THE QUESTION:

What if a morpheme has no underlying phonological material?

What happens to it?
Options:

1. **COPY**: i.e. reduplication:

   RED + PATA → RED
   \[ \begin{array}{c}
   \text{p a t a} \\
   \end{array} \] 

   PATA
   \[ \begin{array}{c}
   \text{p a t a} \\
   \end{array} \]

2. **REMAIN EMPTY**: i.e. zero morphs:

   SHEEP + \{plural\} → SHEEP \{plural\}
   \[ \begin{array}{c}
   \int i p \\
   \end{array} \]
   \[ \varnothing \]

3. **COALESCE**: an (as yet) unexplored alternative:

   C + PATA → C
   \[ \begin{array}{c}
   \text{p a t a} \\
   \end{array} \] 

   PATA
   \[ \begin{array}{c}
   \text{p a t a} \\
   \end{array} \]
Aim: To Explore the Consequences of Coalescing Morphemes…

Issues:

➢ What phonological consequences can C have?

➢ How can we tell if C is present?
Preliminaries:
Implementation in Optimality Theory

How do we get Coalescing Morphemes C?

➢ How are copying and coalescence different?

(1) Copying:

RED          PATA
p a t a       p a t a

(2) Coalescence:

C               PATA
p a t a

Answer:

➢ Copying results in more material than coalescence, violating *STRUC “Don’t have segments” more.

➢ Coalescence results in violations of

MORPHDIS:

“An output segment can belong to only one morpheme.”
So, the coalescence ranking is:

<table>
<thead>
<tr>
<th>C + pata</th>
<th>*STRUC</th>
<th>MORPHDIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C PATA △ △ patapata</td>
<td>x x x x!</td>
<td></td>
</tr>
</tbody>
</table>

This is a lot like morphological haplology. In fact, C can be seen as a reduplicant that has fully haplologized with its base:

Reduplication: pata + C → patapata

Haplogogy: patapata → pata
Lengthening in Maori

Vowel Lengthening happens in many places in Maori:

- reduplication,
- some passivizations and nominalisations,
- and even on its own.

It always has the same character:

\[ \text{CVCVCV} \rightarrow \text{CV:CV.CV} \]

1. Lengthening Alone:

(I) Plural Formation:

\[
\begin{align*}
\text{taŋata} & \quad \text{‘man’} & \rightarrow & \quad \text{taŋata} & \quad \text{‘men’} \\
\text{matua} & \quad \text{‘parent’} & \rightarrow & \quad \text{ma:tua} & \quad \text{‘parents’}
\end{align*}
\]
(II) Other Processes:

koneke ‘(v) slide along’ → ko:neke ‘(n) sledge’
maru: ‘(v) rumble, reverberate’ → ma:ru: ‘(adj) low in tone’
takai ‘(v) wrap up’ → ta:kai ‘(n) bandage’

PrWds in Maori:

➤ A PrWd boundary occurs at every Root Edge:

\[
\text{poro ‘cut’ + pepa ‘paper’} \rightarrow \text{[poro]}_{\text{PrWd}}[\text{pepa}]_{\text{PrWd}} \text{‘guillotine’}
\]

This is only blocked if an affix is too small to form a PrWd on its own:

\[
\sigma_{\mu} \text{RED + kino} \rightarrow [\text{kikino}]_{\text{PrWd}}, *[\text{ki:}]_{\text{PrWd}}[\text{kino}]_{\text{PrWd}}
\]

patu + {passive} → [patua]_{\text{PrWd}}, *[patu][a:]_{\text{PrWd}}

cf

{Causative}+hoki → [faka]_{\text{PrWd}}[hoki]_{\text{PrWd}}

These facts explain lengthening…
Proposal:

- There is a ‘coalescing morpheme’ C.
- It is a morphological Root.
- Because it is a Root, it must be a MinWd in size: i.e. bimoraic.
- Because it is a Root, there must be a PrWd boundary at its left edge.

Only the following structure will satisfy these requirements...

So: \( \text{TANJATA} + C \rightarrow \text{TANJATA} \quad \text{C} \)

\[ \begin{array}{c}
\text{TANJATA} \\
\text{t a: n a t a} \\
\text{PrWd} \quad \text{PrWd}
\end{array} \]

Only this structure has PrWd boundaries at all Root edges.
- *ta* has to lengthen to *ta*: to satisfy the requirement that PrWds have two moras.

- Q: Why does C only coalesce with [ŋata] and not [taŋata]?

- A:
  1. C’s *size* is determined by constraints on root size (e.g. STEM=PRWD, FTBIN) which conspire to make it a foot in size.
  2. C’s *position* is determined by ANCHOR constraints, just like those used for reduplicants.

**Alternatives:**

- What if plural formation simply required words to be fully parsed into feet?
  This would get the right results:
taŋata → (ta:)(ŋata)

Of course, we would have to explain why the leftmost vowel always lengthened. But, putting this aside, why not?…

Reduplication

There are Six reduplicants in Maori:

<table>
<thead>
<tr>
<th>Size</th>
<th>Prefixed</th>
<th>Infixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>σ₁</td>
<td>papaki, hohoata</td>
<td>taweke → ta:weweke</td>
</tr>
<tr>
<td>σ₂</td>
<td>ka:kaho</td>
<td>kapiti → ka:pi:piti</td>
</tr>
<tr>
<td>Ft</td>
<td>pakipaki, paraparau</td>
<td>matuku → ma:tukutuku</td>
</tr>
</tbody>
</table>

➤ How do we explain the INFIXED Sort?

➤ Leading Ideas:
❖ The *infixes* are actually *prefixes*.
❖ Reduplicants prefix to C.
Implementation:

For clarity, in a serial derivation style:

1. TAWEKE + C → TAWEKE

2. TAWEKE

   RED₆ +

   t a w e k e

- RED MUST ATTACH TO C ..... SO:

3. RED TAWEKE

   t a w e k e w e k e
4. **Final Step:**

- In Maori, a PrWd boundary must appear at the left edge of every Root.

- **RESULT:** *LENGTHENING:*

5. **Alternatives: Why do it this way?**

- Q: Why not say there is a condition that all morphemes be parsed into feet?

  A: RED-$\sigma_\mu$ + taweke $\rightarrow$ ta:weke[(ta:)(wewe)ke]…

  - Not all segments get parsed into feet in this form.
  - Why not *[tata)(weke)]$_{PrWd}$ – i.e. separate the form into two PrWds?
  - or [(tata)weke]$_{PrWd}$
Q: Why can’t we say that this is simply prefixing to the head foot (As in e.g. Samoan)?

A: Stress in Maori usually falls on the leftmost syllable. i.e. /taweke/ → (táwe)ke

If RED prefixed to the head foot, we would expect *tawetaweke, not tawekeweke.

Q: Isn’t this just resurrecting circumscription?

Hasn’t circumscription been explained in OT by constraint conflict (McCarthy 1997, etc.)?

A: This is resurrecting circumscription in a limited way. But necessarily…

Maori circumscription picks out a constituent that does not occur in the base form: i.e. you do not pick out the head foot of [(táwe)ke] and apply an operation to it. Instead, you have to parse out a rightmost foot, ignoring the base’s footing.
This ‘picking out’ circumscription is difficult to deal with in OT (McCarthy 1997).

McCarthy (1997) deals with this by appealing to constraints that require identity of prosody and prosodic role.

The problem: the Base and Reduplicant can have entirely different prosodic structure:

- In [ta:][(wéwe)ke], the prosodic structure over the reduplicant we is entirely different to that of the base weke.
- Identity of prosodic structure is almost impossible in this form: other plausible candidates: [(táta)weke], [(táwe)][(kéke)]. The first of these harmonically binds [ta:][(wéwe)ke].
FINAL ISSUES:

Standard definition of ‘Base’ = “The string adjacent to the Reduplicant.”

How does this fit in with the current analysis?

\[
\text{C + PATA} \rightarrow \text{C PATA} \qquad \text{p a t a}
\]

Here, the base of C does not follow C.

So, Redefinition of Base:

Base of Reduplicant:
String \(x\) is the base of reduplicant \(y\) iff:

1. \(x\) is the exponent of (a) morpheme(s) other than the reduplicant.
2. (i) \(x = y\)
or (ii) $x$ is separated from $y$ by the most minimal string satisfying (1).

This definition captures the idea that the Base is the closest string to the reduplicant that is not the reduplicant itself.

**REFERENCES**
