Consumer guide to phonological evidence
(Oostendorp)

What is used as evidence in phonology?
Classical evidence

➔ Existing data (words, utterances)

➔ **Minimal pair** shows:

➔ Which phones contrast

➔ Which allophones belong to which phonemes

➔ Which phonemes are in the language
Classical evidence

 проблемы с минимальными парами

 Не каждая контрастная пара имеет минимальную пару

 Некоторые минимальные пары являются контрастивными только в определенных контекстах

 Канадский английский

 Редактор \( \text{wr}[^\Lambda\text{ɪ}]\text{ter} \) \text{rider} \( \text{r}[\text{aɪ}]\text{der} \)

 Это означает, что минимальные пары основаны на неявных формах, а не на поверхностных? 

 Редактор \( \text{wri}[t]\text{er} \) \( \text{versus} \) \text{ri}[d]\text{er} \)
Classical evidence

Distribution of phones

- Phones found in different environments belong to same phoneme
  - \([t^h]\) syllable initially (tame, attack)
  - \([t]\) after /s/ (stake, store)
- Phones found in same environment belong to different phonemes
  - Problem: \([\eta]\) and \([h]\) are never in same environment, but aren't from same phoneme
Classical evidence

Distribution of phones

Phonotactics

What sounds are licit in different positions

[mp] is OK finally but not initially

Do people really know this?

They accept *kump* but not *mpul*

Doesn't take frequency into account

*Brut* is better than *sfut* but *br-* and *sf-* are both licit (*brat*, *sphere*)
Classical evidence

» Phonological alternations
» Show relationships between sounds
» [t] alternates with [ʔ] so they must be related (fa[ʔ] guy, intrigue)
» [eɪ] alternates with [æ] so they must be related (sane, sanity, vain, vanity)
» But their productivity differs
» shla[ʔ] pig
» Is something maze like m[æ]zic or m[eɪ]zic?
Classical evidence

➔ Descriptive grammars
  ➔ Author probably used minimal pairs, distributional evidence, alternations to make grammar
  ➔ No possible further evidence for dead languages
  ➔ Did author do it right?
Other natural evidence

→ **Frequency** (from corpora)
  → Does sf- exist in language is replaced by how frequent is sf-
  → Binary is replaced by continuous
    → Degree of voicing instead of voiced/voiceless
Other natural evidence

Typology

- Looking for patterns across many languages (universals)
- There are few universals (all languages have /a/, stops)
- There are many implicational universals
  - Languages with nasal vowels have non-nasal counterpart
  - Languages with front rounded vowels have unrounded counterpart
Other natural evidence

- **Data from variation** (sociolinguistics)
  - Shows common cross-linguistic patterns like typology
- **Data from historical change**
  - Shows common patterns across languages
  - Shows how people process language
Other natural evidence

- Pathology
  - Speech errors, brain damage
  - Insight into language processing
    - Big and fat > pig and vat
    - Voicing is interchanged
  - Certain sounds lost first in aphasia and learned last by children (Jacobsen)
Other natural evidence

→ Language acquisition
   → Certain sounds learned last by children (Jacobsen)
   → Regardless of L1 certain sound learned first
Other artificial evidence

- Nonce word studies
- Where does stress fall on *glicopalonza*?
- How do you pronounce *mazic, focalty*?
- Is *blick, bnick* a possible word?
- Maybe people process these differently than native words
Other artificial evidence

➔ Artificial learning
  ➔ Teach people a phony language with phonological rules
    ➔ What is learnable?
    ➔ Are some processes more natural than others?
      ➔ Natural ones will be learned easier
      ➔ Stress based on weight (common, natural) versus how many syllables in word (not common)
Other artificial evidence

Language games
- Show how people manipulate language
- How do they treat syllables, geminates, long vowels, diphthongs (one unit or two?)
Other artificial evidence

- Experiments
  - Very controlled, not natural
  - Phonetic measurements
    - Final devoiced stops are actually partially voiced
  - Psycholinguistic experiments
    - Pa recognized faster in pa.lace than pal.mier and pal recognized faster in pal.mier than pa.lace due to syllable structure
Formal evidence

➔ Simplicity
  ➔ Simplest analysis is correct
  ➔ Misunderstanding of Occam's razor

➔ Modeling
  ➔ Compare theories by creating models of each and testing the theories with data
In Old English, [ç] and [x] are in complementary distribution. State the contexts in which each of these allophones occur.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>kiçt</td>
<td>'boy'</td>
<td>feçθ</td>
<td>'takes'</td>
</tr>
<tr>
<td>meæx</td>
<td>'manure'</td>
<td>broïxtæ</td>
<td>'brought'</td>
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<tr>
<td>faːx</td>
<td>'hostile'</td>
<td>neælæːçtæ</td>
<td>'approached'</td>
</tr>
<tr>
<td>liːçtan</td>
<td>'alleviate'</td>
<td>bɔxtæ</td>
<td>'bought'</td>
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<tr>
<td>uːxt</td>
<td>'daybreak'</td>
<td>hiːç</td>
<td>'high'</td>
</tr>
</tbody>
</table>
Q36 In Tolitoli, an alveolar lateral approximant [l] is in complementary distribution with a retroflex lateral flap, given as [ɾ]. What determines their distribution (Himmelman 1991)?

<table>
<thead>
<tr>
<th>mologo</th>
<th>‘wash hands’</th>
<th>tolitoli</th>
<th>‘Tolitoli’</th>
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</thead>
<tbody>
<tr>
<td>ulag</td>
<td>‘snake’</td>
<td>kikilo</td>
<td>‘firefly’</td>
</tr>
<tr>
<td>membembelan</td>
<td>‘to tremble’</td>
<td>mongiulan</td>
<td>‘to choke’</td>
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<tr>
<td>labia</td>
<td>‘sago’</td>
<td>lelembalan</td>
<td>‘to carry on the shoulder with a stick’</td>
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<tr>
<td>Verb stem</td>
<td>Prefixed form</td>
<td>Gloss for stem</td>
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<td>-----------</td>
<td>--------------</td>
<td>----------------</td>
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<tr>
<td>giok</td>
<td>tonγgiok</td>
<td>‘move’</td>
<td></td>
</tr>
<tr>
<td>piːleʔ</td>
<td>tompiːleʔ</td>
<td>‘see’</td>
<td></td>
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<tr>
<td>joːŋ</td>
<td>tojoːŋ</td>
<td>‘shake’</td>
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<tr>
<td>kana</td>
<td>tonŋkana</td>
<td>‘hit’</td>
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<td>wawau</td>
<td>towawau</td>
<td>‘do’</td>
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<tr>
<td>tobok</td>
<td>tontobok</td>
<td>‘stab’</td>
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<tr>
<td>luaʔ</td>
<td>toluaʔ</td>
<td>‘vomit’</td>
<td></td>
</tr>
<tr>
<td>sosop</td>
<td>tonsososop</td>
<td>‘suck’</td>
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<tr>
<td>ŋjoap</td>
<td>tonŋoap</td>
<td>‘yawn’</td>
<td></td>
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<tr>
<td>dawoʔ</td>
<td>tondawoʔ</td>
<td>‘fall’</td>
<td></td>
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<tr>
<td>balo</td>
<td>tombalo</td>
<td>‘throw’</td>
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<tr>
<td>tunu</td>
<td>tontunu</td>
<td>‘burn’</td>
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<tr>
<td>ronŋor</td>
<td>toronŋor</td>
<td>‘hear’</td>
<td></td>
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<tr>
<td>ụs</td>
<td>tonụs</td>
<td>‘chew’</td>
<td></td>
</tr>
</tbody>
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1. List the alternants of each prefix.
2. For each alternant, list the initial segment of each base before which the alternant occurs.
3. For each prefix, decide which alternant is the UR. Assume two rules, a place assimilation rule for nasals and either a nasal insertion rule or a nasal deletion rule.
4. Motivate your choice of the URs.