カジュアル・スピーチにおける有標性について

Japanese Linguistics 14 (October, 2003) 73 - 97 〔Article〕

Markedness in casual speech

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Keywords
Optimality Theory, *LAB, *ɾ, MAX-IO

Abstract

There is a cross-linguistic tendency to opt for less marked structures in fast and/or casual speech, and Japanese is no exception. While every segment in an underlying representation should be realised at the surface level in formal speech, marked segments and marked structures are systematically avoided in casual speech. Two such marked segments in Japanese are the labial and the flap. The systematic avoidance of labials and flaps, however, does not apply to every morpheme; it is in fact applied only to closed-class items, and even among closed-class items there are some positions where labials and/or flaps are protected from deletion. In Optimality Theory (Prince & Smolensky 1993), all these can be accounted for by means of constraint interaction, and in this paper I propose that casual Japanese have the following constraint ranking:

MAX-IO(Open), MAX_{INIT}-C-IO >> *LAB >> MAX-IO(Root), MAX_{FIN}-C-IO
>> *ɾ >> MAX-C-IO >> MAX-V-IO

1. INTRODUCTION

A variety of syncope and contraction processes are observed in casual speech of Japanese; some involve vowel deletion in order to avoid a violation of ONSET (Itô 1989) and/or *STRUC (Prince & Smolensky 1993) and others involve consonant deletion so that the surface form will not incur a violation of some featural markedness constraints.[1] In this paper I will show how very general constraints, such as *LAB (Prince & Smolensky 1993), *ɾ (McCarthy & Prince 1995) and MAX-IO (McCarthy & Prince 1994), interact in various ways to account for colloquial forms, including dramatic abbreviation of /keɾedomo/ 'although' and /keɾeba/ 'if' to [kedo] and [kʲa], respectively, within the framework of Optimality Theory (henceforth, OT).

This paper develops as follows: Section 2 focuses on labial deletion and, by accounting for the contraction of /te#simaw+ɯ/ 'end up -ing', an attempt is made to establish basic constraint ranking in casual speech. In Section 3 avoidance of flaps is dealt with and how *ɾ interacts with other constrains is briefly discussed. The interaction of MAX-C-IO (Kager 1999) with *LAB and *ɾ is the focal point of Section 4, in which the final constraint ranking is established through the analysis of the contraction of /keredomo/ 'although' and /kereba/ 'if'.

2. UNDERPRONUNCIATION OF LABIALS

Underpronunciation of labials has been well attested throughout the history of Japanese. Classical Japanese saw the loss of /w/ before non-low vowels and the gradual featural change of /p/ >/ɸ/ > /h/, while Modern Japanese presents various instances of labial deletion in casual speech. Examples of the latter include:

(1) Labial deletion in casual speech[2,3]

Underlying	Surface (formal)	Surface (casual)	Gloss
a. sum+i+mas+eN	sumimaseN	suimaseN	'excuse me, I am sorry'
b. so+ɾe#de#wa	soɾedewa	soɾedʒa	'then'
c. mi+te#simaw+ɯ	miteʃimaɯ	mitʃaɯ	'end up watching'

2.1. Frequency Effects and Underpronunciation of Labials

With the exception of /w/ before non-low vowels, full verb root-final labials are never deleted (e.g. /kam+i+mas+ɯ/ → [kamimasɯ]/*[kaimasɯ] 'bite', /tob+i+mas+ɯ/ → [tobimasɯ]/ *[toimasɯ] 'fly, jump'). This is because of the constraint ranking: ***wV[-low]** >> **MAX-IO(Open)** >> ***LAB**, that is, *wV[-low] dominates MAX-IO(Open), which in turn dominates *LAB.

(2) Constraints I

a. ***wV[-low]**: Velar glides are disallowed before non-low vowels.[4]

b. **MAX-IO(Open)**: No deletion of segments from open-class items.

c.***LAB**: Labials are disallowed (Prince & Smolensky 1993, Beckman 1998, among others).

(1a), therefore, is an isolated case. Arisaka (1959:152) argues that commonly used words and phrases tend to be pronounced casually and to be realised incompletely but that they can still be understood because people are accustomed to such incomplete forms.[5] Unarguably /sum+i+mas+eN/ 'excuse me, I am sorry' is one such commonly used word and the deletion of the root-final labial can be ascribed to the interaction of frequency effects and underpronunciation of labials.[6]

In casual speech, the topic/contrast marker /wa/ often undergoes a contraction process with the preceding closed-class item when the latter ends in a front vowel, as seen in (1b) and the following:[7]

(3) Contraction of /e#wa/ and /i#wa/ to /ja/ in casual speech[8]

Underlying	Surface (Formal)	Surface (Casual)	Gloss
a. te#wa	tewa / dewa	tʃa / dʒa	*te*-form + /wa/
b. de#wa	dewa	dʒa	particle /de/ + /wa/
c. de#wa#na+i	dewanai	dʒanai	'be not' (copula /de/ + /wa/)
d. ni#wa	niwa	ɲa	particle /ni/ + /wa/
e. watasi#wa	wataʃiwa	wataʃa	'I (TOPIC)'

The following data are from the survey I conducted in 1993-1994: (Tables (7), (20), (27) and (33) are also from the same survey; the source of the data is listed at the end of this paper.)

(4) Occurrence and realisation of (3a-c) according to formality of speech[9, 10]

/te#wa/	Formal	Semi-formal	Casual	Total
[tewa /dewa]	4 (40%)	2 (29%)	0 (0%)	6 (9%)
[tʃa / dʒa]	6 (60%)	5 (71%)	47 (100%)	58 (91%)
Total	10 (100%)	7 (100%)	47 (100%)	64 (100%)

/de#wa	Formal	Semi-formal	Casual	Total
[dewa]	9 (69%)	5 (21%)	3 (8%)	17 (23%)
[dʒa]	4 (31%)	19 (79%)	34 (92%)	57 (77%)
Total	13 (100%)	24 (100%)	37 (100%)	74 (100%)

/de#wa#na+i/	Formal	Semi-formal	Casual	Total
[dewanai]	21 (28%)	7 (7%)	1 (1%)	29 (8%)
[dʒanai]	54 (72%)	93 (93%)	172 (99%)	319 (92%)
Total	75 (100%)	100 (100%)	173 (100%)	348 (100%)

From a derivational theoretical point of view, this contraction can be accounted for as follows:

(5) Derivational theoretical analysis of contraction of /te#wa/, /de#wa/ and /de#wa#na+i/[11]

	te#wa	de#wa	de#wa#na+i
labial deletion	tea	dea	deanai
glide formation	tja	dja	djanai
assibilation	tʃa	dʒa	dʒanai]

In Japanese, the first consonant of a morpheme does not normally drop even in casual speech. The motivation for this is the necessity to clearly indicate where within a word or a phrase each morpheme starts. This can be formulated in the form of a constraint as follows:

(6) Constraint II

a. **MAX_{INIT}-C-IO**: No deletion of the leftmost consonant of a morpheme.

MAX_{INIT}-C-IO is a positional faithfulness constraint (see Beckman (1998) for Positional Faithfulness Theory) and it outranks *LAB, so that a labial is not deleted when it is the first consonant of a morpheme, whether the morpheme is an open-class item or a closed-class item, as seen in the polite morpheme /mas/ → [mas] (see (1a)).

Here, however, a problem arises. If MAX_{INIT}-C-IO dominates *LAB, why is /w/ deleted from /wa/? I believe that this is another case caused by the interaction of frequency effects and underpronunciation of labials.[12] /wa/ is undoubtedly one of the most commonly used particles and its frequent use is the driving force behind the deletion of the initial /w/.[13]

2.2. Labial Deletion from Closed-class Items

When /simaw+ɯ/ is used as a full verb meaning 'put away', contraction never occurs due to MAX-IO(Open). However, when used as an auxiliary verb, it almost always undergoes a contraction process with the preceding *te*-from in casual speech, as seen in (1c) and the following table:

(7) Occurrence and realisation of /te#simaw+ɯ/ 'end up -ing' according to formality of speech

/te#simaw+ɯ/	Formal	Semi-formal	Casual	Total
[teʃimaɯ /deʃimaɯ]	8 (44%)	20 (24%)	8 (5%)	36 (14%)
[tʃaɯ / dʒaɯ]	10 (56%)	62 (76%)	151 (95%)	223 (86%)
Total	18 (100%)	82 (100%)	159 (100%)	259 (100%)

Within the framework of OT, the contraction of /te#simaw+ɯ/ to [tʃaɯ] can be accounted for by the interaction of the three constraints introduced in (2) with those in (8).

(8) Constraints III

a. **ALIGN-SFX**: Align(Root, R, Suffix, L) - The left edge of the suffix must coincide with the right edge of a root (McCarthy & Prince 1994, 1995). For instance, a violation is incurred in /kaw+ɯ/ → [kaɯ] 'buy' due to w-deletion at the root-suffix boundary.

b. **CVLINKAGE**: Every consonant-vowel sequence forms a linked domain headed by the vowel (Itô & Mester 1995b). This has the effect of requiring a consonant to assimi-

late its place of articulation to the following vowel (e.g. /si/ → [ʃi]).

c. **CODACOND**: A syllable-final consonant is placeless (Itô 1986, 1989, McCarthy & Prince 1986). In Japanese the first half of a geminate, a nasal homorganic to the following stop consonant or liquid, and a word-final nasal are the only licit coda consonants.

d. **IDENT-IO(place)**: The place of articulation of an output segment must be the same as that of the input correspondent (Kager 1999). /si/ → [ʃi], for instance, incurs its violation.

e. **MAX-C-IO**: Input consonants must have output correspondents (ibid.).

f. **MAX-V-IO**: Input vowels must have output correspondents (ibid.).

g. **ONSET**: Syllables must have onsets (Itô 1989, McCarthy & Prince 1994, among others).

Let us first consider the interaction of *LAB, IDENT-IO(place) and MAX-C-IO.

(9) Factorial typology (i.e. all logically possible rankings of a set of constraints)

a. *LAB >> IDENT-IO(place) >> MAX-C-IO	'deletion of labials'
b. *LAB >> MAX-C-IO >> IDENT-IO(place)	'change of place'
c. IDENT-IO(place) >> * LAB >> MAX-C-IO	'deletion of labials'
d. IDENT-IO(place) >> MAX-C-IO >> * LAB	'no deletion of labials or change of place'
e. MAX-C-IO >> * LAB >> IDENT-IO(place)	'change of place'
f. MAX-C-IO >> IDENT-IO(place) >> * LAB	'no deletion of labials or change of place'

In the contraction process in question, the labial is in fact deleted (/te#simaw+ɯ/ → [tʃaɯ]), so both *LAB and IDENT-IO(place) must dominate MAX-C-IO. This eliminates all but (9a) and (9c). When an underlying labial cannot be deleted due to some high-ranking constraint, such as MAX-IO(Open) or MAX_{INIT}-C-IO, on the other hand, the labial surfaces as it is without its place of articulation being altered (e.g. /kam+i+mas+ɯ/ → [kamimasɯ]/*[kanimasɯ]/*[kaminasɯ]/*[kaninasɯ] 'bite'). This means that IDENT-IO(place) outranks *LAB and that the correct ranking of the three constraints is (9c).

From /simaw+ɯ/ → [ʃimaɯ] 'put away', we know that CVLINKAGE dominates IDENT-IO (place) (because of /si/ → [ʃi]) and that *wV[-low] dominates ALIGN-SFX and ONSET (because of /aw+ɯ/ → [aɯ]). (If CVLINKAGE were dominated by IDENT-IO(place), no place of articulation could be altered; if *wV[-low] were outranked by ALIGN-SFX, no segment could be deleted across a root-suffix boundary, and if ONSET were ranked higher than *wV[-low], /aw+ɯ/ would surface as [awɯ], [a] or [ɯ] depending on the ranking of the other constraints.) Also from the fact that /w/ does not change to /j/ just to get around ONSET violation (e.g. *[ʃimajɯ]), we know that IDENT-IO(place) outranks ONSET.

We have so far established the following rankings:

(10) Ranking schemata in casual speech I

a. CVLINKAGE >> IDENT-IO(place)	[just discussed above]
b. *wV[-low] >> ALIGN-SFX, ONSET	
c. IDENT-IO(place) >> ONSET	
d. *wV[-low] >> MAX-IO(Open) >> *LAB	[see the discussion in (2)]
e. MAX_{INIT}-C-IO >> *LAB	[see the discussion in (6)]
f. IDENT-IO(place) >> *LAB >> MAX-C-IO	[see the discussion in (9)]

CVLINKAGE, CODACOND and *wV[-low] are never violated so they are undominated constraints. /w/ can be deleted from /wa/, as shown in (3), so MAX_{INIT}-C-IO is not undominated, and ALIGN-SFX, IDENT-IO(place) and MAX-IO(Open) are all violable in order to satisfy either *wV[-low] or CVLINKAGE (10a, b, d). However, since there is no further evidence to demote any of these four constraints to the same stratum as or below the rest of the constraints, I assume that they are all ranked in the second highest stratum. Both ONSET and *LAB are outranked by IDENT-IO(place) (10c, f) but as the relative ranking between them cannot be established from the data at hand, I assume that they are ranked together in the third stratum. As for the remaining two constraints, MAX-C-IO and MAX-V-IO, vowels are readily deleted to avoid ONSET and/or *STRUC (i.e. no syllables; see (36) below) violation in casual speech (see Note 1 for some examples), so I assume that MAX-V-IO is ranked below MAX-C-IO. This yields the following ranking:

(11) Ranking schema in casual speech II

CVLINKAGE, CODACOND, *wV[-low]	[First stratum]
>>	
ALIGN-SFX, IDENT-IO(place), MAX-IO(Open), MAX_{INIT}-C-IO	[Second stratum]
>>	
ONSET, *LAB	[Third stratum]
>>	
MAX-C-IO	[Fourth stratum]
>>	
MAX-V-IO	[Fifth stratum]

This ranking correctly selects optimal candidates for /simaw+ɯ/ 'put away', /te#simaw+ɯ/ 'end up -ing' and /te#simaw+i+mas+ɯ/ 'end up -ing (POLITE)', respectively, as shown in the following tableaux: (The constraints none of the candidates violates are omitted from the tableaux.)

(12) Tableau for /simaw+ɯ/ 'put away' in casual speech[14]

Input: /simaw+ɯ/	CV LINKAGE	CODA COND	*wV [-low]	ALIGN -SFX	IDENT-IO (place)	MAX-IO (Open)	ONSET	*LAB	MAX-C-IO	MAX-V-IO
a. ☞ ʃimaɯ				*	*	*	*	*	*	
b. ʃaɯ				*	*	**!	*		**	
c. ʃiaɯ				*	*	**!	**		**	
d. saɯ				*		***!	*		**	*
e. ʃima				**	*	*!		*	*	*
f. ʃimawɯ			*!		*			**		
g. ʃimaw		*!		*	*			**		*
h. simawɯ	*!		*					**		

NB: Note the number of violation marks in the MAX-IO(Open) and MAX-V-IO columns in this tableau (also in (13) and (14)). I consider /si/ → [ʃ] (via /sj/) as glide formation, in which the /i/ features move into the onset /s/, and that /i/ is not deleted at the surface level.[15]

(13) Tableau for /te#simaw+ɯ/ 'end up -ing' in casual speech[16]

Input:/te#simaw+ɯ/	CV LINKAGE	CODA COND	*wV [-low]	ALIGN -SFX	IDENT-IO (place)	ONSET	*LAB	MAX-C-IO	MAX-V-IO
a. ☞ tʃaɯ				*	*	*		**	*
b. tʃimaɯ				*	*	*	*!	*	*
c. teʃimaɯ				*	*	*	*!	*	
d. teʃinaɯ				*	**!	*		*	
e. tʃa				**	*!			**	**
f. tʃawɯ			*!		*		*	*	*
g. tʃaw		*!		*	*		*	*	**
h. tesimawɯ	*!		*				**		

(14) Tableau for /te#simaw+i+mas+ɯ/ 'end up -ing (POLITE)' in casual speech[17]

Input: /te#simaw+i +mas+ɯ/	CV LINKAGE	*wV [-low]	ALIGN -SFX	IDENT-IO (place)	MAX_{INIT} -C-IO	ONSET	*LAB	MAX-C-IO	MAX-V-IO
a.☞ tʃaimasɯ			*	*		*	*	**	*
b. tʃimaimasɯ			*	*		*	**!	*	*
c. teʃimaimasɯ			*	*		*	**!	*	
d. tʃainasɯ			*	**!		*		**	*
e. tʃamasɯ			**	*!			*	**	**
f. tʃawasɯ[18]			*	*	*!		*	**	**
g. tesimawimasɯ	*!	*					***		

3. AVOIDANCE OF FLAPS

In Japanese there seems to have been a tendency to avoid flaps. The following are some such examples observed in Classical Japanese and Modern Japanese:

(15) Avoidance of flaps in Classical Japanese (Kishida 1984)

	Surface	Contracted	Gloss
a.	kenaɾiɲe	kenaɲe	'brave'
b.	naɾetsɯkɯ	natsɯkɯ	'get used'
c.	saɾaba	saba	'if so'
d.	odoɾokasɯ	odokasɯ	'surprise'
e.	aɾɯmeɾi	ammeɾi	'there seems'

NB: The phonetic transcription is based on Modern Japanese phonetics and it may not necessarily represent the actual pronunciation in Classical Japanese.

(16) Avoidance of flaps in casual speech of Modern Japanese

	Underlying	Surface	Contracted	Gloss
a.	kosiɾae+ɾɯ	koʃiɾaeɾɯ	kosaeɾɯ	'produce'
b.	tokoɾo	tokoɾo	toko	'place'
c.	iɾo+RED+na	iɾoiɾona	iɾonna	'various'
d.	oki+ɾaɾe+ɾɯ	okiɾaɾeɾɯ	okiɾeɾɯ	'can get up'
e.	wakaɾ+ana+i	wakaɾanai	wakannai	'not know, not understand'

Both /kosiɾae/ 'produce' (16a) and /tokoɾo/ 'place' (16b) are open-class items, so deletion of any segment from these words should be prohibited by MAX-IO(Open). /iɾo+RED+na/ 'various' (16c), on the other hand, involves reduplication and, because of high-ranking **MAX-BR** and **IDENT-BR** (McCarthy & Prince 1994, 1995),[19] the reduplicant should be as faithful as possible to the base. Therefore, we should consider (16a-c) as isolated cases, yet the contraction is still due to avoidance of flaps.[20,21]

Forms like (16d) called *ranuki kotoba* or the short form, which is the potential form without /ɾ/ and /a/, are frequently observed nowadays both in speech and in writing. The contraction of /ɾaɾe/ to [ɾe] started to appear early in the *Showa* period (1926-1989) and quickly spread in the second half of the same period (Tsukishima 1988:111). In some dialects (Nagoya dialect, for one) this contraction is now applicable to the potential form of any vowel-final root verb or *1-dan* verb, but in standard Japanese the potential form does not seem to be contracted readily if the root has more than two moras. Since the speakers of standard Japanese who use the contracted potential form do not contract the passive form despite its underlying representation being identical to that of the

potential form,[22] I assume that such speakers possess two underlying potential morphemes for *1-dan* verbs: /ɾe/ for mono- and bimoraic roots and /ɾaɾe/ for roots with more than two moras.

(17) Potential morphemes for the speakers who use the contracted potential form

a. For mono- and bimoraic roots: /ɾe/

e.g.	/mi+ɾe+ɾɯ/ →	[miɾeɾɯ]	'can see/watch'
	/tabe+ɾe+ɾɯ/ →	[tabeɾeɾɯ]	'can eat'
cf.	/mi+ɾaɾe+ɾɯ/ →	[miɾaɾeɾɯ]	'be seen/watched'
	/tabe+ɾaɾe+ɾɯ/ →	[tabeɾaɾeɾɯ]	'be eaten'

b. For three- or more-mora roots: /ɾaɾe/

e.g.	/wasɯɾe+ɾaɾe+ɾɯ/ →	[wasɯɾeɾaɾeɾɯ]	'can forget'
	/kangae+ɾaɾe+ɾɯ/ →	[kaŋgaeɾaɾeɾɯ]	'can think'

I believe that the deletion of /ɾ/ and /a/ from the potential form is due to haplology and avoidance of flaps, and that the reason why shorter-root verbs undergo contraction more readily than longer-root verbs is that there are more words that are frequently used in the former group of verbs than in the latter, as the following table shows. Apparently, frequency plays some role here as well.

(18) No. of vowel-final verbs found in the frequency ranking of The National Institute of Japanese Language (1962)

moras in root	No. of vowel-final verbs in frequency ranking										Sub-total	Total entries
	~100	~200	~300	~400	~500	~600	~700	~800	~900	~1000		
1	3	1	0	1	0	0	0	0	0	0	5	7
2	1	3	2	2	2	0	3	3	3	2	21	70
3	0	0	2	1	5	2	2	5	3	1	21	86
4+	1	0	0	0	0	0	0	0	0	0	1	61
Total	5	4	4	4	7	2	5	8	6	3	48	224

NB: Verbs that are never used in the potential form are excluded.

Flap nasalisation is another manifestation of avoidance of flaps. Unlike such isolated cases as (16a-c), flap nasalisation is a systematic process, which the root-final /ɾ/ undergoes in casual speech when followed by /ana/ 'not' (16e), /i+nasai/ (command), /ɯ#no/ (question), etc., as seen below.

(19) Nasalisation of flaps in casual speech[23, 24]

	Underlying	Surface (formal)	Surface (casual)	Gloss
a.	kaeɾ+ana+i	kaeranai	kaennai	'not return'
b.	jaɾ+i+nasai	jarinasai	jannasai	'do!'
c.	haiɾ+ɯ#no	hairɯno	hainno	'enter?'

Of the above three types of flap nasalisation /ɾ+ana+i/ → [nnai] is observed the most commonly, and the contracted form is almost predominant in casual speech, as the following table shows:

(20) Occurrence and realisation of /ɾ+ana+i/ 'do not' according to formality of speech[25]

/ɾ+ana+i/	Formal	Semi-formal	Casual	Total
[ɾanai]	2 (67%)	10 (42%)	4 (17%)	16 (31%)
[nnai]	1 (33%)	14 (58%)	20 (83%)	35 (69%)
Total	3 (100%)	24 (100%)	24 (100%)	51 (100%)

Forms like (16e) and (19a) can be analysed in a derivational theory as follows:

(21) Derivational theoretical analysis of contraction of /wakaɾ+ana+i/ and /kaeɾ+ana+i/

	wakaɾ+ana+i	kaeɾ+ana+i
vowel deletion	wakaɾnai	kaeɾnai
flap nasalisation	wakannai	kaennai

In this analysis, however, one may wonder why a vowel is deleted from a well-formed syllable. In OT the process can be accounted for by the interaction of the previously introduced constraints with a few additional constraints but, as a thorough analysis of flap nasalisation is beyond the scope of this paper, I will restrict myself to giving a brief account under the Notes (see No.26).

Kishida (1998:120) ascribes a tendency of /ɾ/ to drop with a neighbouring vowel, or to assimilate to a neighbouring consonant, to its fragility due to weak contact of the tongue with the alveolar ridge. In this section we will examine the feasibility of featural markedness constraint *ɾ (no flaps; McCarthy & Prince 1995) in Japanese.

3.1. The Constraint *ɾ

McCarthy & Prince (1995) propose *ɾ to account for an allophonic alternation between [d] and [ɾ] in Tagalog, in which the latter occurs intervocalically.

(22) *VdV >> *ɾ in Tagalog (McCarthy & Prince 1995:89)

/ma-Dāmot/ 'stingy'	*VdV	*ɾ
a. ☞ marāmot		*
b. madāmot	*!	

/Dāmot/ 'stinginess'	*VdV	*ɾ
a. ɾāmot		*!
b. ☞ dāmot		

In Japanese both intervocalic [d] and word-initial [ɾ] are allowed.[27]

(23) Minimal pairs with [d] / [ɾ] in Japanese

a. sode	'sleeve'	mɯda	'waste'	kido	'wooden door'
soɾe	'that one'	mɯɾa	'unevenness'	kiɾo	'way back'
b. deN	'biography'	daN	'step'	dokɯ	'poison'
ɾeN	'ream'	ɾaN	'orchid'	ɾokɯ	'six'

Thus, *ɾ manifests itself in Japanese not in accounting for allophonic alternation, as seen in Tagalog, but through differences between formal and casual speech.[28]

3.2. Interaction of *ɾ with Other Constraints

Although there is a tendency to avoid flaps in casual speech, it is not the case that flaps can be deleted or assimilated to nasal in any environment. For instance, the flaps in (24a-b) never drop and those in (24c-d) never undergo nasalisation.

(24) Non-avoidance of flaps

Underlying	Surface (formal)	Surface (casual)	Gloss
a. kɯɾɯma	kɯɾɯma	kɯɾɯma	'car'
b. te#moɾaw+ɯ	temoɾaɯ	temoɾaɯ	'receive a favour of -ing'
c. taiɾa+na	taiɾana	taiɾana	'flat'
d. haɾe#naɾa	haɾenaɾa	haɾenaɾa	'if the weather is good'

This is because: (24a) is a noun, which is an open-class item, and MAX-IO(Open) militates against deletion of the flap; although /moraw/ in (24b) is an auxiliary verb, which is a closed-class item, it is a root (Japanese has some roots in closed classes) and **MAX-IO(Root)** (see (25a) below) prevents the flap from being deleted; both /taira/ in (24c) and /hare/ in (24d) are open-class items and, because their respective morpheme-final vowels cannot be deleted due to MAX-IO(Open), the nasalisation of the preceding flaps is prevented. Non-deletion of the flap from /nara/ 'if', in spite of

the fact that /naɾa/ is a particle/closed-class item, is due to **MAX_{FIN}-C-IO** (see (25b) below).

(25) Constraints IV

a. **MAX-IO(Root)**: No deletion of segments from roots.

b. **MAX_{FIN}-C-IO**: No deletion of the rightmost consonant of a morpheme.

The labial is deleted from /simaw/ when it is used as an auxiliary verb (see (1c)) but the flap is never deleted from /moɾaw/ (24b), so MAX-IO(Root) is dominated by *LAB but not by *ɾ. Root-final flaps may be assimilated to nasal (see (16e) and (19)) but are never deleted, and flaps in closed-class items, such as /naɾa/ 'if' (24d), /kaɾa/ 'from, because', /nagaɾa/ 'while' and /kɯɾai/ 'about', never drop when the flaps are the rightmost consonants of respective morphemes. Therefore, *ɾ is outranked by MAX_{FIN}-C-IO as well. On the other hand, flaps do drop from some morphemes (see (16)), so *ɾ must dominate MAX-C-IO. From these facts, we can establish the following rankings:

(26) Ranking schemata in casual speech III

a. *LAB >> MAX-IO(Root) >> *ɾ >> MAX-C-IO

b. MAX_{FIN}-C-IO >> *ɾ >> MAX-C-IO

(The relative ranking of *LAB and MAX_{FIN}-C-IO will be discussed in the next section.)

4. INTERACTION OF MAX-C-IO WITH *LAB AND *ɾ

The interaction of these constraints emerges from the consideration of the reduced contracted forms, [kedo] 'although' and [kʲa] 'if' - forms which, from a general phonological point of view, look unlikely as optimal candidates for /keɾedomo/ and /keɾeba/, respectively. Therefore, the fact that they do emerge as optimal provides support both for the constraints I propose and their ranking.

4.1. /keɾedomo/

The conjunctional particle /keɾedomo/ 'although' surfaces in four ways: [keɾedomo], [keɾedo], [kedomo] and [kedo], and, as the following table shows, the most reduced form, [kedo], is the one that is most frequently used in casual speech:

(27) Occurrence and realisation of /keredomo/ 'although' according to formality of speech

/keredomo/	Formal	Semi-formal	Casual	Total
[keredomo]	100 (52%)	90 (29%)	10 (8%)	200 (32%)
[keredo]	14 (14%)	28 (9%)	3 (2%)	45 (7%)
[kedomo]	48 (25%)	77 (25%)	8 (7%)	133 (21%)
[kedo]	30 (16%)	116 (37%)	100 (83%)	246 (40%)
Total	192 (100%)	311 (100%)	121 (100%)	624 (100%)

From a derivational theoretical point of view, the contraction of /keredomo/ can be accounted for as follows:

(28) Derivational theoretical analysis of contraction of /keredomo/

	keredomo	keredomo	keredomo	keredomo
labial deletion	N/A	keredoo	N/A	keredoo
vowel deletion	N/A	keredo	N/A	keredo
flap deletion	N/A	N/A	keedomo	keedo
vowel deletion	N/A	N/A	kedomo	kedo
	keredomo	keredo	kedomo	kedo

In terms of OT, labial deletion and flap deletion are due to *LAB and *ɾ, respectively, and vowel deletion is due to avoidance of ONSET violation. Let us first consider which candidate the constraint ranking we have established in (11) and (26a) selects as the optimal candidate for /keredomo/ 'although'. (The constraints none of the candidates violates are omitted from Tableau (29).)

(29) Tableau for /keredomo/ 'although' in casual speech

Input:/keredomo/	MAX_{INIT}-C-IO	ONSET	*LAB	*ɾ	MAX-C-IO	MAX-V-IO
a. ☞ kedo					**	**
b. keredo				*!	*	*
c. kedomo			*!		*	*
d. keredomo			*!	*		
e. keredoo		*!		*	*	
f. keedomo		*!	*		*	
g. ko					***!	***
h. do	*!				***	***

The tableau correctly selects [kedo]. We thus see how independently needed constraints account for striking abbreviation of this conjunction in casual speech, without needing to posit a distinct underlying representation for this register of speech.

In (26) we left the relative ranking of *LAB and MAX_{FIN}-C-IO undecided. What will happen when MAX_{FIN}-C-IO is added to the tableau? MAX_{FIN}-C-IO is ranked above *ɾ (see (26b) above) but it cannot be an undominated constraint because the root-final /w/ is deleted when followed by non-low vowels. Therefore, it could be ranked in any of four ways: (i) in the same stratum as MAX_{INIT}-C-IO, (ii) below MAX_{INIT}-C-IO but above ONSET and *LAB, (iii) in the same stratum as ONSET and *LAB, or (iv) below ONSET and *LAB but above * ɾ. Let us see what will happen if we select (iii).

(30) Tableau for /keredomo/ 'although' in casual speech (revised)

Input:/keredomo/		MAX_{INIT}-C-IO	ONSET	*LAB	MAX_{FIN}-C-IO	*ɾ	MAX-C-IO	MAX-V-IO
a.	kedo				*		**!	**
b.	keredo				*	*!	*	*
c. ☹	kedomo			*			*	*
d.	keredomo			*		*!		
e.	keredoo		*		*!	*	*	
f.	keedomo		*	*!			*	
g.	ko				*		**!*	***
h.	do	*!			*		***	***

This tableau would work well when accounting for another contracted form, [kedomo], which is often used in formal and semi-formal speech, but not when accounting for the most reduced form, [kedo], that is dominant in casual speech. MAX_{FIN}-C-IO, therefore, must be dominated by *LAB.

(31) Tableau for /keredomo/ 'although' in casual speech (further revised)

Input:/keredomo/		MAX_{INIT}-C-IO	ONSET	*LAB	MAX_{FIN}-C-IO	*ɾ	MAX-C-IO	MAX-V-IO
a. ☞	kedo				*		**	**
b.	keredo				*	*!	*	*
c.	kedomo			*!			*	*
d.	keredomo			*!		*		
e.	keredoo		*!		*	*	*	
f.	keedomo		*!	*			*	
g.	ko				*		***!	***
h.	do	*!			*		***	***

With the addition of *ɾ, MAX-IO(Root) and MAX_{FIN}-C-IO, the five-stratum ranking schema in (11) will become a seven-stratum ranking schema, thus:

(32) Ranking schema in casual speech IV

CVLINKAGE, CODACOND, *wV[-low]	[First stratum]
>>	
ALIGN-SFX, IDENT-IO(place), MAX-IO(Open), MAX_{INIT}-C-IO	[Second stratum]
>>	
ONSET, *LAB	[Third stratum]
>>	
MAX-IO(Root), MAX_{FIN}-C-IO	[Fourth stratum]
>>	
*ɾ	[Fifth stratum]
>>	
MAX-C-IO	[Sixth stratum]
>>	
MAX-V-IO	[Seventh stratum]

This ranking schema is interpreted as follows: a labial is deleted unless it is the leftmost consonant of a morpheme or it is in an open-class item, such as a noun, an adjective root or a full verb root; a flap is deleted unless it is either the leftmost or rightmost consonant of a morpheme, it is in an open-class item, or it is in a root, including an auxiliary verb root; all the other consonants are protected from deletion by MAX-C-IO, because there is no *C for any other consonant, or because any such constraints are ranked below MAX-C-IO. Hence /te#simaw+ɯ/ → [tʃaɯ] 'end up -ing' but /te#moɾaw+ɯ/ → [temoɾaɯ] 'receive a favour of -ing', and /keɾedomo/ → [kedo] 'although' but /so+ɾe#de#mo/ → [soɾedemo] 'even so' and /nagaɾa/ → [naŋaɾa] 'while'.[29]

4.2. /kereba/

/kereba/ is a morpheme meaning 'if', which follows the negative morpheme /(a)na/ or an adjective root. In formal speech every segment in /kereba/ should surface as it is, but in less formal speech the morpheme is often contracted to [ker^{j}a] or [k^{j}a].[30] The following table shows how /kereba/ is uttered when preceded by /na/:

(33) Occurrence and realisation of /na+kereba/ 'if not ...' according to formality of speech

/na+kereba/	Formal	Semi-formal	Casual	Total
[nakereba]	19 (39%)	7 (23%)	0 (0%)	26 (24%)
[nakerʲa]	8 (17%)	1 (3%)	0 (0%)	9 (9%)
[nakʲa]	21 (44%)	22 (74%)	29 (100%)	72 (67%)
Total	48 (100%)	30 (100%)	29 (100%)	107 (100%)

The contraction of /kereba/ to [kʲa] is twofold. The following is its derivational theoretical analysis:

(34) Derivational theoretical analysis of contraction of /kereba/[31]

	kereba	
labial deletion	kerea	
glide formation	kerʲa	← [Stage I]
flap deletion	keja	
vowel deletion	kʲa	← [Stage II]

Let us see which of the two forms the seven-stratum constraint ranking we have established in (32) selects as optimal. (Constraints none of the candidates violates are omitted from the tableau.)

(35) Tableau for /kereba/ 'if' in casual speech

Input: /kereba/	ONSET	*LAB	MAX_{FIN}-C-IO	*ɾ	MAX-C-IO	MAX-V-IO
a. kʲa			*		**	*!
b. ka			*		**	*!*
c. ☹ keja			*		**	
d. kerʲa			*	*!	*	
e. kera			*	*!	*	*
f. keba		*!			*	*
g. kereba		*!		*		
h. kerea	*!		*	*	*	

This tableau incorrectly selects an unwanted /keja/. Therefore, we need a constraint that rules out /keja/ before MAX-V-IO eliminates /kʲa/. The constraint is ***STRUC**.[32]

(36) Constraint V

a. ***STRUC**: No syllables (Prince & Smolensky 1993).[33]

Vowel deletion in casual speech only takes place when it does not result in a violation of CODACOND (see Note 1), and it does not induce consonant deletion to avoid CODACOND violation. Therefore, *STRUC must be outranked by MAX-C-IO, and domination of *STRUC by MAX-IO(Open) and all the other MAX-IO constraints but MAX-V-IO allows candidates which comply with it to emerge as optimal only in rare instances, such as [kʲa]. Here is a revised version of Tableau (35).

(37) Tableau for /kɾeba/ 'if' in casual speech (revised)

Input:/ kɾeba/	ONSET	*LAB	MAX_{FIN}-C-IO	*ɾ	MAX-C-IO	*STRUC	MAX-V-IO
a. ☞ kʲa			*		**	*	*
b. ka			*		**	*	**!
c. keja			*		**	**!	
d. kɾʲa			*	*!	*	**	
e. kɾa			*	*!	*	**	*
f. keba		*!			*	**	*
g. kɾeba		*!		*		***	
h. kɾea	*!		*	*	*	***	

5. CONCLUSION

In Japanese there are two featural markedness constraints, namely, *LAB and *ɾ, which have effects in casual speech. Context-free MAX-IO constraints are high-ranking in formal speech; MAX-V-IO is undominated and MAX-C-IO outranks *LAB and *ɾ and, therefore, neither vowel nor consonant deletion takes place. However, when MAX-V-IO and MAX-C-IO are demoted below *STRUC and *ɾ, respectively, the two featural markedness constraints interact with other constraints to create less marked structures by means of deletion of labials/flaps or nasalisation of flaps.

In this paper I have proposed MAX-IO(Open), MAX-IO(Root), MAX_{INIT}-C-IO and MAX_{FIN}-C-IO in order to explain why labials and/or flaps are avoided in some environments but not in others. In derivational theoretical analysis, as seen in (5), (21), (28) and (34), though derivation may look simple and straightforward, extrinsic rule ordering is almost always required. Furthermore, such rule ordering cannot predict to what word each rule applies or which rule is blocked in the process of derivation (see the last paragraph of Section 4.1). In optimality theoretical analysis, on the other hand, as complex as the constraint ranking may look, once it is established, no extrinsic rule ordering is required and the interaction of constraints can precisely predict what word undergoes contraction and what word does not. This, I believe, is the strength of OT over a derivational theory.

I conclude this paper by showing how each transitional stage of constraint reranking deter-

mines the surface forms of /te#simaw+ɯ/ 'end up -ing', /keɾedomo/ 'although' and /keɾeba/ 'if'.

(38) Constraint Reranking[34]

a. Before reranking (formal):

MAX-V-IO >> MAX-C-IO >> *LAB >> *ɾ → [teʃimaɯ] [keɾedomo] [keɾeba]

b. Transitional stage I:

MAX-C-IO >> *LAB >> *ɾ >> MAX-V-IO → [tʃimaɯ] [keɾedomo] [keɾeba]

c. Transitional stage II:

*LAB >> MAX-C-IO >> *ɾ >> MAX-V-IO → [tʃaɯ] [keɾedo] [kerʲa]

d. After reranking (casual):

*LAB >> *ɾ >> MAX-C-IO >>MAX-V-IO → [tʃaɯ] [kedo] [kʲa]

Acknowledgements

I would like to thank two anonymous reviewers for their valuable comments and suggestions. All errors are mine.

Notes

1 Examples of vowel deletion in casual speech include: /no#de/ → [nde] 'because', /anata/ → [anta] 'you', and /atataka+i/ → [attakai] 'warm' (avoidance of *STRUC violation), and the *te*-form followed by a vowel-initial auxiliary verb (e.g. /tabe+te#i+ɾɯ/ → [tabeteɾɯ] 'be eating', /kaw+te#ok+ɯ/ → [kattokɯ] 'buy in advance'; avoidance of ONSET violation). Examples of consonant deletion will be introduced in Sections 2-4.

2 Unless otherwise mentioned, all the examples given in this paper are from the data I gathered in my 1993-1994 survey. I refer to these data simply as the "data" from now on.

3 The form without /m/ in (1a) was observed only once out of seven times in the "data". This was because (i) there were not many situations in which drawing attention or apologising took place in the "data" and (ii) in casual speech /sum+i+mas+eN/ is usually replaced with other expressions, such as [nee] when drawing attention and [gomeN] when apologising. In the dialogues of *Total Japanese*, a set of Japanese textbooks in which colloquial expressions are actively introduced, [sumimaseN] and [suimaseN] are found 25 times and 17 times, respectively, the latter being used more frequently in less formal situations.

In the "data", the contraction of (1b) was observed 44 times out of 45 times (98%).

The contraction of (1c) is briefly discussed in Shibatani (1990:177) and Tsujimura (1996:103). The former provides a derivational theoretical analysis. For statistical data of (1c), see (7).

4 *wV[-low] is dominated by **FAITH** (Itô, Mester & Padgett 1995) in Foreign vocabulary. Therefore, such surface forms as [wiibiŋgɯ] 'weaving', [wediŋgɯ] 'wedding' and [woomiŋgɯappɯ] 'warming up' (all from *Sin Meikai Kokugo Jiten*) are acceptable. For Foreign vocabulary and other strata of vocabulary, see McCawley (1968:ch.2) and Itô & Mester (1995a).

5 Frequency plays an important role in deletion of segments. One example is t-deletion from the

past tense in American English. See Myers & Guy (1995), and for more general frequency effects see Bybee (2001) and Pierrehumbert (2001).

6 I regard /sɯm+i+mas+eN/ → [sɯimaseN] as a case of labial deletion rather than *i-onbin*. *I-onbin*, which started to take place at the beginning of the *Heian* period (794-1192), mainly involved /ki/ and /gi/ (Hattori 1950:84-86, Tsukishima 1988:80-81) due to weak occlusion of such stop consonants, and its consequence is still systematically observed in the *te*-form of a verb with root-final /k/ or /g/ and i-adjectives in Modern Japanese. On the other hand, among verbs with root-final /m/, /sɯm/ seems to be the only one that can lose the root-final consonant before /i/. If *i-onbin* were the norm for /m+i/, I would expect to see many more cases in which the underlying /m+i/ surfaces as /i/. For an analysis of /sɯm+i+mas+eN/ → [sɯimaseN] from the point of view of haplology, see Kishida (1998:118-119).

7 /wa/ also undergoes contraction in casual speech when preceded by a closed-class item with a final back vowel, as in /bokɯ#wa/ → [boka] 'I (TOPIC)' (Shibatani 1990:176).

8 I consider that this process involves labial deletion, which is on a par with Shibatani (1990:176). Another point worth mentioning in regard to (3) is that the process in question often involves compensatory lengthening (CL) as well. Accounting for CL, however, is beyond the scope of this paper. For discussion on CL in Japanese, see Miyara (1980), Fukui (1986), Poser (1988) and Kawahara (2001), among others.

9 'Formal', 'semi-formal' and 'casual' speech includes the following, respectively:

a. Formal: interviews in a formal setting such as those with political leaders on NHK, news reading, narration in documentaries, lectures, conference reports, and conversation between total strangers.

b. Semi-formal: interviews in a less formal setting such as those in TV variety shows, conversation between newscasters and between those who know each other but not too well, and addressing from juniors to seniors (except among family members).

c. Casual: conversation between those who know each other well, such as family members and close friends.

10 Maekawa (2002) reports that the contraction of copula /de/ + /wa/ is much more frequent than that of particle /de/ + /wa/. The results of my survey also show this tendency, although the difference between them is not as prominent as that of Maekawa's.

11 In accounting for the contraction of _site#wa_ 'do-CONJ TOP' and _jonde#wa_ 'read-CONJ TOP', Shibatani (1990:176) employs j-epenthesis and e-deletion instead of glide formation. However, I opt for glide formation in my analysis, following Miyara's (1980:107-111) analysis of the contraction of /kereba/, for the reason that glide formation is a cross-linguistically common process.

12 Other isolated cases of this kind include /watasi/ → [ataʃi] 'I, me' and /eba/ → [ja] 'if', in which the deletion of the first consonant of a morpheme is observed. In both cases the deleted consonants are labials.

13 Needless to say, not every 'isolated case' can be dealt with by means of frequency effects (/kosiɾae+ɾɯ/ → [kosaeɾɯ] 'produce' (16a), for one). I would like to leave this matter to the discernment of future research.

14 No deletion of /ɯ/ can also be ascribed to **RealiseTense**. (/ɯ/ indicates the non-past tense.)

15 A similar process is observed in such languages as Luganda (Katamba 1989:171-172) and Ilkano (Hayes 1989:269-278).

16 *[tsaɯ] is another possible candidate. However, [ts] is not a permissible consonant cluster in Yamato vocabulary unless followed by [ɯ], and for this reason this candidate is eliminated. ([ototsaN] 'father' may be heard but it is not in common use.) [tʃimaɯ] (13b) and [tʃimaimasɯ] (14b) can be heard in casual speech. This variation can be accounted for by promoting MAX-C-IO above *LAB (see (38b)).

17 [(m)ai] (14a-c), [(d)oo] (29e) and [(k)ee] (29f) will not violate ONSET if such a vowel sequence is regarded as a diphthong or a long vowel. However, this analysis will not affect the selection of the optimal candidate because (i) in case of (14a-c) the deciding vote is cast by *LAB, not by ONSET, and (ii) (29e) and (29f) also violate *ɾ and *LAB, respectively, while the optimal candidate (29a) incurs neither violation.

18 Instead of invoking MAX_{INFL}-C-IO to eliminate this candidate, we could consider that (14f) incurs two ALIGN-SFX violations, in which case, MAX_{INFL}-C-IO would become superfluous in this tableau.

19 MAX-BR and IDENT-BR are faithfulness constraints; the former militates against deletion of segments from the base in the process of reduplication, and the latter requires that the reduplicant be identical to the base.

20 Frequency is the important factor of the contraction of (16b-c). According to NIJLA (1962), /tokoro/ and /iro+RED/ are the 50th and the 281st most frequently used word, respectively. In the "data", the contraction of (16b) and that of (16c) were observed 21 times out of 50 times (42%) and 15 times out of 18 times (83%), respectively. In casual speech 15 out of 28 /tokoro/ (54%) were realised as [toko] while in formal speech every /tokoro/ surfaced as [tokoro]. On the other hand, [ironna] was frequently observed across all three registers of speech.

21 (16a) is not a high frequency word and, unlike (16b-c), those who use its contracted form do not seem to realise that they are contracting the word. This assumption is based on the results of my search on the Internet (see the table of the occurrence of [koʃirae] and [kosae] below). Thus, I consider that (16a) is a case of lexicalisation (i.e. /kosae+ɾɯ/ → [kosaerɯ]) for some speakers.

	[koʃirae]	[kosae]	Total
Plain non-past aff. [+ɾɯ]	approx. 5090 (70%)	approx. 2200 (30%)	approx. 7290 (100%)
Plain non-past neg. [+nai]	124 (52%)	115 (48%)	239 (100%)
Plain past aff. [+ta]	approx. 9210 (69%)	approx. 4070 (31%)	approx. 13280 (100%)
Plain past neg. [+nakatta]	12 (55%)	10 (45%)	22 (100%)
Polite non-past aff. [+masɯ]	362 (72%)	141 (28%)	503 (100%)
Polite non-past neg. [+maseN]	8 (62%)	5 (38%)	13 (100%)
Polite past aff. [+maʃita]	approx. 1220 (68%)	585 (32%)	approx. 1805 (100%)
Polite past neg.[+masendeʃita]	5 (100%)	0 (0%)	5 (100%)
Te-form [+te]	approx. 10500 (61%)	approx. 6780 (39%)	approx. 17280 (100%)
Total	approx. 26531 (66%)	approx. 13906 (34%)	approx. 40437 (100%)

22 This is possibly due to the more common use of the potential form than that of the passive form.

23 Closely related is the process /rare+nai/ → [rannai], as seen in the potential and passive forms of *1-dan* verbs. Here the morpheme-final vowel drops in conjunction with flap nasalisation. This is because the vowel is not protected by MAX-IO(Open) or MAX-IO(Root) (see (25a)).

24 In regard to the flap nasalisation applied to the non-past negative form of a verb with root-final /ɾ/, such as (16e) or (19a), Shibatani (1990:176) and Tsujimura (1996:101) make a brief note in their respective publications.

25 The reason why /ɾ+ana+i/ is not used as frequently in formal speech as in semi-formal or casual speech is that in formal speech /ɾ+i+mas+eN/, the polite counterpart of /ɾ+ana+i/, is preferred.

26 A brief account of flap nasalisation in OT:

Input: /wakaɾ+(a)na+i/	CODA COND	NO GAP	ALIGN -SFX	MAX-IO (Open)	ONSET	*ɾ	IDENT-IO(nasal)	*STRUC	MAX-V-IO
a.☞ wakannai					*		*	****	
b. wakaɾanai					*	*!		*****	
c. wakanai			*!	*	*			****	
d. wakananai		*!			*		*	*****	
e. wakaɾnai	*!				*	*		****	
f. waknai	*!		**	**	*			***	*

NB: **NOGAP**: No spread of features between non-adjacent segments (Itô, Mester & Padgett 1995).
IDENT-IO(nasal): Correspondent segments in input and output have identical values for [nasal] (Kager 1999).

I consider the first /a/ in /ana/ in casual speech as a ghost segment which surfaces only when necessary. I believe that the fact that /sin+(a)na+i/ 'not die' does not surface as [ʃinnai] is due to homophony avoidance (cf. /siɾ+(a)na+i/ → [ʃinnai] 'not know'). For ghost segments (or floating segments), see Hyman (1985) and Zoll (1993, 1996), and for discussion on homophony avoidance, see Crosswhite (1999).

27 A large number of native Japanese speakers actually use [l] for word-initial /ɾ/ (Amanuma, et al. 1978:75). However, when there is no pause between a word with initial /ɾ/ and the preceding word, /ɾ/ always surfaces as a flap unless the preceding word ends in a moraic nasal, in which case it surfaces as [l].

28 In fact, even in Japanese the identical d~ɾ alternation can be observed in child phonology and in dialects. However, the one observed in dialects differs from that of Tagalog in that some dialects show both ways of alternation (e.g. /deNwa/ → [reũwa] 'telephone' and /roɯsokɯ/ → [doosokɯ] 'candle' in Shima and Okayama dialects; /ɯdoN/ → [ɯroN] 'noodles' and /karada/ → [kadada] 'body' in Hida dialect (Kishida 1998:348-349)). For the data on the alternation in child phonology, see Ueda & Davis (2001:113-114).

29 The only exceptions that I can think of are: /wa/, /eba/ 'if', personal pronouns /watasi/ 'I, me' and /kimi/ 'you', and an adverbial particle /nomi/ 'only'. I believe that non-contraction of /kimi/ to *[ki] is due to **MAX-IO(Pronoun)** and that of /nomi/ to *[no] is due to homophony avoidance among particles. (I consider [temo], [demo] and [tomo] as /te#mo/, /de#mo/ and /to#mo/, respectively, so they all comply with the interpretation.)

30 The contraction, in fact, is often accompanied by the lengthening of the final vowel (i.e. [keɾʲaa], [kʲaa]) in order to compensate for the loss of mora count. Accounting for this CL, however, is beyond the scope of this paper.

31 I consider the process as labial deletion followed by glide formation, following Fukui (1986) and Poser (1988). Miyara (1980:112) proposes assimilation of /b/ to /a/ before glide formation and Shibatani (1990:176) ,when accounting for /te#wa/ → [tʃa], proposes w-deletion followed by j-epenthesis and e-deletion before assibilation, but their proposals are not compatible with my OT analysis.

32 Another choice is **No V** (no vowels; Orgun 1995).

33 The constraints of the *STRUC family ensure that structure is constructed minimally: a notion useful in syntax as well as phonology, where undesirable options typically involve extra structure (Prince & Smolensky 1993/2002:25). The use of *STRUC in this paper is that of Zoll's (1996) *STRUC(σ), which functions to minimise the total number of syllables in a word.

34 (38) shows how those surface forms can be obtained but not others (e.g. [keɾemo], [kemo] and [komo] for /keredomo/ 'although', due to *LAB >> *ɾ and no such constraint as *d) in Modern Japanese. It also shows that all four rankings are potentially possessed by any one speaker. However, judging from the fact that [tʃimaɯ] was never observed in the "data" and that the occurrence of [keɾedo] and [keɾʲa] is considerably low, it is plausible to say that many simply do not possess (38b) or (38c).

Source of Data for the Survey in 1993-1994

Everyday conversations - a family in Tokyo at a dinner table (40 minutes), a family in Nagoya playing games (45 minutes); conference reports (120 minutes); lectures (240 minutes); TV dramas/movies - *Chûgakusei Nikki: Jukensei Rondo* (NHK: 30 minutes), *Chûgakusei Nikki: Seishun no Blue Jeans* (NHK: 30 minutes), *Meitantei Powaro: Kurabu no Kingu* (NHK: 25 minutes), *Bakayarô 2: Shiawase ni Naritai* (80 minutes), *Magokoro o Kimi ni* (90 minutes); Animations - *Chibi Maruko-chan* (Fuji TV: 60 minutes), *Sazae-san* (Fuji TV: 30 minutes), *Doraemon* (TBS: 45 minutes), *Majo no Takkyûbin* (90 minutes); TV variety shows - *Hirudoki Nippon* (NHK: 25 minutes), *Shinshun Yuttari Kikô* (TV Tokyo: 45 minutes), *Ii Tabi Yume Kibun* (TV Tokyo: 45 minutes); TV language programmes - *Practical Nihongo Kôza* (NHK: 30 minutes), *Eikaiwa I* (NHK: 25 minutes); TV interviews - *Kotoba wa Kawaru: Watashi no Nihongo* (NHK: 25 minutes), *Shinshun Tôshu Interview* (NHK: 120 minutes); TV news programmes - *NHK News 9* (NHK: 30 minutes), *News Digest Tokai* (NHK: 10 minutes), *News Station* (TBS: 65 minutes); TV documentaries - *Shin Nihon Tanbô* (NHK: 100 minutes), *Teshigoto Nippon* (NHK: 30 minutes), *Nihon Bi Sai Hakken* (NHK: 90 minutes), *Yakushima: Genseirin no Shiki* (NHK: 20 minutes), *Ôu Sanmyaku no Shiki* (NHK: 20 minutes), *Yomigaere Nihon no Mori* (TV Asahi: 10 minutes); TV sports programmes - *Daigaku Ekiden* (Yomiuri TV: 30 minutes), *Rugby* (TV Tokyo: 30 minutes); radio talk shows - *Yoshida Takurô & Komuro Hitoshi Talk Session* (FM Aichi: 30 minutes), *Mami no Radical* (Tokai Radio: 30 minutes), *Gaikokugo Sekai e no Izanai* (NHK: 30 minutes); radio music programme - *Sound in Oasis* (FM Aichi: 20 minutes): radio sports programme - *Soccer League Championship* (Tokai Radio: 30 minutes); Comic Magazines - *Big Comic Original January 20th 1994* (Shôgakkan), *Manga Time February 1994* (Hôbunsha); movie subtitles - *Sei Naru Yopparai no Densetsu, Nyû Shinema Paradaisu*; dictionary -

Shin Meikai Kokugo Jiten (Sanseidô 1991). (The data were collected for my 1995 unpublished MA thesis.)

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(Received 27 March 2003)
(Revised version received 1 August 2003)

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『日本語科学』14(2003年10月) 73－97 〔研究論文〕

カジュアル・スピーチにおける有標性について

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キーワード

最適性理論，*LAB，*r，MAX-IO

概 要

カジュアル・スピーチにおいては，母音や音節の脱落や音素の融合による様々な縮約形が頻繁に観察される。「食べている」→「食べてる」，「買っておく」→「買っとく」などは頭子音のない音節の回避のため，また，「あなた」→「あんた」，「あたたかい」→「あったかい」などは母音脱落に伴う音節数減少による発音の簡略化のためと考えられるが，では，「てしまう」→「ちゃう」，「けれども」→「けど」，「ければ」→「きゃ」などの縮約は，どのように説明したらよいのであろうか。

日本語には古代から唇音退化現象や単顫音を避ける傾向が見られていたが，このような傾向は現代語においても，特にカジュアル・スピーチの中に引き継がれているようである。本稿では最適性理論に基づき，*LAB (Prince & Smolensky 1993)，*r (McCarthy & Prince 1995) など既存の制約に MAX-IO (McCarthy & Prince 1994) を細分化させた制約を加えることにより，上記縮約形の解明を図る。

MAX-IO の細分化に関しては，一部の例外を除き，基本的には縮約が助動詞・活用語尾・接続助詞などのいわゆる closed-class item に限られていることから，まずは名詞・本動詞などの open-class item からの音素の脱落を禁止する制約を提案，続いて，単顫音が助動詞の語幹からも脱落しないことから，語幹からの音素の脱落を禁止する制約を，更に，形態素の最初と最後の子音が脱落しにくいことから，これらの音素の脱落を禁止する制約を提案する。

本稿では，音韻的に見れば基底を異にするとも思われる上述の3例も，実は制約の相互作用によって生じたものであることを，制約のランク付けを確立することにより立証する。