Final exam

- Exam covers chapters 1–11 of Haspelmath and class notes
- Comprehensive exam, but more on second half
- In class part: Wednesday, May 11
- Take home part: due Monday, May 16
- Both parts are open book, but:
  - You still need to study
  - Don’t work in groups
Morphology

• Morphology is the study of the systematic covariation in the form and meaning of words.

• Two main types: inflection and derivation

• Morphemes as minimal signs
  • Item and Arrangement = morphemes + tactics
  • Item and Process = morphemes + rules

• A third model, Word and Paradigm, takes the notion of an inflectional paradigm as central
Early generative theories

- “Remarks on nominalization” (Chomsky 1970)
  - *Gerundive* nominalizations, like passives, are very predictable
    
    \[
    \text{Pat criticizes the book} \rightarrow \text{Pat’s criticizing the book}
    \]
  - *Derived* nominalizations are more irregular:
    
    \[
    \text{Pat criticizes the book} \rightarrow \text{Pat’s criticism of the book}
    \]

- Lexical redundancy rules
Early generative theories

• “Prolegomena to a theory of word formation” (Halle 1973)
• IA model, with a list of morphs feeding into a set of tactic rules
• Non-occurring forms (*arrivation) removed by filter
• Dictionary lists occurring and non-occurring forms
Early generative theories

• “Word formation in generative grammar” (Aronoff 1976)
• Inflection and compounding are (for Aronoff) in the syntax
• No list of morphs: only free forms are listed
• WFRs are schemata for producing new words out of old words

\[ X_v \text{-er}_N \] ‘one who Xs habitually, professionally, etc.’

• Completely predictable words formed by wholly productive WFRs don’t have to be listed (e.g., -\text{ly})
Inflection

- Linguists have identified a number of criteria, but none are definitional

- Inflectional morphology relates word forms of a lexeme, derivational morphology relates word forms

- Two general approaches
  - Split morphology: inflection and derivation belong to different modules
  - Continuum: inflection and derivation are descriptive categories, but all morphology is combined into a single module
Compounds

- Types of compounds
  - Root, Synthetic, Endocentric, Exocentric, Appositional
- In synthetic compounds, the left daughter fills a semantic role in the meaning of the right daughter
  
  *truck driver, fast acting, pan fried, moth eaten*
- In some languages, noun-verb compounds seem more syntactic (noun incorporation)
Position classes

• Most generative theories of morphology work best for agglutinative derivational morphology: each morph corresponds to an atomic meaning

• In contrast, descriptive traditions don’t treat all morphology as agglutination
  • Template morphology
  • Paradigm-based morphology

• Paradigm functions and realizational morphology
  • Inheritance and defaults
  • Syncretism
Interfaces

- Modular theories of grammar
- **Lexical Integrity Hypothesis**
  Words are syntactic atoms.
- Lexical rules and syntactic rules
- Complexity
  - Syntax is context sensitive or at least context free
  - Morphology on the other hand seems to be a regular language
Interfaces

- Grammatical vs. thematic relations
  - Syntactic rules only refer to GFs like *subject* or *object*
  - Lexical rules can refer to thematic relations like *agent* or *patient*
- Words as islands
Clitics

• Clitics are subject to syntactic rules, but are prosodically dependent on their hosts

• *Simple* clitics alternate with a full word, *special* clitics don’t

• Clitics are much more promiscuous than affixes

• Clitics also rarely have lexical gaps or idiosyncrasies

• Tests to distinguish clitics from affixes
  • English contracted negation *n’t*
  • Romance verbal clitics

• Second position clitics
Interfaces

• Derived environment rules

• Strict Cycle Condition

• Interleaved morphological and phonological processing
  • Lexicon builds a bracketed structure
  • Phonology applies to successively larger units, respecting the Strict Cycle Condition
Lexical phonology

- Lexical and post-lexical phonological rules
- Different kinds of derived environments trigger different phonological rules
- Phonological processes distinguish two types of rules:
  - Type 1: -ity, in-, -ical, -ion, -ian, -al, -y, -ous, ive
  - Type 2: -ness, un-, -ly, re-, -ize, -able, -ful, -y, -ism
- Level Ordering hypothesis
Lexical phonology

LEXICON

- Dictionary
  - Level 1 morphology → Level 1 phonology
  - Level 2 morphology → Level 2 phonology
  - Level n morphology → Level n phonology

- Syntax
  - Post-lexical phonology
Lexical phonology

- For English
  - Level 1: integrated affixes, irregular inflection
  - Level 2: neutral affixes, compounding
  - Level 3: regular inflection
  - Post-lexical: clitics
- Other languages may (in theory) differ, but in practice they don’t seem to
- Many lingering problems and paradoxes
Bracketing paradoxes

- Affix Ordering Generalization
- Reanalysis triggered by the fact that *un-* wants to attach to an adjective

\[
\begin{align*}
&\left[ \left[ \text{grammatical} \right]_A \text{+ity} \right]_N & \text{Level 1} \\
&\left[ \text{un}+\left[ \left[ \text{grammatical} \right]_A \text{+ity} \right]_N \right]_N & \text{Level 2} \\
&\left[ \left[ \text{un}+\left[ \text{grammatical} \right]_A \right]_A \text{+ity} \right]_N & \text{Reanalysis}
\end{align*}
\]

- Alternative solutions
  - Lexical relatedness
  - QR raising
  - Derivational paradigms
Morphosyntax

- Inflectional morphology indicates relations between elements in a clause

- Predicate/argument structure

  \[ Pat \text{ stole } 20 \text{ from the cashbox.} \]

  \[
  \text{steal} \hspace{1cm} \text{agent} \hspace{1cm} \text{Pat} \hspace{1cm} \text{Subject} \\
  \text{theme} \hspace{1cm} \$20 \hspace{1cm} \text{Direct object} \\
  \text{source} \hspace{1cm} \text{the cashbox} \hspace{1cm} \text{Oblique (from)}
  \]

- Argument structure is made up of semantic or thematic roles (agent, theme, etc.)

- Syntactic valence (or subcategorization) from is made up grammatical relations (subject, object, etc.)
Morphosyntax

- Canonical mapping between thematic roles and grammatical relations
  - Canonical mapping links most agent-like argument to subject and most patient-like argument to object
  - Case and agreement marking helps identify grammatical relations
  - Valence alternations reflect non-canonical mappings
    - Passive
    - Anticausative
    - Reflexive
Morphosyntax

- Causative markers add a new agent to the argument structure
- Applicatives add new non-subject arguments to a verb’s argument structure
  - Recipient (dative shift)
  - Instrumentals
  - Benefactives
  - Ethical datives
Frequency

- Frequency effects are very important in morphology, perhaps more than any other subfield of linguistics.
- What is frequency?
  - Relative and absolute frequency
  - Word, stem, and morph frequency
  - Type and token frequency
- Token frequencies follow Zipf’s Law
“Productivity” in glossary:
A morphological pattern or rule is *productive* if it can be applied to new bases to create new words.

Productivity isn’t really an all-or-nothing concept

Measuring productivity

The importance of hapax legomena
Frequency

- Frequency effects in morphological paradigms
  - Frequency and length
  - Frequency and syncretism
  - Frequency and irregularity
- Frequency reversals
Dual mechanism theory

- Dual Mechanism Theory (Marcus, Clahsen, Pinker, et al.)
  - Associative lexicon for irregular inflection
  - Computational rules for regular inflection
- An alternative version of the DMT proposes that both systems work in parallel (Baayen and Schreuder)
  - The lexicon is a list of all full forms and all morphemes
  - Words are segmented by looking up both the whole word and all substrings in the lexicon
  - Whichever pathway comes up with an answer first, wins
  - Spreading activation
Dual mechanism theory

- Activation and productivity
  - The number of forms with an affix that get parsed is a good measure of that affix’s activation
  - High activation affixes are more likely to be salient and productive
  - Words with high activation affixes are less likely to be irregular (semantically or otherwise)
- Activation and blocking