

# Introduction

Lecture 1

January 10, 2022

# Today...

- Syllabus & course outline
- What is Writing?
  - Writing vs. language
  - Picture writing
- Linearity
  - Different writing directions
  - Variability in writing direction
- Graphemes
  - Free vs. bound graphemes
  - Diacritics
  - Allographs
- Orthography & Transliteration
  - Scripts vs. orthographies
  - Transliteration & transcription (IPA)

# Syllabus & Course outline

## ■ Syllabus

- Please take the time to introduce yourselves on the Discussion thread on Quercus if you haven't done so already. And don't forget to read what the other students have written!
- Please type 'Q', 'question' into the chat if you would like to ask a question, and 'comment' if you'd like to make a comment.
- Please unmute yourself (and turn on your video, if comfortable) to ask your question or make your comment when I call on you.
- Please use the 'Raise Hand' feature in Zoom if you'd like to answer a question that I ask during lecture.
- Please leave the chat clear from off-topic conversation, so that questions can be seen.

- Lecture slides will be posted to Quercus after lecture.
  - **Don't** worry about writing *everything* down!
  - **Do** take notes on important points & main ideas, rather than trust you'll be able to reconstruct them in a few weeks by glancing through the slides ☺
- First assessment is Quiz 1, coming up on January 31st

# What is this course about?

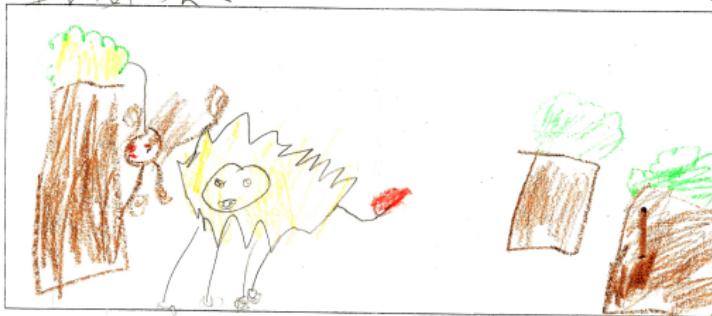
- This course *is not* about:
  - Literature
  - Style, tone, or grammar in essays or papers
  - How to “write better”
- This course *is* about:
  - How writing systems work
    - Their internal rules and structure
    - Their relationship to linguistic structure
  - How they got that way
    - Historical development
    - Language change vs. writing change

What is Writing?

# What do we mean by “writing”?

Name: Xavier

Date: 3-26-12



I think they + tigers

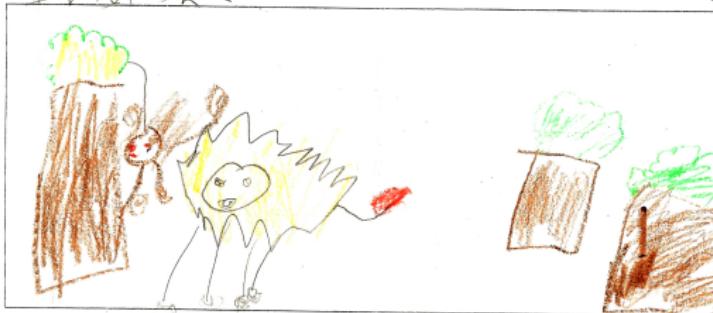
are the best animals

BECUS they JUMP HI AND they RUN FAST

Xavier: “I Think They + tigers  
Are the Best ANIMALS  
BECUS they JUMP HI AND they RUN FAST”

# What do we mean by “writing”?

Name: Davit Eswar Date: 3-26-17  
ENGLISH



I think there + types

are + me Bept + notes

decys + no > up hand they run ap

- *Penmanship—skill at drawing letters*

- *Literary style—linguistic eloquence*

- *Graphic marks representing language*

# What is writing?

## ■ Writing is not language

- All cultures use language: universal
- Not all cultures use writing: not universal
- Writing is an *invention* or *technology*

## ■ Writing represents language

- Specifically, writing represents an *utterance*—a particular series of sounds—rather than a semantic concept or meaning
- There are many symbolic representations of meaning that are not writing

# Picture Writing



Newspaper Rock, Utah

# Picture Writing



- Symbols or pictures which convey meaning
- Can be very complex, and can be interpreted by those trained in the (cultural) symbology
- Often a mnemonic for a narrative or meaning that is already known
- *Language-neutral*: no systematic correspondence to linguistic structure

# Picture Writing

- Picture writing is prevalent today
- Convenient as it is not tied to any one language
- What do these signs mean?

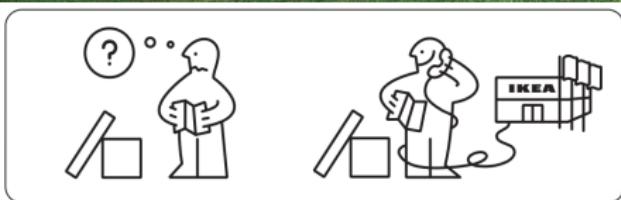
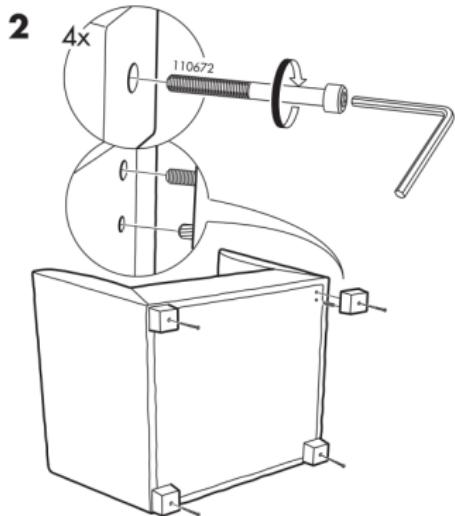


# Picture Writing

- Picture writing is prevalent today
- Convenient as it is not tied to any one language
- What do these signs mean?
  - Although you might all come up with the same phrases, this is not writing
  - Let's consider a different case...



# Picture Writing



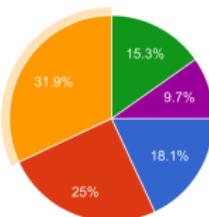
Explain what this means.

# Picture Writing

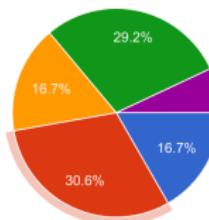
- What about these signs?
  - Cultural background and training is needed to parse each sign



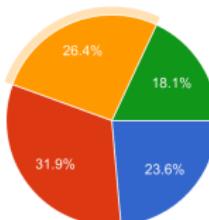
- Shortcomings of picture writing
  - Can't easily convey abstract notions (or even complicated concrete ones!)
  - Ambiguity (e.g. between instruction and warning)
  - Cannot reproduce any string of words in language



- No entry
- No parking
- No stopping
- Watch for hazards
- Watch for X-Men



- Road will turn from one way into two lanes
- Give priority to oncoming traffic
- Wrong way
- Only drive forward
- Back out of this laneway in reverse



- Blind laneway on the right
- Yield while turning left
- T-junction ahead
- Only turn left

# Picture Writing



Pothole..., thin ice..., Zombies...?

- Real writing must often supplement pictures for clarity

# So, writing...

- Is a *systematic* representation of language
- Represents specific linguistic *utterances*
- Can be read and reproduced by anyone literate in the language
- Has internal structure and rules separate from those of language

# Linearity

# Linear flow

- Speech and writing are both linear
  - Speech flows along a single dimension: time
  - Writing flows from grapheme to grapheme across the writing surface
- Directionality can be:
  - Writing direction along a line
  - Line order on the page
  - Page order within a document
  - Label direction within an image

# Horizontal, left-to-right lines

- The majority of writing systems use horizontal lines, starting at the top of the writing surface and continuing downward
- Latin, Cyrillic, Modern Greek, Indic scripts, Ethiopic, and many more...

ARMA virumque cano, Troiae qui primus ab oris →  
Italiam, fato profugus, Laviniaque venit →  
litora, multum ille et terris iactatus et alto →  
vi superum saevae memorem Iunonis ob iram;

Virgil, Aeneid

# Horizontal, right-to-left lines

- Some writing systems, notably those descended from Aramaic, have a right-to-left direction
- Aramaic, Arabic, Hebrew, Syriac...

أنا الذي نظر الأعمى إلى أدبي  
وأسمعت كلماتي من به صمم  
والسيف والرمح والقرطاس والقلم  
الخييل والليل والبيداء تعرفني

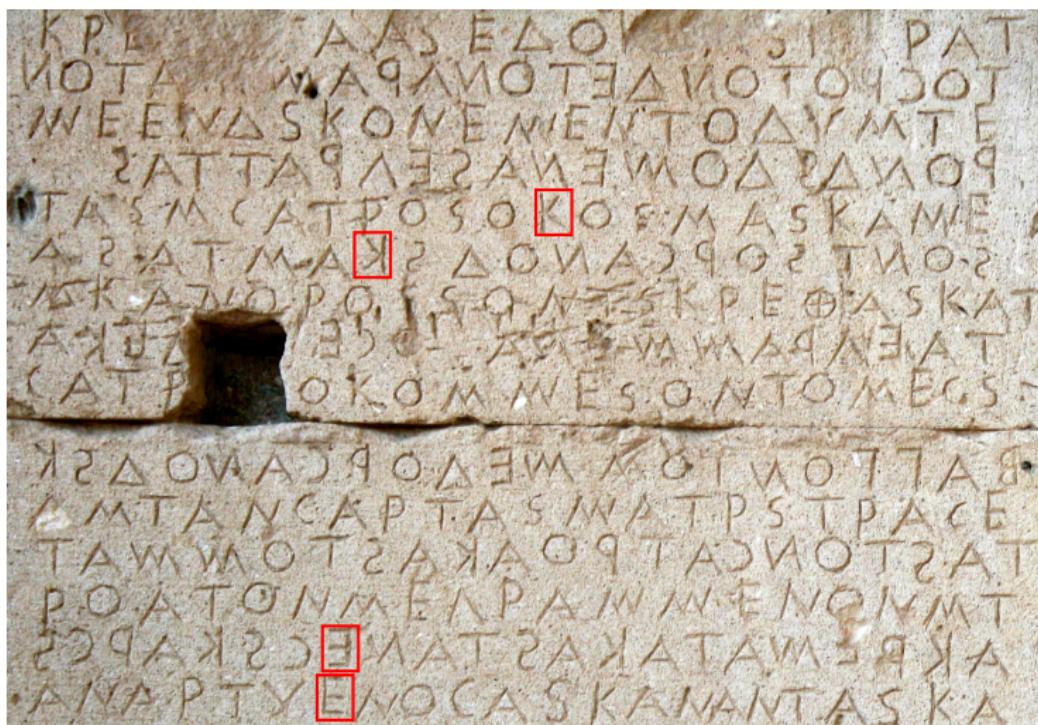
أبو الطيب أحمد بن الحسين المتنبي الكندي  
*Abū at-Ṭayyib Aḥmad ibn al-Husayn al-Mutanabbi al-Kindī*

# Horizontal, boustrophedon

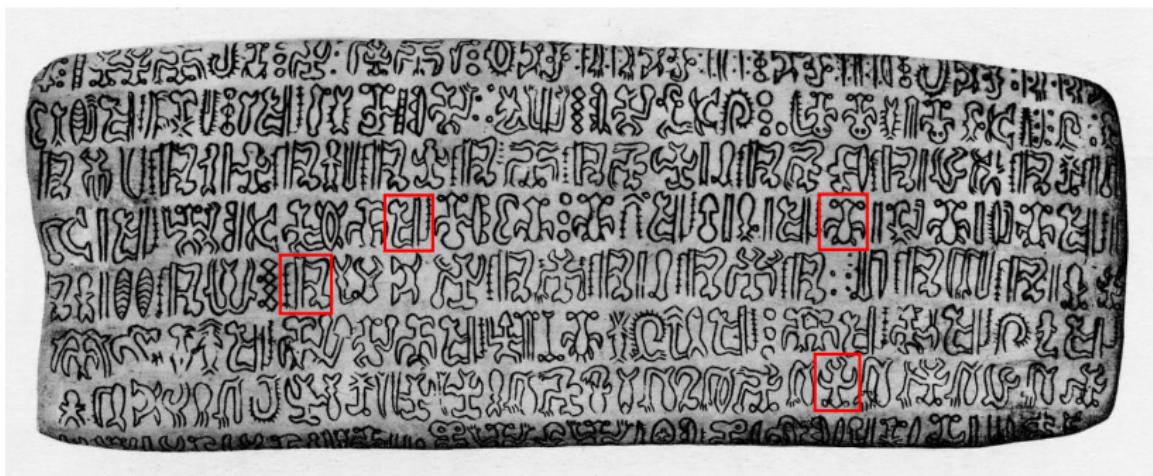
- *Boustrophedon*—“as the ox ploughs”
- Ancient manuscripts & inscriptions
- Most notably Ancient Greek
- *Note:* writing may or may not start L→R on the first line; reversal of direction is the important property here

WRITING IS LEFT-TO-RIGHT ON ODD-NUMBERED  
LINES AND RIGHT-TO-LEFT ON EVEN-NUMBERED  
LINES, WITH LETTERFORMS REVERSING DIRECTION  
ALONG WITH THE WRITING DIRECTION

# Horizontal, boustrophedon



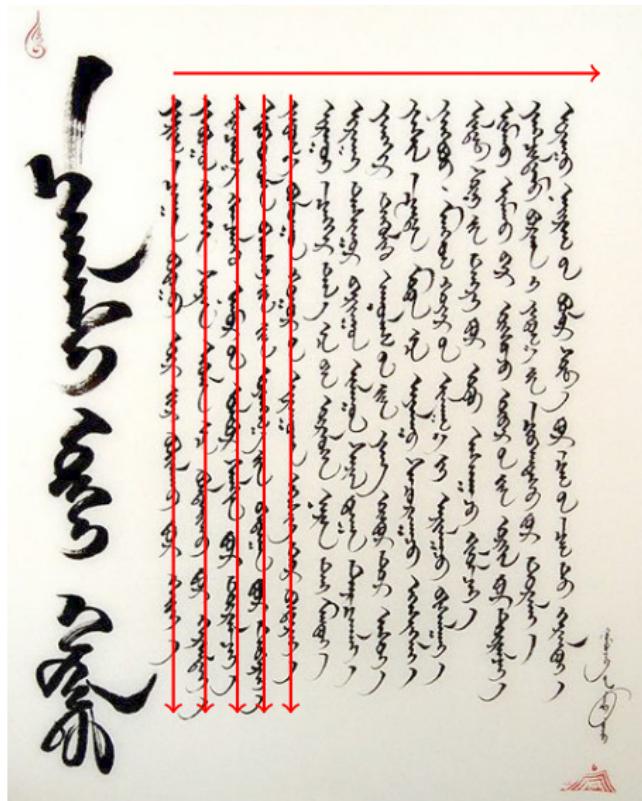
# Horizontal, boustrophedon



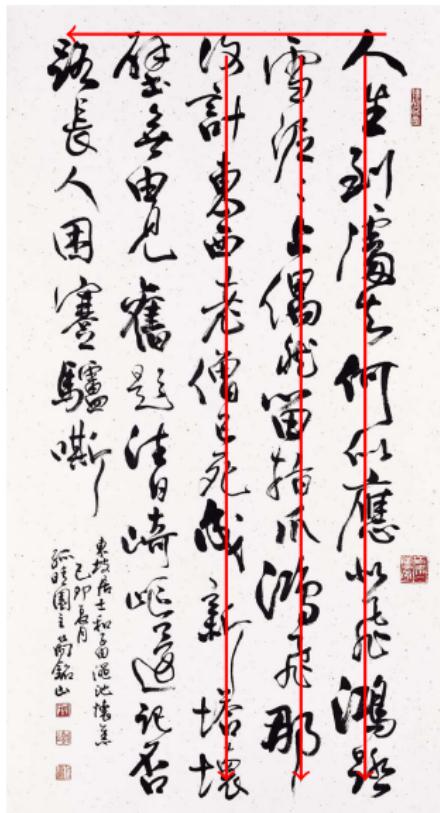
- **Rongorongo**—discovered on Easter Island in the 19th century
- Irregular wooden tablets, often driftwood
- *Undeciphered!*

# Vertical

- Some writing systems can have a vertical direction
- The lines can be ordered to the right in some languages or to the left in others
  - Left-to-right lines: Mongolian
  - Right-to-left lines: Chinese, Japanese



Mongolian



Chinese

# Variability

- There can be optionality in writing direction in some languages
- Chinese, Japanese, and Korean can be written...
  - **Columns:** Top to bottom, ←
  - **Rows:** Left to right, ↓
  - Sometimes in rows apparently right to left?

其表現形式是依附於漢字的藝術，而漢字屬於表意文字，筆劃的組合變化多端，與其他民族的拼音文字相比較，漢字更富於造形性。



# Variability

- Vertical writing is possible in the Latin alphabet too, where horizontal space is similarly constrained
- Capital letters are preferred here



# Graphemes

# Bracketed representations

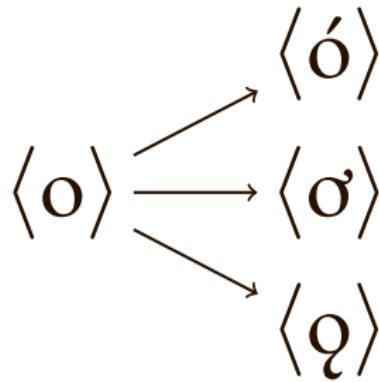
- You might be familiar with the use of brackets to prevent ambiguity if you've studied any linguistics
- We will use different brackets for different kinds of representations:
- Sound
  - Phonetic: [fə'neɪk]
  - Phonemic: /fow'nimɪk/
- Writing
  - Graphemic: ⟨graphemic⟩

# Graphemes

- Minimal **contrastive units** of writing (cf. phonemes, morphemes)
- Can be free or bound
  - **Free** graphemes occur on their own  
e.g., letters of English alphabet, Chinese characters
  - **Bound** graphemes must occur along with another grapheme (although they can sometimes be shown separately for illustrative purposes)  
e.g., accents on letters

# Diacritics

- **Diacritics** are bound graphemes that modify free graphemes
- Placement of diacritics varies widely, and they may interrupt the linearity in the flow of graphemes



# Diacritics

- Devanāgarī (Indic)
  - Written left-to-right
  - Vowels indicated by diacritics
  - Can be placed above, below, after, or before

⟨ती⟩ /ti:/

⟨ति⟩ /ti/

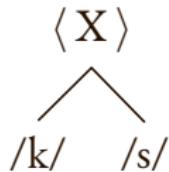
⟨तु⟩ /tu/

# Diacritics versus whole graphemes

- German uses a diacritic ⟨“ ”⟩ called an *umlaut*
  - ⟨ä⟩ = ⟨a⟩ + ⟨“ ”⟩
  - ⟨für⟩ ‘for’ contains four graphemes
- Finnish ⟨ä⟩ is a single grapheme
  - ⟨hän⟩ ‘he’ contains three graphemes
  - Same visual elements, different graphemic status

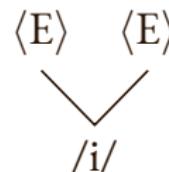
# Digraphs vs. Diphones

- **Digraphs / polygraphs**—2+ *graphemes* for one phoneme
- **Diphones / polyphones**—2+ *phonemes* for one grapheme
  - Two: *di-*
  - Multiple: *poly-*



$\langle X \rangle$  is a **diphone**.

As in  $\langle \text{explain} \rangle$  /ɛkspləjn/.



$\langle EE \rangle$  is a **digraph**.

As in  $\langle \text{need} \rangle$  /nid/.

# Allographs

- Non-contrastive variants of graphemes (compare **allophones**)
- Allographs in **complementary distribution** can be determined based on context
  - Vary **predictably** in their distribution
- Greek sigma
  - $\langle\sigma\rangle$  word-initially;  $\langle\varsigma\rangle$  word-finally
  - e.g.,  $\langle\sigma\tau\alpha\nu\rho\circ\varsigma\rangle$  ( $\langle\text{stavros}\rangle$ ) “cross”
- Roman long s (fell out of use 1800–1850)
  - $\langle f \rangle$  word-initially or medially;  $\langle s \rangle$  word-finally or after long s
  - e.g.,  $\langle f u c c e s f u l \rangle$  “*successful*”
- Virtually all Arabic graphemes...

**ط ط ط ط ظ ظ ظ ظ**

Zah • z / zz

Tah • t / tt

**غ غ غ غ ع ع ع ع**

Ghayn • g / gh

Ayn • —

**ف ف ف ف ق ق ق ق ك ك ك ك**

Kaf • k / c

Qaf • q

Fa' • f

**ل ل ل ل م م م م ن ن ن ن ه ه ه ه**

Heh • h

Noon • n

Meem • m

Lam • l

**ء ي ي ي ي ل ل ل ل و و و و**

Hamza • —

Lam Alef • la

Ya' • y / i

Waw • w / o / u

**أ أ ب ب ب ب ت ت ت ت ث ث ث ث**

Tha' • th

Te' • t

Ba' • b

Alef • a

**ج ج ج ج ح ح ح ح خ خ خ خ**

Kha' • kh

Ha' • h

Jeem • j

**د د د د ذ ذ ذ ذ ر ر ر ر**

Zay • z

Ra' • r

Zal • dh / z

Dal • d

**س س س س ش ش ش ش**

Sheen • sh / ch

Seen • s

**ص ص ص ص ض ض ض ض**

Dhad • d / dd

Sad • s / ss

# Allographs

- Allographs in **free variation** are not determined by context
- Different typefaces:
  - $\langle \text{Sans} \rangle$
  - $\langle \text{Serif} \rangle$
  - $\langle \text{Monospace} \rangle$
- Some graphemes can have different shapes:
  - $\langle a \rangle$  vs.  $\langle \alpha \rangle$
  - $\langle g \rangle$  vs.  $\langle \text{g} \rangle$

# Capitalization

- Some scripts have upper and lower case variants
- Contrastively distinguishes proper and common nouns in English
  - *{Bath}* ‘a city in Somerset, England’
  - *{bath}* ‘a place for bathing’
- Different languages have different capitalization rules, e.g. English vs. German
- Many scripts don’t have capitals!

# Ligatures

- Free graphemes may be fused together into **ligatures**, which are grouped into three categories:
- Non-structural ligatures
  - Just two graphemes pressed together: entirely æsthetic
  - e.g., ligatures in English script
    - æsthetic; first; flower; efficient; affluent
  - These are common in manuscripts!

|                  |                  |
|------------------|------------------|
| <i>ingens</i>    | <i>ingens</i>    |
| <i>gemens</i>    | <i>gemens</i>    |
| <i>torquens</i>  | <i>torquens</i>  |
| <i>completus</i> | <i>completus</i> |

# Ligatures

- Structural ligatures
  - Form distinct graphemes:  
treated as a single new grapheme
  - e.g., Danish ⟨æ⟩, which is its own letter, ordered after ⟨z⟩
- Quasi-ligatures
  - Structural ligatures that are not actually connected!
  - Two distinct shapes that are treated as a single letter
  - e.g., Spanish ⟨ch⟩ and ⟨ll⟩, which were treated as separate letters in the alphabet



A B C D E F  
G H I J K L  
M N O P Q R  
S T U V W X  
Y Z Æ Ø Å

# Orthography & Transliteration

# Orthography

- *Script*—A collection of graphemes & rules to combine them
- *Orthography*—the way something is written or “spelled” in a language, using combinations of graphemes
- For some languages, this corresponds regularly and systematically to pronunciation
  - You can be pretty sure about the pronunciation of an unfamiliar word
  - e.g. Finnish, Italian, Hindi

# Orthography

- For others, the correspondence between orthography and sound is less systematic, perhaps because of...
  - *Linguistic change*—the orthography reflects an earlier pronunciation
  - *Tradition*—the orthography reflects the etymological roots of the word, in an earlier form of the language or another language entirely
  - *Missing phonological information*—the writing system does not represent all of the features that are contrastive in the language
  - *Borrowed system*—the writing system was originally devised for one language but was borrowed wholesale to write another, very different language
- We will be discussing each of these throughout the course

# Transcription

- It is extremely useful to be able to discuss sounds using consistent notation

| English        |      | French        |        |                                     |
|----------------|------|---------------|--------|-------------------------------------|
| Orthog.        | IPA  | Orthog.       | IPA    |                                     |
| though         | [ow] | sain          | [sã]   | <i>healthy</i>                      |
| through        | [u]  | saint         | [sã]   | <i>holy</i>                         |
| tough          | [ʌf] | sein          | [sã]   | <i>breast</i>                       |
| cough          | [af] | seing         | [sã]   | <i>signature</i> ( <i>archaic</i> ) |
| bough          | [aw] | ceins         | [sã]   | <i>I wrap</i>                       |
| bought         | [a]  | ceint         | [sã]   | <i>wrapped</i>                      |
| Irish (Ulster) |      | gheobhaidh    | [joɪ:] | <i>will get</i>                     |
| Tibetan (Kami) |      | བୋଲ୍ବ ༕ୁସ୍ଲାବ | [ʰɬ]   | <i>to teach</i>                     |

# Transcription

- International Phonetic Alphabet (IPA)
  - In linguistics, the IPA is the standard system for transcribing speech sounds
  - Created in 1888, and has undergone several revisions
    - Most recent revision: 2015
  - The IPA has symbols that represent both segments (i.e. consonants and vowels) and suprasegments (e.g., stress, length, tone)
- **Transcription** refers to writing something down as text
  - IPA is used to transcribe spoken language into a consistent and phonetically transparent written form
- **Transliteration** refers to transforming one kind of written text into another

# Transliteration

- Changing writing from one script to another
- Many writing systems have standard Roman transliteration systems
- e.g., Russian
  - Cyrillic ⟨Я не говорю по-русски.⟩
  - Roman ⟨Ya nye govoryu po-russki.⟩

## Lecture 1 Questionnaire

# Readings & Next Time

- Make sure you have read Chapters 1 and 2 of the textbook
- Read Chapter 5 for next week...

