

From Structuralist Phonemics to Underlying Representations in Generative Phonology

Readings: Odden's supplement to Ch. 3 (on his web-site)
 Odden Chapter 4 to page 82 (bring book to class Friday and Monday)

A little more on **American structuralist phonemics**:

Phonemes are the result of phonemic analysis; each phoneme = a set of allophones. Some principles that American structuralists generally agreed upon are:

- Biuniqueness:** a one to one relationship between an allophone and the phoneme it belongs to (for any specific context)
- No Mixing of levels:** only phonetic information can be used in a phonemic analysis (no knowledge of lexicon, morphology, syntax, semantics)

motivations: fieldwork, language acquisition and processing are all assumed to be 'bottom-up' – begin with phonetics and determine phonemics with no other information available, by induction, so no grammatical knowledge available. Analyze from the point of view of the listener.

Morphophonemics: types of alternation for which biuniqueness does not apply. These are alternations that require some kind of lexical/grammatical knowledge, beyond the purely phonetic information that can be used in a phonemic analysis

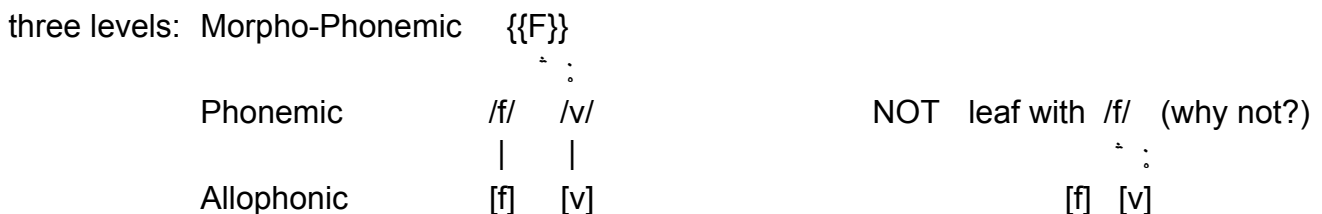
example: leaf [f] ≈ leaves [v]+[z] (vs. regular chef [f] ≈ chefs [f]+[s])

To describe this, use a morphophoneme: //F// = /f/ in sg., /v/ in plural
 this means that the lexical entry for 'leaf' is:

lea//F// which has two allomorphs {lea/f/, lea/v/}

(two allomorphs = two distinct ways of pronouncing the morpheme with the meaning 'leaf'; these are distinct because they end with different phonemes /f/ and /v/, which contrast in minimal pairs in English, such as 'fine' and 'vine')

Morphophonemes are sets of phonemes, like phonemes are sets of allophones. Note that this is not a rule; //F// is an abbreviation for “phoneme /v/ before pl./z/ and phoneme /f/ elsewhere”, used because it occurs in more than one example wife/wive, etc.). Using morphophonemes as a different level of analysis, allows us to keep the relationship between phonemes and allophones biunique:



The same kind of analysis for {am, is, are} (totally suppletive), for leaf/leaves (somewhat phonologically motivated), and for neutralization (completely phonological).

Problems for phonemic analysis (according to generative phonologists in early 60s):

1) Neutralization always raises problems for biuniqueness. Take the example of English /t/ and /d/; both are V[r]V intervocalically; how do you know whether it is the phoneme /t/ or /d/?

2) Generality of Rules: Halle's argument: that a level of representation meeting the specific conditions of structuralist phonemics (especially bi-uniqueness) cannot naturally be incorporated into a theory of phonology (using Russian, see Halle's *Sound Pattern of Russian* 1959).

In Russian, voicing is contrastive for some obstruents but not others (so phonemic for some pairs, like /p/ vs. /b/ = 2 phonemes, but not others, like [č] and [j] = one phoneme).
Voice is predictable for all obstruents in certain positions (e.g., by assimilation).
∴ there will be voice neutralization at the phonemic level for some obstruents, and allophonic voicing for others.

In order to satisfy biuniqueness: split obstruents into 2 classes & use 2 rules of voicing (neutralization, allophonic)

Without biuniqueness: use 1 rule generalized to cover all obstruents

3) Contrast: If you allow mixing of levels (that is, if you consider facts other than phonetics), contrast is not always "all or nothing".

For example, in French, is nasalized \tilde{o} is a phoneme because it's in contrast with other Vs?
are the vowels in [b \tilde{o}] vs. [bon] ('good', m. and fem.) different phonemes?
Phonemicists say yes; if [\tilde{o}] contrasts with [o] anywhere in French then each is a phoneme, so 'good' has two forms spelled with different phonemes: /b \tilde{o} / vs. /bon/
Generativists say no' the nasalized vowel [\tilde{o}] results from rules applied to input /bon/ m. vs. /bon+ə/ fem., which creates an apparent surface contrast from the /o/ in UR

Generative phonology abandons the phonemic level (as strictly defined by biuniqueness – eventually phonemes, or at least contrast, makes its way back into Generative Phonology).

The arguments are not based on 'new' facts, but rather on new ways of evaluating the analyses that result. Note that Halle's (and our) Underlying Representations do not equal phonemes.

The main arguments that we need some underlying representation have been:

- 1) **predictability** (from underlying to surface)
 - 2) **identity of morphemes** despite variation on surface
 - 3) **inertness** of redundant features
 - 4) **environments for stating proper generalizations**
- } we will get to these later

How closely must a UR match a SR? What do URs look like? Possible restrictions on abstractness:

- 1) **all alternants are listed in the lexicon**
 - 2) **the UR of a morpheme must appear as part of one of the forms on the SR**
 - 3) **UR contains segments which each appear phonetically in at least one alternant**
- Does that rule anything out? **Absolute neutralization.**

Types of phonological processes in terms of what they do (fairly common processes)

Assimilation: segments become more similar to something nearby. We've seen this for consonants (place, voicing), where they usually assimilate to a neighbor. When vowels assimilate to other vowels over a distance, it's called "**Vowel harmony**".

Bi-directional Assimilation (aka fusion or coalescence): 2 segments become 1, combining aspects of both

Dissimilation: A sound becomes less like a sound in its environment, commonly in manner, place, or vowel quality. (not nearly as common as assimilation)

Strengthening and Weakening

Stop	>	Fricative	>	Approximant (Glide)	>	∅
		(fortition)		(lenition)		
←						→
Aspirated	>	Voiceless	>	Voiced		

We tend to find Strengthening (also known as fortition) word-initially, syllable-initially, or in stressed syllables

We tend to find Weakening (also known as lenition) intervocalically, syllable-finally, or in unstressed syllables.

Epenthesis: addition of an entire segment; often a vowel is added to break up consonant clusters, or a consonant is added to break up vowel clusters, in order to make better syllables.

Deletion: loss of an entire segment; often a vowel is lost in a vowel cluster, or a consonant is lost in a consonant cluster (again, often in order to make better formed syllables).

Metathesis: reordering of segments. Cross-linguistically a few types of clusters are prone to metathesis: vowels and /l/, vowels and /r/, consonants with /s/, etc.

Reduplication: adding something whose phonological realization depends on what it's added to -- something is copied from the base ("table-schmable" in English)

In case you have not yet discovered it, there is a glossary in the back of the Odden book