Basic concepts

- Lexemes, words forms, morphosyntactic words
- Form/form and meaning/meaning relations
- Morpheme as minimal pairing of form and meaning
- Morphemes as things / morphemes as rules
- Paradigms

Allomorphy

- Formal relations aren't usually as simple as Chinese compounding
- The shape of a morphemes varies (often in complex ways) with its context
- Phonological rules may may have different effects, depending on the morphological environment
- German final devoicing
  
<table>
<thead>
<tr>
<th>Tag</th>
<th>Tage</th>
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</tr>
</thead>
<tbody>
<tr>
<td>[taːk]</td>
<td>[taːɡ]</td>
<td>‘day’</td>
<td>‘days’</td>
</tr>
<tr>
<td>Hund</td>
<td>Hunde</td>
<td>[hʊnd]</td>
<td>[ˈhʊnda]</td>
</tr>
<tr>
<td>Los</td>
<td>Lose</td>
<td>[loːs]</td>
<td>[loːz]</td>
</tr>
</tbody>
</table>
- Difference is purely phonological, and not reflected in the orthography

Allomorphy

- Not all variation can be reduced to phonological alternations
- Some variation is phonologically conditioned, but not purely phonological
- English plurals / 3rd person singulars
  
<table>
<thead>
<tr>
<th>cat</th>
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<tbody>
<tr>
<td>[kæt]</td>
<td>[kæts]</td>
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<tr>
<td>dog</td>
<td>dogs</td>
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<tr>
<td>[dɒg]</td>
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<tr>
<td>face</td>
<td>faces</td>
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<tr>
<td>[feis]</td>
<td>[feisəz]</td>
</tr>
</tbody>
</table>
- Three allomorphs chosen by phonological conditions
- Phonological motivation is obvious (assimilation, dissimilation)
Allomorphy

- Dutch diminutives
  - kar  karretje: 'car'
  - bal  balletje: 'ball'
  - bus  busje: 'bus'
  - kerk  kerkje: 'church'
  - duim  duimpje: 'thumb'
  - raam  raampje: 'window'
  - berm  bermje: 'berm'
  - koning  koninkje: 'king'
  - laan  laantje: 'lane'
  - zee  zeetje: 'sea'
  - ui  uïte: 'onion'
  - boete  boetetje: 'fine'

- Allomorphy may also be morphologically conditioned

- Sanskrit stem indexing

  pat  pa-pat-a: 3sg perf. act. 'has fallen'
  pat  pat-at: 3sg pres. indic. act. 'falls'
  pt  apa-pt-at: 3sg aor. act. 'fell'
  bhagavant- bhagavat-as: nom. pl. 'fortunate, blessed'
                      bhagavant-a:u: nom./acc. du.
  bhagavat- bhagavat-as: abl./gen. sg. or acc. pl.
                      bhagavat-os: gen./loc. du.

Allomorphy

- Lexically conditioned allomorphy depends on the particular morphemes involved

- German plurals

  Jahr  'year': Jahre
  Tür  'door': Türen
  Fenster  'window': Fenster
  Straße  'street': Straßen
  Bad  'bath': Bäder
  Auto  'car': Autos
  Bruder  'brother': Brüder
  Ärztin  'physician (f.)': Ärztinnen
  Erlebnis  'experience': Erlebnisse
  Kuh  'cow': Kühe

- Phonologically conditioned allomorphy need not make any synchronic sense

- Suppletive allomorphs look nothing like each other

  go  went

- Martuthunira locative case

  parla  'stone': parlangka  'at stone'
  muyi  'dog': muyingka  'at dog'
  kanyara  'person': kanyarala  'at person'
  warrirti  'spear': warrirtila  'at spear'
Morphemes

• Allomorphy raises problems for morphemes as minimal signs
• Other problems
  • Cumulative exponence: mont-em ‘mountain-ACC.SG’
  • ‘Cranberry’ morphs: re-ceiv-er
  • Overlapping morphs: vom Faß = von dem Faß
  • Portmanteau morphs: go-ed = went
• Empty morphs: baker’s dozen

Example: Swedish
  • kvinna ‘woman’ kvinman ‘woman-DEF’ kvinnor ‘women’
  • pojke ‘boy’ pojken ‘boy-DEF’ pojkar ‘boys’
  • sak ‘thing’ saken ‘thing-DEF’ saker ‘things’
  • bok ‘book’ boken ‘book-DEF’ bócker ‘books’
  • bord ‘table’ bordet ‘table-DEF’ bord ‘tables’

• What are the morphs? What are the allomorphs? What are the morphemes?

Morphemes

• The best we can do is to give a distributional definition
• A morpheme is a set of alternates (allomorphs) which have the same meaning and are in complementary distribution.
• Discovery procedure (Harris)
  • divide corpus into recurring chunks (morphs)
  • gather together morphs which have the same meaning but which never occur in the same environment

We need to put some constraints on discovery procedures

• English score and twenty are in more or less complementary distribution, but there is no single morph with that same distribution
• But, we could combine am and are, because the single morph walk covers them both
• We can posit a zero allomorph so long as the morpheme walk has some non-zero allomorph (like Swedish plural), or if the morpheme is a member of some tactically relevant class (like English plural subject agreement).
• English honorifics?
**Morphemes**

- Do we need complementary distribution, or just non-contrastive?
  - inefficient, impossible, intolerant, incompetent, illegitimate, irresponsible
  - unable, unprofitable, untidy, unclear, unlimited, unrealized
  - in/unalienable, in/uncomputable, in/unessential, in/unrealizable
- Are in- and un- allomorphs of the same morpheme?

**Principles**

- Principles of structuralist morphological analysis (Nida 1948)
  - Principle 1: Forms which possess a common semantic distinctiveness and an identical form in all their occurrences constitute a single morpheme.
  - Principle 2: Forms which possess a common semantic distinctiveness but which differ in phonemic form (i.e., constituency or shape) constitute a single morpheme provided that the distribution of formal differences can be phonologically defined.
  - Principle 3: Forms which possess a common semantic distinctiveness, but which differ in the phonemic form in such a way that the distribution of the forms cannot be phonologically defined, constitute a single morpheme if the forms are in complementary distribution, subject to the following restriction:
    - Complementary distribution in tactically different environments constitutes a basis for combining different forms into one morpheme only on the following condition: that some other morpheme-occurs in all the tactically different environments where the forms in question are found.
  - Principle 4: An overt formal difference among related forms constitutes a morpheme, if in any of these forms this difference is the only significant feature for establishing a minimal unit of phonetic-semantic distinctiveness.
  - Principle 5: The meaning of any form is definable in terms of the feature or features common to the situations in which the form occurs.
  - Principle 6: Morpheme alternants whose distribution is not phonologically definable exhibit sub-morphemic differences of meaning.
Principles

- Principle 7: Related forms which occur in the same environment, but which could otherwise be regarded as allomorphs, can still be so regarded if
  - (a) there is no apparent difference of meaning between them, or
  - (b) the difference of meaning is derivable from the distribution of the related forms

- Principle 8: Homophonous forms possessing more than one distinct area of meaning and belonging to correspondingly different distributional classes consist of as many morphemes as there are parallel semantic and distributional classes.

- Principle 9: Homophonous forms are semantically related when they identify regularly associated aspects of the same object, process, or state.

- Principle 10: Homophonous forms which are semantically related and which occur in correspondingly different distributional environments constitute a single morpheme with multiple distribution-class memberships.

- Principle 11: Homophonous forms which are semantically related but which do not occur in correspondingly different distributional environments constitute as many morphemes as there are meaning-distribution classes.

- Principle 12: The allomorphs of two (or possibly more) morphemes may be partially or completely coexistent, provided one of the morphemes is not zero.

- Principle 13: A single morpheme may be tactically equivalent to two or more morphemic categories.