Node Labeling and Concatenation
(Baker and Bobaljik 2002)

- This week we have surveyed different types of derivation (including compounding). One thing we've seen is that there are various patterns involving meaning that correlate with the different types. Next week we will be looking at how to derive some of these, with a focus on argument structure. To do this we will add to the notation used in our WSTs.

- As an initial step towards the enriched WSTs we will use next week, we will now make explicit the processes involved in the determination of the properties of derived words. It will turn out that we need to posit two processes. What does this tell us? We will infer that this reflects the existence of two kinds of concatenation! (Note that here I use the term 'concatenation' in a very general sense, referring to each structure-building step in word-formation. This abstracts away from the issue of whether the phonological form of the morphology is fully specified or partly underspecified as per our unit on prosodic morphology).

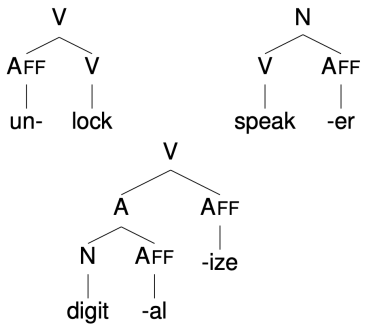
- Anticipating where we will end up:

  - Two processes for determining the properties of derived words:
    - **Node labeling**
    - **Feature Percolation**
  - Two kinds of concatenation:
    - **Head-complement structures**
    - **Modifier structures**

1.0 Node labeling convention (NLC)

- We have so far drawn WSTs that simply stipulated the category of the node projected by concatenation:

  (1) WSTs from Week 2



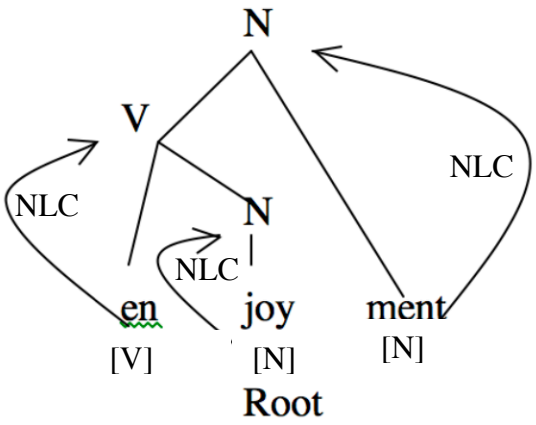
- Henceforth, we will be more explicit in treating each **terminal node** in the WST as, essentially, the lexical entry for a morpheme.
  - We will include category features with the terminal nodes of WSTs
  - We will also extend this practice to other relevant features
  - We will posit rules that make explicit which terminal node is responsible for the new node created by concatenation.

- We have previously established that concatenation is **headed**, with the head being the element that assigns its category to the new form. This is made explicit in our first rule, the **Node Labeling Convention (NLC)**.

  (2) **Node Labeling Convention (NLC):** The features of a node are provided by the lexical category it immediately dominates.

  - *Terminological note:* When we are talking about node labeling, we will refer to the node that is being labeled as the **target node**.

  (3) WST with NLC



  - Note that with our definition of the NLC we have to stipulate that roots always project a target node and label it before affixation occurs. Otherwise we would not have the asymmetry required for the NLC to apply, as there would be two lexical categories immediately dominated by the target node.

- Practice:

(4) Russian (Bobaljik 2002)

c = /ts/; transcription broadly phonemic
stress-related vowel alternations NOT indicated
palatalization not consistently indicated

a.	leningrad	'Leningrad' [Masc]		
	vjetnam	'Vietnam' [Masc]		
	amerika	'America' [Fem]		
	italija	'Italy' [Fem]		
	marokko	'Morocco' [Neut]		
	meksiko	'Mexico' [Neut]		
b.	leningrad^{j}ec	'Leningrader' [Masc]	leningradka	'Leningrader' [Fem]
	vjetnam^{j}ec	'Vietnamese' [Masc]	vjetnamka	'Vietnamese' [Fem]
	amerikan^{j}ec	'American' [Masc]	amerikanka	'American' [Fem]
	italjan^{j}ec	'Italian' [Masc]	italjanka	'Italian' [Fem]
	meksikan^{j}ec	'Mexican' [Masc]	meksikanka	'Mexican' [Fem]
	marokkan^{j}ec	'Moroccan' [Masc]	marokkanka	'Moroccan' [Fem]

- Observe:
  - Russian has three genders: _____
  - Russian has two affixes that meaning 'someone from X': _____
  - There is some allomorphy in the forms of both affixes and roots. List the allomorphs and try to give a statement of the relevant environments:

  - Do the affixes change the category **or other features** of the base?

- Create lexical entries for these affixes (regarding the allomorphy, you can simply list both forms but try to include a statement of their environments)

Label		
Form		
Meaning		
Subcategorization		
Category **+ Gender**		

- Now draw fully labeled WSTs for *amerikan^{j}ec* and *leningradka*

- There are, in principle, two ways to derive the correct output for *italjanka*. Give both WSTs. Can you determine which is correct?

2.0 Feature Percolation

- It isn't always the case that affixation will trigger the NLC.

(5) a. non-invasive non-trivial non-essential
b. non-smoker non-fiction non-entity

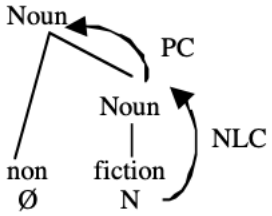
  - *non-* attaches to both As and Ns
  - When it attaches to As the target node is an A
  - When it attaches to Ns the target node is an N
  - What is the category of *non-* ? We could say it is [N]/_[N] and [A]/_[A] but this seems to be missing a generalization. Instead, we will say *non-* is a **modifier** and has no category feature. (This is reminiscent of adjunction/modification in syntax, where adjunction/modification is invisible to the projection of phrase-level category labels).

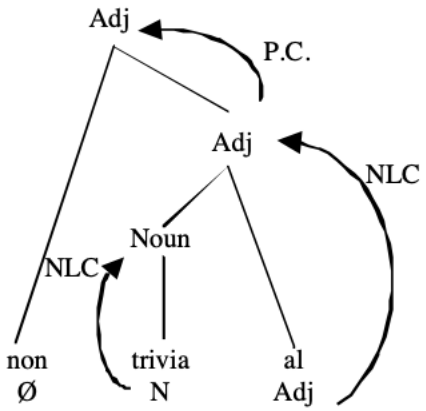
- In our WSTs, we will treat modifying affixes like *non-* as lacking the appropriate features to trigger the NLC. In this scenario, features of the immediately lower node can **percolate** up and label the target node. This gives us our second labeling rule, the **(Backup) Percolation Convention (PC).**

(6) **(Backup) Percolation Convention (PC):** If the lexical category immediately dominated by the target node does not have the features relevant to the NLC then the target node may acquire the features of an immediately lower node.

- A generalization that emerges from this: modifying affixes will introduce semantic change but not category change.

(7) Applying the percolation convention





- Practice:

(8) Italian nouns and diminutives (Bobaljik 2002)

scatol-a	'box' (fem)	scatol-ett-a	'little box' (fem)
camici-a	'shirt' (fem)	camici-ett-a	'little shirt' (fem)
libr-o	'book' (masc)	libr-ett-o	'little book' (masc)
vas-o	'vase' (masc)	vas-ett-o	'little vase' (masc)

- Observe:
  - Italian has two genders: _____
  - Italian has an affix that means 'diminutive': _____
  - Does this change the category or other features of the base? _____

- Give a lexical entry for the diminutive affix:

Label		
Form		
Meaning		
Subcategorization		
Category **+ Gender**		

- Give WSTs for *scatola* and *libro*. The final vowels *-a* and *-o* are inflectional markers that merely reflect the gender of the root. Treat the gender features as originating on the root. For now, we will treat *-a* and *-o* as featureless.

- Give WSTs for *scatoteletta* and *libretto*.

Conclusion: Our two kinds of feature labeling correspond to two kinds of concatenation structures. We have said we'll call concatenation correlated with the PC a **modification structure**. We also need to identify the concatenation correlated with the NLC. This we will refer to as a **head-complement structure.**

Head-Complement Structures
The affix is a head. It contributes its features to the whole constituent, via the NLC.

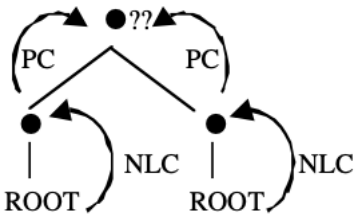
Rule of thumb: Anything that "changes" a feature (category, gender) is a head-complement structure.

Modification Structures
The affix is a modifier. It has no features to contribute, and the features of the stem percolate through (by the BPC).

Rule of thumb: Anything that has variable subcategorization of the form: [X,Y,Z __], and results in an unchanged category label for the target node [= X,Y,Z] is a modification structure.

3.0 Labeling compounds

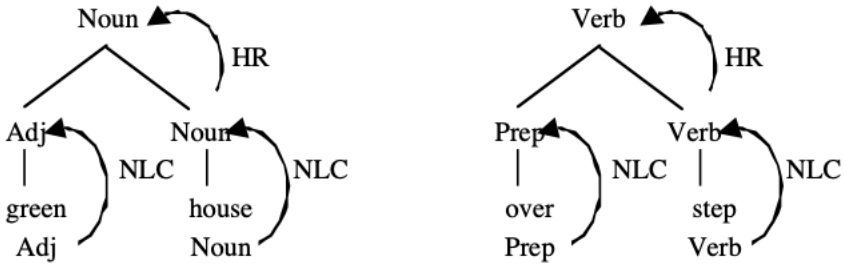
- With compounds we cannot invoke the NLC or PC because the structure of compounds is symmetrical: there is not just one lexical category immediately dominated by the target node.



- But, we have already identified a rule for labeling compounding structures —the (**Right-Hand) Head Rule** — and we will invoke this.

(9) **(Right-Hand) Head Rule (HR):** The features of the **right**-hand member of a compound determine the features of the whole. [English]

(10) Labeling compounds



- Practice

(11) Donau-dampf-schiff-fahrts-gesellschaft
Danube-steam-ship-travel-company
"lit. Danube-steam-ship-travel-company"

- Give a WST for the (famous!) compound in (11). Treat each lexeme as an indivisible root.

- Can you think of alternative structures that have plausible meanings?