Chapter 10: Interrogative and Wh-Question Constructions

Syntactic Constructions in English
Kim and Michaelis (2020)
1. Clausal Types and Interrogatives

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Clausal types and their functions

- English offers distinct sentence patterns for distinct types of speech acts.

  (1) a. Declarative: John is clever.
      b. Interrogative: Is John clever? Who is clever?
      c. Exclamative: How clever you are!
      d. Imperative: Be very clever.

- Each clause type has a dedicated function. A declarative makes a statement, an interrogative asks a question, an exclamative represents an exclamatory statement, and an imperative issues a directive.

- However, these correspondences are not always one-to-one.

  (2) a. I ask you if this is what you want.
       b. Would you mind taking out the garbage?
There are two basic types of interrogatives: yes-no (or polar) questions and *wh*-questions.

(3) a. Yes-no questions: Can the child read the book?
    b. *Wh*-questions: What can the child read?
As we saw in Chapter 8, such yes-no questions are generated through the combination of an inverted finite auxiliary verb with a nonfinite S.

(4) Can the child read the book?
In addition to featuring this so-called subject-auxiliary inversion, *wh*-questions are introduced by one of the interrogative words. The *wh*-phrases formed from these *wh*-words have a variety of functions in the clause.

(5) a. [Who] did John call last night?
    b. [Who] made that mistake?
    c. [With what] did the baby hit the toy?
    d. [How] did he eat the food?
The *wh*-questions have a bipartite structure: a *wh*-phrase and an S that is incomplete in the sense that the complement of some predicator within it is missing.

(6) a. \[NP \text{ Which man} \] [did you talk to ___ ]?
   b. \[PP \text{ To which man} \] [did you talk ___ ]?
   c. \[AP \text{ How ill} \] [has Hobbs been ___ ]?
   d. \[AdvP \text{ How frequently} \] [did Hobbs see Rhodes ___ ]?
Wh-questions: category matching between filler and gap

- The *wh*-interrogative sentence must have a missing element.
  
  (7) a. *[Which man] did you talk to Bill?  
       b. *[How ill] has Hobbs been sick?

- The *wh*-phrase (filler) and the missing phrase (gap) must have identical syntactic categories as a way of ensuring their linkage.

  (8) a. *[NP Which man] [did you talk [PP __ ]]?  
       b. *[PP To which man] [did you talk to [NP __ ]]?
Another important property is that an unlimited number of clause embeddings may occur between the filler and the gap—a situation that the literature refers to as a long-distance (or unbounded) dependency.

(9)  a.  [[Who] do you think [Tom saw __ ]]?  
    b.  [[Who] do you think [Mary said [Tom saw __ ]]]?  
    c.  [[Who] do you think [[Hobbs imagined [Mary said [Tom saw __ ]]]]]?

A similar phenomenon is observed in the so-called TOPICALIZATION CONSTRUCTION:

(10)  a.  Most dogs, Tom didn’t see __ .  
    b.  Most dogs, Mary thought Tom didn’t see __ .  
    c.  Most dogs, Hobbs said Mary thought Tom didn’t see __ .
There have traditionally been two means of representing the link between the filler *wh*-phrase and its corresponding gap.

One strategy is to assume that the filler *wh*-phrase is moved to the sentence-initial position by movement operations.

(11)
Problems with movement analysis: coordination examples

- This kind of movement operation is an appealingly straightforward way to capture the linkage between the filler and gap.

- However, the movement analysis becomes less plausible with coordination examples.

  (12) a. Who did Kim work for __ and Sandy rely on __ ?
    b. *Who did Kim work for __ and Sandy rely __ ?
    c. *Who did Kim work for __ and Sandy rely on Mary?
There is also a class of ‘movement paradox’ examples.

(13) a. You can always rely on [this kind of assistance].
    b. [This kind of assistance], you can always rely on __ .

(14) a. We endlessly talked about [the fact that she had quit the race].
    b. [The fact that she had quit the race], we endlessly talked about __ .

Not every putatively ‘derived’ example has a well-formed source.

(15) a. *You can rely on [that we will always help you].
    b. [That we will always help you], you can rely on __ .

(16) a. *This theory captures that arrows don’t stop in midair.
    b. [That arrows don’t stop in midair] is captured __ by this theory.
An alternative is to assume that there is no movement process at all, and to posit a mechanism of communication through the tree, known as feature percolation, to license such \textit{wh}-questions.

For example, the information that an NP is missing or gapped can be shared within the tree so that the gap and its filler bear the same specifications for the relevant features, e.g., syntactic category.
Feature percolation: basic example tree

(17)

Notations like NP/NP (read as ‘NP slash NP’) or S/NP (‘S slash NP’) here mean that the category to the left of the slash is incomplete: it is missing one NP.

This missing information is percolated up to the point where the slash category is combined with the filler who.
Feature percolation: explanation for coordination examples

(18) a. S/NP
    V
    Did S/NP and S/NP NP
    Kim VP/NP NP VP/NP
    work for ___ Sandy rely on ___

b. S/NP
    V
    *S/NP & S/PP
    Did S/NP and S/PP
    Kim VP/NP NP VP/PP
    work for ___ Sandy rely ___
One way to avoid positing an abstract element is to encode the missing information in the lexical head of the phrase containing the missing argument or adjunct.

For example, the verb *recommend* can be realized with different overt complements.

(19) a. These qualities recommended him to Oliver.
    b. The UN recommended an enlarged peacekeeping force.

(20) a. This is the book which the teacher recommended __ .
    b. Who will they recommend __ ?
(21) Argument Realization Constraint (ARC, second approximation):
The first element on the ARG-ST list is realized as SPR; the rest as COMPS or GAP in syntax.
Lexical entries of *recommend*

This revised ARC thus allows the following lexical entries for *recommend*:

(22)

\[
\begin{align*}
  &\begin{array}{l}
    \text{v-lexm} \\
    \text{FORM } \langle \text{recommend} \rangle \\
    \text{ARG-ST } \langle 1, 2 \rangle
  \end{array} \\
  &\begin{array}{l}
    \text{FORM } \langle \text{recommend} \rangle \\
    \text{SPR } \langle 1 \rangle \\
    \text{VAL} \\
    \text{COMPS } \langle 2 \rangle \\
    \text{GAP } \langle \rangle
  \end{array}
\end{align*}
\]
Example trees

(23) a. S
   NP
   The UN
   VP[fin]
   V[fin]
   recommended
   an enlarged peacekeeping force

b. S
   [GAP ⟨ ⟩]
   S
   NP
   Who
   [GAP ⟨NP⟩]
   V[fin]
   will
   S
   NP
   [GAP ⟨NP⟩]
   V
   they
   VP
   [GAP ⟨NP⟩]
   recommend

Syntactic Constructions
Chapter 10
(24) HEAD-FILLER CONSTRUCTION:

\[ S_{\text{GAP} \langle \quad \rangle} \rightarrow \text{\#XP}, \quad S_{\text{GAP} \langle \text{\#XP} \rangle} \]
Nonsubject wh-questions: ARG-ST of *put*

\[(25) \begin{bmatrix}
  \text{*-l}x_m \\
  \text{FORM} \langle \text{put} \rangle \\
  \text{ARG-ST} \langle \text{NP, NP, PP} \rangle
\end{bmatrix}\]
The ARC will ensure that of these three arguments, the first must be realized as the `spr` element, and the rest either as `comps` or as `gap` elements.

(26) a. \[ \text{FORM } \langle \text{put} \rangle \]
\[ \begin{array}{l}
\text{SPR } \langle 1 \text{NP} \rangle \\
\text{SYN } \mid \text{VAL} \\
\text{COMPS } \langle 2 \text{NP}, 3 \text{PP} \rangle \\
\text{GAP } \langle \rangle \\
\text{ARG-ST } \langle 1 \text{NP}, 2 \text{NP}, 3 \text{PP} \rangle \\
\end{array} \]

b. \[ \text{FORM } \langle \text{put} \rangle \]
\[ \begin{array}{l}
\text{SPR } \langle 1 \text{NP} \rangle \\
\text{SYN } \mid \text{VAL} \\
\text{COMPS } \langle 3 \text{PP} \rangle \\
\text{GAP } \langle 2 \text{NP} \rangle \\
\text{ARG-ST } \langle 1 \text{NP}, 2 \text{PP}, 3 \text{PP} \rangle \\
\end{array} \]

c. \[ \text{FORM } \langle \text{put} \rangle \]
\[ \begin{array}{l}
\text{SPR } \langle 1 \text{NP} \rangle \\
\text{SYN } \mid \text{VAL} \\
\text{COMPS } \langle 2 \text{NP} \rangle \\
\text{GAP } \langle 3 \text{PP} \rangle \\
\text{ARG-ST } \langle 1 \text{NP}, 2 \text{NP}, 3 \text{PP} \rangle \\
\end{array} \]
Nonsubject wh-questions: different realizations of *put* (cont’d)

(27) a. John put the books in a box.
    b. Which books did John put in the box?
    c. Where did John put the books?
Nonsubject wh-questions: example tree

(28)

Which books did John put in the box?
Nonsubject wh-questions: another example tree

(29)

Who V S

| 2NP |

S

[Gap <2NP>]

NP

do

V S

[Gap <2NP>]

NP

[Gap <2NP>]

S

you

V S

[Gap <2NP>]

NP

think

Hobbs

[Gap <2NP>]

V

met
(30) Nonlocal Feature Inheritance Principle (NIP):
A phrase’s nonlocal features including $\textit{GAP}$ and $\textit{QUE}$, are the union of its daughters’ nonlocal feature values minus any bound nonlocal features.

- This principle ensures that the $\textit{GAP}$ value in the head daughter or nonhead daughter is passed up through the structure until it is discharged by the filler in the HEAD-FILLER CONSTRUCTION.
It is also easy to verify that this feature percolation system accounts for examples where the gap is a non-NP.

(31) a. [In which box] did John put the book __ ?
b. [How happy] has John been __ ?
Non-subject wh-questions: non-NP gap examples (cont’d)

(32)

In which box did NP [[\text{gap } \langle 3 \text{PP} \rangle ]] John [[\text{COMPS } \langle 2 \text{NP} \rangle ]] V [[\text{GAP } \langle 3 \text{PP} \rangle ]] put the book?
This approach provides a clearer account of the examples that involve gaps in coordination structures.

(33) a. Who did Kim work for ___ and Sandy rely on ___?
   b. *Who did Kim work for ___ and Sandy rely on Mary?

(34) COORDINATION CONSTRUCTION:

\[
XP \rightarrow XP[\text{GAP } A] \text{ conj } XP[\text{GAP } A]
\]
(35) a.  

S \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

S and S \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

NP Kim \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

VP work for _ 

NP Sandy \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

VP rely on _ 

b.  

*S \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

S and S \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

NP Kim \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

VP work for _ 

NP Sandy \[ \text{GAP } \langle 1 \text{NP} \rangle \] 

VP rely on Mary
Subject wh-questions: subject gap

Subject wh-questions are also available.

(36) a. Who put the book in the box?
    b. Who DID put the book in the box?
    c. Who can put the book in the box?

As a first step toward accounting for such subject wh-question examples, we can allow a structure similar to that of non-subject wh-questions, where the subject is gapped.

(37) a. Who __ put the book in the box?
    b. Who __ can put the book in the box?
In the current context, our grammar requires no additional mechanism other than a slight revision to the ARC.

(38) Argument Realization Constraint (ARC, final):
The first element on the ARG-ST list is realized as SPR or GAP, and the rest as COMPS or GAP.

This revised ARC guarantees that the members of the ARG-ST list are the sum of that of SPR, COMPS, and GAP.
Subject wh-questions: lexical entry of *placed*

\[(39)\]

\[
\begin{bmatrix}
\text{FORM} \langle \text{placed} \rangle \\
\text{SPR} \langle \quad \rangle \\
\text{SYN} | \text{VAL} \text{ COMPS} \langle \text{2} \text{NP}, \text{3} \text{PP} \rangle \\
\text{GAP} \langle \text{1} \text{NP} \rangle \\
\text{ARG-ST} \langle \text{1} \text{NP}, \text{2} \text{NP}, \text{3} \text{PP} \rangle \\
\end{bmatrix}
\]
Subject wh-questions: example tree

(40)

```
S
  |     'S'
  |     VP
  |     [SPR ⟨ ⟩
  |     COMPS ⟨ ⟩]
  1NP[QUE +]
    |   Who
    V
  [SPR ⟨ ⟩
  COMPS ⟨ 2, 3⟩
  GAP ⟨1⟩]
  2NP
    placed
    the book
  3PP
    in the box
```
Incomplete sentence ‘S’

Even though the ‘S’ with a gapped subject cannot function as an independent sentence (as in, e.g., *Visited him), it can function as the complement of a verb like think.

(41) a. Who do you think [visited Seoul last year]?
    b. That’s the UN delegate that the government thinks [visited Seoul last year].
Subject wh-questions: another example tree

(42)

\[
\begin{array}{c}
\text{Who} \\
\text{do} \\
\text{you} \\
\text{think} \\
\end{array}
\]

\[
\begin{array}{c}
\text{visited} \\
\text{Seoul} \\
\end{array}
\]
Verbs selecting an indirect-question complement

Among verbs selecting a sentential or clausal complement (S or CP), there are also verbs that select an indirect-question complement.

(43) a. John wonders [whose book his son likes __].
    b. John has forgotten [which player his son shouted at __].
    c. He told me [how many employees Karen introduced __ to the visitors].

Not all verbs allow an indirect-question as complement.

(44) a. Tom denied [(that) he had been reading the article].
    b. *Tom denied [which book he had been reading].

(45) a. Tom claimed [(that) he had spent five thousand dollars].
    b. *Tom claimed [how much money she had spent].
Verbs selecting an indirect-question complement can be distinguished semantically.

(46) a. interrogative verbs: *ask, wonder, inquire, . . .
    b. verbs of knowledge: *know, learn, forget, . . .
    c. verbs of increased knowledge: teach, tell, inform, . . .
    d. decision verbs/verbs of concern: decide, care, . . .

The clausal complement of these verbs cannot be a canonical CP, and must be an indirect question.

(47) a. *John inquired [that he should read it].
    b. *Peter will decide [that we should review the book].

(48) a. John inquired [which book he should read].
    b. Peter will decide [which book we should review].
At the same time, there are some verbs, e.g., *forget*, *tell* and *know*, that can select either a [**QUE** +] or a [**QUE** −] complement.

(49) a. John told us that we should review the book.
    b. John told us which book we should review.
(50) a. \[ \text{FORM} \langle \text{wonder} \rangle \]
\[ \text{ARG-ST} \langle 1 \text{NP}, 2 \text{S/CP} \rangle \]

b. \[ \text{FORM} \langle \text{deny} \rangle \]
\[ \text{ARG-ST} \langle 1 \text{NP}, 2 \text{S/CP} \rangle \]

c. \[ \text{FORM} \langle \text{tell} \rangle \]
\[ \text{ARG-ST} \langle 1 \text{NP}, 2 \text{NP}, 3 \text{S/CP} \rangle \]
Indirect questions: example tree

(51) VP
  V
  [COMPS ⟨2[QUE +]⟩]
  wonder
  1NP[QUE +]
  whose book
  S[\textsc{gap} ⟨1NP⟩]
  NP
  his son
  VP[\textsc{gap} ⟨1NP⟩]
  V[\textsc{gap} ⟨1NP⟩]
  likes
(52) a. 
\[ S[\text{QUE +}] \text{ In which box did he put the book } \_\_ \]? 
b. 
\[ S[\text{QUE +}] \text{ Which book by his father did he read } \_\_ \]?

(53) a. John asks \[ S[\text{QUE +}] \text{ in which box he put the book} \]. 
b. John asks \[ S[\text{QUE +}] \text{ which book by his father he read} \].

(54) a. Kim has wondered \[ [[\text{in which room}] \text{ Gary stayed } \_\_ \] \]. 
b. Lee asked me \[ [[\text{how fond of chocolates}] \text{ the monkeys are } \_\_ \] \].
Indirect questions: another example tree

(55)

```
(55)  VP
     / \
    V   S[QUE +]
       /     |
      1PP [QUE +] S[GAP ⟨1PP⟩]
         /     |     |
        NP       NP       VP[GAP ⟨1PP⟩]
       /  \
      P    N'    stayed
     /|
    in  which  room
         /\   |
        DP  N'  \\
        /   \
       in   \\
```
If a verb like *wonder* combines with a *[QUE −]* clausal complement, the result would be an ungrammatical structure.

(56) a. *Kim has wondered *[QUE −] that Gary stayed in the room*.  
    b. *Kim asked me *[QUE −] that the monkeys are very fond of chocolates*.  

Indirect questions: category matching requirement between filler and gap

\[(57)\]
Indirect questions: coordination data again

In a similar fashion, the present system also predicts the following contrast.

(58) a. John knows [whose book [Mary bought ___ ] and [Tom borrowed ___ from her]].

b. *John knows [whose book [Mary bought ___ ] and [Tom talked ___ ]].
(59) a. 

\[
\begin{array}{c}
\text{S[QUE +]} \\
\text{[1NP[QUE +]}} \\
\text{whose book} \\
\text{S[GAP [1NP]]} \\
\text{Mary bought} \\
\text{and} \\
\text{S[GAP [1NP]]} \\
\text{Tom borrowed from her}
\end{array}
\]

b. 

\[
\begin{array}{c}
\text{S[QUE +]} \\
\text{[1NP[QUE +]}} \\
\text{whose book} \\
\text{S[GAP [1NP]]} \\
\text{John bought} \\
\text{and} \\
\text{S[GAP [2PP]]} \\
\text{Tom talked}
\end{array}
\]

\*S[GAP [1NP]]
Non-wh indirect questions

English also has indirect questions headed by the complementizer *whether* or *if*.

(60) a. I don’t know [whether/if I should agree].
    b. I wonder [whether/if you’d be kind enough to give us information].
Lexical entry of the complementizer *whether* and an example tree

(61) \[
\begin{align*}
\text{FORM} & \langle \text{whether} \rangle \\
\text{HEAD} | \text{POS} & \text{comp} \\
\text{SYN} & \text{VAL} | \text{COMPS} \langle \text{S[fin]} \rangle \\
\text{QUE} & + \\
\text{ARG-ST} & \langle \text{S} \rangle
\end{align*}
\]

(62) \[
\begin{align*}
\text{CP} & [\text{QUE} +] \\
\text{C} & [\text{QUE} +] \\
\text{S} & [\text{fin}] \\
\text{whether/if} & \quad \text{I should agree}
\end{align*}
\]
Differences between *whether* and *if*

- While *if* and *whether* both carry a positive value for the \text{QUE} feature, *whether* more closely resembles question words like *when* in some respects.

- A *whether*-clause like other *wh*-questions, but not *if*-clause can function as a prepositional object.

(63) a. I am not certain about [when he will come].
   b. I am not certain about [whether he will go or not].

(64) a. *I am not certain about [if he will come].
   b. *I am not certain about [if he will go or not].
Differences between *whether* and *if* (cont’d)

The difference between *if* and *whether* also surfaces in infinitival constructions.

(65)  a. I don’t know [where to go].  
     b. I don’t know [what to do].  
     c. I don’t know [how to do it].  
     d. I don’t know [whether to agree with him or not].

(66)  a. *I don’t know [if to agree with him].  
     b. *I don’t know [that to agree with him or not].

This means that while *whether* and *if* both bear the attribute [QUE +] (projecting an indirect question), but only *whether* behaves like a true *wh*-element.
In addition to the finite indirect questions, English also has infinitival indirect questions.

\[(67)\]  

a. Fred knows [which politician to support].  
b. Karen asked [where to put the chairs].
In English there exist at least four different ways for the subject to be realized: as a canonical NP, a gap, and PRO, or pro.

(68) a. The student protected him. (a canonical NP)
    b. Who ___ protected him? (a subject gap NP)
    c. To protect him is not an easy task. (big PRO)
    d. Protect him! (small pro)
Noncanonical subject construction

(69) **NONCANONICAL SUBJECT CONSTRUCTION:**

\[ S[S_{SPR} \langle \text{} \rangle] \rightarrow VP[S_{SPR} \langle NP[\text{noncanonical}] \rangle] \]

(70) a. \( S[S_{SPR} \langle \text{} \rangle] \)

\[ VP[S_{SPR} \langle NP[\text{pro}] \rangle] \]

b. \( S[S_{SPR} \langle \text{} \rangle] \)

\[ VP[S_{SPR} \langle NP[\text{PRO}] \rangle] \]

Protect yourself

To protect yourself
Infinitival indirect questions: example tree

(71)
Infinitival indirect questions: lexical entry of *support*

(72)

\[
\begin{bmatrix}
\text{FORM} & \langle \text{support} \rangle \\
\text{SYN} & \text{VAL} & \text{SPR} & \langle \text{1NP[PRO]} \rangle \\
\text{ARG-ST} & \langle \text{1NP, 2NP} \rangle
\end{bmatrix}
\]

\[
\begin{bmatrix}
\text{COMPS} & \langle \rangle \\
\text{GAP} & \langle \text{2NP} \rangle
\end{bmatrix}
\]
Infinitival indirect questions: no overt subject

- One constraint we can observe in infinitival *wh*-questions is that the subject of the infinitival head cannot be overtly realized.

\[(73)\]

a. *Fred knows [which politician for Karen/her to vote for].

b. *Karen asked [where for Jerry/him to put the chairs].

\[(74)\]

- The structure shows that the HEAD-FILLER CONSTRUCTION licenses the combination of an S with its filler, but not a CP with its filler.
Adjunct wh-questions: basic examples

- The main-clause *wh*-questions and indirect questions that we have seen so far have a **gap** value originating from an argument position of a verb or preposition.

- However, *wh*-question example are also acceptable, where the *wh*-phrases are not argument but adjuncts.

  (75) a. How carefully have you considered your future career?
  b. When can we register for graduation?
  c. Where do we go to register for graduation?
  d. Why have you borrowed my pencil?
One way to deal with such examples is to take the adverbial *wh*-phrase to modify an inverted question.

(76)

```
S
  └──[QUE +]
     └──[ɪS]
        ├──[AUX +]
        │   └──[INV +]
        └──have you considered your future career?

AdvP
  └──[MOD 〈ɪS 〉]
    └──How carefully
```
Matters become more complicated when we consider questions in which a *wh*-word adjunct can modify either the main verb or the embedded one.

(77) a. When did he say that he was fired?
    b. Where did he tell you that he met Mary?
    c. How did you guess that he fixed the computer?

These sentences are ambiguous with respect to the function of the *wh*-adjunct (*when*, *where*, *how*), and in particular which of the two verbs (main or embedded) it modifies.
Adjunct wh-questions: extended ARG-ST

- We need a structure in which the adverbial *wh*-phrase linked to the embedded clause.
- To resolve this issue, we propose that English allows the extension of the ARG-ST list to include a limited set of adverbial elements as arguments.

(78) Extended ARG-ST:

\[
\begin{align*}
\text{FORM } & \left\langle \text{fix} \right\rangle \\
\text{ARG-ST } & \left\langle 1\text{NP}, \ 2\text{NP} \right\rangle \\
\rightarrow & \\
\text{FORM } & \left\langle \text{fix} \right\rangle \\
\text{ARG-ST } & \left\langle 1\text{NP}, \ 2\text{NP}, \text{AdvP} \right\rangle
\end{align*}
\]

(79) 

\[
\begin{align*}
\text{FORM } & \left\langle \text{fix} \right\rangle \\
\text{SPR } & \left\langle 1\text{NP} \right\rangle \\
\text{SYN } & \text{COMPS } \left\langle 2\text{NP} \right\rangle \\
\text{GAP } & \left\langle 3\text{AdvP} \right\rangle \\
\text{ARG-ST } & \left\langle 1\text{NP}, \ 2\text{NP}, \ 3\text{AdvP} \right\rangle
\end{align*}
\]
(80) S
  3 AdvP
    S
      [GAP ⟨3⟩]
    V
      S
        [GAP ⟨3⟩]
      NP
        did
      VP
        [GAP ⟨3⟩]
      S
        he
        V
          [GAP ⟨3⟩]
        NP
          guess
        VP
          [GAP ⟨3⟩]
        S
          he
          V
            [GAP ⟨3⟩]
          NP
            fixed
          the computer

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Adjunct wh-questions: extended ARG-ST (cont’d)
This does not mean that we can extend the ARG-ST list randomly.

(81) a. Why do you wonder [whether she will invite me]?
    b. How often did he ask [when we will meet at the party]?

In these examples, which include a sentential complement introduced by a *wh*-word, we have only one interpretation – that in which the *wh*-phrase modifies the matrix verb *wonder* or *ask*.

This means that argument extension is limited, governed by various syntactic and semantic conditions.
In this chapter, we focused on the syntax of *wh*-question patterns that have been referred to as long-distance or unbounded dependency constructions.

Starting with core dependency properties of *wh* constructions, we then reviewed the main problems that movement approaches encounter when attempting to represent the link between the filler *wh*-phrase and its corresponding gap.

We then developed a declarative, feature-based analysis that does not use any abstract elements to capture the linkage between the filler and the gap, while resolving problems originated from movement analyses.
The key mechanisms of our construction-based analysis involve the ARC (Argument Realization Constraint) that allows any argument to be realized as a GAP element, the HEAD-FILLER CONSTRUCTION which licenses the combination of a filler and an incomplete sentence with a nonempty GAP value, and the NIP (Nonlocal Feature Inheritance Principle), which regulates nonlocal features like GAP in relevant mother phrases.

We also saw that the tight interplay of these construction-based mechanisms allows us to license a wide variety of *wh*-constructions: main-clause non-subject *wh*-questions, subject *wh*-questions, *wh*-indirect questions, non-*wh* indirect questions, infinitival indirect questions, and even adjunct *wh*-questions.