Evidence for Phonetic Features: speech errors
Example 1

<table>
<thead>
<tr>
<th>Intended</th>
<th>Actually produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>big and fat</td>
<td>pig and vat</td>
</tr>
</tbody>
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- voiced - voiced
+ labial + labiodental
+ stop + fricative

► voicing is known about separately to the other features
Example 2

<table>
<thead>
<tr>
<th>Intended</th>
<th>Actually produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is Pat a girl?</td>
<td>Is bat a curl?</td>
</tr>
</tbody>
</table>
### Example 2

<table>
<thead>
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<th>Intended</th>
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<tbody>
<tr>
<td>Is Pat a girl?</td>
<td>Is bat a curl?</td>
</tr>
<tr>
<td>- voiced</td>
<td>+ voiced</td>
</tr>
<tr>
<td>+ labial</td>
<td>+ velar</td>
</tr>
<tr>
<td>+ stop</td>
<td>+ stop</td>
</tr>
<tr>
<td>+ voiced</td>
<td>- voiced</td>
</tr>
<tr>
<td>+ labial</td>
<td>+ velar</td>
</tr>
<tr>
<td>+ stop</td>
<td>+ stop</td>
</tr>
</tbody>
</table>

> **voicing** is known about separately to the other features.
### Example 3

<table>
<thead>
<tr>
<th><strong>Intended</strong></th>
<th><strong>Actually produced</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cedars of Lebanon</td>
<td>Cedars of Lemmanon</td>
</tr>
</tbody>
</table>
Example 3

<table>
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<tr>
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<th>Actually produced</th>
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<td>Cedars of Lebanon</td>
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</tr>
<tr>
<td>+ voiced</td>
<td>+ voiced</td>
</tr>
<tr>
<td>+ labial</td>
<td>+ labial</td>
</tr>
<tr>
<td>+ stop</td>
<td>+ alveolar</td>
</tr>
<tr>
<td>+ nasal</td>
<td>+ nasal</td>
</tr>
</tbody>
</table>

► nasal is known about separately to the other features
Moving from sounds to language

from phonetics to phonology
Phonetics and Phonology
Phonetics & Phonology

• Phonetics
  – is about the **actual sounds** that are made in language and languages

• Phonology
  – is about how languages **divide up** the individual sounds into units for making distinct meaning-carrying elements (words and morphemes)
Grouping sounds together

- light
- hell
- milk
- leopard
- bold
- late
- leak
- close
- lick
- luck
- tulip
- film
## Phonetic representation

<table>
<thead>
<tr>
<th>light [ˈlaɪt]</th>
<th>leak [lɪk]</th>
</tr>
</thead>
<tbody>
<tr>
<td>hell [hɛl]</td>
<td>close [ˈkləʊz]</td>
</tr>
<tr>
<td>milk [mɪlk]</td>
<td>lick [lɪk]</td>
</tr>
<tr>
<td>leopard [ˈleʊpərd]</td>
<td>luck [lʌk]</td>
</tr>
<tr>
<td>bolt [bʊlt]</td>
<td>tulip [ˈtʌlp]</td>
</tr>
<tr>
<td>late [ˈleɪt]</td>
<td>film [fɪlm]</td>
</tr>
</tbody>
</table>
Complementary distribution

before: ε, ɪ, i

[1]

everywhere else

[ɪ]
Phonetics & Phonology

• the actual sounds involved are different
  – [l]
  – [ɹ]

• but English groups these together as a single "abstract sound", or phoneme.
“let”

[let]

“tell”

[tell]
“let”  

[let]

“tell”  

[tell]
COMPLEMENTARY DISTRIBUTION
Phonetics

\[
\begin{align*}
\text{let} & \quad \text{tel} \\
[l\varepsilon t] & \quad [t\varepsilon l]
\end{align*}
\]

phones
Phonemics

‘abstract’ sounds:
the units that a language distinguishes in order to make up its words

Phonetics

\[ [lɛt] \quad [tɛl] \]
**Phonetics**  
\[
[\text{let}] \quad [\text{tel}]
\]

**Phonemics**  
\[
/\text{let}/ \quad /\text{tel}/
\]

\[
/1/ \rightarrow [1] \quad [1']
\]

phoneme phones
Complementary distribution

before: ε, ɪ, i

elsewhere
Complementary distribution

allophones
Complementary distribution

[1] [1]

of the phoneme /1/

allophones
Phonological Rule

\[
/\text{l}/ \rightarrow \begin{cases} 
[1] / \varepsilon, \text{i}, \text{i} \\
[\text{l}] / \text{elsewhere}
\end{cases}
\]
Description vs. Prescription

• Description
  – describing how language **is**, systematising our observations in order to serve as a basis for proposing theories.
  – **Empirical**.

• Proscription / Prescription
  – saying how language **should be**, based on norms and social standards, sense(s) of aesthetics, ‘folk’-feelings about language.
  – **Not linguistic!**
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Phonological Rule

/1/ \rightarrow \begin{cases} [1] / \varepsilon, \text{i, i} \\ \{1\} / \text{elsewhere} \end{cases}
Phonetics & Phonology

• Phonetics
  – is about the **actual sounds** that are made in language and languages

• Phonology
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Phones, Phonemes, Language

Which phones are allophones of which phonemes depends on the language!!

For example:

- Chinese / Japanese does not distinguish \([l]\) and \([x]\), some other languages do!
- English does not distinguish \([p]\) and \([p^h]\), some other languages do!
The **phonological system** of a language defines which ‘abstract sounds’ are available to distinguish meanings.

It defines ‘abstract sounds’, or **phonemes**, as a collection of actual sounds (phones) that are **not distinguished** by speakers of the language.
Phones, Phonemes, Language

English

/\p/  /\l/  /\r/

[p] [pʰ]
[ɬ] [ɬ]
[i] Ø

phonology  phonetics
Phones, Phonemes, Language

phonology

phonetics

[pʰ]

[p]

[ɬ]

[ɻ]

[l]
Phones, Phonemes, Language

Thai

phonology

phonetics
Phones, Phonemes, Language

The **phonological system** of a language defines which ‘abstract sounds’ are available to distinguish meanings.

It defines ‘abstract sounds’, or **phonemes**, as a collection of actual sounds (phones) that are **not distinguished** by speakers of the language.