When harmony meets reduplication in Selayarese

Hasan Basri  
State University of New York at Stony Brook  
Tadulako University in Indonesia

Yiya Chen  
State University of New York at Stony Brook

This paper examines: 1) mid-vowel [-ATR] harmony in Selayarese; 2) the interruptive effect of [i] in mid-vowel [-ATR] harmony; 3) the interaction of vowel harmony with reduplication. A set of constraints are adopted to account for the data within OT. We propose that IDENT_{ATR}(B-R) is ranked high in Selayarese, predicting ATR patterns in reduplicated forms that may not conform to the general harmony constraints.

1.0 Basic facts of mid vowel harmony in Selayarese

Selayarese has seven vowels, as shown in (1). Only mid vowels can be either [+ATR] or [-ATR]. The alternation between [+ATR] and [-ATR] mid vowels, we argue, is predictable. High vowels surface only with [+ATR] value. For the low vowel a, we assume that it has the value [+RTR], as it participates in vowel harmony in a very different way.¹

1. High  i  u  [+ATR]  
   Mid  e  o  [+ATR] (tense)  
   ɛ  e  [-ATR] (lax)  
   Low  a  [+RTR]

1.1 Monomorphic words

In monomorphic words, [-ATR] mid vowels appear word finally and before another [-ATR] mid vowel, as shown in (2-4).

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¹ Special thanks are due to Ellen Broselow for her guidance and encouragement. We are grateful to the audience at the AFLA VI conference at Toronto for their comments and questions. This work was partially supported by NSF grant 431-1159A to Daniel Pinney and Ellen Broselow.

¹A mid vowel immediately preceding a is lax, such as bua 'tax'. However, when the preceding mid vowel is not adjacent to a, it is tense, such as gora 'shout'. As it is not relevant for reduplication, in the following, we will not address harmony involving the low vowel a. Note 4 gives a brief account of how a mid vowel before a surfaces as lax. For a detailed analysis of the effect of a in Selayarese vowel harmony, we refer to Basri (1997, and in preparation).
2. a. soroŋ 'push'  
   b. póre 'skillful'  
   c. tínro 'sleep'  
   d. lópi 'boat'

(2a) ends with a consonant and both vowels are [+ATR]. In (2b), both the word-final and the medial vowels are [-ATR]. In (2c), the mid vowel is stem final and [-ATR]. In contrast, in (2d), the stem-final vowel is a high vowel; the mid vowel preceding it is [+ATR].

In short, when a stem-final mid vowel is [-ATR], any preceding mid vowel in the stem also has to be [-ATR], as illustrated by additional data in (3). A non-final mid vowel is [-ATR] only when it precedes another [-ATR] mid vowel. This is illustrated by data in (4).

3. golo 'ball'  
   sēre 'one'

4. dōntu 'swollen'  
   golo? 'dagger'

1.2 Polymorphic words

In polymorphic forms, things become more complicated. In (5-7), two things are worthy of note: 1) the [ATR] value of the mid vowels; 2) the shift of stress.

5. a. pókē 'spear'  
   b. pokē + ku 'my spear'

6. a. bembē 'goat'  
   b. bembē + mu 'your goat'

7. a. golo 'ball'  
   b. golo + njō 'the ball'

In (5a-7a), mid vowels are [-ATR] and stress is on the penultimate syllable, the normal position for Selayarese. In (5b-7b), the stems are followed by suffixes. Here, stress is still penultimate, falling on the final syllable of the stem. Moreover, if the suffix ends with a high vowel such as ku in (5b) and mu in (6b), the mid vowels of the stem are [+ATR]. But when the suffix ends with a [-ATR] mid vowel, such as njō in (7b), the mid vowels in the stem are [-ATR]. In short, when the suffix is within the stress domain, it also affects the ATR value of the mid vowels in the stem, which no longer behave like word-final vowels.

In (8-11), however, we see a different type of suffix. When these suffixes follow stems, stress remains on the penultimate syllable of the stem. Furthermore, whatever ATR value mid vowels have in the suffix, the mid vowels of the stem remain unchanged.

8. a. pépko 'lasso'  
   b. lə - pépko # kəŋ 'He lassoed us (excl.)'

9. a. tínro 'sleep'  
   b. tínro # kəŋ 'We (excl.) sleep'
10. a. soroŋ 'push'    b. ku-soroŋ # kaŋ 'I pushed you'
11. a. tsoroŋ 'stumble'  b. tat-tsoroŋ # kaŋ 'You stumbled'

Thus we conclude that there are two different kinds of suffixes and they have different effects on the ATR value of mid vowels: the stress-shifting suffix affects the ATR value of a mid vowel and the stress-neutral suffix does not affect the ATR value of a mid vowel.

1.3 Suffix vs. Clitic

In the following we will assume that the stress-shifting suffixes are true affixes and the stress-neutral ones clitics. We further assume that prosodically, affixes attach to a stem (which is composed of a foot) and form a prosodic word, while clitics follow a prosodic word and form a phonological phrase. The different phonological behavior of affixes and clitics is also supported by the difference in their syntactic behavior. For details, see Finner (1996 and this volume). In the following, we will adopt the Prosodic Hierarchy of Selkirk (1995) and illustrate such a structure in (12) (+ here indicates stem boundary and # indicates prosodic word boundary).

12. a. tinro 'sleep'
   b. tinro + ku 'my sleep'
   c. tinro # kaŋ 'We (exclu.) sleep.'

<table>
<thead>
<tr>
<th>Prosodic Word (Pwd)</th>
<th>Phonological Phrase (PhP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ \</td>
<td>/ \</td>
</tr>
<tr>
<td>foot suffix</td>
<td>Pwd Clitic</td>
</tr>
<tr>
<td>(tinro + ku) Pwd</td>
<td>((tinro) Pwd # kaŋ) PhP</td>
</tr>
</tbody>
</table>

2.0 Analysis

In this section, we introduce the phonological constraints that play a key role in Selayarese vowel harmony. As mentioned earlier, only mid vowels differ in ATR values. [+ATR] mid vowels in Selayarese occur freely word-initially and medially, while [-ATR] mid vowels only occur at prosodic word final position; elsewhere, they need a prosodic word-final [-ATR] mid vowel to license them. It is thus reasonable to posit that [-ATR] vowels are marked in Selayarese. This leads us to the first phonotactic constraint (13a), which bars the surface occurrence of [-ATR] vowels in any position. The fact that no high vowels ever surface as [-ATR] vowels supports

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2 For a similar but more detailed analysis of affixes and clitics in the related Makassarese, we refer to Basri et al (1997).
(13b), which ranks higher than \[^{-}\text{ATR}]\) to ensure that high vowels surface as 
\([+\text{ATR}]\).^3

13. Constraints on ATR value of Selayarese mid and high vowels
   a. \[^{-}\text{ATR}]\: vowels should be \([+\text{ATR}]\).
   b. \([+\text{high}, +\text{ATR}]\): high vowel should be \([+\text{ATR}]\).

   Now, the question is how can we ever get a \([-\text{ATR}]\) mid vowel? Given the
   observation that prosodic word-final mid vowels must be \([-\text{ATR}]\), the constraint in
   (14) is proposed to rule out prosodic word-final \([+\text{ATR}]\) mid vowels.

14. Constraint on prosodic word-final mid vowel ATR value
   \([^{+}\text{ATR}]_{\text{wfd}}\): prosodic word-final vowels should be \([-\text{ATR}]\).

   Taking \(\text{tnro}\) as an example, we illustrate the above analysis in tableau (15).

15. Word-final \([-\text{ATR}]\) mid vowel

\[\begin{array}{|l|l|l|l|}
\hline
\text{Candidate} & \text{[+high, [+ATR]}} & \text{[^{+}\text{ATR}]_{\text{wfd}}} & \text{[^{-}\text{ATR}]} \\
\hline
a. \text{tnro} & & & \\
b. \text{tnro} & & & \\
c. \text{tnro} & & & \\
d. \text{tnro} & & & \\
\hline
\end{array}\]

   In (15), both (c, d) contain a high \([-\text{ATR}]\) vowel, which is ruled out by the
   constraint \([+\text{high}, +\text{ATR}]\). This leaves us with (15a) and (15b). \([^{+}\text{ATR}]_{\text{wfd}}\)
   requires a prosodic word-final vowel to be \([-\text{ATR}]\) and excludes (15b). \[^{-}\text{ATR}\]
   disfavors any \([-\text{ATR}]\) vowel. Because \[^{-}\text{ATR}\] is ranked lower than the other two
   constraints, (15a) emerges as the winner. To summarize, for a mid vowel at the
   prosodic word-final position, this set of ranked constraints determines that it should
   surface as a \([-\text{ATR}]\) vowel.

   As observed earlier, we also get \([-\text{ATR}]\) mid vowels when a mid vowel precedes
   another \([-\text{ATR}]\) mid vowel. A case in point is \(\text{tưro}\) meaning 'straight'. To account
   for such an effect, the constraint in (16) is adopted from Cole and Kisseberth (1994).
   This constraint dictates that the \([-\text{ATR}]\) feature of mid vowels be aligned with the
   left edge of the prosodic word containing that vowel.

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^3 We assume \([+\text{low}, \text{+RTR}]\) which requires that low vowel must be \([+\text{RTR}]\). Ident \([+\text{low}]\)
which requires that corresponding segments in input and output should have identical values for the
feature \([+\text{low}]\), and \[^{-}\text{ATR}]_{\text{RTR}}\) which disfavors a sequence of immediately adjacent \([+\text{ATR}]\)
vowel and \([+\text{RTR}]\) vowel. By ranking \([+\text{low}, \text{+RTR}]\), \([+\text{low}]\), and \[^{-}\text{ATR}]_{\text{RTR}}\) higher than \[^{-}\text{ATR}\],
we thus predict that a lax mid vowel may surface in a non-prosodic word-final position if it
immediately precedes a.
16. Constraint on harmony
   Align ([−ATR]-domain, left; Prosodic word, left)
   (Cole and Kisseberth 1994)

17. Word-medial [−ATR] mid vowel

<table>
<thead>
<tr>
<th>Candidate</th>
<th>*[+ATR]_pwd</th>
<th>Align(−ATR, Left)</th>
<th>*−ATR</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. tőro</td>
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<td></td>
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<tr>
<td>b. tőro</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. tőro</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>d. tőro</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   In (17), *[+ATR]_pwd rules out (17c) and (17d) since both have a [+ATR] vowel in word-final position. The interesting contrast is between (17a) and (17b). The alignment constraint requires that the [−ATR] feature be extended to the left edge of the prosodic word and thus favors (17a). This constraint, like the above proposed constraints, is ranked higher than *−ATR. Hence, although (16a) violates *−low, −ATR twice, it survives as the optimal surface form. (18) shows the ranking of the constraints proposed above.

18. [+high, +ATR] >> *[+ATR]_pwd, Align(−ATR, Left) >> *−ATR

   In tableaux (19) and (20), we show that the same set of constraints can also be used to account for the vowel harmony facts in polymorphic words. (19) shows that when a stem takes a suffix which ends with a [+ATR] vowel, the mid vowels of the stem surface as [+ATR], because these mid vowels are not in the prosodic word-final position, nor do they have a final [−ATR] vowel to license [−ATR]. (20) shows that when a stem itself is a prosodic word and takes a clitic to form a phonological phrase, the ATR value of the mid vowels is the same as for the isolated form since the clitic is outside of the [−ATR] harmony domain.

19. (póke + ku)_pwd

<table>
<thead>
<tr>
<th>Candidate</th>
<th>*[+high, +ATR]_pwd</th>
<th>*[+ATR]_pwd</th>
<th>Align(−ATR, Left)</th>
<th>*−ATR</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (póke+ ku)_pwd</td>
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<td></td>
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<tr>
<td>b. (póke + ku)_pwd</td>
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<tr>
<td>c. (póke + ku)_pwd</td>
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<td></td>
<td></td>
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<tr>
<td>d. (póke + ku)_pwd</td>
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<td></td>
</tr>
<tr>
<td>e. (póke + ku)_pwd</td>
<td>*</td>
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</tbody>
</table>

20. (póke + ku)_pwd

<table>
<thead>
<tr>
<th>Candidate</th>
<th>*[+high, +ATR]_pwd</th>
<th>*[+ATR]_pwd</th>
<th>Align(−ATR, Left)</th>
<th>*−ATR</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (póke+ ku)_pwd</td>
<td></td>
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<tr>
<td>b. (póke + ku)_pwd</td>
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<tr>
<td>c. (póke + ku)_pwd</td>
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<td>d. (póke + ku)_pwd</td>
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<tr>
<td>e. (póke + ku)_pwd</td>
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</tbody>
</table>
20. \((p\text{ôke})_{bud} \# k\text{an}\)_{pap} ‘spear us’ (cf. \(p\text{ôke} ‘\text{spear’})

<table>
<thead>
<tr>
<th>Candidate</th>
<th>[+high, +ATR]</th>
<th>*[-ATR]_{bud}</th>
<th>Align (-ATR, Left)</th>
<th>*[-ATR]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ((pôke)<em>{bud} # k\text{an})</em>{pap}</td>
<td></td>
<td></td>
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<td>**</td>
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<tr>
<td>b. ((pôke)<em>{bud} # k\text{an})</em>{pap}</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. ((pôke)<em>{bud} # k\text{an})</em>{pap}</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ((pôke)<em>{bud} # k\text{an})</em>{pap}</td>
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</tbody>
</table>

3.0 \textit{i- Effect}

Now we turn to another phenomenon, the effect of the high vowel \(i\). (21a) and (21b) both take the determiner suffix \(nj\)a(here and in the following, parenthesis indicates prosodic word edge). In (21a), the suffix has a [-ATR] mid vowel but the mid vowel in the stem is [+ATR]. In (21b), all three vowels are [-ATR]. So it seems that the high vowel \(i\) interrupts mid vowel [-ATR] harmony. Interestingly, even when \(i\) is in a clitic, it affects the [ATR] value of mid vowels across the right edge of a prosodic word. This is shown in the contrast of (22a) vs. (22b). In (22a) the mid vowel is [+ATR] before \(i\) while in (22b) it is [-ATR] before \(kag\). This is further illustrated by comparing (22a) and (22c).

21. a. I\text{ôpi} + nj\text{a} ‘the boat’ *I\text{ôpi}+nj\text{a}  
b. gold + nj\text{a} ‘the ball’ *gold+nj\text{a}

22. a. t\text{înro} # ki ‘We (inclu.) sleep’ (cf. t\text{înro})  
b. t\text{înro} # k\text{an} ‘We (exclu.) sleep’  
c. t\text{înro} + ku ‘my sleep’

So far, we have seen that the effect of high vowel \(i\) on mid vowel harmony extends across the right edge of a prosodic word, the domain of vowel harmony. Data in (23) suggest another property of the high vowel \(i\)-effect. In (23a), \(t\text{înro}\) is prefixed by \(t\), yet the high vowel \(i\) in \(t\text{înro}\) fails to bring about the tensing of mid vowels that we saw in (22). A similar failure of the \(i\)-effect is also observed in compounds, as shown in (23b). The \(i\) in \(\text{înug}\) again does not affect the ATR value of the preceding mid vowels.

23. a. t\text{ô} – t\text{înro} ‘One who sleeps’  
b. ere – \text{înug} ‘drinking water’

\*It is hard to tell whether the \textit{i} effect in [-ATR] harmony is a peculiar property of \(i\) or it is [+ATR] harmony of high vowels in Selayarese as we, unfortunately, could not find any data to test if the other high vowel \(u\) participates in this process or not.
Now the question is where does the \( i \) effect apply? We assume that both the prefix \( \varepsilon \) and different members of a compound constitute separate prosodic words. Data in (24) lend support to this assumption. The second member of both compounds contains two lax mid vowels while the mid vowels in the first part of the compounds remain lax. This is predicted, as the domain of mid vowel \([-\text{ATR}]\) harmony is a prosodic word.

24. a. meŋ - kɔʔɔ \quad \text{‘wild cat’} \\
    b. pompoŋ - lɔlɔ \quad \text{‘bowels’}

Given the above assumption, the \([-\text{ATR}]\) mid vowels in (23) suggest that the \( i \)-effect does not extend across the left edge of a prosodic word. To account for this, we adopt constraint (25) which requires that mid vowels in a prosodic word be \([+\text{ATR}]\) before \( i \) contained in that same prosodic word or in a clitic. In other words, the effect of \( i \) extends leftward until it encounters the left edge of a prosodic word. This constraint is ranked higher than \( *[^{+\text{ATR}}]_{\text{red}} \) and forces prosodic word final mid vowels to be \([+\text{ATR}]\).

25. The \( i \)-Effect constraint

A mid vowel before \( i \) must be \([+\text{ATR}]\) as long as no left prosodic word edge intervenes.

We illustrate the effect of this constraint in (26). Here, \( \text{tınıro} \) takes the clitic \( ki \). \([+\text{high}, +\text{ATR}]\) rules out (c, d, e). (26b) violates \( i \)-Effect. Although (26a) violates \( *[^{+\text{ATR}}]_{\text{red}} \), this constraint is subordinate to the \( i \)-effect constraint and (26a) turns out to be the winner.

\[
\begin{array}{|c|c|c|c|c|}
\hline
\text{Candidate} & [+\text{high}, +\text{ATR}] & \text{\( i \)-Effect} & *[^{+\text{ATR}}]_{\text{red}} & \text{Align (-\text{ATR}, Left)} & *[-\text{ATR}] \\
\hline
\text{a. (tınıro) \# ki} & & & & & \\
\text{b. (tınıro) \# ki} & & & & & \\
\text{c. (tınıro) \# ki} & & & & & \\
\text{d. (tınıro) \# ki} & & & & & \\
\text{e. (tınıro) \# ki} & & & & & \\
\hline
\end{array}
\]

We now consider a case in which \( i \) is separated from a preceding mid vowel by a left prosodic word edge. In (27), \( \text{tınıro} \) takes the prefix \( \varepsilon \). The winning candidate
(27a) violates both the alignment constraint and *[−ATR], but it does not violate any higher ranked constraints. From these data, we also see that it is crucial to rank *[+ATR]_{pwd} higher than Align(−ATR, Left). To conclude, the relative ranking of the key constraints of vowel harmony in Selayarese is given in (28).

27. to-(tinro) ‘One who sleeps’

<table>
<thead>
<tr>
<th>Candidate</th>
<th>[+high, +[ATR]]</th>
<th>i- Effect</th>
<th>*[+ATR]_{pwd}</th>
<th>Align(−ATR, Left)</th>
<th>*[−ATR]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.to-(tinro)</td>
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</tr>
<tr>
<td>b.to-(tinro)</td>
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<tr>
<td>c.to-(tinro)</td>
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<td>d.to-(tinro)</td>
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<tr>
<td>e.to-(tinro)</td>
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</tbody>
</table>

28. [+high, +ATR], i- Effect >> *[+ATR]_{pwd} >> Align(−ATR, Left) >> *[−ATR]

4.0 When harmony meets reduplication

In this section, we will first show that reduplicates in Selayarese constitute separate prosodic words as prefixes and different members of compounds. Then we move on to account for vowel harmony in reduplication.

4.1 Reduplicant as a prosodic word

Reduplication in Selayarese is sensitive to the number of syllables in the base. A two-syllable word is copied in its entirety, as shown in (29).

29. a. riɔ - riɔ ‘bathe for pleasure’  riɔ ‘bathe’
b. tinro - tinro ‘sleep for pleasure’ tinro ‘sleep’
c. tɔɾo - tɔɾo ‘rather straight’ tɔɾo ‘straight’
d. sulo - sulo ‘torch like thing’ sulo ‘torch’
e. karaŋ - karaŋ ‘small sack’ karaŋ ‘sack’

First, let’s look at (29a). The high vowel i in the base does not seem to affect the ATR value of the preceding mid vowel in the reduplicant. This is exactly what we have seen in the prefixed forms and compounds. We have assumed that prefixes attach to prosodic words and that different members of a compound constitute
separate prosodic words. Along the same lines, we can analyze this fact by assuming that a reduplicant itself also constitutes a separate prosodic word. Then it follows naturally that should remain [-ATR] since the reduplicant is outside the domain of the i-effect.

A similar analysis of reduplicants as separate prosodic words has been proposed to explain reduplication facts in Makassarese, a closely related language of Selayarese. McCarthy and Prince (1994) adopt the templatic requirement of RED = Prosodic word to explain glottal insertion in Makasarese reduplication when the base is longer than two syllables. This same phenomenon is observed in Selayarese reduplication. As shown in (30), when a polysyllabic word is reduplicated, a glottal stop is inserted.\(^5\)

30. a. \((\text{ka}s\text{k}a)\)  
    \('\text{porridge}'\)
  
  b. \((\text{ka}s\text{a}?)-(\text{ka}s\text{k}a)\)  
    \('\text{porridge-like object}'\)

  Phonetic output: \([(\text{ka}s\text{k}a)-(\text{ka}s\text{k}a)]\)

31. a. \((\text{pa}\text{d}a)\)  
    \('\text{eggplant}'\)
  
  b. \((\text{pa}\text{l}a?)-(\text{pa}\text{d}a)\)  
    \('\text{eggplant-like object}'\)

  Phonetic output: \([(\text{pa}\text{l}a)-(\text{pa}\text{d}a)]\)

4.2 Harmony in reduplication

Assuming that reduplicants are separate prosodic words, we are now faced with a new problem in (32).

32. a. \((\text{tin}\text{ro})-(\text{tin}\text{ro})) \# \text{ki} \quad \text{‘you sleep for pleasure’}\)
  
  b. \((\text{tin}\text{ro})-(\text{tin}\text{ro})\)  
    \('\text{sleep for pleasure}'\)

(32a) is a reduplicated form followed by a clitic. In contrast to (32b), where the mid vowel in the reduplicant is [−ATR], the mid vowel in the reduplicant of (32a) is [+ATR].

33. a. \((\text{tor}\text{o})-(\text{tor}\text{o}+i)\)  
    \('\text{Make it rather straight’}\)
  
  b. \((\text{tor}\text{a})-(\text{tor}\text{a})\)  
    \('\text{rather straight’}\)

34. a. \((\text{to})-(\text{k}\text{eto})\) \# i  
    \('\text{we cheat him’}\)
  
  b. \((\text{to})-(\text{k}\text{eto})\)  
    \('\text{we cheat’}\)

In (33a), the reduplicated form takes a suffix within the stress domain. Here again, not only the mid vowels in the base but also the ones in the reduplicant surface as [+ATR]. (34a) takes a clitic. It contrasts with both (32a) and (33a). The mid vowel in the prefix remains [−ATR] while the one in the stem changes to be

\(^5\) For further discussion of how the notion of prosodic word plays a role in accounting for various phonological processes in Selayarese, see Basri (in preparation).
[+ATR]. Here, an obvious question is why in (32a) and (33a) i seems to exert its influence across the left edge of the base, while at the same time, the i in (34a) does not have any effect on ta.

Going back to (30) and (31), another problem arises: the mid vowel of the reduplicant in (30b) is [-ATR] although it is not prosodic word final. This has nothing to do with the glottal stop, since the mid vowel in (31b) is [+ATR] before the glottal stop.

Considering (30-33) together, two things are worthy of note: 1) in reduplicated forms, mid vowels may be [+ATR] at the edge of a prosodic word but [-ATR] nonfinally; 2) the ATR value of the mid vowels in the reduplicant is consistent with that of the corresponding vowel in the base. These two facts suggest that there must be a constraint that forces the vowel in the reduplicant to have the same ATR value as the corresponding vowel in the base. This constraint is stated in (35).

35. IDENT_{ATR}(B-R)

Corresponding segments in base and reduplicant should have identical values for the feature [ATR].

Tableau (36) illustrates that this constraint must be ranked higher than *[+ATR]_{pwd}. In (36), when (tincro)-(tirno) is followed by the clitic ki, we know that the i in the clitic requires that the mid vowel in the base should be [+ATR]. At the same time, this i exerts no effect on the mid vowel in the reduplicant. Therefore, all else being equal, we should get (36b). But by ranking the IDENT constraint higher, we choose (36a).

36. \text{((tincro)-(tirno)) # ki} 'you sleep for pleasure'

<table>
<thead>
<tr>
<th>Candidates</th>
<th>IDENT_{ATR}(B-R)</th>
<th>*[+ATR]_{pwd}</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ((tincro)-(tirno)) # ki</td>
<td></td>
<td>**!</td>
</tr>
<tr>
<td>b. ((tirno)-(tirno)) # ki</td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

The ranking of the constraints proposed so far is given in (37) and tableau (38) summarizes the effects of these constraints.

37. IDENT_{ATR}(B-R), [+high, +ATR]. i- Effect >> *[+ATR]_{pwd} >>

Align(-ATR, Left) >> *[-ATR]
38. (kalok) - (kalōko)  
'porridge-like object'

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (kalok)- (kalōko)</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>b. (kalok)- (kalōko)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (kalok)- (kalōko)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. (kalok)- (kalōko)</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.0 Optimality vs. ordering theory

In the following, we would like to compare the B-R correspondence approach within OT to the serial treatment of reduplication in Ordering Theory. Let’s turn our attention to (32), repeated here in (39). In (39a), číaro ‘sleep’ is reduplicated. Both mid vowels in the base and the reduplicant are [-ATR]. In (39b), when this reduplicated form takes clitic ki, both vowels change to [+ATR].

39. a. ((číaro) - (číaro))  
'sleep for pleasure' (base: číaro)

b. ((číaro)-číaro)) # ki  
'You sleep for pleasure'

We have shown that high vowel i affects the ATR value of mid vowels to its left so long as no left prosodic word edge intervenes. Under serialism, it is predicted that only the mid vowel in the base should change to [+ATR] and the one in the reduplicant should remain [-ATR], because base and reduplicant constitute separate prosodic words. Here the crucial assumption is that cliticization in Selayarase takes place after reduplication, which is supported by the data in (40). bámbag is a bisyllabic word, meaning ‘hot’. It reduplicates by copying the entire base, as shown in (40b). When it takes a suffix, as a consonant final bisyllabic word, reduplicates like a polysyllabic stem, that is, a glottal stop is inserted, as shown in (40c). However, when it takes a clitic, it behaves like a bare bisyllabic stem and is reduplicated without the insertion of glottal stop, as shown in (40d). This suggests that suffixation takes place before reduplication while cliticization happens after reduplication.

40. a. bámbag  
'hot'

b. ((bámbag)-(bámbag))  
'rather hot'

c. ((bamba)i)-(bamba) + i  
'to heat a little'

d. ((bamba)i)-(bamba) # ki  
'you are rather hot'

Given such an order, (41) illustrates a derivational analysis of harmony in reduplication.
41. Failed serial attempt: \((RED)-(tinrɔ)\) # ki 'You sleep for pleasure'

<table>
<thead>
<tr>
<th>Stem:</th>
<th>tinrɔ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduplication:</td>
<td>(ti nro)(tinrɔ)</td>
</tr>
<tr>
<td>Cliticization:</td>
<td>((ti nro)(tinrɔ))# ki</td>
</tr>
<tr>
<td>i- Effect:</td>
<td>*(ti nro)(tinrɔ)# ki</td>
</tr>
</tbody>
</table>

Thus, we have shown that a simple derivational analysis of reduplication fails to account for the interaction of phonology and morphology in Selayarese. In contrast, the identical mid vowel ATR value exhibited in (42) is fully expected, because the highly ranked Ident B-R constraint requires that corresponding vowels in the base and the reduplicant should have the same [ATR] value. This is illustrated in (41).

42. \((tinrɔ)\)-(tinrɔ)#ki ‘you sleep for pleasure’

<table>
<thead>
<tr>
<th>Candidates</th>
<th>IDENT</th>
<th>[+(high)</th>
<th>i-</th>
<th>*[+ATR]</th>
<th>Align</th>
<th>*[+-ATR]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (ti nro)(tinrɔ) # ki</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. (ti nro)(tinrɔ) # ki</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (ti nro)(tinrɔ)# ki</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.0 Conclusion

To conclude, the analysis presented above shows that mid vowel [-ATR] harmony in Selayarese takes place only within the domain of a prosodic word. High vowel i causes the tensing of mid vowels. This [+ATR] harmony is effective only within or across the right edge of a prosodic word and never extends across the left edge of a prosodic word. In reduplicated forms, constraints implementing vowel harmony are subordinate to the constraint which requires the ATR value of segments in the reduplicant to be identical to the corresponding vowels in the base. The interaction of all these constraints derives the optimal output forms as shown throughout the paper. Finally, we would like to point out that in respect to reduplication, a serial approach in the derivational framework seems inadequate to account for the data we have presented here.
References


Finer, Daniel (in this volume). Cyclic clitics in Selayarese.


Basri Hasan
Linguistics Department & FkIP, Tadulako University
State University of New York at Stony Brook Palu, Sulawesi Tengah
NY 11794-4376, USA Indonesia

Yiya Chen
Linguistics Department
State University of New York at Stony Brook
NY 11794-4376, USA