

## Introduction to Linguistics

*What is language?*

Language is:

- **untaught:**  
People occasionally try to teach you things about language (e.g. “don’t split an infinitive,” or “never end a sentence with a preposition”), but the really interesting things you know (e.g. *blick* is a possible word, but *bnick* is not) are things that nobody ever taught you.
- **tacit:**  
We can (and will) try to figure out how the rules of language work, but these rules are instinctive, and we don’t think about them when we speak.
- **uniform:**  
All developmentally normal children acquire language. In addition, human languages, though they differ from one another, differ in *highly constrained ways*, so that we find the same kinds of patterns and rules again and again.
- **infinite:**  
We don’t just memorize sentences we’ve heard. We are capable of creating and interpreting sentences we’ve never heard, of infinite length (“My pet octopus believes that his friend Bob believes that everyone believes that...”).
- **species-specific:**  
Only humans acquire language.



*Nim Chimpsky, 1973-2000*

- *There have been extended studies on animals to see if they have a human-like capacity for language.*
- *The general conclusion is that they don't. Nim Chimpsky, on the left, was raised more or less as a human child for the first 10 years of his life. He learned somewhere between 25 and 125 signs, but never acquired language in the way we think of it.*
- *Animals' use of language tends to be strictly pragmatic: as a means to achieve something. We use language for much more: to express complex ideas, to worry about the future, to reflect on the past.*

**Universal Grammar** (Noam Chomsky): We are all born (tacitly, innately) knowing certain things about human language is put together. This is how we acquire this complex system, without instruction: we have a head start.

*Linguistics* is the study of how these complex systems work, and how exactly we acquire them.

## (English) Phonetics

*Phonetics* is the study of the sounds we use in language: how speech sounds are produced, how they're transmitted, and how they're perceived. Some things we will learn today:

- Speech sounds and spelling often do not match.
- Sounds can be categorized based on *how and where they are pronounced*.

### 1 Spelling/sound correspondences

- (1) How many consonants are there in the English alphabet? **20 or 21.**  
**b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, z(, y)**
- (2) How many consonant *sounds* are there in English? **At least 25.**
  - a. /b/, as in **bark**
  - b. /p/, as in **park**
  - c. /d/, as in **dark**
  - d. /t/, as in **tarp**
  - e. /dʒ/, as in **jury**
  - f. /tʃ/, as in **chirp**
  - g. /g/, as in **glow**
  - h. /k/, as in **car**
  - i. /ʔ/, it's the silent bit in **uh-oh**
  - j. /v/, as in **vine**
  - k. /f/, as in **fine**
  - l. /θ/, as in **thin**
  - m. /ð/, as in **then**
  - n. /z/, as in **zone**
  - o. /s/, as in **scone**
  - p. /ʒ/, as in **garage**
  - q. /ʃ/, as in **shine**
  - r. /m/, as in **mine**
  - s. /n/, as in **nine**
  - t. /ŋ/, as in **ring**
  - u. /l/, as in **line**
  - v. /ɹ/, as in **rind**
  - w. /w/, as in **wind**
  - x. /w̥/, as in **which** (some dialects only; see <[https://en.wikipedia.org/wiki/Phonological\\_history\\_of\\_wh#Wine.E2.80.93whine\\_merger](https://en.wikipedia.org/wiki/Phonological_history_of_wh#Wine.E2.80.93whine_merger)> for more info)
  - y. /j/, as in **you**

- (3) How many vowels are there in the English alphabet? **5 or 6.**  
**a, e, i, o, u(, y)**
- (4) How many vowel *sounds* are there in English? **American English: around 15**
- /i/, as in **beat**
  - /ɪ/, as in **bit**
  - /ɛ/, as in **bet**
  - /æ/, as in **bæt**
  - /ə/, as in **banana**
  - /ʌ/, as in **but**
  - /u/, as in **boot**
  - /ʊ/, as in **book**
  - /ɔ/, as in **caught** (some dialects only; in others, like mine, /ɔ/ and /a/ are indistinguishable. See <[https://en.wikipedia.org/wiki/Phonological\\_history\\_of\\_English\\_low\\_back\\_vowels#Cot.E2.80.93caught\\_merger](https://en.wikipedia.org/wiki/Phonological_history_of_English_low_back_vowels#Cot.E2.80.93caught_merger)> for more info.)
  - /ɑ/, as in **father**
  - /eɪ/, as in **play**<sup>1</sup>
  - /aɪ/, as in **my**
  - /ɔɪ/, as in **boy**
  - /oʊ/, as in **boat**
  - /aʊ/, as in **house**

How many *sounds* (**not** how many *letters*) are there in the following words?

- |  |   |
|--|---|
| <p>(5) Some easier ones...</p> <ol style="list-style-type: none"> <li>aloof: 4 /əlu:f/</li> <li>mix: 4 /mɪks/</li> <li>timid: 5 /tɪmɪd/</li> <li>coup: 2 /ku/</li> <li>lugged: 4 /lʌgd/</li> </ol> | <p>(6) Some trickier ones...</p> <ol style="list-style-type: none"> <li>bird: 3 /bɪd/? 4 /bɜːd/? 4 /beɪd/? ...</li> <li>windows: 6 /wɪndəʊz/</li> <li>mitten: varies; e.g. 5 /mɪtən/, 4 /mɪʔn/</li> </ol> |
|--|---|

- (7) How many sounds can the string *ough* (as in **hiccough**) correspond to? **10.**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>/oʊ/ as in <b>though</b></li> <li>/ʌf/: as in <b>tough</b></li> <li>/af/: as in <b>cough</b></li> <li>/ʌp/: as in <b>hiccough</b></li> <li>/aʊ/: as in <b>plough</b></li> </ol> | <ol style="list-style-type: none"> <li>/u/: as in <b>through</b></li> <li>/ɔ/: as in <b>nought</b></li> <li>/ax/<sup>2</sup>: as in <b>lough</b></li> <li>/ə/: as in <b>borough</b></li> <li>/ak/: as in <b>hough</b></li> </ol> |
|--|--|

<sup>1</sup>The ligature (linking element here) essentially tells you that, although I've transcribed two segments here, we should think of them as one sound.

<sup>2</sup>/x/ is a voiceless velar fricative (as in Bach). English used to have an /x/ I think, but lost it at some point.

(8) How many ways are there to spell the following sounds?<sup>3</sup>

a. [i] (as in **me**) **At least 18.**

- |                 |                   |                  |
|-----------------|-------------------|------------------|
| i. e, be        | vii. ee, bee      | xiii. oe, amoeba |
| ii. i, ski      | viii. ei, deceit  | xiv. oi, chamois |
| iii. a, bologna | ix. eo, people    | xv. ue, dengue   |
| iv. ae, algae   | x. ey, key        | xvi. ui, beguine |
| v. ay, quay     | xi. eye, volleyed | xvii. uy, guyot  |
| vi. ea, beach   | xii. ie, field    | xviii. y, city   |

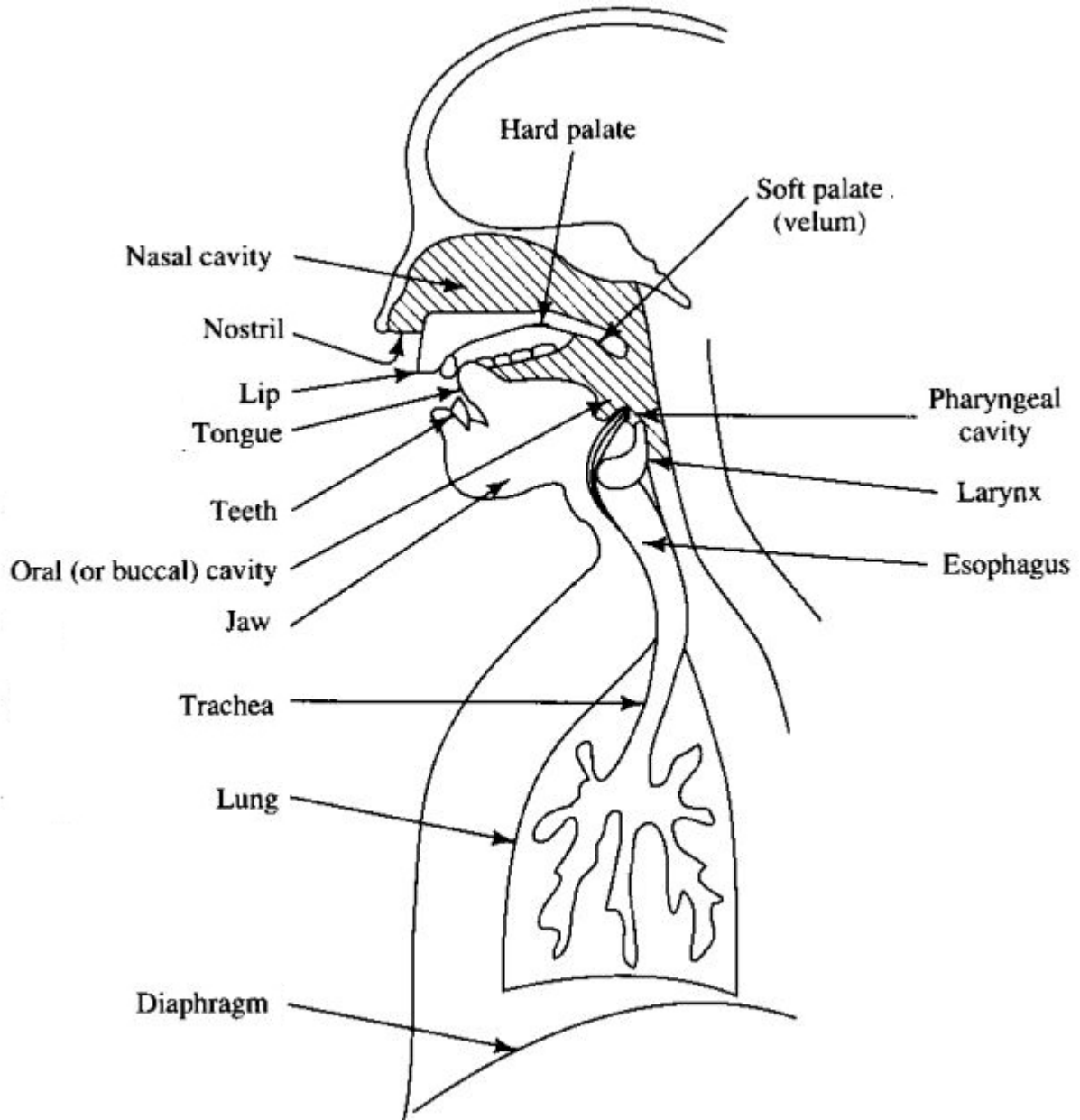
b. [eɪ] (as in **May**) **At least 34.**

- |                     |                         |                    |
|---------------------|-------------------------|--------------------|
| i. ez, chez         | xiii. et, ballet        | xxv. ay, hay       |
| ii. ie, lingerie    | xiv. a, bass            | xxvi. e, ukulele   |
| iii. oeh, boehmeite | xv. aa, quaalude        | xxvii. é, café     |
| iv. ue, merengue    | xvi. ae, reggae         | xxviii. eg, thegn  |
| v. uet, bouquet     | xvii. ai, rain          | xxix. ee, matinee  |
| vi. ete, crocheted  | xviii. aig, arraign     | xxx. ée, soirée    |
| vii. ey, they       | xix. aigh, straight     | xxxi. eh, eh       |
| viii. eye, obeyed   | xx. ais, palais         | xxxii. ei, veil    |
| ix. eigh, weighed   | xxi. al, Ralph (B. Eng) | xxxiii. eig, reign |
| x. er, dossier      | xxii. ao, gaol          | xxxiv. eigh, eight |
| xi. ere, espaliered | xxiii. au, gauge        |                    |
| xii. es, demesne    | xxiv. aye, payed        |                    |

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<sup>3</sup>I found these on Wikipedia. Some of these examples are debatable (a lot are loans from French, and I'm not sure why the consonants count in some cases but not others), but the point is that the orthography-to-spelling conversion is not 1 to 1. There's more where this came from at <[https://en.wikipedia.org/wiki/English\\_orthography](https://en.wikipedia.org/wiki/English_orthography)>.

2 How and where these sounds are made



## 2.1 Grouping sounds I: *where* they are articulated

On p. 2 (and hopefully, on the blackboard), you have a list of the consonantal sounds in English. Now your task is to group them by *where* they are pronounced. . .

- (9) With your lips (*labial* consonants): /b/, /p/, /m/, /f/, /v/ (and /w/, /w̥/, sort of)<sup>4</sup>
- (10) With your teeth and your tongue (*interdental*): /θ/, /ð/
- (11) With your tongue (*coronal* consonants): /t/, /d/, /n/, /s/, /z/, /l/, /ɹ/
- (12) Somewhere in between coronal and dorsal: /ʃ/, /ʒ/, /tʃ/, /dʒ/, /j/
- (13) In the back of your mouth (*dorsal* consonants): /k/, /g/, /ŋ/, /h/, /ʔ/

## 2.2 Grouping sounds II: *how* they are articulated

On p. 2 (and hopefully, on the blackboard), you have a list of the consonantal sounds in English. Now your task is to group them by *where* they are pronounced. . .

- (14) Voicing: Voicing refers to the activity of the vocal folds during speech production. In English, consonants can either be *voiceless* (no vibration) or *voiced* (vibration).
  - a. List the voiced consonants: /b/, /d/, /g/, /v/, /ð/, /z/, /ʒ/, /dʒ/, /m/, /n/, /ŋ/, /l/, /ɹ/, /w/, /j/
  - b. List the voiceless consonants: /p/, /t/, /k/, /ʔ/, /f/, /θ/, /s/, /ʃ/, /h/, /tʃ/
- (15) Airflow: Sounds differ in the amount of air expelled from the mouth (or the nose) during production. For example: what is the difference between [t] (as in **tee**) and [s] (as in **see**)?
  - a. *Stops* completely stop the flow of air; there is a pressure buildup, and then a release: /p/, /t/, /k/, /b/, /d/, /g/, /ʔ/
  - b. *Fricatives* create a narrow path for the air; there is no complete stop of airflow: /v/, /f/, /θ/, /ð/, /z/, /s/, /ʒ/, /ʃ/, /h/
  - c. *Nasals* are weird cousins of stops, that also allow air through the nasal cavity: /m/, /n/, /ŋ/
  - d. *Affricates* are more or less a stop immediately followed by a fricative: /tʃ/, /dʒ/
  - e. *Approximants and glides* are consonants with a lesser degree of constriction than those listed above: /l/, /ɹ/, /w/, /j/

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<sup>4</sup>Technically, /w/ and its voiceless cousin are labiovelar consonants. They involve both a constriction at the front of the mouth (lip rounding) as well as a constriction at the back (you can feel the back of your tongue raising). So they're difficult to classify.

### 3 Vowels

The primary (though not only) distinction between vowels is the position of the tongue.

- (16) Height: Vowels are differentiated according to the tongue's vertical position in the mouth.
- Which vowels are produced with your tongue high?  
/i/, /ɪ/, /u/, /ʊ/
  - Which vowels are produced with your tongue low?  
/æ/, /a/
  - Somewhere in the middle: /ɛ/, /ə/, /ʌ/, /ɔ/
- (17) Back and front: The tongue's horizontal position also makes a difference.
- Which vowels are produced with your tongue towards the front?  
/i/, /ɪ/, /ɛ/, /æ/
  - Which vowels are produced with your tongue towards the back?  
/u/, /ʊ/, /ɔ/, /a/
  - Somewhere in the middle: /ə/, /ʌ/
- (18) Rounding: Some vowels are produced with your lips rounded. Which vowels are these?  
/u/, /ʊ/, /ɔ/
- (19) Anything we haven't covered yet? (Hint: what about *oy* in **boy**)?  
Diphthongs!! These are: /eɪ/, /aɪ/, /ɔɪ/, /oʊ/, /aʊ/. They are vowels that have two parts.

### 4 On your own: phonetics resources

- From the University of Iowa: this is an interactive web app that allows you to pick a sound, and then it both plays it for you *and* shows you how it's articulated. Nifty.  
*English*: <<http://soundsofspeech.uiowa.edu/english/english.html>>  
*German*: <<http://soundsofspeech.uiowa.edu/german/german.html>>  
*Spanish*: <<http://soundsofspeech.uiowa.edu/spanish/spanish.html>>
- From the University of Victoria: an IPA chart containing all speech sounds (not just English). Feel free to play around; we'll talk more about some of these sounds next time.  
<<http://web.uvic.ca/ling/resources/ipa/charts/IPALab/IPALab.htm>>
- And here's a glossary, in case you visit these sites and find some of the terms unfamiliar.  
<<http://blogjam.name/sid/>>