Movement

Movement: rules that account for apparent violations of locality of selection.

Principle of locality of selection seem to be violated in certain structures

topicalization : <u>The pictures of Keto</u>, Temo put on your desk
questions: <u>Which pictures of Keto</u> did he put on your desk?
raising to subject: <u>Time</u> seems to elapse slowly in the tropics
control: <u>Temo</u> wanted to sleep

Preservation of locality: the principle applies before movement. Sentences in (2) have undergone "adjustments", movement (or other) transformations.

(2) a. The pictures of Keto [TP Temo [VP put on your desk]]
    b. Which pictures of Keto did [TP he [VP put on your desk]]
    c. [TP Time [VP seems [TP to [VP elapse slowly in the tropics]]]]
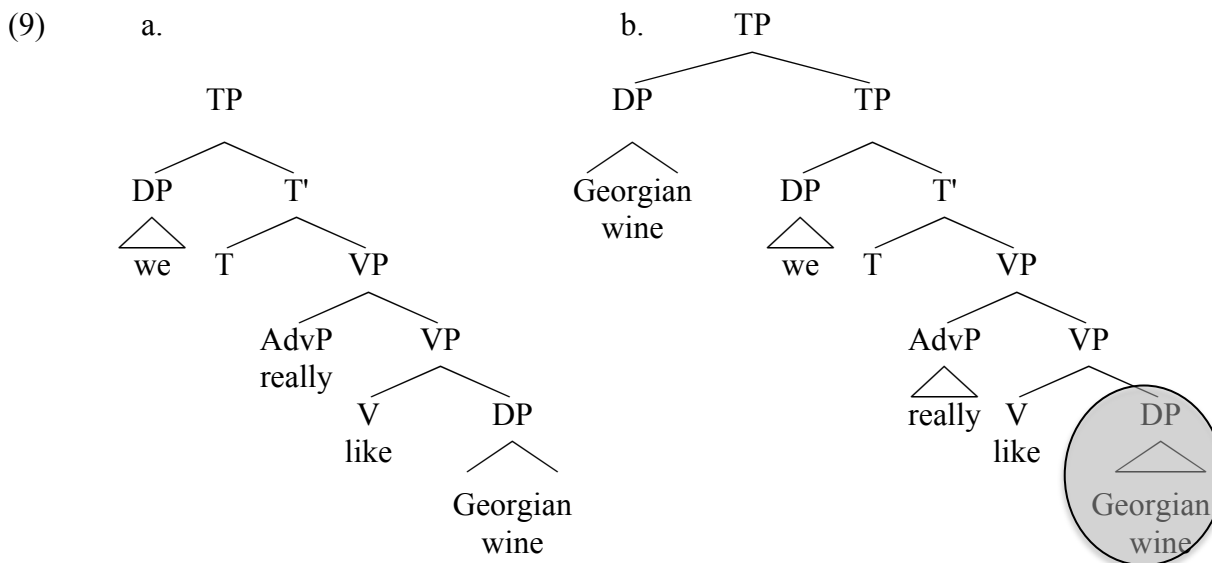   d. [TP Temo [VP wanted [TP to [VP sleep]]]]

Topicalization

The pair in (3) share a common property: they have the same "deep" (underlying) structure before movement

(3) a. She put the pictures of Temo on your desk
    b. The pictures of Temo, she put on your desk
(4) a. *She slept the picture of Bill
    b. *The picture of Bill she slept
(5) a. Keto thinks that [she put the picture of Temo on your desk
    b. Keto thinks that [the picture of Temo, she put on your desk]
(6) a. Keto thinks that [Nino put the picture of Temo on your desk] and [her sister ate the lobiani]
    b. Keto thinks that [the picture of Temo Nino put on your desk] and [the lobiani her sister ate]

• Principle of locality of selection applies at deep structure
• Topicalized constituents are adjoined to TP.
• Moved constituents leave a copy in the original position
• The topmost copy is pronounced. The lower copy is called a trace, it is unpronounced (here, ~~barred~~).

(7) a. We really like Georgian wine.
    b. Georgian wine we really like ~~Georgian wine~~.

(8) S1:   we really like Georgian wine
    S2:   [Georgian wine] we really like ~~Georgian wine~~

1

(9)   a.   b.

[Syntax tree diagrams showing movement of "Georgian wine"]

Questions:
What kinds of movements are there?
- head movement and XP-movement.
- Different kinds of XP-movement: topicalisation, wh-movement, raising, passive, etc.

Can anything move anywhere?
– No. XPs can move far away from their base position but they are subject to island constraints
– XPs move *up* the tree.

Understanding when and how movement is allowed=understanding how Locality of Selection can be violated.

- Basic constraints on movement

(i)   Only constituents can move
(ii)   *Structure Preservation*: Movement creates structures that obey X' Theory
       Derived trees look "familiar", movement doesn't create different-looking trees
(iii) *Recoverability*: Movement does not cause information to be lost. Constituents move to unoccupied positions: adjoined positions or empty specifiers

- Locality

Topicalization is unbounded: a constituent can move far up from its base position.

Georgian
(10)   a. temom   mak'as   is c'igni   gaugzavna
           Temo.ERG   Maka.DAT   that book.NOM   sent
           "Temo sent that book to Maka"
       b. is c'igni   temom   mak'as   ~~is c'igni~~ gaugzavna
           that book.NOM   Temo.ERG Maka.DAT   sent
           "That book, Temo sent to Maka"
       c. is c'igni   mamas   ar sjera   rom temom   mak'as   ~~is c'igni~~   gaugzavna
           that book.NOM   father.DAT not believe that   Temo.ERG Maka.DAT   sent
           "That book, Dad does not believe that Temo sent to Maka"
       d. **is c'igni**   qvelam   icis rom mamas   ar sjera   rom temom

   that book.NOM   everyone.ERG   know that   father.DAT not believe that   Temo.ERG
mak'as   ~~is c'igni~~ gaugzavna
Maka.DAT   sent
"That book, everyone knows that Dad does not believe that Temo sent to Maka"

e. **is c'igni**   mart'o bebiam   ver gaigo rom   q'velam   icis   rom
that book.NOM   only   Grandma.ERG no heard that   everyone.ERG   know that
mamas   ar sjera   rom temom   mak'as   ~~is c'igni~~ gaugzavna
father.DAT not believe that   Temo.ERG Maka.DAT   sent
"That book, only Grandma did not hear that everyone knows that Dad does not believe that Temo sent to Maka"

But 'is c'igni' cannot be moved from anywhere. Topicalization cannot leave a syntactic island, i.e.syntactic configuration out of which movement is impossible. (Ross 1967)

- • islands
- – embedded questions
- – relative clauses
- – clausal adjuncts
- – subjects
- – conjunctions
- – others!

Complex Noun Phrase Constraint: no element may be moved out of a complex NP (a noun phrase with a relative clause or complement clause attached)

(11)a. ketim   naxa [k'aci   romel-ma-c   mak'as   is c'igni   gaugzavna]
      Keti.ERG saw   man.NOM which-ERG-rel Maka-DAT that book.NOM sent
      "Keti saw a man who sent that book to Maka"
   b. ***is c'igni**   ketim   naxa [k'aci   romel-ma-c mak'as   ~~is c'igni~~ gaugzavna]
      that book.NOM keti.ERG saw   man.NOM which-ERG-rel Maka.DAT   sent
      "*That book, Keti saw a man who sent to Maka"

Adjunct Island Condition: no element may be moved out of a clausal adjunct

(12)a. keti   gabrazda [imit'om rom temom   mak'as   is c'igni   gaugzavna]
      Keti.NOM got-upset because that   Temo.ERG Maka.DAT that book.NOM sent
      "Keti got upset because Temo sent that book to Maka"
   b. ***is c'igni**   keti   gabrazda imitom rom temom   makas   ~~is c'igni~~ gaugzavna
      that book.NOM Keti.NOM got-upset   because that   Temo.ERG Maka.DAT   sent
      "*That book, Keti got upset because Temo sent to Maka"

Coordinate Structure Constraint: no element may be moved out of a coordinated constituent.

(13)a. temom   mak'as   ori k'ilo msxali   da is c'igni   gaugzavna
      Temo.ERG Maka.DAT two kilo pear.NOM and that book.NOM sent
      "Temo sent two kilos of pears and that book to Maka"
   b. ***is c'igni**   temom   mak'as   ori k'ilo msxali   da ~~is c'igni~~ gaugzavna
      that book.NOM Temo.ERG   Maka.DAT two kilo pear.NOM and   sent
      "*That book, Temo sent two kilos of pears and to Maka"

Theoretical studies on islands.
–   What configurations are islands?
–   Why do islands block movement?
–   Are islands universal?

WH-movement.

Some properties of wh-movement
–   Wh-words: in English: *who, why, when, what, where, whose.., which..,* but also *how*.
–   Wh-words in Georgian: *vin, rat'om, rodes, ra, sad, visi, romeli, rogor*. "R-words"
–   Types of wh-phrases : DP, PP, AdvP
–   Move wh-phrase to a non-argument position, Spec,CP

(14) a. What will you read?
    b. Who can you work with?
    c. When did your parents visit Paris?
    d. Whose parents will visit Paris?
    e. What city did your parents visit which day?
    f. *What city which day did your parents visit?

Wh-movement is triggered by features of C in an interrogative sentence/

(15) a. You put *a newly painted picture of Bill* on his desk
    b. You put [*which picture of Bill*] on his desk?
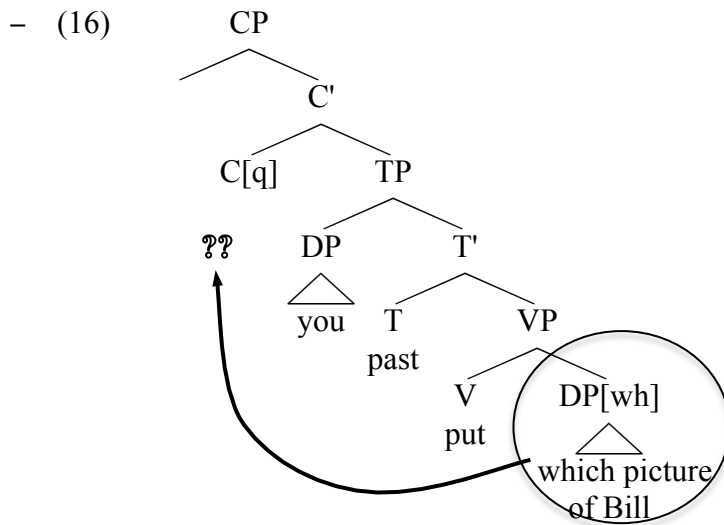   c. [*Which picture of Bill*] did you put on his desk?
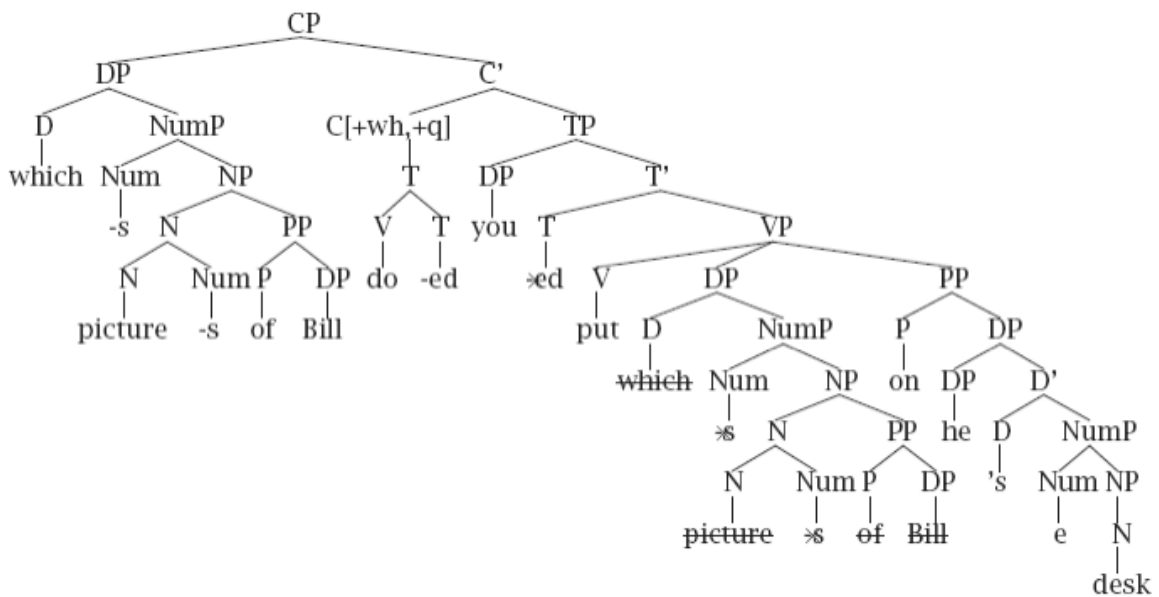
English *Wh*-Movement

Where does a wh-constituent move ?
  – Higher than C (*did* i*s* in C, inverted AUX and modals are in C)
How do we derive (15c)?

  – Underlying structure: [which picture of Bill] is an object; Principle of locality is satisfied;
  – C has +wh feature, and DP-object contains a *wh*-word.
  – XP-Movement: wh-constituent moves to Spec,CP.

  – (16)

(17) Tree for (15b):

Evidence that wh-constituents move to Spec,CP:

(2) MIDDLE ENGLISH
  a. he   wiste   wel   hymself **what that**   he   wolde   answer
      he   knew   well himself what that   he   would   answer
      "He himself knew well what he would answer"
  b. I   wolde fayn   knowe   **how that** ye   understonde thilke wordes
      I   would like   know   how that   you   understood   these   words
      "I would like to know how you understood these same words"

Wh-movement is unbounded

(19) a. What was he reading ~~what~~?
      b. What did Temo say [that he was reading ~~what~~]?
      c. What does Maka believe [that Temo said [that he was reading ~~what~~]]?
      d. What are they claiming [that Maka believes [that Temo said [that he was reading ~~what~~]]]?

But in Georgian, wh-movement seems to be clause-bounded.

(20) a. **romeli c'igni**   gaugzavna temom   mak'as   ~~romeli c'igni~~ ?
          which book.NOM sent   Temo.ERG Maka.DAT
          "Which book did Temo sent to Maka?"
      b. ?**romeli c'igni**   ar daijera bebom   rom temom   gaugzavna
          which book.NOM   not believe Grandm.ERG that Temo.ERG sent
          mak'as   ~~romeli c'igni~~?
          Maka.DAT
          "Which book did Grandma disbelieve that Temo sent to Maka?"
      c. ?***romeli c'igni**   ar daijera   bebom   rom mamam   mogvc'era rom
          which book.NOM   not believe Grandm.ERG that Dad.ERG   wrote-us   that
          temom   gaugzavna mak'as   ~~romeli c'igni~~?
          Temo.ERG   sent   Maka.DAT
          "Which book did Grandma disbelieve that Father wrote us that Temo sent to Maka?"

Wh-movement is subject to islands

  –   Wh-Island Constraint: no element may be moved out of an embedded question

(21) a. You wonder [when I told **Temo** the news].
      b. ***Who** do you wonder [when I told ~~who~~ the news]?

(22) a. bebos   aint'eresebs rodis c'avalt **kobuletši**
          grandma.DAT interests   when   we-go   Kobuleti-in
          "Grandma wonders when we will go to Kobuleti"
      b. *?**sad**   aint'eresebs bebos   rodis   c'avalt ~~sad~~?
          where interests   Grandma.DAT when   we-go
          "Where does Grandma wonder when we will go"
      c. ?**sad**   aint'eresebs bebos   rodis <u>rom</u> c'avalt ~~sad~~?
          where interests   Grandma.DAT when   that   we-go
          "Where does Grandma wonder when we will go"

Complex Noun Phrase Constraint: no element may be moved out of a complex NP/

(23) a. You visited [the guy who dislikes cats].
     b. ***Who** did you visit [the guy who dislikes ~~who~~]?

(24) a. vest'umret [kacs   romelmac   **ori k'at'a**   gaagdo]
         we-visited   man.DAT which.ERG.rel   two cat.NOM   chased
         "We visited a man that chased two cats away"
     b. ***ramdeni k'at'a**   vest'umret k'acs   romelmac   gaagdo ~~ramdeni k'at'a~~
         how-many cat.NOM   we-visited   man.DAT which.ERG.rel chased
         "*How many cats did we visit a guy who chased?"

Adjunct Island Condition: no element may be moved out of a clausal adjunct
(25) a. He smiled [because they promoted his wife].
     b. ***Who** did he smile [because they promoted ~~who~~]?
(26) a. temo   gabrazda imit'om rom k'acma   **ori k'at'a**   gaagdo
         Temo.NOM   got-upset because that man.ERG   two cat.NOM   chased
         "Temo got upset because the man chased two cats away"
     b. ***~~ramdeni kat'a~~**   gabrazda temo   imit'om rom k'acma   gaagdo
         ~~ramdeni kat'a~~?
         how-many cat.NOM   got-upset Temo.NOM because that man.ERG   chased
          "*How many cats did Temo get upset because the man chased?"

Ross, John. R. 1967. Constraints on variables in syntax. MIT PhD dissertation. Published as *Infinite syntax*! Norwood: Ablex.