

**Introduction to Cognitive Science for Mathematical Scientists**

*Cognitive Science 050.313/613*

**Some Japanese Phonology in Optimality Theory**

**Problem Set 11-14**

*November 14, 2003*

*Due: Friday, November 21, 2003*

A Japanese word can end only in a vowel or an *n*.

nippon	Japan
den	legend
futa	lid
kuči	mouth
toofu	you guessed it

- (1) Consider the following words. There is a strong restriction in Japanese on legal syllable codas. What is it? Call this constraint CODACOND.

kande	chewing
sampo	walk
kaŋkei	relation
katte	buying
šippai	failure
kikkori	smiling
unzari	disgusted
kampai	cheers
sufiŋkusu	sphinx

[CONTINUED REVERSE SIDE]

(2) Consider the following compound words.

<u>surface form</u>	<u>underlying form</u>	<u>gloss</u>
gakkoo	gak + koo	school
gakkai	gak + kai	academic conference
gakusee	gak + see	student
gakučoo	gak + čoo	school president
gakumon	gak + mon	learning
daigaku	dai + gak	university

- a. What is the generalization describing the correct surface form for a given underlying form?
- b. Provide an OT analysis (a constraint ranking) of this compounding phenomenon using CODACOND and the constraints introduced in the text. To show that your analysis works correctly, give tableaux for the following inputs:
  - i. gak + koo
  - ii. gak + see
  - iii. dai + gaku

(3) Now consider this compound:

<u>surface form</u>	<u>underlying form</u>	<u>gloss</u>
gakuin	gak + in	academy

(the “u” and “i” are in separate syllables)

- a. Does this pose a problem for your analysis?
- b. Can you give a revised analysis exploiting the following constraint (in addition to those already in use):
 

\*COMB Segments from two different morphemes are not combined within a single syllable