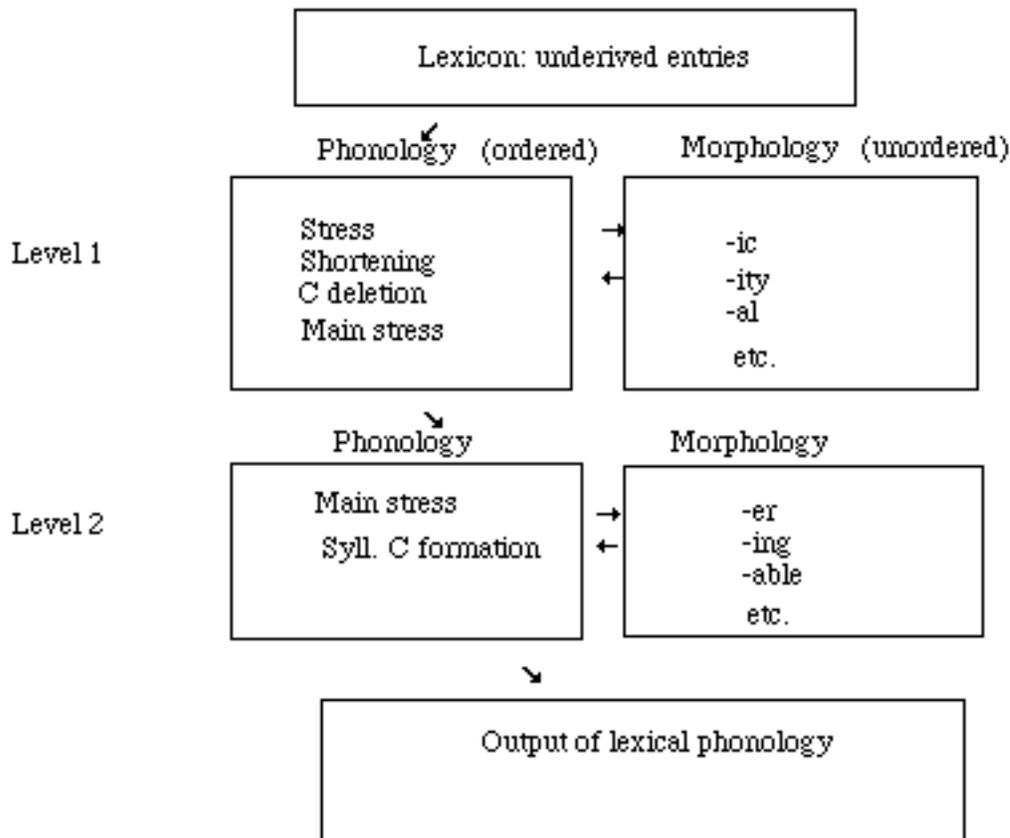


## Assignment 5, due Wed. March 10 2005

In this assignment you are asked to compute the implications of a set of data for a model of the interaction between morphology and phonology in English. The model is classical Lexical Phonology (LP), as first proposed by Paul Kiparsky (1982, 1984), based on earlier proposals by David Pesetsky (1979, general paper MIT), and KP Mohanan (1982, PhD thesis, MIT). The question is whether the data can be accounted within the model.

Here is a flowchart corresponding to how information is channeled from the lexicon, to phonology and morphology, in one version of this classical LP model.



Information extracted from the lexicon is processed by phonology at Level 1, in the sense that all applicable rules apply in order, then are fed into the word formation component, which adds any one – or none – of the affixes available at that level. After each affixation, the resulting stem+affix is again processed by Level 1 phonology, in the sense that all applicable Level 1 rules apply. When no more affixation rules apply, the result is passed to Level 2. Here again the output of the previous level is first processed by phonology: that means that all applicable Level 2 rules apply. Then Level 2 affixation rules apply.

Here is a more extensive list of Level 1 affixes: *-ard*, *-ar* (a variant of *-al*), *-est*, *-ation*, *-ure*, *-atic*, *-ify*. Some affixes like adjectival *-y* are said to have both Level 1 and Level 2 versions.

Here is the data (from Borowsky 1993):

Word in isolation	Level 1 affix	Level 2 affix	comment
center	central	centering	Syllabic sonorant in isolation form and before Level 2 affix. Non-syllabic sonorants before Level 1 affix.
anger	angry	angering	
hunger	hungry	hungering	
wonder	wondrous	wondering	
cycle	cyclic	cycler, cycling <sup>1</sup>	
meter	metrical	metering	
long	elongate	longing	Voiced stop absent in isolation form and before Level 2 affix. Voiced stop present before level 1 affix.
strong	strongest	strongly	
bomb	bombard	bombing, bomber	
crumb	crumble	crumby	
condemn	condemnation	condemning	[n] absent in isolation form and before Level 2 affix; present before Level 1 affix.
autumn	autumnal	autumning	
hymn	hymnal	hymning	
resign	resignation	resigning	[ain] and [aim] with no [g] in the isolation form and before Level 2 affix; the variant form [ign], [igm] before Level 1 affix.
sign	signature	signing	
paradigm	paradigmatic		

It is significant that I use examples involving vowel-initial Level 1 and Level 2 affixes. The processes described care about whether a C or C sequence is or is not followed by a vowel, but the Level 1 and Level 2 suffix-initial vowels appear to work differently.

Here is what you need to do: give an analysis of the 4 phenomena described above in rule-based terms. First explain how the architecture of the LP model explains – or does not – this data. Then sketch OT analyses of these data and explain whether you encounter any difficulty in accounting for the different behavior of the two suffixes.

<sup>1</sup> Non-syllabic [l] in *cycler*, *cycling* is possible, but syllabic [l] forms are also possible. In contrast, before Level 1 *-ic*, syllabic [l] is strictly impossible.