Accounting for “free Wackernagel elements”: weakness without dependency

1.0 The problem

- There are strong arguments for having phonology involved in some capacity for the derivation 2P effects in many languages (Chung 2003). This is generally done by having clitics undergoing postsyntactic movement in order to satisfy a prosodic dependency (Halpern 1995, Embick & Noyer 2001) or by a prosodic subcategorization requirement on the part of clitics (Inkelas 1989, Chung 2003).

- So how do we handle (apparently non-syntactic) 2P in the face of evidence against prosodic dependency, i.e., ‘free Wackernagel elements’ (Bickel & Nichols 2007). “While there may be languages for which a phonological account of the non-occurrence of clitics in phrase-initial position is possible, no well supported analyses of this kind have been presented. And in fact it is extremely unlikely that such a prosodically based account will be adequate in general. That is because some special clitics that must be placed post-initially are not prosodically deficient. Tagalog, for instance, has a huge system of clitics, most of which are prosodically autonomous and bear their own stress. There seems no phonological reason why these could not occur initially, and if they do not, that fact must be due to some other constraint.” (Anderson 2005:141)

(1) Kuo di [sána talaga táyo] na-bracket together...
   if NEG OPT EMPH 1P.NOM PV.NVL.RL-bracket together
   ‘If we only weren’t bracketed together...’

- Anderson’s solution: give up on prosody – 2P is derived by a NON-INITIAL constraint

2.0 The short answer

- There are prosodic words and there are prosodic words:
  PWd – fulfills minimality requirements (e.g., bimoraicity, disyllabicity)
  PWd_Hd – focusability, unmarked head of larger prosodic domains

(2) *mag-lúto? [táyo]:
   AV-cook 1P.NOM
   (can only be interpreted as ‘[Let us cook]’


1 http://www.peyups.com/posts.khtml?mode=viewtopic&topic=30538&forum=22&start=195
(3) a. \([táyo]\_F ay mag-lúto?\) b. \([táyo]\_F an=mag-lúto?\)

1P.NOM TOP AV-cook 1P.NOM NOM=AV-cook
‘As for us, let’s cook’ (contrastive topic) ‘Let US cook’ (focus)

PWd\_Hd=MWd\_Lex
A PWd with prosodic head status must be a MWd\_Lex (Zec 2005:87)
A MWd\_Lex must be a PWd with prosodic head status

* On every prosodic level there exists dyads of strong and weak elements. On the level of the prosodic word, heads constitute strong elements while non-heads, weak elements.

* The constraint *WEAKSTART militates against beginning a domain with a weak member:

\[
*\text{WEAKSTART (PCat)}
\]
Violated by the configuration \([w (w)…]\) in PCat

Figure 1. Unmarked s-w binary structures

<table>
<thead>
<tr>
<th>σ</th>
<th>Ft</th>
<th>PWd</th>
<th>PPh</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>w</td>
<td>s</td>
<td>w</td>
</tr>
<tr>
<td>w</td>
<td>s</td>
<td>s</td>
<td>w</td>
</tr>
<tr>
<td>C</td>
<td>V</td>
<td>s</td>
<td>σ</td>
</tr>
</tbody>
</table>

Figure 2. Marked w-s binary structures

<table>
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<th>PPh</th>
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<tbody>
<tr>
<td>W</td>
<td>s</td>
<td>W</td>
<td>s</td>
</tr>
<tr>
<td>s</td>
<td>W</td>
<td>s</td>
<td>W</td>
</tr>
<tr>
<td>V</td>
<td>C</td>
<td>σ</td>
<td>σ</td>
</tr>
</tbody>
</table>

Strong evidence for *WEAKSTART on the Ft level comes from the preference for trochees during acquisition (Fikkert 1994, Demuth 1995, Pater 1997).

Evidence for *WEAKSTART on the PWd level may come from the universal preference for suffixing. Parallel to PWds, Ft\_Hd would be constituted by lexical material while non-head Ft by functional material (cf. Ito & Mester 2006 for PWd effects).

Evidence for *WEAKSTART on the PPh level comes from 2P effects in which the 2P element is a bona fide prosodic word.

* Preliminary evaluation for (2) above:
Tableau 1.

<table>
<thead>
<tr>
<th>Input:</th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mag-lúto? AV-cook MWdLex</td>
<td>PPh</td>
<td>PPh</td>
<td>PPh</td>
</tr>
<tr>
<td>1P.NOM &gt; táyo MWd</td>
<td>s w</td>
<td>w s</td>
<td>s s</td>
</tr>
<tr>
<td></td>
<td>PWdHd PWd</td>
<td>PWd PWdHd</td>
<td>PWdHd PWdHd</td>
</tr>
<tr>
<td></td>
<td>MWdMWdLex</td>
<td>MWdMWdLex</td>
<td>MWdMWdLex</td>
</tr>
<tr>
<td></td>
<td>maglúto? táyo</td>
<td>táyo naglúto?</td>
<td>táyo naglúto?</td>
</tr>
</tbody>
</table>

| PHead=MWdLex | *! | *! |

We still need to answer a number of burning questions:

Why does ‘misalignment’ to 2P seem to be such a popular repair mechanism for remedying *WEAKSTART?

Why are there so few cases of 1P clitics considering that *WEAKSTART could easily be dominated by the constraint demanding edge alignment of clitics?

3.0 Clitic typology

For Klavans, clisis need not depend on prosodic prominence as clisis is viewed by her as a “syntactic phenomenon, with phonological consequences” (Klavans 1995:158).

But subsequent research (Marantz 1988, Sadock 1991, Billings 2004, inter alia) has shown that the Klavans’ clitic parameters drastically overgenerate.

As shown by Billings 2004, head adjacent clisis must be treated separately from phrasal clisis to make any sense of the facts although he abandons Zwicky’s (1977) descriptive distinction between ‘simple’ and ‘special’ clitics.

Here, in addition to alignment to either X or XP categories, the crucial feature of clitics which helps determine their distribution is their status as sisters/non-sisters of their hosts. (This roughly correlates with Zwicky’s distinction between ‘special’ and ‘simple’ clitics.)

**Morphosyntactic sister:**
Functional/Lexical heads which select for an XP comp (e.g. D, Case, Aux, Neg).

**Morphosyntactic non-sister:**
In figure 3, X(P) represents the clitic’s phrase/head of origin with B and C as the more specific pivots for placement (domain initial versus domain final). The arabic numerals represent possible clitic attachments with the equals sign representing the direction of attachment. Elements which do not show phonological dependencies are ambiguous as the pairs <1,2>, <3,4>, <5,6> and <7,8> represent the single positions I, II, III and IV, respectively, within the string. If no evidence has been adduced for a particular attachment in the given position it is marked by √.

Figure 3. Improved typology of clitic positions (Kaufman in progress)

<table>
<thead>
<tr>
<th>Phrase</th>
<th>WP</th>
<th></th>
<th>XP</th>
<th></th>
<th>YP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host position</td>
<td>A=1</td>
<td>2=B=3</td>
<td>4=...=5</td>
<td>6=C=7</td>
<td>8=D</td>
</tr>
<tr>
<td>sister</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>non-sister</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

L-ALIGNED        INFIXING         R-ALIGNED

Figure 4. Three possibilities for (phrasal) sister clitics

a. 

b. 

c. 

d. 

eclitic prepositional  proclitic prepositional  enclitic postpositional  proclitic postpositional

Prosodic Asymmetry
In the vast majority of cases, rightwards prosodic attachment is coerced by direct morphosyntactic constituency (restricted to sister elements).

DP[Det=NP[...]] %arg=IP[...]

Sisterhood Displacement Asymmetry
Morphological displacement of a clitic from its host only occurs with non-sisters.

IP[X=arg...] *CaseP[NP[X=Case...]]

Directional Displacement Asymmetry
Morphological displacement of a clitic from its host only occurs domain initially (pivot B/position II) not domain finally (pivot C/position III).

IP[X=arg...] *IP[...arg X]

Interim conclusions:
- Prosodic attachment is not arbitrary, as originally argued by Klavans. It either (i) follows morphosyntactic constituency or (ii) it is leftwards.
- Because agreement/adverbial clitics never attach to a morphosyntactic sister they generally do not have the option to procliticize to an element to their right.
- Misalignment really is prosodically motivated as it only occurs on the left-edge.
4.0 The feature adjunction theory of 2P

How do we formalize the difference between sister and non-sister clitics?

We posit two types of alignment constraints the first of which aligns a morphosyntactic head to its complement as a sister under a syntactic phrase (CONCATENATE), and the second of which aligns a feature to the edge of a related head or extended projection (ADJOIN).

CONCATENATE – ALIGN L/R (Head, Complement)
A morphosyntactic head is aligned to the Left/Right edge of its complement within a syntactic phrase.
(An alignment constraint which creates phrase structure by merging 2 elements from the numeration under the label of the head, cf. Chomsky 1995).

ADJOIN – ALIGN L/R (Feature; Extended Projection/ Xj0)
A feature is aligned to the Left/Right edge of a related extended projection/head.
(An alignment constraint which adds a morphological feature from the numeration directly to either a head or phrase edge without creating new syntactic structure.)

When ADJOIN aligns features to the edge of a phrase these are left unparsed by syntax, consequently leaving them to be spelled out in a prosodic vacuum.

Therefore, they can then only be parsed as adjuncts to an adjacent prosodic phrase or project their own prosodic phrase to satisfy EXHAUSTIVENESS. Given the constraints below, both of these options are harmonically bound by ‘misalignment’ of the clitic.

ALIGN (PPhmax,L; XP,L)
The left edge of maximal prosodic phrase is aligned to the left edge of an XP

*STRUCTURE (PPh)
Violated by a prosodic phrase in the output

ADJOIN-L ([Person.GEN/NOM], IP)
Genitive/Nominative person features are adjoined to the left edge of IP
Prosody: \[ PPh[PWd] \]
Syntax: \[ IP[\text{maglúto}? \ táyo] \]

violation profile:
\begin{align*}
\text{*WEAKSTART (PPh)} & \checkmark \\
\text{*STRUCT (PPh)} & \times \\
\text{ALIGN (PPh}_{\text{max}}, L; XP,L) & \checkmark
\end{align*}

(7) Prosody: \[ PPh[PWd PPh[PWd]] \]
Syntax: \[ táyo \ IP[\text{maglúto}?] \]

violation profile:
\begin{align*}
\text{*WEAKSTART (PPh)} & \times \\
\text{*STRUCT (PPh)} & \times \times \\
\text{ALIGN (PPh}_{\text{max}}, L; XP,L) & \times
\end{align*}

(8) Prosody: \[ PPh[PWd] PPh[PWd]\]
Syntax: \[ táyo \ IP[\text{maglúto}?] \]

violation profile:
\begin{align*}
\text{*WEAKSTART (PPh)} & \times \\
\text{*STRUCT (PPh)} & \times \times \\
\text{ALIGN (PPh}_{\text{max}}, L; XP,L) & \times
\end{align*}

So 1P elisis is not impossible, just unlikely. This is because it is militated against by three independent motivated constraints. For 1P elisis to go through, \textsc{ADJOIN-L} has to dominate all three antagonistic constraints:

\textsc{ADJOIN-L (F, IP)} \gg *\textsc{WEAKSTART}, *\textsc{STRUCTURE (PPh)}, \textsc{ALIGN (PPh}_{\text{max}}, L; XP,L)\)

This accords well with the rarity but not impossibility of 1P (non-sister) clitics. One example is found in Zuni where weak pronouns, which cannot occur in isolation, must take first position in the clause (Nichols 1997).

(9) a. **Ho’** waccita ‘ito-k’e-kkya
\begin{align*}
1S.NOM(w) & \text{ dog} \\
& \text{ eat-CAUS-PST} \\
& \text{‘I fed the dog’}
\end{align*}
\begin{flushright}
\textit{Zuni} \\
\text{(Nichols 1997:37)}
\end{flushright}

\begin{flushright}
\end{flushright}

b. **Hom** waccita ‘ute-kya
\begin{align*}
1S.ACC(w) & \text{ dog} \\
& \text{ bite-PST} \\
& \text{‘The dig bit me’}
\end{align*}
\begin{flushright}
\text{(Nichols 1997:37)}
\end{flushright}

(10) *Waccita **hom** ‘ute-kya
\begin{align*}
\text{dog} & \text{ 1S.ACC(w)} \\
& \text{ bite-PST}
\end{align*}
\begin{flushright}
\text{(Nichols 1997:38)}
\end{flushright}

Now we can ask how concatenated (morphosyntactic sister) clitics differ.
Unlike adjoined features, concatenated clitics are part of ‘narrow syntax’ and are constrained by such principles as head directionality. The bonds of concatenation are harder to break than those of adjunction. *WEAKSTART is thus satisfied in-situ by breaking the unmarked syntax-prosody mapping and encliticizing ‘against the grain’.

(11) Mam-mula=ak [si balat]  
Limos Kalinga
AV-plant=1S.NOM OBL banana
‘I’m planting bananas.’
(Ferreirinho 1993:82)

(12) Nan-anup dadit tagu=[t bolok]  
AV.PRF-hunt PL.NOM person=OBL pig
‘The people hunted pig.’
(Ferreirinho 1993:12)

The two types of prepositional markers are derived by the following ranking:

*WEAKSTART (PPh) >> ALIGN (XP,PPh)  
ALIGN (XP,PPh) >> *WEAKSTART (PPh)

The difference between argument features and syntactic heads made here garners support from Tobler-Mussafia (TM) effects in Romance. This occurs when *WEAKSTART makes itself felt on head adjoined features rather than phrase adjoined ones. TM clitics are proclitic on a verb (typically) unless the verb is initial in its domain in which case enclisis ensues.

Fisher (2002) notes a problem for treating these clitics as D elements (ala Cardinaletti & Robetrs 1991, Uriagereka 1995 *inter alia*). Inversion only applies to the argument clitics but not to their homophonous determiner counterparts which are always proclitic:

(13) …e presentà’s denant lo=rey e saludà=lo molt altament  
Old Catalan
CONJ present.3s before DET=king CONJ greet=3s very highly
‘…and he appeared before the king and greeted him warmly…’
(Fischer 2002:134)

Fischer (2002:134) sums up the problem: “In this case the constraint would not only have to read the syntactic label, but it would also have to interpret the semantics and/or to analyze whether or not a complement is taken by the D0.”

Here, we expect that Old Cat. lo and la head a DP in their determiner function and are thus introduced via CONCATENATE whereas, in their agreement function, these elements are nothing but person features which are ADJOINED to the verbal head. We thus predict that only in their adjoined incarnation do these clitics misalign.

5.0 Conclusion

We can now explain 2P effects for prosodically independent elements on a prosodic basis without stipulating NON-INITIAL as a morphological constraint.
This brings 2P clisis together again with infixation (Anderson 2005), as the infixation of vowel initial morphemes (e.g. Tagalog <um>) should be derived prosodically (Prince & McCarthy 1995) rather than specified morphologically as non-initial.

We can now also make better sense of the typology in figure 3 (repeated below):

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<td>non-sister</td>
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<td>✓</td>
<td>✗</td>
</tr>
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**Sister 1:** Enclitic prepositions: *WEAKSTART >> XP=PPh

**Sister 2:** Canonical proclitic preposition: XP=PPh >> *WEAKSTART

**Sister 3,4:** No misalignment of phrasal heads because they are subject to CONCATENATE

**Sister 5,6 + Non-Sister 5,6:** No *WEAKSTART violation on right edge ∴ no misalignment

**Sister 7 + Non-Sister 7:** Only possible position and prosodic dependency for right aligned clitics

**Sister 8 + Non-Sister 4,8:** No syntactic constituency ∴ no rightwards prosodic dependency

**Non-Sister 1,2:** Militated against by 3 independently necessary constraints ∴ attested but rare

**Non-Sister 3:** ADJOINED elements canonically satisfy *WEAKSTART by misalignment to 2P

**Selected sources**


Chung, Sandra. 2003. The syntax and prosody of weak pronouns in Chamorro, LI


Itô, Junko, Armin Mester. 2006. The onset of the prosodic word. ms. UCSC.


