Introduction to Phonological Analysis **Handout 4 (Sept. 12)**
LING 232A/632A, Fall 2013
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Theme: Basics of phonology: phonemes, allophones and segments (continued).
Based on: Hayes, 2009, chapter 3.

Question: what do you find on the first pages of an extremely traditional grammar?

1. Structuralist phonology	**vs.**	**Early generative phonology**
Sapir (1925): Sound patterns in language		Chomsky, Noam, and Morris Halle (1968): *The Sound Pattern of English*
Starting point: language (etc.) is a *system* (Saussure, 1916) a function of social conventions => a social phenomenon + human behavior is a black box (behaviorism) => language is a (static) structure		Starting point: language is a *product* of the mind/brain a function of neurological constraints => a biological/psychological phenomenon + the black box must be opened => language is a computational system
/Phoneme/ ≠ default or elsewhere [allophone], because phonemes and allophones represent two different levels of abstraction for describing the sound inventory of a specific language.		Same segment in /UF/ and [SF], if unchanged. Namely, underlying segments either rewritten (if rule applies) or retained (in elsewhere condition). Different sound inventories on U and S levels.
Methodology: - Fieldwork: collect data. - Search for minimal pairs and complementary distribution. (is Clark Kent Superman?) - In theory, works automatically, but in practice, many questions to be solved intuitively (e.g., no minimal pairs by coincidens, problems in Hayes 3.4).		Methodology: - Fieldwork: collect data. But also: typology. - Define model = representations + mappings: how does the UR maps onto SR? Model covers data: observational adequacy Model correctly generalizes: descriptive adq. Model explains lg. typology: explanatory adq. aim: internal structure of mind/brain

2. Some useful notions introduced by the structuralists:
natural classes
features

3. The cognitive turn: biological and computational aspect.

Why introduce formal system?
- after practice, easier to work with (beyond a certain level of complexity) than with plain text;
- more efficient way of communication between trained scientists;
- cracking the software code in the mind / writing code for artificial intelligence.

Programming: data structure + commands + general architecture.

Cf. two major components of a phonological theory:

1. Representation: "grasp it: this is what it is."
   E.g., segments; features of natural classes; syllable constituents; autosegmental tiers.
2. Processes (mappings): "do something with it: this is what it becomes."
   In many contemporary theories: *underlying form* → *surface form*
   (rewrite rules in SPE phonology; Optimality Theory filters).
   Alternative: declarative approach: restrictions on what *surface form* can look like.

Underlying form/representation → surface form/representation.
Cf. * form in proto-language > form in documented language.

Transformational approach with mappings and (rewrite) rules, focusing on processes
vs. declarative approach with constraints, focusing on representations.
(NB: OT is tricky…)

Q: Are these rules and constraints just a fancy way to describe observed facts? Or do they explain facts?

4. A 2-year-old Hungarian child arriving from the Netherlands to the US…

Reading for Tuesday: Hayes, chapter 4.

Homework:

0. Think about all other exercises in sections 1-3, even if you do not have to submit them.

1. Hayes, p. 67, exercise 3 on Japanese. Present your phonemic analysis of the 5 nasals. Make sure you include: (a) a statement of what the phonemes and their allophones are; (b) a statement in words of the generalization governing the distribution of allophones, and (c) the rule or rules formalizing the alternations. Additionally,
- (regarding question d) also try to formulate constraint(s), as an alternative to the rule(s), and
- provide the derivations of four words out of 3, 8, 22, 27, 32, 36, 38, 44.

2. Create an inventory of the sounds in 'your' language. Describe them using the IPA-symbols. Create the inventory of the phonemes in 'your' language. Search for minimal pairs, or demonstrate complementary distributions, and formulate allophony rules.