Over- and undergeneration

- A theory overgenerates when it predicts that certain impossible states of affairs are indeed possible.
- A theory undergenerates when it fails to predict that certain facts are possible.
- The generalized version of X'-theory that we’ve adopted suffers from both kinds of problems.

Overgeneration: Word order

- The rules of X'-theory allow for either kind of Head/Complement order and either kind of Specifier/Head order, but word order in most languages is not so free.

\[ \text{John kissed Mary.} \]
\[ \text{*John Mary kissed.} \]
\[ \text{*Kissed Mary John.} \]
\[ \text{*Mary kissed John. (where John=Subj, Mary=Obj)} \]

This type of overgeneration can be dealt with by supposing that grammars of particular languages are parameterized.

Overgeneration: Lexical idiosyncrasy

- The rules of X'-theory say nothing about transitive versus intransitive verbs, nor the fact that verbs (and other lexical items) of discriminate with regard to what kinds of Complements they can (or must) take.

\[ \text{John smiled.} \]
\[ \text{*John smiled Mary.} \]
\[ \text{*John kissed.} \]
\[ \text{John kissed Mary.} \]
\[ \text{John is fond of Mary.} \]
\[ \text{*John is fond.} \]
Undergeneration: ‘Double complement constructions’
- The rules of X’-theory predict that each element can have at most one complement, but transitive verbs appear to have two.

\[ \text{John gave Mary a gift.} \]
\[ \text{John gave a gift to Mary.} \]

This type of undergeneration can be dealt with by VP-shells (and the decomposition hypothesis).

Undergeneration: Word order
- The rules of X’-theory only predict four possible types of basic word order in a transitive clause, but six basic types are actually attested.

<table>
<thead>
<tr>
<th>Basic Type</th>
<th>Example Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Verb Object</td>
<td>SVO (e.g., English)</td>
</tr>
<tr>
<td>Subject Object Verb</td>
<td>SOV (e.g., Japanese)</td>
</tr>
<tr>
<td>Verb Subject Object</td>
<td>VSO (e.g., Arabic)</td>
</tr>
<tr>
<td>Verb Object Subject</td>
<td>VOS (e.g., Seediq)</td>
</tr>
<tr>
<td>Object Verb Subject</td>
<td>OVS (e.g., Hixkaryana)</td>
</tr>
<tr>
<td>Object Subject Verb</td>
<td>OSV (e.g., Khwe)</td>
</tr>
</tbody>
</table>

X’-theory predicts these 2 are impossible!

We’ll talk about this next week.

Overgeneration: Case
- The rules of X’-theory say nothing about Case distinctions among DPs, i.e., why DPs inflected with certain Case morphology are restricted to certain positions.

\[ \text{He hit John.} \]
\[ \text{*John hit he.} \]
\[ \text{John hit him.} \]
\[ \text{*Him hit John.} \]

We’ll talk about this today!

Overgeneration: Pronouns, Anaphors, and other DPs
- The rules of X’-theory say nothing about restrictions on the distribution and interpretation of various kinds of DPs.

\[ \text{*Jason hit him,} \]
\[ \text{Jason hit him,} \]
\[ \text{Jason hit himself,} \]
\[ \text{*Jason hit himself,} \]

We’ll talk about this today, too!

More overgeneration
- Consider:
  - \textit{He hit John.}
  - \textit{John hit him.}
  - \textit{*John hit he.}
  - \textit{*Him hit John.}

That’s overgeneration.

A theory \textit{overgenerates} when it predicts that certain impossible states of affairs are indeed possible.

More overgeneration
- Consider:
  - \textit{He hit John.}
  - \textit{John hit him.}
  - \textit{*John hit he.}
  - \textit{*Him hit John.}

\textbf{COMPLEMENTARY DISTRIBUTION!}

The theory responsible for stating the considerations under which DPs are assigned a certain grammatical Case is called \textit{Case Theory.}
Things like Agents and Experiencers get nominative Case, but Themes, Instruments, Locations and Sources get accusative Case. The assignment of grammatical Case must be based on syntactic criteria, not semantic ones. Okay, but what exactly are the syntactic criteria?

**Case in Classical Latin**

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>dominus</td>
<td>–us</td>
</tr>
<tr>
<td></td>
<td>domini</td>
<td>–i</td>
</tr>
<tr>
<td>Vocative</td>
<td>domine</td>
<td>–e</td>
</tr>
<tr>
<td></td>
<td>domini</td>
<td>–i</td>
</tr>
<tr>
<td>Accusative</td>
<td>dominum</td>
<td>–um</td>
</tr>
<tr>
<td></td>
<td>dominūs</td>
<td>–ōs</td>
</tr>
<tr>
<td>Genitive</td>
<td>domini</td>
<td>–i</td>
</tr>
<tr>
<td></td>
<td>dominūrum</td>
<td>–ōrum</td>
</tr>
<tr>
<td>Dative</td>
<td>dominō</td>
<td>–ō</td>
</tr>
<tr>
<td></td>
<td>dominīs</td>
<td>–īs</td>
</tr>
<tr>
<td>Ablative</td>
<td>dominō</td>
<td>–ō</td>
</tr>
<tr>
<td></td>
<td>dominīs</td>
<td>–īs</td>
</tr>
</tbody>
</table>

**Case in Pali**

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>deve</td>
<td>kapi</td>
</tr>
<tr>
<td></td>
<td>madi</td>
<td>atī</td>
</tr>
<tr>
<td>Vocative</td>
<td>deva</td>
<td>kāpi</td>
</tr>
<tr>
<td></td>
<td>madi</td>
<td>atī</td>
</tr>
<tr>
<td>Accusative</td>
<td>devāhi</td>
<td>kāpi</td>
</tr>
<tr>
<td></td>
<td>madi</td>
<td>atāhi</td>
</tr>
<tr>
<td>Genitive</td>
<td>devās</td>
<td>kāpi</td>
</tr>
<tr>
<td></td>
<td>madi</td>
<td>atā</td>
</tr>
<tr>
<td>Dative</td>
<td>deve</td>
<td>kāpi</td>
</tr>
<tr>
<td></td>
<td>madi</td>
<td>atā</td>
</tr>
<tr>
<td>Ablative</td>
<td>deve</td>
<td>kāpi</td>
</tr>
<tr>
<td></td>
<td>madi</td>
<td>atā</td>
</tr>
</tbody>
</table>

**Case in Czech**

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>domín</td>
<td>–us</td>
</tr>
<tr>
<td></td>
<td>dominů</td>
<td>–i</td>
</tr>
<tr>
<td>Vocative</td>
<td>domín</td>
<td>–e</td>
</tr>
<tr>
<td></td>
<td>dominů</td>
<td>–i</td>
</tr>
<tr>
<td>Accusative</td>
<td>domín</td>
<td>–um</td>
</tr>
<tr>
<td></td>
<td>dominůř</td>
<td>–ůs</td>
</tr>
<tr>
<td>Genitive</td>
<td>domín</td>
<td>–i</td>
</tr>
<tr>
<td></td>
<td>dominůř</td>
<td>–ůř</td>
</tr>
<tr>
<td>Dative</td>
<td>domín</td>
<td>–ů</td>
</tr>
<tr>
<td></td>
<td>dominů</td>
<td>–íš</td>
</tr>
<tr>
<td>Ablative</td>
<td>domín</td>
<td>–ů</td>
</tr>
<tr>
<td></td>
<td>dominů</td>
<td>–íš</td>
</tr>
</tbody>
</table>
Case (endings) in German

<table>
<thead>
<tr>
<th>Case</th>
<th>Suffix</th>
<th>English prop.</th>
<th>Noun form</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td>-talo</td>
<td>-talo-house</td>
<td>house</td>
<td></td>
</tr>
<tr>
<td>genetive</td>
<td>-n</td>
<td>of</td>
<td>talon</td>
<td>of (a) house</td>
</tr>
<tr>
<td>essiive</td>
<td>-a</td>
<td>as</td>
<td>talona</td>
<td>as (a) house</td>
</tr>
<tr>
<td>partitive</td>
<td>-na</td>
<td>(role of)</td>
<td>talona</td>
<td>house (as an object)</td>
</tr>
<tr>
<td>translative</td>
<td>-ksi</td>
<td>to</td>
<td>taloksi</td>
<td>to a house</td>
</tr>
<tr>
<td>messiive</td>
<td>-sa</td>
<td>in</td>
<td>talosa</td>
<td>in (a) house</td>
</tr>
<tr>
<td>elatiive</td>
<td>-sta</td>
<td>from (inside)</td>
<td>taloista</td>
<td>from (a) house</td>
</tr>
<tr>
<td>illatiive</td>
<td>-an</td>
<td>into</td>
<td>taloon</td>
<td>into (a) house</td>
</tr>
<tr>
<td>adessiive</td>
<td>-la</td>
<td>at, on</td>
<td>ta-lolla</td>
<td>at (a) house</td>
</tr>
<tr>
<td>ablatiive</td>
<td>-la</td>
<td>from</td>
<td>ta-lolta</td>
<td>from (a) house</td>
</tr>
<tr>
<td>allatiive</td>
<td>-le</td>
<td>to</td>
<td>talolle</td>
<td>to (a) house</td>
</tr>
<tr>
<td>abessiive</td>
<td>-la</td>
<td>without</td>
<td>talotta</td>
<td>without (a) house</td>
</tr>
<tr>
<td>kominatiive</td>
<td>-ne</td>
<td>together with</td>
<td>talo-nesi</td>
<td>with my house(s)</td>
</tr>
<tr>
<td>instruktive</td>
<td>-ksi</td>
<td>with (aid of)</td>
<td>taloksi</td>
<td>with (a) house</td>
</tr>
</tbody>
</table>

Case in Finnish

• Case Theory is a theory of the Government and Binding framework and its successors.
• Case theory deals with a special property that all (overt*) DPs are assumed to have.
  *An ‘overt’ DP is a DP that is actually pronounced. We’ll talk about ‘covert’ (=non-overt) DPs later.
• There are two Cases that are generally recognized in English – nominative Case and accusative Case.*
  *Accusative case in English is also called objective case in many grammar books, and is often referred to as oblique case in syntax literature. ‘Oblique’ is a term that covers accusative and other non-nominative cases which are not distinguished in English, but are distinct in other languages (e.g., accusative versus dative case).

Case Theory

What determines whether a DP gets inflected with nominative Case versus accusative Case?

Subjects get nominative Case and objects get accusative Case.

That donkey expects that I will believe him.
That donkey expects me to believe him.

Case Theory will define the syntactic criteria for Case assignment – it’s not as simple as ‘subject’ & ‘object’!

Where does Case come from?

• Since the complements of verbs and prepositions get accusative Case (in English), it’s logical to presume that these complements get Case from the heads that are their sisters.
  
  • The evidence is even stronger when we look at languages other than English.
Describing Case assignment in terms of structural relations

- What structural relation characterizes the relationship between a Case-bearing DP and its Case-assigner?
  - How many structural relations do we know of?
    - Daughter/mother of?
    - Dominance?
    - Sisterhood?
- With regard to the examples above, we could just say ‘sisterhood’ or ‘c-command’, since Case assignment is always occurring from head-to-complement.
- We will call the relationship between a Case assigning element and a DP that receives Case government.

Mary needs the doctor, so I'll call him for her.

Ein Mann warf einen Stein auf mich.
'A man threw a stone at me.'

Ein Mann warf einen Stein zu mir.
'A man threw a stone to me.'

Ich liebe den Klang von dem Klavier.
'I love the sound of the piano.'
**Ich liebe den Klang von dem Klavier.**

'I love the sound of the piano.'

The governor seems to always be a lexical head, i.e., not a phrase and not a functional head.

The head that governs is always the 'closest' one.

The subject DP is not the sister of a lexical head (or any other head). But it has Case too!

**There's still one question left, though...**

**Now What?!!**

**Ich liebe den Klang von dem Klavier.**

'I love the sound of the piano.'

The subject DP is not the sister of a lexical head (or any other head). But it has Case too!

**To-Do List**

- We need to define government – the relation that holds between a Case assigner and a DP that gets assigned Case.
- This involves:
  - Saying what things can be governors and which things can’t,
  - Saying what structural relation must hold between a governor and a governed DP (It’s not just c-command!),
  - Stating any other restrictions that hold.

**What things can be governors?**

- Verbs are governors (assign Accusative in English)
  – kissed her/me/him/them etc.
- Prepositions are governors (also assign Accusative in English)
  – for/with/to/at her/me/him/them etc.
- Finite T’s are governors (assign Nominative in English)
  – He/She/We/They will/could/do etc.
- Possessive D’s can be governors (assign Genitive in English)
  – Mary’s friend’s cat...

**What structural relation must hold between a governor and a governed DP?**

- There are three basic types of Case assignment configurations to deal with:
  - instances where a head assigns Case to its complement,
  - instances where a head assigns Case to its specifier,
  - instances where a governor assigns Case to the specifier of an embedded clause.
C-command

• A c-commands B if and only if
  – A does not dominate B,
  – B does not dominate A, and
  – the first branching node dominating A also dominates B.


M-command

• A m-commands B if and only if
  – A does not dominate B,
  – B does not dominate A, and
  – the first XP dominating A also dominates B.

What phrases does X m-command? WP, YP, ZP and VP.

What phrases does Y m-command? ZP and VP.

Minimality

• Minimality is respected between A and B if and only if there is no node Z such that
  – Z is a potential governor for B,
  – Z m-commands B, and
  – Z does not m-command A.

Is minimality respected between T and DP? NO!

1) V is a potential governor
2) V m-commands DP
3) V does not m-command T

Government

• A governs B if and only if
  – A is a governor,
  – A m-commands B, and
  – minimality between A and B is respected.

Government is the structural condition for Case assignment: When a lexical head governs a DP, then it can assign Case to that DP.

So...

• Consider:
  – He hit John.
  – John hit him.
  – *John hit he.
  – *Him hit John.

What can we do about the overgeneration? There must be another restriction on grammars that we have not mentioned yet.

It’s called the Case Filter
Case filter

All overt DPs must be assigned Case.

Mary will meet a man.

Mary will meet a man.

Mary will meet a man with a beard.

Mary will meet a man with a beard.
Exceptional Case Marking (ECM)

- Consider:
  - I expect he will be absent.
  - I expect that he will be absent.
  - I expect him to be absent.
  - I expect for him to be absent.
  - *I expect that him to be absent.

Where does 'him' get its Case in examples like these?

And what to the examples tell us about the properties of the embedded complements of the verb 'expect'? 

\[ \text{I expect for him to be absent} \]

\[ \text{Does the T 'to' govern the DP 'him'?} \]

1) governor? \( \checkmark \)
2) m-command? \( \checkmark \)
3) minimality respected?

Therefore: T will NOT assign Nominative Case to the DP him.

\[ \text{I expect him to be absent} \]

\[ \text{C is a 'potential governor'} \]

This tree violates the Case Filter. (Yet the sentence sounds grammatical!)

\[ \text{For is a 'prepositional complementizer', and therefore capable of government!} \]

Therefore: 'for' will assign accusative Case to the DP him.

\[ \text{I expect him to be absent} \]

\[ \text{Now him is governed by the verb 'expect'}! \]

Exceptional Case Marking (or ECM) constructions involve verbs that assign accusative Case to the subject of an embedded non-finite clause.

Government & Binding Theory

- The basic model of the grammar we have been developing is known as Government and Binding Theory.
- Proposed by Chomsky in the early 1980’s, it spawned a huge amount of research in theoretical syntax, and is the most widely study syntactic theory in history.
- The basic proposal is a variety of Transformational Grammar – a theory of syntax that assumes each sentence has an ‘underlying representation’ that can undergo transformations to yield a surface form.
Government & Binding Theory

**X'-theory** → **D-structure**

The underlying representation of a sentence is known as its D-structure.

**Transformations**

**EPP** → **S-structure**

D-structures are generated by the rules of X'-theory and must obey the θ-criterion.

S-structures are generated from D-structures by moving constituents within the tree and/or inserting material (like expletive 'it'), as well as inflecting DPs with Case morphology. They are subject to the EPP and the Case Filter.

**Reminder**

A theory overgenerates when it predicts that certain impossible states of affairs are indeed possible.

If a syntactic theory predicts that certain sentences are grammatical when they actually are not, then the theory is overgenerating.

### Solutions to Overgeneration

- We have discussed three major ways in which the rules of X'-theory overgenerate.
  - Overgeneration due to lack of restrictions on head-complement order, specifier-X' order, and adjunct-X' order. **Parameterization!**
  - Overgeneration due X'-theory’s lack of reference to lexical idiosyncrasy, **θ-Theory!** *(including the θ-criterion)*
  - Overgeneration due to the lack of Case distinctions in X'-theory (and θ-theory). **Case Theory!**

### Even more overgeneration

- Consider:
  - *Jason hit him*
  - *Jason hit himself*
  - The rules of X'-theory can generate all of these strings, but only half of them are actually grammatical sentences. **That’s overgeneration.**

### R-expressions

- This issue is further complicated by the fact that referential expressions (or R-expressions) like do not have the same distribution as pronouns.
  - *Jason thinks that he is lucky*
  - *Jason thinks that the teacher is lucky*

The theory responsible for stating the conditions under which anaphors and pronouns are allowed is called **Binding Theory.**
**Binding Theory**

- Binding Theory is a module of grammar that places specific syntactic constraints on various types of DPs and, in doing so, regulates the referential properties of those DPs.
- The term 'binding' refers to the relationship between a DP and its antecedent (some other DP that occurs before with which a DP is co-indexed.)
- The notion of 'government' and the concept of 'binding' provide the foundation for Government & Binding Theory, the most highly developed and widely studied syntactic theory in history.

**Subcategories of DPs**

- The notions ‘Anaphor’, ‘pronoun’, and ‘R-expression’ are not syntactic primitives, but can rather be characterized in terms of two primitive, binary features ±anaphoric and ±pronominal, where the distribution of features for overt DPs is as below.

<table>
<thead>
<tr>
<th>R-expressions</th>
<th>Pronouns</th>
<th>Anaphors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronominal</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>Anaphoric</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

**Definitions:**

- $x$ binds $\alpha$ iff $x$ c-commands $\alpha$ & $x$ and $\alpha$ are co-indexed.
- $\alpha$ is free iff $\alpha$ is not bound by anything.
- The governing category of $\alpha$ is the smallest clause containing $\alpha$,
  a governor of $\alpha$ & an accessible subject for $\alpha$.

- $S$ is an accessible subject for $\alpha$ iff $S$ is in a SPECIFIER position.
Binding is pretty simple!

- You can’t bind something unless your co-indexed with it.
- You can’t bind something that’s higher up in a tree than you.
- You can bind more than one thing.

\[ \text{co-indexed} + \text{c-commanded} = \text{BOUND} \]

\( \alpha \) is free iff \( \alpha \) is not bound by anything.

The governing category of \( \alpha \) is the smallest clause containing \( \alpha \), a governor of \( \alpha \) & an accessible subject for \( \alpha \).

The governing category of \( \alpha \) is the smallest XP containing \( \alpha \), a governor of \( \alpha \) & an accessible subject for \( \alpha \).
Principles A, B & C

- Binding Theory can then be formulated in terms of the feature specifications for the various DP-types.

**Principle A:** an element that is +anaphoric must be bound in its governing category.

**Principle B:** an element that is +pronominal must be free in its governing category.

**Principle C:** an element that is −pronominal and −anaphoric must be free everywhere.

### Examples

#### Violates Principle A!

<table>
<thead>
<tr>
<th>α</th>
<th>x Resns α?</th>
<th>Subj.</th>
<th>G.C.</th>
<th>governor of α</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>John</td>
<td>Subj.</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>Bill</td>
<td>Bill</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>himself</td>
<td>himself</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>x Resns α?</th>
<th>α</th>
<th>Subj.</th>
<th>G.C.</th>
<th>governor of α</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>John</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>Bill</td>
<td>Bill</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>himself</td>
<td>himself</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
</tbody>
</table>

#### Violates Principle B!

<table>
<thead>
<tr>
<th>α</th>
<th>x Resns α?</th>
<th>Subj.</th>
<th>G.C.</th>
<th>governor of α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul</td>
<td>Paul</td>
<td>Subj.</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>the fool</td>
<td>the fool</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>him</td>
<td>him</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>x Resns α?</th>
<th>α</th>
<th>Subj.</th>
<th>G.C.</th>
<th>governor of α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul</td>
<td>Paul</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>the fool</td>
<td>the fool</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>him</td>
<td>him</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
</tbody>
</table>

#### Violates Principle C!

<table>
<thead>
<tr>
<th>α</th>
<th>x Resns α?</th>
<th>Subj.</th>
<th>G.C.</th>
<th>governor of α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul</td>
<td>Paul</td>
<td>Subj.</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>the fool</td>
<td>the fool</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>the exam</td>
<td>the exam</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>x Resns α?</th>
<th>α</th>
<th>Subj.</th>
<th>G.C.</th>
<th>governor of α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul</td>
<td>Paul</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>the fool</td>
<td>the fool</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
<tr>
<td>the exam</td>
<td>the exam</td>
<td>™</td>
<td>Vp</td>
<td>TP</td>
</tr>
</tbody>
</table>

---

**Principle A is satisfied!**

**Principle B is satisfied!**

**Principle C is satisfied!**
The missing link
- The discussion above invites another interesting question: two binary features, ±Anaphoric and ±Pronominal, yield four logical possibilities. Why, then, do we only have three overt NP types?

<table>
<thead>
<tr>
<th></th>
<th>[+anaphoric]</th>
<th>[-anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>?</td>
<td>pronouns</td>
</tr>
<tr>
<td>[-pronominal]</td>
<td>anaphors</td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

What would ‘?’ do?
- Since ‘?’ is +Pronominal, it must obey Principle B: so ‘?’ will never appear where Anaphors like *himself* appear, since ‘?’ must be free in its governing category.

<table>
<thead>
<tr>
<th></th>
<th>[+anaphoric]</th>
<th>[-anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>?</td>
<td>pronouns</td>
</tr>
<tr>
<td>[-pronominal]</td>
<td>anaphors</td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

What would ‘?’ do?
- On the other hand, since ‘?’ is +Anaphoric, it must obey Principle A: so ‘?’ will never appear where pronouns like *him* appear, since ‘?’ must be bound in its governing category.

<table>
<thead>
<tr>
<th></th>
<th>[+anaphoric]</th>
<th>[-anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>?</td>
<td>pronouns</td>
</tr>
<tr>
<td>[-pronominal]</td>
<td>anaphors</td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

What would ‘?’ do?
- In other words:

‘?’ must be both bound and free in its governing category.

<table>
<thead>
<tr>
<th></th>
<th>[+anaphoric]</th>
<th>[-anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>?</td>
<td>pronouns</td>
</tr>
<tr>
<td>[-pronominal]</td>
<td>anaphors</td>
<td>R-expressions</td>
</tr>
</tbody>
</table>

impossible?

Only barefeet in house!!!

No barefeet in my house!!!

Solution?
Be free in GC!
Be bound in GC!

Principle A

The missing link = PRO

<table>
<thead>
<tr>
<th>[+anaphoric]</th>
<th>[-anaphoric]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+pronominal]</td>
<td>PRO, pronouns</td>
</tr>
<tr>
<td>[-pronominal]</td>
<td>anaphors, R-expressions</td>
</tr>
</tbody>
</table>

John decided to leave, 1

John decided him to leave, 1

This clause has no subject.
Violates the EPP!

Violates the θ-Criterion!

This verb has no argument to which to assign its θ-role.

John decided John to leave, 1

John decided John to leave, 1

If the 2 DPs are coindexed, then The lower R-expression is bound.

Violates Principle C!
It doesn’t matter, though! PRO doesn’t need case because it is not an overt DP!

PRO theorem:
PRO must be un governed!

Corollary of the PRO theorem:
PRO must be covert!

Suppose PRO is an overt DP.

Case Filter

Violates Principle A

Principle A

Violates Principle B

Principle B

See you next time,