## Comparative Markedness, Grandparents, Derived Environments

1. Summary: grandfather and derived environment effects (to be described below) plus a subset of counterfeeding opacity cases can be analyzed by distinguishing old from new markedness violations.

2. Source: McCarthy 2003, Theoretical Linguistics. Paper on the MIT server is a longer version of this.

3. Key new notion: the FFC. The fully faithful candidate is *the best of the fully faithful surface candidates* from some UR. It is fully faithful because it differs, if at all, from the UR only wrt modifications not penalized by any correspondence constraints. Thus, if Ident [±syll] does not exist and if Ident syllable position does not exist, then the FFC of lexical entry /sɪzl/ (no syllable structure, no syllabic values) is [sɪ.z̩l], with syllable structure and syllabicity values added. FFC ≠ [sɪ.zəl]: this candidate violates DEP.

4. Each markedness constraint M is now bifurcated into two, $M_O$, and $M_N$: if, for any M, a candidate violates M and *so does the FFC*, then that represents a violation of $M_O$. Otherwise an M violation is of $M_N$.

5. $M_O$ violation      $M_N$ violation            (figure from McCarthy)
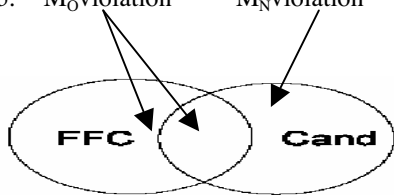


6. Quote: "These novel markedness constraints distinguish between:
-- Mappings that fail to correct a marked configuration in the FFC. E.g., the mapping /ab/-> ʔab fails to correct the marked voiced obstruent in the FFC *ab*. That is, the NOVCDOB violation in ʔab is 'old' because the fully faithful candidate *ab* has the same violation; and
-- Mappings that introduce new marked configurations. E.g., the mapping /ampa/ -> *amba* (i.e., post-nasal voicing) introduces a voiced obstruent that is not present in the FFC *ampa*. That is, the NOVCDOB violation in *amba* is 'new' because the fully faithful candidate *ampa* doesn't have this violation." (McCarthy 2003: 2)

7. In conjunction with faithfulness, the new constraints describe two classes of phenomena
   a. $_N M \gg F \gg _O M$ : grandfather effects, derived environment effects (DEEs)
   b. $_O M \gg F \gg _N M$ : noniterating processes, coalescence paradoxes, counterfeeding opacity

8. Grandfather effects: Mekkan Arabic [αvoice] Assimilation
   a. Voiced obstruent assimilates to following voiceless
      /ʔagsam/ ʔaksam 'he swore an oath', /mazku:r/ masku:r 'mentioned'
   b. But not vice-versa. Assimilation can't create marked voiced obstruents
      /ʔakbar/ ʔakbar, *ʔagbar 'older'
   c. Otherwise, voiced obstruents, even codas, are treated faithfully
      /ʔibnu/ ʔibnu 'his son', /dabdaba/ dabdaba 'pitter-pat (footsteps)'

9. The analysis, bearing in mind that Ident voice $\gg _O$NoVcdOb as shown by [ʔibnu] (tableau from McC)
   Mekkan Arabic: $_N$NOVCDOB ≫ AGREE(voice) ≫ IDENT(voice)

| /ʔagsam/ | $_N$NOVCDOB | AGREE(voice) | IDENT(voice) |
|---|---|---|---|
| a.    ☞ ʔaksam | | | * |
| b.    (FFC) ʔagsam | | *! | |
| /ʔakbar/ | | | |
| c. (FFC) ☞ ʔakbar | | * | |
| d.      ʔagbar | *! | | * |

10.  Blocked self feeding: Lardil apocope

/pulumunitami/    pulumunita    'young f. dugong' cf. pulumunitamin
/kurumpuwa/       kurumpu       'tata-spear' cf. kurumpuwan
/muŋkumuŋku/      munkumu       'wooden axe' cf. muŋkumuŋkun

$_O$M >> Faith >> $_N$M:  M = *V/_#; other relevant M is Coda = apical

| muŋkumuŋku | $_O$*V/_# | $_{O,N}$Coda = apical | MAX seg | $_N$*V/_# |
|---|---|---|---|---|
| muŋkumuŋku | *! | | | |
| muŋkumuŋk | | *! | * | |
| muŋkumuŋ | | *! | ** | |
| ☞muŋkumu | | | *** | * |
| muŋkum | | *! | **** | |
| muŋku | | | *****! | * |

11.  Blocked self feeding: non-iterative spreading (Ekegusii, Bickmore 1996)

/kór-a/     kórá      'to do'        /káan-er-a/    káánera    'to deny for'
/kór-er-a/  kóréra    'to do for'    /símek-er-a/   símékera   'to plant for'

a. failure of standard  Agree H (*HL) or Align H

| kór-er-a | Agree H | Faith |
|---|---|---|
| kórera | *! | |
| ⊛kóréra | *!* | * |
| ☞kórérá | | ** |

b. success of  $_O$Agree H($_O$HL); assume that the FFC is computed on a concatenation of root + affix UR's

| kór-er-a | $_O$Agree H | Faith | $_N$Agree H |
|---|---|---|---|
| kórera | *! | | |
| ☞kóréra | | * | * |
| kórérá | | **! | |

12.  Counterfeeding: back to Hindi ...nəb... -> …nb… while nb -> mb
$_O$M >> Faith >> $_N$M:  M = Agree place
But recall that in this case there is an alternative using scalar (distantal) faithfulness, as discussed earlier.
Here the appropriate scale is one of linear adjacency between nasality and oral constriction.

13.  Derived environments: $_N$M >> Faith >> $_O$M
**Environment derived wrt rule R**:  information necessary for R's application is introduced by  morpheme concatenation or  by the application of a previous phonological rule. Upshot: information necessary for R's application is not present in the UR of any one morpheme. (Kiparsky 1968, 1973, 1993 and in between.)

**DEE effect**:  rule is blocked from applying in a non-derived environment.

14.  Ruki rule (Sanskrit). s -> ṣ/  r, u, k, i ____ (following string must not contain  ṣ  or r)

a.    -si '2 sg'        *da-da:-si*      'give'      *bi-bhar-ṣi*     'carry'
      -s-  aorist       *a-ja:s-am*      'go'        *a-bhar-ṣ-am*    'carry'
      -sya- future      *kram-sja-ti*    'stride'    *vak-ṣja-ti*     'speak'
      -sa- desid.       *di-da:-sa-ti*   'give'      *ni-ni:-ṣa-ti*   'lead'
       -su 'Dat pl'     *sena:-su*       'army'      *agni-ṣu*        'fire'
                        *marut-su*       'wind'      *madhu-ṣu*       'honey'

b. ṣ is not an allophone of s.
     *ṣaṣ-* 'six',   *ka:ṣtha* 'piece of wood',   *ba:ṣpa* 'tear',   *bha:ṣ-* 'speak',   *ṣṭhi:w-* 'spit'

c. DEE effects: ruki fails morpheme-internally unless previous rule applies
     *kisalaya* 'flower',   *kusuma* 'sprout',   *bṛsi* 'ascetic's seat'   *pis-* 'stretch',   *busa* 'thicket'.

d. Ruki applies in derived environments morpheme-internally, when fed by Ablaut (delete unaccented a, also occasionally unaccented a: -> i or i:)

| | | |
|---|---|---|
| *bu-báudh-a* | *budh-aná* | 'wake' |
| *swáp-a-te* | *sup-tá* | 'sleep' |
| *wjá:-ja-ti* | *wji-tá (vi:-tá)* | 'envelop' |
| *çás-ti* | *çiṣ-ṭá* | 'order, instruct' |
| *çwas-iti* | *çuṣ-ántam* | 'blow' |
| *wás-tawe* | *uṣ-ṭá* | 'shine' |
| *ghás-ati* | *dʒa-kṣ-úr* | 'devour' |

15. DEE (first pass) = ₙM >> Faith >> ₒM

| kisalaya | ₙRuki | Ident anter | ₒRuki |
|---|---|---|---|
| ☞kisalaya | | | * |
| kiṣalaya | | *! | |

| was-tá | Ablaut | ₙRuki | Ident anter | ₒRuki |
|---|---|---|---|---|
| wastá | *! | | | |
| ustá | | *! | | |
| ☞uṣtá | | | * | |

Further assimilatory action generates actual form [uṣṭá].

16. Prediction:      since DEE = ₙM >> Faith >> ₒM
                 and counterfeeding = ₒM >> Faith >> ₙM
                 the same process triggered by M cannot be both opaquely counterfed and subject to DEE

17. Meskawaki Apache (Thomas Wier CLS 2004)
     Palatalization:      a. /ni·mi-t-i/ ni·mi**tʃi** 'he dances' cf. /ni·mi-t-a/ ni·mi**ta** '(he) who dances'
                         b. /e·h-in-et-i/ e·hine**tʃi** 'one addressed him thus'
                         c. /pye·t-ike·-w-a/ pye·**tʃi**ke·wa 'he is bringing (something)'
     DEE:                  a. /e·h-ma·watʃim-ti·-wa·-t-i/ e·hma· watʃiti·wa·tʃi 'they called each other together'
                         b. /paʃito·h-etike/ paʃito·he**ti**ke 'old men!' (voc. pl.)
                         c. /ti·kwe·-w-i/ **ti**·kwe·wi 'it patters'
                         d. /taneti·-w-aki/ tane**ti**·waki 'they gamble, make bets'
                         e. -eti·- reciprocal suffix; –etiso- middle voice suffix; –etike- vocative plural suffix
     Counterfeeding:      a. /nekotw-itʃiʃe/ neko**ti**tʃiʃe 'one inch' cf. /nekotw-ayaki/ nekotwayaki 'one group'
                         b. /na·-nekotw-i/ na·neko**ti** 'one apiece, one by one'
                         c. /otʃity-i/ otʃi**ti** 'bird's rump or tail' cf. /otʃity-ani/ otʃity-e·ni 'bird's tails'

18. An alternative: say DEE is indeed ₙM >> Faith >> ₒM, but the counterfeeding interaction with glide deletion is an effect of faithfulness to the degree of overlap:

| Palatal and TT constriction | Non-adjacent | Adjacent | Overlap |
|---|---|---|---|
| twi | √ | | |
| ti | | √ | |
| tʃi | | | √ |

19. Sketch of analysis:
    a.  Palatalization in DE:                              nimit-i [nimitʃi]: $_N$*ti >> Ident anterior
    b.  Palatalization blocked in NDE:                     eti [eti]: Ident anterior >> $_O$*ti
    c.  Palatalization counterfed in DE by w-deletion:     tw-i [ti]:  Ident 2-overlap >> $_N$*ti

20. Partial conclusion:
    • CM may be useful in analysis of DEE, though there are other options
    • and in the analysis of grandfather effects, where it has no rival
    • but there are better options for counterfeeding opacity, in which case
    • only $_N$M >> Faith >> $_O$M is  motivated.

21. McCarthy's approach to an easier version of this problem:
    • Latin *flo:s, flo:r-is, rosa, vid-s-us -> vi:sus*: DEE wrt *s-> r/V_V*; process counterfed by *ds -> s*
    • For any M  and any form of correspondence (IO, BD, BR), M is split into Corr $_N$M and Corr $_O$M.
    • Phonological DEE (like Macassarese or Finnish): IO $_N$M >> Faith >> IO$_O$M
    • Morphological DEE  (like Latin): OO $_N$M >> Faith >> OO$_O$M
    • Counterfeeding and Morphological DEE (Latin): OO $_N$M, IO$_O$M >> Faith >> OO$_O$M, IO $_N$M
    • Morphological and phonological DEE (like Sanskrit): OO $_N$M, IO $_N$M >> Faith >> OO$_O$M, IO$_O$M

22. Why Meskawaki might still a problem:
    To invoke OO $_N$M >> Faith >> OO$_O$M, the FFC must be identical to the base of affixation, a surface form.
    But Meskawaki /ni·mi-t-i/ ni·mit**ʃi** 'he dances' (cf. /ni·mi-t-a/ ni·mi**ta** '(he) who dances') does not contain a
    base [ni·mi-t] and therefore the FFC cannot be defined, on the assumption that bases are free forms.

23. What we have learned in the last few weeks about opacity and related:

| Phenomena | Devices |
| --- | --- |
| (i)Counterfeeding | (a)Local Kirchnerian Conjunction |
| (ii)Counterbleeding | (b)Expanded Gnanadesikan-style faithfulness |
| (iii)Non-self feeding processes | (c) CM |
| (iv)Grandfather effects | (d) Stratal OT |
| (v) Derived Env. Effects | (e) Kawahara-Faithfulness among variants |
| (vi) Suffixed truncation[1] | (f) Sympathy |

The best matches between analytical devices and phenomena seem to be as follows:

| | |
| --- | --- |
| (iii)Non-self feeding processes | (b)Expanded Gnanadesikan-style faithfulness |
| (i) Counterfeeding | (e) Kawahara-Faithfulness among variants[2] |

| | |
| --- | --- |
| (iv)Grandfather effects | |
| (v) Derived Env. Effects | (c) CM |

| | |
| --- | --- |
| (ii)Counterbleeding | ? |
| (vi) Suffixed truncation[1] | |

Sympathy, Kirchner-Conjunction and Stratal OT can solve some of these problems but, in their current form,
they can do too much, hence the reluctance to view the outstanding problems as solved. Certain counterbleeding
interactions can be viewed as expanded faithfulness, à la (b), but these have not been discussed or explored.

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[1] This is the counterbleeding truncation (*Gabriele -> Gabi, *Gabri* ) you have analyzed in HW 7. I find it hard to
classify as normal counterbleeding (with suffixation counterbleeding coda cluster simplification) because I don't
understand why the simple bleeding version of the process remains unattested.

[2] Kawahara faithfulness makes sense of several among the allophonic opacity cases.