

Chapter 6

Introduction to Movement

6.1 Introduction

- Now we will start looking at “long distance dependencies”: cases in which there appears to be a close relationship (e.g., selection, interpretation) between two non-adjacent constituents.
- These kinds of phenomena are usually referred to as involving ‘movement’. The extent to which you take this terminology literally is somewhat up for grabs.
- Key cases of movement
 - Topicalization
 - *wh*-fronting
 - Non-configurationality in languages with more free word order
 - ... and many more

6.2 Movement

6.2.1 Movement and selection

- Let’s remind ourselves of the following familiar data set:

- (6.1)
- a. Sam is afraid of catastrophes.
 - b. *Sam is afraid to Sally.
 - c. *Sam is sleepy of catastrophes
 - d. *Sam is sleepy to Sally.
 - e. Sam seemed afraid of catastrophes.
 - f. *Sam seemed sleepy of catastrophes.
 - g. Sam seemed afraid to Sally.
 - h. Sam seemed sleepy to me.
 - i. Sam seemed afraid of catastrophes to me.
 - j. *Sam seemed sleepy of catastrophes to me.

- How did we account for this?

- (6.2) *PS Rules*

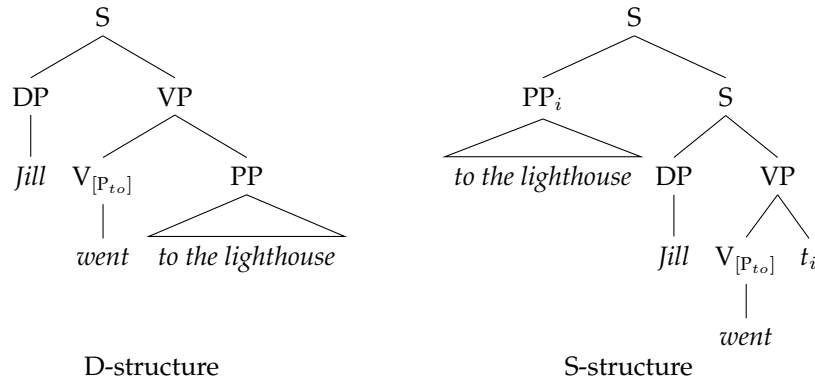
- Look at the correspondences between the following sets of sentences. What do we notice about word order and selection?
- NB: we can name this phenomenon PP (contrastive) topicalization. See Bresnan and Kanerva 1989, Bresnan 1994 for more on PP fronting in general.

- (6.3)
1. Sam is afraid of catastrophes.
...[But] of CATASTROPHES, Sam is afraid.
 2. *Sam is afraid to Sally.
...*[But] to SALLY, Sam is afraid.
 3. *Sam is sleepy of catastrophes
...*[But] of CATASTROPHES, Sam is sleepy.
 4. *Sam is sleepy to Sally.
...*[But] to SALLY, Sam is sleepy.
 5. Sam seemed afraid of catastrophes.
...[But] of CATASTROPHES, Sam seemed afraid.
 6. *Sam seemed sleepy of catastrophes.
...*[But] of CATASTROPHES, Sam seemed sleepy.
 7. Sam seemed afraid to Sally.
... [But] to SALLY, Sam seemed afraid.
 8. Sam seemed sleepy to me.
... [But] to ME, Sam seemed sleepy.
 9. Sam seemed afraid of catastrophes to me.
... [But] of CATASTROPHES, Sam seemed afraid to me.
... [But] to ME, Sam seemed afraid of catastrophes.
 10. *Sam seemed sleepy of catastrophes to me.
... *[But] of CATASTROPHES, Sam seemed sleepy to me.
... *[But] to ME, Sam seemed sleepy of catastrophes.

- What are the necessary components of topicalization according to these data points?
-
- The challenge now is to incorporate these kinds of data into the grammar.
 - Key challenge, we want to avoid constraints on trees which refer to *other* trees. For example, no constraints like “put a blank space where the PP *would have been*”.
 - These kinds of constraints are called *trans-derivational constraints* and add serious complications to any kind of theory which allows them (see e.g., Lappin et al. 2000, Potts 2003).
 - Following the discussion from earlier weeks, we also want to avoid *unconstrained transformations* of the kind proposed in Chomsky 1957.
 - The approach in GB (Chomsky 1981)
 - When we parse a sentence, we don’t just posit a single tree, but rather a series of trees.
 - The initial tree in the series will satisfy the selectional requirements of all lexical items (the D-structure).
 - The final tree will be the input for pronunciation and interpretation (the S-structure).

- Here's a suggested analysis for how PP-topicalization works.
 - At D-structure, the verb *went* selects for a PP headed by *to*. The selectional constraints are satisfied at D-structure.
 - At S-structure, the PP is left-adjoined to S.

(6.4)

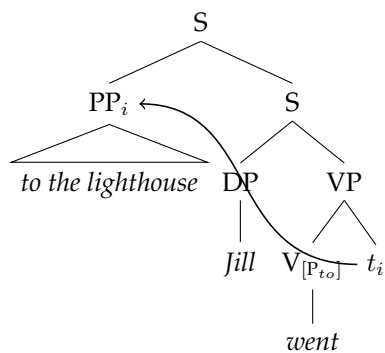


- Preliminary constraints on the link between D-structure and S-structure.
 - Only constituents move.
 - Each moved constituent is co-indexed with a “trace” in its D-structure position.
 - Each movement is licensed by a movement rule in the grammar.
- A potential movement rule licensing the data above.

(6.5) **PP-topicalization::** A [+TOP] PP can left-adjoin to S.

- We can abbreviate the series of trees above into one tree using an arrow. The tree below represents the same information as (6.4).

(6.6)



- Draw a tree for the sentence “of CATASTOPHES, Sam seemed afraid to me” using an arrow.

(6.7)

6.2.2 Spanish post-posing

- Let's go back to Spanish. Best if you have Handout 5 available.
- What's the generalization, taking into consideration word order and agreement?

- (6.8)
1. *Corre la vaca loca*
The crazy cow runs
 2. *Corren las vacas locas*
The crazy cows run
 3. *Grito en la cocina el coronel gordo*
The fat colonel yelled in the kitchen
 4. *Gritaron en la cocina los coroneles de Espana*
The colonels from Spain yelled in the kitchen
 5. *Comio la banana el mono loco*
The crazy monkey ate the banana
 6. *Tiene una cara bastante bella la muchacha*
The girl has a fairly pretty face
 7. *No han estado comiendo los platanos los monos locos*
The crazy monkeys have not been eating the bananas
 8. *Estaban comiendo el cuerpo del mono muerto unos gallinazos horribles con alas enormes*
Some horrible buzzards with enormous wings were eating the body of the dead monkey

- In order to incorporate this, we'll need:
 - A movement rule
 - A generalization about the order of the movement rule with respect to agreement.

(6.9) **Spanish postposing:**

- Draw a tree for sentence (5), using either arrows or the D-structure/S-structure series.

(6.10)

6.2.3 English particle verbs

- What do the following tell us about PP preposing and PP arguments of verbs.

- (6.11)
1. My monkey climbed up the tree.
 2. My uncle called up the mayor.

3. Up the tree my monkey climbed.
4. *Up the mayor my uncle called.
5. My uncle called the mayor up.
6. *My monkey climbed the tree up.

- It helps to separate out two phenomena, represented by (6.12) and (6.13).
- How does our grammar already account for (6.12)?
- How do we know that (6.13) should be analyzed using a new category.

- (6.12)
- a. Into his ear the monkey stuffed a banana.
 - b. In this can I keep my marbles.
 - c. To the back of the device the technician affixed a long antenna.
 - d. On her index finger she put a simple silver ring.

- (6.13)
- a. turn off the lights, turn the lights off
 - b. put out the cat, put the cat out
 - c. let in the dog, let the dog in
 - d. take out the garbage, take the garbage out
 - e. wrap up the meat, wrap the meat up

- Also consider cases like the following

- (6.14)
1. She ran down the road and through the woods.
 2. Down the road and through the woods she ran.
 3. *I turned on the lights and off the water.
 4. This process will heat up and soften the metal.

- Our goal is to expand our grammar to incorporate these.
- Draw a tree for sentences (2) and (5). Remember our toolkit of VP constituency tests (coordination, ellipsis, anaphora, clefts, etc.)

(6.15)

(6.16)

- What's the movement rule allowing this structure?

(6.17) **Particle incorporation:**

- Can we incorporate the following?

- (6.18)
1. They picked on somebody (*They picked somebody on.)
 2. I ran into an old friend (*I ran an old friend into)
 3. She takes after her mother (*She takes her mother after)
 4. Sam passes for a linguist (*Sam passes a linguist for)
 5. You should stand by your friend (*You should stand your friend by)

- (6.19)
1. He always dresses down.
 2. They want to hang out.
 3. After fainting, he came to.

- (6.20)
1. You can put up with this challenge. (*put with this challenge up)
 2. She is looking forward to a rest. (*looking to a rest forward)
 3. The other tanks were bearing down on my panther. (*bearing on my panther down)
 4. We loaded up on Mountain Dew (*loaded on MD up)
 5. Susan has been sitting in for me. (*sitting for me in)

- (6.21)
1. You should take this issue up with your supervisor (take up this issue with your supervisor)
 2. You should smooth this problem over with your parents (smooth over this problem with your parents)

6.3 Constraining Movement

- So far our understanding of movement is very informal, for example:

(6.22) **PP-topicalization::** A [+TOP] PP can left-adjoin to S.

- How do we know which movement rules are okay and which aren't?
- Furthermore, our use of co-indexed traces takes us out of the realm of CFGs (which we want to stick as close to as possible).
- The following formalization follows Gazdar 1981:

(6.23) **Gap percolation:**

If a grammar has a rule $[X \rightarrow \dots Y \dots]$, then it also has a rule $[X_{[\text{gap:DP}]} \rightarrow \dots Y_{[\text{gap:DP}]} \dots]$

If a grammar has a rule $[X \rightarrow \dots Y \dots]$, then it also has a rule $[X_{[\text{gap:PP}]} \rightarrow \dots Y_{[\text{gap:PP}]} \dots]$

- Now non-terminal nodes will have an extra feature-value pair: *Gap*. This feature tells us whether or not the node dominates a trace, and what category the trace is.

- Let's allow non-terminal nodes to have an unlimited amount of them as well (in case they dominate more than 1 trace). Gap Percolation above is recursive.

$$(6.24) \begin{bmatrix} \text{Category:} & V \\ \text{Bar-level:} & 5 \\ \text{Gap:} & D \end{bmatrix}$$

this is a V-projection (5 levels above the head), which dominates the trace of a DP.

- Because our PS-rules include the following:

$$(6.25) \text{[Cat: S]} \rightarrow \text{[Cat: D]} \text{[Cat: V]}$$

- By Gap Percolation, they'll also include:

$$(6.26) \begin{bmatrix} \text{Cat:} & S \\ \text{Gap:} & D \end{bmatrix} \rightarrow \text{[Cat: D]} \begin{bmatrix} \text{Cat:} & V \\ \text{Gap:} & D \end{bmatrix} \text{ or maybe } \begin{bmatrix} \text{Cat:} & S \\ \text{Gap:} & D \\ \text{Gap:} & P \end{bmatrix} \rightarrow \begin{bmatrix} \text{Cat:} & D \\ \text{Gap:} & D \end{bmatrix} \begin{bmatrix} \text{Cat:} & V \\ \text{Gap:} & P \end{bmatrix}$$

- Basically, freely allow D- and P-valued *Gap* features, so long as they get passed up from daughter to mother. In an abbreviated format:

$$(6.27) \begin{array}{cc} \begin{array}{c} S_{[\text{gap:D}]} \\ \swarrow \quad \searrow \\ \text{DP} \quad \text{VP}_{[\text{gap:D}]} \end{array} & \begin{array}{c} S_{[\text{gap:D,gap:P}]} \\ \swarrow \quad \searrow \\ \text{DP}_{[\text{gap:D}]} \quad \text{VP}_{[\text{gap:P}]} \end{array} \end{array}$$

- Now we need to incorporate traces.

$$(6.28) \begin{bmatrix} \text{Cat:} & X \\ \text{Bar:} & 0 \\ \text{Gap:} & X \end{bmatrix} \rightarrow t$$

Where X can be any (sub-category of) D or P¹

- The trace introduced by (6.28) will be the 'origin' of the Gap feature, which gets passed from daughter to mother up the tree.

$$(6.29) \begin{array}{c} S_{[\text{gap:D}]} \\ \swarrow \quad \searrow \\ \text{DP} \quad \text{VP}_{[\text{gap:D}]} \\ | \quad \swarrow \quad \searrow \\ \text{you} \quad \text{V} \quad \text{DP}_{[\text{gap:D}]} \\ | \quad | \quad | \\ \text{tease} \quad t \end{array}$$

- Now we have enough to formalize our **PP-topicalization** rule and our **Spanish post-posing** rule.

(6.30) **PP-topicalization:** (informal) A PP can left-adjoin to S.

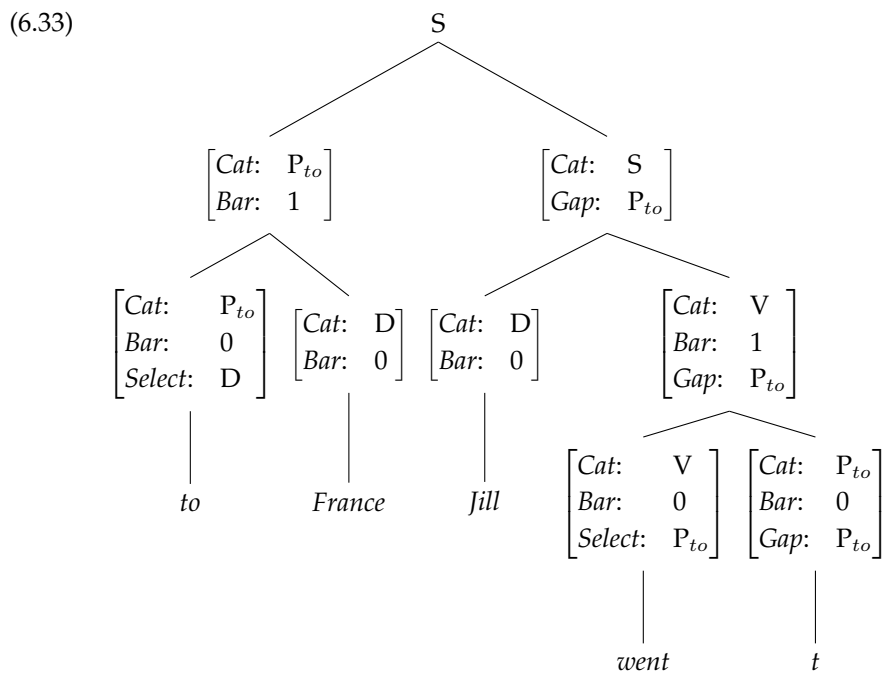
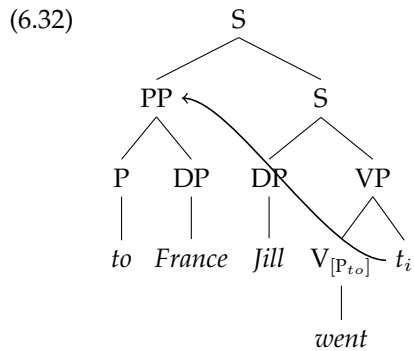
(6.31) **PP-topicalization:** (formal)

$$\text{[Cat: S]} \rightarrow \text{[Cat: P}_X\text{]} \begin{bmatrix} \text{Cat:} & S \\ \text{Gap:} & P_X \end{bmatrix}$$

The _X subscript is just to make clear that the features of the 'moved' PP have to match the PP's trace.

¹This specification is English-specific, some languages can't move P, some languages can move other things.

- The informal and formal notation of a tree with a topicalized PP.

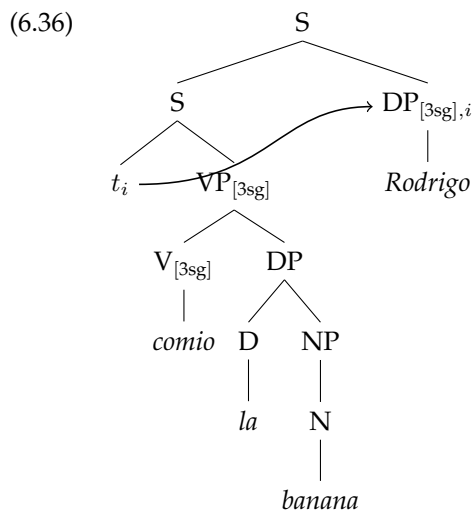


- Let's try formalizing Spanish post-posing

(6.34) **Spanish postposing:** (informal)

(6.35) **Spanish postposing:** (formal)

- Lets un-abbreviate the following tree:



(6.37)

- We'd need to further constrain this to ensure only subjects postpose (maybe adding a [nom] feature).
- A final constraint for Gap Percolation.

(6.38) **No gappy roots:** No constituent $\begin{bmatrix} \text{Cat:} & S \\ \text{Gap:} & X \end{bmatrix}$ can be the root node.

- This actually falls out by our assumption that the root node is S (not $S_{[\text{gap}:X]}$).
- What kinds of structures does this constraint rule out?

6.3.1 Implications of gap theory

- The theory proposed in Chomsky 1981 involves constructing a D-structure, moving constituents and creating an S-structure.
- In order to constrain movement, limitations on movement have to be independently stipulated. They don't fall out naturally from the theory.
- Here are some stipulated constraints on movement from Haegeman 1994 (a GB textbook). Our challenge is to understand if gap theory needs these extra stipulations.

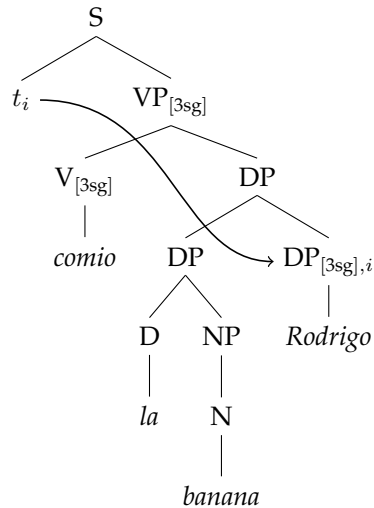
(6.39) a. Movement is always 'upward': no downward/sideways movement.
 b. Movement is obligatory.
 c. Only maximal projections move.
 d. The trace is co-indexed with the moved XP.
 e. Movement leaves a trace

- Throughout, we'll observe that PP-topicalization and Spanish postposing obey these rules, but particle movement breaks them, motivating a different kind of analysis.
- First, the final constraint "movement leaves a trace" is the simplest one: the *Gap* feature emerges from the placement of a trace in the tree. There are no *Gap* features without traces.

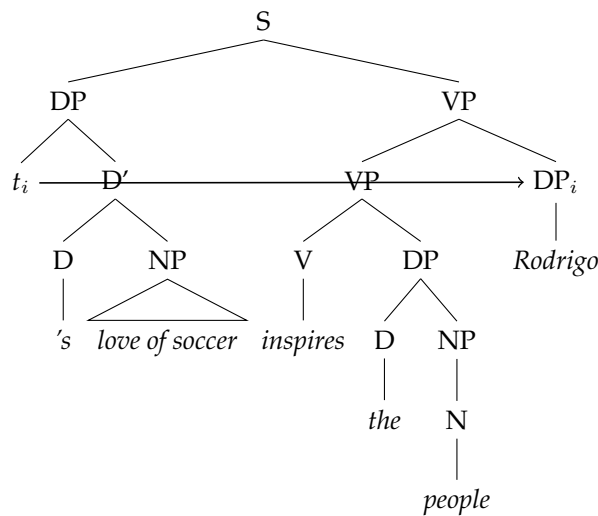
6.3.2 Movement is always upward

- Gap theory already predicts that movement is always upward. Explain why the following movements are ruled out.

(6.40)



(6.41)



6.3.3 Is movement obligatory?

- It is very unclear as to whether it is a good stipulation that movement is obligatory. Numerous cases of movement phenomena appear to be optional, e.g., the particle movement in English above.
- French *wh*-movement is also optional, at least in spoken French.

(6.42)

- Tu vois qui Lundi?*
You see who Monday? (i.e., who are you seeing on Monday?)
- Qui vois-tu Lundi?*
Who see-you Monday? (i.e., who are you seeing on Monday?)

- Advocates of obligatory only movement might say that allegedly optional movement can be explained by saying:
 - The optionally moved thing (e.g., *qui* above) optionally has a feature like [+TOP]
 - When it has [+TOP], movement is obligatory, and blocked otherwise.
- But with no independent way to observe the presence/absence of a feature (semantically, prosodically, phonologically), this idea makes the “obligatory movement” hypothesis unfalsifiable.

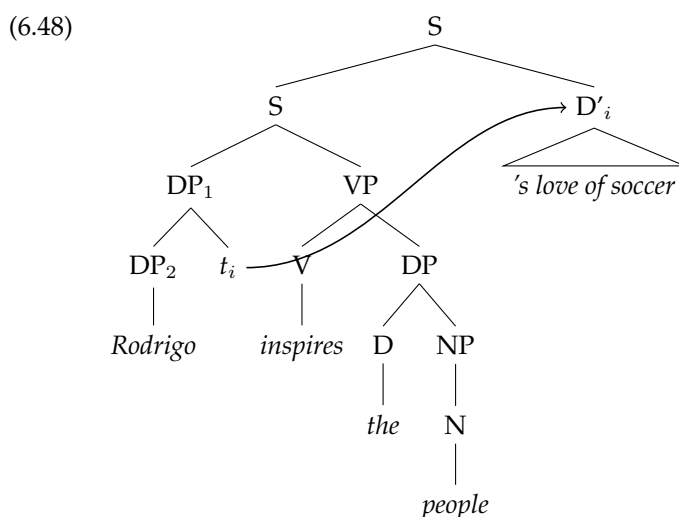
- While we're here though, let's ensure that PP-topicalization only happens with topics, ruling out:
 - (6.43) a. Q: What makes Sally afraid.
A: Of snakes, Sally is afraid. NB: answers to questions are *focused*, not topics
 - b. Sally isn't afraid of mice, but of SNAKES, Sally is afraid.
 - c. *Jerry isn't afraid of mice, but of mice, JERRY is afraid.
- PP-topicalization can only apply to topics.
 - (6.44) a. Sally isn't afraid of mice, but she is afraid of SNAKES.
 - b. Sam seemed afraid to you, but he seemed sleepy to ME.
- The judgements here are somewhat unclear, but it's probably safe to say that topic PPs don't need to be fronted.
- How do we edit our PP-topicalization rule to ensure
 - i. only topic PPs are fronted
 - ii. topic PPs need not be fronted
- (6.45) **PP-topicalization:** (informal) A PP can left-adjoin to S. \Rightarrow
- (6.46) **PP-topicalization:** (formal)

- More work is needed to assess when Spanish subjects can be postposed.

6.3.4 Only maximal projections move

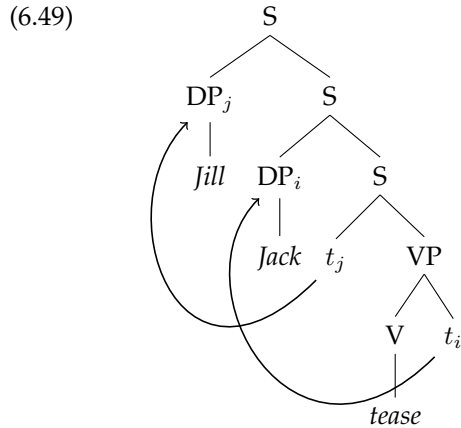
- Gap theory takes traces to be like a lexical item, licensed by the following PS-rule.
 - (6.47)
$$\begin{bmatrix} \text{Cat:} & X \\ \text{Bar:} & 0 \\ \text{Gap:} & X \end{bmatrix} \rightarrow t$$

Where X stands for a class of category labels (e.g., P and D in English).
 - The trace doesn't have any *Select:* or *Spec:* features, so it doesn't have any arguments.
 - This will rule out, e.g., a D' constituent moving. Why is this structure bad?

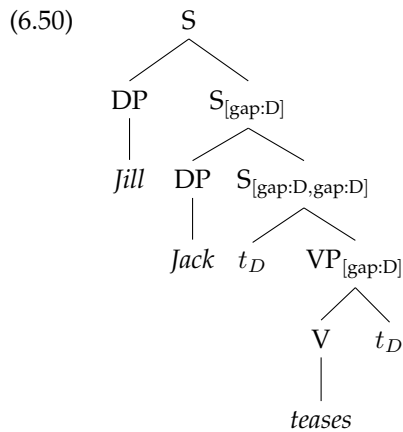


6.3.5 Co-indexation

- Traces have to be co-indexed with the moved XP.
- This tells us the origin point of the moved XP. Imagine this hypothetical structure (possible in many languages, e.g. German, Hungarian, Japanese, Hindi, etc.):

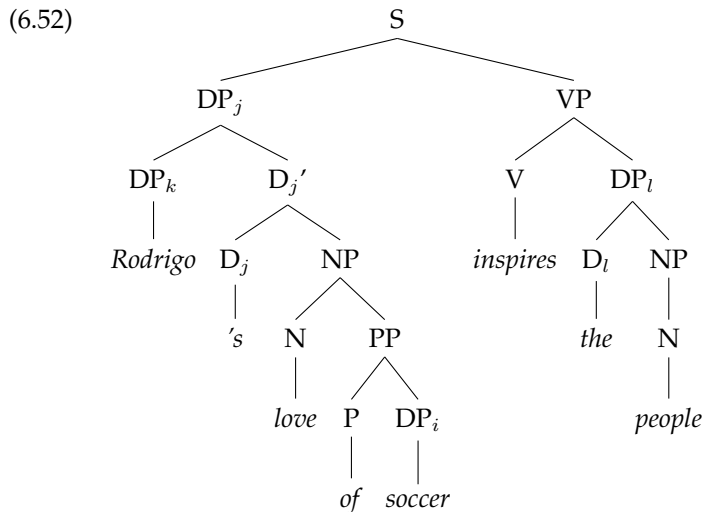


- Co-indexation tells us where everything came from, which will aid interpretation.
- Co-indexation takes us out of the realm of CFGs. See if you can explain why. Remember that CFG-trees are only well formed if each minimal sub-tree conforms to the PS-rules.
- Without co-indexation, gap theory runs into a problem.

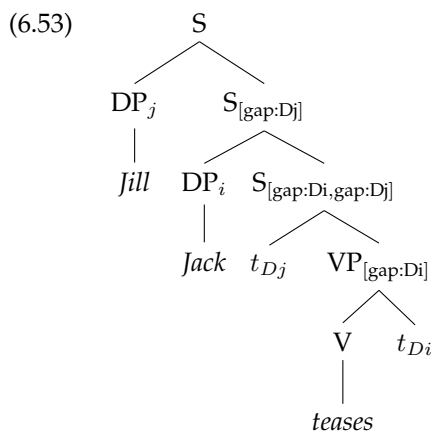


- This structure is well formed, but it provides no information about whether Jill teases Jack or vice versa.
 - So it seems we can't escape co-indexation. However, we don't have to have *long-distance co-indexation*.
- (6.51) **Tagging categories:** An category label X is indexed with an index n (written X_n) such that:

- all nodes in the same projection have the same category label.
- nodes in different projections never have the same category label.



- NB: feel free to omit the number where it is irrelevant to the discussion.
- Now we can tell whether Jack teases Jill or vice versa (see Cooper 1981 for a precursor to this idea).



- The arrows notation is of course easier on the eyes, so it's fine to use, as long as you understand its underpinnings.

6.4 AtB movement and parasitic gaps

- There are two big advantages of gap theory over a generalized transformations approach:
 - a. "across the board" movement
 - b. parasitic gaps
- What do the following structures have in common?

- (6.54)
- a. To the *lighthouse*, Bill walked and Fred ran.
 - b. Under the *bridge*, the troll lives and its children swim.
 - c. To *me*, Sue seemed hopeful and Mary seemed fearful.

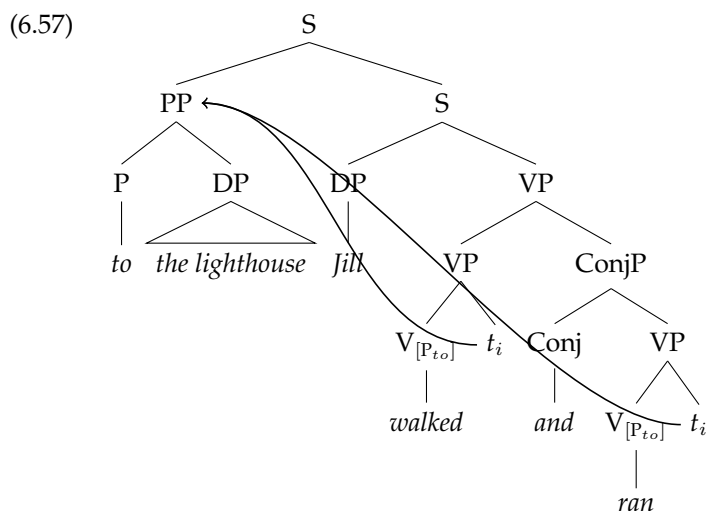
- Compare the following

- (6.55)
- a. *[To the *lighthouse*]_i, Bill walked to the beach and Fred ran *t_i*.
 - b. *[Under the *bridge*], the troll lives on top of the hill and its children swim *t_i*.

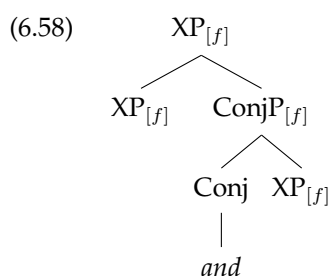
c. *[To me], Sue seemed hopeful to everyone else and Mary seemed fearful t_i .

(6.56) **The Coordinate Structure Constraint (CSC):** if XP binds a trace in one conjunct, it bind a trace in every conjunct.

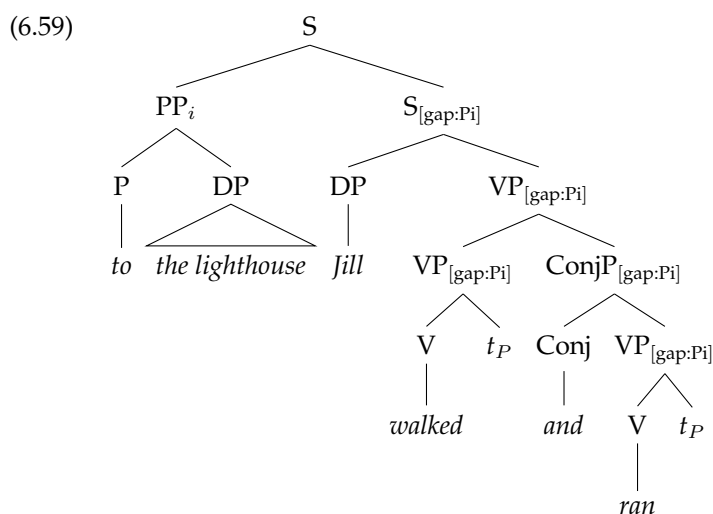
- Under the transformational theory of movement, where an XP is “extracted” and placed in a new position, AtB-movement doesn’t seem to fit.



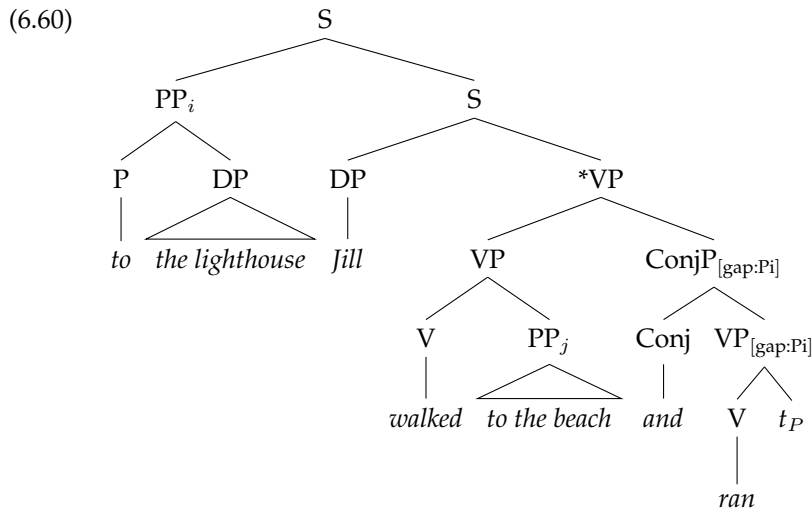
- Under a theory of feature “percolation” like the gap theory, we can understand it by the constraints of conjunction: the feature specifications of conjuncts must match.



- So we immediately have a theory of AtB-movement.



- As well as the CSC (no binding a trace in one conjunct but not the other). The following structure breaks the constraint that the features of conjuncts must match.



- We will maybe discuss parasitic gaps at another time. Here's the brief overview

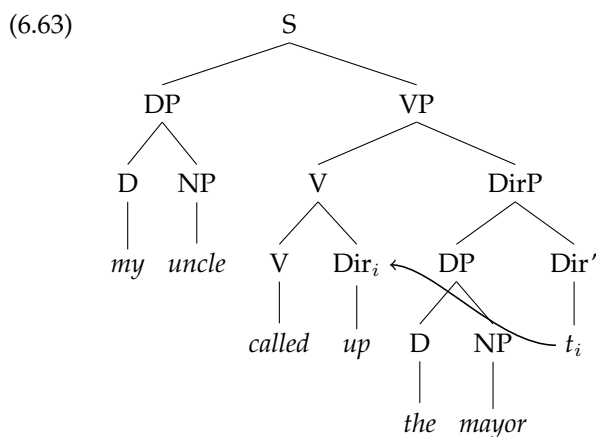
(6.61) **Parasitic gaps:** If an XP binds a trace in an adjunct, it must also bind a trace in the adjunct's host as well.

- (6.62) a. What did you try without buying?
 b. *What did you try the cornbread without buying?

- Why is this data *already predicted* by gap theory in conjunction with our theory of adjunction? (see Engdahl, , Postal 1994, Chaves 2012)

6.5 XP vs. X movement

- The gap theory outlined above works for PP-topicalization and Spanish post-posing. Both of these involve movement of an XP to a higher position.
- But the theory does not obviously account for particle movement.



- In what ways is this proposed movement not predicted by gap theory?

- We will leave the analysis of this kind of movement until the next handout. For now it is safe to say that this is a possible sort of movement which warrants a new kind of analysis.

(6.64) **Movement type 1: XP-movement:** constrained by gap theory.

(6.65) **Movement type 2: Head movement:** the adjunction of a head onto another head.

6.6 Further readings

- The theory of movement and how transformations are constrained using traces, indexes, and D-structure/S-structure is primarily discussed in Chomsky 1981, building off Chomsky 1965, Emonds 1976, Williams 1981. Chomsky 1986 is a later extension refining the theory further.
- The theory in this handout is based on Gazdar 1981, and its application to phenomena like AtB-movement and parasitic gaps is explored in Chaves 2012.
- The standard understanding of how moved XPs are linked with their thematic role (e.g., as the do-er or done-to) according to GB/Minimalism comes from Baker 1988, Baker 1997. Though we will explore the underpinnings of this theory as we move forward in later weeks.

6.7 Possible paper topics

- Bresnan et al. 2015 (chapters 1 and 2) provide some arguments against including a notion of movement in grammar, based on XPs which are licensed in the alleged “moved” position, but not in the alleged “base” position. Could their data be accommodated in a grammar which assumes movement? See also Andrews 1994.
- How does movement help us understand ‘non-configurational languages’ or languages which are analyzed as having free word order? Do we have evidence that multiple orders are derived via movement or should these languages be analyzed as having an underlyingly different phrase structure, see, e.g., Austin and Bresnan 1996, Nordlinger 1998, Legate 2002, Simpson 2007.
- Another curious phenomenon is constituents with different forms in moved positions vs. non-moved positions. Complement clauses in English can optionally have *that*, but must have *that* in fronted positions (see Koster 1978, Grimshaw 1993). Question words in French also have different forms, ‘what’ is *quoi* when not fronted, but *que* when fronted.
- A very pervasive and still hard to understand phenomenon: resumptive pronouns (see, e.g., Sells 1984). These seem to be cases in which a trace is pronounced as a pronoun. They are very common cross-linguistically, and show up in English too “She’s the kind of professor who no one knows why they don’t give her tenure”. McCloskey 1990, 2002 explores this thoroughly in Irish. Asudeh 2004 is a rich, insightful, sophisticated study of resumption in Irish, Hebrew, and Swedish. See also Georgopoulos 1991 for an exploration of the notion of “null resumption”.

References

- Andrews, A. D. 1994. *Syntax Textbook*. Ms., Australia National University.
- Asudeh, A. 2004. *Resumption as resource management*. Ph.D. dissertation, Stanford University.
- Austin, P. and J. Bresnan. 1996. Nonconfigurationality in Australian aboriginal languages. *Natural Language and Linguistic Theory* 14: 215–268.
- Baker, M. 1988. *Incorporation: A Theory of Grammatical Function Changing*. Chicago, IL: University of Chicago Press.
- Baker, M. 1997. Thematic roles and syntactic structure. *Elements of Grammar*, ed. by L. Haegeman, 73–137. Dordrecht: Kluwer.
- Bresnan, J. 1994. Locative inversion and the architecture of universal grammar. *Language* 70: 72–131.

- Bresnan, J., A. Asudeh, I. Toivonen, and S. Weschler. 2015. *Lexical Functional Syntax*, 2nd Edition. West Sussex: Wiley-Blackwell.
- Bresnan, J. and J. M. Kanerva. 1989. Locative inversion in Chichewâ: A case study of factorization in grammar. *Linguistic Inquiry* 20: 1–50.
- Chaves, R. P. 2012. On the grammar of extraction and coordination. *Natural Language and Linguistic Theory* 30(2): 465–512.
- Chomsky, N. 1965. *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press. 3–37.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, N. 1986. *Barriers*. Cambridge, MA: MIT Press.
- Emonds, J. 1976. *A Transformational Approach to English Syntax*. New York, NY: Academic Press.
- Engdahl, E. 1983. Parasitic gaps. *Linguistics and Philosophy* 6(1): 5–34.
- Gazdar, G. 1981. Unbounded dependencies and coordinate structure. *Linguistic Inquiry* 12: 155–184.
- Georgopoulous, C. 1991. *Syntactic Variables: Resumptive Pronouns and A'-binding in Palauan*. Dordrecht: Springer.
- Grimshaw, J. 1993. Minimal projection, heads and optimality. Technical report RuCCS-TR-4, Center for Cognitive Science, Rutgers University.
- Haegeman, L. 1994. *Introduction to Government and Binding Theory*. Malden, MA: Blackwell.
- Koster, J. 1978. Why subject sentences don't exist. *Recent Transformational Studies in European Languages*, ed. by S. J. Keyser, 53–64. Cambridge, MA: MIT Press.
- Lappin, S., R. D. Levine, and D. E. Johnson. 2000. The structure of unscientific revolutions. *Natural Language and Linguistic Theory* 18: 665–671.
- Legate, J. A. 2002. Warlpiri: Theoretical implications. Ph.D. dissertation, MIT.
- McCloskey, J. 1990. Resumptive pronouns, A'-binding and levels of representation in Irish. *The Syntax of the Modern Celtic Languages*, ed. by R. Hendrick, 199–248. New York, NY: Academic Press.
- McCloskey, J. 2002. Resumption, successive cyclicity, and the locality of operations. *Derivation and explanation in the Minimalist Program*, ed. by S. D. Epstein and T. D. Seeley, 184–226. Oxford: Blackwell.
- Nordlinger, R. 1998. *Constructive Case: Evidence from Australian Languages*. Stanford, CA: CSLI Publications.
- Postal, P. M. 1994. Parasitic and pseudoparasitic gaps. *Linguistic Inquiry* 25: 63–117.
- Potts, C. 2001. Three kinds of transderivational constraint. *Syntax and Semantics at Santa Cruz*, ed. by S. Mac Bhloscaidh, 21–40. Santa Cruz, CA: University of California, Santa Cruz.
- Sells, P. 1984. *Syntax and Semantics of Resumptive Pronouns*. Ph.D. dissertation, University of Massachusetts, Amherst.
- Simpson, J. 2007. Expressing pragmatic constraints on word order. *Architectures, Rules, and Preferences: Variations on Themes by Joan W. Bresnan*, ed. by A. Zaenen et al., 403–442. Stanford, CA: CSLI Publications.
- Williams, E. 1981. Argument structure and morphology. *The Linguistic Review* 1: 81–114