Lecture 5 Handout:
Deriving Universal 20

1. Abbreviations

Dem	Demonstrative	(this, that, these, those)
Num	Numeral	(three, four, five, …)
A	Adjective	(big, red, nice, …)
N	Noun	(table, cup, John, …)

2. Universal 20 (Greenberg 1963)

When any or all of the items Dem, Num and A **precede** N, then they are always found in that order (Dem > Num > A).

If they **follow** N, the order is either the same (Dem > Num > A) or the exact opposite (A > Num > Dem).

3. Complete paradigm for Universal 20

	I	II	III	IV
a.	Dem Num A N	N A Num Dem	N Dem Num A	A Num Dem N
b.	Dem Num N A	A N Num Dem	Dem N Num A	A Num N Dem
c.	Dem A N Num	Num N A Dem	A N Dem Num	Num Dem N A
d.	Dem N A Num	Num A N Dem	N Num A Dem	Dem A Num N
e.	A Dem Num N	N Num Dem A	N Dem A Num	Num A Dem N
f.	A Dem N Num	Num N Dem A	N A Dem Num	Num Dem A N

4. Exercise 1: Derivation by merger

Combining N, A, Num and Dem (in that order), how many of the above word orders can you derive?

You should be able to find eight structures this way.

Restrictions:

(1) Only pairwise combination of items. We call this operation **merge**.
(2) N and A merge first. Then Num is merged, then Dem is merged.
(3) For each merger, languages can choose the linear order of the merged items.

5. Solution: Orders derivable without movement

Ia. **IIa.**

Ib. **IIb.**

Ic. **IIc.**

Id. **IId.**

6. Exercise 2: Derivation by movement

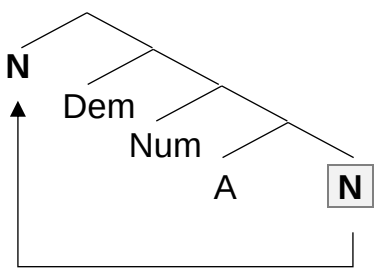
Suppose that at any point in the process of building a Noun Phrase, a language may choose to recombine the current structure with an element already containted within itself. We call this operation **move**.

Assumptions:

(4) Let's assume (for now) that only the Noun can be **moved**.
(5) Movement is always to the left.
(6) The lower copy of a moved item is **not** pronounced.

Example:

IIIa.



Can you see how you can make the following three orders with this method?

- IIIb. Dem N Num A
- IIId. N Num A Dem
- IIIe. N Dem A Num

7. Solution: Orders derivable by movement

IIIb.

IIId.

IIIe.

8. Deriving the final two orders

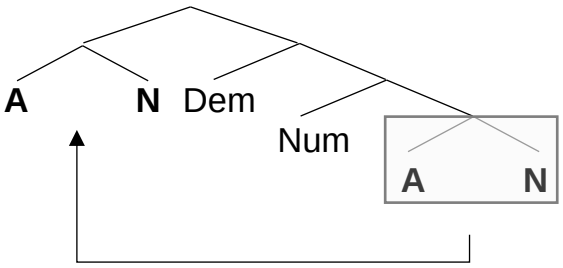
We cannot generate IIIc. and IIIf. with the method we used above. We need to loosen assumption (4) for this, as follows:

(4b) Only structures containing the Noun can be moved.

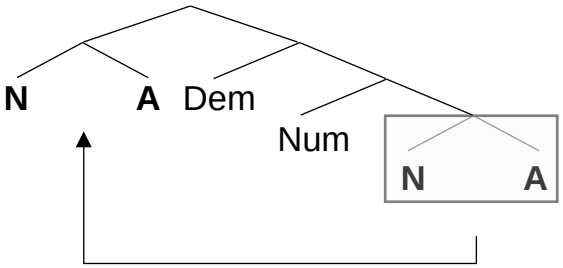
Movement that includes other items along with the moved item is called **pied-piping**.[1]

Pied-piping allows us to derive IIIc. and IIIf. as follows:

IIIc.



IIIf.



[1] Pied-piping is named after the legend of the Pied Piper of Hamelin, who freed a town in Saxony from a plague of rats by making the rats follow him whenever he played a melody on his pipe.