

- **Language change and mental grammar**

Background reading:

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

0. Course information

- Our **final exam** is **Th Dec 14, 8-11am**
 - This is more than a week after our last class!
 - Tip: Review a little each day to keep the material fresh
- **Info & review guide** available W Dec 6
 - The final exam is cumulative
- I will hold a **review session** shortly before the final exam (probably on W Dec 13)
 - I will take suggestions before the review session for topics to discuss or review

1. Language change and mental grammar

- We know that language changes over time
 - We can use information from existing languages to **reconstruct** (hypothesize) their ancestor language (common starting point)
 - See lecture outline from last time for examples
 - We can **observe** changes in language through historical records
- When language changes over time, *what* changes?
What is different between older, younger speakers?
 - Think about this as we consider some examples

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? (examples from Campbell 1999)

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? (examples from Campbell 1999)

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 [wiklif] 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 genēalæton

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 are the differences between the speakers of those two languages?
- Now suppose we observe that a language has changed over time
 - What are the differences 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 are the differences between the speakers of those two languages?
→ **lexicon and/or mental grammar**
- Now suppose we observe that a language has changed over time
 - What are the differences between older and newer speakers of those two languages?
→ **lexicon and/or 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**, including:
 - 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 over time is often strikingly **regular** and **systematic**
 - Does our model of human mental grammar predict this?

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- Language change over time is often strikingly **regular** and **systematic**
 - Does our model of human mental grammar predict 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 arise morpheme by morpheme

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
- So **why** do some changes spread and persist, and not others? → *Major research question; no easy answers*

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 change
 - Inaccurate perception → substitution change
- 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 rule in the mental grammar for one stage in time (such as a phonological rule from phonemes to allophones, or an affix's word-formation rule)

3. Phonetics/phonology: Sound change

- **Sound change rule:**

A > B / (environment, if any)

- Examples of sound changes
 - Grimm's Law (last time)
 - 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

honos 'honor' labos 'labor' (*nom. sg.*)

honōsem labōsem (*acc. sg.*)

honōsis labōsis (*gen. sg.*)

4. Morphology: Overgeneralization (analogy)

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

honos **s** labos **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 inconsistent consonant
- How might this paradigm change to become **more regular?**

4. Morphology: Overgeneralization (analogy)

- Latin after 200 BC

honor	labor	(<i>nom. sg.</i>)
honōrem	labōrem	(<i>acc. sg.</i>)
honōris	labōris	(<i>gen. sg.</i>)

- 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**]'

5. Morphology and syntax

- Old Finnish: [-m] acc. sg., [-n] gen. sg.
- Original construction:
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I.see man-ACC.SG come-PART-ACC.SG

'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 [_{CP} **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

- Sound change can change the phoneme inventory of a language in several ways
 - In a **phoneme split**,
one phoneme > two (or more) phonemes
 - In a **phoneme merger**,
two (or more) phonemes > one phoneme
 - In a **phoneme shift**,
the number of phonemes does not change, but their phonetic value changes

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

- 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? | **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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- Examples:
 - The *pin/pen* vowel merger
 - The *cot/caught* vowel merger
- 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

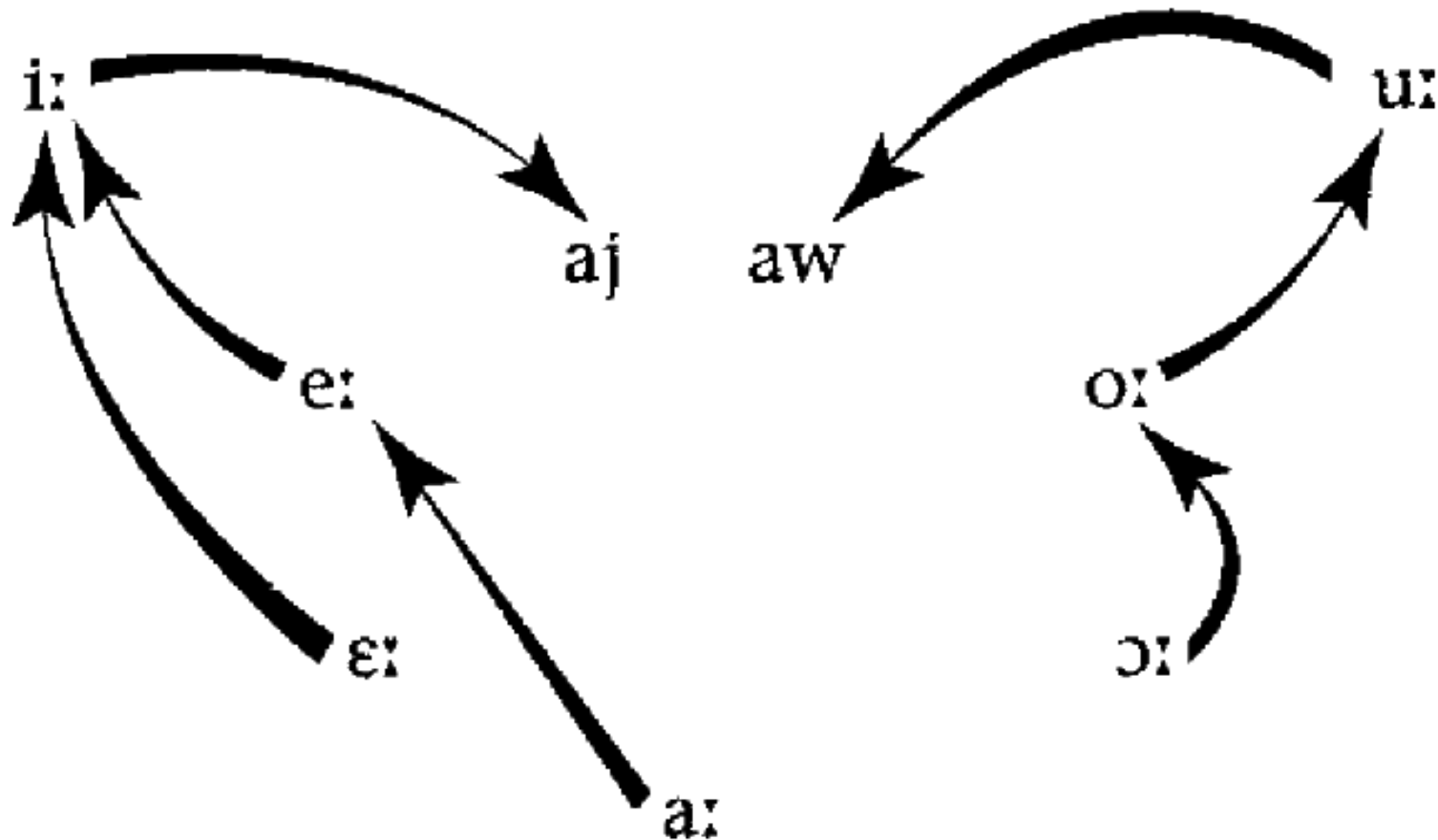


Figure 8.8 Changes brought about by the Great English Vowel Shift

6. More on sound change

- The Great English Vowel Shift

- How were the (first) vowels in these words pronounced **before** and **after** the shift?

tide

loud

geese

goose

name

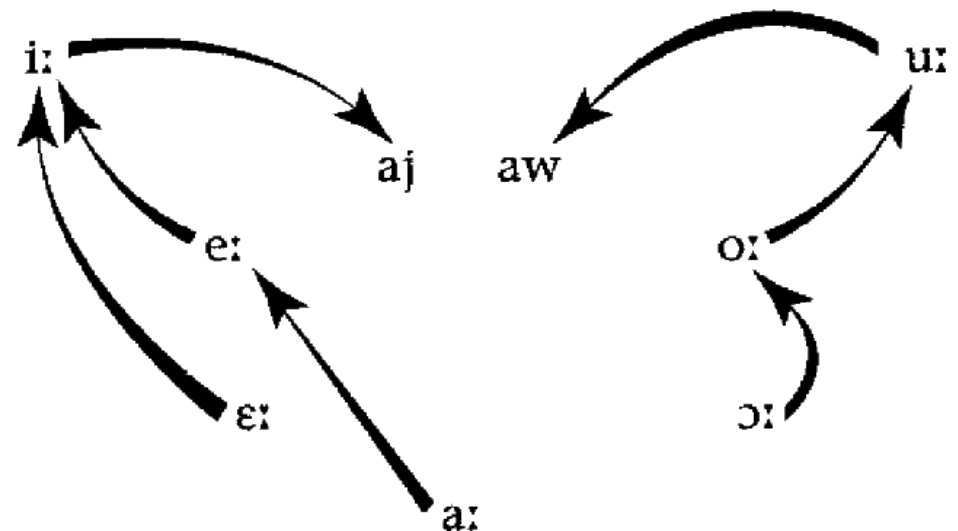


Figure 8.8 Changes brought about by the Great English Vowel Shift

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

6. More on sound change

- The Great English Vowel Shift

- How were the (first) vowels in these words pronounced **before** and **after** the shift?

tide

[?]>[aj]

geese

[?]>[i]

name

[?]>[e(j)]

loud

[?]>[aw]

goose

[?]>[u]

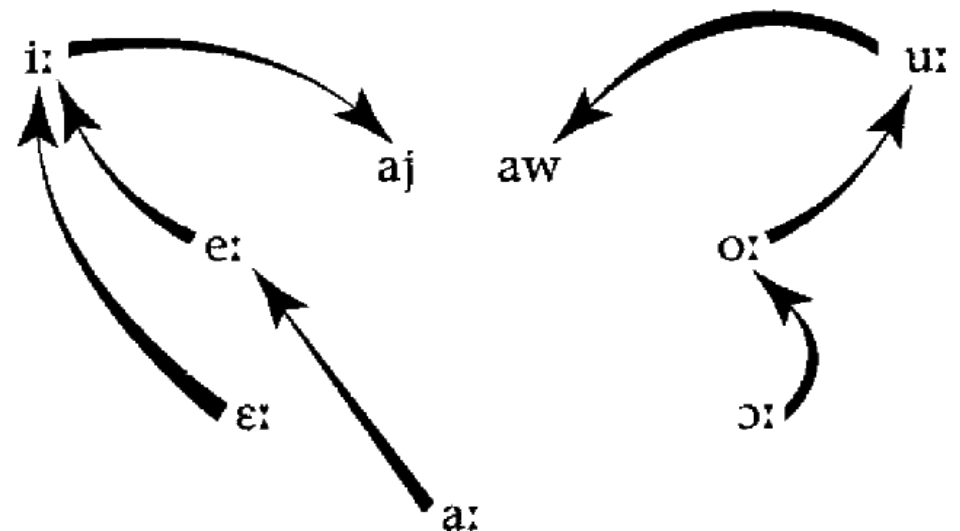


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tide

[i] > [aj]

loud

[u] > [aw]

geese

[e] > [i]

goose

[o] > [u]

name

[a] > [e(j)]

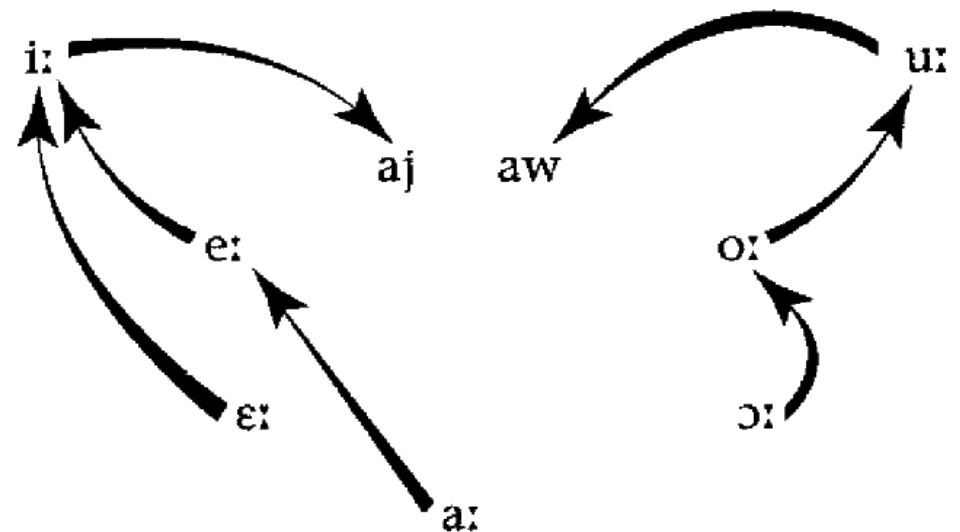


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- When sound (or natural class) A changes over time to become sound (or natural class) B, we can write a **sound change rule**:

A > B / (environment, if any)

- Looks familiar! Remember to use properties
- Use this arrow (>) for change 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* (in essentially all environments)
 - How can we write this as a sound change?

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* (in essentially all environments)
 - How can we write this as a sound change?
mid front lax > central
- Sound change rules are what lead to **systematic sound correspondences** in related languages

7. Key points from today's discussion

- When language changes over time, what changes?
 - The lexicon (individual morphemes)
 - The mental grammar: **phonology, morphology, syntax**
- When the **mental grammar** changes, we often see **systematic** changes in the language
- We can **describe** and **analyze** language change over time using concepts from our model of the **mental grammar**