Daniel Silverman UCLA Phonology Seminar March 12, 1991

THE BINARY FOOT IN CANTONESE: AGAINST THE IAMB (or: Bipedalism in the Descendants of Peking Man)

- 0. Basics of Cantonese morpho-phonology
 - 1. Segment Inventory:

(aspiration is represented by inverse commas)

- 2. Tonal Inventory:
 - 55 (H) 53 (HM) 33 (M) 35 (MH) 22 (L) 24 (LM) 21
- 3. morphemes are almost exclusively monosyllabic
 - syllables are obligatorily bimoraic (Duanmu 1990)
 - syllables are superficially (C)VX -- no branching onsets, no branching codas
 - one tone is lexically associated with each morpheme
 - the segmental phonology and the tonal phonology are both extremely impoverished.
- 1. Yip's arguments for the iamb
 - according to Yip, iambicity (weak-strong) in Cantonese is achieved primarily through pitch prominence: [[T] [H]]
 - 4. hypocoristics (Yip 1990, from Whitaker 1955,6))

```
familiar names
/yip[L]/ -> a[M] yip[LH]
/ts'an[L] -> a[M] ts'an[LH]
/tsoeng[HM] -> a[M] tsoeng[H]
```

```
family relations
/kung[M]/ -> a[M] kung[H] "maternal grandfather"
/t'ai[M]/ -> a[M] t'ai[MH] "great grandmother"
/kao[L] fu[L] -> kao[L] fu[LH] "mother's brother"
```

```
names based on birth order
    /yi[L]/
                   -> a[M] yi[H]
                                       "Number 2"
                   -> a[M] ng[LH]
                                       "Number 5"
    /ng[LM]/
    /sap[L] sei[M] -> sap[L] sei[MH]
                                       "Number 14"
                                       "Number 15"
    /sap[L] ng[LM] -> sap[L] sei[LH]
    nicknames
    /pai[HM]/
                                            "the lame"
                    -> a[M] pai[H]
    /fei[LM]/ -> a[M] fei[LH]
                                           "the fat"
                                            "the yellow-
    /wong[L] mou[L]/-> wong[L] mou[LH]
                                            haired one"
    /m ng[L] pei[L]/-> m ng[L] pei[LH]
                                           "deformed nose"
Assumed process:
- iambic template
- associate to head (i.e. second syllable)
- fill first syllable with default melodic material if
 necessary
- make second syllable more prominent (i.e. attach a [H])
5.
    loanword phonology
    - stressed syllables perceived as [H] toned
    game
              kem[H]
                                  Jack
                                           tsik[H]
    show
              sou[H]
                                  hi-fi
                                           hai[H] fai[H]
    - non-primary-stressed syllables perceived as [M] toned
                                 cigar syt[M] ka[H]
    quitar kit[M] t'a[H]
    - derived syllables perceived as [L] toned
              si[L] t m[H]
                                  fluke
                                          fu[L] luk[H]
    stamp
    stick
             si[L] tik[H]
                                  cream
                                          kei[L] lim[H]
    - final rise: [L], [M] -> [MH]
              ma[H] tsin[MH]
                                 salad sa[H] loet[MH]
    margin
    inch
              in[H] tsi[MH]
                                  post
                                          p'ou[H] si[MH]
6.
    truncated loanwords
                                 philosophy fi[M] lo[H]
    insurance in[M] so[H]
    biology pai[M] o[H]
                                 psychology sai[M]k'o[H]
    tutorial [t'iu[M] t'o[H]
                                 political science
                                            p'ou[M]lit[H]
```

/ku[H] ts'e[H] -> ku[H] tse[H] "paternal aunt"

7. C-liquid clusters

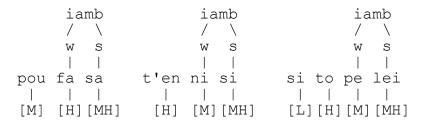
epenthesis:

deletion:

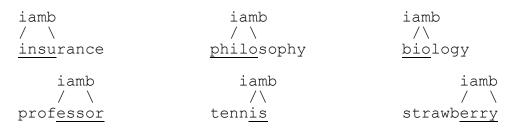
8. polysyllabic loanwords

9. Yip's conclusions:

- pressure to achieve iambicity in loans
- iambic template is applied to right edge of form, thus accounting for polysyllabic forms:



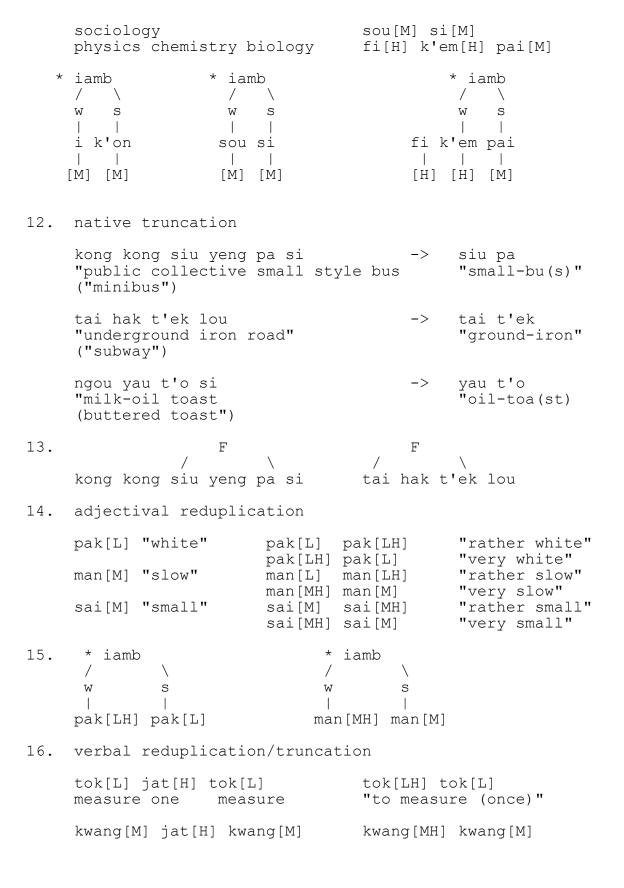
10.



2. Against the iamb

11. more truncated loanwords

economics i[M] k'on[M]



stroll one stroll "to walk around (a while)"

- 17. * iamb * iamb * iamb / \ / \ w s w s tok tok kwang kwang t'iu t'iu [MH] [M] [LH][L] [MH] [M]

3. Bisyllabic minimality in derived environments?

19. Truncation

```
->
                                    k' m pou
composition
                               ->
               ->
                               ->
geography
                                    tsok ka
marketing
                ->
                               ->
                                    ma
                                          k'et
                          r
resident
               ->
                               ->
                                    re
                                          si
insurance
               ->
                               ->
                                    in
                                          SO
                          u
                                    fi
philosophy
                               ->
                                          10
               ->
political
                          n
 science
                               ->
                                    p'ou lit
English
                          С
 literature
                               ->
                                    ing
                                          lit
university
                          а
 library
                ->
                               ->
                                    ju
                                          lai
tutorial
               ->
                               ->
                                    t'iu t'o
economics
                ->
                               ->
                                    i
                                          k'on
sociology
                ->
                               ->
                                          si
                                    sou
                                         k'0
psychology
               ->
                               ->
                                    sai
                          0
biology
                ->
                               ->
                                    pai
                                         0
                          n
physics
               ->
                               ->
                                    fi
                                    k'em
chemistry
               ->
                               ->
```

(physics chemistry biology -> fi[H] k'em[H] pai[M])

20. Hypocoristics

```
input
                    suffixation
                                         bisyllabic minimality
yip[L]
               ->
                    yip[LH]
                                    ->
                                         a[M]
                                                   yip[LH]
ts'an[L]
               ->
                    ts'an[LH]
                                    ->
                                         a[M]
                                                   ts'an[LH]
tsoeng[HM]
               ->
                    tsoeng[HMH]
                                    ->
                                         a[M]
                                                   tsoeng[H]
ng[LM]
               ->
                    ng[LMH]
                                    ->
                                         a[M]
                                                   ng[LH]
(no. 5)
wong[L] mou[L] ->
                    wong[L] mou[LH]->
(the yellow-haired one)
sap[L] sei[M] ->
                    sap[L] sei[MH] ->
(no. 14)
```

- 4. Retreat: Derived environments that violate bisyllabic minimality
 - 21. changed tone in common nouns

```
("comb-y")
pei[M]
          (comb)
                       pei[MH]
                                 ("stool-y")
tang[HM]
          (stool)
                   ->
                       tang[H]
         (pliers) -> k'im[LH]
                                ("pliers-y")
k'im[L]
                                ("plane-y")
p'aw[L]
         (plane)
                  -> p'aw[LH]
                   -> hap[LH] ("box-y")
hap[M]
         (box)
                   ->
         (crane)
                       hok[MH]
                                ("crane-y")
hok[M]
```

- 5. Bisyllabic minimality in Mandarin
 - 22. Tonal inventory:

23. Tone Sandhi rule:

24. Lexical tone neutralization:

- b./xiao[3]/ /jie[3]/ -> xiao[2] jie[5]
 little sister young lady
 - /ke[3]/ /yi[3]/ -> ke[2] yi[5] able okay
 - /lao[3]/ /shu[3]/ -> lao[2] shu[5] old rat rat
- 26. Rule ordering (cf. 25b):
 - 1. Tone Sandhi
 - 2. Tone neutralization
- 26. terms of familial address:
 - a./ge[1]/ -> ge[1] ge[5] (elder brother)
 /ye[2]/ -> ye[2] ye[5] (elder brother)
 /ba[4]/ -> ba[4] ba[5] (father)
 - b./jie[3]/ -> jie[3] jie[5] (elder sister)
 /sao[3]/ -> sao[3] sao[5] (elder brother's wife)
 /lao[3]/ -> lao[3] lao[5] (maternal grandmother)
 /nai[3]/ -> nai[3] nai[5] (grandmother)
- Tone neutralization bleeds Tone Sandhi
- Cheng (1973): TS applies across word-boundaries only. Reduplication of terms of familial address is a stem-level process.
- The output of the lexicon must be bisyllaic
- No reference to derived status of form
- Assume a similar constraint holds in Cantonese

6. Conclusions

- The iamb does not exist in Cantonese
- Iambic quality of hypocorisitcs, loanwords, etc. is an artifact of two fully independent processes:
- 1. tonal suffixation, usually denoting familiarity
- 2. a binary foot template applied within certain lexical classes (loanwords, hypocorostics, terms of familial address), and applied to all truncated and reduplicated forms.