Today

• Syntax of PPs, cont’d
• Transitive vs. Intransitive Prepositions
• Particles
• Complements of PPs
  – NP, PP, VP, S

Reading: pp. 198-205
Syntax of PPs

So far, we’ve looked at PPs that have NP objects.

... into the woods ...
... over a bridge ...
... at her school ...

These are **transitive prepositions**:

PP \Rightarrow (\text{MOD}) \ P \ NP
Transitivity vs. Intransitivity

NOTE: Verbs can also be transitive, taking a direct object

The boy hit the ball.
*The boy hit.

The dog found the bone.
*The dog found.
Transitivity vs. Intransitivity

Intransitive verbs *do not* take an object:

The boy napped.
*The boy napped the bed.

Kiki sneezed.
*Kiki sneezed a sneeze.
Transitivity vs. Intransitivity

**Intransitive** prepositions do not take an *object*

Students like to sleep *in class*. (= transitive)
Students like to sleep *in*. (= intransitive)

He jumped *up the stairs*. (= transitive)
He jumped *up*. (= intransitive)

*Intransitive* prepositions are called **Particles**
Particles

Some **particles** form semantic unit w/ **verb**: 

The plane **took off**.  =  V + Prt
Please **shut up**.  =  V + Prt
The power plant **shut down**.  =  V + Prt

```
  VP
   V   Prt
    took    off
```
Particles

Some particles form semantic unit w/ verb:

He ran up the hill. = PP
He ran up the bill. = V + Prt + NP
She turned off the highway. = PP
She turned off the light. = V + Prt + NP
We looked up the street. = PP
We looked up the answer. = V + Prt + NP
Particles do not behave like transitive prepositions in PPs.
Particles

1. **Particles cannot be pronominalized**

   Compare...
   
   He ran **up the hill**.
   
   He ran **where**?
   
   Where did he run?
   
   *(up the hill = PP)*
   
   He ran **up the bill**.
   
   *He ran **where**?*
   
   *Where did he run?*
   
   *(up the bill)*

   *up the bill is NOT a constituent*
Particles

run up the hill

run up the bill

= where

Not a constituent
Particles

2. **Particles** cannot conjoin with **PPs**.

Please listen **to me**. (PP)
Please listen **up**. (Prt)
*Please listen **to me** and **up**.

PP Prt
Particles

3. With V + Prt, “the whole does not equal the sum of its parts” (i.e., idiomatic)

The plant shut down (≠ shut + down)
The plane took off (≠ took + off)

*Where did it take?
*Did it take off or on?
Particles

3. With V + Prt, “the whole does not equal the sum of its parts” (i.e., idiomatic)

Compare…

The book fell off the desk. (PP)
Where did it fall?
Did it fall on or off the desk?
Particles

4. Particles can undergo movement around NP (= Particle Shift). PPs cannot.

Compare…

Particles

She turned **off** the light.
She turned **the light off**.

Prepositional Phrases

She turned **off** the highway.
*She turned **the highway off**.

We looked **up** the answer.
We looked **the answer up**.

*We looked **up the street**.
*We looked **the street up**.
Particles

**Particle shift**: Particle moves to right of NP

```
VP
  /   
V    Prt
  /   
turn off
  /   
the light
```
Particles

Particle shift: Particle moves to right of NP

.turn off
VP
V
Prt
NP
the light

→
VP
V
NP
Prt
the light
off
Particles

Particle shift: Particle branches off VP, not PP

NP is *not* object of PP, but Direct Object of Verb
Particles

5. NPs following particles can undergo Passive Movement

Passive Movement of direct object NPs:

Active: The tiger chased the lion.
Passive: The lion was chased by the tiger.

Active: He turned off the lights.
Passive: The lights were turned off by him.
Particles

5. NPs following particles can undergo Passive Movement

*No* Passive Movement of NP objects of prepositions:

Active: The car turned off the street.

Passive: *The street* was turned off by the car.

Why? Movement involves whole constituents – off the street is a single constituent (PP) that cannot be separated.
Summary: Particles vs. PPs

**Particles**
- Intransitive prepositions (no NP object)
- *Can’t* be pronominalized
- *Can’t* coordinate w/ PPs
- *Can* participate in Particle Shift, Passive Movement

**PPs**
- Headed by transitive prepositions (NP object)
- *Can* be pronominalized
- *Can* coordinate w/ PPs
- *Cannot* participate in Particle Shift, Passive movement
Complements of Prepositions

Prepositions can have different types of *complements* (i.e., phrase selected by a lexical head to *complete* its phrase)

- on the table
- under my book
- through a window

= NP complements
Complements of Prepositions

Prepositions can have different types of *complements* (i.e., phrase selected by a lexical head to complete its phrase)

- John skated out on thin ice.  
  Complement: PP
- Jane left before eating dessert.  
  Complement: VP
- Joon left after Min arrived.  
  Complement: S
Complements of Prepositions

PPs with \textit{PP complements} are called complex PPs

John skated \([_{PP} \text{out} \quad _{PP} \text{on thin ice}]]\).

The cat hopped \([_{PP} \text{out} \quad _{PP} \text{of the basket}]]\).

She jumped \([_{PP} \text{out} \quad _{PP} \text{from} \quad _{PP} \text{behind the tree}]]\).

It came \([_{PP} \text{back} \quad _{PP} \text{out} \quad _{PP} \text{from} \quad _{PP} \text{inside} \quad _{PP} \text{of the hole}]]\)]

\begin{align*}
\text{PP} & \Rightarrow \text{P} \quad \text{PP} \\
& \quad \text{Recursive!!}
\end{align*}
Complements of Prepositions

PPs with **PP complements** are called complex PPs

![Diagram of prepositional phrase structure with PP complements], inside, of, the tree
Complements of Prepositions

PPs with \textbf{PP complements} are called complex PPs
Complements of Prepositions

Prepositions can take *participial verb phrases* (VP) as complements:

- John left *before* eating dessert.
- while talking loudly.
- after making a scene.

\[
\text{PP} \Rightarrow \text{P} \quad \text{VP}
\]
Complements of Prepositions

Prepositions w/ participial VP complements

... while talking loudly
Complements of Prepositions

Prepositions that take *Sentences* (S) as complements are called *subordinating prepositions*

John left  
*after* Marnie arrived.  
*because* he was angry.  
*since* no one told him not to.  
*while* the professor was talking.  
*when* the phone rang.  
*before* the President called.

\[ PP \Rightarrow P \ S \]
Complements of Prepositions

Prepositions that take *Sentences* (S) as complements are called *subordinating prepositions*

Why?

Because these *sentences-within-a-sentence* are called *subordinate clauses*
Complements of Prepositions

Subordinating prepositions w/ Sentence (a.k.a. subordinate clause) complements

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Complements of Prepositions

Phrase structure rule for PPs:

\[ PP \Rightarrow (\text{MOD}) \ P \ (\begin{cases} \text{NP} \\ \text{S} \\ \text{VP} \\ \text{PP} \end{cases}) \]
Summary

PPs can have...

...No complement = Particle
...NP complement
...S complement (= subordinating preposition)
...Participial VP complement
...PP complement (= complex PP)