## Multi-tiered Phonology

1. Certain properties of sounds seem to be more naturally viewed as being present across more than one segment at a time—as properties of syllables or words (and maybe even morphemes) as opposed to being properties of a single segment. If you look at vowel harmony, for instance, in a language in which all of the vowels in a word are [-back] or [+back] but no words have both front and back vowels, you have to decide how to specify backness in the underlying form. Do you give the first vowel a value for [back] and then assimilate all the others to it? Why not the last vowel? Why not the middle one, or the second from the left? If no one solution is better than the others, they must all be wrong. The backness of each vowel is predictable from that of any one of the others; in cases like this, there must be something else which is the independent variable. Backness is a property of the *word,* which gets copied onto all of its vowels. We can represent this efficiently by having a separate **tier** for backness, floating near the segmental tier. In the latter, only the height (and maybe the rounding) of the vowels needs to be specified, as in Katamba's Mongolian example.

2. Tonal phenomena like Downstep, in which a high tone is lowered to a mid tone for no apparent reason, or upstep, in which a low tone is raised to mid for no apparent reason, need a magic floating tone to explain their occurrence. This magic L or H does better if it just hangs from the tonal tier and never gets associated with any segment, rather than being jammed onto the last vowel before the Down- or Upstep; you'd have to delete it if it were a part of the vowel, to explain why it never surfaced. (You could, of course, avoid that whole issue by having phonemic mid tones, but that would be Wrong, or at least No Fun.)

3. Things to know:

   **Downdrift:** Phonetic, automatically caused by declination
   **Downstep:** Phonological, often caused by invisible floating tones, much as evil spirits or pathogens cause disease
   **Obligatory Contour Principle:** You can't have two adjacent identical things, e.g., two syllables with the same tone.
   **Well-formedness Condition:** Each vowel gets a tone, each tone gets a vowel (even the magical floating ones have to share a vowel with the next tone), and association lines must not cross.

There's more, but it can wait for the classes on metrical and lexical phonology.