

Phonological rules : exercises

1. In the following data, [θ] and [f] are substitutes for the targets /f/, /s/, /ʃ/, and /θ/, and their occurrences are predictable. Give the generalization.

feather	[θɛdə]
soup	[fup]
fall	[fɔl]
thin	[θɪn]
fish	[θɪs] ← please note a correction

replacements that are observed:

f → θ before ε

s → f before u

f → f before ɔ

θ → θ before ɪ

Or, we have [θ] before [ε, ɪ] and [f] before [u, ɔ]

Rule:

[+cont, +ant, -voi] → [α cor, -α stri] / __ [α front, - low]

2. Examine the following data from B (4years, 1month), a child with phonological disorder, and determine whether the realizations of /r/ targets are predictable.

race	[res]	mirror	[mɪwə]
berry	[bewɪ]	correct	[kɔwɛk]
parade	[pəwɛd]	rain	[ren]
ride	[raɪd]	four	[fɔ]
deer	[di]	road	[rod]
wrong	[rɔŋ]	room	[rum]

We have [r] word initially, [w] in intervocalic position, and 0 at the end of the word:

/r/ → {[r, w, 0]} / {# __, V __ V, __ #}

[+cont, +son, -lat] → {[-cons, -cor, -ant], 0} / {V __ V, __ #}

3. Examine the following data from Japanese and determine whether [t], [ts] and [tʃ] are allophones of the same phoneme or represent two different phonemes, or three different phonemes. If allophones, state the complementary distribution; if phonemes, state the contrast.

a.	[te]	hand	i.	[tsutʃi]	earth
b.	[takai]	high	j.	[ato]	later
c.	[tegami]	letter	k.	[kutsu]	shoe
d.	[tsukue]	desk	l.	[tʃitʃi]	father
e.	[utʃi]	house	m.	[matsu]	wait
f.	[tʃizu]	map	n.	[ita]	board
g.	[tatami]	mat	o.	[tomodatʃi]	friend
h.	[kata]	person	p.	[tatsu]	summer

- 1) there are no minimal pairs, we have to make the distribution chart
 2) we notice that all three sounds can occur word initially and in the middle of the word, but whatever their place is, they are always followed by a vowel. Therefore, the chart will consider the quality of the following vowel:

	<u>i</u>	<u>e</u>	<u>a</u>	<u>u</u>	<u>o</u>
t		+	+		+
ts				+	
tʃ	+				

[t] occurs before [e, a, o]

[ts] occurs before [u]

[tʃ] occurs before [i]

/t/ is the phoneme for [ts] and [tʃ] (more contexts of occurrence)

/t/ → {[ts], [tʃ]} / {__u, __i}

[-cont, +ant, +cor, -voi] → {[+stri, +del rel], [+stri, +del rel, -ant]} / {__ [+hi, +bck], __ [+hi, -bck]}

On the basis of your findings, predict the most likely pronunciation of the following English words by a speaker of Japanese. You should concentrate on the realization of /t/ targets in these words. And ignore the other potential problems.

city [tʃ]

team [tʃ]

tear [tʃ]

totem [t, t]

tune [ts]