Problem Set #7a: Sonority and coda consonants in OT

As we discussed briefly in class, an OT counterpart can be developed for Zec's (1988) theory about sonority level and moraic status (Zec herself does this in a later paper). We can propose a set of constraints of the form *μ/X, where 'X' represents an individual step on the sonority scale. For the purposes of this problem set, let's pretend that the sonority scale has exactly two steps: obstruent consonants < sonorant consonants (ignoring vowels for the moment, since we're interested in codas). This means that there are two relevant *μ/X constraints: *μ/OBSTC and *μ/SONC.

*μ/OBSTC	No mora has an obstruent consonant as its most sonorous segment.
*μ/SONC	No mora has a sonorant consonant as its most sonorous segment.

Your job is to consider the predictions that are made when *μ/OBSTC and *μ/SONC interact with some other mora-related constraints that we have recently seen or talked about.

NOSHAREDMORA	Moras are linked to single segments. (BCH 1997)
MINIMALWORD (MINWD)	A word contains at least two moras. (This constraint is responsible for languages, like English, Lithuanian, Arabic and many others, that do not tolerate monomoraic words.)

Part I. Possible rankings

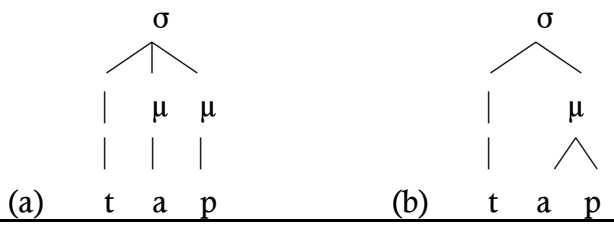
- Determine how many distinct rankings of these four constraints are possible, and list them all. (Hint...Discuss the following question in your write-up: Do *μ/OBSTC and *μ/SONC have a universally fixed ranking, or are they freely rankable? Why? If they do have a fixed ranking, what is it, and why?) Number the individual rankings that you list, so that you can refer back to them in Part II.

Part II. Predicted language types

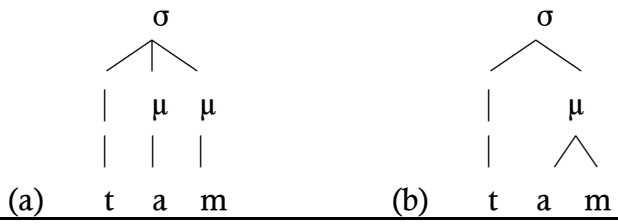
For this part of the problem, you will determine what general type of language is predicted by each of the different rankings you have identified in Part I. You will do this by seeing which of the following two outputs each ranking will choose for the sample inputs /tap/ and /tam/. (For example, you might find that there is one ranking that will produce a language in which both obstruent and sonorant codas bear their own mora, and two other rankings, although not identical, that will each produce a language in which no coda consonants bear their own mora.)

Input:	*Two competing output candidates: Which will win?*

Obstruent case: /tap/



Sonorant case: /tam/



Note: Looking only at these two candidates, (a) and (b), for each case means that we are considering only languages where PARSE (or MAX), FILL (or DEP), and IDENT[F] are ranked very high. That is, none of the languages we are examining will use epenthesis or deletion to avoid other problems, nor will they change the features of any segments (i.e., change their sonority). We are also assuming that another high-ranking constraint prevents these languages from lengthening vowels in order to satisfy MINWD without using moraic codas. This set of simplifying assumptions lets us focus in on the main point of interest: whether or not coda consonants can be moraic.

- First, take each of your rankings from Part I and apply it to the obstruent case and the sonorant case shown above to determine which of the two candidates is preferred by that ranking for each kind of input. Then give a prose description of the language pattern (as seen in the examples given above): what does the language produced by this ranking do with obstruent and sonorant codas?

- If you find that multiple rankings lead to the same language type, discuss them together and try to determine what the crucial factor is that those rankings have in common.

- Are there any logically possible language types that are not produced by any of the rankings you have found? Why are these language types predicted to be impossible?

- How do your predictions concerning possible and impossible language types compare with the original predictions made by Zec (1988)? (Is there anything that she claimed to be possible that your rankings here have predicted to be impossible, or vice-versa?)