

SPEECH COMMUNICATION
6.541J-24.968J-HST710J
Spring 2004

Problem Set 7

Assigned: 04/13/04

Due: 04/22/04

Problem 1

Listed below is a set of verbs, together with the past tense and the 3rd person singular for each verb. State the rule or rules that are needed to derive (a) the pronunciation of the past tense from the stem verb, and (b) the pronunciation of the 3rd person singular from the stem verb. The rules should be stated in terms of the features of the segments. (Assume that [voice] is a feature for obstruent consonants.) Simplicity is desirable, i.e., use a minimum set of rules.

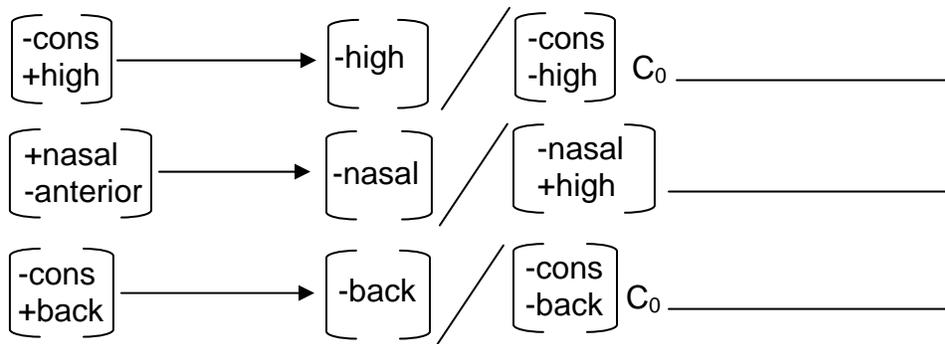
<u>Verb</u>	<u>past tense</u>	<u>3rd person singular</u>
want	wanted	wants
pass	passed	passes
preach	preached	preaches
play	played	plays
laugh	laughed	laughs
breathe	breathed	breathes
rinse	rinsed	rinses
raid	raided	raids
lag	lagged	lags
wish	wished	wishes
please	pleased	pleases

Problem 2

The following forms (given as phonetic transcriptions) occur in the language Chamorro. The base form is given in the left column in each case, and the modification of this form when it is preceded by various morphemes is given at the right.

		preceding morpheme		
gumə	'house'	i	gimə	'the house'
Tomu	'knee'	i	temu	'the knee'
Lahi	'male'	i	læhi	'the male'
tunu	'to know'	en	tinu	'you know'
hulu	'up'	sæn	hilu	'upward'
otdut	'ant'	mi	etdut	'lots of ants'
oksu	'hill'	gi	eksu	'at the hill'
lagu	'north'	sæn	lægu	'toward the north'

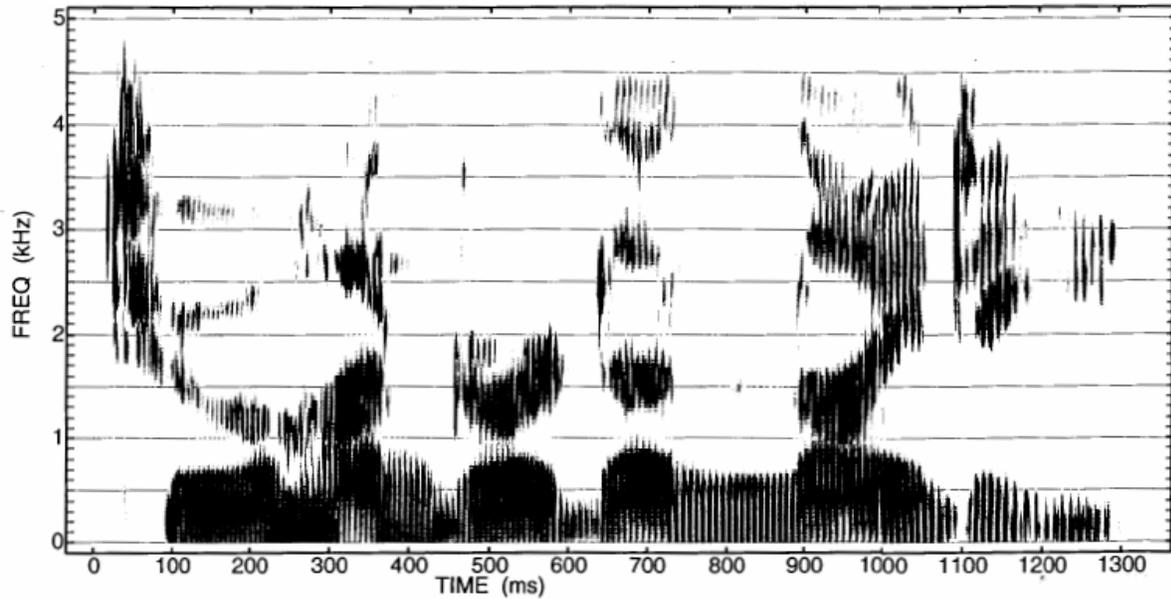
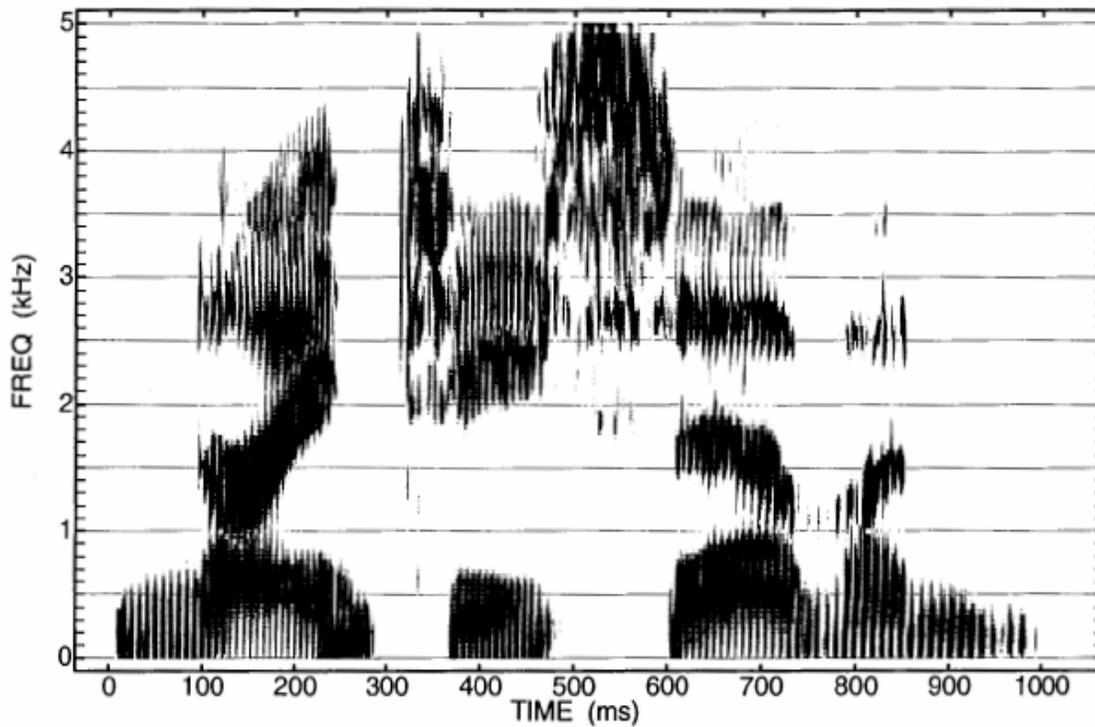
Which, if any, of the following rules applies to these alternations?



Note: Example of how to read this notation: The first line says: A [+high] vowel becomes [-high] just in case it occurs following a [-high] vowel, with any number of consonants (including none) intervening.

Problem 3

Figures 3.1 and 3.2 are spectrograms of the utterance of two numbers. The numbers are between 30 and 310. What are the numbers?

**Figure 3.1****Figure 3.2**