A first example: Wh-elements

Wh-elements can have different functions:

1. a. Who did Hobbs see _ ?  
   b. Who do you think _ saw the man?  
   c. Who did Hobbs give the book to _ ?  
   d. Who did Hobbs consider _ to be a fool?  

Wh-elements can also occur in subordinate clauses:

2. a. I asked who the man saw _ .  
   b. I asked who the man considered _ to be a fool .  
   c. I asked who Hobbs gave the book to _ .  
   d. I asked who you thought _ saw Hobbs.

Different categories can be extracted:

3. a. Which man did you talk to _ ?  
   b. [To [which man]] did you talk _ ?  
   c. [How ill] has the man been _ ?  
   d. [How frequently] did you see the man _ ?  

This sometimes provides multiple options for a constituent:

4. a. Who does he rely [on _ ] ?  
   b. [On whom] does he rely _ ?

Unboundedness:

5. a. Who do you think Hobbs saw _ ?  
   b. Who do you think Hobbs said he saw _ ?  
   c. Who do you think Hobbs said he imagined that he saw _ ?
**Unbounded dependency constructions**

An unbounded dependency construction
- involves constituents with different functions
- involves constituents of different categories
- is in principle unbounded

Two kinds of unbounded dependency constructions (UDCs)
- Strong UDCs
- Weak UDCs

**Strong UDCs**

An overt constituent occurs in a non-argument position:

Topicalization:
(6) Kim, Sandy loves _i.

Wh-questions:
(7) I wonder [who, Sandy loves _i].

Wh-relative clauses:
(8) This is the politician [who, Sandy loves _i].

It-clefts:
(9) It is Kim, [who, Sandy loves _i].

Pseudoclefts:
(10) [What, Sandy loves _i] is Kim.

**Weak UDCs**

No overt constituent in a non-argument position:

Purpose infinitive (for-to clauses):
(11) I bought it, for Sandy to eat _i.

Tough movement:
(12) Sandy is hard to love _i.

Relative clause without overt relative pronoun:
(13) This is [the politician], [Sandy loves _i].

It-clefts without overt relative pronoun:
(14) It is Kim, [Sandy loves _i].

**Some properties of UDC constructions**

Link between filler and gap with category information needed:

(15) a. Kim, Sandy trusts _i.
    b. [On Kim], Sandy depends _i.
(16) a. * [On Kim], Sandy trusts _i.
    b. * Kim, Sandy depends _i.
And this link has to be established for an unbounded length:

(17) a. *Kim, Chris knows Sandy trusts i.
   b. *[On Kim], Chris knows Sandy depends i.

(18) a. Kim, Chris knows Sandy trusts i.
   b. *Kim, Chris knows Sandy depends i.

(19) a. Kim, Dana believes Chris knows Sandy trusts i.
   b. *[On Kim], Dana believes Chris knows Sandy depends i.

(20) a. *[On Kim], Dana believes Chris knows Sandy trusts i.
   b. *Kim, Dana believes Chris knows Sandy depends i.

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An example for a strong UDC

The top of a UDC: Filler-head structures

Filler-head schema

The bottom of a UDC: Traces
The top of a UDC: Filler-head structures
Example for a structure licensed by the filler-head schema

The middle of a UDC: The Nonlocal Feature Principle (NFP)

For each nonlocal feature, the \textsc{inherited} value on the mother is the union of the \textsc{inherited} values on the daughter minus the \textsc{to-bind} value on the head daughter.

The analysis of the strong UDC example

The analysis of weak UDCs

(21) a. \textit{Kim}$_i$ is easy (for \textit{John}) to please \textit{-}$_i$.
b. \textit{Kim}$_i$ is easy to prove that \textit{Mary} asked \textit{Paul} to bribe \textit{-}$_i$.

(22) a. \textit{It} is easy to please \textit{him}$_{acc}$ / * \textit{he}$_{nom}$.
b. \textit{I}$_{nom}$ am easy to please \textit{-}$_{acc}$.

Subject is role assigned:

(23) a. \textit{I} believe there to be a unicorn in the garden.
b. * There is easy to believe a unicorn in the garden.

(24) a. [This \textit{sonata}]$_i$ is easy to play \textit{-}$_i$ on that \textit{violin}.
b. [This \textit{violin}]$_i$ is easy to play this \textit{sonata} [on \textit{-}$_i$].
Lexical entry of adjective *easy*

Limiting the occurrence of traces

The *that*-trace effect, one of the island effects:

(25) Whoₙ did he claim that she kissed -i
(26) *Whoₙ did he claim that -i kissed her.

The trace principle

Every trace must be strictly subcategorized by a substantive head, i.e., its SYNSEM value must be a non-initial member of a substantive head’s SUBCAT list.

Subject extraction

(27) *Whoₙ did he claim that -i kissed her.
(28) Whoₙ did he claim -i kissed her.

Subject extraction lexical rule (SELR):

\[
\text{word} \rightarrow \text{SYNSEM} \text{local} \text{cat} \text{subcat} \text{rest element} \left( \text{S} \text{nmarked} \right)
\]

\[
\text{SYNSEM} \text{local} \text{subcat} \text{rest element} \left( \text{S} \text{nmarked} \right) \rightarrow \text{SYNSEM} \text{nonlocal} \text{inherited} \text{slash} \left( \text{S} \text{nmarked} \right)
\]
A subject extraction analysis

Parasitic gaps

Extraction out of objects is possible in English:

(31) Who did John assassinate [rivals of ] ?

Extraction out of subjects, however, is only possible in the presence of a second gap:

(32) Who did [rivals of ] assassinate ?

(33) a. * Who did [rivals of the president] assassinate the President?
   b. Who did [rivals of the president] assassinate ?

The subject condition

The initial element of a lexical head's SUBCAT list may be slashed only if that list contains another slashed element.

Multiple unbounded dependencies

(29) a. It will be easy to play even the most difficult sonata on a violin this well crafted.
    b. [A violin this well crafted], even [the most difficult sonata] will be easy to play on .

(30) a. It is easy to talk to John about this topic.
    b. This is the topic which John is easy to talk to about .