

Linguistics 312 Introduction to Phonology  
Linguistics 712 Phonology I  
Course Materials

Spring Semester 1998  
KU Linguistics Department  
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**Linguistics 312/712**


48104/41226

**Phonology I**

Course Outline SP98

**MMTH**

9:30 – 10:50 TR, 206 Blake

<b>Date</b>	<b>Topic</b>	<b>Read*</b>
T 1/13 R 1/15	Introduction The goals of phonological theory	
T 1/20 R 1/22	Preliminaries to phonology	Ch. 1
T 1/27 R 1/29 T 2/3 R 2/5 T 2/10	Phonological processes	Ch. 2
R 2/12	<b>Test 1</b>	
T 2/17 R 2/19 T 2/24	Syllables	Ch. 3
R 2/26 T 3/3 R 3/5 T 3/10 R 3/12 T 3/17	Distinctive Features	Ch. 4
R 3/19	<b>Test 2</b>	
T 3/24 R 3/26	<b>Spring Break</b>	
T 3/31 R 4/2 T 4/7 R 4/9	Rules and Domains	Ch. 5
T 4/14 R 4/16 T 4/21	Postlexical Processes in English	Ch. 6
R 4/23 T 4/28 R 4/30	Stress and Rhythm	Ch. 7
R 5/7	<b>7:30 a.m. Final Exam</b>	

\*Reading assignments are in Andrew Spencer's *Phonology* (Blackwell, 1996) ISBN 0-631-19233-6. There will be homework—exercises both from the textbook and from other sources.

Instructor: Michael M. T. Henderson. Office hours: 1:30-2:30 M & R, in 427A Blake. For other times, call me at 864-3481 or email me at [mmth@ku.edu](mailto:mmth@ku.edu) (the best way to get in touch with me).

## Grading and Other Policies

Your tasks and the way you are graded depend on whether you are enrolled in Linguistics 312, the undergraduate course, or 712, the graduate course. People enrolled in 712 will write a research paper (described on another page). Here are the grading percentages:

	312	712
Quiz 1	15%	10%
Quiz 2	20%	15%
Homework	30%	25%
Paper		25%
Final	35%	25%
	<hr/> 100%	<hr/> 100%

*Attendance:* I seldom ‘take’ attendance, but I do know who is in class and who isn’t, and I am much happier to see you than to miss you. Besides, a great deal of what you will learn (and be expected to remember) is going to come from information I give out in class, so skip at your peril. If we’re having a quiz, you need a really, really good reason not to be there, such as hospitalization, jury duty, or arrest. Not only that, but I tend to bring lots of handouts, and to give homework assignments which are not listed on the syllabus, so you need to be there to get those and return them to me in time (see next paragraph).

*Handing things in late:* This is a very bad idea. I give assignments because I hope and believe that they will help you to understand what we are going over at the time, not because I like grading them. The later you do them, the less credit they bring you, at the rate of about 5% each school day. If you were to hand something in 4 weeks (20 school days) late, it would count **zero**, so you can see the advantages of doing your work on time. In phonology, it is especially important to keep up with the exercises, since they are designed to build your analytic ability cumulatively. If you wait to the last minute to do them, you won’t be as prepared for the tests, the exam, and the later assignments.

*Other:* Any students with disabilities which, as it’s said, ‘prevent the fullest expression of their abilities’ should consult with me early in the semester. I do know something about disabilities, remember.

*E-mail:* If you don’t have an account, you should get one and check it regularly. I can show you how, and even help you sign up. I may need to communicate with the class individually or all together, and this is the best way. Wouldn’t it be nice to check your e-mail in the morning and find out that the class was canceled? It would certainly be nicer than coming all the way to Blake through the heat, snow, dust, etc. only to find that everyone else got to stay home and sleep late. (Not that I’m promising to miss any classes, but you never know if the elevator will work.)

## Term Papers for Linguistics 712

Your assignment is to analyze the phonology of a language other than English. You should list the sounds of the language, group them into phonemes, and state their distribution. You will have to assign distinctive features to the phonemes and allophones. You should describe the syllable structure of the language, and any restrictions on the structure of words. You will probably concentrate on post-lexical phonology, but any lexical processes you can describe will be a bonus. Information on suprasegmentals should include stress or pitch accent, if the language has any, tone (if any), and the major intonation patterns of the language.

A sample will be made available early in the semester. Here is a tentative outline:

### Introduction

Information about the language, including where it is spoken, how many speakers it has, and its ancestry.

### Consonants

Obstruents, approximants, nasals, other

What airstream mechanisms and phonation types are observed?

### Vowels

### Syllable structure

### Phonological processes

Lexical & post-lexical

### Suprasegmentals

Stress or pitch accent

Tone

Intonation

You should follow the style given as an appendix of the Linguistics Dept. *Graduate Student Guide*. I'll make copies of the style sheet available separately for people who are not Linguistics graduate students, or you can view it on line at <http://falcon.cc.ukans.edu/~ling/gsg.html#LSAStyle>.

## Linguistics 312/712

## Phonology I Errata in Spencer's *Phonology*

MMTH

(Negative line numbers mean 'up from the bottom of the page'.)

Page	Line	<i>is</i>	<i>should be</i>
29	6	[θ]	[e]
53	19	found	Find
56	3	deverabal	deverbal
84	3	to those of 3.11b	to those of 3.11a
93	22	lines of 3.18	lines of 3.26
95	1	given	Give
101	1	such as	such a
108	2	one the important	one of the important
114	23	hard palatal	hard palate
119	1	distinguished	distinguishes
140	19	/æ/ /o/	/æ/ /ɔ/
165	17	Thus, exx 5.24 b, c	exx 5.24 a, b, c (?)
166	5	NSP counterfeeds Velar Palatalization	Velar Palatalization counterfeeds NSP
197	14	forms in 5.46	forms in 5.44

197	15	Epenthesis 5.47	Epenthesis 5.44
197	21	have to present	have to be present
198	5	vɔvlɑ̃	vɔvlɑ̃
202	9	/f/ and /j/, are	/f/ and /j/ are
205	7 8	preceding it is sequence on	preceding <i>it</i> is sequence of
218	6.43b	l:	i:
226	3	[pliz]	[pli:z]
229	2,13		insert right arrow as in 6.62
264	4	‘the (masc.)	‘they (masc.)
268	8.5	éxtrême	extrême
269	14	/ou/ /ju:/ regularly	/ou/ regularly
269	14	(along with \ju\:	(along with /ju:/
277	last	<i>mountain</i> here will	<i>mountain here</i> will
298	1	Hages	Hayes
307	3	stress with and	stress with ´ and

## Suspicious Pairs

Suspicious pairs are pairs of sounds which might well be allophones of the same phoneme, since they are phonetically similar. If you find that they are never in contrast in identical or analogous environments, you can hypothesize that they may be allophones of the same phoneme. You learn to spot suspicious pairs from experience, but here are some typical examples which might help:

Sound types	Examples
Stops & homorganic fricatives	[b] and [v] or [β], [t] and [s] or [θ]
Plain and aspirated stops	[p] and [p <sup>h</sup> ]
Voiced and voiceless consonants	[p] and [b], [s] and [z], [t] and [d]
Taps and trills	[r] and [r]
Laterals and non-lateral approximants	[l] and [ɭ]
Taps and approximants	[r] and [ɻ]
[ŋ] and any other nasal consonant	[ŋ] before [k], [m] before [p], etc.
Nasals and homorganic stops	[ŋ] and [g]
Syllabic and non-syllabic consonants	[l] and [l̩], [ŋ] and [ŋ̩]
Dental and retroflex consonants	[t] and [ɖ], [s] and [ʂ]
Velar and palatal(-alveolar) stops/affricates	[k] and [kʲ] or [c] or [tʃ]
Velar and uvular consonants	[k] and [q]
Oral and nasal vowels	[a] and [ã]
“Tense” and “lax” vowels	[i] and [ɪ], [e] and [ɛ]
Vowels and corresponding glides	[i] and [j], [u] and [w], [y] and [ɥ]
Rounded and unrounded vowels	[i] and [y], [u] and [ɯ], [ɑ] and [ɒ]

Note that a sound can be a member of more than one suspicious pair.

When we classify sounds into phonemes, we ask ourselves the following questions:

1. For two or more phonetically similar sounds, are they in **complementary distribution**? Where one occurs, do(es) the other(s)? E.g., [d] and [ð] in Spanish are not only pretty suspicious, they are also in complementary distribution: [d] occurs word-initially and after [l] and [n], and [ð] occurs elsewhere. But in English, in which [d] and [ð] are just as suspicious as they are in Spanish, both sounds can occur in the same environment: initially, as in *day* and *they*; medially, as in *ladder* and *lather*; and finally, as in *bayed* and *bathe*.
2. The second question, if the sounds are not in complementary distribution, is Are they in **contrast in identical environments**? In the examples above, the minimal pairs show us that [d] and [ð] are in contrast in identical environments in English word with different meanings (see 4 below). This proves that they are not allophones of the same phoneme.
3. If identical environments cannot be found, but the sounds do not seem to be in any complementary distribution that can be recognized, then we look for **contrast in analogous environments**. In English, [ʃ] and [ʒ], while phonetically similar and thus a suspicious pair, would be the only pair of obstruents in the language to be allophones of the same phoneme differing only in voicing.<sup>1</sup> Voicing seems to be contrastive in all other English fricatives. So we look for minimal pairs, but they are very hard to find, unless you think that *mesher* ‘one who meshes’ is a proper word to contrast with *measure*,<sup>2</sup> or you pronounce *fissure* [ˈfɪzə] so you can contrast it with *fisher*.<sup>3</sup> But we have the pair *pressure* - *pleasure*, which differ, other than the sounds in question, only in the second consonant. It is very difficult to persuade oneself that the [ɹ] in one word causes the medial fricative to be voiceless while the [l] in the other word causes it to be voiced; so we conclude that these analogous environments are sufficient to represent a true contrast. [ʃ] and [ʒ] are therefore probably not allophones of the same phoneme in English.
4. There is one other relationship that two or more phonetically similar sounds can be in: so-called **free variation**. Examples include the diphthongs [aj] and [ʌj] in English. For some speakers, the appearance of each of these depends on the voicing of the next consonant, so *write* is [ɹʌjt] and *ride* is [ɹajd]. But for others, *write* can come out [ɹʌjt] or [ɹajt], depending perhaps on the prosodic context. This puts [aj] and [ʌj] in free variation. There is another kind of free variation, this one between phonemes, which is seldom the concern of phonologists. It produces pairs like [ˈɪjðə] and [ˈajðə] for *either*, and [tʰəˈmeto] and [tʰəˈmato] for *tomato*. You might think this was a case of contrast in identical environments, but that has to be accompanied by a **difference in meaning**.

<sup>1</sup>We do find [ɹ] alternating with [r], and [ʃ] with [ʃ], the voiceless allophones appearing after aspirated stops. But they are not obstruents.

<sup>2</sup>*Mesher* doesn't appear in most dictionaries, and would get you challenged in Scrabble.

<sup>3</sup>Some people do, really. They might actually say [ˈfɪzə], but if so they might say [ˈfɪʒə] too.



## PLACE FEATURES

Before the adoption of unary place features [LABIAL], [CORONAL], [DORSAL], and [GUTTURAL], we described the place of articulation of consonants with binary features, like this:

	p	p'	φ	f	θ	t	t'	s	ɕ	ʈ	ʂ	ʃ	c	c'	ç	k	k'	x	q	q'	χ	ħ	ʔ	h
Anterior	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coronal	-	-	-	-	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-
Distributed	+	+	+	-	+	-	-	-	-	-	-	+	+	+	+	+	+	+	-	-	-	-	-	
High	-	-	-	-	-	-	-	-	+	-	-	+	+	+	+	+	+	+	-	-	-	-	-	
Low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
Back	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	

[Anterior] thus divided all consonants made from the lips back to the alveolar ridge from those made from post-alveolar on back. [Coronal] further divided the labials from the dentals and alveolars, and the post-alveolars and retroflexes from the palatals and velars. This was the standard model from 1968 to about 1990, when phonologists decided that place of articulation was better described with one feature. But students need to be aware of the earlier system in order to understand the important literature of the time.

Now we view features as qualitatively different. Not all are interchangeable. We separate features which describe laryngeal activity from those describing a sound's major class, and from those describing its place and manner. There are now different classes of features; the precise number and nature of these has not yet been agreed on, but everyone seems to have accepted the following:

<i>Name of Node</i>	<i>Questions it answers</i>	<i>Features used</i>
ROOT	What class of sound is it?	[±consonantal] [±approximant] [±sonorant]
LARYNGEAL	What's happening in the glottis?	[±voiced] [±constricted glottis] [±spread glottis]
MANNER	Is it a stop, a fricative, or what?	[±nasal] [±continuant] [±strident] [±distributed] [±lateral]
PLACE	Where is the greatest narrowing in the vocal tract?	[LABIAL] <sup>4</sup> [CORONAL] <sup>5</sup> [DORSAL] <sup>6</sup> [GUTTURAL] <sup>7</sup>

See Spencer, pp. 156-8, for the geometric representation of sounds.

<sup>4</sup> Further subdivided by [±round].

<sup>5</sup> Further subdivided by [±anterior].

<sup>6</sup> Further subdivided by [±high], [±low], [±back], [±ATR]

<sup>7</sup> It isn't quite settled how to differentiate pharyngeals [Ɂ ʕ] from epiglottals [ʕ̠ ʕ̡], if this is ever necessary.

Features: Put a check mark  $\checkmark$  opposite each segment in the column for the major classes it belongs to. Each segment gets two check marks.

	Sonorant	Obstruent	Consonant	Vowel
f	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ə	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ɑ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ç	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
z	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ŋ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
θ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ʃ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For each group of segments below, circle the segment which doesn't belong and explain by filling in the blank.

Example: p t f k All **(t)** the others are stops

p t ! f All the others are \_\_\_\_\_.

f v θ s ʃ x All the others are \_\_\_\_\_.

n l r z R y All the others are \_\_\_\_\_.

b d g γ p k All the others are \_\_\_\_\_.

i ø e a æ y All the others are \_\_\_\_\_.

i ø œ o ɔ u All the others are \_\_\_\_\_.

u o ɔ ʌ ε All the others are \_\_\_\_\_.