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**Positive and Negative Transfers in the
Pronunciation Learning of Japanese *onyomi kanji*
by Native Cantonese Speakers**

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Introduction to the Japanese Writing System

Japanese Writing system

私は中文大学の学生です。

Hiragana (平仮名)

Katagana (片仮名)

明日アメリカへ行きます。

Kanji (漢字)

Kunyomi (訓讀) vs. *Onyomi* (音讀) in Kanji

なか
■ 中 Kunyomi (naka)

ちゅうぶん
中文 Onyomi (chuubun)



Introduction

- Similar pronunciation between Cantonese words and Japanese Onyomi Kanji (音讀漢字)

- E.g.

Cantonese: 大學 daai hok

Japanese: 大学 だいがく daigaku

Cantonese: 兩親 leong can

Japanese: 両親 りょうしん ryoushin



Literature Review

- Lee (1992) figured out the Onset, Rhyme and Coda corresponding rules between the pronunciation of Cantonese words and Japanese *onyomi* kanji
- Purpose:
 - Language teaching
 - Facilitate the learning of the pronunciation of the Japanese vocabularies by native Cantonese speakers

Coda Transformation Rules between Cantonese and Japanese kanji (1)

Cantonese Rhyme		Corresponding Japanese Syllable	Number of Chinese characters	Percentage
~p (include ~aap, ~ap, ~ip)	→	~う (long vowel)	41	75.9%
	→	Others	13	24.1%
e.g. 採集 (さいしゅう) Cantonese: coi zaap Japanese: saishuu				
~t (include ~aat, ~at, ~eut, ~it, ~ot, ~ut, ~yut)	→	~つ (tsu)	99	78.6%
	→	~ち (chi)	11	8.7%
	→	Others	16	12.7%
e.g. 印刷 (いんさつ) Cantonese: jan caat Japanese: insatsu				
~k (include ~aak, ~ak, ~euk, ~ok, ~uk, ~ik, ~ek)	→	~く (ku)	194	77.6%
	→	~き (ki)	42	16.8%
	→	Others	14	12.7%
e.g. 握手 (あくしゅ) Cantonese: aak sau Japanese: akushu				

Coda Transformation Rules between Cantonese and Japanese kanji (2)

Cantonese Rhyme		Corresponding Japanese Syllable	Number of Chinese characters	Percentage
~m (include ~aam, ~am, ~im)	→	~ん (n)	86	97.7%
	→	Others	2	2.3%
e.g. 増減 (ぞうげん) Cantonese: zang gaam Japanese: zougen				
~n (include ~aan, ~an, ~eun, ~in, ~on, ~un, ~yun)	→	~ん (n)	347	99.1%
	→	Others	3	0.9%
e.g. 旋律 (せんりつ) Cantonese: syun loet Japanese: senritsu				
~ng (include ~aang, ~ang, ~eng, ~eung, ~ing, ~ong, ~ung)	→	~う (long vowel)	311	75.0%
	→	~e+い (long vowel)	84	20.2%
	→	Others	20	4.8%
e.g. 急増 (きゅうぞう) Cantonese: gap zang Japanese: kyuzou				



Research Questions

- Will native Cantonese speakers use the Cantonese-Japanese pronunciation *onyomi* kanji corresponding rules as a strategy in their mind implicitly when guessing the pronunciation of unfamiliar Japanese vocabularies?
- It is reported that Cantonese speakers have difficulties in distinguishing Chinese words with /n/-/ŋ/ pairs and /t/-/k/ pairs in the coda position (Zee 1999). Will this problem have a negative transfer when they learn the Japanese pronunciation of the same Chinese character?



Methodology

- Questionnaire

- Part I – Pronunciation of Japanese kanji (24 MC items)
- Part II – Coda of Cantonese character (24 Fill in the blanks items)
- Part III – Personal Information

- Cross-sectional study with 4 different levels of students who are learning Japanese

- Items

Items are chosen so that they vary in their levels of difficulty.

Level 1 (Beginner) – know almost none of them

Level 2 (Intermediate) – know some of them

Level 3 (Higher-Intermediate) – know most of them

Level 4 (Advanced) – know all of them

- Error Analysis



Test Items

Coda	Chinese character	Japanese romanization	Cantonese romanization	Coda	Chinese character	Japanese romanization	Cantonese romanization
p	採集 (さいしゅう) 鉄塔 (てつとう) 協調 (きょうちょう) 吸収 (きゅうしゅう)	saishuu tettou kyouchou kyuushuu	coi zaap tit taap hip tiu kap sau	m	添付 (てんぷ) 増減 (ぞうげん) 暫定 (ざんてい) 欠陥 (けっかん)	tenpu zougen zantei kekkan	tim fu zang gaam zaam ding him ham
t	印刷 (いんさつ) 突然 (とつぜん) 脱落 (だつらく) 連結 (れんけつ)	insatsu totsuzen datsuraku renketsu	jan caat dat jin tyut lok lin git	n	繁雑 (はんざつ) 音韻 (おんいん) 違憲 (いけん) 旋律 (せんりつ)	hanzatsu onin iken senritsu	faan zaap jam wan wai hin syun loek
k	握手 (あくしゅ) 搜索 (そうさく) 特徴 (とくちょう) 宿泊 (しゅくはく)	akushu sousaku tokuchou shukuhaku	aak sau sau sok dak zing suk pak	ŋ	並立 (へいりつ) 連盟 (れんめい) 莊重 (そうちょう) 急増 (きゅうぞう)	heiritsu renmei souchou kyuuzou	bing laap lin mang zong zung gap zang

Questionnaire Part I

Pronunciation of Japanese kanji

- Please choose the correct pronunciation of the following Japanese vocabularies. If you haven't learn the vocabularies before, please circle the vocabulary, read through all the 4 choices and choose the one that you think is the most probable answer.

- Long vowel

- ku

- n

- tsu

- | | | | | |
|------|----------|----------|----------|----------|
| 1.採集 | a. さいしゅう | b. さいしゆく | c. さいしゆん | d. さいしゆつ |
| 2.印刷 | a. いんさあ | b. いんさく | c. いんさん | d. いんさつ |
| 3.並立 | a. へいりつ | b. へくりつ | c. へんりつ | d. へつりつ |
| 4.握手 | a. ああしゆ | b. あくしゆ | c. あんしゆ | d. あつしゆ |
| 5.繁雑 | a. はあざつ | b. はくざつ | c. はんざつ | d. はつざつ |
| 6.添付 | a. ていふ | b. てくふ | c. てんふ | d. てつふ |
| 7.突然 | a. とうぜん | b. とくぜん | c. どんぜん | d. とつぜん |
| 8.搜索 | a. そうさあ | b. そうさく | c. そうさん | d. そうさつ |



Questionnaire Part II

Coda of Cantonese character

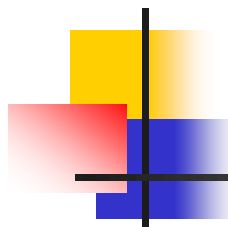
- Please fill in the Cantonese coda for the following Chinese character. (/m/, /n/, /ŋ/, /p/, /t/ or /k/)
- Example 文 mən_____ 曲 kuk_____
- 1. 盟 mɛ_____
- 2. 集 dza_____
- 3. 繁 fa_____
- 4. 刷 tsa_____
- 5. 添 ti_____
- 6. 握 a_____



Questionnaire Part III

Personal Information

- Age
- major
- years of learning Japanese
- no. of hours learning Japanese per week
(including lessons and revision time)
- JPT Level and Vocabulary score
- Grade of Cantonese transcription test
- Current enrolling Japanese course in CUHK
- Experience of studying abroad in Japan and the length of stay
- Vocabulary learning strategy (Japanese comics, novels, website, newspaper, songs, dramas, games, by repetition, find out the transformation rules between Cantonese and Japanese etc.)



Subjects

- A total of 76 students submitted the questionnaires.
- They are mainly university students taking Japanese courses in CUHK.
- Below is a summary of the subjects.

Level	No. of subjects	Criteria
Level 1 (Beginner)	38	Studying JAS 1xxx or 2xxx courses in CUHK
Level 2 (Intermediate)	16	Japanese Proficiency Test Level 3 or Studying JAS 3xxx courses in CUHK
Level 3 (Higher – intermediate)	11	Japanese Proficiency Test Level 2
Level 4 (Advanced)	11	Japanese Proficiency Test Level 1 or Experience of living abroad in Japan for at least 1 year

Level 1 (Beginner) Results

Japanese Pronunciation

Cantonese Pronunciation

Cantonese coda	~ long vowel	~ く (~ /ku/)	~ ン (~ /n/)	~ っ (~ /tsu/)		~ /p/	~ /t/	~ /k/	~ /m/	~ /n/	~ /ŋ/	~ others
/p/	68%	15%	3%	13%		72%	5%	5%	9%	1%	5%	2%
/t/	13%	25%	5%	57%		2%	51%	38%	1%	5%	3%	1%
/k/	4%	65%	7%	25%		7%	14%	70%	1%	2%	3%	3%
/m/	11%	9%	76%	4%		3%	2%	1%	80%	11%	3%	0%
/n/	19%	9%	69%	3%		1%	7%	1%	2%	71%	18%	1%
/ŋ/	55%	12%	29%	4%		1%	2%	3%	1%	40%	53%	1%

Remarks: All the figures are rounded off to the nearest integer.
The correct answers are shadowed in grey.



Level 2 (Intermediate) Results

Japanese Pronunciation

Cantonese Pronunciation

Cantonese coda	~ long vowel	~ く (~ /ku/)	~ ン (~ /n/)	~ ン (~ /tsu/)		~ /p/	~ /t/	~ /k/	~ /m/	~ /n/	~ /ŋ/	~ others
/p/	69%	19%	5%	8%		70%	3%	11%	11%	2%	2%	2%
/t/	11%	28%	8%	53%		2%	55%	41%	0%	2%	0%	2%
/k/	2%	77%	5%	17%		2%	13%	77%	0%	0%	6%	3%
/m/	19%	6%	70%	5%		5%	2%	6%	61%	23%	3%	0%
/n/	19%	3%	72%	6%		2%	2%	3%	3%	80%	8%	3%
/ng/	39%	14%	41%	6%		6%	3%	3%	0%	13%	73%	2%



Level 3 (Higher-Intermediate) Results

Japanese Pronunciation

Cantonese Pronunciation

Cantonese coda	~ long vowel	~ く (~ /ku/)	~ ん (~ /n/)	~ っ (~ /tsu/)		~ /p/	~ /t/	~ /k/	~ /m/	~ /n/	~ /ŋ/	~ others
/p/	86%	11%	0%	2%		77%	5%	0%	9%	2%	5%	2%
/t/	0%	2%	5%	93%		2%	55%	34%	0%	2%	5%	2%
/k/	0%	84%	2%	14%		0%	16%	80%	0%	2%	2%	0%
/m/	5%	9%	84%	2%		0%	0%	0%	91%	5%	5%	0%
/n/	7%	5%	84%	5%		0%	0%	0%	0%	86%	14%	0%
/ng/	73%	2%	23%	2%		0%	0%	2%	0%	25%	73%	0%



Level 4 (Advanced) Results

Japanese Pronunciation

Cantonese Pronunciation

Cantonese coda	~ long owel	~ く (~ /ku/)	~ ん (~ /n/)	~ っ (~ /tsu/)		~ /p/	~ /t/	~ /k/	~ /m/	~ /n/	~ /ŋ/	~ others
/p/	91%	2%	0%	7%		80%	5%	0%	5%	0%	0%	11%
/t/	0%	2%	2%	96%		0%	73%	18%	0%	0%	0%	9%
/k/	0%	93%	0%	7%		0%	25%	66%	0%	2%	0%	7%
/m/	2%	5%	91%	2%		0%	2%	0%	80%	7%	2%	9%
/n/	5%	5%	89%	2%		5%	2%	2%	0%	77%	5%	9%
/ng/	91%	2%	5%	2%		0%	0%	2%	0%	34%	57%	7%



Overall Results

Japanese Pronunciation

Cantonese Pronunciation

Cantonese coda	~ long vowel	~ く (~ /ku/)	~ ン (~ /n/)	~ ン (~ /tsu/)		~ /p/	~ /t/	~ /k/	~ /m/	~ /n/	~ /ŋ/	~ others
/p/	74%	14%	3%	10%		74%	5%	5%	9%	1%	4%	3%
/t/	9%	19%	5%	67%		2%	56%	35%	0%	3%	2%	2%
/k/	2%	74%	5%	19%		4%	16%	72%	0%	2%	3%	3%
/m/	10%	8%	78%	4%		2%	2%	2%	78%	12%	3%	1%
/n/	15%	6%	75%	4%		1%	4%	1%	2%	76%	14%	2%
/ng/	59%	10%	27%	4%		2%	2%	3%	0%	31%	61%	2%



Japanese vocabulary learning strategies

Strategy	Level 1	Level 2	Level 3	Level 4	Overall
Read Japanese comics, novels, website, newspaper	71%	63%	73%	82%	71%
Listen to Japanese songs	58%	56%	64%	64%	59%
Watch Japanese dramas	76%	63%	73%	73%	72%
Play Japanese video games	34%	31%	27%	45%	34%
Learn by repetition	47%	69%	82%	18%	53%
Find out the corresponding rules between Cantonese and Japanese	29%	25%	27%	36%	29%



Discussion – Preference of choices

- For most of the items, the percentage of correct response far outweighs the other 3 choices in all levels
- For items with lower accuracy rate, most of the incorrect choices they made are related to their problems in Cantonese
- The error rate for the advanced students is the lowest, the error rate for beginner and intermediate students are similar.



Discussion – Negative transfer from Cantonese into Japanese

- Negative transfer from Cantonese into Japanese
- Distinction between /t/-/k/ pairs in Cantonese coda
 - 突 *dat* or *dak*?
 - 特 *dat* or *dak*?
- Distinction between /n/-/ŋ/ pairs in Cantonese coda
 - 文 *man* or *mang*?
 - 盟 *man* or *mang*?



Conclusion

- Cantonese speaker may have the phonemic awareness of the Cantonese-Japanese pronunciation *onyomi* kanji corresponding rules in their mind implicitly
- Learning the Cantonese-Japanese pronunciation *onyomi* kanji corresponding rules explicitly can increase the efficiency of learning Japanese vocabulary
- Need to make effort to differentiate /t/-/k/ pairs and /n/-/ŋ/ pairs in Cantonese coda



Future Directions

- The pronunciation learning strategies of Japanese *onyomi kanji* by speakers of other languages.

Coda Corresponding rules in Cantonese, Mandarin, Japanese and Korean

Cantonese	-p	-t	-k	-m	-n	-ŋ
Mandarin (Shi, 1985)				-n	-n	-ŋ
Japanese (Lee, 1992)	long vowel	-tsu	-ku	-n	-n	long vowel
Korean (Lee, 2007)	-p	-l	-k	-m	-n	-ŋ



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