

2.1 Assimilation

Persian exhibits several patterns of vowel harmony including height harmony and place harmony. Three types of height harmony can be recognized. While all involve raising of mid vowels to high (low vowels do not participate in height harmony in Persian (see Rohany Rahbar 2007a)), there are slight differences depending upon domain, and I thus organize this section considering the domains in which vowel harmony takes place.

2.1.1 Vowel harmony within the stem

Persian shows two patterns of height harmony within the stem, as follows:

(1)  o → u / — Cu
    hozur ~ huzur ‘presence’
    vođud ~ vuđud ‘existence’
    xorus ~ xurus ‘rooster’

(2)  e → i / — Ci
    kelid ~ kilid ‘key’
    sebil ~ sibil ‘moustache’
    zeqil ~ ziqil ‘wart’

In these cases, as we see, /e/ and /o/ are both targets of assimilation while the trigger is a high vowel. Evidence for the underlying presence of /o/ and /e/ (and not of /u/ and /i/) in the above forms (and so, the occurrence of harmony and consequently raising of /o/ and /e/ to high vowels) is as follows: first, the existence of words with CuCu and CiCi in the language argues for /o/ and /e/ in the above examples. These words, some of which are given below, are never pronounced as CoCu and CeCi even in very formal speech. In their written forms they have the letters used for [i] and [u] which are pronounced in both formal and colloquial speech.

(3)  a. CuCu Words
    lulu ‘bogy’
    susu ‘glimmer’

    b. CiCi Words
    sili ‘slap’
    bini ‘nose’
Thus, surface C-highV-C-highV words have two sources: the vowels may be phonologically high, as in (3), in which case vowel height is invariant, or the first vowel may vary in its height between mid and high, as in (1) and (2). I treat this varying vowel as phonologically mid. Second, the orthography of the language supports the presence of /o/ and /e/ in forms such as those in (1) and (2). In Persian, /al, /el/, and /ol/ are represented by diacritics (which are not inserted in writing except in books for new learners), and /al/, /i/, and /u/ by three letters of the alphabet. None of the words in (1) and (2) contain the symbols used for /i/ and /u/ in their written form. It is only in speech that [i] and [u] are pronounced. In (3), however, the vowels are both represented by the vowel symbols.

The assimilation of /el/ to [o] within stems needs comment. While there are cases such as  tsl\(\text{e}\)lo ~  ts\(\text{l}\)olo ‘front’ and  tf\(\text{e}\)lo ~  tf\(\text{lo}\)lo ‘steamed rice’ which might be taken as cases of /el/ to [o] assimilation within stems, there are cases such as dero ‘harvest’, ke\(\text{f}\)o ‘drawer’ and senobar ‘black poplar’ which do not show any change in /el/ (*doro; *ko\(\text{f}\)o, *sonobar) even in informal speech. Whether there is a pattern in this regard, what the underlying form is in the cases such as  ts\(\text{l}\)elo ~  ts\(\text{l}\)olo, and in general how CeCo words should be treated are questions for future research. In this paper, for the case of /el/ to [o] assimilation, I rely on this pattern of harmony when it happens across morphemes. The prefix-stem /el/ to [o] assimilation in imperatives, a highly common pattern of harmony in Persian, will be discussed later.

In addition to the cases of within-stem harmony mentioned above, there is some interaction between the two low vowels in Persian, which shows a case of within-stem place assimilation, in the following way:

<table>
<thead>
<tr>
<th>(4)</th>
<th>a → a / C − ?ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>bah(\text{r})</td>
<td>bah(\text{r})</td>
</tr>
<tr>
<td>d(\text{s})ahan</td>
<td>d(\text{s})ahan</td>
</tr>
<tr>
<td>m(\text{a})(\text{q})(\text{a})</td>
<td>m(\text{a})(\text{q})(\text{a})</td>
</tr>
<tr>
<td>s(\text{a})(\text{d})(\text{a})r</td>
<td>s(\text{a})(\text{d})(\text{a})r</td>
</tr>
</tbody>
</table>

This could be a case of laryngeal transparency. The process involves only low vowels (e.g.,  tihu does not become  tuhu ‘partridge’). It also involves only laryngeal consonants; it does not occur across other consonants (e.g.,  ta\(\text{b}\)ar does not become  ta\(\text{b}\)ar ‘lineage’). One possible account of this process is that laryngeals and low vowels both have the feature [low], and place assimilation is possible in this environment. Whether Persian laryngeals bear the feature [low], as this process might suggest, remains to be investigated. The point which is relevant to our discussion in this paper is the occurrence of place assimilation: the feature [peripheral] spreads from a to a.

Next, we will look at prefix-stem assimilation in imperatives.

\(^1\) Identifying their underlying form and a pattern in them—if there is a pattern in these cases—is important, in particular because the language exhibits some interchangeable occurrence of /el, /al, and /ol/; for example,  xar\(\text{b}\)e\(\text{z}\)e ~  xar\(\text{b}\)e\(\text{z}\)e ‘melon’,  po\(\text{t}\)e\(\text{c}\)a\(\text{l}\) ~  po\(\text{t}\)e\(\text{c}\)a\(\text{l}\) ‘orange’,  \(\text{f}\)\(\text{e}\)n\(\text{e}\)n ~  \(\text{f}\)\(\text{e}\)n\(\text{n}\) ‘such’,  \(\text{f}\)\(\text{e}\)n\(\text{a}\)n ~  \(\text{f}\)\(\text{e}\)n\(\text{a}\)n ‘such’,  ga\(\text{v}\)a\(\text{h}\)i ~  go\(\text{v}\)a\(\text{h}\)i ‘testimony’,  ga\(\text{l}\)u ~  ge\(\text{l}\)u ‘throat’.
2.1.2 Vowel harmony in verbal prefixes

Another case of harmony in Persian occurs when the vowel /e/ in the verbal prefix *be* (imperative marker) assimilates to the first vowel of the stem if it is a non-low vowel, as follows:

(5) \(e_{\text{prefix}} \ldots o_{\text{stem}} \rightarrow o_{\text{prefix}}\) (place harmony)
be + ro \(\rightarrow\) boro 'go!'
be + kon \(\rightarrow\) bokon 'do!'

(6) \(e_{\text{prefix}} \ldots u_{\text{stem}} \rightarrow u_{\text{prefix}} / o_{\text{prefix}}\) (place — and height — harmony)
be + xan \(\rightarrow\) bexun\(^2\) ~ buxun/boxun 'read!'
be + gu \(\rightarrow\) begu ~ bugu/bogu 'say!'

(7) \(e_{\text{prefix}} \ldots i_{\text{stem}} \rightarrow i_{\text{prefix}}\) (height harmony)
be + jin \(\rightarrow\) bejīn ~ bijīn 'sit!'
be + gir \(\rightarrow\) begir ~ bigir 'get!'

It should be noted that in the cases of prefix-stem height harmony (given above in (5)-(7)), the assimilation of /e/ to [o] is by far more common than the assimilation of /e/ to high vowels. The assimilation of /e/ to [i] and [u] seems to be strongly under the influence of sociolinguistic factors.

As we had seen before, in within-stem harmony, raising of mid vowels to high vowels was a very common pattern; in prefix-stem harmony, however, assimilation of /e/ to [o] is the most common one. This shows that Persian harmony patterns vary in their frequency depending on domains in which they occur. This remains to be studied in future.

Returning to prefix-stem harmony, two points should be noted here: first, Persian has three verbal prefixes: *be*— (imperative and also subjunctive marker), *na*— (negative marker), *mi*— (indicative marker). Thus the verb prefixes in Persian have an inventory of three vowels (i.e., /i/, /e/, and /a/). These can be viewed as sharing the same place of articulation and differing in height. Among them, only the mid vowel (i.e., /e/) is a target of harmony. The high and low vowels in prefixes (i.e., /i/ and /a/) remain unchanged. Second, the vowel /o/ in the stem is also the trigger of harmony for /e/ (i.e., /e/ assimilates to [o]).

A third case of vowel harmony occurs in loan words; this will be discussed below.

2.2 Epenthesis

The epenthetic vowel in Persian, inserted to break up the forbidden consonant clusters both in loan words and in suffixation in native words, is [e].

\(^2\) [a] is commonly raised to [u] before nasal consonants in Persian; for example, *badam* ‘almond’ becomes *badum* in speech. This pattern of raising is not a case of height harmony (since there is no neighbouring high vowel to trigger the harmony) and requires special treatment due to the effect of nasalization.

\(^3\) A sociolinguistic study of harmony patterns in Persian is not a goal in this paper, so I leave it aside.
2.2.1 Vowel epenthesis in loan words

Patterns of vowel harmony are also observed in English words that have been borrowed into Persian. Initial consonant clusters are forbidden in Persian, and an [e] is usually inserted to break up these clusters. In words starting with sC, [e] is inserted at the beginning of the cluster, for example:

(8) English          Persian  
ski               eski  
small             esmnl

In other cases, [e] is epenthesized between the two consonants as in pelastik ‘plastic’ and kefas ‘class’. The epenthetic [e] undergoes harmony in loan words when the following vowel is a non-low vowel. Here are some examples:

(9) English          Persian  
freezer            firizer  
flute              fulut  
profile            porofajl

As in native words, in loan words, too, [e] undergoes harmony when the potential trigger is a non-low vowel. One might ask why I take [e] as the epenthetic vowel for loan words in Persian, since we see different realizations of epenthetic vowels in the examples. In (9), there are some reasons to consider [e] as epenthetic, putting aside its similarity to some native process of assimilation. In the cases in which no harmony is seen —when the cluster precedes the low vowel— [e] is always observed in the epenthetic vowel position (e.g., kefas ‘class’). In addition, even in cases where harmony normally takes place, sometimes the foreign word with an [e] as epenthetic vowel can interchangeably be used, as in [ferizer] and [ firizer] for freezer. Finally, the insertion of [e] at the beginning of sC clusters also suggests the nature of the epenthetic vowel (e.g., eski ‘ski’). In these words, there is no harmony, perhaps because of the existence of two consonants between [e] and the next vowel, and [e], as a default epenthetic vowel, always appears. Thus, in the absence of assimilation, the epenthetic vowel in Persian is [e].

As these examples show, /o/ is not the epenthetic vowel in loan words although it is a mid vowel as /el/ is. Moreover, /ol/, like the other non-low vowels, can be the trigger of harmony for /el/.

2.2.2 Vowel epenthesis in native words

In suffixation in native words, too, /el/ is epenthized to break up consonant clusters. Consonant clusters may be created in syllable margins when a suffix is added to a root in Persian. A strategy to break up these consonant clusters is inserting the vowel [e]. The vowel /o/ is not an epenthetic vowel in native words either.4

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4 One exception is arď ‘worth, value’ followed by the suffix mand which results in arďomand ‘worthy, valuable’.
The question here is: if [mid] is unmarked, why is [o] not an epenthetic vowel in Persian as [e] is? It is very common that only one vowel is used as epenthetic in a language but its height is shared by other vowels which are not epenthetic in that language. For example, [i] is the epenthetic vowel in Yoruba but the language has [u] as well. For other reasons [u] does not show the same behavior as [i] (see Pulleyblank 2003 for discussion). Considering the place features of Persian vowels and assuming that [mid] is the unmarked feature in this language, [o] is specified for place but not for height so it is unspecified for only one feature. The vowel [e], however, is unspecified for two features. Both [coronal] and [‘mid] are unspecified so in fact [e] has no content and so is more likely to be epenthetic. This is captured as follows: insert V which has no content.

2.3 Deletion

Evidence shows that [e] is easily lost in Persian. For instance, [e] is deleted in contact with [a], where all other vowels remain and [a] deletes. As (11a) shows when /e/ at the end of the noun (which is a proper name) is followed by the vowel /a/ of the copula ast ‘is’, /e/ is deleted and [a] survives. In (11b), however, the opposite happens. The vowels [u], [i], [a], and [o] remain at the expense of deletion of /a/. Thus the second vowel is generally deleted; it remains only if the first vowel is /e/. Compare (11a) with (11b); the facts are summarized in (11c).

(11) a. esm-e dust-e
    Taran[e a]st
    name-Ezafe⁶ friend-3rd sg gn.
    ‘Her/his friend’s name is ……’
    → esm-e dust-e
    Taranast⁷ *Taranest

b. esm-e dust-e
    → esm-e dust-e
    Minast *Rahast *Bitast Xosrast

c. e-a → a
    u-a → u
    i-a → i
    α-a → α
    o-a → o

⁵ In speech, due to raising before nasals, saxteman, nardeban, and mandegar, are pronounced as saxtemun, nardebun, and mundegar respectively.

⁶ Ezafe, meaning ‘addition’, is an unstressed –e which links the elements of some phrases together.

⁷ [t] in ast is usually deleted in speech.
Another example of deletion occurs in the genitive. The genitive suffix starts with a vowel in Persian. When it is attached to a noun which ends in a vowel, the same process as above occurs here. Except for /el/, in contact with /a/ all vowels remain.

(12) a. zanu + am → zanum (a is deleted) ‘my knee’ *znam
    bini + am → binim (a is deleted) ‘my nose’ *binam
    seda + am → sedam (a is deleted) ‘my voice’ *sedam
    ḍelo + am → ḍelom (a is deleted) ‘my front’ *ḷelam
    b. ūne + am → ūnam (e is deleted) ‘my shoulder’ *ūnom

So if we have a sequence of V₁ followed by /a/, V₁ survives unless it is /el/, in which case [a] survives. As we see, /el/ patterns with other vowels and not with /el/, although it is a mid vowel as /el/ is. This can be explained in the following way: both /el/ and /el/ are unspecified for a height feature ([mid] is unmarked) but /el/ has a place feature which /el/ does not have ([coronal] is unspecified). The overall result is that in these processes /el/ is deleted following any vowel unless the preceding vowel has no content. The only vowel which has no content is /el/ and it is the only vowel which is deleted before /el/.

Another case of /el/-deletion is observed when there is no hiatus. In the indicative mood of verbs whose infinitive’s first vowel is [e], [e]-deletion is observed. This does not occur with other vowels. The vowel in parentheses can be deleted.

(13) i mi.xi.su.nam ‘I soak’ u mi.pu.su.nam ‘I put sth on sb’
    e mi.j(e).ka.nam ‘I break’ o mi.so.ra.jam ‘I write poems’
    a mi.xa.ra.fam ‘I scratch’ a mi.xa.bu.nam ‘I sleep’

In verbs with /el/ in the relevant position, the without-[e] form is much more common than the with-[e] form in speech. For the other vowels, the deletion of the vowel is impossible (*mix.su.nam, *mix.ra.fam, *mip.su.nam, *mis.ra.jam, *mix.bu.nam). Note that Persian does not allow consonant clusters in initial position (*CCVC). In this case, too, /el/ behaves as the other vowels and differently from /el/.

The cases that we looked at in this section show that /el/ has exceptional behaviour regarding deletion although both /el/ and /el/ are mid vowels. The absence of features on /el/ offers an account of why it is this vowel that is easily deleted.

2.4 Neutralization

The vowel /el/ is the result of neutralization both historically and synchronically in Persian. A general tendency of Persian in the last millennium is to change [a] to [e] (e.g., Natel Khanlari 1987). In final position, this has happened in all words. Only two words in Modern Persian end in a (va ‘and’ and na ‘no’). Some examples of this change in final position are given below (the examples are taken from Natel Khanlari 1987; in the reference the phonetic transcription of many of these words are not given). Note that the

8 The number of syllables matters here. In verbs with three syllables in the indicative form, no deletion happens. For example: mi.re.sam ‘I reach’ does not become mir.sam.
sounds of interest are in bold; in the Middle Persian transcription the other sounds may not be of the right quality.9

(14) Middle Persian     Modern Persian
  kasa  kase          ‘bowl’
  miva  mive          ‘fruit’
  sina  sine          ‘chest’

Words which ended in -ag in Middle Persian end in –e today. That is, they underwent two changes: the deletion of [g], and the change of [a] to [e]. For example:

(15) Middle Persian     Modern Persian
  hamag  hame          ‘all’
  nejastag  nejaste     ‘seated’

In the first syllable changes of [a] to [e] have occurred in some cases. For example:

(16) Middle Persian     Modern Persian
  bahejt  behejt        ‘paradise’
  pealk  pelk          ‘eyelid’

The absence of [a] in final position can explain why synchronically there are words whose final syllable changes from CaC (the formal form) to Ce (the colloquial form).

(17) digar  →  dige      ‘else’
  magar  →  mage        ‘unless’
  mi-xor-ad  →  mixore   ‘s/he eats’
  mi-zan-ad  →  mizane   ‘s/he hits’

Final /r/- and /d/-deletion happen in Persian. In (17), after the deletion of final /r/ and /d/, what remains is [a]. This vowel cannot occur in final position, and thus /a/ raises to [e]. This is a case of neutralization where the unmarked element is expected to surface. Compare (17) with cases such as:

(18) tfetor  →  tfeto    ‘how’
  tfikar konam  →  tfiku konam    ‘what should I do?’

In these examples, /r/ is deleted but since after /r/-deletion the word ends in a vowel which is allowed in final position ([o] and [a]), no change affects the remaining vowel. Note that again /o/ patterns with a vowel other than /e/.

We saw that in cases of neutralization, /o/ does not behave similarly to /e/. That is, /o/ is not the result of neutralization. There are two cases in which change of low vowels

9 See Rohany Rahbar (2007b) for discussion on the historical development of the Persian vowel system.
to /o/ is observed, as follows: first, the word va ‘and’ (the formal form) is pronounced as [o] in informal speech and even in formal speech (in the latter interchangeably with va). For instance, ketab va galam ‘book and pen’ becomes ketab o galam. It seems that in this case the vowel /a/ raises to /e/ through the raising process. Coalescence of the consonant and vowel, maintaining the place of articulation of the consonant, yields the form [o]. Second, the specificity marker -ra becomes -ro or -o in speech. With vowel-final words, the form -ro is used (e.g., caza-ro ‘the meal’); with consonant-final words, either one can be used, although -o is much more common (e.g., sib-o ‘the apple’). The reason for the change of a to o in -ra needs investigation.

The common diagnostics of (un)markedness determine [mid] as the unmarked height feature in Persian. However, these diagnostics in most cases are applicable only to /e/ and not to /o/, as we saw above.

Returning to the main question that we address in this paper: if [mid] is unmarked, why does [o] not behave as /e/ does? This asymmetry can be explained in the following way: considering the place features of Persian vowels and assuming that [mid] is the unmarked height feature in this language, /o/ is specified for place but not for height so it is unspecified for only one feature. The vowel /e/, however, is unspecified for two features. Both [coronal] and [mid] are unspecified; thus, /e/ has no content and is more likely to assimilate to other vowels, to be epenthetic, to get lost in deletion, and to be the result of neutralization. In cases of assimilation of /e/ to [o], the feature [peripheral] spreads from [o] to /e/.

3. Conclusion

We saw that the two mid vowels in Persian, /e/ and /o/, do not pattern similarly with respect to markedness criteria, although both are unspecified for height, given that [mid] is unmarked in Persian. I suggested that their different patterning is because [peripheral] is marked in Persian and /o/ is specified by this place feature. The feature [coronal], however, is unspecified, and that makes /e/ featureless (unspecified for both height and place).

A comparison of Persian, in which [coronal] is unspecified, with Written Manchu (Dresher and Zhang, in press), in which this feature is specified (for non-low vowels), provides support for the idea that markedness of features needs to be looked at from a language-particular perspective. In Written Manchu, in the non-low region, [coronal] is the marked place feature. In low vowels, however, [labial] is the marked place feature (see the reference for discussion). The Written Manchu vowel system shows that [coronal] can be the marked place feature in a language and therefore constitutes an argument for the view that [coronal] is not necessarily the unmarked feature in all languages unlike the widespread idea that this feature is cross-linguistically unmarked. Moreover, the fact that, within the same inventory, in the low region [labial] is marked while in the non-low region [coronal] is marked shows that different place features can be (un)marked. The contrasts in a system and the phonological patterning determine which feature is (un)marked in a system. That is, there is no fixed (un)marked feature cross-linguistically.
References


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