

A decorative border in the top-left corner of the slide, composed of a grid of small orange squares and rectangles, creating a geometric pattern.

Ling 566

Oct 21, 2024

Lexical Types

Overview

- Motivation for lexical hierarchy
- Default inheritance
- Tour of the lexeme hierarchy
- The Case Constraint
- *pos* vs. *lexeme*
- Reading Questions

Motivation

- We've streamlined our grammar rules...
- ...by stating some constraints as general principles
- ...and locating lots of information in the lexicon.
- Our lexical entries currently stipulate a lot of information that is common across many entries and should be stated only once.
- Examples?
- Ideally, particular lexical entries need only give phonological form, the semantic contribution, and any constraints truly idiosyncratic to the lexical entry.

Lexemes and Words

- **Lexeme:** An abstract proto-word which gives rise to genuine words. We refer to lexemes by their ‘dictionary form’, e.g. ‘the lexeme *run*’ or ‘the lexeme *dog*’.
- **Word:** A particular pairing of form and meaning. *Running* and *ran* are different words

Q: Is lexeme the same as lemma?

Lexical Types & Lexical Rules

- Lexemes capture the similarities among *run*, *runs*, *running*, and *run*.
- The lexical type hierarchy captures the similarities among *run*, *sleep*, and *laugh*, among those and other verbs like *devour* and *hand*, and among those and other words like *book*.

Q: What do *devour* and *book* have in common?

A: The SHAC

- Lexical rules capture the similarities among *runs*, *sleeps*, *devours*, *hands*,...



The Imperative Rule just does away with that SPR requirement, without providing an overt constituent:



Sneaky!

0

Unfair! The verb needed that SPR!

0

Confusing! How can a requirement just go away?

0

Subtle! I can see it works, but it's still surprising

0

Elegant!

0

Default Inheritance

Q: Why do we have default inheritance?

A: Generalizations with exceptions are common:

- Most nouns in English aren't marked for CASE, but pronouns are.
- Most verbs in English only distinguish two agreement categories (*3sing* and *non-3sing*), but *be* distinguishes more.
- Most prepositions in English are transitive, but *here* and *there* are intransitive.
- Most nominal words in English are 3rd person, but some (all of them pronouns) are 1st or 2nd person.
- Most proper nouns in English are singular, but some (mountain range names, sports team names) are plural.

Default Inheritance, Technicalities

If a type says
ARG-ST / < NP >,
and one of its
subtypes says
ARG-ST < >,
then the ARG-ST
value of instances of
the subtype is < >.

If a type says
ARG-ST < NP >,
and one of its
subtypes says
ARG-ST < >,
then this subtype can
have no instances,
since they would
have to satisfy
contradictory
constraints.

Default Inheritance, More Technicalities

- If a type says $\text{MOD} / \langle S \rangle$, and one of its subtypes says $\text{MOD} \langle [\text{SPR} \langle \text{NP} \rangle] \rangle$, then the MOD value of instances of the subtype is what?

$$\left[\text{MOD} \left\langle \left[\begin{array}{ll} \text{HEAD} & / \textit{verb} \\ \text{SPR} & \langle \text{NP} \rangle \\ \text{COMPS} & / \langle \rangle \end{array} \right] \right\rangle \right]$$

- That is, default constraints are ‘pushed down’

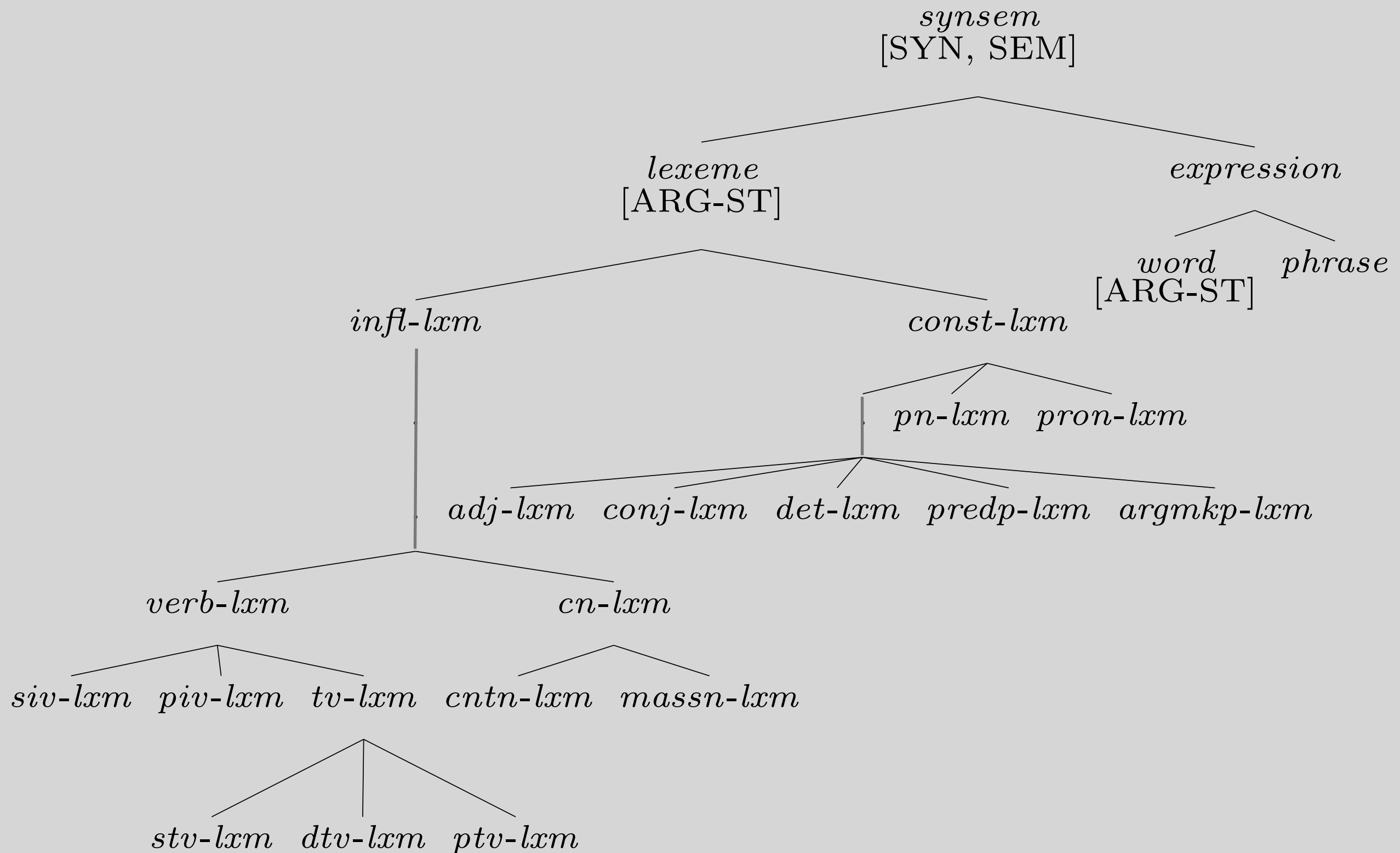
Question on Default Inheritance

Q: Can a grammar rule override a default constraint on a word?

A: No. Defaults are all ‘cached out’ in the lexicon.

- Words as used to build sentences have only inviolable constraints.

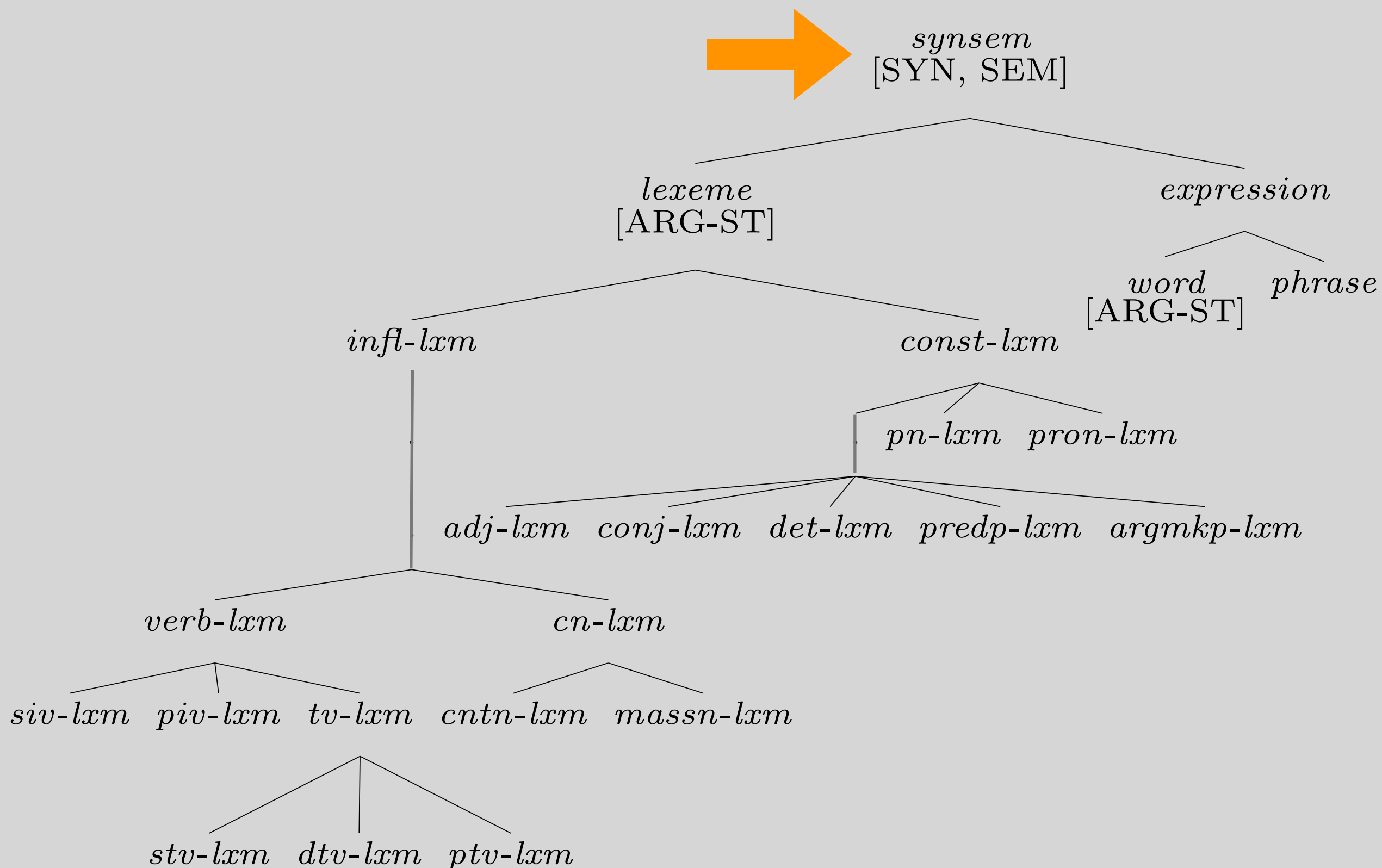
Our Lexeme Hierarchy



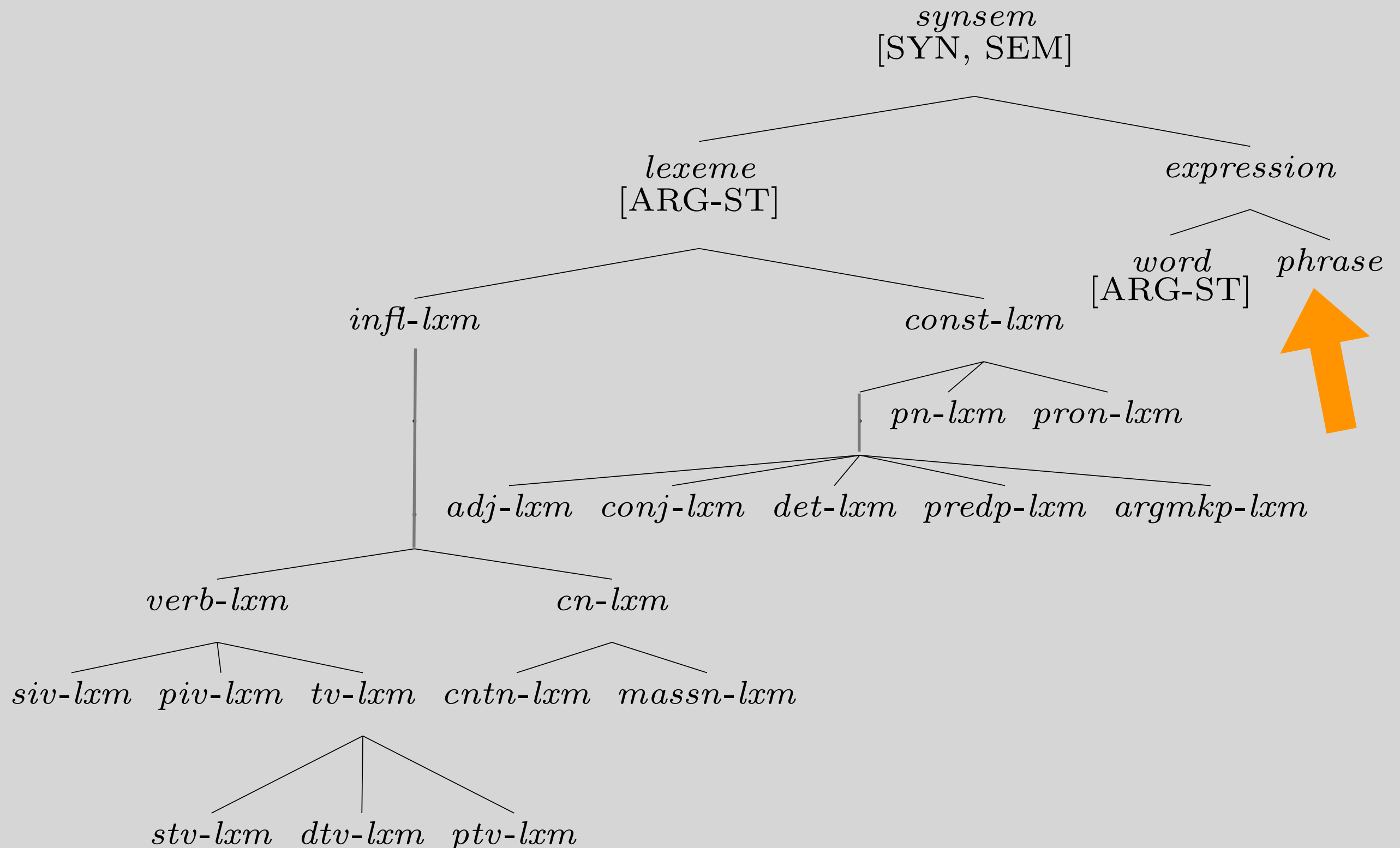
Functions of Types

- Stating what features are appropriate for what categories
- Stating generalizations
- Constraints that apply to (almost) all instances
- Generalizations about selection -- where instances of that type can appear

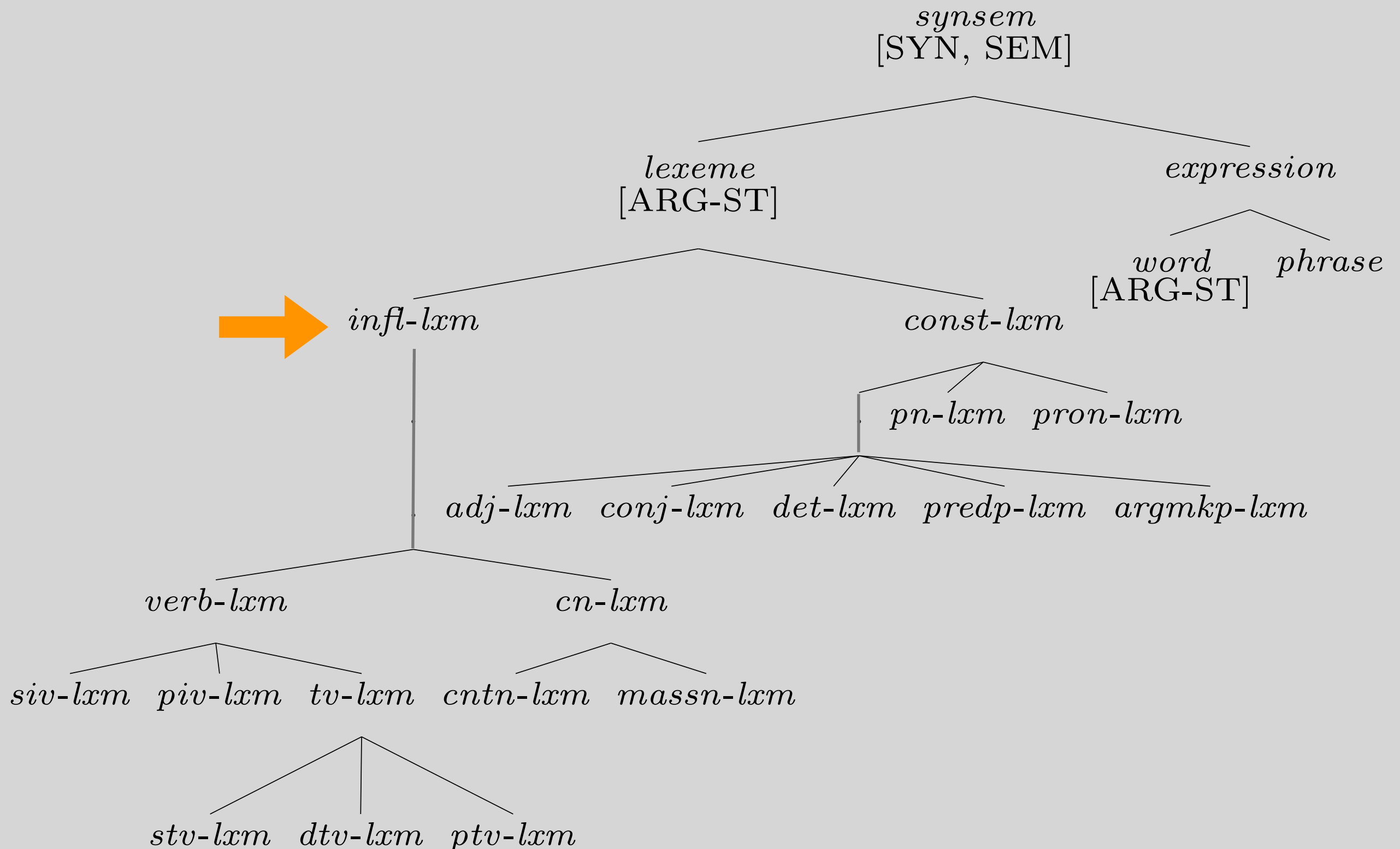
Every *synsem* has the features SYN and SEM



No ARG-ST on *phrase*



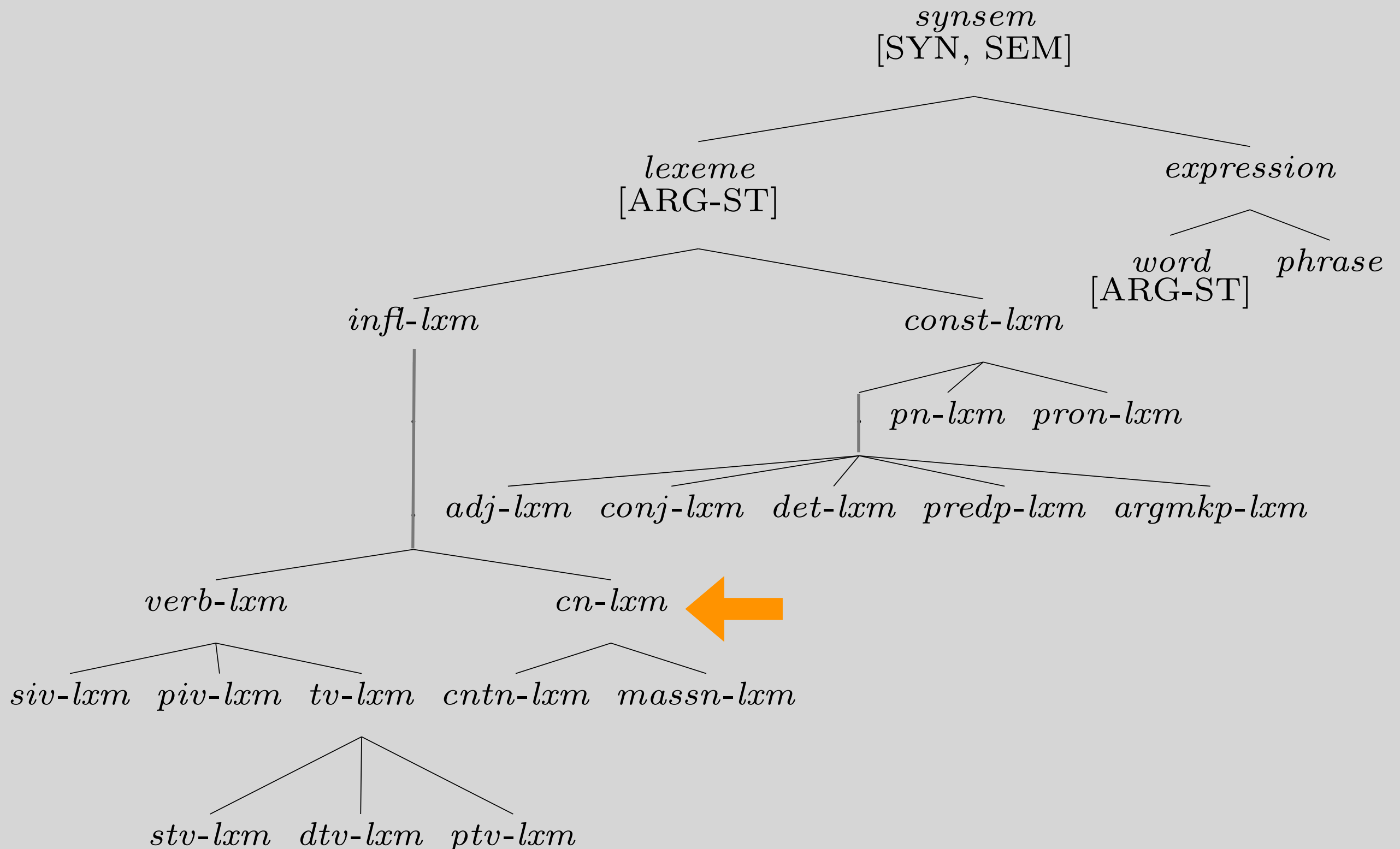
A Constraint on *infl-lxm*: the SHAC



A Constraint on *infl-lxm*: the SHAC

$$infl-lxm : \left[\begin{array}{c} SYN \\ VAL \\ HEAD \end{array} \left[\begin{array}{c} SPR \left\langle [AGR \quad \boxed{1}] \right\rangle \\ [AGR \quad \boxed{1}] \end{array} \right] \right]$$

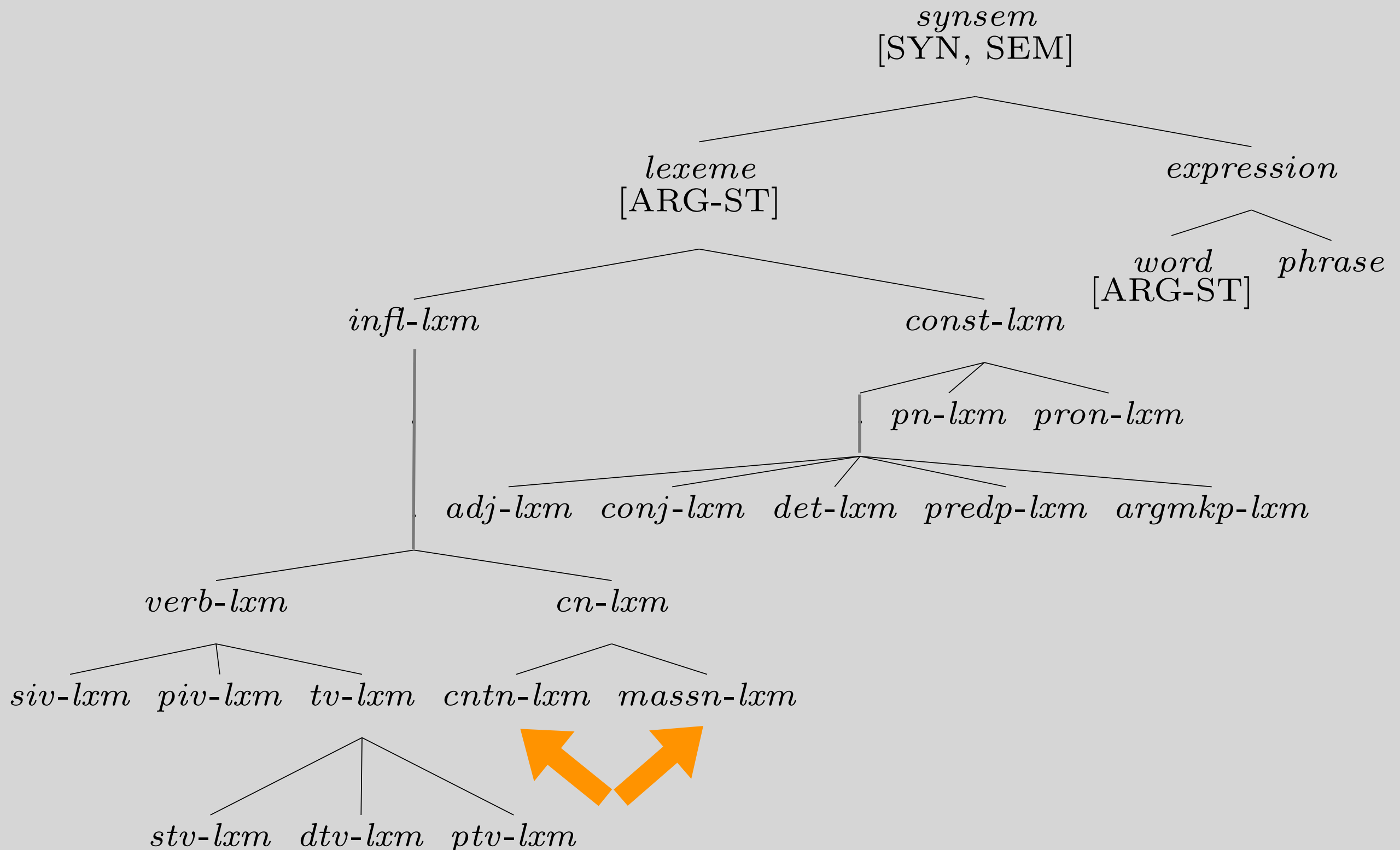
Constraints on *cn-lxm*



Constraints on *cn-lxm*

$$cn-lxm : \left[\begin{array}{l} SYN \\ SEM \\ ARG-ST \end{array} \left[\begin{array}{l} HEAD \left[\begin{array}{l} noun \\ AGR \quad [PER \ 3rd] \end{array} \right] \\ VAL \left[\begin{array}{l} SPR \quad \left\langle \left[\begin{array}{l} HEAD \\ INDEX \end{array} \right] \det \right\rangle \\ \left[\begin{array}{l} MODE \quad / \text{ref} \\ INDEX \quad i \end{array} \right] \end{array} \right] \end{array} \right] \right]$$

Formally Distinguishing Count vs. Mass Nouns

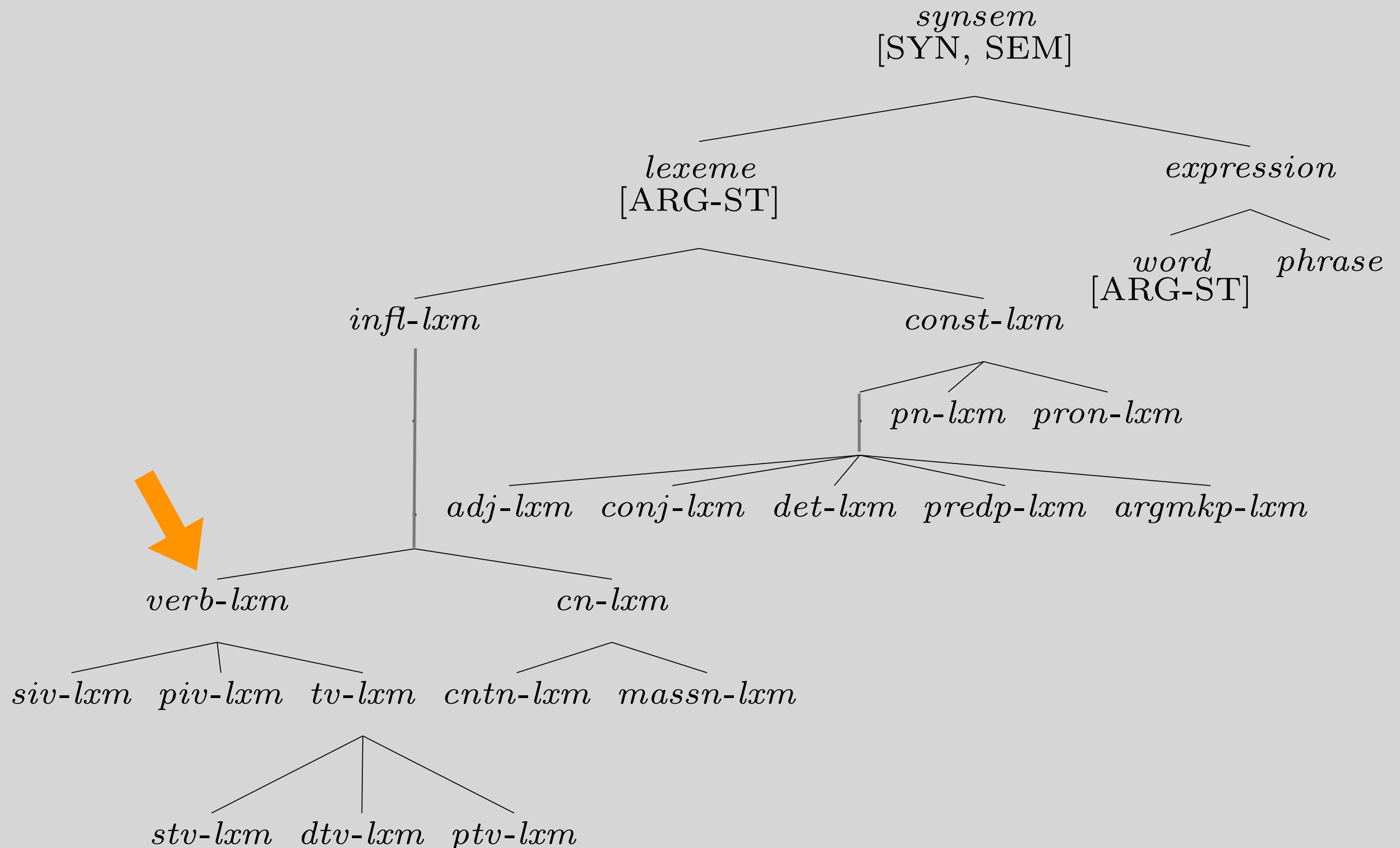


Formally Distinguishing Count vs. Mass Nouns

$cntn-lxm : \left[SYN \left[VAL \left[SPR \langle [COUNT +] \rangle \right] \right] \right]$

$massn-lxm : \left[SYN \left[VAL \left[SPR \langle [COUNT -] \rangle \right] \right] \right]$

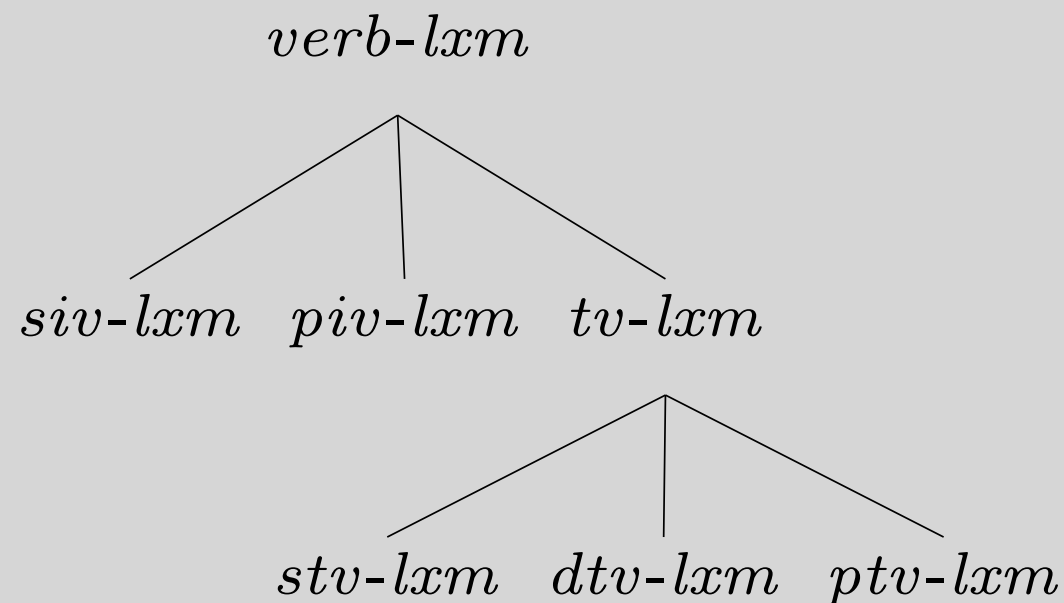
Constraints on *verb-lxm*



Constraints on *verb-lxm*

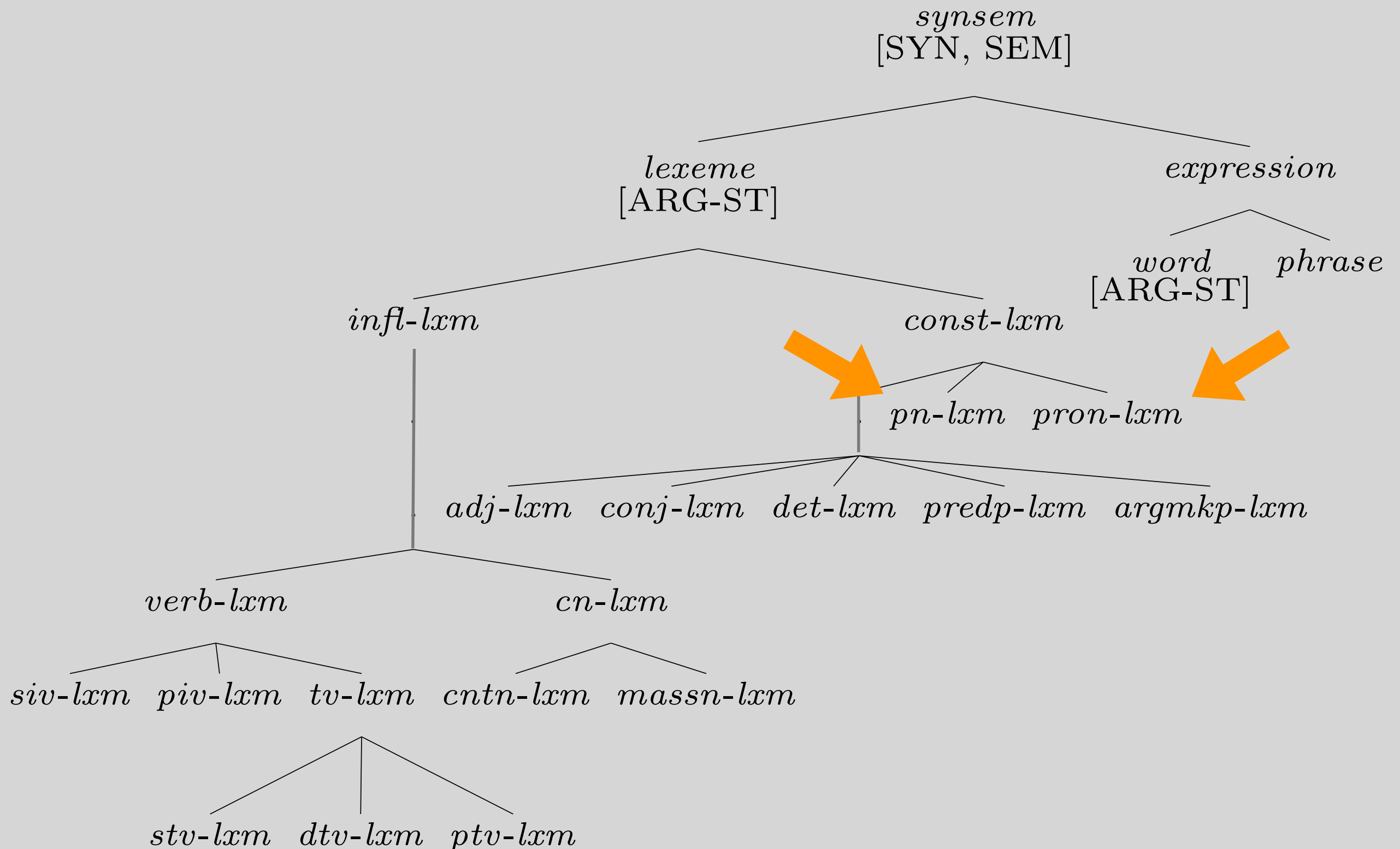
verb-lxm:
$$\begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{HEAD} & \textit{verb} \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{MODE} & \textit{prop} \end{bmatrix} \\ \text{ARG-ST} & / \langle \text{NP}, \dots \rangle \end{bmatrix}$$

Subtypes of *verb-lxm*



- *verb-lxm*: [ARG-ST < NP, ... >]
 - *siv-lxm*: [ARG-ST < NP >]
 - *piv-lxm*: [ARG-ST < NP, PP >]
 - *tv-lxm*: [ARG-ST < NP, NP, ... >]
 - *stv-lxm*: [ARG-ST < NP, NP >]
 - *dtv-lxm*: [ARG-ST < NP, NP, NP >]
 - *ptv-lxm*: [ARG-ST < NP, NP, PP >]

Proper Nouns and Pronouns



Proper Nouns and Pronouns

$$pn-lxm: \left[\begin{array}{l} SYN \left[\begin{array}{l} HEAD \left[\begin{array}{l} noun \\ AGR \left[\begin{array}{l} PER \quad 3rd \\ NUM \quad / \quad sg \end{array} \end{array} \right] \end{array} \right] \\ SEM \left[\begin{array}{l} MODE \quad ref \end{array} \right] \\ ARG-ST \quad / \quad \langle \rangle \end{array} \right]$$

$$pron-lxm: \left[\begin{array}{l} SYN \left[\begin{array}{l} HEAD \quad noun \end{array} \right] \\ SEM \left[\begin{array}{l} MODE \quad / \quad ref \end{array} \right] \\ ARG-ST \quad \langle \rangle \end{array} \right]$$

The Case Constraint

An outranked NP is [CASE acc].

- object of verb ✓
- second object of verb ✓
- object of argument-marking preposition ✓
- object of predication preposition (✓)

The Case Constraint, continued

An outranked NP is [CASE acc].

- Subjects of verbs
 - Should we add a clause to cover nominative subjects?
 - No.

We expect them to leave. (Chapter 12)

- Lexical rules for finite verbs will handle nominative subjects.
- Any other instances of case marking in English?
- Does it apply to case systems in other languages?

No: The Case Constraint is an English-specific constraint.

Apparent redundancy

- Why do we need both the *pos* subhierarchy and lexeme types?
- *pos*:
 - Applies to words and phrases; models relationship between them
 - Constrains which features are appropriate (no AUX on *noun*)
- *lexeme*:
 - Generalizations about combinations of constraints

Lexical Types & Lexical Rules

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- Lexical rules capture the similarities among *runs*, *sleeps*, *devours*, *hands*,...



Is it clear what type of regularities are captured by lexical types and lexical rules? (take 2)



Not clear why we need either

0

Not clear what the difference is

0

Yes ...?

0

Yes

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Overview

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HW4 tips

- Ch 7 Problem 1:
 - Not grading you on the judgments, but on the sentences constructed and matching classification to the judgments
 - Be sure to keep the same verb + preposition pair
- Ch 8 grammar summary is in Ch 9
- In general: If it's not clear what the problems are asking for, post to Canvas

RQs: Lexical sequence

- "Lexical entries, like other parts of the grammar, are descriptions. Lexical sequences (both those that satisfy lexical entries and those licensed by lexical rules) are models."
- I think the model vs. description comparison was touched on in an early class, but I don't remember the details. Can you say more about it? Also, what does it mean for a lexical sequence to "satisfy" a lexical entry?

RQs: *lexeme v. expression*

- The text says that “we want all daughters in syntactic structures to be expressions, rather than lexemes,” even though constant lexemes don’t change when they become words. Why do we still need to distinguish lexemes from expressions in the grammar, and why are only expressions allowed in argument structures if they can sometimes be identical in form?

RQs: Why lexemes?

- I think throughout these 4 sections, I've been wrestling with the necessity of adding lexeme as an extra layer of abstraction to the grammar structure. It seems to overlap with AGR and VAL a lot. If the generalized categories already contain the information, why not get rid of AGR and VAL?
- What will be the difference between lexical entries and lexemes for us?

RQs: Lexical integrity

- Is the main motivation for lexemes vs. words just inflectional morphology? Could we not split up the word by the morphology and analyze it separately? Similar to what we did in Ch6.4 with 's as the head of the DP.

RQs: Ch 7 review

- I don't understand the difference between *I wrapped the blanket around me* and *I wrapped the blanket around myself*.
- Could you explain to/remind me of the difference between *me* and *myself* which makes these prepositions classified differently? Would it be a valid argument to say *me* functions as an allomorph of *myself* in the first example? Or do the 2 sentences mean different things?