## Historical Linguistics

Course script 2005/6  
Prof. Holger Diessel

### Review of phonology

#### Classification of consonants

Consonants are classified along three dimensions:

1. Voicing  
2. Manner of articulation: degree of constriction in the oral cavity  
3. Place of articulation: constriction in the front or back of oral cavity

Voiced and unvoiced speech sounds

<table>
<thead>
<tr>
<th>Voiced</th>
<th>Unvoiced</th>
</tr>
</thead>
<tbody>
<tr>
<td>[f] ‘father’</td>
<td>[v] ‘vase’</td>
</tr>
<tr>
<td>[s] ‘salt’</td>
<td>[z] ‘zoo’</td>
</tr>
<tr>
<td>[t] ‘tree’</td>
<td>[d] ‘door’</td>
</tr>
</tbody>
</table>

#### Manner of articulation

- **Plosives**: [p] [b] [t] [d] [k] [g]  
- **Fricatives**: [f] [v] [r] [ð] [s] [z] [ʃ] [ʒ]  
- **Affricates**: [ts] [pf]  
- **Nasals**: [m] [n] [ŋ]  
- **Liquids**: [l] [ɾ]  
- **Glides**: [w] [y]

#### Place of articulation

- **Bilabial**: [p] [b] [m] [w]  
- **Labiodental**: [f] [v]  
- **Interdental**: [θ] [ð]  
- **Alveolar**: [t] [d] [s] [z] [n] [l] [ɾ]  
- **Palatal-alveolar**: [ʃ] [ʒ] [tʃ] [dʒ] [y]  
- **Velar**: [k] [g] [ŋ]  
- **Uvular**: [q] [G]  
- **Pharyngeal**: [h] [ʕ]  
- **Glottal**: [ʔ]
Classification of vowels

Vowels are classified along four dimensions:

1. Height of the tongue: high – mid - low
2. Advancement of the tongue: front – central – back
3. Lip rounding: rounded - unrounded
4. Tenseness: tense - lax

English vowels:

\[
\begin{align*}
\text{i} & \quad \text{u} \\
\text{I} & \quad \text{O} \\
\varepsilon & \quad \text{o} \\
\text{æ} & \quad \text{a}
\end{align*}
\]

English diphthongs:

\[
\begin{align*}
\text{i} & \rightarrow \text{a} \\
\text{u} & \rightarrow \text{a} \\
\text{i} & \rightarrow \text{o}
\end{align*}
\]
German vowels

i y u
i y o
e ø e ø
e æ æ a

Phonemes and allophones

Phonology is concerned with the mental dimension of the production and recognition of speech sounds. The mental representation of a speech sound is called a phoneme. Native speakers are aware of the phonemes of their language, but they usually do not recognize the different physical instantiations of a phoneme. Many phonemes are differently pronounced in different phonetic environments; aspirated and non-aspirated stops:

\[
\begin{align*}
\text{[tʰop]} & \quad \text{‘top’ aspirated} \\
\text{[stop]} & \quad \text{‘stop’ plain}
\end{align*}
\]

The concrete pronunciation of a phoneme is called a phone or allophone. The derivation of allophones from phonemes can be expressed in a phonological rule:

\[
/p t k/ \rightarrow \quad [pʰ tʰ kʰ] / \quad # \_, \_V^n \\
[p, t, k] \text{ elsewhere}
\]

Contrastive – complementary distribution

<table>
<thead>
<tr>
<th>English</th>
<th>Korean</th>
</tr>
</thead>
<tbody>
<tr>
<td>[læk] ‘lack’</td>
<td>[param] ‘wind’</td>
</tr>
<tr>
<td>[rek] ‘rack’</td>
<td>[irím] ‘name’</td>
</tr>
<tr>
<td>[lif] ‘leaf’</td>
<td>[pal] ‘foot’</td>
</tr>
<tr>
<td>[rif] ‘reef’</td>
<td>[mal] ‘horse’</td>
</tr>
</tbody>
</table>

In English, [l] and [r] are in contrastive distribution, but in Korean, [l] and [r] are in complementary distribution, i.e. they are allophones of the same phoneme.

\[
/l/ \rightarrow [r] / V \_V \\
[l] \text{ elsewhere}
\]

\[
/l/ \rightarrow [l] / \_\# \\
[r] / \text{ elsewhere}
\]
Phonological processes of English

Aspiration

\[ [t^h \text{op}] \rightarrow [p^h \text{th}] / \quad \#__, \_V \]
\[ [\text{stop}] \rightarrow [\text{stop}] / [p, t, k] \text{ elsewhere} \]

Nasalization

\[ [k\text{æ̃n}] \rightarrow [\text{can}] / \quad \_N \]
\[ [k\text{ãm}] \rightarrow [\text{come}] / [V] \text{ elsewhere} \]

Vowel lengthening

\[ [\text{beːtd}] \rightarrow [\text{bed}] / \quad [+\text{voice}] \]
\[ [\text{hæːv}] \rightarrow [\text{have}] / [V] \text{ elsewhere} \]

Flapping (American English)

\[ [\text{bær}] \rightarrow [\text{butter}] / \quad \_ \]
\[ [\text{bɛr}] \rightarrow [\text{better}] / [t] \text{ elsewhere} \]

\[ /t/ \rightarrow [r] / (\text{after stressed syllables at the beginning of unstressed syllables}) \]

Morphophonemic processes

The allophonic process that we have seen thus far must be distinguished from morphophonemic processes. Allophonic processes involve the derivation of allophones from phonemes; the process is obligatory and automatic. Morphophonemic processes occur when two morphemes are combined into a complex word. Such processes are also obligatory and automatic, but they do not involve allophones but rather ‘basic’ speech sounds (i.e. phonemes); thus native speakers easily perceive such processes when they are pointed out to them.
English plural

[kæts] ‘cats’
[dəɡz] ‘dogs’
[bʊʃəz] ‘bushes’
[karz] ‘cars’
[lajts] ‘lights’
[bæŋks] ‘banks’
[kɪsəz] ‘kisses’
[dʒəræfs] ‘giraffes’
[gərəʒəz] ‘garages’
[mætəz] ‘matches’
[deʊs] ‘deaths’

Three allomorphs: [s] after voiceless speech sound
[z] after voiced speech sounds
[əz] after sibilants

Place harmony in the negative prefix:

[ɪmpəsɪbl] ‘impossible’
[ɪnsɛnsətɪv] ‘insensitive’
[ɪŋkɔnsɪstənt] ‘inconsistent’

There allomorphs: [m] before labials
[n] before alveolars
[ŋ] before velar
The Indo-European Language Family

Germanic

West Germanic

Low German

English

Dutch

Frisian

Afrikaans

High German

German

North Germanic

Swedish

Danish

Norwegian

Icelandic

East Germanic

Gothic

Vandal

Burgundian

---

Table 1. Systematic sound correspondences between English and German

<table>
<thead>
<tr>
<th>English</th>
<th>German</th>
</tr>
</thead>
<tbody>
<tr>
<td>time</td>
<td>Zeit</td>
</tr>
<tr>
<td>tongue</td>
<td>Zunge</td>
</tr>
<tr>
<td>ten</td>
<td>Zehn</td>
</tr>
<tr>
<td>tame</td>
<td>Zahn</td>
</tr>
<tr>
<td>tent</td>
<td>Zelt</td>
</tr>
<tr>
<td>to</td>
<td>Zu</td>
</tr>
<tr>
<td>two</td>
<td>Zwei</td>
</tr>
<tr>
<td>twelve</td>
<td>Zwölf</td>
</tr>
<tr>
<td>twins</td>
<td>Zwillinge</td>
</tr>
</tbody>
</table>

The second German sound shift

<table>
<thead>
<tr>
<th>English</th>
<th>German</th>
</tr>
</thead>
<tbody>
<tr>
<td>time</td>
<td>Zeit</td>
</tr>
<tr>
<td>tongue</td>
<td>Zunge</td>
</tr>
<tr>
<td>ten</td>
<td>zehn</td>
</tr>
<tr>
<td>that</td>
<td>das</td>
</tr>
<tr>
<td>there</td>
<td>da</td>
</tr>
<tr>
<td>through</td>
<td>durch</td>
</tr>
</tbody>
</table>
pan  Pfanne
path  Pfad
pole  Pfahl

hate  hanno
eat    essen
let    lassen

grip  greifen
deep   tief
sleep  schafen

Romance

<table>
<thead>
<tr>
<th>French</th>
<th>Catalan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian</td>
<td>Galician</td>
</tr>
<tr>
<td>Spain</td>
<td>Sardinian</td>
</tr>
<tr>
<td>Portuguese</td>
<td>Provençal</td>
</tr>
<tr>
<td>Romanian</td>
<td>Rhaeto-Romance</td>
</tr>
</tbody>
</table>

Table 2. Systematic sound correspondences in the Romance languages

<table>
<thead>
<tr>
<th></th>
<th>Sardinian</th>
<th>Italian</th>
<th>Romansh</th>
<th>French</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hundred</td>
<td>këntu</td>
<td>tʃento</td>
<td>tʃjent</td>
<td>sà</td>
<td>0jen</td>
</tr>
<tr>
<td>Sky</td>
<td>kēlu</td>
<td>tʃelø</td>
<td>tʃil</td>
<td>sjel</td>
<td>0jelo</td>
</tr>
<tr>
<td>Stag</td>
<td>kerbu</td>
<td>tʃervo</td>
<td>tʃerf</td>
<td>sër</td>
<td>0jerbo</td>
</tr>
<tr>
<td>Wax</td>
<td>këra</td>
<td>tʃera</td>
<td>tsaira</td>
<td>sìr</td>
<td>0era</td>
</tr>
</tbody>
</table>

Indo-European

<table>
<thead>
<tr>
<th></th>
<th>Germanic</th>
<th>Greek</th>
</tr>
</thead>
<tbody>
<tr>
<td>Romance</td>
<td>Iranian</td>
<td></td>
</tr>
<tr>
<td>Slavic</td>
<td>Indian</td>
<td></td>
</tr>
<tr>
<td>Baltic</td>
<td>Albanian</td>
<td></td>
</tr>
<tr>
<td>Celtic</td>
<td>Armenian</td>
<td></td>
</tr>
</tbody>
</table>
Slavic

Baltic
- Latvian
- Lithuanian
- Old Prussian

East Slavic
- Russian
- Ukrainian
- Belarusian

West Slavic
- Polish
- Czech
- Slovak
- Sorbian

South Slavic
- Serbo-Croatian
- Slovene
- Bulgarian
- Macedonian

Celtic

Irish
Scottish Gaelic
Welsh
Manx
Cornish
Breton

Speakers today:
- Welsh (Wales): 250,000
- Irish (Irland): 500,000
- Gaellic (Scotland): 75,000
- Manx (Ilse of man): extinct
- Cornish (Cornwell): extinct
- Breton (Brittany): 500,000
The comparative method

Languages for which we have long and comprehensive historical records

- Indo-European
- Semitic (Hebrew, Arabic, Egyptian)
- Chinese
- Japanese
- Turkish
- Native American languages
- African languages
- Dravidian

Sound structure of a dead language

1. Rhyme
   You spotted snakes with double tongue,
   Thorny hedge-hogs, be not seen;
   Newts, and blind-worms, do no wrong;
   Come not near our fairy queen. (Shakespeare)

2. Spelling mistakes
   consul ‘cosul’
   censor ‘cesor’ (Latin inscriptions)

3. Phonetic descriptions of ancient scholars
   ‘We produce this letter by pressing the lower lip on the upper teeth. The tongue is turned back towards the roof of the mouth, and the sound is accompanied by a gentle puff of breath.’ (Roman grammarian)
### Comparative evidence

#### Table 1. Numerals in Indo-European and non-Indo-European languages

<table>
<thead>
<tr>
<th>English</th>
<th>Gothic</th>
<th>Latin</th>
<th>Greek</th>
<th>Old Ch. Slavic</th>
<th>Sanskrit</th>
<th>Chinese</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>one</td>
<td>ains</td>
<td>unus</td>
<td>heis</td>
<td>jedinu</td>
<td>ekas</td>
<td>i</td>
<td>hitotsu</td>
</tr>
<tr>
<td>two</td>
<td>twai</td>
<td>duo</td>
<td>duo</td>
<td>duva</td>
<td>dva</td>
<td>erh</td>
<td>futatsu</td>
</tr>
<tr>
<td>three</td>
<td>trija</td>
<td>tres</td>
<td>tres</td>
<td>trije</td>
<td>trayas</td>
<td>san</td>
<td>mitsu</td>
</tr>
<tr>
<td>four</td>
<td>fidwor</td>
<td>quattuor</td>
<td>tettares</td>
<td>cetyre</td>
<td>catvaras</td>
<td>ssu</td>
<td>yottsnu</td>
</tr>
<tr>
<td>five</td>
<td>fimf</td>
<td>quinque</td>
<td>pente</td>
<td>peti</td>
<td>panca</td>
<td>wu</td>
<td>itsutsu</td>
</tr>
<tr>
<td>six</td>
<td>saihs</td>
<td>sex</td>
<td>heks</td>
<td>secti</td>
<td>sat</td>
<td>liu</td>
<td>muttsu</td>
</tr>
<tr>
<td>seven</td>
<td>sibun</td>
<td>septem</td>
<td>hepta</td>
<td>sedmi</td>
<td>sapta</td>
<td>ch’i</td>
<td>nanatsu</td>
</tr>
<tr>
<td>eight</td>
<td>ahtau</td>
<td>octo</td>
<td>okto</td>
<td>osmi</td>
<td>asta</td>
<td>pa</td>
<td>yattsu</td>
</tr>
<tr>
<td>nine</td>
<td>niun</td>
<td>novembe</td>
<td>ennea</td>
<td>deveti</td>
<td>nava</td>
<td>chiu</td>
<td>kokonotsu</td>
</tr>
<tr>
<td>ten</td>
<td>taihun</td>
<td>decem</td>
<td>deka</td>
<td>deseti</td>
<td>dasa</td>
<td>shih</td>
<td>to</td>
</tr>
</tbody>
</table>

#### Table 2. Proto-Indo-European numerals

Proto-Indo-European | English
---|---
*sems, *oi- | one
*duwo / *dwo | two
*treyes | three
*kwetwores | four
*penkwe | five
*sweks / *seks | six
*septam | seven
*októ | eight
*newan | nine
*dekat | ten

#### Table 3. Systematic sound correspondences in the Indo-European languages

<table>
<thead>
<tr>
<th>English</th>
<th>Latin</th>
<th>Greek</th>
<th>Irish</th>
</tr>
</thead>
<tbody>
<tr>
<td>fish</td>
<td>piscis</td>
<td>ikhthys</td>
<td>iasg</td>
</tr>
<tr>
<td>father</td>
<td>pater</td>
<td>pater</td>
<td>athair</td>
</tr>
<tr>
<td>foot</td>
<td>ped–</td>
<td>pod–</td>
<td>troigh</td>
</tr>
<tr>
<td>for</td>
<td>pro</td>
<td>para</td>
<td>do</td>
</tr>
<tr>
<td>six</td>
<td>sex</td>
<td>hexa</td>
<td>se</td>
</tr>
<tr>
<td>seven</td>
<td>septem</td>
<td>hepta</td>
<td>seacht</td>
</tr>
<tr>
<td>sweet</td>
<td>suavis</td>
<td>hedys</td>
<td>millis</td>
</tr>
<tr>
<td>salt</td>
<td>sal</td>
<td>hal</td>
<td>salann</td>
</tr>
<tr>
<td>new</td>
<td>novus</td>
<td>neos</td>
<td>nua</td>
</tr>
<tr>
<td>night</td>
<td>noct–</td>
<td>nykt–</td>
<td>(in)nacht</td>
</tr>
<tr>
<td>nine</td>
<td>novem</td>
<td>(en)nea</td>
<td>naoi</td>
</tr>
</tbody>
</table>
Table 4. Sound correspondences across unrelated languages

<table>
<thead>
<tr>
<th></th>
<th>Arabic</th>
<th>Urdu</th>
<th>Turkish</th>
<th>Swahili</th>
<th>Malay</th>
</tr>
</thead>
<tbody>
<tr>
<td>news</td>
<td>xabar</td>
<td>xabar</td>
<td>haber</td>
<td>habari</td>
<td>khabar</td>
</tr>
<tr>
<td>time</td>
<td>waqt</td>
<td>vaqt</td>
<td>vakit</td>
<td>wkati</td>
<td>waktu</td>
</tr>
<tr>
<td>book</td>
<td>kitab</td>
<td>kitab</td>
<td>kitap</td>
<td>kitabu</td>
<td>kitab</td>
</tr>
<tr>
<td>service</td>
<td>xidmat</td>
<td>xidmatgari</td>
<td>hizmet</td>
<td>huduma</td>
<td>khidmat</td>
</tr>
<tr>
<td>beggar</td>
<td>faqir</td>
<td>faqir</td>
<td>fakir</td>
<td>fakiri</td>
<td>fakir</td>
</tr>
</tbody>
</table>

**Grimm’s law**

\[
/\text{p}/ \rightarrow /\text{f}/
\]

<table>
<thead>
<tr>
<th>Latin</th>
<th>Sanskrit</th>
<th>Old English</th>
<th>Gothic</th>
</tr>
</thead>
<tbody>
<tr>
<td>pedum</td>
<td>padam</td>
<td>fot</td>
<td>fotus</td>
</tr>
<tr>
<td>piscis</td>
<td>—</td>
<td>fisc</td>
<td>fiskis</td>
</tr>
</tbody>
</table>

\[
/\text{t}/ \rightarrow /\text{θ}/
\]

<table>
<thead>
<tr>
<th>Latin</th>
<th>Sanskrit</th>
<th>Old English</th>
<th>Gothic</th>
</tr>
</thead>
<tbody>
<tr>
<td>tres</td>
<td>trayas</td>
<td>three [θri]</td>
<td>thrir</td>
</tr>
<tr>
<td>tu</td>
<td>tuvam</td>
<td>thou [ðau]</td>
<td>thuo</td>
</tr>
</tbody>
</table>

\[
/\text{k}/ \rightarrow /\text{x}/ (/\text{x}/ = /\text{h}/)
\]

<table>
<thead>
<tr>
<th>Latin</th>
<th>Sanskrit</th>
<th>Old English</th>
<th>Gothic</th>
</tr>
</thead>
<tbody>
<tr>
<td>cordem</td>
<td>craidd</td>
<td>heart</td>
<td>hairto</td>
</tr>
<tr>
<td>centum</td>
<td>cant</td>
<td>hundred</td>
<td>hund</td>
</tr>
</tbody>
</table>

\[
/\text{d}/ \rightarrow /\text{c}/
\]

<table>
<thead>
<tr>
<th>Latin</th>
<th>Sanskrit</th>
<th>Old English</th>
<th>Gothic</th>
</tr>
</thead>
<tbody>
<tr>
<td>edo</td>
<td>admi</td>
<td>eat</td>
<td>itan</td>
</tr>
<tr>
<td>decem</td>
<td>daca</td>
<td>ten</td>
<td>taihun</td>
</tr>
</tbody>
</table>

\[
/\text{g}/ \rightarrow /\text{h}/
\]

<table>
<thead>
<tr>
<th>Latin</th>
<th>Sanskrit</th>
<th>Old English</th>
<th>Gothic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ager</td>
<td>—</td>
<td>acre</td>
<td>akras</td>
</tr>
<tr>
<td>genus</td>
<td>—</td>
<td>kin</td>
<td>kuni</td>
</tr>
</tbody>
</table>
Table 4. Grimm’s law

<table>
<thead>
<tr>
<th>Indo-European</th>
<th>became</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>[bh]</td>
<td>[bhero:] ‘I carry’</td>
<td>[b] ‘bear’</td>
</tr>
<tr>
<td>[dh]</td>
<td>[dedhe:i] ‘I place’</td>
<td>[d] ‘do’</td>
</tr>
<tr>
<td>[gh]</td>
<td>[ghans] ‘goose’</td>
<td>[g] ‘goose’</td>
</tr>
<tr>
<td>[b]</td>
<td>No sure examples</td>
<td>[p] ‘ten’</td>
</tr>
<tr>
<td>[d]</td>
<td>[dekm] ‘ten’</td>
<td>[t] ‘kin’</td>
</tr>
<tr>
<td>[g]</td>
<td>[genos] ‘tribe’</td>
<td>[k]</td>
</tr>
<tr>
<td>[p]</td>
<td>[pater] ‘father’</td>
<td>[f] ‘father’</td>
</tr>
<tr>
<td>[t]</td>
<td>[treyes] ‘three’</td>
<td>[θ] ‘three’</td>
</tr>
<tr>
<td>[k]</td>
<td>[kornu] ‘horn’</td>
<td>[h] ‘horn’</td>
</tr>
</tbody>
</table>

Grimm’s Law

*p t k  →  f θ x/h
*b d g →  p t k
*bh dh gh →  b d g

Verner’s law

[p t k]  

[f θ x] [b d g]

Sanskrit  Old English
vártate  weorθan
varárta  weartθ
vavrtimá  wurdon
vavrta:ná  worden

The Neogrammrian Hypothesis

Every sound change takes place according to laws that admit no exceptions.
[Brugmann]
### Internal reconstruction

<table>
<thead>
<tr>
<th>[ð]</th>
<th>[θ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>father</td>
<td>think</td>
</tr>
<tr>
<td>mother</td>
<td>thief</td>
</tr>
<tr>
<td>feather</td>
<td>thick</td>
</tr>
<tr>
<td>heather</td>
<td>thin</td>
</tr>
<tr>
<td>weather</td>
<td>thigh</td>
</tr>
<tr>
<td>bother</td>
<td>thank</td>
</tr>
</tbody>
</table>
Lexical and semantic change

I. Loan words

Computer (originally ‘compute’ is from Romance)
Desktop
Mouse
Server
Bytes
Keyboard
Disk
Ram
Email

Loan words from Scandinavian (800-1050)
law
neck
cake
fellow
anger
skin
sister [sweaster]

leg
bag
egg
dirt
knife
give
take

Loan words from Latin (throughout its history)

<table>
<thead>
<tr>
<th>GERM</th>
<th>OE</th>
<th>ME</th>
<th>EME</th>
</tr>
</thead>
<tbody>
<tr>
<td>wall</td>
<td>noon</td>
<td>history</td>
<td>occurrence</td>
</tr>
<tr>
<td>street</td>
<td>rule</td>
<td>gesture</td>
<td>expectation</td>
</tr>
<tr>
<td>onion</td>
<td>cap</td>
<td>infancy</td>
<td>insane</td>
</tr>
<tr>
<td>church</td>
<td>pear</td>
<td>individual</td>
<td>frequency</td>
</tr>
</tbody>
</table>

Borrowings from French (1100-1400)

<table>
<thead>
<tr>
<th>action</th>
<th>adventure</th>
</tr>
</thead>
<tbody>
<tr>
<td>age</td>
<td>air</td>
</tr>
<tr>
<td>bucket</td>
<td>person</td>
</tr>
<tr>
<td>carpenter</td>
<td>powder</td>
</tr>
<tr>
<td>coast</td>
<td>river</td>
</tr>
<tr>
<td>cost</td>
<td>country</td>
</tr>
<tr>
<td>clear</td>
<td>usual</td>
</tr>
<tr>
<td>advice</td>
<td>approach</td>
</tr>
<tr>
<td>enjoy</td>
<td>prefer</td>
</tr>
</tbody>
</table>
Borrowings from other languages

- moose (Native American)
- tobacco (Native American)
- canoe (Native American)
- curry (East Asia)
- jungle (East Asia)
- mango (East Asia)
- kangaroo (Australia)
- banana (Africa)
- chimpanzee (Africa)
- zebra (Africa)
- canyon (Spanish)
- taco (Spanish)
- angst (German)
- kindergarten (German)

Loan translations

- Greek: sym-pathia ‘with-suffering’ original
- Latin: com-passion ‘with-suffering’ loan translation
- German Mit-leid ‘with-suffering’ loan translation

Intensive borrowing can influence the phonological system

[v] and [f]

<table>
<thead>
<tr>
<th>very</th>
<th>voice</th>
<th>virgin</th>
</tr>
</thead>
<tbody>
<tr>
<td>victory</td>
<td>value</td>
<td>vowel</td>
</tr>
<tr>
<td>vine</td>
<td>vinegar</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>few</th>
<th>vs.</th>
<th>view</th>
</tr>
</thead>
<tbody>
<tr>
<td>fat</td>
<td>vs.</td>
<td>vat</td>
</tr>
<tr>
<td>rifle</td>
<td>vs.</td>
<td>rival</td>
</tr>
<tr>
<td>strife</td>
<td>vs.</td>
<td>strive</td>
</tr>
</tbody>
</table>

[z]

- measure
- pleasure
- treasurer
- leisure
- azure

Phonotactics

- shrink
- shred
- shrimp
schmuck  Yiddish
shlep
schnoz
spiel
shtick

schnapps  German
schnauzer
schnitzel
schmaltz

The morphological treatment of loan words

phenomenon  phenomena
criterion  criteria
datum  data
hypothesis  hypotheses

Grammatical borrowing

reiterate
repeat
reunion
resign
resist
restrict

Ballan Sprachbund

1. Rumanian  om-ul  ‘man-the’
   Bulgarian  kniega-ta  ‘book-the’
   Albanian  mik-u  ‘friend-the’

2. English  Balkan languages
   I saw Peter leave.  I saw that Peter left.
   I want Peter to leave.  I want that Peter is leaving.

3. Future
The cross-linguistic distribution of grammatical features

Order of Adjective-Noun

Preposition – Postposition
II. Word formation processes

- Compounding
  - girlfriend
  - ice cream
  - lipstick
  - jetlag
  - soundproof
  - close-up

- Affixation
  - pre–, re–, anti–, non–, ex–, over–
  - ness, –ful, –ity, –al, –ize, –er

- zero derivation
  - to bridge
  - to sandwich

- clipping
  - telephone > phone
  - gymnasium > gym
  - influenza > flu

- blending
  - motel > motor + hotel
  - smog > smoke + fog
  - chunnel > channel + tunnel
• Acronyms
  Acquired immune deficiency syndrome > AIDS
  North Atlantic Treaty Organization > NATO
  Radio detecting and ranging > radar
  Strategic Arms Limitation Talks > SALT
  For your information > FYI

• Eponyms
  Sandwich
  Hamburger
  Pentium
  Kodak
  Xerox

• New inventions
  blurb
  nylon
  chirrup
  blatant
  pentium

III. Semantic change

Metaphor
  to terminate ‘to kill’
  to take care of ‘to kill’
  to eliminate ‘to kill’
  to dispose of ‘to kill’

  blasted ‘drunk’
  ripped ‘drunk’
  smashed ‘drunk’
  wasted ‘drunk’

Metonymy
  tea ‘evening meal’
  head ‘leader’
  give me a hand ‘help me’
Widening

dog
Original meaning: specific type of dog

salary
From Latin ‘salarium’, i.e soldiers’ allotment of salt; then it came to mean soldiers’ wages in general; finally pay for all kinds of work

arrive
originally it meant ‘come to shore’, ‘arrive by ship’

Narrowing

meat
Originally: food including non-meaty food

wife
Originally: woman

deer
Originally: animal

fowl
Originally: bird

starve
Originally: to die

Degeneration

spinster
Originally: older unmarried woman (who spins)

mistress
Originally: woman who has control over household

peasant
Originally: small farmer

Elevation

knight
Originally: mounted warrior serving a king

Traugott: From concrete to abstract

- ‘felan’ (meaning ‘touch’)  >  ‘feel’ ME (psychological, emotional)
- ‘realize’ (make real)  >  (understand)
- ‘see’ (visual)  >  (understand)
- ‘hot’ (temperature’)  >  (sexually attractive, interesting, super)
- ‘shit’ (physical)  >  (expressions of anger)

- ‘while’ (ða hwhile ðe ‘at the time that’)  >  temporal conjunction
- ‘but’ (on the outside)  >  adversative conjunction
- ‘well’ (adverb of ‘good’)  >  discourse marker
- ‘this/that’ (demonstrative)  >  complementizer
- ‘there’ (demonstrative)  >  existential marker

- deontic modals (She must go)  >  epistemic modals (This must be it)
Phonological change: Types of sound change

1. sporadic change — regular change

(i) Examples of sporadic change

spræc ‘language/speech’ > speech
grammar > glamour

(ii) Examples of regular change

Grimm’s law: [p t k] > [f θ h]

2. conditioned change — unconditioned change

(i) Examples of unconditioned change

[fif] > [faif] ‘five’
[wif] > [waif] ‘wife’

(ii) Examples of conditioned change

[bed] > [be : d]

3. phonemic change — allophonic change

(i) Examples of allophonic change

All of the changes we have seen so far were examples of non-phonemic change.

(ii) Examples of phonemic change

<table>
<thead>
<tr>
<th>PIE</th>
<th>Latin</th>
<th>Gothic</th>
<th>OHG</th>
<th>PDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>*o</td>
<td>*okto-</td>
<td>octo</td>
<td>ahtau</td>
<td>ahto</td>
</tr>
<tr>
<td>*ɔ</td>
<td>*pater-</td>
<td>pater</td>
<td>fadar</td>
<td>fater</td>
</tr>
<tr>
<td>*a</td>
<td>*agro-</td>
<td>ager</td>
<td>akrs</td>
<td>ackar</td>
</tr>
</tbody>
</table>
(1) [k] > [tʃ]

<table>
<thead>
<tr>
<th></th>
<th>cat</th>
<th>chaff</th>
<th>chin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>katt</td>
<td>keaff</td>
<td>kinn</td>
</tr>
<tr>
<td>Stage 2</td>
<td>katt</td>
<td>tʃeaʃ</td>
<td>tʃinn</td>
</tr>
<tr>
<td>Stage 3</td>
<td>katt</td>
<td>tʃaʃ</td>
<td>tʃinn</td>
</tr>
</tbody>
</table>

(2) Umlaut

<table>
<thead>
<tr>
<th>Original</th>
<th>SG Mouse</th>
<th>PL Mouse</th>
<th>SG Foot</th>
<th>PL Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>/mu:s/</td>
<td>/mu:s-s-i/</td>
<td>/fo:t/</td>
<td>/fo:t-i/</td>
<td></td>
</tr>
<tr>
<td>[mu:s]</td>
<td>[mu:s-s-i]</td>
<td>[fo:t]</td>
<td>[fo:t-i]</td>
<td></td>
</tr>
<tr>
<td>/mu:s-i/</td>
<td>/mu:s-i/</td>
<td>/fo:t-i/</td>
<td>/fo:t-i/</td>
<td></td>
</tr>
<tr>
<td>[my:s-i]</td>
<td>[mu:s-i]</td>
<td>[fo:t-i]</td>
<td>[fo:t-i]</td>
<td></td>
</tr>
<tr>
<td>/mu:s/</td>
<td>/mi:s/</td>
<td>/fe:t/</td>
<td>/fe:t/</td>
<td></td>
</tr>
<tr>
<td>[mu:s]</td>
<td>[mi:s]</td>
<td>[fe:t]</td>
<td>[fe:t]</td>
<td></td>
</tr>
<tr>
<td>/mai:s/</td>
<td>/mai:s/</td>
<td>/fi:t/</td>
<td>/fi:t/</td>
<td></td>
</tr>
<tr>
<td>[mai:s]</td>
<td>[mai:s]</td>
<td>[fi:t]</td>
<td>[fi:t]</td>
<td></td>
</tr>
</tbody>
</table>

(3) [s] > [r] in Latin

![Diagram showing the shift of [s] to [r] in Latin]
What motivates sound change?

**Assimilation**

(1) *Latin*  
nocte [nokte]  *Italian*  
notte [notte]

(2) *English*  
cheese  *German*  
Käse  
child  Kind  
chin  Kinn  
church  cyrice (Old English)

(3) nature  
[ty] > [tʃ]  
education  [dy] > [dʒ]  
tissue  [sy] > [ʃ]

(4) pain [pɛ]  
‘bread’  
fin [fɛ]  ‘end’

(5) *English*  
*[mus]*  ‘mouse’ SG  
*[mys-i]*  ‘mice’ PL

(6) *Latin*  
*[peŋkwe]*  >  *[kweŋkwe]*

**Lenition**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>stop</td>
<td>&gt;</td>
<td>fricative</td>
</tr>
<tr>
<td>stop</td>
<td>&gt;</td>
<td>liquid</td>
</tr>
<tr>
<td>oral stop</td>
<td>&gt;</td>
<td>glottal stop</td>
</tr>
<tr>
<td>voiceless</td>
<td>&gt;</td>
<td>voiced</td>
</tr>
<tr>
<td>geminate</td>
<td>&gt;</td>
<td>simplex</td>
</tr>
</tbody>
</table>

- **Spirantization**

  *Latin*  
  habebat ‘he had’  >  *Italian*  
aaveva  
  faba ‘bean’  >  fava

- **Stop > liquid**

  *English*  
  [wɔtr]  >  *American English*  
  [wɔrr]
• Oral stop > glottal stop
  
  *English*  *London, Glasgow*
  
  \[wɔtr\]  \[wɔ?r\]

• Voicing
  
  *Latin*  *Italian*
  
  strata  >  strada
  lacu  >  lago

• Degemination
  
  *Latin*  *Spanish*
  
  cuppa ‘cup’  >  copa ‘wine glass’
  gutta ‘drop’  >  gota ‘drop’
  siccu ‘dry’  >  seco ‘dry’

• The minimal consonant: [h]
  
  *Old English*  *English*
  
  hnuti ‘nut’  >  nut
  hit ‘it’  >  it
  where [hw]ere  >  where [w]ere

### Deletions

(1)  

draft  *French*  *English*
  
  lit  ‘bed’  knee
  gros  ‘big’  knot
  murs  ‘walls’  knife

(2)  

draft  *English (syncope)*
  
  chocolate  medicine
  camera  battery
  police  dictionary
  correct

### Additions

(1)  

draft  ‘something’
  [səmpən]  ‘something’
  [drempt]  ‘dreamt’
  [tʃɔmpski]  ‘Chomsky’

(2)  

draft  ‘fancy’
  [fæntsı]  ‘fancy’
  [prints]  ‘prince’
(3)  [æθɔlrt]  ‘athlete’

(4)  Spanish

\begin{tabular}{ll}
  \textit{Esnobe} & ‘snob’ \\
  \textit{eslalom} & ‘slalom’ \\
  \textit{estruchenina} & ‘estrychnine’ \\
\end{tabular}

\textit{Latin}  \textit{Spanish}

spatha & españa ‘sword’ \\
statu & estado ‘state’ \\
scala & escala ‘ladder’

\section*{Other types of sound change}

\textbf{Metathesis}

\begin{tabular}{ll}
  \textit{Old English} & \textit{Modern English} \\
  wæps & wasp \\
  bridd & bird \\
  frist & first \\
  thridde & third \\
  ask /aks & ask \\
\end{tabular}

\textbf{Compensatory lengthening}

\begin{tabular}{llll}
  \textit{Pre-Old English} & \textit{Middle English} & \textit{Modern English} \\
  *[finf] & *[fiːf] & [faɪf] \\
  *[gans] & & [ɡæs] \\
\end{tabular}
Phonological change: The drive for symmetry

<table>
<thead>
<tr>
<th></th>
<th>Labial</th>
<th>Alveolar</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless plosive</td>
<td>p</td>
<td>t</td>
<td>k</td>
</tr>
<tr>
<td>Voiced plosive</td>
<td>b</td>
<td>d</td>
<td>g</td>
</tr>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td>ñ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Labiodent.</th>
<th>Interdental</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiceless</td>
<td>f</td>
<td>θ</td>
<td>s</td>
<td>f</td>
<td>h</td>
</tr>
<tr>
<td>Voiceless</td>
<td>v</td>
<td>δ</td>
<td>z</td>
<td>ṣ</td>
<td>3</td>
</tr>
</tbody>
</table>

Italian

\[
\begin{align*}
[i] & \rightarrow [\text{I}] & [\text{u}] \\
[\text{I}] & \rightarrow [\epsilon] & [\text{O}] \\
[\epsilon] & \rightarrow [\text{a}] & [\text{O}] \\
[\text{a}] & \rightarrow [\text{e}] & [\text{u}] \\
\end{align*}
\]
The Great English Vowel Shift

<table>
<thead>
<tr>
<th>Old English</th>
<th>Modern English</th>
</tr>
</thead>
<tbody>
<tr>
<td>[bruːn]</td>
<td>‘brown’</td>
</tr>
<tr>
<td>[deːman]</td>
<td>‘deem’</td>
</tr>
<tr>
<td>[dɒm]</td>
<td>‘doom’</td>
</tr>
<tr>
<td>[dʌn]</td>
<td>‘down’</td>
</tr>
<tr>
<td>[æːl]</td>
<td>‘eel’</td>
</tr>
<tr>
<td>[æːfən]</td>
<td>‘even(ing)’</td>
</tr>
<tr>
<td>[laːtə]</td>
<td>‘late’</td>
</tr>
<tr>
<td>[fiːf]</td>
<td>‘five’</td>
</tr>
<tr>
<td>[heː]</td>
<td>‘he’</td>
</tr>
<tr>
<td>[raːd]</td>
<td>‘rode’</td>
</tr>
<tr>
<td>[hæːθ]</td>
<td>‘heath’</td>
</tr>
<tr>
<td>[næmə]</td>
<td>‘name’</td>
</tr>
<tr>
<td>[huːs]</td>
<td>‘house’</td>
</tr>
<tr>
<td>[iːs]</td>
<td>‘ice’</td>
</tr>
<tr>
<td>[læːce]</td>
<td>‘leech’</td>
</tr>
<tr>
<td>[mʌθ]</td>
<td>‘mouth’</td>
</tr>
<tr>
<td>[miːn]</td>
<td>‘my’</td>
</tr>
</tbody>
</table>
Middle English | Chaucer | Shakespeare | Modern spelling
---|---|---|---
iː | [fiːf] | [farv] | five
ɛː | [meːde] | [miːd] | mid
ɛː | [kleːne] | [kleːn] | clean
aː | [naːma] | [neːm] | name
uː | [duːn] | [daːn] | down
oː | [rotːa] | [rutː] | root
ɔː | [ɡɔːtːa] | [ɡoːtː] | goat

**Competing motivations**

“The maintenance or restoration of symmetry appears to be a powerful force in sound change, and chain shifts in particular can be more readily understood in terms of movement within phonological space. A crucial observation has been that there are always competing phonological pressures, both syntagmatic and paradigmatic; these can never all be satisfied at once, and a great deal of phonological change can be understood as endless attempts at satisfying these competing pressures, with each resulting change typically introducing new strains into the system.” [Trask 1996: 95-96]
Morphological change

Today’s morphology is yesterday’s syntax

(1) -ly
    -hood

N meaning ‘body’ (‘mann-lic’)
N meaning ‘person’, ‘sex’, ‘quality’

(2) English past tense
    –ed

V ‘did’

(3) Spanish future

<table>
<thead>
<tr>
<th>Latin</th>
<th>Spanish</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>cantare habeo</td>
<td>cantaré</td>
<td>‘I’ll sing’</td>
</tr>
<tr>
<td>cantare habes</td>
<td>cantarás</td>
<td>‘you’ll sing’</td>
</tr>
<tr>
<td>cantare habet</td>
<td>cantará</td>
<td>‘he’ll sing’</td>
</tr>
<tr>
<td>cantare habermus</td>
<td>cantaremos</td>
<td>‘we’ll sing’</td>
</tr>
<tr>
<td>cantare habetis</td>
<td>cantareis</td>
<td>‘you’ll sing’</td>
</tr>
<tr>
<td>cantare habent</td>
<td>cantarán</td>
<td>‘they’ll sing’</td>
</tr>
</tbody>
</table>

(4) Basque

<table>
<thead>
<tr>
<th>Verb</th>
<th>Pronoun</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>noa</td>
<td>‘I’m going’</td>
<td>ni</td>
</tr>
<tr>
<td>noa</td>
<td>‘you are going’</td>
<td>hi</td>
</tr>
<tr>
<td>doa</td>
<td>‘he/she is going’</td>
<td>-</td>
</tr>
<tr>
<td>goaz</td>
<td>‘we are going’</td>
<td>gu</td>
</tr>
<tr>
<td>zoas</td>
<td>‘you are going’</td>
<td>zu</td>
</tr>
<tr>
<td>doaz</td>
<td>‘they are going’</td>
<td>-</td>
</tr>
</tbody>
</table>

(5) French

a. Jean donnera le livre à Marie. ‘John will give the book to Mary.’

b. Il te le donnera. ‘He you-it-will give’

>>> Jean, il-te-le-donnera, le livere.

Analogy

Four-part analogy

\[
\begin{array}{c:c}
A & B \\
\uparrow & \\
\downarrow & \\
C & X \\
\end{array}
\]
Four-part analogy 1: English plural nouns

(1) X X-s
    ziff ziff-[s]
    zo zo-[z]
    zax zax-[əz]

(2) X-us X-i
    cact-us cact-i
    radi-us radi-i

Four-part analogy 2: English verb forms

(1) Old English Modern English
    climb clomb climb climbed
    step stope step stepped
    laugh low laugh laughed

(2) Present Past
    V V-ed V X-ed

(3) throw–threw–thrown throw–thowed–thowed
    strive–strove–striven strive–stroved–stroved
    dream–dreamt–dreamt dream–dreamed–dreamed
    hang–hung–hung hang–hanged–hanged
    light–lit–lit light–lighted–lighted
    cleave–clove–cloven cleave–cleaved–cleaved

(3) Original New
    dive dived dive dove
catch catched catch caught

Four-part analogy 3: derivational forms

(1) sea seascape
    moon moonscape

(2) journal journalese
    mother motherese
    American Americanese
Sturtevant’s paradox

Sound change is regular, but produces irregularity; analogy is irregular, but produces regularity.

Table 1. Analogical leveling in French

<table>
<thead>
<tr>
<th></th>
<th>Latin</th>
<th>Old French</th>
<th>Modern French</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>ámo</td>
<td>aim</td>
<td>aime</td>
</tr>
<tr>
<td>2SG</td>
<td>ámas</td>
<td>aimes</td>
<td>aimes</td>
</tr>
<tr>
<td>3SG</td>
<td>ámat</td>
<td>aimet</td>
<td>aime</td>
</tr>
<tr>
<td>1PL</td>
<td>amámus</td>
<td>amons</td>
<td>aimons</td>
</tr>
<tr>
<td>2PL</td>
<td>anátis</td>
<td>amez</td>
<td>aimez</td>
</tr>
<tr>
<td>3PL</td>
<td>ámant</td>
<td>aiment</td>
<td>aiment</td>
</tr>
</tbody>
</table>

Old English               Modern English
Present        ce:osan    choose     [z]
Past SG        ce:as      chose      [z]
Past PL        curon      chose      [z]
Past PTC       gecoren   chosen     [z]

Old High German       Modern German
Present               kiusan     küren       [z]
Past SG               ko:s       kor         [r]
Past PL               kurun      kor         [r]
Past PTC              gikoran   gekoren    [r]

Special types of analogy

1. Structural reanalysis

(1) a naddre (type of snake) an adder [ædər]
a napron              an apron
(2) an ewt              a newt [n(ə)ut]
an ekename            a nickname
2. Contamination

(1) male : femelle
    male : *fe-male

(2) Stage 1: French borrowing English
    ouvert [uvɔ:r] covered [kuvɔ:r]

    Sound change

    Stage 2: overt [ɔvɔ:r] covert [kɔvɔ:r]

(3) regard : regardless = irrespective

3. Hypercorrection

(1) [dark] ‘dark’
    [kɔrt] ‘court’

(2) [avɔkardo] ‘avocado’

(3) a. Peter and me went swimming. > Peter and I went swimming.
   b. Sally talked to Peter and me. > *Sally talked to Peter and I.

4. Backformation

(1) hamburger > ham + burger
    cheese > cheese + burger
(2) OE          SG          PL
    [peːz] ←———→ pisan

PDE                  pea ←———→ peas

Established pattern  Back formation

to exhibit – exhibit-or >> editor > to edit
printer – to print >> laser > to lase
maintenance – to maintain >> surveillance > to surveille
book – book-s >> cerise (Sg) > cherry

Change in morphological type

Isolating language

(1) Vietnamese
Khi tôi đến nhà bạn tôi bắt đầu làm bài
When I come house friend I, PL I begin do.lesson
‘When I arrived at my friend’s house, we began to do lessons.’

Agglutinating language

(2) Turkish
Yap-ta-m hata-yı memleket-i tanı-ma-ma-m-a
Make-PART-my mistake-OBJ country-OBJ know-not-GER-my-to
ver-ebil-ir-siniz.
Give-can-TENSE-you
‘You can ascribe the mistake I made to my not knowing the country.’

Inflectional language

(3) Latin
Arm-a vir-um-que can-o
‘Arms and the man I sing.’
Figure 1. Language ‘drift’ (Sapir)
Syntactic change

Syntactic change

Structural reanalysis

Grammaticalization

The development of the perfect

(1) *Ic hæbbe [thone fisc gefangene].
   I have the fish caught.ACC
   ‘I have the fish caught’ (=I have the fish in a state of being caught)

(2) Ic hæfde [hine gebundenne].
   I had him bound.ACC
   ‘I had him bound’ (=I had him in a state of being bound)

(3) Ic hæfde hit gebunden.
   I had it bound.Ø
   ‘I had it bound’ (= I had it in my possession)

(4) thin geleafa hæfth the gehæled
    your faith has you healed
    ‘Your faith has healed you.’

(5) Ac hie hæfdon tha … hiora mete genotudne
    but they had then … their food used-up
    ‘But they had then used up their food.’

The development of psych verbs in English

(1) *Peran licoden than cynge. SVO
    Peras were-pleasing the-DAT king-DAT

(2) than cynge licoden peran. OVS
    The-DAT king-DAT were-pleasing pears
    ‘Pears were pleasing to the king’ (i.e. The king liked pears)
The king liked pears.
He liked them.

*The development of the Germanic complementizers*

(1) I believe that she will take the job. English
(2) Ich verstehe, dass Sie nicht kommen. German
(3) Ik weet dat hij veel vrienden heeft. Dutch
(4) Jag trodde, att hans sista stund var kommen. Swedish

(5) Middle High German
joh gizalta in sâr tha3, thiu sålida untar in uuas
and told them immediately that the luck among them was
‘And he told them immediately that good fortune was among them.’

(6) ðæt gefremede Diulius hiora consul, ðæt ðæt angin that arranged Diulius their consul COMP that beginning
wearð tidlice ðurthogen
was in. time achieved
‘Their consul Diulius arranged (it) that it was started on time.’

(7) I’m like ‘What’s going on?’
Typological harmony

VO and OV languages [Dryer 2005]

Adposition and Noun Phrase

Correlation between verb-object & noun-adposition
Table 1. Word order correlates in VO and OV languages

<table>
<thead>
<tr>
<th>VO languages</th>
<th>OV languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>VO</td>
<td>OV</td>
</tr>
<tr>
<td>P NP</td>
<td>NP P</td>
</tr>
<tr>
<td>AUX V</td>
<td>V AUX</td>
</tr>
<tr>
<td>N GEN</td>
<td>GEN N</td>
</tr>
<tr>
<td>COMP S</td>
<td>S COMP</td>
</tr>
<tr>
<td>N REL</td>
<td>REL N</td>
</tr>
<tr>
<td>V COMP-clause</td>
<td>COMP-clause V</td>
</tr>
<tr>
<td>case-marking absent</td>
<td>case-marking</td>
</tr>
</tbody>
</table>

*The dummy auxiliary ‘do’*

(1) Æcired me ah; Eanred mec agrof
   Æcired me oens Eanred me carved
   ‘Æcired owns me; Eanard carved me.’

(2)  
   b. Opened you the door?
   a. Did you open the door?
Grammaticalization

Introduction

Exercise: Identify the grammatical morphemes and determine their historical source.

Language change is a topic that spreads itself over a wide range of areas. Therefore a good historical linguist should have a solid background in all subfields of linguistics. Indeed, most historical linguists began as general linguists before they turned to the study of language change.

Traditionally, historical linguistics was primarily concerned with phonological and morphological change. However, in recent years the focus has shifted onto syntax and the development of grammar.

Grammaticalization has become a central topic for anybody who is interested in language change because it challenges central assumptions of linguistic theory. Nevertheless, given that grammaticalization involves phonological and morphological change, it also revived the interest in the study of traditional topics in historical linguistics.

Example 1: gonna

(1) I am going to marry Bill. [meaning: I am leaving in order to marry Bill.
(2) ??I am sure you are going to like Bill.
(3) I [am going [to marry [Bill]]]. >>> I [[[am [going to]] marry] [Bill]]
(4) be going to > to gonna.

Example 2: lets

(1) a. Let yourself down on the rope.
   b. Let Bill go.
(2) a. Let’s go to the circus tonight.
   b. Let’s watch a movie.
(3) Lets give you a hand. (‘I’ll give you a hand’)
(4) Lets you and I take’em on for a set.
(5) Lets you go first, then if we have any money left I’ll go.
(6) Lets wash your hand.
## Examples of grammaticalization

<table>
<thead>
<tr>
<th>Source construction</th>
<th>Target construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘go’ [motion verb]</td>
<td>gonna [auxiliary]</td>
</tr>
<tr>
<td>‘will’ [verb of intention]</td>
<td>will [auxiliary]</td>
</tr>
<tr>
<td>‘have’ [verb of possession]</td>
<td>have [auxiliary]</td>
</tr>
<tr>
<td>noun meaning ‘with an x-appearance’</td>
<td>x–ly</td>
</tr>
<tr>
<td>noun meaning</td>
<td>x-hood</td>
</tr>
<tr>
<td>auxiliary ‘do’</td>
<td>x–ed</td>
</tr>
<tr>
<td>DEM hwile SUB (hwile = ‘time’)</td>
<td>while [conjunction]</td>
</tr>
<tr>
<td>‘by cause’ preposition+noun</td>
<td>because [conjunction]</td>
</tr>
<tr>
<td>‘given’ [past participle of ‘go’]</td>
<td>given [conjunction]</td>
</tr>
<tr>
<td>‘during’ [verb in continuous form]</td>
<td>during [preposition]</td>
</tr>
<tr>
<td>‘in front of’ [PP]</td>
<td>in front of [preposition]</td>
</tr>
<tr>
<td>‘a-gone’ [PREFIX-verb]</td>
<td>ago [postposition]</td>
</tr>
<tr>
<td>‘be-foran’ [be– prefix meaning ‘by’, + foran ‘ADV’ meaning ‘in front’]</td>
<td>before [preposition]</td>
</tr>
<tr>
<td>‘some body’ [NP]</td>
<td>somebody [indefinite pro]</td>
</tr>
<tr>
<td>‘one’ [numeral]</td>
<td>one [article/pronoun]</td>
</tr>
<tr>
<td>‘(do you) you know’ [question]</td>
<td>y’know</td>
</tr>
<tr>
<td>‘I think’ [matrix clause]</td>
<td>(I) think</td>
</tr>
<tr>
<td>‘guess’ [imperative matrix clause]</td>
<td>guess</td>
</tr>
</tbody>
</table>
The grammaticalization of demonstratives

All grammatical morphemes have developed out of lexical morphemes, principally nouns and verbs… [Bybee 2003]

*Definite article*
the
der/die/das

*Third person pronouns*
he / it
er / sie / es

*Relative pronouns*
that
der/die/das

*Complementizers*
that
dass

*Sentence connectives/conjunctions*
thus / therefore
deshalb / dadurch

*Directional preverbs*
hin-gehen
her-kommen

*Copulas*
NP, [DEM NP] > NP be NP
Der Mann, der (ist) ein Polizist. > Der Mann ist ein Polizist.

![Diagram of lexical expressions and demonstratives](image-url)
Frequency, habituation, and storage

The reduction effect

1. Phonetic reduction
   - going to > gonna
   - I will > I’ll
   - I am > I’m
   - do not > don’t

2. Loss of constituent structure
   - want to > wanna
   - [in [front [of ___]]] > [in front of [ ___ ]]
   - some DET body N > [somebody] PRO

3. Semantic bleaching
   - to [from directional preposition to INF marker]
   - going [from motion verb to future tense marker]
   - ly [from noun meaning ‘body’ to ADV marker]

The preservation effect

1. Regularization of irregular verbs
   - wept > wepted (low token frequency)
   - keep > kept (high token frequency)

2. Suppletion
   - go – went
   - be – am – are – is
   - good – better
   - bad – worse

3. Case marking
   - he SUBJ him OBJ
   - she SUBJ her OBJ
   - car SUBJ car OBJ

<table>
<thead>
<tr>
<th>Psychological mechanism</th>
<th>Reduction Effect</th>
<th>Conserving effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ritualization</td>
<td>(processing effect)</td>
<td>Entrenchment (storage effect)</td>
</tr>
</tbody>
</table>

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Variation as the vehicle of language change

Table 1. Person-number inflection in German

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th>ich</th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>du</td>
</tr>
<tr>
<td>person</td>
<td>er/sie/es</td>
</tr>
<tr>
<td>person</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLURAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>person</td>
<td>wir</td>
</tr>
<tr>
<td>person</td>
<td>ihr</td>
</tr>
<tr>
<td>person</td>
<td>sie</td>
</tr>
</tbody>
</table>

Figure 1. The English vowel system

Saussurean paradox

If language is primarily a system of relations, how is it that a language can change without disrupting the system?
### Labov: Martha’s Vineyard

#### Table 1. Age and degree of centralization

<table>
<thead>
<tr>
<th>Age</th>
<th>Degree of centralization [ai]</th>
<th>Degree of centralization [au]</th>
</tr>
</thead>
<tbody>
<tr>
<td>75+</td>
<td>0.25</td>
<td>0.23</td>
</tr>
<tr>
<td>61-75</td>
<td>0.35</td>
<td>0.37</td>
</tr>
<tr>
<td>46-60</td>
<td>0.62</td>
<td>0.44</td>
</tr>
<tr>
<td>31-45</td>
<td>0.81</td>
<td>0.88</td>
</tr>
<tr>
<td>14-30</td>
<td>0.37</td>
<td>0.46</td>
</tr>
</tbody>
</table>

1933  
[ai] 0.86  
[au] 0.06

#### Table 2. Degree of centralization and occupation and environment

<table>
<thead>
<tr>
<th>Age</th>
<th>Degree of centralization [ai]</th>
<th>Degree of centralization [au]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisherman</td>
<td>1.00</td>
<td>0.79</td>
</tr>
<tr>
<td>Farmers</td>
<td>0.32</td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Towns</td>
<td>0.35</td>
<td>0.33</td>
</tr>
<tr>
<td>Rural areas</td>
<td>0.61</td>
<td>0.66</td>
</tr>
</tbody>
</table>

#### Table 3. Centralization and attitude to the island

<table>
<thead>
<tr>
<th>Age</th>
<th>Degree of centralization [ai]</th>
<th>Degree of centralization [au]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive (40 subjects)</td>
<td>0.63</td>
<td>0.62</td>
</tr>
<tr>
<td>Neutral (19 subjects)</td>
<td>0.32</td>
<td>0.42</td>
</tr>
<tr>
<td>Negative (6 subjects)</td>
<td>0.09</td>
<td>0.08</td>
</tr>
</tbody>
</table>
**Trudgill: the –ng variable in Britain**

\[
\begin{array}{l}
[\text{gən}] & \text{going} \\
[\text{gən}] & \text{goin’}
\end{array}
\]

Table 1. The alveolar pronunciation of the –ing suffix

<table>
<thead>
<tr>
<th></th>
<th>Word list</th>
<th>Reading</th>
<th>Formal speech</th>
<th>Casual speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle class</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>Lower middle class</td>
<td>0</td>
<td>10</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td>Upper working class</td>
<td>5</td>
<td>15</td>
<td>74</td>
<td>87</td>
</tr>
<tr>
<td>Middle working class</td>
<td>23</td>
<td>44</td>
<td>88</td>
<td>95</td>
</tr>
<tr>
<td>Lower working class</td>
<td>29</td>
<td>66</td>
<td>98</td>
<td>100</td>
</tr>
</tbody>
</table>

**Cheshire: Teenage talk in Reading (Aitchison 2001: 77-80)**

(1) I *knows* how to handle teddy boys.
(2) You *knows* my sister, the one who’s small.
(3) They *calls* me all the name under the sun.

Table 5. Nonstandard verb inflection in Reading

<table>
<thead>
<tr>
<th></th>
<th>Casual speech</th>
<th>Formal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>60%</td>
<td>31%</td>
</tr>
<tr>
<td>Girls</td>
<td>49%</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>50%</td>
<td>22%</td>
</tr>
</tbody>
</table>

**Labov: The pronunciation of non-prevocalic [r] in New York City**

Table 5. The pronunciation of [r] in non-prevocalic position in NYC

<table>
<thead>
<tr>
<th></th>
<th>Word list</th>
<th>Reading</th>
<th>Formal speech</th>
<th>Casual speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper middle class</td>
<td>41</td>
<td>27</td>
<td>27</td>
<td>18</td>
</tr>
<tr>
<td>Lower middle class</td>
<td>61</td>
<td>24</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Upper working class</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Middle working class</td>
<td>23</td>
<td>17</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Lower working class</td>
<td>18</td>
<td>15</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Lower class</td>
<td>10</td>
<td>10</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>
Geographical and lexical diffusion

1. Geographical diffusion

(2) hem:a har ja inte so myk:et som et gam:alt gos:be:n central Swed.

Translation: At home have I not so much as an old goose-leg

Isoglosses

<table>
<thead>
<tr>
<th>Low German</th>
<th>High German</th>
</tr>
</thead>
<tbody>
<tr>
<td>dorp</td>
<td>dorf</td>
</tr>
<tr>
<td>dat</td>
<td>das</td>
</tr>
<tr>
<td>mak:en</td>
<td>max:en</td>
</tr>
</tbody>
</table>

2. Lexical diffusion

All sound changes are mechanical processes, taking place according to laws with no exceptions. [Osthoff and Brugmann 1978]

Example 1: Schwa deletion

<table>
<thead>
<tr>
<th></th>
<th>ev(e)ry</th>
<th>deliv(e)ry</th>
<th>desult(o)ry</th>
</tr>
</thead>
<tbody>
<tr>
<td>fam(i)ly</td>
<td>nurs(e)ry</td>
<td>curs(o)ry</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Schwa deletion and word frequency (Bybee 2001)

<table>
<thead>
<tr>
<th></th>
<th>No schwa</th>
<th>Frequent schwa deletion</th>
<th>Infrequent schwa deletion</th>
</tr>
</thead>
<tbody>
<tr>
<td>every (492)</td>
<td>memory (91)</td>
<td>artillery (11)</td>
<td></td>
</tr>
<tr>
<td>family (149)</td>
<td>salary (51)</td>
<td>cursory (4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>summary (21)</td>
<td>mammmary (0)</td>
<td></td>
</tr>
</tbody>
</table>

(2) burgl(a)ry
forg(e)ry
**Example 2: Auxiliary contraction**

I’ll, you’ll
he’ll, she’ll, we’ll, they’ll
*Peter’ll, man’ll

**S-shaped development**

![Graph showing S-shaped development over time]

- brun ‘brown’
- fin ‘end’
- bien ‘well’
- coin ‘corner’
- bon ‘good’
- en ‘in’
- an ‘year’
The invisible hand phenomena

Languages are organisms of nature; they have never been directed by the will of man; they rose, and developed themselves according to definite laws; they grew old, and died out. They, too, are subject to that series of phenomena which we embrace under the nature of ‘life’. The science of language is consequently a natural science; its method is generally altogether the same as that of any other natural science. [August Schleicher 1863]

The desire of communication is a real living force, to the impelling action of which every human being, in every stage of culture, is accessible; and so far as we can see, it is the only force that was equal to initiating the process of language-making, as it is also the one that has kept up the process to the present time. It works both consciously and unconsciously, as regards the further consequences of the act. [William Dwight Whitney 1967]

**Phenomena of the third type**

- natural phenomena
- results of human actions
  - artefacts
  - phenomena of the third kind