Reluctance to leave

- Now, consider:
  - Mary is reluctant to leave.

- This looks very similar to Mary is likely to leave.
- Can we draw the same kind of tree for it?

- How many \( \theta \)-roles does reluctant assign?

Reluctance to leave

- Reluctant has two \( \theta \)-roles to assign.
  - One to the one feeling the reluctance (Experiencer)
  - One to the proposition about which the reluctance holds (Proposition)

- Leave has one \( \theta \)-role to assign.
  - To the one doing the leaving (Agent).

- In Mary is reluctant to leave, what \( \theta \)-role does Mary get?

Reluctance to leave

- In Mary is reluctant to leave,
  - Mary is doing the leaving, gets Agent from leave.
  - Mary is showing the reluctance, gets Experiencer from reluctant.

- And we have a problem:
  - Mary appears to be getting two \( \theta \)-roles, in violation of the \( \theta \)-criterion.

Reluctance to leave

- Mary is reluctant to leave.
- Reluctant assigns its \( \theta \)-roles within AP as required, Mary moves up to SpecIP in the main clause by Spellout.
- But what gets the \( \theta \)-role from leave, and what satisfies the EPP for the embedded clause?
Reluctance…

- Mary is reluctant to leave.
- There must be something there, getting the θ-role and satisfying the EPP.
- But we can’t see it.
- It’s a phonologically empty (Ø) DP. We will call it PRO.

If there’s a PRO, how do we know?

- Best method for finding PRO: Count the θ-roles. If there appear to be fewer arguments than θ-roles (in a grammatical sentence), there must be a PRO.

- Another way is to try with idioms like The cat is out of the bag or The cat’s got your tongue or The jig is up.

Idioms

- For something to have an idiomatic interpretation (an interpretation not literally derivable from its component words), the pieces need to be very close together at the point of original Merge.
  - It is likely that the jig is up.
  - It is likely that the cat is out of the bag.
  - It is likely that the cat has your tongue.
Idioms

- It is ok if the pieces of the idiom move away after their original Merge, we can still get the idiomatic interpretation:
  - [The cat], is likely $t_i$ to have your tongue.
  - [The cat], is likely $t_i$ to be out of the bag.
  - [The jig], is likely $t_j$ to be up.
- The important thing is that they are together originally (the $\theta$-role needs to be assigned by the predicate to the noun)

- If we break up the pieces, then we lose the idiomatic interpretation and can only get the literal meaning.
  - The cat thinks that it is out of the bag.
  - The cat thinks that it has your tongue.
- With PRO sentences (“control sentences”), we also lose the idiomatic reading.
  - #The cat is reluctant to be out of the bag.
  - #The cat attempted to have your tongue.
  - #The jig tried to be up.

Idioms

- The reason for this is that the idiomatic subject and the idiomatic predicate were never together…
  - The cat is reluctant [PRO to be out of the bag]
  - The cat attempted [PRO to have your tongue]
  - The jig tried [PRO to be up]
- Unlike with raising verbs:
  - [The jig], is likely [ $t_j$ to be up]

Control

- PRO is similar to a silent pronoun; it gets its referent from somewhere outside its sentence. In many situations, however, PRO is forced to co-refer to a preceding DP, unlike a pronoun.
  - Bill, thinks that he$_{i/j}$ is a genius.
  - Bill, is reluctant PRO$_{i/*j}$ to leave.
- We say that PRO is controlled (here by the matrix subject).

Subject and object control

- There are actually two different kinds of “control verbs”, those whose subject controls an embedded PRO and those whose object does.
  - Bill, is reluctant [PRO$_i$ to leave]
  - reluctant is a subject control predicate
  - John, persuaded Bill$_j$ [PRO$_j$ to leave]
  - persuade is an object control predicate

PRO$_{arb}$

- Finally, there is a third use of PRO, in which it gets arbitrary reference and means something like “someone/anyone”.
  - [PRO$_{arb}$ to leave] would be a mistake.
- The conditions on which interpretation PRO can/must get are referred to as Control Theory, although to this day the underlying explanation for Control remains elusive.
“Control theory”

For now, what control theory consists of is just marking the theta grids of specific predicates (persuade, reluctant) with an extra notation that indicates when an argument is a controller.

<table>
<thead>
<tr>
<th>predicate</th>
<th>Argument</th>
<th>Experiencer</th>
<th>Controller</th>
<th>Proposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>persuade</td>
<td>i</td>
<td>i</td>
<td>j</td>
<td></td>
</tr>
<tr>
<td>reluctant</td>
<td>j</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Predicates that have a controller marked are control predicates. When the controller is the external argument, it is a subject control predicate, otherwise it is an object control predicate.

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The PRO conundrum

Back when we talked about Binding Theory, we said that DPs come in one of three types, pronouns, anaphors, and R-expressions.

- PRO is a DP, so which kind is it?
  - It gets its reference from elsewhere, so it can’t be an R-expression.
  - It is sometimes forced to get its referent from an antecedent, like an anaphor and unlike a pronoun.
  - But that referent is outside its clause, meaning it can’t be an anaphor (the antecedent would be too far away for Principle A). Plus, it’s not always forced (PRO\_arb), like a pronoun.

Conclusion: It doesn’t seem to be any one of the three. It doesn’t seem to fall neatly under Binding Theory

...hence, we need “Control Theory” to deal with the distribution and interpretation of PRO.

The PRO conundrum

These weird properties of PRO are sometimes taken to be the cause of another generalization about PRO (the “PRO theorem”)

- PRO cannot get Case.

That is, PRO is forbidden from any position where Case would be assigned to it (hence, it cannot appear in SpecIP of a finite clause—only a nonfinite clause)

Control Theory

Despite the fact that PRO does not submit to Binding Theory, there are some binding-theory-like requirements on control of PRO.

- PRO is only obligatorily controlled by a c-commanding controller.

- [Bill’s mother] is reluctant [PRO\_\gamma to leave]
**PRO: One possible piece of support**

- Let’s think back to Binding Theory.
- Principle A says that anaphors must be bound within their binding domain, and we take binding domain to be the clause.
  - *Bill wants [Mary to meet himself]
- However, now consider:
  - Bill is reluctant to buy himself a gift.
  - Bill promised Mary to buy himself a gift.
- Why are these allowed?

**PRO: Recap**

- Although we can’t see that PRO is there, all of our theoretical mechanisms point to its being there.
- EPP says that clauses need a subject.
- The θ-criterion says that there must be exactly as many arguments as θ-roles.
- Binding Theory indicates something is present inside embedded clauses.
- If the rest of our theory is right, it seems that PRO must be there.

**Italian subjects**

- Many languages have the property that when the subject is understood (often in the cases where in English we would use a pronoun subject), it can be just left out entirely. For example, Italian:
  - *Parlo.*
  - *Parli.*
  - ‘I speak’
  - ‘You speak’

**Italian subjects**

- So what about the EPP and the θ-criterion? Clearly ‘speak’ assigns a θ-role, and presumably the Italian SpecIP needs to be filled as well.
- This sounds like a familiar question… should we hypothesize that the subject in these sentences is PRO?

**Little pro**

- There is one important difference between the Italian null subject and PRO, namely the null subject in Italian appears in a position that gets Case.
  - Io parlo.
    - I speak-1s ‘I speak’
- Since PRO cannot appear in a Case-marked position, we have to take this to be something similar but different: Little pro.
Little pro

- Little pro is really just a regular pronoun, only null. It doesn’t have the fancy control properties exhibited by PRO, it appears in Case-marked positions.

- Languages seem to be divided into those which have little pro and those which don’t, often correlating with the amount of agreement on the verb (rich agreement makes it more likely that a language will have pro). Languages with pro are often called “pro-drop languages” or “null subject languages”.