

THE PHONOLOGICAL STRUCTURE OF JAPANESE MIMETICS AND MOTHERESE

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Goals

- To demonstrate that mimetics and motherese (赤ちゃん言葉, 母親言葉, 育児語) in Japanese share basic phonological structures.
- To show that these phonological structures form the core of the adult grammar: mimetics and motherese represent the unmarked structures of Japanese phonology.

Roadmap

1. Motherese in Japanese

Mimetics vs motherese vs. adult grammar

2. Syntax & Morphology

3. Word length

4. Prosodic structure

5. Accent

6. Summary

1. Motherese in Japanese

- Japanese is known for its abundance in mimetic vocabulary, but it also has a rich inventory of baby talk words many of which are listed in adult dictionaries.
- Motherese is used only in child-directed speech.
- It has two major sources:
 - (i) mimetics, mostly ‘giongo’ (擬音語, sound) and ‘giseigo’ (擬態語, voice)
 - (ii) adult vocabulary

Two sources of motherese in Japanese

(i) from mimetics

wan.wan 'dog'	ワンワン
buu.buu 'pig, car'	ブーブー
pon.pon 'tummy'	ポンポン
kon.kon 'cough(ing)'	コンコン
shik.ko 'peepee'	シッコ
un.chi 'poopoo'	ウンチ

- Dogs bark 'wanwan' → wanwan 'dog' 犬
- Pigs say 'buubuu' → buubuu 'pig' 豚
- Cars sound 'buubuu' → buubuu 'car' 車
- Tummies sound 'ponpon' → ponpon 'tummy' 腹
- Sheep and goats say 'meemee' → meemee
'sheep, goat' 羊 · 山羊
- Mice say 'chuuchuu' → chuuchuu 'mouse' 鼠
- Cats cry 'nyannyan' → nyannyan 'cat' 猫

Two sources of motherese in Japanese

(ii) from adult vocabulary

hai.hai < ha.u 'to crawl' ハイハイ / 這う

nai.nai < nai 'to tidy up, no more' ナイナイ / 無い

dak.ko < da.ku 'to hold up' ダッコ / 抱く

om.bu < o.bu.u 'to carry on the back'

オンブ / 負ぶう

kuk.ku < ku.tsu 'shoes' クック / 靴

baa.ba < ba.ba 'grandma' バーバ / ばば

Mimetics and motherese

2.1 Syntax

- Mimetic words are used primarily as adverbs and motherese as nouns:

e.g. wan.wan ワンワン

(adult) wanwan naku 'cry *wanwan*'

(baby) wanwan 'a dog, dogs'

+ 'Look at the dog!'

'I wanna see a dog'

'Where's the dog?' ...

2.2 Morphology

- **Reduplication** is very common both in mimetics and motherese.
- Mimetics: wan-wan ‘she cried *wanwan*’
pi.ka-pi.ka ‘sparkling, shiny’
- Motherese: wan-wan ‘dog’
hai-hai < ha.u ‘to crawl’ ハイハイ
nai-nai < nai ナイナイ
kuk-ku < ku.tsu ‘shoe’ クック
nen-ne < ne.ru ‘to sleep’ ネンネ

3. Word length

Mimetics: 3~4 moras

- ba.ta バタ (base=2 moras)

→ (3 moras) bata-ri, bata-n, bata-t

バタリ、ボタン、バタッ

→ (4 moras) bata-bata

バタバタ

cf. bata'n bata'n, yura'ri yura'ri バタンバタン
(6 moras, but two prosodic words)

Word length (motherese)

Baby words derived from mimetics

a. 4 moras

wan.wan 'dog'

buu.buu 'pig, car'

pon.pon 'tummy'

kon.kon 'cough(ing)'

b. 3 moras

shik.ko 'peepee'

un.chi 'poopoo'

Word length (motherese)

Baby words derived from adult words

- 2 moras → 3 moras

ku.tsu → kuk.ku 'shoe' クック

da.ku → dak.ko 'to hold' ダッコ

ne.ru → nen.ne 'to sleep' ネンネ

ma.ma → mam.ma 'food' マンマ

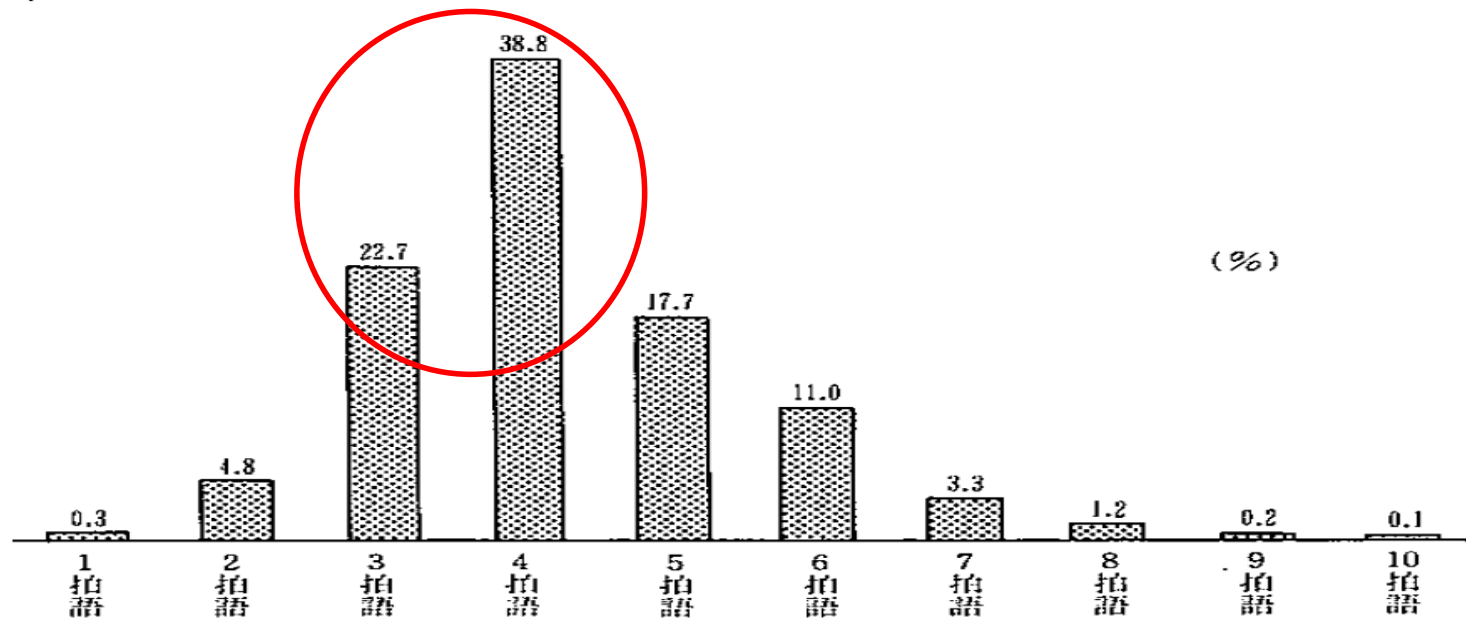
Word length (motherese)

- 3 moras → 3 moras
o.bu.u → om.bu 'to carry on the back' オンブ
- 2 moras → 4 moras
ha.u → hai.hai 'to crawl' ハイハイ
nai → nai.nai 'to tidy up' ナイナイ
- 4 moras~ → 3 moras
o.baa.chan → baa.ba 'grandma' バーバ
po.ket.to → pok.ke 'pocket' ポッケ

Word length in adult phonology

- The most predominant word length in adult Japanese is 4 moras (38.8%) (Hayashi 1957).
- 4-mora and 3-mora words combined account for over 60% of all words in Japanese.

〔拍数による語彙分類〕



Bimoraic foot as a basic unit

- Reduplicated forms both in mimetics and motherese consist of a bimoraic base.
e.g. wan-wan
- Bimoraicity represents the minimal length of words in Japanese: ‘bimoraic foot’
- It explains a wide range of seemingly unrelated phenomena in the language.
 - (i) Vowel lengthening
Numbers: 525-2525 (goo.nii.goo nii.goo.nii.goo)
Days: 火土 (kaa.doo)
 - (ii) Truncation
cho.ko.ree.to → cho.ko, *cho ‘chocolate’
su.to.rai.ki → su.to, *su ‘strike’

Four-mora template

- In addition to ‘bimoraic foot’, (adult) Japanese uses a four-mora template in many morphophonological processes.
- The four-mora template defines the maximal length of optimal words in adult grammar (Kubozono 2004).
- Compound truncation

po.ket.to mon.su.taa → {po.ke-mon} ‘Pokémon’

yu.nii.ku ku.roo.zin.gu → {yu.ni-ku.ro} ‘UNIQLO’

- Prosody of telephone numbers

042-540-4300

{ze-ro-yo-n}-nii {go-o-yo-n}-ze.ro {yo-n-san}{ze-ro-ze-ro}

4. Prosodic structure

- Both mimetics and motherese in English are typically disyllabic.
- Mimetics zíg-zag (ジグザグ)
 tíck-tack (チックタック)
 bów-wow (バウワウ = ワンワン)
- Motherese pée.pee (ピーピー = おしっこ)
 póo.poo (プープー = うんち)
 kí.ty (キティー = 猫ちゃん)
 físh.y (フィッシー = 魚さん)
 bír.die (バーディー = 鳥さん)
 tél.ly (テリー = 電話)
 túm.my (ポンポン)

Japanese

- Both mimetics and motherese in Japanese are also typically disyllabic.
- Mimetics
 - wan-wan, ba.tan, ba.tat
 - cf. ba.sa-ba.sa
- Motherese
 - a. shik.ko, un.chi, wan.wan, buu.buu, nyan.nyan, pon.pon...
 - b. dak.ko, om.bu, kuk.ku, nen.ne, hai.hai...

Prosodic asymmetry (HL vs. LH)

- Japanese motherese permits only two prosodic structures (HL, HH); it does not permit Light-Heavy disyllables.
- Heavy (2 moras) + Light (1 mora)
baa.ba, shik.ko, om.bu
- Heavy (2 moras) + Heavy (2 moras)
wan.wan, buu.buu, kon.kon
hai.hai, nai.nai

Baby words derived from mimetics

a. 4 moras (H + H disyllables)

wan.wan 'dog'

buu.buu 'pig, car'

pon.pon 'tummy'

kon.kon 'cough(ing)'

b. 3 moras (H + L disyllables)

shik.ko 'peepee'

un.chi 'poopoo'

Baby words derived from adult words

- **LL → HL**

ku.tsu → kuk.ku ‘shoe’ クック

da.ku → dak.ko ‘to hold’ ダッコ

ne.ru → nen.ne ‘to sleep’ ネンネ

ma.ma → mam.ma ‘food’ マンマ

ba.ba → baa.ba ‘grandma’ バーバ

cf. ba.baa ‘old hag’ (pejorative) ババ—

- **H → HH**

nai → nai.nai ‘to tidy up, no more’ ナイナイ

cf. chuu ‘kiss(ing)’ チュー

Baby words derived from adult words

- **LL** → **HH**

ha.u → hai.hai 'to crawl' ハイハイ

- **LLL** → **HL**

o.bu.u → om.bu 'to carry on the back' オンブ

- **LHL** → **HL**

po.ket.to → pok.ke 'pocket' ポツケ

cf. chuu 'kiss(ing)', o-te.te 'hand'

Satchan

- 「サツちゃん」(阪田寛夫作詞・ 大中恩作曲)
 サツちゃんはね サチコっていうんだ
 ほんとはね だけど ちっちゃいから
じぶんのこと サツちゃんって呼ぶんだよ
おかしいな サツちゃん
- Sachiko calls herself 'Satchan'. How strange she is!
- She is not strange at all!!
 - a. Sachiko (LLL) ○○○
 - b. Satchan (HH) ○○○○

Prosodic structure of mimetics

(1) Reduplicated forms: typically HH

- She cries *wan.wan* (HH)
- It rains *zaa.zaa* (HH)
- The wind blows *byuu.byuu* (HH)

(2) Non-reduplicated forms

- ba.ta (LL)
 - (a) ba.ta.ri (LLL) → ba.ta.ri-to (LLLL)
 - (b) ba.tan (**LH**) → ba.tan-to (**LHL**)
 - (c) ba.tat (**LH**) → ba.tat-to (**LHL**)

HL/LH Asymmetry in Adult Grammar

(1) Loanword truncation (Ito 1990)

- HL is favored; LH is prohibited.
- HL roo.tee.shon → roo.te ‘rotation’
pan.fu.ret.to → pan.fu ‘pamphlet’
- LH → LL
ro.kee.shon → ro.ke, *ro.kee ‘location’
de.mon.su.to.ree.shon
→ de.mo, *de.mon ‘demonstration’

(2) *Kattobasee* chanting

- Baseball chanting:

kattobasee XXX (player's name) !

‘Hit a homerun, XXX !’

- Rule 1: If the name consists of three moras, link each mora to X. (Tanaka 1999)

X	X	X
Ma	tsu	i

Su-zu-ki...


Kattobasee chanting

- Rule 2: If the name is only two moras long, link the first mora to the initial two Xs (Kubozono 2003).
- LL → HL

X	X	X
	↘	
ya		no
a		be

*X	X	X
	↘	
ya	no	矢野
a	be	阿部

(3) Zuuja-go スー ज्या 語 (Ito et al. 1996)

- (Jazz) musicians' word game involving metathesis
- pi.(y)a.no → ya.no.pi 'piano' ピアノ / ヤノピ

- ba.tsu.gun → gun.ba.tsu 'outstanding' 抜群 / 群抜
- ja.zu (LL) → zuu.ja (HL) 'jazz' ジャズ / スー ज्या

HL vs. LH asymmetry in Zuuja-go

- **H → HL**

kii → ii.ki ‘key’ キー / イーキ

buu → uu.bu ‘Majin Boo’ 魔神ブウ / ウーブ

- **LH → HL**

go.men → men.go ‘sorry’ ごめん / めんご

u.mai → mai.u ‘delicious!’ うまい / マイウ

- **HL → HL, *LH**

pan.tsu → tsun.pa, *tsu.pan ‘pants’

パンツ / ツンパ

(4) Miscellaneous cases

- Vowel lengthening (LL → HL)
 - shika → shii.ka 詩歌
 - fu.ki → fuu.ki 富貴
 - Consonant gemination (LL → HL)
 - ha.chi → hat.chi (みなしご)ハッチ
 - cha.ku → chak.ku 巾着→チャック
 - Vowel lengthening (LH → HH)
 - jo.oo → joo.oo 女王
 - nyo.booo → nyoo.booo 女房
- ☞ In adult phonology, too, HL and HH are favored, whereas LH is disfavored

5. Accent

- Both mimetics and motherese are basically accented on their initial syllables.
- If reinterpreted in terms of foot structure, they are accented on **the non-final, right-most foot**.
- This represents the default accent pattern in adult phonology (Kubozono 2006, 2008) .

Mimetics

- ()=bimoraic foot
 (wa'n)(wan), (byu'u)(byuu)
 (pi'.ka)(pi.ka),
 ba(ta'n)-to, ba(ta't)-to
 ➡ accented on the non-final, rightmost foot.
- Some mimetics permit the unaccented pattern as a secondary pattern (when used as adjectives), but this accent pattern is semantically predictable.

(pi.ka)(pi.ka)⁰-no kaban 'shiny bag'

kaban-ga (pi.ka)(pi.ka)⁰-da. 'The bag is shiny'

Accent in motherese

- Baby words are also accented on the non-final, rightmost foot.

(i) words derived from mimetics

(**wa'n**)(wan)

(**po'n**)(pon)

(**nya'n**)(nyan)

(**si'k**)ko

(**u'n**)chi

Accent in motherese

(ii) words derived from adult vocabulary

(**ha'i**)(hai) < (ha'.u)

(**ma'm**)ma < (ma'.ma)

(**o'n**)bu < (o.bu')u

(**ba'a**)ba < (ba'.ba)

(**ku'k**)ku < (ku.tsu')

(**da'k**)ko < (da.ku)⁰

(**ne'n**)ne < (ne.ru)⁰ (unaccented)

Mystery

- Accented words are less common than unaccented words in the adult vocabulary.
 Child phonology (& mimetics): accented
 Adult phonology: unaccented > accented
 tookyoo⁰ 'Tokyo', yokohama⁰ 'Yokohama'
 hiroshima⁰ 'Hiroshima', oosaka⁰ 'Osaka'
- Accented words (default): accented on the non-final, rightmost foot (Kubozono 2006):
 (i'wa) te, (na'go)ya, (kyo'o)to, a(za'ra)si...
- Accented words represent the default pattern.

The Emergence of the Unmarked (TETU)

- Default rule: ‘Accent on the non-final, rightmost foot’
- Loanwords (Kubozono 1996, Katayama 1998)
- Compounds (Kubozono 1997)
- Verbs and adjectives (Kubozono 2008)
- Other derived words:

doraemon⁰ → do(rae')(mon)-zu ドラエモンズ

tonneru⁰ → (to'n)(neru)-zu とんねるず

sawamura⁰ → sa(wa'mu)(raa) サワムラー

☞ ‘Derived word effect’

The unmarked pattern emerges in derived words.

Implications for adult phonology

- Unaccented words do not represent the default accent pattern of (Tokyo) Japanese.
- In fact, it is possible to predict to a considerable extent where the unaccented pattern occurs in adult phonology (Kubozono 2016).
 - Deaccenting morphemes
 - Deaccenting pseudo-morphemes
 - Prosodic configuration
 -

6. Summary

- Mimetics and motherese in Japanese share basic phonological structures: word length, prosodic structures, accent.
- These phonological structures form the core of the adult grammar: mimetics and motherese represent the unmarked structures of Japanese phonology.
- It is essential to study mimetics and motherese to understand the fundamental structures of adult phonology.

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公開シンポジウムのお知らせ

「オノマトペの魅力と不思議」

The Marbles and Misteries of Mimetics

国立国語研究所 & 言語系学会連合共催

2017年1月21日(土)午後

神田神保町・学術総合センター(一橋講堂)

参加無料、事前申し込み必要

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(<http://www.ninjal.ac.jp/event/public/forum>)

References

- 林 大 1957. 「語彙」 (講座現代日本語Ⅱ 『ことばの体系』) 筑摩書房.
- Ito, Junko, Yoshihisa Kitagawa & Armin Mester, 1996. Prosodic faithfulness and correspondence: Evidence from a Japanese argot., *Journal of East Asian Linguistics* 5, 217–294.
- Katayama, Motoko, 1998. *Optimality Theory and Japanese loanword phonology.*, Doctoral dissertation, University of California Santa Cruz.
- Kubozono, Haruo, 1996. Syllable and accent in Japanese: Evidence from loanword accentuation, *Bulletin 211*, The Phonetic Society of Japan, 71-82.
- Kubozono, Haruo, 1997. Lexical markedness and variation: A non-derivational account. *WCCFL* 15, 273-287.
- Kubozono, Haruo, 2003. The syllable as a unit of prosodic organization in Japanese., In C. Fery and R. van der Vijver (eds.) *The Syllable in Optimality Theory*, 99-122, Cambridge University Press, Cambridge.

- 窪園晴夫 2004. 「音韻構造から見た単純語と合成語の境界」
音声文法研究会 (編) 『文法と音声IV』 123-143 東京：くろしお出版
- Kubozono, Haruo, 2006. Where does loanword prosody come from? A case study of Japanese loanword accent. *Lingua* 116, 1140-1170.
- Kubozono, Haruo, 2008. Japanese accent. In Shigeru Miyagawa and Mamoru Saito (eds.) *The Handbook of Japanese Linguistics.*, 165-191, Oxford University Press, Oxford.
- Kubozono, Haruo, 2016. Accent in Japanese phonology. Mark Aronoff (ed.), *Oxford Research Encyclopedia of Linguistics* (online encyclopedia).
- Tanaka, Shin'ichi, 1999. Nihongo no onsetsu to yonhaku no tenpurēto: Senryū to puroyakyū seien ni okeru ziamari no bunseki. [Syllables and four-mora templates in Japanese: Analysis of 'ji-amari' in *senryu* poems and baseball cheering]. In Spoken Language Working Group (ed.) *Bunpō to onsei II* [Speech and grammar 2]., 261-290, Kurosio, Tokyo.