

THE PHONOLOGICAL REPRESENTATION OF ENGLISH LOANWORDS IN CANTONESE
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(0) INTRODUCTION

- (1) Host language speakers have no access to the phonological representation of incoming loanwords
 (2) Two levels of loanword phonology:
 1) PERCEPTUAL LEVEL: parsing the input signal into segment-sized chunks, providing native feature matrices
 2) OPERATIVE LEVEL: full prosodization triggers phonological processes which are peculiar to the loanword phonology

(3) Cantonese segment inventory

p	t	ts	k	k'	i	ü	u
p'	t'	ts'	k'	k''	ɛ	ɔ	o
f		s			h	v	a
m	n		ng				
l					y	w	

(aspiration is indicated by inverse commas, ng = ŋ)

(4) Acceptable codas

p	t	k
m	n	ng
w	y	

(5) Lexical tones

55 ([H])	53 ([HM])
33 ([M])	35 ([MH])
22 ([L])	24 ([LM])
21	

(6) STRESS - TO - TONE

- (7) English primary stress → [H] tone
 English non-primary stress → [M] tone
- a. [card] → [kat[H]] b. [cigar] → [syt[M] ka[H]]
 [gin] → [tsin[H]] [guitar] → [kit[M] t'a[H]]

(8) Epenthesized vowels → [L] tone

- [fluke] → [fu[L] luk[H]]
 [stamp] → [si[L] tam[H]]
 [stick] → [si[L] tik[H]]
 [break] → [pi[k[L] lik[H]]]
 [cream] → [kei[L] lim[H]]

- (9) input: [stamp] [stick]
 Perceptual Level: [s[L] t^øm[H]] [s[L] tik[H]]
 Operative Level: [si[L] t^øm[H]] [si[L] tik[H]]
 surface: [si[L] t^øm[H]] [si[L] tik[H]]

(10) Tonal suffixation

- (a) [body] → [p>[H] ti[MH]]
 (b) [cello] → [ts'ɛ>[H] lou[MH]]
 (c) [fashion] → [fa>[H] soen[MH]]

- (11) a. [buffet] → [pou[M] fei[H]]
 [cigar] → [syt[M] ka[H]]
 b. [motor] → [m>[H] ta[MH]]
 [soda] → [s>[H] ta[MH]]
 c. [stick] → [si[L] tik[H]]
 [fluke] → [fu[L] luk[H]]
 d. [lace] → [lei[H] si[MH]]
 [film] → [fei[H] l>m[MH]]

(12) Prosodization precedes tonal suffixation

- [bus] → [pa[H] si[MH]] (*pa[H] si[L]])
 [lace] → [lei[H] si[MH]] (*lei[H] si[L]])

(13) Domain of Pitch Contrast Analysis: <English free morpheme>

- (14) [dockyard] → [<t>k[H]> <ja[H]>]
 [floorshow] → [<f>[H]> <sou[H]>]
 [sideboard] → [<sai[H]> <put[H]>]

(15) CONSTRAINTS AT THE PERCEPTUAL LEVEL

(16)

Perceptual Uniformity Hypothesis:

At the Perceptual Level, identically perceived input is uniformly provided with identical feature matrices

(17) English voicing contrast is neutralized

- a. [ball] → [p^b] b. [sideboard] → [sai put]
 [game] → [k^tm] [salad] → [sa loet]

(18) English /r/ is perceived as /l/

- a. [bearing] → [p^f ling]
 b. [warrant] → [w^r loen]
 c. [lorry] → [l^r lei]

(19) English /sh/ is perceived as /s/

- [show] → [sou]
 [sharp] → [sap]
 [shaft] → [svp]

(20) English derived aspiration is perceived as lexical

- [pie] → [p'ai] [bumper] → [p^bm pa]
 [tie] → [t'ai] [motor] → [m^t ta]
 [cut] → [k^ht] [chocolate] → [t^{ch} ku lik]

(21) English /v/ is perceived as /w/

- [valve] → [wa lou]
 [volume] → [w^v l^m]

(22) THE OPERATIVE LEVEL: PROCESSES TRIGGERED BY PROSODIZATION

- (23) C → [-cont] / _____]
 (24) [film] → [fei l^{dm}] [shaft] → [s^{hp}]
 [floorshow] → [f^s sou] [lift] → [l^{ip}]
 (25)
 - 1. input: [shaft] [lift]
 2. Perceptual Level: [⟨saft⟩] [⟨lift⟩]
 s s
 /|\ /|\
 3. Operative Level: [s^{hp}] [lip]
 /|\ /|\
- (26) C → [-s.q.] / _____]
 (27) [salad] → [sa lot] [card] → [k'at]
 (28)
 - 1. input: [salad] [card]
 2. Perceptual Level: [⟨sa lot(')⟩] [⟨k'at(')⟩]
 s s
 /|\ /|\ /|\
 3. Operative Level: [sa lot] [k'at]
 /|\ /|\ /|\
- (29) Ø → V / s] _____
- (30)
 - a. [tips] → [tip si]
 [waste] → [wai si]
 b. [stamp] → [si tam]
 [store] → [si t^e]
- (31)
 - 1. input: [tips] [store]
 2. Perceptual Level: [⟨tipa⟩] [⟨stɔr⟩]
 s s
 /|\ /| /|\ /|
 3. Operative Level: [tip si] [si t^e]
 /|\ /| /|\ /|

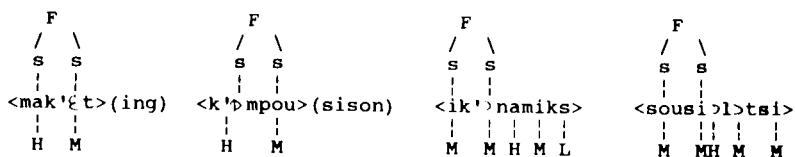
(32) EVIDENCE FOR LEVEL-ORDERED LOANWORD PHONOLOGY: THE ANALYSIS OF TRUNCATED FORMS

(41) SAMPLE DERIVATIONS

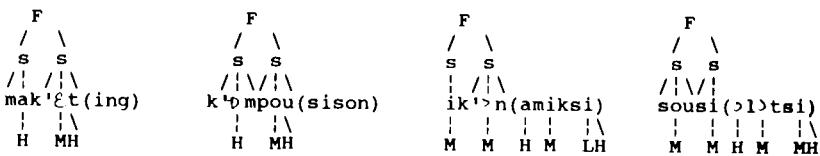
1. INPUT:

[marketing] [composition] [economics] [sociology]

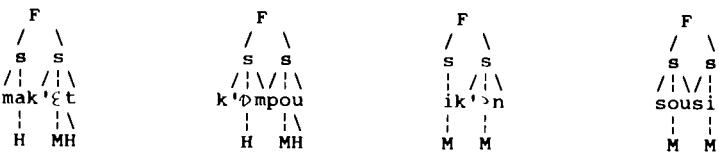
2. SCANSION ONE (PERCEPTUAL LEVEL)



3. SCANSION TWO (OPERATIVE LEVEL)



4. STRAY ERASURES:



5. SURFACE:

[mə(H)k'ɛt̪ MH] [k'ɒm(H)pou MH] [i(M)k'ɔ:n M] [sou M si M]

(42) CONCLUSIONS

- 1) Cantonese speakers do not have access to English phonological representation
- 2) Cantonese loanword phonology possesses two distinct ordered levels
- 3) PERCEPTUAL LEVEL: parsing the input signal into segment-sized chunks, providing native feature matrices, lexical tones, and syllable nodes
- 4) OPERATIVE LEVEL: full prosodization triggers phonological processes which are peculiar to the loanword phonology
- 5) Operative Level processes are available through Universal Grammar
- 6) Scansion One = Perceptual Level
Scansion Two = Operative Level

References

- Bauer, R. 1985. The Expanding Syllabary of Hong Kong Cantonese. C.L.A.O. vol.XIV.1: 99-111.
- Chao, T. R. 1947. A Cantonese Primer. Harvard-Yenching Institute, Cambridge.
- Chao, Y.R. 1968. A Grammar of Spoken Chinese. UC Berkeley Press.
- Cheng, C.C. 1973. A Synchronic Phonology of Mandarin Chinese. Mouton, The Hague, Paris.
- Cheng, R.L. 1985. Sub-Syllabic Morphemes in Taiwanese. ms., UH Manoa.
- Cohn, A. 1991. The Consequences of Dissimilation in Sundanese. LSA Annual Meeting, Chicago.
- Dell, F. and M. Elmedlaoui 1985. Syllabic Consonants and Syllabification in Imdlawi Tashlihyt Berber. Journal of African Languages and Linguistics 7.2.
- Duanmu, S. 1990. A Formal Study of Syllable, Tone, Stress and Domain in Chinese Languages. Ph.D. dissertation, MIT.
- Gandour, J. 1976. Aspects of Thai Tone. Ph.D. dissertation, UCLA.
- Gandour, J. 1979. Tonal Rules for English Loanwords in Thai. South East Asian Linguistic Studies, v.4, The Australian National University.
- Hayes, B. 1988. Compensatory Lengthening in Moraic Phonology. ms., UCLA.
- Hyman, L. 1985. A Theory of Phonological Weight. Foris, Dordrecht.
- Ito, J. 1986. Syllable Theory in Prosodic Phonology. Ph.D dissertation, UM Amherst.
- Ito, J. 1989. A Prosodic Theory of Epenthesis. Natural Language and Linguistic Theory 7, 217-259.
- Ito, J. 1990. Prosodic Minimality in Japanese. Syntax Research Center, UCSC.
- Kao, D.L. 1971. Structure of the Syllable in Cantonese. Mouton, The Hague, Paris.
- Katada, F. 1990. On the Representation of Moras: Evidence From a Language Game. Linguistic Inquiry 21, 641-646.
- Kearns, K. 1990. The Glottal Fricative in Maori. ms., MIT.
- Kiparsky, P. 1973. "Phonological Representations." in Three Dimensions of Linguistic Theory, TEC Company, Tokyo.
- Levin, J. 1985. A Metrical Theory of Syllacticity. Ph.D. dissertation, MIT.
- Lim, Yeonjoo 1990. English Loanwords in Korean. ms., UCLA.
- Lovins, J.B. 1975. Loanwords and the Phonological Structure of Japanese. Ph.D. dissertation, Tsuda College.
- McCarthy, J.J. 1986. OCP Effects: Gemination and Antigemination. Linguistic Inquiry 17, 207-263.
- McCarthy, J.J., and A.S. Prince 1986. Prosodic Morphology. ms., UM Amherst, Brandeis U.
- Mester, R.A. 1990. Patterns of Truncation. Linguistic Inquiry 21, 478-485.
- Miura, A. 1979. English Loanwords in Japanese. Charles E. Tuttle Company.
- Silverman, D. 1991. Level-Ordered Loanword Phonology: Evidence from Cantonese. ms., UCLA.
- Silverman, D. 1991b. The QI Binary Foot in Cantonese: Against the Iamb. Presentation, Phonology Seminar, UCLA.
- Steriade, D. 1988. Reduplication and Syllable Transfer in Sanskrit and Elsewhere. Phonology 5, 73-155.
- Whitaker, K.P.K. 1955/6. A Study on the Modified Tones in Spoken Cantonese. Asia Major 5.1, 5.2, 9-36, 184-207.
- Yip, M. 1980. The Tonal Phonology of Chinese. Ph.D. dissertation, MIT.
- Yip, M. 1988. The Obligatory Contour Principle and Phonological Rules: A Loss of Identity. Linguistic Inquiry 19, 65-100.
- Yip, M. 1989. Cantonese Morpheme Structure and Linear Ordering. ms., Brandeis U.
- Yip, M. 1990. The Phonology of Cantonese Loanwords: Evidence for Unmarked Settings for Prosodic Parameters. ms., Brandeis U.
- Yip, M. 1990b. From the Foot Down: Prosodic Phonology and Morphology in Chinese. Presentation, East Asian Linguistics Workshop, UC Irvine.
- Zec, D. 1990. Sonority Constraints on Prosodic Structure. Ph.D. dissertation, Stanford U.
- Zhang, R.S. 1986. Xianggang Guangzhouhua yingyu yinyi jieci de shengdiao guilu (Tonal Rules for English Loanwords in Hong Kong Cantonese). Zhongguo Yuwen (Chinese Language) 42-50.

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