- **Language change and mental grammar**

Background reading:

- *CL* Ch 8, sec 2.4 on phonological change
- *CL* Ch 8, sec 3.1-3.2, 3.4 on morphological change
- *CL* Ch 8, sec 4.2 on syntactic change

1. Language change and mental grammar

We know that language changes over time

- We can use information from existing languages to **reconstruct** (hypothesize) what their common starting point (ancestor language) was like
  - See the self-paced learning slides from last week for examples and discussion
- We can **observe** changes in language through historical records
- When language changes over time, *what* changes?

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- When language changes over time, *what* changes?
  - **lexicon** and **mental grammar**

1. Language change and mental grammar

- What language is this? (examples from Campbell 1999)

Þa æfter lytlum fyrste genēalæton
þa ðe þær stodon, cwædon to petre.
Soðlice þu eart of hym,
þyn spræc þe gesweotolað.

1. Language change and mental grammar

- What language is this?

And a litil aftir, thei that stooden
camen, and seiden to Petir,
treuli thou art of hem;
for thi speche makith thee knowun.

1. Language change and mental grammar

- What language is this?

> And after a while came vnto him
> they that stood by, and saide to Peter,
> Surely thou also art one of them,
> for thy speech bewrayeth thee.

1. Language change and mental grammar

- **Early Modern English** — King James Bible, 1611

  And after a while came vnto him
  they that stood by, and saide to Peter,
  Surely thou also art one of them,
  for thy speech bewrayeth thee. (Matthew 27:73)

- Can we see differences from Modern English?
  - spelling differences (some may be clues to **phonology**; some are not linguistically interesting)
  - **lexicon**
  - **morphology** and **syntax**

1. Language change and mental grammar

- **Middle English** — Wycliff [wɪklɪf] Bible, 14th century

  And a litil aftir, thei that stooden
  camen, and seiden to Petir,
  treuli thou art of hem;
  for thi speche makith thee knowun.

- Can we see differences from Modern English?
  - (spelling differences)
  - **lexicon**
  - **morphology** (no syntax differences visible here)

1. Language change and mental grammar

- **Old English** — West-Saxon Gospels, c. 1050

Þa	æfter	lytlum	fyrste	genēalǣton
Then	*after*	*little*	*first*	*approached*

þa	ðe	þær	stodon,	cwædon	to	petre.
they	*that*	*there*	*stood,*	*said*	*to*	*Peter.*

Soðlice	þu	eart	of	hym,
Truly	*thou*	*art*	*of*	*them,*

þyn	spræc	þe	gesweotolað.
thy	*speech*	*thee*	*makes-clear.*

1. Language change and mental grammar

- Old English:

  Can we see differences from Modern English?

  - (spelling differences; unfamiliar alphabet letters)
  - **lexicon**
  - **morphology**
  - **syntax**

1. Language change and mental grammar

- Suppose we observe (from language data) that Language A and Language B are different
  - What is the difference between the speakers of those two languages?

- Now suppose we observe that a language has changed over time
  - What is the difference between older and newer speakers of those two languages?

1. Language change and mental grammar

- Suppose we observe (from language data) that Language A and Language B are different
  - What is the difference between the speakers of those two languages?

    → lexicon and mental grammar
- Now suppose we observe that a language has changed over time
  - What is the difference between older and newer speakers of those two languages?

    → lexicon and mental grammar!

1. Language change and mental grammar

- When we see that two languages (or varieties) differ, we know that they differ in terms of their…
  - **lexicon** (morphemes and their meanings)
  - mental grammar:
    - inventory of **phonemes**
    - **X-bar** structure
    - **rules** (phonological, morphological, syntactic…)
- When a language changes over time, these aspects must also be **what is changing**

1. Language change and mental grammar

- Language change is often strikingly **regular** and **systematic**
  - Does our approach to understanding human language explain this?

1. Language change and mental grammar

- Language change is often strikingly **regular** and **systematic**
  - Does our approach to understanding human language explain this?
  - Yes! Changes in the **mental grammar** (rules) *should* be systematic
- There are also some historical changes that affect individual lexical items
  - These changes are more sporadic, since they are case by case

2. How language change happens

- What factors might make a language (lexicon, mental grammar) **different** from one generation to the next?

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- What factors might make a language (lexicon, mental grammar) **different** from one generation to the next?
  - Child **language acquisition** may be 'imperfect' from the perspective of the adult grammar

    → New generation has different mental grammar
  - **Language variation** may cause the language systems of two language communities to differ increasingly over time
- But **why** do some changes spread and persist, and not others? → A major research question

2. How language change happens

- Some types of change resemble phenomena observed in child language acquisition
- Phonetic/phonological changes (**sound change**)
  - Ease of articulation → **assimilation**
  - Inaccurate perception → **substitution**
- Morphological or syntactic changes
  - **Overgeneralization** (of regular or irregular patterns) → change by **analogy**
  - A string of morphemes or words may be **reanalyzed** as having a different structure

3. Phonetics/phonology: Sound change

- When sound (or natural class) A changes over time to become sound (or natural class) B, we can write a **sound change rule**:

  A > B / (environment, if any)

  - Looks familiar! Remember to use properties
  - **Use this arrow (>) for change over time**
  - The arrow with a stem (→) is for a phonological rule, from phonemes to allophones, for one stage in time

3. Phonetics/phonology: Sound change

- **Sound change rule**:

  A > B / (environment, if any)

- Examples of sound changes
  - Grimm's Law (last week)
  - More examples at the end of these slides

- Sound change rules are what lead to **systematic sound correspondences** in related languages

	Variety 1	Variety 2	
Stage 1:	/p/	/p/	
Stage 2:	/p/	/f/	(after /p/ > /f/ sound change)

4. Morphology: Overgeneralization (analogy)

- Morphological or syntactic changes
  - **Overgeneralization** (of regular or irregular patterns) → change by **analogy**

  - Example from Latin:

4. Morphology: Overgeneralization (analogy)

- Latin before 400 BC

hono**s**	‘honor’	labo**s**	‘labor’	*(nom. sg.)*
honō**s**em		labō**s**em		*(acc. sg.)*
honō**s**is		labō**s**is		*(gen. sg.)*

4. Morphology: Overgeneralization (analogy)

- Systematic sound change ([s] > [r] between vowels)

hono**s**	labo**s**	*(nom. sg.)*
honō**r**em	labō**r**em	*(acc. sg.)*
honō**r**is	labō**r**is	*(gen. sg.)*

vcls alveolar fric > vcd liquid / vowel __ vowel

- Paradigm now has an alternating consonant
- How might this paradigm change to become **more regular**?

4. Morphology: Overgeneralization (analogy)

- Latin after 200 BC

honor	labor	*(nom. sg.)*
honōrem	labōrem	*(acc. sg.)*
honōris	labōris	*(gen. sg.)*

  - The change from *labōsem* to *labōrem* (etc.) is explained by a **systematic sound change**, but word-final [s] in general was not changed
  - So why did words like *labos* change to *labor*? By **analogy** with the rest of their paradigm (similar to overgeneralization by children)

5. Morphology and syntax

- Morphological or syntactic changes
  - A string of morphemes or words may be **reanalyzed** as having a different structure

  - Example from Finnish:

5. Morphology and syntax

- Old Finnish: [-m] acc. sg., [-n] gen. sg.
  (example from Campbell 1999)

- Original construction:
  Relative clauses need **accusative** case

(a) näen miehe-m tule-va-m
I.see *man-ACC.SG* *come-PART-ACC.SG*
'I see the man [$_{CP}$ who is coming]'

(b) näin venee-t purjehti-va-t
I.saw *boat-ACC.PL* *sail-PART-ACC.PL*
'I saw the boats [$_{CP}$ that sail]'

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  'I see the man [$_{CP}$ who is coming]'

- **Sound change**: labial nasal > alveolar / __#
- New generation of learners, after sound change:

  (a) näen miehe-n tule-va-n
  → ***Is this accusative, or genitive?***

5. Morphology and syntax

- New generation of learners, after sound change:

  (a) näen miehe-n tule-va-n (ACC or GEN?)

- Here is what we now find in the plural:

  (b) näin vene-i-den purjehti-va-n

  I.saw *boat-PL-GEN* *sail-PART-GEN*

  'I saw the boats that sail'

  which is a change from the older form:

  näin venee-t purjehti-va-t

  I.saw *boat-ACC.PL* *sail-PART-ACC.PL*

- How has this change in the plural come about?

5. Morphology and syntax

- The change from accusative to genitive in Finnish relative clauses is an example of **reanalysis**
- **Reanalysis** is when:
  - A string of words (or morphemes) has an *ambiguous interpretation* — it could have more than one structure ([-n]: ACC or GEN?)
  - The new generation of learners interprets the string to have a different structure from what the older generation of speakers gave it ([-n]: GEN)
  - Reanalysis can affect morphology or syntax

6. More on sound change

- In a **phoneme split**, one phoneme in an older form of the language corresponds to two (or more) phonemes in a later form of the language

6. More on sound change

- Example: [n], [ŋ] in English
  - Earlier stage: No minimal pairs
    [ŋ] occurs only before [k, g]
    [n] never occurs before [k, g]
    - Did [n], [ŋ] belong to separate phonemes, or were they allophones of one phoneme?
  - Is this different from English now?

6. More on sound change

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  - Earlier stage: No minimal pairs
    [ŋ] occurs only before [k, g]
    [n] never occurs before [k, g]
    - Did [n], [ŋ] ~~belong to separate phonemes,~~ or were they allophones of one phoneme?
  - Is this different from English now? | yes
- What happened? Word-final [g] was lost after nasals, leaving [ŋ] in word-final position
  - Now we have minimal pairs, as in [sin], [siŋ]

6. More on sound change

- In a **phoneme merger**, two (or more) phonemes in an older form of the language correspond to one phoneme in a later form of the language
- Examples:
  - The *pin/pen* vowel merger
  - The *cot/caught* vowel merger

  → Which of these is **unconditioned**?
  (=has no environment; happens everywhere)

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  → Which of these is **unconditioned**?
  (=has no environment; happens everywhere)
    - The *pin/pen* merger happens / __ nasals
    - The *cot/caught* merger is unconditioned

6. More on sound change

- In a **phoneme shift**, the number of phonemes does not change, but the phonetic value of those phonemes undergoes change
- Examples:

  Older

  - Grimm's Law (last class)
  - Great English Vowel Shift

  Recent/ongoing

  - Northern Cities Vowel Shift [examples at end]
  - New Zealand Vowel Shift [examples]

6. More on sound change

- The Great English Vowel Shift (*CL*, pp 310-311)
  Middle English period through the 18th century

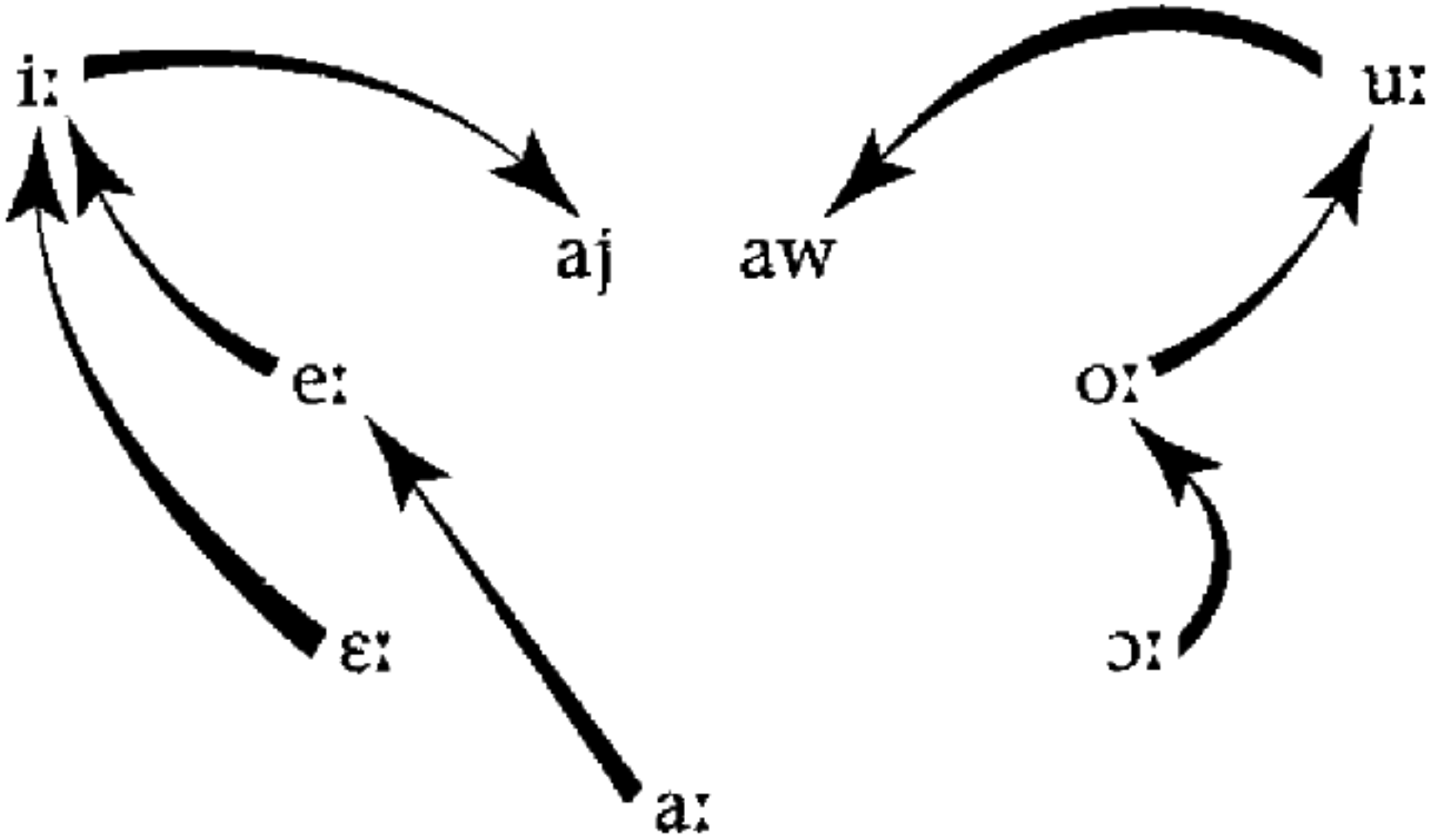


Figure 8.8 Changes brought about by the Great English Vowel Shift

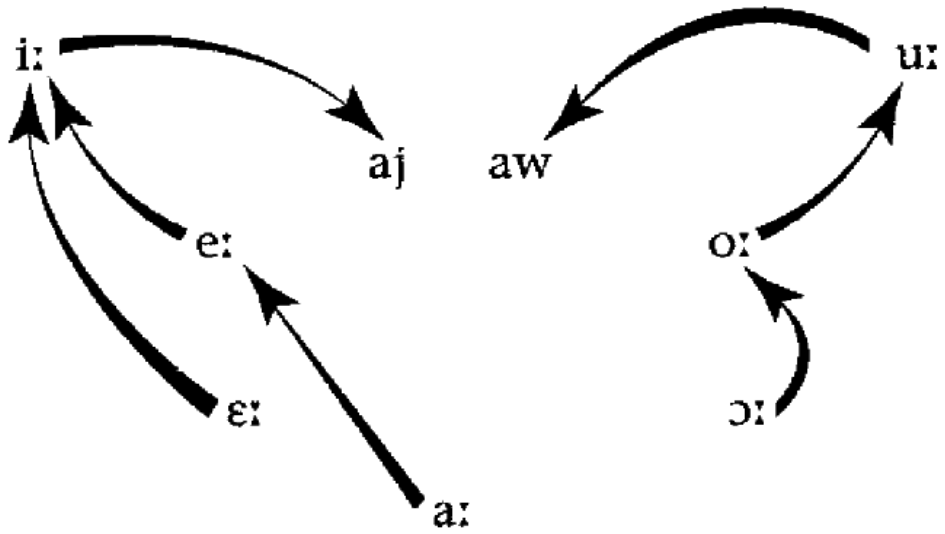
6. More on sound change

- The Great English Vowel Shift
  - How were the (first) vowels in these words pronounced before and after the shift?

*t**i**de* *l**ou**d*

*g**ee**se* *g**oo**se*

*n**a**me*



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  - Does this help explain anything about the spelling conventions for Modern English vowels?

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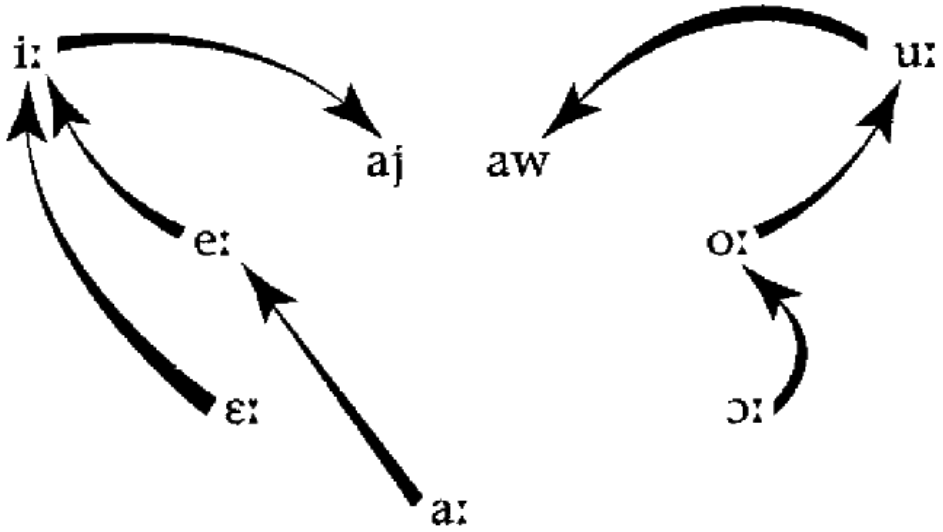
[*?*]>[i]	[*?*]>[u]

*n**a**me*

[*?*]>[e(j)]



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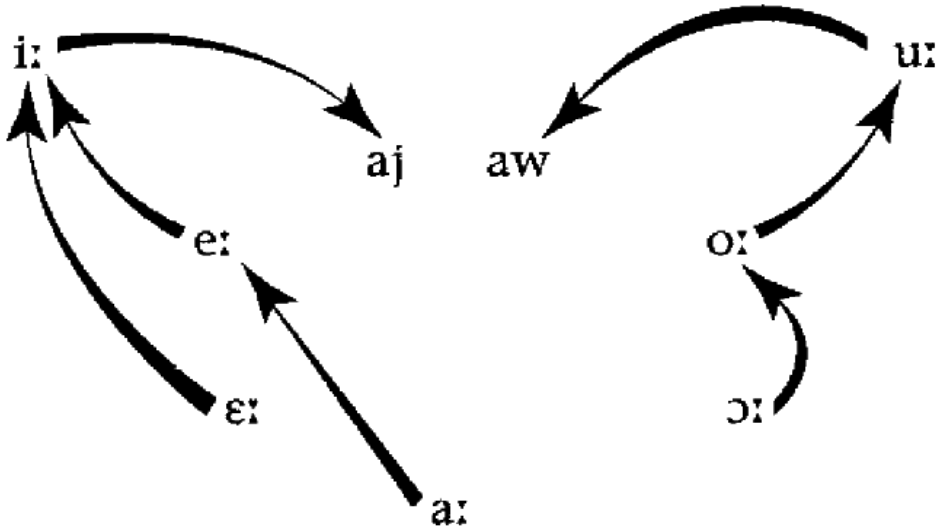

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  - Looks familiar! Remember to use properties
  - Use this arrow (>) for change in time, and the arrow with a stem (→) for the outcome of a speaker's phonological rule

6. More on sound change

- **Sound change rule**:

  A > B / (environment, if any)

- Try it: Northern Cities Shift example
  - The vowel in the word *dress* has changed to sound like the vowel in the word *trust*
  - How can we write this as a sound change?

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  - The vowel in the word *dress* has changed to sound like the vowel in the word *trust*
  - How can we write this as a sound change?

    mid front lax > central

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