1.0.1 Syntactic Tree: For starters—an ‘AuxP’

(i)

```
Sentence
   |   |   |   |
  DP-subj  VP  PP
       |   |   |
           | Aux V P  DP-Obj
                   |   |   |
                       |   |   |
(a)  ø I can study with the book.
(b) The books ø are on the desk.
(c) ø Students ø study with ø books.
(d) An elephant ø skated down the lane.
```

**Definiteness & Case contrast.**

(ii)

```
DP
  |   |   |
D N  (3)  DP
  |   |   |
features  [+Def]  |  vs.  [+Def]  |
          [+Nom]  |  vs.  [+Nom]  |
          [3P]  |  [3P]  |
          [+Pl]  |  [+Pl]  |
The books are on the desk.  |
Have you read any books?
```
**Inflection: Born & Delivery.**

(iii) (a)  
\[ \text{AUXP} \]  
\[ \text{Aux} \]  
\[ \text{V} \]  
Token Sentences:  

Features:  
[3P, -Pl Present {s}] write-s (a)  
John writes at night.  

[1,2P, -Pl Pres {ø}] write-ø (b)  
If/you write at night.

Inflectional Process:  

(b)  
\[ \text{VP}^1 \]  
Recursive VPs: Double Verb Construct  
\[ \text{AUXP}^{+\text{Fin}} \]  
\[ \text{VP}^2 \]  

Token Sentence:  

John likes to play ball.

John.............. ø likes to play ball

The following introduction on template syntactic structures should be used as an illustrative means of getting to the core analysis of English syntax. In addition, let the templates serve as a further theoretical reference for all sentences that came before in part-1 of the text.

(iv) **New Tree Template: ‘TP’**

\[ \text{TP} \]  
\[ \text{DP-subj} \]  
\[ \text{T'} \]  
\[ \text{D} \]  
\[ \text{N} \]  
\[ \text{Tense} \]  
\[ \text{PP} \]  
\[ \text{MV} \]  
\[ \text{P} \]  
\[ \text{DP-Obj} \]  
\[ \text{∅} \]  
\[ \text{I} \]  
\[ [+\text{Fin}] \]  
\[ \text{D} \]  
\[ \text{N} \]  
\[ \text{can study} \]  
with a  
book
Let’s start with the TP [T [Aux, MV]] structure as shown above. To a certain degree, this is a compromised, hybrid diagram that sits half-way between our basic MVP trees as presented earlier in part-1 and our eventual TP tree that will be found hereinafter. In fact, as will be shown in the proceeding pages, our newly revamped TP will actually end-up sitting on top of VP in forming an extended Finite TP>VP structure, dispensing with the old Aux/MV structure altogether.

Consider the now extended TP below showing distinct TP and VP layers:

```
(v)
  +-----------------------------+
  |                   |       |
  |                can      |
  |                  study |
  +-----------------------------+
    |      |            |      |
    T   VP       [+Fin]  V  PP...
      |         |          |
      T'     T
        |       |
        DP   TP
```

1.1 Movement & Constituency

The idea of feature checking and chain formation now leads us to further examine the role of Movement and Constituency. While the notion of movement is a metaphorically one—no one would wish to claim that there are inflectional morphemes which actually move about inside our brain—nonetheless, there is good sound evidence provided by recent brain imaging studies (fMRI, ERP) which do suggest that inflectional morphology is characterized by a movement analogy of a neurological nature, as is particularly addressed by the Dual Mechanism Model showing that the stem and affix are decomposed with lexical stems residing in the Temporal Lobe (TL) regions of the brain and the functional affixes residing in the Frontal Lobe (FL). In fact, recent work has uncovered a Broca-related gene-complex called FOX2 which specifically addresses this movement analogy in real neurological terms. It should also be noted here that current research along these lines has found that movement of this nature—both cognitive/motor-skill and linguistic/morpho-syntactic—is indeed tied to Broca’s area of the brain. The movement analogy of morpho-syntactic inflection theoretically holds given that the (FL) affix has to somehow make its way and attach to the (TL) stem—again, the convergence of the two must involve ‘theoretical movement’ at the very least.

1.1.1 Movement

One of the most interesting of linguistic phenomena is the idea that language should allow for movement to take place—and we are not talking about an abstract metaphysical idea of movement here, but a movement that is both physiologically and physically real: physiological in the sense that psycholinguistic experiments have detected such movement/traces (in the brain), and physical in the sense that movement can even affect one’s phonological output (see ‘wanna’ contraction below). For example, we had earlier looked at instances of movement regarding Aux. Inversion (of Yes-No Questions) where the Aux. was seen to move across the subject into front position: e.g., ‘Are you t fixing dinner?’ (=You are fixing dinner) (leaving a trace (t) index behind to show movement). Well, movement in general seems to be a very productive means of forming abstract grammatical rules—the Yes-No Question Aux-inversion rule just being one amongst a number of possible movement operations.

   Below, we sketch out and organize some general movement operations by asking (i) ‘How’ the movement takes place, and (ii) ‘Where’ the movement takes place: our ‘how’ question examines the movement operation per se and asks what types of elements are involved, while our ‘where’
question examines at what level does the movement take place (e.g., word-level, phrase-level, etc.). Much of the discussion amongst generative linguists today is centered upon the idea that movement is instigated by an intrinsic need to ‘check-off’ functional features: movement entails the mapping of two elements, one of which must become (at the very least) phonologically erased. In other words, if a given language were ever considered to hold no functional categories, then a strong case could be made that all sentences structure types would be base-generated (that is, all words would remain in their original positions) showing no movement. Claims of this kind have appeared showing that some languages have more movement as opposed to other languages, and that these differences in movement are directly linked to the qualitative and quantitative measures of the given language’s functional categories and/or features.

1.1.2 Constituency

One very important finding that has come out of a Phrase-Structure grammar has been the notion of constituency. A Constituent is defined as a structural unit or component—i.e., an expression which is one of the components out of which a Phrase/Sentence is built. For example, in considering a Verb Phrase \textit{likes ice-cream}, the components which build up the Verb Phrase would include the two constituents: Verb \textit{like} and Noun \textit{ice-cream}, generating the VP \textit{[VP [V like-s] [N ice-cream]]}. What we have found in the study of syntax is that phrases form tightly knit constituencies that cannot be broken or torn apart by separating/movement operations. So, in a nutshell, what we can say is that whatever adjacency condition might have come out of our functional-to-lexical relationships as discussed throughout this text, a similar (and closely inter-dependent) condition also stipulates that the components which make-up a phrase must remain adjacent, keeping the phase whole.

\textit{Particle/Inflectional Movement.} In a real sense, the smallest form of movement takes place at the morphological level—morphology being defined as the smallest unit of meaning. One classic example of this particle movement has come to be known as \textit{Affix Hopping} (see below). The affix particle can be seen as moving and inserting itself across word boundaries in a number of ways. Consider the examples below showing different forms of \textit{affix movement} (Inflection):
(1) Verb Tense Inflection: {s} & {ed} Movement

```
AUXP      
  Aux   V
```

Features: [3P,-Pl Present {s}] walk-s → John walk-s at night.

[Past {ed}] walk-ed → John walk-ed at night.

(2) Verb Inflection: {ing} Verb

```
AUXP                      
  Aux   V   
       |   |      
(i) John is walk-ing.   (Progressive)
(ii) John likes walk-ing. (Infinitive)
(iii) The walk-ing was nice. (MV=>Gerund)

{ing} walk-ing
```

Affix hopping

Consider the following example of affix hopping:

(3) (i) The grammatical Aux. rule of the Present Perfect Progressive is:

```
[ [Subject] + Aux (=> Tense) + [have + {en}] + [ be + {ing}] + [Main Verb] ]
```

(ii) The exact sequence of the elements above should then give you:

* The student s have en be ing read (with read serving as the main verb here)
  → wrongly yielding: s-have en-be ing-read

(iii) The actual target sentence is:

```
The student ha-s be-en read-ing.
```

(The student has been reading)

In order to yield the proper sequencing of elements, movements or affix hopping must apply accordingly: {s} moves across the first Auxiliary Have {s}, {en} moves across the second Auxiliary Be {en}, {ing} moves across the Main Verb read {ing}, yielding:
(4) → The student have + {s} be + {en} read + {ing}

So, as illustrated above, there is indeed a real sense of ‘movement’ even at the smallest level of language—the ‘morpheme-level’. This type of **morpheme-level movement** is usually what is behind the term **Inflection** since Inflectional Processes take a morphological (functional) affix and inflect it onto a (lexical) stem.

### 1.1.3 Word Level Movement

The best examples of **word-level movement** can be found in operator movements such as Wh-Questions. Consider the word movements below:

**Wh-movement.** In English, the Wh-words (what, where, when, who(m), why, which, how) originate at the end of a sentence (as a DP-object) and move into the front position (a term sometimes called ‘Wh-fronting’). The rule for such Wh-movement is also triggered by an adjacency condition which stipulates that a Wh-word can never sit alongside a subject—hence, the adjacent rule calls for an abstract Auxiliary ‘do’ (or any other Aux. depending on the specific grammar at hand: e.g., progressive ‘be’ or perfect ‘have’) to insert in order to satisfy the condition, yielding [Wh-word] + {Aux} + [Subject]. So what we have here is a Wh-word that has in fact originated at the end of the sentence, and has, via movement, positioned itself into the front of the sentence. Consider the examples below showing such Wh-move(ment):

(5) (a) Ann is doing what?

(a’) What is Ann t doing t?  

(i) showing ‘Aux Invert’  

(ii) showing ‘Wh-move’

(The index t shows trace of the movement)

(b) You want which film?

(b’) Which film do You t want t?

Recall in the previous chapter that ‘which films’ functions as a DP-object constituent and cannot be split apart via movement (both the Head D along with the Complement N must move):

(c) *Which do you want film?
Diagramming Wh-movement

Diagramming Wh-movements and Aux Inversions can be tricky. They require one to posit additional structure to a phrase tree. Thus far, we have been starting our Trees with an S (to mark Sentence): [S [DP][MVP]]. This seems to hold up nicely when drawing simple SVO sentences without movement. Once we incorporate movement however, we need some additional phrase markers to host the moved elements—a marker that must be added to the top outermost layer of an already established S-structure.

In more recent syntactic analyses, the upper-most phrase which can host moved elements has been labeled Complementizer Phrase (CP). The CP then sits on top of an S. In more recent terminology, the ‘S’ label has likewise been made redundant and has been reanalyzed as an Inflectional Phrase (IP) since as part of the definition of a Sentence, the [+Fin] Main Verb is required to be inflected for Aux. functional material. The Verb Phrase analysis has not changed. So then, using more recent Phrase Structure terminology, we get an IP>VP tree (where IP=S) for all SVO declarative structures and a CP>IP>VP for all interrogative structures. (See Chapter 14 for a final word regarding tree diagramming).

While considering the newly fashioned CP>IP>VP tree below, note that all trace indexes serve as a quasi-functional category in themselves, labeled herein as an empty-category. The syntactic role of the empty category (or trace) is to recall where the moved element originated from within the original basic order of the sentence. Due to theory internal assumptions, ‘words’ may only move upward through a tree (downward movement is banned). (Only ‘Features’ may involve covert downward movement).
(6) The full CP>IP>VP Tree

```
CP
  DP C'
    Aux IP (= S)
      DP VP
        D N AUXP
          Aux V
```

Which films do ø [you do want? Which films ]

→ [You do want which films?] > Which films do you want?

Note above that the DP-object of the VP (which films) is shadowed in order to show that the DP object which contains a Wh-word (which) was originally generated VP-internal but has since moved into the CP in front of the sentence.

**Auxiliary movement.** As mentioned above, the Auxiliary word too has the capacity to move:

(7) (a) DOES HE take this (lovely) bride as his (life-long) wife?

(b) HE DOES!

Clearly, one can see the all too conspicuous movement of the Auxiliary ‘do’ (again, triggering the Yes-No question grammar: Does he? He does!). These above are easily recognizable examples of movement, but sometimes movement is less conspicuous and involves a more convoluted analysis. For instance, it also seems that a negative operator ‘nor/never’ triggers Aux. inversion (without a question operator)—e.g., ‘I will not seek, nor will I
accept…’ and …‘Never would I leave you for a younger girl.’ In this sense, either of the two operators (question and negation) can drive movement. Consider ‘wanna’ contractions and Neg ‘not’ movements below.

**The ‘wanna’ contraction.** The ‘wanna’ contraction example of movement is perhaps the most interesting of them all since it also demonstrates, in one fell swoop, the fact that an empty category (indicated here by a trace) continues to have a real linguistic influence over the sentence. Although an empty category doesn’t continue to have a phonological shape (there is no sound) it maintains a real syntactic presence. Consider the two sentence types below where one overtly demonstrates the effect of a syntactically real empty (null) category (the e-category is denoted herein as e):

Possible ‘wanna’ contraction:

<table>
<thead>
<tr>
<th>Derived order (showing movement)</th>
<th>Original order (before movement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(8) (a) Who do you want to help? (a’) You want to help who?</td>
<td></td>
</tr>
<tr>
<td>→ Who do you ‘wanna’ help?</td>
<td>→ You ‘wanna’ help who?</td>
</tr>
</tbody>
</table>

Syntax showing traces/empty categories:

(b) Who₁ do₂i You e₃i want to help e₄i?

(c) (You do want to help who?) (= ‘wanna’ contraction permitted)

No Possible ‘wanna’ contraction

<table>
<thead>
<tr>
<th>Derived order (showing movement)</th>
<th>Original order (before movement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(9) (a) Who do you want to help you? (a’) You want who to help you?</td>
<td></td>
</tr>
<tr>
<td>→ Who do you *wanna help you?</td>
<td>→ You do *wanna who help you?</td>
</tr>
<tr>
<td>→ Who do you want to help you?</td>
<td>(no contraction)</td>
</tr>
</tbody>
</table>
Syntax showing traces/empty categories:

(b) Who\textsubscript{i} do\textsubscript{ii} You e\textsubscript{ii} want e\textsubscript{i} to help you?

(c) (You do want who to help you?) (= no ‘wanna’ contraction permitted)

Notice in (9b) above that there is an intervening empty category/trace (e\textsubscript{i}) situated between the Main Verb *want* and the following infinitive ‘to’ particle *(to help)* which blocks any possible phonological contraction of want-to to ‘wanna’. Hence, in a real sense, we can say that an otherwise phonologically null category maintains a certain amount of syntactic relevance in overt syntax. The ‘wanna’ contraction cannot contract here since there is in the underlying syntax an empty category marker keeping a grip on its syntactic space. This should come at no surprise to us considering that we have discussed elsewhere the syntactic relevance of the zero allomorph \{ø\} in DPs—e.g., where a pronoun was said to take on a functional categorical status via an empty zero allomorph in D (restated here):

| (10) |
| DP |
| D  | N |
| ø  |   |

features: [1P,+Def]  |
[+Nom]  |

(a) I......speak English (English)
(b) (Yo) ø.....hablo inglés (Spanish)

n’t contraction

Similar to the ‘wanna’ contraction, there’s a type of movement that seemingly applies to a Negative *n’t* when it is realized as a clitic (that is, when *n’t* has no phonological syllabic structure of its own and is morphologically fastened onto a verb stem).

Consider the **negative clitic movement** below:
Negative Clitic movement.

(11) (a) Marie does not speak French. **Base Order**
     (b) Doesn’t Marie speak French? (moved clitic n’t showing trace)
     (c) Does Marie not speak French? (lexical not remains in base position)
     (d) *Does not Marie speak French? (lexical not cannot move)
     (e) *Does n’t Marie speak French? (clitic n’t must attach to verb stem)
     (f) * Does Marie n’t speak French? (clitic n’t isn’t a lexical word)

Note that when *not* is a lexical word (with its own syllabic stress), it cannot move across the Subject (*Marie*), but rather must preserve the original base order [Aux Verb + not] configuration. (Conversely, as it is a clitic, the {n’t} can never be left dangling on its own without a verb stem.) It is only when *not* is generated as a clitic (= n’t) that we find it getting a free ride—‘piggy-backing’ on the Auxiliary verb *do*. Again, the reason for this syntactic maneuvering is due to the fact that the clitic n’t is realized as part of the phonological Verb Stem, and so it travels wherever the verb goes (a kind of adhesive clue has been applied tying the clitic to the verb stem forming one phonological chunk).

1.1.4 Phrase Level Movement

Having examined movement operations from a variety of word positions (e.g., Wh-word, Aux-word, wanna contraction and negative clitic movement) we can begin to look at the next level of language (the phrase) and see if movement can likewise be found. One example of movement found at the phrase level has to do with Prepositional Phrase (PP)-movement (or fronting). Recall that PPs originate at the back of the sentences since one of its major roles is to check the [-Nom] Accusative Case Feature to its counterpart DP-Object (sometimes this functional feature is referred to as Oblique Case). As a way of marking emphasis, the PP often gets fronted. Consider PP-movement below (noting that the constituency condition which stipulates that all phrases must be kept intact during movement operations continues to hold throughout).
**PP-movement.** Consider examples of PP-movement below:

(12) (a) In the beginning, God created the word (t).

![Diagram of PP-movement]

[PP [P In] [DP [-Nom] the beginning]], God created the word.

(showing PP-movement)

(b) God created the word in the beginning.

(showing original SVO base order)

Other examples of PP-movement

(13) (a) Under no condition should children be left alone.

(b) Between you and me, I think our Presidential choice stinks.

(c) After the storm, the children played in the park.

(d) Without any hesitation, our militia killed the trained killers.

(e) For several years, our troops kept the peace.

Note that in (13c) above where you have two PPs, (in the park & after the storm respectively) only the last of the two PPs moves (i.e., the last PP fronts). As shown in examples (f, g) below, one wouldn’t say e.g., *The children played after the storm in the park*—the sequencing would have us utilize the last PP after the storm as a (time) modification to the (place-preposition) in the park (it seems ‘place’ supercedes ‘time’ according to a prepositional hierarchy). This kind of hierarchy might also be found amongst Adjectival Phrases (AdjP) whereby certain adjectives supercede others—e.g., The red brick house vs. *The brick red house*, where ‘color’ comes before ‘material’, etc.). Hence, the ill-formed PP-fronted sentence *In the Park, the children played after the storm* is ruled out.

(f) After the storm, the children played in the park.

(g) *In the park, the children played after the storm.*

Consider the structure below showing PP-fronting:
DP-Movement (Dative Shift)

A second type of movement at the phrase level has to do with **DP-movement** (which is sometimes called Dative Shift). In a nutshell, Dative shift has to do with variable orderings of Direct and Indirect objects within the predicate. Typically speaking, the Direct Object (=DO) comes first as the (adjacent) complement of the verb with the Indirect Object (=IO) following (as the complement of a Prepositional Phrase). Consider the sentences below which afford possible DP shifts:

(15) (a) John gave the book to Mary.

   (i) John gave [ [DO DP\textsuperscript{1} the book] [PP to [IO DP\textsuperscript{2} Mary]] ]

(b) John gave Mary the book.

   (i) John gave [ [IO DP\textsuperscript{2} Mary] [DO DP\textsuperscript{1} the book] ]

   (ii) John gave [ [(PP to) IO DP\textsuperscript{2} Mary] [DO DP\textsuperscript{1} the book] ]

Note that the Preposition \{to\} may delete in (15b,i) due to this Dative Shift. What is of interest to us here is that two DPs [ [D \emptyset] [N Mary] ] and [ [D the] [N book] ] seem to switch position within the predicate. In tree diagramming
such shifts, it’s possible to simply draw the two DPs as an adjacent double phrase projection:

Double DPs

\[ \text{(16)} \]

\[
\begin{array}{c}
\text{DP} \\
\text{DP} \\
\text{D} \\
\text{N} \\
\text{Ø} \\
\text{D} \\
\text{N}
\end{array}
\]

John gave…. Mary the book

1.1.5 Clause Level Movement

Movement at the **Clause-level** is typically associated with certain sentence structure types such as Dep(endent) and Indep(endent) clauses (forming C(omplex) S(entences)). In most cases, the movement here involves the dependent clause which is typically positioned as the final clause of the sentence, moving out from its final position and seating in the front position of the sentence.

Consider the following Clause-Level movements within Complex sentences below.

(17) (a) While I was driving home, I saw an accident \( t \). \text{ (movement) } \\
→ (a’) I saw an accident while \text{ I was driving home}. \text{ (base order) } \\
[CS \text{ [Indep I saw an accident] [Dep while I was driving home] } ]

(b) Before entering the house, remove all shoes \( t \). \text{ (movement) } \\
→ (b’) Remove all shoes before \text{ entering the house}. \text{ (base order) }
8.1.6 Sentence Level Movement

Movement at the Sentence-level is typically associated with the Passive grammar. Whereas we normally speak in the SVO Active voice, the Passive voice turns the word order on its head yielding a kind of OVS mirror image ordering. Consider the passive movement at the sentence level below.

**Passive voice**

(18) (a) John announced the names of the linguists.  (S-VO active)

(b) The names of the linguists were announced by John.  (OV-S passive)

(c) The French students gave a ‘going-away’ party.  (S-VO active)

(d) A ‘going-away’ party was given by the French students.  (OV-S passive)

**Middle voice**

(19) (a) John easily slices the cheese.  (active voice)

(b) The cheese was easily sliced by John.  (passive voice)

(c) Cheese slices nicely.  (middle voice)

1.2 Absence of Movement in Child Grammars

One very strong piece of empirical evidence suggesting that children’s syntax matures incrementally, from lexical to functional grammar, comes from studies looking at movement operations having to do with passive
formations. As mentioned above, passive constructions involve subject/object movement in the sense that the subject of an active sentence becomes an object of a passive sentence. Before we exam what happens to passives in child syntax, and how they come to be interpreted by the child, we must point out that movement is considered to be a functional operation (par excellence). The very fact that movement takes place, up-rooting an item and displacing it to a higher functional phrase (leaving appropriate empty categories and traces behind) suggests that the child has matured to a formal linguistic level sufficient enough to recover such traces and manipulate displaced items. Theoretically speaking, a lexical stage should not bear out such movement operations, given that, by definition, lexical phrases exclusively host ‘in-situ’ elements—in-situ in the sense that such elements have originated in that structure and cannot be derived via some prior movement.. Let’s briefly consider below what happens to passives and how they come to be interpreted by children in their early stage-1 multi-word speech (18-30 months).

1.2.1 Passives

Many studies have been designed and replicated in past years to see whether young children (at the otherwise lexical stage of development) have access to movement via passive formation (Borer & Wexler). What many studies seem to show is that very young children have no way to recover displaced elements in passive sentences so that when asked e.g., ‘Who is doing the kissing? in relation to a previously posed passive sentence John was kissed by Mary, young children incorrectly assume that it is John who is doing the kissing (and not correctly Mary). It seems that pragmatics, or something as simple as the position the pronoun takes in the sentence, is what is ultimately behind the wrong interpretation: it may be that in children’s early syntax, the first introduced pronoun takes on the default status of [Agent] subject. In other words, children begin to analyze passives by first assuming that the superficial subject of a passive sentence serves the role of agent.

Consider below another such misanalysis.

(20) The lion was chased by the tiger.

(a) (The adult interpretation: tiger = agent: i.e., the tiger does the chasing).

(b) (The child interpretation: *Lion = agent: i.e., the lion does the chasing).
Similar studies along these lines also suggest that passives often get interpreted by the child as adjectival constructs as in the following examples:

<table>
<thead>
<tr>
<th>Adult Passive</th>
<th>Child Adjectival</th>
</tr>
</thead>
<tbody>
<tr>
<td>(21) (a) The door was closed (by Mary). → The closed door.</td>
<td></td>
</tr>
<tr>
<td>(b) The bike was painted red (by father). → The painted bike.</td>
<td></td>
</tr>
<tr>
<td>(c) The tree was broken (by the wind). → The broken tree.</td>
<td></td>
</tr>
</tbody>
</table>

In short, one theory behind why early children cannot support such passives has to do with the movement mechanism behind such structures. A maturational tack on this would suggest that such formal procedural processes having to do with movement operations have yet to come on-line in early child speech. Given this view, the movement operation involved with passives have yet to mature in early child syntax (= approx ages 2-4 years). Adult-like target passive formations and interpretations begin to appear in child language typically around the age of 4. Consider the passive movement involved below:

**Passive Movement**

(22) John was asked (by somebody) to read.

→ Somebody asked John to read. (= active derivation/ prior to movement)

i. [DP-subj Somebody] [DP-obj John]\(i\) was asked John to read.

(⇒ Somebody asked John to read)

→ John was asked to read (= passive derivation/ after movement)

ii. [DP-obj Somebody] [DP-subj John]\(i\) was asked John to read.

(⇒ John was asked to read)

The above passive movement (sometimes called A-movement or Argument movement) is similar to what we find with PRO as was presented earlier and as recapped in the following sections below.
1.2.2 Anaphoric Pronouns

Young children seem to have difficulty identifying and/or interpreting PRO (=PROnoun) whenever it becomes a moved element requiring a trace—as was discussed regarding passive A-movement above. It seems children often allow PRO to have free interpretations either as subjects or objects. Recall our discussion of empty categories (of which PRO is a part) that PRO serves as an empty category which controls either a subject or object in a higher phrase structure. Let’s flesh this out and see how PRO functions in the sentences below.

(23)  (a) [Johni wants [PROi to study French]].

(⇒ John studies French).

(b) Johni wants [Maryii PROii to remain quiet].

(⇒ Mary remains quiet).

The PRO element in (23a) is said to control the subject John (as understood by following its trace) whereas PRO in (23b) controls the object Mary. In studies, perhaps owing to a local adjacency condition on trace, or young children between 2-4 years of age seem to prefer (incorrectly so) the closer object-PRO interpretations over the distant subject-PRO interpretations for complement clauses. Consider the two possible PRO interpretation readings of (24a) below:

PROs in Adjunct Clauses

(24)  (a) The boyi pushed the girli after PROi dropping the books.

Correct PRO-subject read

(a’) The boy pushed the girl after (the boy) dropping the books.

*Incorrect PRO-object read (by children between 2-4 years of age)

(a”) *The boy pushed the girl after (the girl) dropping the books.

After reading such sentences, children prefer to give the sentence the following incorrect object-PRO reading such that:
(25)  

(a) *The boy\textsubscript{i} pushed [the girl\textsubscript{ii} after PRO\textsubscript{ii}] dropping the books.

Correct read:  

(b) [The boy\textsubscript{i} pushed the girl\textsubscript{ii} after PRO\textsubscript{i}] dropping the books.

Here in (25) above, the reading of PRO rather controls the object so that it is *the girl* who dropped the books (as opposed to the correct subject-PRO reading where it is *the boy* who dropped the books). The problem with the false reading in (25a) is that the clause *after dropping the books* is an adjunct clause (an adjunct to the higher phrase housing the PRO-subject) so that the girl (the matrix object) cannot be controlled by the PRO. This object-PRO error is best seen when the adjunct fronts—e.g., *After dropping the books, the boy pushed the girl* whereby it is ‘the boy’ who ‘drops the books’.

Condition of control for PRO

(26)  

(a) PROs in Adjunct clauses must be controlled by the matrix subject since adjuncts are attached in the tree to a position higher-up than the matrix object.

(b) PROs in Complement clauses however can be controlled by either a subject or an object.

Recall in our previous discussion on PP-movement (also an adjunct), adjuncts can position in a multitude of locations—e.g., can be fronted above the subject. Consider the adjunct placements below:

(27)  

(a) The boy pushed the girl [adjunct after dropping the books].

(b) The boy [adjunct after dropping the books] pushed the girl.

(c) [adjunct After dropping the books], the boy pushed the girl.

What these various derived structures in (27) tell us is that adjuncts subserve the higher–order DP-subject Phrase and therefore any PRO embedded in an Adjunct clause must control the subject—i.e., a PRO-subject reading.
PROs in Complement Clauses

In contrast to the condition placed on PROs in adjunct clauses, PROs of complement clauses may control either subjects or objects. Consider the sentences below.

(28)  
(a) John\textsubscript{1} tried PRO\textsubscript{1} to write the letter for Mary. \((\text{PRO = subject/John})\)  
\[\rightarrow \text{John writes the letter.}\]

(b) John told Mary\textsubscript{1} PRO\textsubscript{1} to write the letter. \((\text{PRO = object/Mary})\)  
\[\rightarrow \text{Mary writes the letter.}\]

Verbs like try in (28a) (referred to as control predicates) are required to have a PRO in the complement clause which controls the matrix subject. Notice, verbs like tell don’t have the same requirement. The nature of this difference is reminiscent of earlier discussions regarding verb transitivity type, etc. Regarding such complement PROs above, children, in their early stages of development, seem to randomly interpret both subject and object PROs freely. For example, when asked: Who was writing the letter? in response to the sentence John told Mary to write the letter, children freely (and wrongly) interpret either John and/or Mary as possible Agents doing the writing: whereas Mary should be the only acceptable Agent.

The upshot of all this it to ask the following question: Why? Why do children have such a hard time, initially, with (i) dealing with movement operations and (ii) reconstructing PRO? Well, certainly some notion of maturation must factor into the delay. For instance, it is well known that children at the lexical stage-1 omit functional categories. If movement operations involve some sort of functional category and/or mechanism both to host the moved elements, as well as to recover the moved elements via an empty category, then it should be no surprise that children at stage one may employ other and perhaps ‘non-linguistic’ strategies to deal with such structures, as made apparent by their incorrect interpretative readings and production. One example of a non-linguistic strategy might have to do with adjacency. For instance, at stage-1, PRO in (28) above is either (i) freely interpreted—in which pragmatics or event-related factors may play into the
choice—or (ii) is governed by adjacency considerations suggesting that young children have a memory deficit or threshold whereby allowing the closest adjacent DP to be controlled by the PRO. Regarding maturational factors, it may very well be that young children have yet to gain access to either (i) recursive rules of movement (dealing embedding) and/or (ii) trace-movement rules (dealing with co-indexing references). So, similar to how passives were interpreted at our stage-1 (2-3 years), so too do PROs along with all of their trappings of movements and traces present a problem for the developing child. Overall, it may be that a fully-fledged MVP/IP projection must first establish itself before any antecedent properties ultimately tied to AGReement can emerge.

Further Reading


