Day 5.2.

A **Phonological System** delineates possibilities for making signs. It has two parts.

1) Choice of categories => number of contrasts
2) Organization into fluent utterances:
   - Restriction of possible sequences makes sequence more predictable.
   - Restriction of possible sequences reduces the number of contrasts that can be made and hence you have fewer choices within the system.

Example:
If I have a system which groups consonants with vowels in a CV order, and it has 2 consonants = \{p, t\}, and 2 vowels = \{i, a\}, it will allow us to create 4 symbols: pi, pa, ti, and ta.

If I *also* have a restriction, such that /t/ cannot come before /i/ ...
   a) The pattern is more predictable. I know that if I have a /t/, the vowel has to be /a/.
   b) The system has less expressive power. We can only create three symbols: pi, pa, and ta.

**Phonemic Analysis** = getting a phonological system from observed patterns. Some patterns listed below:

1) **Contrast** => A minimal difference in two phonemic categories which signals a word difference, evident in a minimal pair.
   E.g.: [kat] vs. [gat] in English.

2) **Variability within a category** => A minimal difference between two categories which does *not* signal a word difference.
   E.g.: [kat] vs. [qat] in English (difference due to person)
   E.g.: [hit] vs. [hiʔ] in English (difference due to style)

3) **Variability within a category based on context** => A difference between two categories that get put into the same category is due to context, evident in a **systematic rule** (see next page).
   E.g. [hit] ‘heat’ vs. [hirIŋ] ‘heating’

   E.g. [bo] ‘bow’ vs. [bʊn] ‘bone’
Systematic rule: Y -> Z / context X => is evident in distributions

IF: in context X, a rule always changes Y -> Z
THEN: Y will never appear in context X
AND: Z will appear in context X

COMPLEMENTARY DISTRIBUTION:
IF A appears where B does not, and B appears where A does not,
A & B are in complementary distribution.

vs.

OVERLAPPING DISTRIBUTION:
IF A and B appear in the same context,
A & B are in overlapping distribution.

(CONSISTENTLY APPLYING RULES produce
COMPLEMENTARY DISTRIBUTION)

OBLIGATORY RULES -> COMPLEMENTARY DISTRIBUTION
NO RULE -> OVERLAPPING DISTRIBUTION

MINIMAL PAIRS -> OVERLAPPING DISTRIBUTION
[t a t] no rule predicts the difference
[d a t] <------- between [t] and [d]!

NEAR minimal pairs -> OVERLAPPING DISTRIBUTION

[ˈtɛləfon] no reasonable rule can predict
this difference between [t] & [d], either!
[ˈdɛleget] <--------------

(Near minimal pair: two forms which
keep you from writing a reasonable rule, and
bear different meaning.)
General Method for phonemic analysis:

1) Collect the sounds that speakers make.

2) Consider sounds in pairs. Pick pairs of sounds which are phonetically similar. (If they're not similar, the sounds contrast.)

3) Look for minimal pairs/false minimal pairs. (‘False minimal pairs’ forms which are distinguished in only one element, but do not have different meanings.)

4) If no such pairs, look at distributions and formulate rules.

5) Go back to #2 until all of the phonetically similar pairs of sounds have been examined.

6) Organize your findings into a grammar.
START HERE:

PICK TWO SOUNDS

Are the two sounds phonetically similar?

NOPE

SEPARATE PHONEMES

Are there two utterances which differ only in these two sounds?

YUP

NOPE

List the environments in which the two sounds are found.

YUP

NOPE

Do the two forms bear the same meaning?

YUP

Get more data (expecting a minimal pair to show up). Cite near minimal pairs as evidence.

NOPE

Get more data (expecting to find some sort of complementary distribution). Concoct outlandish rule, which may unfortunately be right.

YUP

DO THE TWO FORMS OCCUR IN SIMILAR ENVIRONMENTS?

NOPE

Do the two sounds occur in similar environments?

YUP

Are the sounds in complementary distribution?

NOPE

YUP

State the phonological process which explains the distribution.

ONE PHONEME

Split by an obligatory process.

ONE PHONEME

Split by an optional process.

ROCCO

ROCCO
Formalism

Rule schema: /X/ => [Y] / x _____ y

Target: /X/

Environment (or Trigger): / x ____y

Structural Change: => Y

Structural Description: xXy (target in environment/input)

Output: xYy (change in environment/output)

(Equivalent rule: /xXy/ => [xYy]... Don't do it this way)

_____

/ = "in the environment of"

X___ = "after X"

___X = "before X"

X___Y = "between X and Y"

() = optional parts of the description:

Hence ___(Z)Y, "before Y, or before ZY"

{} = "or"(just set notation):

Hence, ____ {x,y}, "before x or before y"

# = word edge

0 = nothing

V = vowel

C = consonant