Stress Restricts Reduplication:
Stress-Reduplication Interactions in Australian and Austronesian
Sam Zukoff
4/26/14

1. Introduction

- In languages with the stress properties in (1), there is a systematic absence of monosyllabic or monomoraic partial reduplication:

(1) Stress properties in restrictive languages
   i. Prohibition on stress clash
   ii. Cyclic stress (Base-Derivative stress faithfulness)
   iii. A fixed stress relative to an edge

- Among these systems, there are many languages like Diyari (Austin, 1981 [2013]), but none like Diyari’, Diyari’’, or Diyari’’’:

(2) Attested and unattested patterns in restrictive languages\(^1\)

<table>
<thead>
<tr>
<th>Base</th>
<th>✓ Diyari reduplication</th>
<th>* Diyari’ reduplication</th>
<th>* Diyari’’ reduplication</th>
<th>* Diyari’’’ reduplication</th>
</tr>
</thead>
<tbody>
<tr>
<td>ṣṣ</td>
<td>ṣṣ-Ṣṣ</td>
<td>ṣ-Ṣṣ</td>
<td>ṣ-ṢṢ</td>
<td>ṣ-ṢṢ</td>
</tr>
<tr>
<td>wilha</td>
<td>wi-wilha</td>
<td>wi-wilha</td>
<td>wi-wilha</td>
<td>wi-wilha</td>
</tr>
<tr>
<td>kānku</td>
<td>kānku-kānku</td>
<td>kā-kānku</td>
<td>ka-kānku</td>
<td>kā-kānku</td>
</tr>
<tr>
<td>yātha</td>
<td>yātha-yātha</td>
<td>yā-yātha</td>
<td>ya-yātha</td>
<td>yā-yatha</td>
</tr>
<tr>
<td>ṣṢ</td>
<td>ṣṢ-ṢṢ</td>
<td>ṣ-ṢṢ</td>
<td>ṣ-ṢṢ</td>
<td>ṣ-ṢṢ</td>
</tr>
<tr>
<td>kānhibi</td>
<td>kānhibi-kānhibi</td>
<td>kā-kānhibi</td>
<td>ka-kānhibi</td>
<td>kā-kānhibi</td>
</tr>
<tr>
<td>ngāpīri</td>
<td>ngāpī-ngāpīri</td>
<td>ngā-ngāpīri</td>
<td>nga-ngāpīri</td>
<td>nga-ngāpīri</td>
</tr>
<tr>
<td>tyilparku</td>
<td>tyilpaka-tyilparku</td>
<td>tyi-tyilparku</td>
<td>tvi-tyilparku</td>
<td>tvi-tyilparku</td>
</tr>
<tr>
<td>ṣṢṢṢ</td>
<td>ṣṢṢṢ-ṢṢṢṢ</td>
<td>ṣ-ṢṢṢṢ</td>
<td>ṣ-ṢṢṢṢ</td>
<td>ṣ-ṢṢṢṢ</td>
</tr>
<tr>
<td>wilhapīna</td>
<td>wilhapīna-wilha-pina</td>
<td>wi-wilhapīna</td>
<td>wi-wilhapīna</td>
<td>wi-wilhapīna</td>
</tr>
</tbody>
</table>

\(^1\) Diyari data drawn from Austin (1981 [2013]: 38-40). Four-syllable roots are not attested with reduplication; wiha-wilhapina is hypothetical.
• This single-unit reduplicant gap holds across multiple stress parameters:

(3) Stress parameters in restrictive languages
   i. Unit of metrical computation: syllable vs. mora
   ii. Orientation of fixed stress: left vs. right
   iii. Position of fixed stress relative to edge: edgemost or interior

• To explain this gap, we must assert a meta-ranking condition on two types of constraints:
  (i) Constraints enacting size preferences for the reduplicant.
      ▪ Henceforth “REDSIZE” or “R” constraints.
      ▪ We will use templatic constraints.²
  (ii) Constraints enacting stress requirements, i.e. unviolated stress constraints.
      ▪ Henceforth “STRESSREQ” or “S” constraints.
      ▪ REDSIZE constraints are invariably subordinated to STRESSREQ constraints.

(4) Stress-Reduplication meta-ranking: STRESSREQ » REDSIZE   (S » R)

  o If the reverse ranking were permitted, we predict a fixed reduplicant shape that
    countermands the stress properties of the language.

  a. Prosodic Morphology Hypothesis
     Templates are constraints on the prosody/morphology interface, asserting the
     coincidence of morphological and prosodic constituents.
  b. Template Satisfaction Condition
     Templatic constraints may be undominated, in which case they are satisfied fully,
     [or] they may be dominated, in which case they are violated minimally, in
     accordance with general principles of Optimality Theory.
  c. Ranking Schema
     \[ P \gg M \quad [\text{PROSODY} \gg \text{MORPHOLOGY}] \]

² For a critique of templatic constraints and an alternative proposal, see Hendricks (1999).
The $S \gg R$ meta-ranking basically conforms to the $P \gg M$ meta-ranking.
  - REDSIZE constraints fall into the “$M$” category.
- However, part of their statement of the “Template Satisfaction Condition” is incompatible with the $S \gg R$ meta-ranking:
  - “Templatic constraints may be undominated, in which case they are satisfied fully.”
  - If the STRESSREQ » REDSIZE meta-ranking is correct, then this statement must be reconsidered.
- $S \gg R$ can generate invariant template satisfaction under certain circumstances:
  - Non-stress languages.
  - Languages where the STRESSREQs do not interact with reduplication.
  - Languages where the apparent template is actually the output which (uniquely) satisfies the STRESSREQs.
- I will present three sets of systems where REDSIZE constraints must be subordinated to the STRESSREQs:
  - Prosodically-fixed patterns (Diyari and Hawaiian), a templatic constraint could be enforcing the size requirement.
    - However, the pattern actually follows directly from the interaction of the STRESSREQ constraints.
  - $S \gg R$ leads to prosodically-variable, yet predictable, reduplication (Ponapean).

2. Reduplication in Australian languages and the over-generation problem
- Australian languages commonly display quantity insensitive left-to-right alternating stress (QI L→R) without stressed final syllables.\(^3\)
  - Many also display cyclic stress (Poser, 1989; Crowhurst, 1994; Kenstowicz, 1998; Berry, 1998; Alderete, 2009; Stanton, 2014).
- When these languages display prefixal partial reduplication, it is virtually exclusively disyllabic.
  - This property follows from the $S \gg R$ ranking.

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\(^3\) Left-to-right syllabic trochees, in foot-based terms.
2.1. Diyari stress

- One of the most well-studied of the aforementioned Australian languages is Diyari (Austin, 1981 [2013]).
- In a foot-free stress framework, the stress behavior of these language can be modeled with the following constraints:\(^4\)

(6) Foot-free stress constraints for QI L→R cyclic stress systems (following Gordon, 2002)

- **STRESSLEFT** – Assign one violation mark * if the initial syllable is not stressed.
- **CLASH** – Assign one violation mark * for each sequence of two adjacent stressed syllables.
- **NONFINALITY** – Assign one violation mark * if the word-final syllable is stressed.\(^5\)
- **LAPSE** – Assign one violation mark * for each sequence of two adjacent unstressed syllables.
- **BD-IDENT(stress)** – Assign one violation mark * for each syllable in the derivative in which the presence or absence of stress differs from the corresponding syllable of the base (following Benua, 1997).

(7) Total stress ranking in Diyari

\[
\begin{array}{c}
\text{STRESSLEFT} \\
\text{*CLASH} \\
\text{NONFINALITY} \\
\text{BD-IDENT(stress)} \\
\text{*LAPSE}
\end{array}
\]

- The effects of and arguments for this ranking are illustrated in tableaux (8) and (9) for Diyari:

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\(^4\) The insights and conclusions of this paper can largely be translated into foot-based terms. Therefore, this discussion is not meant to adjudicate between stress frameworks.

\(^5\) NONFINALITY will not interact with reduplication in these languages, but it will in the discussion of Hawaiian reduplication.
(8) Stress in 3 syllable simplex words: Diyari /pinaru/ → [pínarú] ‘old man’

- Ranking arguments for STRESSLEFT, *CLASH, NONFINALITY » *LAPSE

<table>
<thead>
<tr>
<th>/pinaru/</th>
<th>STRESS</th>
<th>*CLASH</th>
<th>NONFINALITY</th>
<th>*LAPSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. pínarú [100]</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>b. pínarú [101]</td>
<td></td>
<td></td>
<td>*/</td>
<td></td>
</tr>
<tr>
<td>c. pínáru [110]</td>
<td>*/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. pínáru [010]</td>
<td>*/</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(9) Cyclic stress: Diyari /máda-la-ŋtu/ → [máda-la-ŋtu] ‘old man’

- Ranking argument for BD-IDENT(stress) » *LAPSE

<table>
<thead>
<tr>
<th>/máda-la-ŋtu/</th>
<th>BASE: [máda-la] (10-0)</th>
<th>STRESS</th>
<th>*CLASH</th>
<th>NONFIN</th>
<th>BD-IDENT (stress)</th>
<th>*LAPSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. máda-la-ŋtu [10-0-0]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>b. máda-lá-ŋtu [10-1-0]</td>
<td></td>
<td></td>
<td>*/</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| c. máda-la-ŋtu [10-0-1] | | | */ | | | *

- This shows that the “STRESSREQs” for Diyari are:

(10) STRESSREQs in Diyari: { STRESSLEFT, *CLASH, NONFINALITY, BD-IDENT(stress) }

2.2. How stress determines Diyari reduplication

- Diyari, like many other Australian languages, has a consistent prefixal disyllabic reduplication pattern (Austin, 1981 [2013]; for analyses see M&P, 1986 [1996], 1994a, 1994b, et seq.).

(11) Diyari Reduplication (Austin, 1981 [2013]: 38-40)

<table>
<thead>
<tr>
<th>Non-reduplicated stem</th>
<th>Reduplicated stem</th>
<th>Reduplicated stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ‘mother’s mother’</td>
<td>kanhini</td>
<td>kanhi-kanhini</td>
</tr>
<tr>
<td>b. ‘woman’</td>
<td>wilha</td>
<td>wilha-wilha</td>
</tr>
<tr>
<td>c. ‘boy’</td>
<td>kanku</td>
<td>kanku-kanku</td>
</tr>
<tr>
<td>d. ‘father’</td>
<td>ngapiri</td>
<td>ngapi-ngapiri</td>
</tr>
<tr>
<td>e. ‘bird type’</td>
<td>tyilparku</td>
<td>tyilpa-tyilparku</td>
</tr>
<tr>
<td>f. ‘cat fish’</td>
<td>ngankanthi</td>
<td>nganka-ngankanthi</td>
</tr>
<tr>
<td>g. ‘to emerge’</td>
<td>durnka</td>
<td>durnka-durnka</td>
</tr>
<tr>
<td>h. ‘to talk’</td>
<td>yatha</td>
<td>yatha-yatha</td>
</tr>
</tbody>
</table>
• If we follow the $S \rightarrow R$ ranking, we derive this disyllabic reduplicant before any REDSIZE constraints can enter into the evaluation.

(12) Schematic Diyari reduplication according to $S \rightarrow R$:\textsuperscript{6,7}

<table>
<thead>
<tr>
<th>/ RED, $\sigma\sigma\sigma\sigma$ / BASE: $[\sigma\sigma\sigma\sigma]$</th>
<th>schematic stress</th>
<th>STRESSL</th>
<th>*CLASH</th>
<th>BD-IDENT (stress)</th>
<th>RED = $\sigma$</th>
<th>RED = 2$\sigma$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\acute{\sigma}$-$\sigma\sigma\sigma\sigma$</td>
<td>1-1010</td>
<td></td>
<td>!</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>b. $\sigma$-$\acute{\sigma}\sigma\sigma\sigma$</td>
<td>0-1010</td>
<td></td>
<td>!</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>c. $\acute{\sigma}$-$\sigma\sigma\sigma\sigma$</td>
<td>1-0100</td>
<td></td>
<td>!**</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>d. $\sigma$-$\acute{\sigma}\sigma\sigma\sigma$</td>
<td>10-1010</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td>✓</td>
</tr>
</tbody>
</table>

• As long as the templatic constraints are subordinated to the STRESSREQS, they play no role in the evaluation.
  o Since this is a disyllabic “template,” the same result would be obtained from a high ranking of $\text{RED} = 2\sigma$ ($\approx \text{RED} = \text{FOOT}$).
  o Such a ranking would be an example of the first clause of M&P’s Template Satisfaction Condition.
• But, if REDSIZE constraints could rank above the STRESSREQS, RED = $\sigma$ could be highest ranked, as well.
  o If we allow RED = $\sigma$ to be freely ranked with respect to the Diyari STRESSREQS, we produce (at least) three unattested patterns.
  o These patterns’ unattested status is confirmed by a survey of Australian languages with Diyari-like stress systems.

2.3. The typology of reduplication systems with freely rankable RED = $\sigma$

• If RED = $\sigma$ were freely rankable with respect to the STRESSREQ constraints of the cyclic QI L→R stress systems represented by Diyari (STRESSLEFT, *CLASH, and BDIDENT(stress)), we would expect (at least) four patterns:

---
\footnotetext[6]{I abstract away from differences in stress degree.}
\footnotetext[7]{We will not consider candidates with that reflect total reduplication.}
(13) **Reduplication typology**

(i) **Diyari’: Stressed monosyllabic reduplicant, clash with the root**

**Ranking:** \( \text{RED} = \sigma, \text{STRESSL}, \text{BD-IDENT(stress)} \gg *\text{CLASH} \)

**Winner:** Candidate (a) \( \breve{\sigma}-\sigma\sigma\sigma [1-1010] \)

(ii) **Diyari’’: Unstressed monosyllabic reduplicant, base stress retained**

**Ranking:** \( \text{RED} = \sigma, *\text{CLASH}, \text{BD-IDENT(stress)} \gg \text{STRESSL} \)

**Winner:** Candidate (b) \( \sigma-\breve{\sigma}\sigma\sigma [0-1010] \)

(iii) **Diyari’’’: Monosyllabic reduplicant, default \( L \rightarrow R \) stress**

**Ranking:** \( \text{RED} = \sigma, \text{STRESSL}, *\text{CLASH} \gg \text{BD-IDENT(stress)} \)

**Winner:** Candidate (c) \( \breve{\sigma}-\sigma\sigma\sigma [1-0100] \)

(iv) **Diyari: Disyllabic reduplicant, default \( L \rightarrow R \) stress**

**Ranking:** \( \text{STRESSL}, *\text{CLASH}, \text{BD-IDENT(stress)} \gg \text{RED} = \sigma \)

**Winner:** Candidate (e) \( \sigma\sigma-\sigma\sigma\sigma [10-1010] \)

- We have already seen that Diyari displays the last of these four patterns.
- Question: Which of these patterns are attested in other languages with a Diyari-like stress system?
- I conducted a survey to address this question.
  - The survey started by looking for Australian languages which had been described as \( QI L \rightarrow R \).
    - Based largely on Gordon’s (2002) survey of quantity insensitive languages, supplemented by searching of WALS (wals.info).
  - Of the languages on this list, I was able to access data for a large majority.
    - Electronic resources, MIT Libraries, Boston Library Consortium, Borrow Direct, Inter-Library Loan.
    - In most cases, the data was drawn directly from fieldwork grammars.
I discarded those languages without evidence of prefixal partial reduplication and without (some) evidence of cyclic stress.\footnote{There is one language, Martuthunira (Dench, 1987, 1995), which has an unambiguously total reduplication pattern and no unambiguously partial reduplication pattern (although the majority of attested forms are to disyllabic roots).}

- This uncovered 12 Australian languages (including Diyari) with prefixal partial reduplication and cyclic QI L→R stress.
  - i.e. those which can be characterized by unviolated STRESSLEFT, *CLASH, and BD-IDENT(stress).

\begin{itemize}
  \item \textbf{Among these languages}, it is indeed the case that the disyllabic pattern (13.iv) is the only attested prefixal partial reduplication pattern.
    \begin{itemize}
      \item The monosyllabic patterns (13.i-iii) are all unattested in the surveyed languages.
      \item There is one other language which is a potential exception: Ngan’gityemerri (Reid, 2011).
        \begin{itemize}
          \item It is not cyclic, but has a (sometimes) clash-inducing monosyllabic prefixal reduplication pattern.
          \item There are certain intricacies of the stress pattern which actually make it the exception that proves the rule (see appendix).
        \end{itemize}
    \end{itemize}
  \item There is a common link that characterizes the unattested monosyllabic patterns (i-iii) to the exclusion of the attested disyllabic pattern (iv):
    \begin{itemize}
      \item RED = σ dominates one of the STRESSREQs.
    \end{itemize}
  \item This ranking possibility can thus be identified as the locus of over-generation.
    \begin{itemize}
      \item By instituting the \textbf{S \textgreater R} meta-ranking, we prohibit exactly this set of rankings, and avoid the over-generation problem.
    \end{itemize}
\end{itemize}

\begin{table}
\begin{tabular}{|l|l|}
\hline
Arabana-Wangkangurru (Hercus, 1994) & Pitta Pitta (Blake, 1979b) \\
Bagandji (Hercus, 1982) & Walmatjari (Hudson, 1978) \\
Diyari (Austin, 1981 [2013]) & Wambaya\footnote{Wambaya also has an infixal reduplication pattern. This will be discussed below.} (Nordlinger, 1998) \\
Dyirbal (Dixon, 1972) & Warlpiri (Nash, 1980) \\
Kalkatungu (Blake, 1979a) & Warrwa (McGregor, 1994) \\
Mayi (Breen, 1981) & Wirangu (Hercus, 1999) \\
\hline
\end{tabular}
\end{table}
2.4. Interim conclusions

- A survey of QI L→R cyclic stress systems in Australian languages reveals that all languages conform to the S » R meta-ranking hypothesis.
  - Preferences for reduplicant shape are invariably subordinated to the stress requirements of the language.
  - In the case of cyclic QI L→R systems, this means that monosyllabic prefixal reduplication is impossible.
- By enforcing the meta-ranking of STRESSREQ » REDSIZE, we capture all of the attested patterns and prohibit the unattested but otherwise logically possible patterns.

3. Suffixal reduplication in Hawaiian

- In §2, three stress requirements drove disyllabic reduplication:
  - *CLASH, STRESSL, and BD-IDENT(stress).
- In Hawaiian (Alderete & MacMillan [A&M], 2014), STRESSREQ constraints again conspire to restrict possible reduplication patterns.
- Hawaiian stress differs from the QI L→R pattern of Australian across three parameters:

  (15) Parametric differences between Australian and Hawaiian stress

<table>
<thead>
<tr>
<th>Unit of metrical computation</th>
<th>Australian</th>
<th>Hawaiian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation of fixed stress</td>
<td>Syllable</td>
<td>Mora</td>
</tr>
<tr>
<td>Position of fixed stress relative to edge</td>
<td>Left</td>
<td>Right</td>
</tr>
<tr>
<td></td>
<td>Edgemost (initial)</td>
<td>One removed from edge (penultimate)</td>
</tr>
</tbody>
</table>

- Once we establish the STRESSREQ constraint set necessary to derive these stress facts, S » R will generate bimoraic reduplication and ban monomoraic reduplication.


- Stress always falls on the penultimate mora, never the final: *LAPSE\(_\mu\) + NONFINALITY\(_\mu\).
  - Stress the final syllable if heavy (…[\(\sigma\) (C)V\(\mu\) V\(\mu\) ]#):
    - \(kìi\) ‘shoot’, \(pàʔàu\) ‘soaked’, \(hùùnaa\) ‘hide’, \(liiħa\) ‘gentle’
  - Otherwise stress the penultimate syllable (…[\(\sigma\) (C)\(V\mu\)\(V\bar{\mu}\)]\(\sigma\) (C)\(V\mu\) ]#):
    - \(hèlu\) ‘scratch’, \(ʔalóhi\) ‘radiant’, \(kàawàla\) ‘speech’, \(hòlokàke\) ‘blown’
• Adjacent moras may never be stressed: *CLASH$_\mu$.
• 5 mora words show vacillation in the placement of secondary stress.
  o Preferred pattern: initial stress, medial lapse [µ µ µ µ µ]: ʔèlemakûl 'old man'
  o Minority pattern: 2$^{\text{nd}}$ syllable stress, no lapse [µ µ µ µ µ]: makù.ahìne 'mother'
  o Demonstrates violability of both STRESSL$_\mu$ and *LAPSE$_\mu$.
• Hawaiian has some degree of cyclic stress (A&M, 2014: 16-19):
  o Lengthening occurs in certain derivatives as a way to retain base stress.
    ▪ ʔâlì ‘to scar’ → ʔàalí-ña ‘a scar’ (not *ʔâlì-ña or *ʔâlì-ña)
    o The requirement of penultimate stress would force stress off of the initial mora of the base (*ʔâlì-ña), or force a clash if that stress were retained without lengthening (*ʔâlì-ña).
    o By lengthening, base stress is maintained without the clash.
    o The same mechanism applies in some reduplicated constructions.
      ▪ ʔâlôhi → ʔâalôhi-lôhi (not *ʔâlohi-lôhi)
• It is probably necessary to distinguish faithfulness to primary stress from faithfulness to secondary stress.
  o There are no instances where a mora which bears primary stress in the base is unstressed in the derivative.
  o There are instances where a mora which bore secondary stress in the base is unstressed (or possibly deleted) in the reduplicated derivative, accompanied by shortening.
    ▪ hùunáa → hunáa-hunáa
    ▪ liiháu → lihā-liiháu
    ▪ ʔòolápa → ʔòla-ʔolápa
  o Furthermore, Hawaiian freely tolerates the additions of stress, relative to the base, often accompanied by lengthening.
    ▪ polùhi → pò-lu-lûhi
    ▪ po.âle → pòo.âle-âle
This (non-)faithfulness to secondary stress (and its interaction with STRESSL, \( *LAPSE_{\mu} \) and faithfulness to vowel length), may help to characterize (if not explain) the variation of reduplication patterns.

- But any preference for faithfulness to secondary stress is violable.
- Faithfulness to primary stress, however, is never violated.

- Therefore, we should operate with two separate cyclic stress constraints for Hawaiian, one specific and one general:

(16) **Cyclic stress constraints in Hawaiian**

a. **BD-IDENT(1\text{ary}stress)** – Assign one violation mark * if the primarily stressed mora in the base is unstressed in the derivative.

b. **BD-IDENT(stress)** – Assign one violation mark * for each mora in the derivative in which the presence or absence of stress differs from the corresponding mora of the base

- The lengthening example of \( ?\ddot{a}li \rightarrow ?\ddot{a}al\acute{\imath}-na \) shows that the general constraint **BD-IDENT(stress)** must be dominated:
  - \( ?\ddot{a}li \rightarrow ?\ddot{a}al\acute{\imath}-na > *?\ddot{a}li-na : *LAPSE_{\mu} \triangleright \text{BD-IDENT(stress)} \)

(17) **The unviolated stress constraints** (i.e. **STRESSREQ**):

\[ *LAPSE_{\mu}, \text{NONFINALITY}_{\mu}, *\text{CLASH}_{\mu}, \text{BD-IDENT(1\text{ary}stress)} \]

- As in Australian, the need to satisfy the stress requirements limits the range of possible reduplicant shapes.
3.2. Hawaiian reduplication

- While Hawaiian has a wide variety of reduplication patterns, there is one pattern which is notably absent (or at least massively underrepresented): a monomoraic suffix.\(^{10}\)

(18) Reduplication patterns in Hawaiian (Alderete & MacMillan, 2014: 1)

**Reduplicant pattern frequencies**

<table>
<thead>
<tr>
<th></th>
<th>whole</th>
<th>prefix</th>
<th>infix</th>
<th>suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot(_{uu})</td>
<td>516</td>
<td>188</td>
<td>9</td>
<td>515</td>
</tr>
<tr>
<td>(\sigma_\mu)</td>
<td>0</td>
<td>246</td>
<td>69</td>
<td>4</td>
</tr>
<tr>
<td>(\sigma_\mu\sigma_{uu})</td>
<td>60</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- This absence of monomoraic reduplicative suffixes in Hawaiian is explicable by exactly the same means as the absence of monosyllabic prefixes in Australian: \(S \rightarrow R\).

(19) **Suffixal reduplication with ...H# stem:** hōolū → hōolū-lū ‘corpulent’

<table>
<thead>
<tr>
<th>/ hooluu, RED / BASE: [hōolū] (2010)</th>
<th>*LAPSER(_\mu)</th>
<th>NON FIN(_\mu)</th>
<th>*CLASH(_\mu)</th>
<th>BD-IDENT (1(^{st})stress)</th>
<th>RED</th>
<th>RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. hōolū- lu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>b. hōolu- lu</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>c. hōolū- lu</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>d. hōolū- lu</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>e. hōolū- lū</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

(20) **Suffixal reduplication with ...LL# stem:** pōolūnu → pōolūnu-lūnu ‘chubby, short’

<table>
<thead>
<tr>
<th>/ poolunu, RED / BASE: [pōolūnu] (2010)</th>
<th>*LAPSER(_\mu)</th>
<th>NON FIN(_\mu)</th>
<th>*CLASH(_\mu)</th>
<th>BD-IDENT (1(^{st})stress)</th>
<th>RED</th>
<th>RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. pōolūnu- nu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>b. pōolun- nu</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>c. pōolūn- nu</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>d. pōolūn- nū</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>e. pōolūn- lūnu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

\(^{10}\) A&M find four examples of such a suffix in their dataset, which is based on Pukui & Elbert 1986. These can be found in their data supplement (http://anderei.net/publications-2/): ene → ene-ene (E.290.1), piki → piki-ki (P.1899.1), poonulu → pōonul- lu (P.2613.1), and newe → newe-newe-we (N.451.1). They also include under this heading ʔauwaha → ʔauwaha-wá (A.1650.1), with apparently non-local copying.
• If \( \text{RED} = \mu \) could dominate any of these constraints, we would predict systems with monomoraic reduplicative suffixes like the (a-d) candidates.
  o \( S \succ R \) predicts that such systems should be unattested.
  o This remains to be empirically verified.

3.3. Non-suffixal reduplication in Hawaiian

• Hawaiian tolerates monomoraic reduplicants outside of final position.\(^{11}\)

(21) **Monomoraic reduplication patterns in Hawaiian**\(^{12}\)

<table>
<thead>
<tr>
<th>Initial</th>
<th>Medial</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{kíu} \rightarrow \text{ku-kíu} )</td>
<td>( \text{polúhi} \rightarrow \text{pò-lú-láhi} )</td>
</tr>
<tr>
<td>( \text{háki} \rightarrow \text{ha-háki} )</td>
<td>( \text{kipúu} \rightarrow \text{ki-kú-píu} )</td>
</tr>
<tr>
<td>( \text{màlihini} \rightarrow \text{ma-màlihíni} )</td>
<td>( \text{mùoho.o} \rightarrow \text{mò-hí-hí.o} )</td>
</tr>
<tr>
<td></td>
<td>( \text{káaléwa} \rightarrow \text{kàa-le-léwa} )</td>
</tr>
</tbody>
</table>

• In each case, the resulting reduplicated form satisfies all of the STRESSRQS: \(*\text{LAPSE}_{\mu}\), and \( \text{BD-IDENT}(1^{\text{ary}}\text{stress}) \).
  o Furthermore, the resulting stress patterns are all licit (cf. 4.1 above).

• The language tolerates monomoraic reduplicants, *except where they are incompatible with unviolated stress constraints*.
  o \( S \succ R \) permits templatic constraints to dominate them.
    • \( \text{RED} = \mu, \text{RED} = 2\mu^{13} \succ *\text{LAPSE}_{\mu}, \text{STRESSL}(, \text{BD-IDENT}(\text{stress})) \) is a licit ranking for Hawaiian.
  o \( S \succ R \) does not permit the templatic constraints to dominate the other stress constraints, since they are evidenced to be unviolated.
    • \( *\text{LAPSE}_{\mu}, \text{NONFINALITY}_{\mu}, *\text{CLASH}_{\mu}, \text{BD-IDENT}(1^{\text{ary}}\text{stress}) \succ \text{RED} = \mu, \text{RED} = 2\mu \)

---

\(^{11}\) These co-occur with bimoraic (and occasionally trimoraic) reduplicants. See the chart in (18) for distributions.

\(^{12}\) Monomoraic reduplicants always immediately precede a stressed vowel which was also stressed in the base.

\(^{13}\) Monomoraic and bimoraic reduplications appear to be in free variation in non-final position. This could be due to a non-critical ranking of the two templatic constraints.
• Putting these together, we have the following total ranking for Hawaiian:

(22) Total ranking for Hawaiian:\textsuperscript{14}

\begin{itemize}
  \item Stratum 1: unviolated stress constraints (STRESSREQs)
    \begin{center}
      \begin{tabular}{|c|c|c|c|}
        \hline
        \*LAPSER\textsubscript{\mu} & NONFINALITY\textsubscript{\mu} & \*CLASH\textsubscript{\mu} & BD-IDENT(1\textsuperscript{ary}stress) \\
        \hline
      \end{tabular}
    \end{center}

  \item Stratum 2: templatic constraints (REDSIZE)
    \begin{center}
      \begin{tabular}{|c|c|}
        \hline
        RED = \mu & RED = 2\mu \\
        \hline
      \end{tabular}
    \end{center}

  \item Stratum 3: dominated stress constraints
    \begin{center}
      \begin{tabular}{|c|c|c|}
        \hline
        STRESSL & BD-IDENT(stress) & \*LAPSE\textsubscript{\mu} \\
        \hline
      \end{tabular}
    \end{center}
\end{itemize}

• With this ranking, we can see why reduplication is invariant at the right-edge and variable elsewhere.
  \begin{itemize}
    \item Consider the domain of operation of the various stress constraints:
  \end{itemize}

(23) Domain of stress constraints relative to the base

\textsuperscript{strikethrough} indicates a dominated constraint

\textbf{The base:} $[\text{Left-edge } \mu \mu \mu \ldots \mu \mu \mu \mu \text{ Right-edge}]$

\textbf{\*CLASH}$_{\mu}$ + \*LAPSE$_{\mu}$ + BD-IDENT(stress)

\*LAPSER$_{\mu}$ + NONFIN + BD-IDENT(1\textsuperscript{ary}stress)

\textbf{\*LAPSER}$_{\mu}$ + NONFINALITY$_{\mu}$ + *CLASH$_{\mu}$ + BD-IDENT(1\textsuperscript{ary}stress)

\textsuperscript{14} The rankings (and non-rankings) of the constraints in Strata 2 and 3 require further examination.
• All reduplication patterns will have to obey *CLASH₁.
• But, there is no inherent requirement that the reduplicant bear stress.
  o Base-Derivative faithfulness will never directly place a stress on the reduplicant, because the reduplicant by definition has no correspondent in the base.
  o Stress will only fall on a reduplicant when positional stress constraints force stress onto the position the reduplicant happens to occupy.
  o The positional constraints operative word-initially and/or word-medially (STRESS₁ and *LAPSEₙ) are violable.
• Therefore, a non-final reduplicant always has the option of being unstressed.
  o Therefore, reduplication will never crucially conflict with *CLASH₁ word-initially or word-medially.
  o There are no other STRESSREQs operating in these positions.
  o This allows size preferences to exert themselves at will.
• It is the fact that all the STRESSREQs are operative at the right-edge, and that they interact to disfavor monomoraic reduplication in that position, that prevents size preferences from surfacing in suffixal reduplication but not elsewhere.
• S » R thus predicts that, if we are to see situations of (free-)variation of this sort,¹⁵ it should be outside the domain of fixed-stress assignment.
  o Likewise, it predicts that there is a greater chance of seeing variability of pattern (both within a language and cross-linguistically) in languages without a fixed stress system.

4. Ponapean reduplication
• In Australian prefixal reduplication and Hawaiian suffixal reduplication, fixed-stress placement restricts the possible reduplication patterns that may occur at the same edge as the fixed stress.
• Ponapean (M&P, 1986 [1996]; Kennedy, 2002) presents an example of fixed stress and reduplication occurring at opposite ends of the word.
  o Rightmost stress, leftmost reduplication.

¹⁵ That is, of multiple partial reduplication patterns. Variation between a total reduplication and a single type of partial reduplication can be compatible with the fixed-stress domain.
• However, the additional fact that Ponapean has *strictly* alternating stress distinguishes it from Hawaiian prefixal reduplication.
  o Ponapean reduplicant size is *prosodically-variable*, but *predictable*.
  o This arises because \textsc{redsize} constraints are subordinated to the stress constraints which demand alternating rhythm, in addition to fixed stress.

• Ponapean stress can be accounted for as follows (Kennedy, 2002: 2, citing Rehg, 1993):
  o Stress the rightmost mora: \textsc{stressr}\textsubscript{μ}.
    ▪ Final consonants are non-moraic, medial codas are moraic.
  o Strictly alternating by mora: \textsc{*clash}\textsubscript{μ} + \textsc{*lapse}\textsubscript{μ}.
    ▪ Odd parity (by mora) words will have stress on the initial mora.
      • 1μ: pá; 3μ: li.aán, diu pék
    ▪ Even parity (by mora) words will not have stress on the initial mora.
      • 2μ: duné, dilip; 4μ: ri.àalá, toòroòr, soûpisèk; 6μ: waàntùuké

• Kennedy shows that the data can be grouped based on mora count of the stem and mora count of the reduplicative prefix.

\begin{table}
\centering
\begin{tabular}{|c|c|c|c|}
\hline
 & 1 mora stem & 2 mora stem & 3 mora stem & 4 mora stem \\
\hline
2-mora\,
prefix & \textit{pà}.pá & \textit{du}.\textit{N}.du.né & \textit{du}.\textit{u}.duú.\textit{pék} & \textit{ri}.\textit{i}.ri.àa.lá \\
\hline
1-mora\,
\hline
\end{tabular}
\caption{Ponapean reduplication (Kennedy, 2002: 225)}
\end{table}

o Also the one example of a 6μ stem: \textit{waàntùuké} \(\rightarrow\) \textit{wa}-\textit{waàntùuké}

• The key to explaining the pattern (as noted by Kennedy: 25-6) is that the reduplicant must bear a stress.
  o Perhaps by \textsc{stress-to-morpheme} ‘every morpheme must bear a stress’

\footnote{Capital “\textit{N}” refers to a stressed coda nasal (which is mora-bearing).}
• Once this requirement is instantiated, there is a potential conflict with undominated *CLASHµ,
  ○ This explains the behavior of odd parity stems:
• Odd parity stems always have bimoraic reduplicants:17

(25) Odd parity stems → bimoraic reduplicants
  \[\text{på}_µ \rightarrow \text{på}_µ\text{a}_µ\text{på}_µ \text{(not } \*\text{på}_µ\text{på}_µ)\],
  \[\text{té}_µ\text{p} \rightarrow \text{té}_µ\text{pi}_µ\text{té}_µ\text{p}\],
  \[\text{dø}_µ\text{d} \rightarrow \text{dø}_µ\text{n}_µ\text{dø}_µ\text{d}\]
  \[\text{li}_µ\text{a}_µ\text{ā}_µ\text{n} \rightarrow \text{li}_µ\text{ii}_µ\text{a}_µ\text{ā}_µ\text{n} \text{(not } \*\text{li}_µ\text{li}_µ\text{a}_µ\text{ā}_µ\text{n})\],
  \[\text{dụ}_µ\text{u}_µ\text{pē}_µ\text{k} \rightarrow \text{dụ}_µ\text{u}_µ\text{u}_µ\text{pē}_µ\text{k}\]
  ○ If these stems were to display a monomoraic reduplicant, there would be a mora clash with the initial mora, which must be stressed due to alternating rhythm.
  ○ Thus, a preference for a monomoraic reduplicant (which is shown by the even parity stems) is prevented from surfacing due to *CLASHµ.

(26) Odd parity stems → bimoraic reduplicants: \[\text{li}_µ\text{a}_µ\text{ā}_µ\text{n} \rightarrow \text{li}_µ\text{ii}_µ\text{li}_µ\text{a}_µ\text{ā}_µ\text{n}\]

<table>
<thead>
<tr>
<th>/ RED, liµaµān /</th>
<th>STRESS-TO-MORPHEME</th>
<th>*CLASHµ</th>
<th>RED = µ</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. liµ-liµaµåµn</td>
<td>0-101</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>b. liµ-liµaµåµn</td>
<td>1-101</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>c. liµliµ-liµaµåµn</td>
<td>10-101</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

• The second observation is that even parity stems vary, but predictably.
  ○ Even parity stems with a (super)heavy initial syllable have a monomoraic reduplicant:
    • This is the preferred reduplicant shape.

(27) #H even parity stems → monomoraic reduplicants
  \[\text{du}_µ\text{u}_µ\text{p} \rightarrow \text{du}_µ\text{u}_µ\text{u}_µ\text{p} \text{(not } \*\text{du}_µ\text{u}_µ\text{u}_µ\text{p})\],
  \[\text{to}_µ\text{o}_µ\text{ro}_µ\text{o}_µ\text{r} \rightarrow \text{to}_µ\text{to}_µ\text{o}_µ\text{ro}_µ\text{o}_µ\text{r}\],
  \[\text{wa}_µ\text{a}_µ\text{n}_µ\text{tu}_µ\text{u}_µ\text{kê}_µ \rightarrow \text{wá}_µ\text{wá}_µ\text{a}_µ\text{n}_µ\text{tu}_µ\text{u}_µ\text{kê}_µ\]

17 The difference in outcomes of the bimoraic reduplicant (for any stem parity) is driven by restrictions on possible codas. I will not provide a full analysis here – see Kennedy (2002) for details.
Stems with a light initial syllable have a bimoraic reduplicant, despite not needing it for clash purposes.

(28) \#L even parity stems → bimoraic reduplicants

\[ du_{\mu}.n\acute{e}_{\mu} \rightarrow du_{\mu}u_{\mu}.du_{\mu}.n\acute{e}_{\mu} \] (not \*du_{\mu}.du_{\mu}.n\acute{e}_{\mu})
\[ di_{\mu}.li_{\mu}p \rightarrow di_{\mu}u_{\mu}.di_{\mu}.li_{\mu}p \]
\[ si_{\mu}.pe_{\mu}d \rightarrow si_{\mu}.pi_{\mu}.si_{\mu}.pe_{\mu}d \]
\[ ri_{\mu}.\acute{a}_{\mu}.l\acute{a}_{\mu} \rightarrow ri_{\mu}l_{\mu}.ri_{\mu}.\acute{a}_{\mu}.l\acute{a}_{\mu} \]

A monomoraic reduplicant built to these forms would lead to two identical light (i.e. monomoraic) syllables next to each other.

A constraint which bans adjacent identical light syllables generates the data.\(^{18}\)

- I propose to use a version of Yip's (1995) \*REPEAT constraint:

(29) \*REPEAT(light) – No identical adjacent light syllables.

This constraint (without the restriction to light syllables) is employed by Kennard (2004) as part of her analysis of Tawala durative reduplication.

Tawala is an Austronesian language related to Ponapean (both are members of the Oceanic sub-group).

The Ponapean reduplication pattern under discussion is the durative.

- When this constraint outranks RED = \( \mu \), it will cause light-syllable initial roots to extend their reduplicants to two moras, but have no effect on heavy-syllable initial roots.

(30) \#L even parity stems → \*REPEAT effect: ri_{\mu}.\acute{a}_{\mu}.l\acute{a}_{\mu} \rightarrow ri_{\mu}l_{\mu}.ri_{\mu}.\acute{a}_{\mu}.l\acute{a}_{\mu}

<table>
<thead>
<tr>
<th>/ RED, ri_{\mu}l_{\mu}.ri_{\mu}.\acute{a}<em>{\mu}.l\acute{a}</em>{\mu} /</th>
<th>STRESS-TO-MORPHHEME</th>
<th>*CLASH_{\mu}</th>
<th>*LAPSE_{\mu}</th>
<th>*REPEAT (light)</th>
<th>RED = ( \mu )</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ri_{\mu}.ri_{\mu}.\acute{a}<em>{\mu}.l\acute{a}</em>{\mu}</td>
<td>0-0101</td>
<td>!</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. ri_{\mu}.ri_{\mu}.\acute{a}<em>{\mu}.l\acute{a}</em>{\mu}</td>
<td>1-0101</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. ri_{\mu}l_{\mu}.ri_{\mu}.\acute{a}<em>{\mu}.l\acute{a}</em>{\mu}</td>
<td>01-0101</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>d. ri_{\mu}l_{\mu}.ri_{\mu}.\acute{a}<em>{\mu}.l\acute{a}</em>{\mu}</td>
<td>10-0101</td>
<td>!</td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

\(^{18}\) The restriction to light syllables is in some way crucial here, since in trimoraic stems with an initial long vowel, the reduplicant is identical to the initial syllable of the root: \( \hat{d}u_{\mu}u_{\mu}.p\acute{e}_{\mu}k \rightarrow \hat{d}u_{\mu}u_{\mu}.\hat{d}u_{\mu}u_{\mu}.p\acute{e}_{\mu}k \), not \*\( \hat{d}u_{\mu}u_{\mu}.p\acute{e}_{\mu}k \).
(31) #H even parity stems → no *REPEAT effect: $d_u^-d_u^-u^-p \rightarrow d_u^-d_u^-u^-p$

| / RED, $d_u^-u^-p /$ | STRESS-TO-MORPHEME | *CLASH$_\mu$ | *LAPSE$_\mu$ | *REPEAT (light) | RED = $\mu$
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $d_u^-d_u^-u^-p$</td>
<td>0-01</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. $\not\exists d_u^-d_u^-u^-p$</td>
<td>1-01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. $d_u^-u^-u^-p$</td>
<td>01-01</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>d. $d_u^-u^-u^-p$</td>
<td>10-01</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Abstracting away from the different instantiations of the bimoraic reduplicants, this gives us the following ranking:

(32) Ponapean stress and reduplication ranking$^{19}$

Stratum 1: STRESS REQs

Stratum 2: other markedness$^{20}$

Stratum 3: preferred REDSIZE

Stratum 4: dispreferred REDSIZE

$^{19}$ McCarthy & Prince (1986 [1996]: 23) report data on reduplication of vowel-initial roots which is not included in Kennedy (2002). Many of the forms conform to the length generalizations proposed here, but a few do not (stress is not reported, but inferred by me):

- $uuitoɔr \rightarrow u^-u^-uitoɔr$ ‘independent’
- $al \rightarrow al^-i-al$ ‘walk’
- $inɛn \rightarrow in^-i-inɛn$ ‘straight’
- $urak \rightarrow ur^-u-urak$ ‘wade’

A monomoraic reduplicant to these roots would create neither a clash nor a *REPEAT violation (in its present formulation). This behavior is restricted to the disyllabic vowel-initial roots (cf. $u\dot{u}k \rightarrow u^-y-u\dot{u}k$ ‘lead’), so that may play some role. I leave this as a question for further investigation.

$^{20}$ There is no necessity to separate this into a different stratum than the STRESSREQs. This is more meant to represent that it plays a different sort of role in the system, and that it is not a pre-ordained necessity that it dominate the REDSIZE constraints.
• The crucial point vis-à-vis $S \rightarrow R$ is the alternation between bimoraic reduplicants in odd parity stems and the monomoraic reduplicants in the even parity stems which are not extended by *REPEAT.
  ○ The extension in the monomoraic stems is driven by a need to satisfy *CLASH$_\mu$.
  ○ This comes at the expense of creating a longer reduplicant.
  ○ This is precisely the sort of relationship predicted by $S \rightarrow R$, where constraints which are unviolated in the general language necessarily override preferences for reduplicant shape.

5. Conclusion
• We have now seen several different types of languages where the application of fixed stress and other unviolated stress considerations restricts the range of possible reduplication patterns.
  ○ Leftmost stress, plus clash avoidance and cyclic stress, prevents monosyllabic prefixal reduplication in Australian languages.
  ○ Penultimate stress, plus clash avoidance and cyclic stress, prevents monomoraic suffixal reduplication in Hawaiian
    • But these stress requirements do not prevent monomoraic reduplication in other positions, because of the limited scope of their application.
  ○ Strictly alternating stress induces predictable alternation in Ponapean.
• These effects can be generated by a meta-ranking condition holding of the relationship between stress requirements and reduplicant size preferences:

(33) Stress-Reduplication meta-ranking: $\text{STRESSREQ} \gg \text{REDSIZE} \quad (S \rightarrow R)$

• This proposal partially contradicts M&P’s (1993) formulation of the “Template Satisfaction Condition.”
  ○ They allow for the possibility of undominated templatic constraints.
  ○ But we have seen that this over-generates.
• It predicts monosyllabic reduplicants should be possible for cyclic QI L→R stress systems.
  - The survey of Australian languages indicates that these patterns are unattested.
    o It also leaves unaccounted the distribution of reduplicant shapes in Hawaiian.
    o These distributions can all be accounted for by prohibiting undominated templatic constraints.
  - Invariant template satisfaction occurs only when the stress requirements happen to be compatible with the preferred templatic constraint.
• S » R also refines M&P’s “P » M” proposal.
  o In M&P 1993, the PROSODY » MORPHOLOGY meta-ranking makes no differentiation between unviolated and violated prosodic constraints.
  o Non-final monomoraic reduplication in Hawaiian shows us that size preferences can countermand otherwise violated prosodic constraints:
    - RED = μ » STRESSL, *LAPSE_μ
  o Furthermore, total reduplication patterns in Australian languages can induce lapses:
    - For example: Dyirbal gúlgiri → gúlgiri-gúlgiri ‘lots of prettily painted men’ (Dixon, 1972: 242-3).
    - The language shows independent evidence for violation of *LAPSE.
    - Yet, if the size preference dictating total reduplication was dominated by *LAPSE, this form would be impossible.
  o If it were the case that all prosody constraints dominated all morphological constraints, these patterns could not occur.
• Furthermore, it shows that it is not only prosodic markedness constraints that belong in the P category.
  o Cyclic stress faithfulness constraints (BD-IDENT(stress)) must be included in the P category, as well
6. References


https://www.academia.edu/2491078/A_Grammar_of_Diyari_South_Australia


http://roa.rutgers.edu/files/19-0794/19-0794-CROWHURST-0-0.PDF.gz


http://works.bepress.com/john_j_mccarthy/43


7. Appendix: Ngan’gityemerri

- In conducting the survey, I found one language which can be basically characterized as QI L→R but also has a monosyllabic reduplicant: Ngan’gityemerri (Reid, 2011).  
  o It is not cyclic (per se), so BD-IDENT(stress) is not at stake.
  o What is at stake is the behavior of reduplication relative to *CLASH.
- In monomorphemic nominals, Ngan’gityemerri shows classic QI L→R behavior:

(34) Stress in monomorphemic nominals (Reid, 2011: 90, ex 2-95):
  
  2σ: fépi ‘rock, hill’, mipurr ‘man’, dágum ‘dew’, gânggi ‘high, upstream’
  3σ: détyengi ‘today’, minati ‘big’
  4σ: ápudèrri ‘pubescent girl’, ánemũni ‘sweetheart’

- Verbal auxiliary structures are also basically QI L→R, with some morphological interference.

(35) Stress in freestanding verbal auxiliaries:
  
  a. yé-rr-menggè-ny-gu22 (2.SBJ-PL-arrive-PERF-DUAL) ‘you (dual) arrived’
  b. génty-e-mèngge-gu (2.UNSBJ-arrive-DUAL) ‘you (dual) shouldn’t arrive’
  c. yé-mengge-ny-ngiti (2.SBJ-arrive-PERF-1SG.IO) ‘you (sg) came to me’
  d. ngi-nyinggi-n-nyi (1.SBJ-see-PRES-2SG.DO) ‘I’m looking at you’

  o These forms show a preference for stressing the left-edge of morphemes:
    - STRESSL-MORPHEME.
  o This preference never induces a clash or pulls stress off the initial syllable.
  o It does lead to lapses and stressed final syllables.
    - *CLASH » STRESSL-MORPHEME » *LAPSE, NONFINALITY

21 Stress is described on pages 90-101, including discussions of stress in reduplicated forms. Verbal reduplication is described more fully on pages 152-4, 185-9.
22 The /gu/ morpheme does not attract stress, possibly because it is part of a circumfix together with the number-marking prefixes.
• Stress operates very differently in the “complex verbal stem” (Reid: 97-99).

(36) Stress in the complex verb

a. yé-ni-ny=nàp ‘he climbed up’
b. yé-nim=mi-wap-nyine ‘she’s camped with (him) / she’s married now’
c. wi-rr-ing-gu=dà-dà ‘they (dual) are singing’
d. yù=tyèrr-dum ‘Shut the door!’
e. yé-mi-ngiti=ři-řityi-pagu-pe ‘Roll me some (smokes)’

• Complex verbal constructions consist of two parts: an auxiliary stem and a “complex verbal stem.”

• In these constructions, stress assignment can be described as follows:
  o Stress the left-edge of every stem: STRESSL-STEM
  o No stresses elsewhere: *STRESS(complex verb)
    ▪ STRESSL-STEM » *STRESS(complex verb)
  o Except, syllables standing in Base-Reduplicant correspondence must have the same degree of stress: BR-IDENT(stress).
    ▪ BR-IDENT(stress) » *STRESS(complex verb)
  o The ban on stresses wipes out any secondary stresses that would have been present in the auxiliary if it were standing in isolation, creating lapses; e.g., (36e).
    ▪ *STRESS(complex verb) » *LAPSE
  o It can also induce clashes when the auxiliary stem is monosyllabic; e.g., (36d).
    ▪ STRESSL-STEM » *CLASH

• There are two types of reduplication that occur in the complex verbal domain: total reduplication (probably rightward) and leftward monosyllabic reduplication.
  o Reid (2011: 98, ex. 2-115) gives the following examples of partial reduplications in isolation:

---

23 “=” / “” indicates a stem boundary. < ny> = [ɲ]. < y > never indicates a vowel.
24 The same interaction is evidenced in nominal compounding, where the left-edge of each compound member is stressed, even if this leads to a clash.
Idealized monosyllabic reduplications

- kuluk ‘cough’ → ku-kuluk
- palak ‘drop’ → pa-palak
- purity ‘slip’ → pu-purity
- fityi ‘roll’ → fi-fityi

But note that they cannot actually appear in isolation, but only as elements in the complex verbal stem.

Monosyllabic reduplications in context

a. ngi-ni=[ku-kuluk]-tye ‘I was coughing’ (p.98, ex. 2-117)

b. yé-mi-ngiti=[fi-fityi]-pagu-pe ‘Roll me some (smokes)!’ (p.98, ex 2-118)
c. yé-rr-mi-gi=mi-[fa-fala]-pe ‘Keep showing it!’

In light of the data from the other Australian languages, we might expect these forms (at least (38a) and (38b)) to be disyllabic.

- Copying only one syllable forces a violation of *CLASH, due to the need for Base-Reduplicant stress identity.
- Copying a second syllable would alleviate the clash, but this does not occur.
- (38c) does not display a clash.

The reduplicant does not receive a stress because it is not stem-initial.

Therefore, BR-IDENT(stress) does not place an additional stress on the corresponding syllable of the root.

We can understand the permission of the monosyllabic reduplicant and subsequent clash by considering the constraint ranking needed in order to explain stress behavior in the complex verbal domain.

- There are only two conditions that are fully surface-true (i.e. STRESSREQs):
  - STRESSL-STEM and BR-IDENT(stress)
- Even though *CLASH is never violated in simplex nominals and freestanding auxiliaries, it is violable in service of STRESSL-STEM
  - As in (36d) yú=tyèrr-dum
- Since *CLASH can be violated, it is not a STRESSREQ in this language.

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25 Reid does not provide stress marking on the forms in this section. Stress marks are mine, based on his description from Chapter 2.
- According to S » R, REDSIZE constraints are only required to be dominated by STRESSREQ constraints.
  - Since *CLASH is not a STRESSREQ, the REDSIZE constraint RED = σ is permitted to dominate it.
  - Therefore, the following ranking, which is sufficient to describe the complex verbal domain in Ngan’gityemerri, is licit according to the S » R hypothesis.

(39) Ranking for Ngan’gityemerri (complex verbal domain)

```
STRESSL-STEM       BR-IDENT(stress)
RED = σ
*CLASH          *STRESS(complex verb)
```

(40) Monosyllabic reduplicant in complex verb: yé-mi-ngiti=îtì-ûtyi-pagu-Çe

<table>
<thead>
<tr>
<th>/ yemingiti=RED-fityipagupe /</th>
<th>STRESSL-STEM</th>
<th>BR-IDENT (stress)</th>
<th>RED = σ</th>
<th>*CLASH</th>
<th>*STRESS (complex verb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. yémìngiti=ûtì-ûtyipagupe</td>
<td></td>
<td></td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>b. yémìngiti=ûtì-ûtyipagupe</td>
<td></td>
<td>!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. yémìngiti=ûtì-ûtyipagupe</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. yémìngiti=ûtyi-ûtyipagupe</td>
<td>!</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- In light of this behavior, Ngan’gityemerri actually perfectly conforms to the S » R hypothesis, since the REDSIZE constraint can be dominated by the stress constraints which are always surface-true (i.e. unviolated) and still exert its force.