

Your job is to complete this assignment individually. If you consult with your classmates to help each other think about the assignment, list their names at the bottom of your assignment. When you upload your assignment to the submissions folder, you are declaring that the work is your own.

Upload your assignment **as a PDF file** ([see here for advice](#)) to the [Assignment 2 Submissions](#) Folder by **3:30 pm on Friday, November 18**. If your assignment is not a PDF file, Avenue can't display it correctly, and the TAs won't be able to grade it. That means that if you don't save it in the right file format, you won't earn the points! If you're a Mac user, you can create a pdf by choosing Print then clicking PDF|Save as PDF... in the bottom left corner of the print box.

For useful tools to help you produce IPA characters on your computer or using a web interface, consult the many links in the Content section, "Useful Tools for Doing Linguistics". If you choose to complete part of your assignment by hand, make sure to do it in dark ink on white paper and photograph it under bright light, then insert your photograph into the document that you will save as a pdf.

## Question 1

The regular English past tense suffix is spelled *-ed* but is pronounced in three different ways, either [t], [d] or [əd]. Ask a friend who's a native speaker of English to read this list of words for you, or click to listen to this [audio file of Dr. Anderson](#) saying them.

		bagged
		thrilled
		nabbed
		lived
wished	hated	breathed
dropped	branded	turned
kicked	needed	plowed
missed	pitted	climbed
pinched		tinged
		wronged
		played

- Which of the pronunciations is the underlying form? How do you know? (2 points)
- Write two feature matrices, one each for the environments where the alternate forms appear. (6 points)

## Question 2

Tohono O'odham is an indigenous language spoken in the southwestern United States. Like English, it

contains both the segments [t] and [tʃ]. Examine the following language data from Tohono O'odham.

[ta:t]	touched	[tako]	yesterday
[to:n]	knee	[tʃikwo]	ankle
[tʃin]	mouth	[tʃuʔi]	flour
[tʃim hekid]	always	[to:bi]	rabbit
[tʃuk]	black	[tas]	sun
[tʃikpan]	is working	[towa]	turkey

(For your information, the segment [i] is a high central unrounded vowel. Tenseness/laxness is not relevant for this analysis.)

- In Tohono O'odham, are the segments [t] and [tʃ] two different phonemes or are they allophones of the same phoneme? (2 points)
- What did you observe in the data that led you to your conclusion in part (a) above? (3 points)
- Using the notation from video 8A and section 3.4.2 of the textbook, write a rule that characterizes how the two segments are represented in the grammar of Tohono O'odham. (5 points)
- The phonemic representation for the Tohono O'odham word meaning "base of the mountain" is /tuksan/. Predict what the phonetic representation of the word would be. (1 point)
- Imagine you're a linguistic fieldworker, working with Tohono O'odham speakers to develop a writing system for the language. Would you recommend using two separate letters to represent the segments [t] and [tʃ], or using the same letter for both? Explain why you make that recommendation. (2 points)

### **Question 3**

Here is a set of data transcribed from German. Examine the data and pay attention to these three segments:

- [ç] (voiceless palatal fricative)
- [ʃ] (voiceless post-alveolar fricative)
- [x] (a voiceless velar fricative)

You may also wish to know the following:

- [ø] is a mid-high, front, rounded tense vowel
- [y] is a high, front, rounded tense vowel

[ɪç]	<i>I</i>	[byʃə]	<i>bushes</i>	[bʊx]	<i>book</i>
[mənç]	<i>some</i>	[tuʃə]	<i>ink</i>	[dʌx]	<i>roof</i>
[dʊrç]	<i>through</i>	[nɑʃən]	<i>nibble</i>	[nɔxən]	<i>small boat</i>
[tøçtəɪ]	<i>daughters</i>	[kɪrʃə]	<i>cherry</i>	[nɔx]	<i>still, yet</i>
[mɛ:dçən]	<i>girl</i>	[fɪʃtə]	<i>fished</i>	[tʊx]	<i>scarf</i>
[kɪrçə]	<i>church</i>	[mɛnʃən]	<i>people</i>	[kʊxən]	<i>cake</i>
[fɪçtə]	<i>pine</i>	[ʃpi:lən]	<i>to play</i>	[ɑxɑ:t]	<i>agate</i>
[mɛnçən]	<i>little man</i>	[ʃtɑ:t]	<i>state</i>	[lɑxst]	<i>(you) laugh</i>

- a. Describe clearly in words the observations you've made about the three segments [ç] [ʃ] [x]. Also include examples from the data to support your observations (9 points)
- b. Based on your observations, what conclusions can you make about how the segments [ç] [ʃ] [x] are represented in the grammar of German? (6 points)

### **Before Submitting**

- Have you included the names of any classmates you worked with at the bottom of your assignment?
- Is your file a pdf?