A Correspondence Theory of

Epenthetic Quality*

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1   The Issue

❑ Epenthetic elements can be a *copy* of a nearby segment:

(1)   e.g. **Maori** (Kitto 1997):

pihikete	'biscuit'	ha:pa	'harp'
piɾiniha	'prince'	ho:ro	'hall'
hanawiti	'sandwich'	wuru	'wool'
ha:mene	'summon'		

☙ **Copy Epenthesis and Feature Geometry**:

Spreading of *all* vowel features across anything but a featureless consonant fatally results in line crossing:

❑ Attempts to account for this are based on total V/C planar segregation (McCarthy 1979), and a more restricted version by Hume (1992) and Clements & Hume (1995).

❑   Both have problems:
        (1) McCarthy (1979)'s approach is necessarily derivational since planar conflation is invoked.
        (2) Hume (1992) and Clements & Hume (1995) attempt to solve this by extending only a few vowel features out past consonant features – i.e. place and height. The problem is that other features – e.g. [nasal] in Winnebago – also take place in total vowel spread. This entails non-constituent spreading: an undesirable result.

2   Proposal: The Correspondence Theory of Epenthesis

☞ **In Brief**: Epenthetic elements can *correspond* to output segments, just as reduplicants do.

(3)   **Copy Epenthesis:** /a l/ $\rightarrow$ [a$_1$ l $\underline{a}_1$]

   (i) The epenthetic element [$\underline{a}$] corresponds to its **Base** [a].

   (ii) Compare with reduplication: /pata + RED/ $\rightarrow$ [p$_1$ a$_2$ t$_3$ a$_4$ $\underline{p}_1$ $\underline{a}_2$ $\underline{t}_3$ $\underline{a}_4$]

(4)   **Constraints** hold over this relation:
        e.g. **B**(ase)**E**(penthetic segment)-**IDENT-F**
   "Segment *x* in the Base and its Epenthetic correspondent have the same value for feature F."

☞ Important Note: Correspondence constraints are often called *Faithfulness* constraints. We will use the terms interchangeably.

☞ **The Outline of the rest of this talk**

❑   To explore (some of) the typological consequences of this theory

Section 3: Markedness *vs* Faithfulness
❑   What about 'normal' epenthesis: where an unmarked segment is epenthesized?
❑   More generally: How do correspondence constraints on the epenthetic element and its base interact with other constraints (esp. on markedness)?
Section 4: The Dynamic Base
❑   How is the 'Base of epenthesis' defined?
❑   What implications does this have?

❑ <u>Empirical Base</u>: The core of the theory set out here was originally proposed by Kitto (1997) to explain patterns of epenthesis in Polynesian loanwords. The vestiges of this basis can be seen in the first half of this talk. We range rather freely after that, although our focus is mainly on Austronesian languages.

3 Markedness *vs* Epenthesis

3.1   The Basic Typology

❑ Correspondence constraints conflict with *markedness* constraints.

(5)   Faithful copy: e.g. Maori   RED + *pata* → papata

If Faithfulness Constraints outrank Markedness constraints, perfect copy results:

(6)   **Faithful Copy: ‖Faith » Markedness‖**

RED + /pata/	BR-FAITH	M(V→i)
☞ papata		x
pipata	x!	

M(V→i) represents the set of markedness constraints that require vowels to be [i].

☙ **The same effects obtain in epenthesis:**
     <u>Note</u>: the *Base* of epenthesis in these examples is the preceding vowel.

(7)   **Copy Epenthesis: ‖Faith » Markedness‖** (e.g. Maori)

/okan/	BE-FAITH	M(V→i)
☞ okana		x
okani	x!	

(8)   Emergent Markedness: e.g. Yoruba   (Alderete et al. in press)

   (i)   RED + gbona   →   gbigbona
   (ii)   RED + dara   →   didara
   (iii)   RED + mu   →   mimu

(9)   **Emergent Markedness: ‖Markedness » Faith‖**

RED + /dara/	M(V→i)	BR-FAITH
dadara	x!	
☞ didara		x

(10)   **'Default' Epenthesis: ||Markedness » Faith||** (e.g. Tongan)

/a l/	M(V→i)	BE-FAITH
a l a̲	x!	
☞ a l i̲		x

3.1.1 Partial Copy

❧ Markedness Constraints and Faithfulness constraints may intermingle to produce *partial* copy.

(11)   Yoruba loans: E̹ is a *high vowel*, and copies the backness and roundness of adjacent vowels: /pek/ → [peki̲], /pok/ → [poku̲].

(12)   **Partial Copy in Epenthesis**

❶ /pek/	*-high	BE-IDENT	M
☞ peki̲		x	
peke̲	x!		
❷ /pok/	*-high	BE-IDENT	M
☞ poku̲		x	
poko̲	x!		
poki̲		x x!	

> Partial Copy: ||M₁ » BE-FAITH » M₂||

Other cases:
❧ Chadic – epenthetic vowel is [i] before [–round] vowels and [u] before [+round] vowels (Frajzyngier & Kopo 1989) ||*-high » IDENT-EB » M||.
❧ Awtuw – E → V$^{+high, \alpha back}$/ __ V$^{\alpha back}$ e.g. /d-kælij/ → [di̲kælij] (Feldman 1986).

3.2   Contextual Copy/Default

❧ The effect of a constraint can be *blocked in certain environments* by a higher-ranked constraint.

(i) This is the 'do *x* except when' situation (P&S 1993).

☞ In constraint terms, "do *x* except when *y*, then do *z*" is expressed by the ranking ||*y* » *x* » *z*||.

(i) *y* blocks the effect of *x* in a specific environment, allowing the low-ranked *z* to effect the output.

(13) **Case I**: "**Copy except when**" – *Maori loanwords*

❑ Epenthetic vowels are a copy of preceding vowels:

e.g. hanawit<u>i</u> 'sandwich', ha:men<u>e</u> 'summon', ha:p<u>a</u> 'harp', ho:r<u>o</u> 'hall', wur<u>u</u> 'wool'.

❑ Except [fu] sequences are banned in the language (de Lacy 1998). This produces /a/: e.g. [huf<u>i</u>] 'hoof', *hufu.

❑ This is a "Copy except when [fu], else default to [i]":

(14) "Do except when"

/huf/	*fu	BE-IDENT	M(V → i)
huf<u>u</u>	x!		x
☞ huf<u>i</u>		x	

❑ **Cook Islands Maori (~Rarotongan)**

(15) CIM prevents a more spectacular case: "Do *x*, except when *y* do *z*, but if still *y* do *w*."

(16) **The data**:

(i) Usually, an [i] is epenthesized:

e.g. [ka:rat<u>i</u>] 'carrot', [menet<u>i</u>] 'minute', [ku:t<u>i</u>] 'goose', [naeron<u>i</u>] 'nylon'

(ii) However, after /r/ vowel copy takes place:

e.g. [pe:r<u>e</u>] 'bail', [a:par<u>a</u>] 'apple'

(iii) But if this would create an [ir<u>i</u>] sequence, the epenthetic vowel is [a]:

e.g. [pir<u>a</u>] 'bill'

❑ Condition (iii) shows that this isn't a case of liquid transparency. Liquid transparency would promote [ir<u>i</u>] sequences.

(17)   Explanation

(i) Since [i] is usually epenthesized and not a copy, ||M(V→i) » BE-FAITH||.

(ii) The 'except when' condition: *ri – [ri] sequences are banned.

　　　(i) This explains why epenthesis of [i] is blocked.

　　　(ii) It also explains why copy of *i* is blocked in [ir<u>i</u>] situations.

　　　(iii) *ri holds in other Polynesian languages too (Kitto 1997). There is a variety of evidence for its activity in other languages, including Portuguese Spanish (where liquids and i are in complementary distribution in some dialects), and in Chamicuro (Steve Parker p.c.) where liquids and [i] dissimilate.

(iii) So, ||*ri » M(V→i) » BE-IDENT|| -- a typical 'do *x* except when' case.

(18)   "Default except when [ri], then copy"

❶ /pet/	*ri	M(V→i)	BE-IDENT
☞ pet<u>i</u>			x
pet<u>o</u>		x!	
❷ /per/	*ri	M(V→i)	IDENT-EB
per<u>i</u>	x!		x
☞ per<u>e</u>		x	

(iv) The final step:

❑ This still leaves the /ir/ → [ir<u>a</u>] cases.

❑ In this situation, epenthetic [<u>i</u>] is blocked by *ri.

❑ The epenthetic element then *defaults to the next most unmarked vowel*: [a].

　　||*ri » M(V→i) » BE-IDENT » **M(V→a)**||

(19)   **Multiple TETU**: ||*ri » default-to-i » COPY » default-to-a||

❶ /pir/	*ri	M(V→i)	IDENT-EB	M(V→a)
pir<u>i</u>	x!			x
☞ pir<u>a</u>		x	x	
❷ /per/	*ri	M(V→i)	IDENT-EB	M(V→a)
per<u>i</u>	x!			x
☞ per<u>e</u>		x		x

✎ An aside: 'Global' Conditions and OT

(20)   One way to describe this is that *ri is a 'global condition', and triggers the change down a hierarchy of preference:

1. default to [i] > 2. copy > 3. default to [a].

(21)   Situations where a global condition G motivates a hierarchy of repairs $|R_1 > R_2 >.. R_n|$ are easily captured in OT by the ranking $||G > R_1 > R_2 > … R_n||$.

(22)   Not easy to capture in rule-based terms (to be read disjunctively):

$\varnothing$ → a / ir_
        → V_1 /V_1r_
        → i elsewhere

This formulation misses the point that it is the sequence [ri] that is being avoided here.   This same point is raised in rule-based analyses by Krause (1973) for epenthesis in Chukchi and by Wilbur for reduplication.

(23)   Not even easy to capture in theories with localized constraints (constraints that apply at a certain point in the derivation, triggering a repair).

Process: $\varnothing$ → i
Constraint: *ri   *triggers*   Repair: $\varnothing$ → V_i/ V_iC_
Constraint: *ri   *triggers*   Repair: $\varnothing$ → a

Since constraints and their repair strategies are local, it is entirely a coincidence that the *same* constraint triggers two different repairs.

3.3 Summary

❧ Invoking correspondence explains why full copy can occur: no autosegmental spreading is needed, hence no line crossing problems result.

❧ This results in the spectrum of interactions, from a

(i) fully faithful copy, (e.g. Tongan, Takelma, Maltese, Makassarese, Winnebago, Ostrobothnian Finnish, Savo Finnish, Wolof, Kolami, Bardi)

(ii) through partial copy, (e.g. Yoruba, Chadic, Awtuw).

(iii) to default segmentism (e.g. many…)

4 The Dynamic Definition of Base

❧ *Base* – the segment that the epenthetic element corresponds to.

❧ In Reduplication: The *Static* Definition:

"The Base of a RED is the nearest accessible string" (McCarthy & Prince 1995, de Lacy 1999).

(i) The identity of the base is not an epiphenomenon of constraint ranking or other mechanisms – it is overtly picked out.

(24)   The *Dynamic* definition:

"The base of an epenthetic element is the 'best' segment possible."

(i) 'best' is defined in terms of constraints.

❑   GEN produces candidates with intra-output correspondence relations.

❑   The candidate with the most optimal correspondence relation(s) is chosen.

(25)   <u>An Example</u>: The epenthesis /ek/ → [ek<u>e</u>] is driven by NOCODA.

Why is the Base for [<u>e</u>] [e] and not [k]?

<u>Candidates</u>:   (a) [ek$_1$k̲$_1$] -- violates the trigger NOCODA, so 'undoing' the effect of epenthesis. Hence, NOCODA deems this correspondence relation untenable.

(b) [e$_1$k̲e̲$_1$] -- satisfies NOCODA ... therefore it's better than (a).

<u>Comment</u>: This reduces the notion of 'Base' to an epiphenomenon of constraint ranking – there is no need to invoke a separate identification mechanism for the 'Base' – the Base of epenthesis is simply that segment that stands in correspondence with the epenthetic element.

4.1   The Aim of this section

❑ To explore the typological consequences of reranking constraints that affect the identity of the Base.

❑ <u>Note</u>: For ease of exposition, Ɛ stands for 'epenthetic element' and Ɛ' for 'correspondent of Ɛ'.

(26)   Relevant Base-Epenthesis Constraints:

(1)   *Direction*:   COPY-L/R   "Ɛ corresponds to an element to its left/right"

(2)   *Locality*:   BE-ADJACENCY "Ɛ and Ɛ' are as close as possible."

(3)   *Identity*:   BE-IDENT-*f* "Ɛ agrees with Ɛ' in terms of *f*."

(4)   *Correspondence*: BE-CORR "Ɛ corresponds to something."

(5)   *The Trigger*: Whatever constraint (ONSET, NOCODA) forces epenthesis.

❑ The focus of this section is somewhat like the previous one:

What do these constraints predict will happen in a "do *x* except when" situation? e.g. "The base must be to the left of the epenthetic element except when *y*, in which case *z*...." || *y* » COPY-LEFT » *z*||

- **Aim**: To talk about Direction, and what happens in cases of "Copy Left/Right except when…"

- **Note:** Cases of adjacency – "Copy the adjacent element except when..." work in an analogous fashion with similar repairs. We will not have time to discuss these cases in this talk – see the handout (to be) posted on Paul de Lacy's webpage: http://www-unix.oit.umass.edu/~delacy.

4.2   Direction

(27)   **Basic Typology**

(i)   **Left Copy**

❑ Takelma (Sapir 1922):
/sensan/ → [sen<u>e</u>san], /dült:al/ → [dül<u>ü</u>t:al], /i:gaxgixi'n/ → [i:gax<u>a</u>gixi'n]

(ii)   **Right Copy**

e.g. Bardi (Metcalfe 1979): [iŋ<u>um</u>u<u>ŋ</u>uridindina], [guŋ<u>ir</u>i<u>m</u>iñdid].

(iii)   Proposal

❑ **COPY-LEFT:**   Ɛ′ precedes Ɛ.
❑ **COPY-RIGHT:**   Ɛ precedes Ɛ′.

(28)

	/sensan/	COPY-LEFT	COPY-RIGHT
☞	sen<u>e</u>₁sa₁n		x
	sen<u>a</u>₁sa₁n	x!	

❑ Note: We can't use the standard ANCHOR/ALIGN constraints (M&P 1993, 1995) since the left/right edge of a segment is the segment itself. Hence, [CaC<u>a</u>Ci] and [CaC<u>i</u>Ci] both satisfy ANCHOR-LEFT and ANCHOR-RIGHT equally well.

(29) Dynamic Direction: *"Copy L/R except when"*

❑ The most common reasons for not copying in a certain direction:

(1) there is nothing in that direction to copy (e.g. Karo Batak).

(2) The copied element must be root material (e.g. Wolof, Winnebago)

[parallels in reduplication – Lushootseed (Urbanczyk 1996), Maori (Keegan 1996).]

(3) there is something better (i.e. less marked or more faithful) in the other

direction (e.g. Faroese, Maori).

4.2.1 Responses

(i)   Reverse Direction

❑ Hawaiian: Copies to the left, but copies to the right initially (Kitto 1997):

(i) Medial: (ii) Initial:
[kalik<u>i</u>maka] 'Christmas'   [p<u>e</u>lena]   'bread'
[ʔen<u>e</u>kinia] 'engineer'   [p<u>e</u>lekikena] 'president'
[mal<u>a</u>ki]   'March'   [p<u>a</u>lani]   'brandy'
[kok<u>o</u>leka]   'chocolate'   [k<u>o</u>loka]   'cloak'
                                          [p<u>u</u>luma]   'plum'

❑ GEN cannot produce a candidate with a base to its left if there is nothing there
   to copy.

> **Copy L/R else copy in opposite direction:**
>
> || BE-CORR » COPY-*dir1* » COPY-*dir2* ||

(ii)   Default to Unmarked

❑ Wolof: Copies to the left. e.g. /xarf/ → [xar<u>a</u>f] 'to be initiated'

❑ When it can't (when the thing to be copied is not a root), it defaults to [ə].:

e.g. /nap {Af} + kat {Root}/ → [na₁p<u>ə</u>kat], *[nap<u>a</u>kat]

(30)   Analysis:

BE-CORR "Ɛ must correspond to something."

❑ If Ɛ does not correspond to anything, no faithfulness constraints can affect its quality.

Therefore, its quality must be determined by markedness constraints.

Therefore it defaults to the unmarked value.

❑ The present situation can be explained as a case of "Copy, except when there is no root element to the left, in which case do not correspond (i.e. default to unmarked quality)."

❑ "Correspond to something (BE-CORR), except when this would entail not copying a root element to the left (COPY-ROOT, COPY-LEFT), then do not correspond, and default to the unmarked."

(31)

/nap+kat/	COPY-ROOT	COPY-LEFT	BE-CORR	M(V→ə)
☞ a) napəkat			x	
b) napa$_1$ka$_1$t		x!		x
c) na$_1$pa$_1$kat	x!			x
/sarx/	COPY-ROOT	COPY-LEFT	BE-DEP	M(V→ə)
☞ a) sa$_1$ra$_1$x				x
b) sarəx			x!	

Copy L/R else default segment:

|| *TRIGGER* » COPY-L/R » BE-DEP ||

(iii) Don't Epenthesize ||COPY-L/R » TRIGGER||

❑ *Don't Epenthesize unless copying to the left/right is possible:*

e.g. many cases of C epenthesis 'under hiatus', but not initially (e.g. Karo Batak – Woolams 1996): e.g. /tue/ → [tuwe], /ute/ → [ute], *[wute]

❑ This is a case of "Epenthesize (*trigger*), except when the epenthetic element cannot copy to the left (BE-CORR and COPY-LEFT), then do not epenthesize."

(i) COPY-LEFT and BE-CORR require an epenthetic element to correspond to something and correspond to the left.

(ii) ONSET is the trigger.

(iii) Therefore, ‖COPY-LEFT, BE-CORR » ONSET‖

(32) ‖COPY-LEFT, BE-CORR » *trigger* ‖

1.	/uta/	COPY-LEFT	BE-CORR	ONSET
	w₁u₁ta	x!		
☞	uta			x
	ʔuta		x!	
2.	/ua/	COPY-LEFT	BE-CORR	ONSET
☞	u₁w₁a			
	ua			x!
	uʔa		x!	

(33)   More striking are cases where (near-)complete identity between E and and its correspondent E' are required:

  e.g. In many languages (e.g. Dutch):

  $\varnothing \rightarrow$ j / i_V
       $\rightarrow$ w / u_V
       $\rightarrow \varnothing$ elsewhere

The analysis: "Epenthesize (*trigger*), except when the epenthetic element is not a (near-) perfect copy (BE-IDENT and BE-CORR), then do not epenthesize."

(34) ‖IDENT, CORR» *trigger* ‖

1.	/ua/	BE-IDENT	BE-CORR	ONSET
☞	u₁w₁a			
	ua			x!
	u₁ʔ₁a	x!		
	uʔa		x!	
2.	/oa/	BE-IDENT	BE-CORR	ONSET
☞	o₁w₁a	x!		
	oa			x
	oʔa		x!	

> **Copy L/R else do not epenthesize:**
> COPY-L/R, DEP » TRIGGER

❑ *An advantage of this analysis*:

  Cases like this have usually been explained by invoking a context-sensitive triggering constraint.   e.g. 'anti-hiatus' constraints like *VV, or the use of

constraints like IO-ANCHOR-Left. Note that the Dutch case would require separate constraints like *{i,u}V *vs* *{~i,~u}V.

This analysis shows that such constraints are unnecessary – they can be eliminated in favour of less complex constraints like ONSET and NOCODA once the relationship between other elements are better understood.

❑   Vowel example: e.g. Damascene Arabic: CC]$_\sigma$ → CiC, except word-finally:

(35) ||COPY-RIGHT, DEP » *CC » M(V→i) » IDENT-F||

/katabt/	COPY-RIGHT	DEP	*CC]$_\sigma$	M(V→i)	IDENT-F
katabt$_i$i$_i$	x!				x
katabt$\underline{a}$		x!		x	
☞ katabt			x		
/atkba/	COPY-RIGHT	DEP	*CC]$_\sigma$	M(V→i)	IDENT-F
☞ atk$\underline{i}_1$ba$_1$					x
atk$\underline{a}_1$ba$_1$				x!	
atk$\underline{i}$ba		x!			
atkba			x!		

Even though the epenthetic vowel is default (i.e. not faithful) it still is in correspondence due to DEP.

4.2.2 "Except when…"

(i) Markedness Causes Direction Reversal (≈ Mirror Image Rules)

❑   In Maori loanwords, total harmony takes place:

(36)   hanawit$\underline{i}$ 'sandwich', ha:men$\underline{e}$ 'summon', ha:p$\underline{a}$ 'harp', ho:r$\underline{o}$ 'hall',

hep$\underline{e}$tema 'September', ha:m$\underline{a}$rara 'umbrella', kok$\underline{o}$roihe 'cockroach'.

❑   Medially, though, the direction of copy is variable:

(37)   Illustrated with "*i* vs V"
         a_i: [a:t$\underline{i}$ɾi:kona]   'archdeacon'
         i_a: [piɾin$\underline{i}$ha]   'prince'
         i_e: [pih$\underline{i}$kete]   'biscuit'
         u_i: [hu:p$\underline{i}$rimi]   'supreme'

❑   There is a pattern: if [i] is available, it is copied.

❑   [i] is the least marked vowel in Maori (independent evidence from passive/ nominalisation allomorphy – Blevins 1994).

❑   This can be explained as a case of markedness driving direction:

"Copy left (COPY-LEFT), except when there is a less marked vowel to the right (M(V→i)), copy to the right (COPY-RIGHT)."

(38) Markedness-Driven Reversal: ‖MARKEDNESS » DIRECTION‖

1.	/pirinha/	BE-IDENT	M(V→i)	COPY-LEFT
☞	piri$_1$n$\underline{i}_1$ha			x
	pirin$\underline{a}_1$ha$_1$		x!	
2.	/heptema/	BE-IDENT	M(V→i)	COPY-LEFT
☞	he$_1$p$\underline{e}_1$tema		x	x
	he$_1$p$\underline{i}_1$tema	x!		

☞ Similar situation in Oscan (Buck 1904, Anderson 1974) and West Greenlandic C-epenthesis (Cearley 1970).

Markedness-Driven Direction:

BE-FAITH » M » COPY-L/R

(ii)   Faithfulness Causes Direction Reversal

❑ Faroese (Anderson 1974): Glide epenthesis copies an adjacent /i/ or /u/.

(i) The [i,u] can precede or follow the glide.
(ii) In the context i_u or u_i, the glide copies the leftmost vowel.

Analysis:
❑ Glides are restricted to [j] or [w].
❑ [j] and [w] are identical (except for a mora) to [i] and [u], resp.
❑ So, copying [i] or [u] will incur less faithfulness violations than copying, e.g. [e], [o], or [a].

"Copy left (COPY-LEFT), except when a more faithful copy is available (IDENT-F) to the right (COPY-RIGHT)."

(39)   **Faithfulness Driven Reversal: ‖IDENT-F » DIRECTION‖**

	/oi/	BE-IDENT-F	COPY-LEFT	COPY-RIGHT
☞	o$\underline{j}_1$i$_1$		x	
	o$_1\underline{w}_1$i	x!		x
	/ui/	BE-IDENT-F	COPY-LEFT	COPY-RIGHT
☞	u$_1\underline{w}$i			x
	u$\underline{j}_1$i$_1$		x!	

4.3   Summary

☞ The aim of this section was to introduce the 'dynamic' notion of Base of Epenthesis.

☞ The Base is the best possible segment that an element could correspond to.

5   Conclusions

❑ We have introduced a theory of epenthesis that makes crucial use of a correspondence relation between the epenthetic element and other output segments.

❑ This expresses the idea that copy epenthesis is akin to reduplication.

❑ By using correspondence, the problem of line-crossing encountered in autosegmental theory is avoided.

Typology:

❑ Permuting constraints – both markedness and faithfulness – produces a variety of attested types of epenthetic processes and responses to epenthesis; these range from totally faithful copy through partial copy to default segmentism.

❑ The constraints also account for cases of "Do x except when" situations in epenthesis.

❑ The Dynamic Definition of Base was introduced. It was shown how various permutations of constraints produced a typology of different epenthetic element—Base pairings.

❑ The constraints not only account for epenthetic quality, but for the triggers and repairs attested in epenthetic processes.

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References

Alderete, John, Jill Beckman, Laura Benua, Amalia Gnanadesikan, John McCarthy, and Sue Urbanczyk. (in press) "Reduplication with Fixed Segmentism." Rutgers Optimality Archive #226. [to appear in LI]

Anderson, S. R. (1974). <u>The Organization of Phonology</u>. New York, Academic Press.

Bickmore, Lee S. 1995. 'Refining and Formalizing the Tahitian Stress Placement Algorithm.' *Oceanic Linguistics* 34.2:410-442.

Blevins, Juliette. 1994. 'A Phonological and Morphological Reanalysis of the Maori Passive'. **Te Reo** 37:29-53.

Buck, C. D. (1904). <u>A Grammar of Oscan and Umbrian.</u> Boston, Ginn & Company.

Cearley, Alvin. 1970. "Epenthesis, Metathesis, and Assimilation in West Greenlandic." CLS (Special edition on Eskimo Linguistics).

Clements, G. N. and E. V. Hume (1995). The internal organization of speech sounds. in J. A. Goldsmith, Ed. <u>The Handbook of Phonological Theory</u>. Cambridge, MA, and Oxford, UK, Blackwell**:** 245-306.

de Lacy, Paul. (1998) "A Cooccurrence Restriction in Maori." *Te Reo* (the most recent one).

de Lacy, Paul (1999) "Circumscriptive Morphemes and Haplologizing Reduplicants." Talk (to be) presented at AFLA VI.

Elenbaas, Nine (1999) *A Unified Account of Binary and Ternary Stress: Considerations from Sentani and Finnish*. OTS: LOT.

Feldman, Harry. (1986) "A Grammar of Awtuw." Pacific Linguistics B – No.94.

Frajzyngier, Zygmunt & Robert Koops. (1989) "Double-Epenthesis and N-Class in Chadic." in Zygmunt Frajzyngier (ed.) *Current Progress in Chadic Linguistics*. Philadelphia: John Benjamins, pp.233-250.

Hume, E. (1992). Front Vowels, Coronal Consonants, and their Interaction in Nonlinear Phonology, Cornell University.

Ito, J. (1986). Syllable Theory in Prosodic Phonology, University of Massachusetts, Amherst.

Ka, Omar. (1994) "Wolof Phonology and Morphology." London: University Press of America.

Kitto, Catherine (1997). *Epenthesis and Polynesian Loanwords*. MA Thesis, University of Auckland.

McCarthy, J. (1991). <u>On gutturals</u>, University of Massachusetts, Amherst.

McCarthy, J. J. and A. S. Prince (1994). "The emergence of the unmarked: Optimality in prosodic morphology." in M. Gonzàlez, Ed. *Proceedings of NELS 24*. Amherst, MA: GLSA, pp. 333-379.

McCarthy, J. J. and A. S. Prince (1995). "Faithfulness and Reduplicative Identity". in J. Beckman, S. Urbanczyk and L. Walsh Dickey, (eds) *University of Massachusetts Occasional Papers in Linguistics UMOP 18*. Amherst, MA: GLSA, pp.249-384.

Metcalfe, C.D. (1975) "Bardi Verb Morphology." Pacific Linguistics B30.

Miner, K. (1989). "Winnebago accent: The rest of the data." <u>Anthropological Linguistics</u> **31**: 148--172.

Sapir, E. (1922). "The Takelma language of southwestern Oregon." <u>Bulletin of American Ethology</u> **40**(2): 1--296.

Steriade, D. (1990). Gestures and autosegments: Comments on Browman and Goldstein's paper. in J. Kingston and M. Beckman, Ed. <u>Papers in Laboratory Phonology</u>. Cambridge, Cambridge University Press.

Wiltshire, Caroline. 1998. "Extending ALIGN constraints to new domains." *Linguistics* 36.3: 423-468.

Woolams, Geoff. 1996. "A Grammar of Karo Batak, Sumatra." *Pacific Linguistics* C-130.