The Lexicon

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Constraining X-bar theory using the mental dictionary

Overgeneration

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- It over-generates (generates ungrammatical sentences)

Overgeneration

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- X-bar theory says complements are optional:

  X' → X' (WP)

  - The philosopher loves caramel apples
  - The philosopher smiled

Overgeneration

- X-bar theory says complements are optional:

  X' →X' (WP)

  - The philosopher loves caramel apples
  - The philosopher smiled

- BUT

  - *The philosopher loves
  - *The philosopher smiled the breadbox.

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- Certain verbs require objects, others require that they don't have them, others require two.
- It depends on the particular verb.

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  - meaning of word
  - requirements about other words they occur with.

Reminder: Subcategories of V

[NP __]	intrans 1	*arrive*
[NP __ NP]	trans 1	*hit*
[NP __ {NP/CP}]	trans 2	*ask*
[NP __ NP NP]	ditrans 1	*spare*
[NP __ NP PP]	ditrans 2	*put*
[NP __ NP {NP/PP}]	ditrans 3	*give*
[NP __ NP {NP/PP/CP}]	ditrans 4	*tell*

Selectional Restrictions

Selectional Restrictions

- Selectional Restrictions limit the semantic properties of arguments
  - #My toothbrush loves raisins.
  - #The bolt of lightening killed the rock.

Thematic Relations

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- A way of encoding selectional restrictions.
- semantic relation between the argument and the predicate.

Thematic Relations

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- Agent: initiator of the action, capable of volition
  - Brad hit Andrew

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We won't really distinguish agents from natural phenomena

Thematic Relations

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- Experiencer: the argument that experiences or perceives the event
  - Becki saw the Eclipse
  - Syntax frightens Jim
  - Susanna loves cookies
  - A falling rock hit Terry.

Thematic Relations

Thematic Relations

- Theme (also patient and percept) the entity that undergo actions, are moved, experienced or perceived
  - Susanna loves cookies
  - A falling rock hit Terry.
  - The syntactician bought a phonology textbook.

Thematic Relations

Thematic Relations

- Goal: The entity towards which motion takes place. Goals may involve abstract motion.
  - A falling rock hit Terry.
  - The syntactician bought a phonology textbook.
  - Millie went to Chicago
  - Travis was given a semantics article.

Thematic Relations

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- Recipient: A special kind of goal that involves a change of possession
  - Julie gave Jessica the book
  - Roy received a scolding from Sherilyn.

Thematic Relations

- Recipient: A special kind of goal that involves a change of possession
  - Julie gave Jessica the book
  - Roy received a scolding from Sherilyn.
- Source: The opposite of goal, entity from which movement occurs.
  - Bob gave Steve the Syntax assignment
  - Stacy came directly from Sociolinguistics class.

Thematic Relations

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- Location: Place where action occurs
  - Andrew is in Tucson's finest apartment
  - We're all at school.

Thematic Relations

- Location: Place where action occurs
  - Andrew is in Tucson's finest apartment
  - We're all at school.
- Instrument: The entity with which action occurs.
  - Patrick hacked the computer apart with an axe
  - This key will open the door to the Douglass building.

Thematic Relations

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- Beneficiary: The entity for whom the action occurs
  - He bought these flowers for Jason
  - She cooked Matt dinner.

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There are many other thematic relations, but these will do for our purposes.

Theta Roles

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- Thematic relation ≠ theta role.
- An argument can have many thematic relations, but only one theta role.

Theta Roles

- Brian gave the doorknob to Mary

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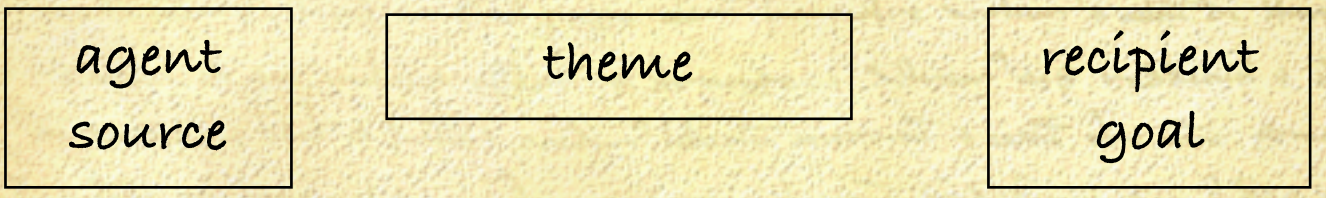

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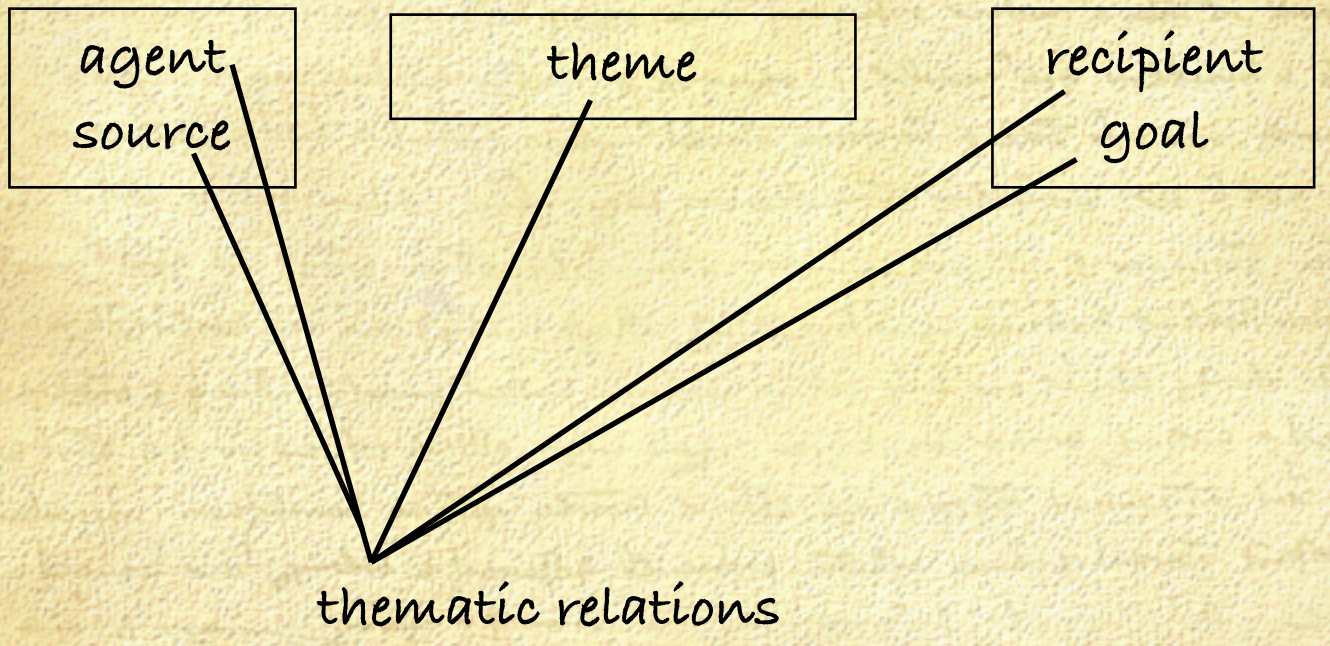

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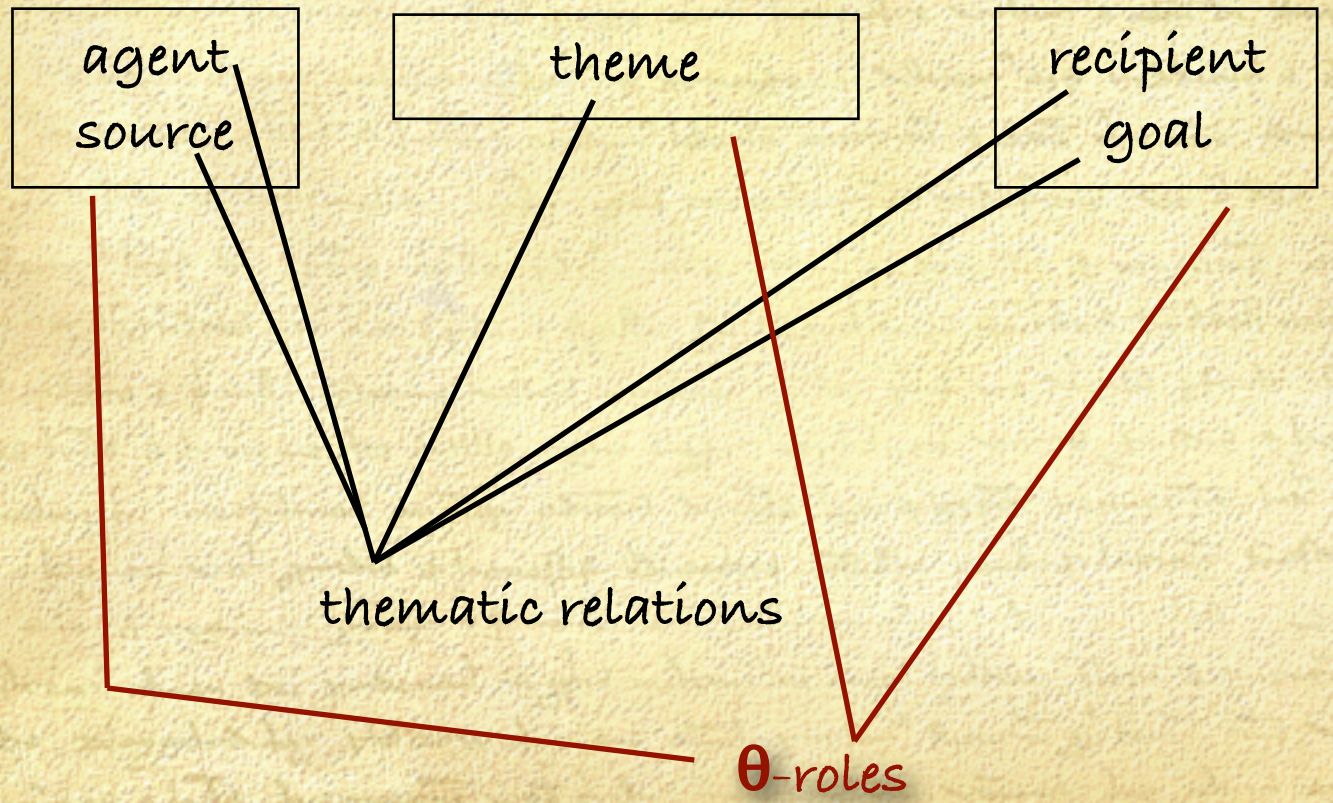

A note on the term "Theta Role"

- Sometimes we talk about the "agent theta role". Technically this is incorrect. Agent refers to the thematic relation. But when we are talking about the "Agent theta role" we mean the theta role whose most prominent thematic relation is the Agent.

One to one match of theta roles & arguments

- 'put' requires an agent, a theme, a goal

  John put the book on the table
  *put the book on the table
  *John put the book
  *John put on the table
  *John put the book the pen on the table
  *The rock put the sky with the fork

- Too many, too few, or the wrong kinds of arguments result in ungrammaticality.

Theta Grids

'put'

Agent/ Source DP	Theme DP	Goal PP
i	j	k

$[John]_i$ put $[the\ book]_j$ $[on\ the\ table]_k$

These indices (indexes) are NOT The same as the indices used in binding theory

Theta Grids

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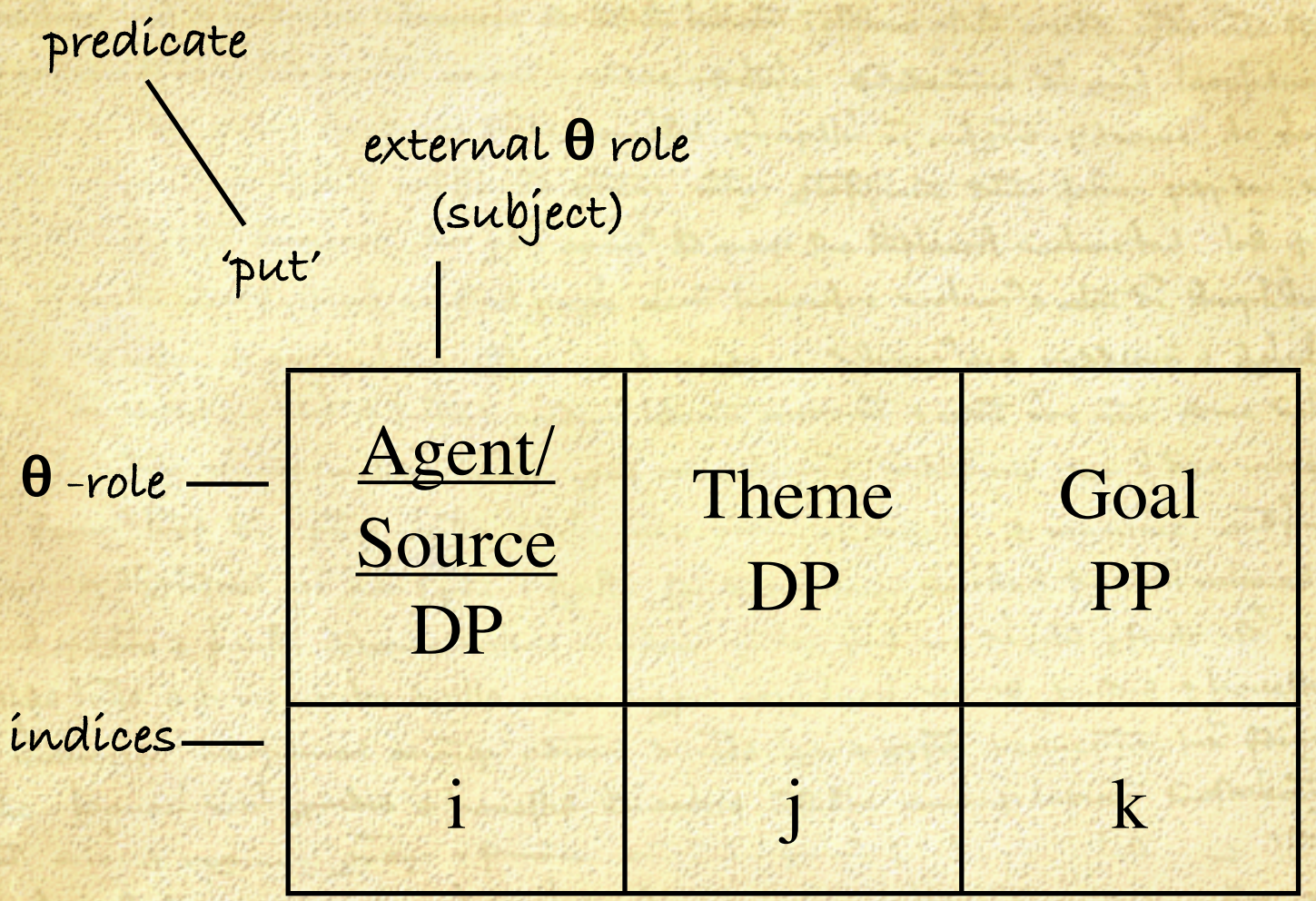

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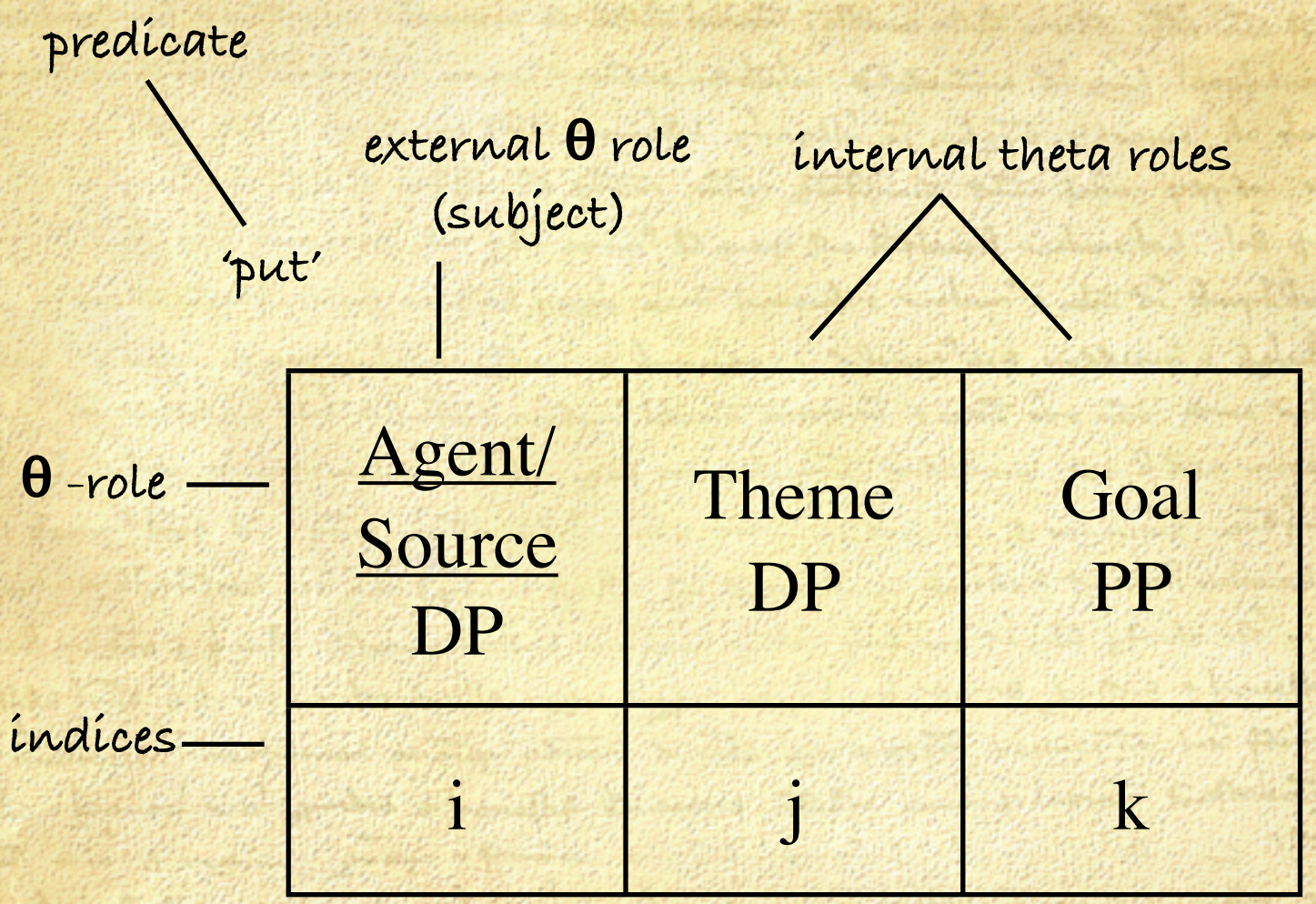

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An important point!

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- Adjuncts are NOT included in theta grids.

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- Adjuncts are NOT included in theta grids.
- (With verbs) Adjuncts are optional, complements & subjects are obligatory:
  - John put the book on the table on Friday
  - John put the book on the table
  - *John put the book on Friday

The Theta Criterion

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- A sentence meets the theta criterion iff:
  - Every argument must have one and only one theta role AND
  - Every theta role must be assigned (indexed to) to one and only one an argument.

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There is a one to one correspondence between the number of theta roles and the number & type of arguments

'love'

Experiencer DP	Theme DP

DP DP

DP DP

DP DP

'love'

Experiencer DP	Theme DP

Megan$_i$ loves Kevin$_j$

Experiencer DP	Theme DP
i	j

DP DP

DP DP

'love'

Experiencer DP	Theme DP

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Experiencer DP	Theme DP
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Experiencer DP	Theme DP	
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- The X-bar rules generate trees. These trees are then checked against constraints (like the binding conditions and the theta criterion) to make sure they are ok.

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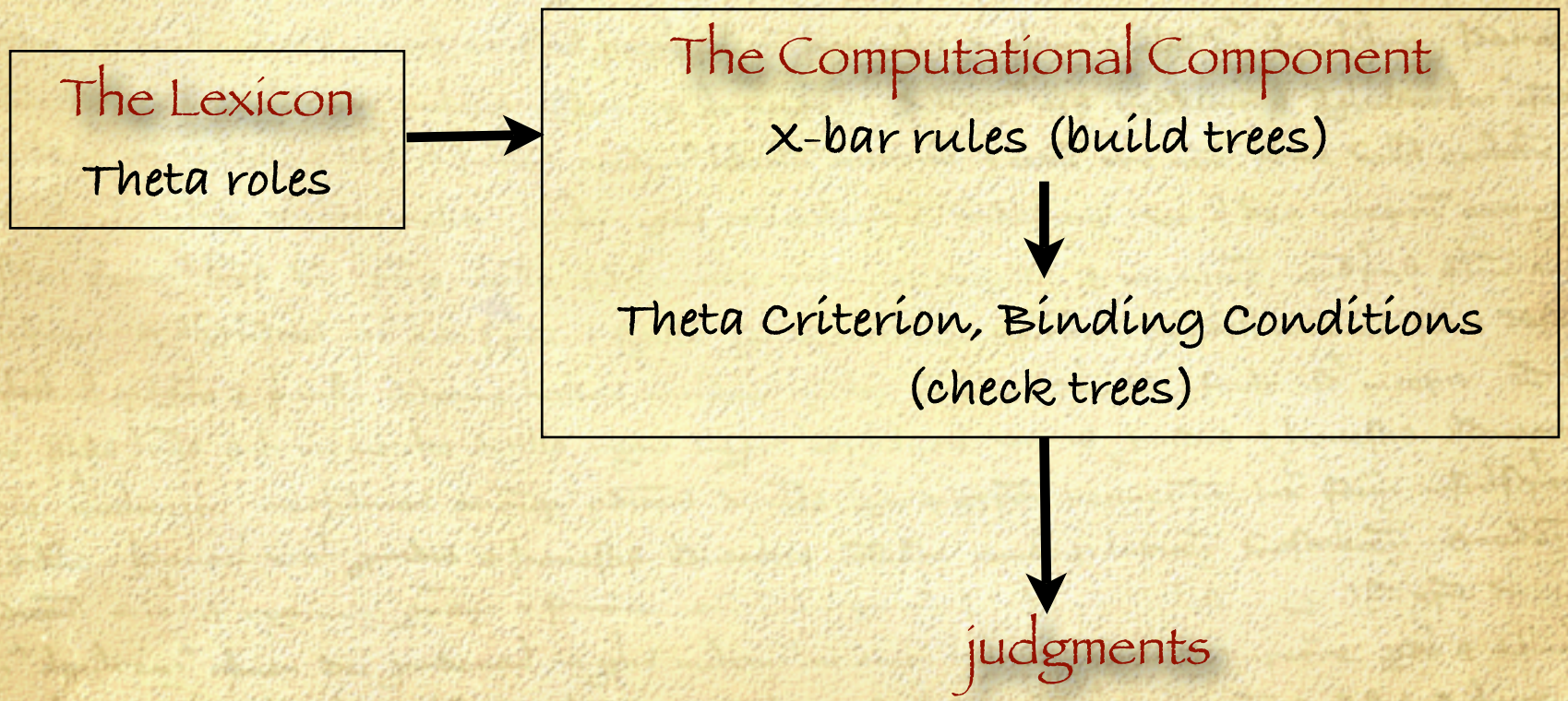
- The constraints filter out badly constructed trees.

The Model of the Grammar (first try)



NPs without theta roles?

- It rained
- It snowed
- It hailed
- It is likely that Bob left
- These are called Expletives or Pleonastics.

Two Kinds of 'it'

- it bit me on the leg — pronoun
- it is likely that I'll leave — expletive

Weather verbs & propositional verbs

'rain' takes *no* arguments

'is likely' [That John will leave]i is likely
It is likely [that John will leave]i

Proposition CP
i

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    - Every sentence must have a subject.
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- There is another constraint on the grammar:
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  - Every sentence must have a subject.
  - *rain (meets theta criterion, but violates EPP).
- Rule of Expletive insertion:
  - insert an 'it' in subject position.

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- What do *you* do with verbs that have no theta roles to assign? Why doesn't Expletive insertion cause a violation of the theta criterion.

A contradiction

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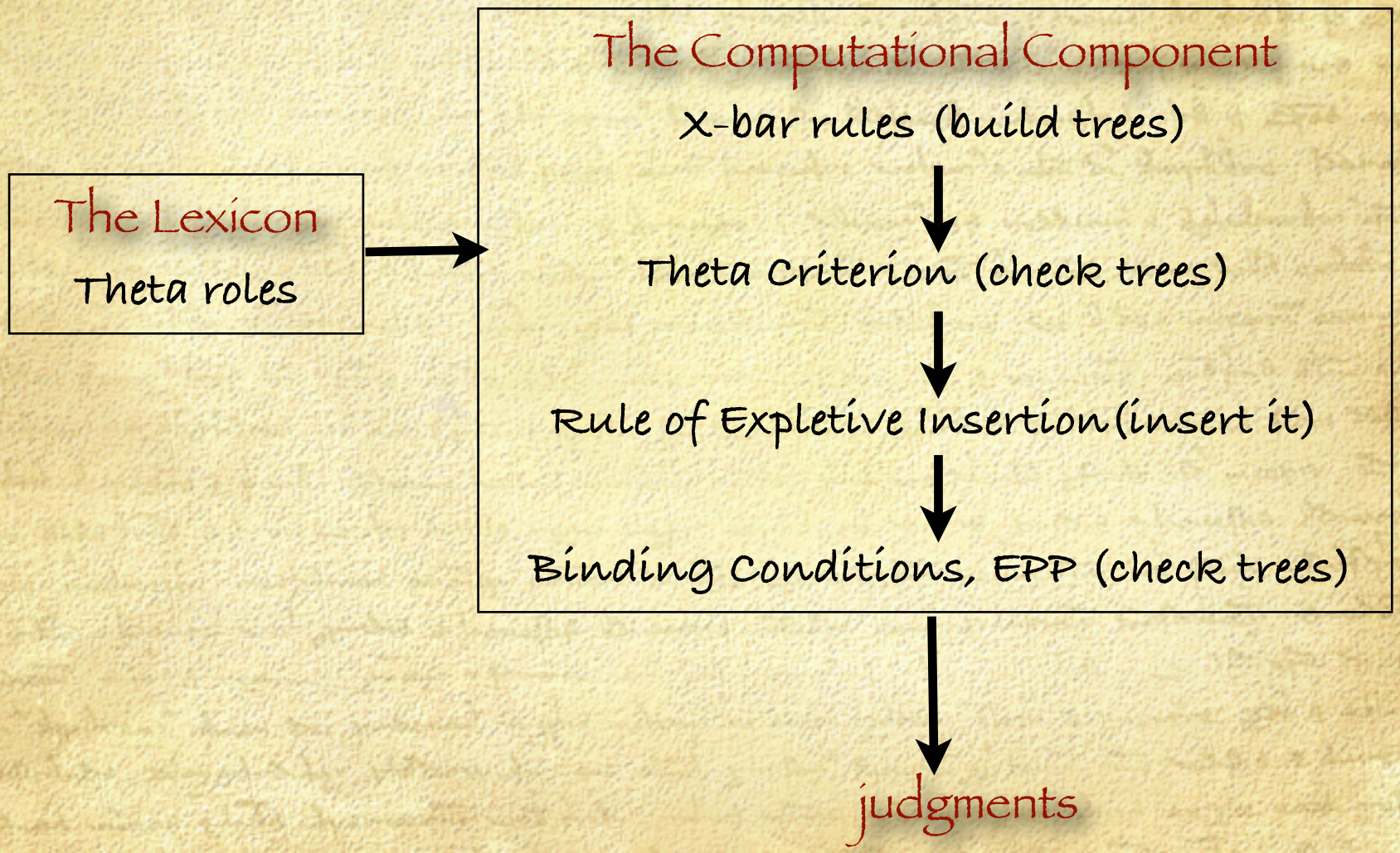
- What do *you* do with verbs that have no theta roles to assign? Why doesn't Expletive insertion cause a violation of the theta criterion.
- Solution lies in ordering

The Model of the Grammar (second try)



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- Predicate: a relation between entities
- Arguments: the participants in a predicate
- Thematic relations describe the semantic properties of arguments

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- EPP requires every sentence to have a subject

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- There is ordering of operations.
  - Constraints filter out bad sentences.
  - Order: X-bar→Theta Criterion → Expl. Insertion→ EPP & Binding conditions → Judgments.