

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 24, 2024

Lexical Types

Don't forget to vote!

- <https://cele.uw.edu/students/huskies-vote/>

Did you know the University of Washington has one of the highest voter participation rates of any college or university in the nation? This legacy is something we can all be proud of. And it's something we can continue. Learn how below. **#HuskiesVote**



VOTING FAQs

Learn about the UW's voter engagement efforts and access voter resources.
cele.uw.edu/students/huskies-vote



TAKE ACTION

Learn the logistics of voting as a college student and register to vote.
studentvote.org

WHEN TO VOTE

October 18	Start of voting (WA)
October 28	Last day to register online (WA)
November 5	Last day to register in person (WA) (Same day registration!)
November 5	Election Day: Vote by 8 p.m.

This postcard was produced in partnership with the UW's Democracy Dawgs and the Community Engagement and Leadership Education (CELE) Center in Undergraduate Academic Affairs.

WHERE TO VOTE

Ballot box *Schmitz Hall, 1400 NE Campus Pkwy*

- Official King County ballot box is open 24 hours a day.
- If you are voting closer to Election Day (Tuesday, November 5, 2024) this option will guarantee that your ballot is received. Ballot boxes close at 8 p.m. on Election Day.

By mail *Willow Hall desk (north campus) or Lander Hall desk (west campus)*

- Regional desks will accept outgoing mail to the USPS.
- You do not need to put a stamp on Washington state ballots.
- **Vote early** if voting by mail: Mail-in ballots **MUST** be postmarked by 8 p.m. on Election Day and USPS pickup times vary.

Student Engagement Voting Center *Husky Union Building*

- Opens in early November; check cele.uw.edu/students/huskies-vote for hours.
- Cast a ballot, get a replacement ballot and register to vote up until November 5.



ADVOCATE FOR YOURSELF

The King County Elections Office will mail general election ballots on October 18. If you have questions or issues, email elections@kingcounty.gov or visit the Student Engagement Voting Center in the HUB.
kingcounty.gov/depts/elections



RESEARCH YOUR CHOICES

The UW Libraries offer excellent, non-partisan voter guides about candidates and ballot measures.
guides.lib.uw.edu/elections



VOLUNTEER

Kickstart your volunteering. Join undergrads across campuses nationwide to activate the largest voting block in the country.
cele.uw.edu/students/huskies-vote

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*,...

Is it clear what type of regularities are captured by lexical types and lexical rules?



Not clear why we need either

0

Not clear what the difference is

0

Yes ...?

0

Yes

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’

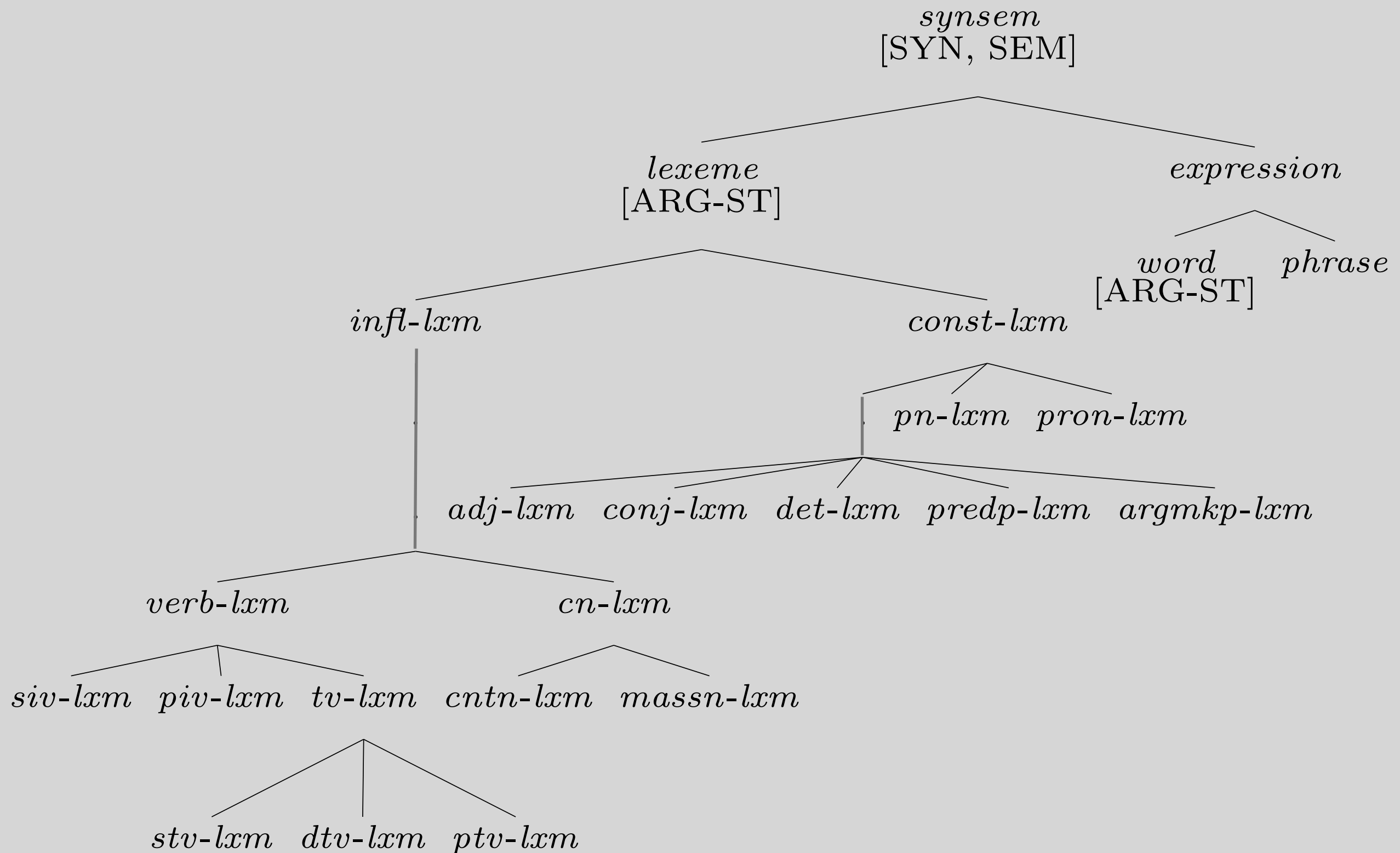
Question on Default Inheritance

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.

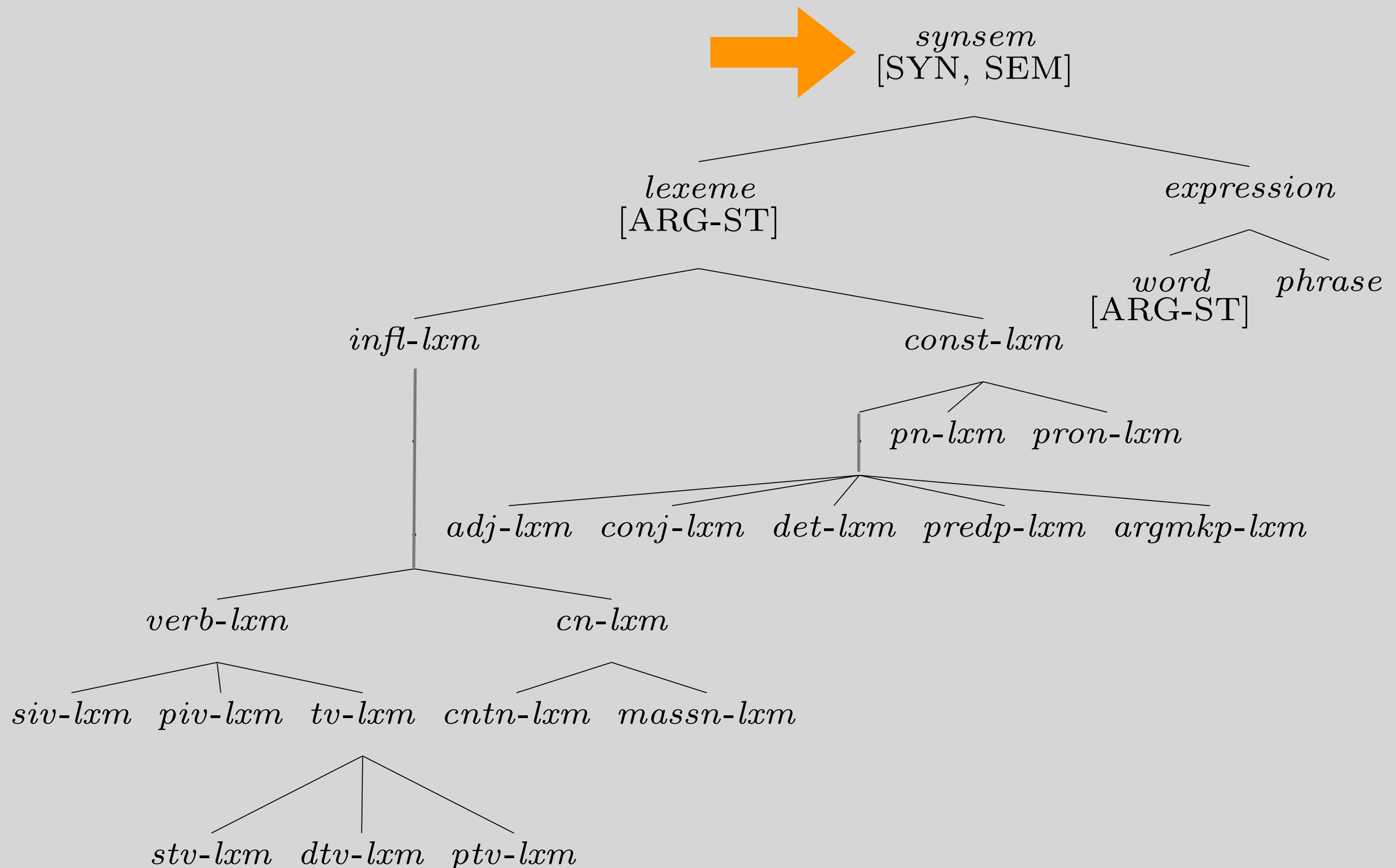
Our Lexeme Hierarchy



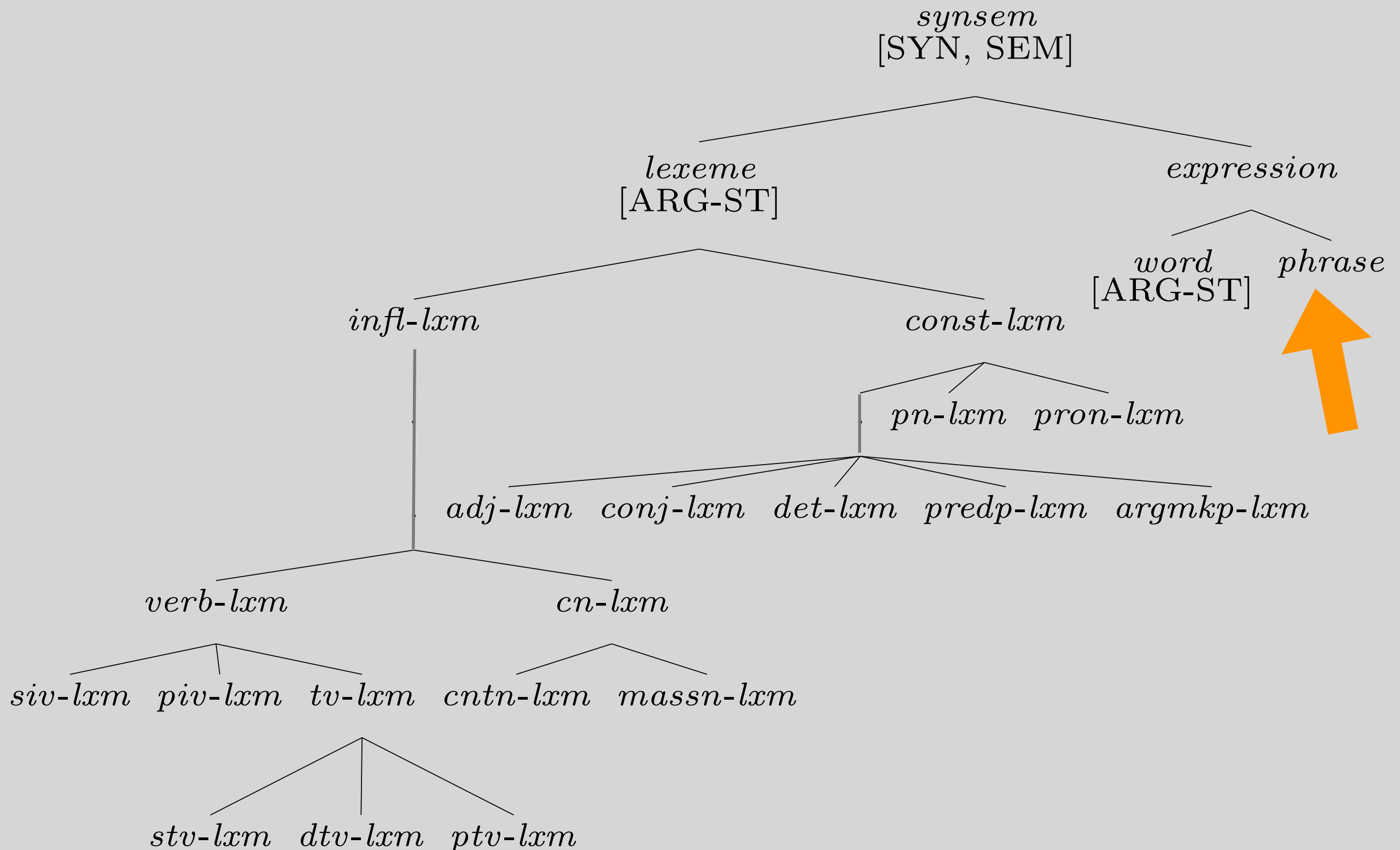
Functions of Types

- 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

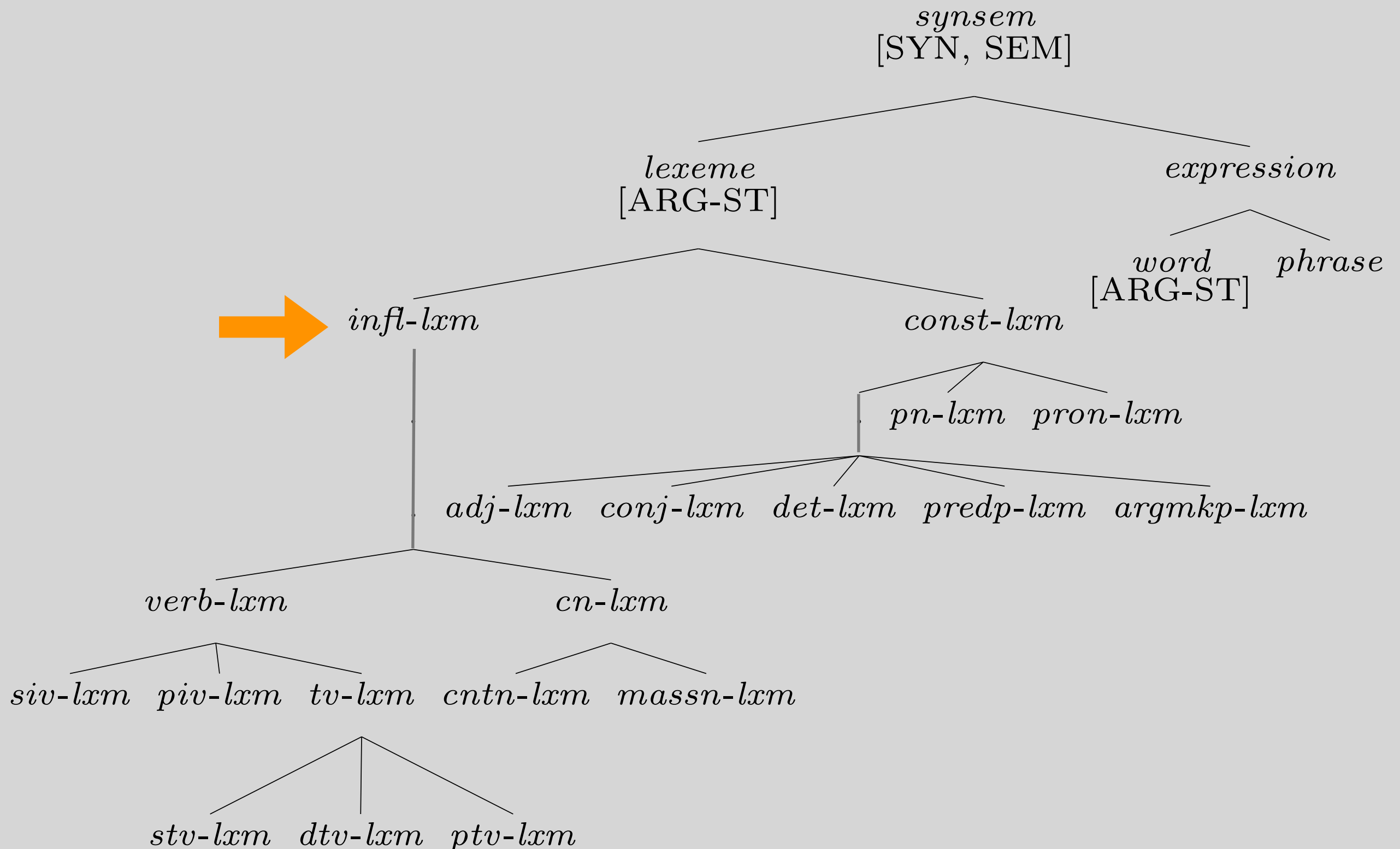
Every *synsem* has the features SYN and SEM



No ARG-ST on *phrase*



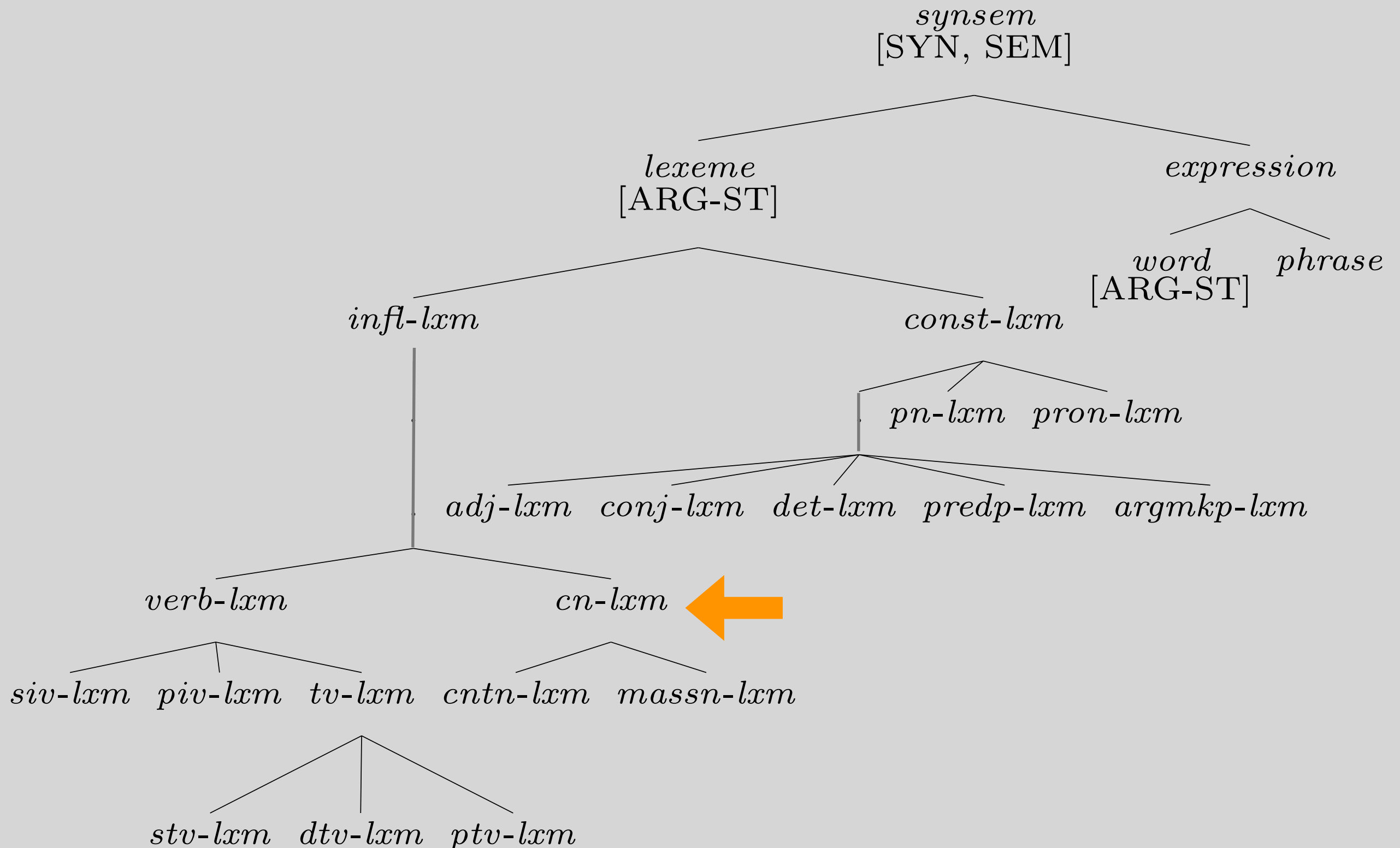
A Constraint on *infl-lxm*: the SHAC



A Constraint on *infl-lxm*: the SHAC

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

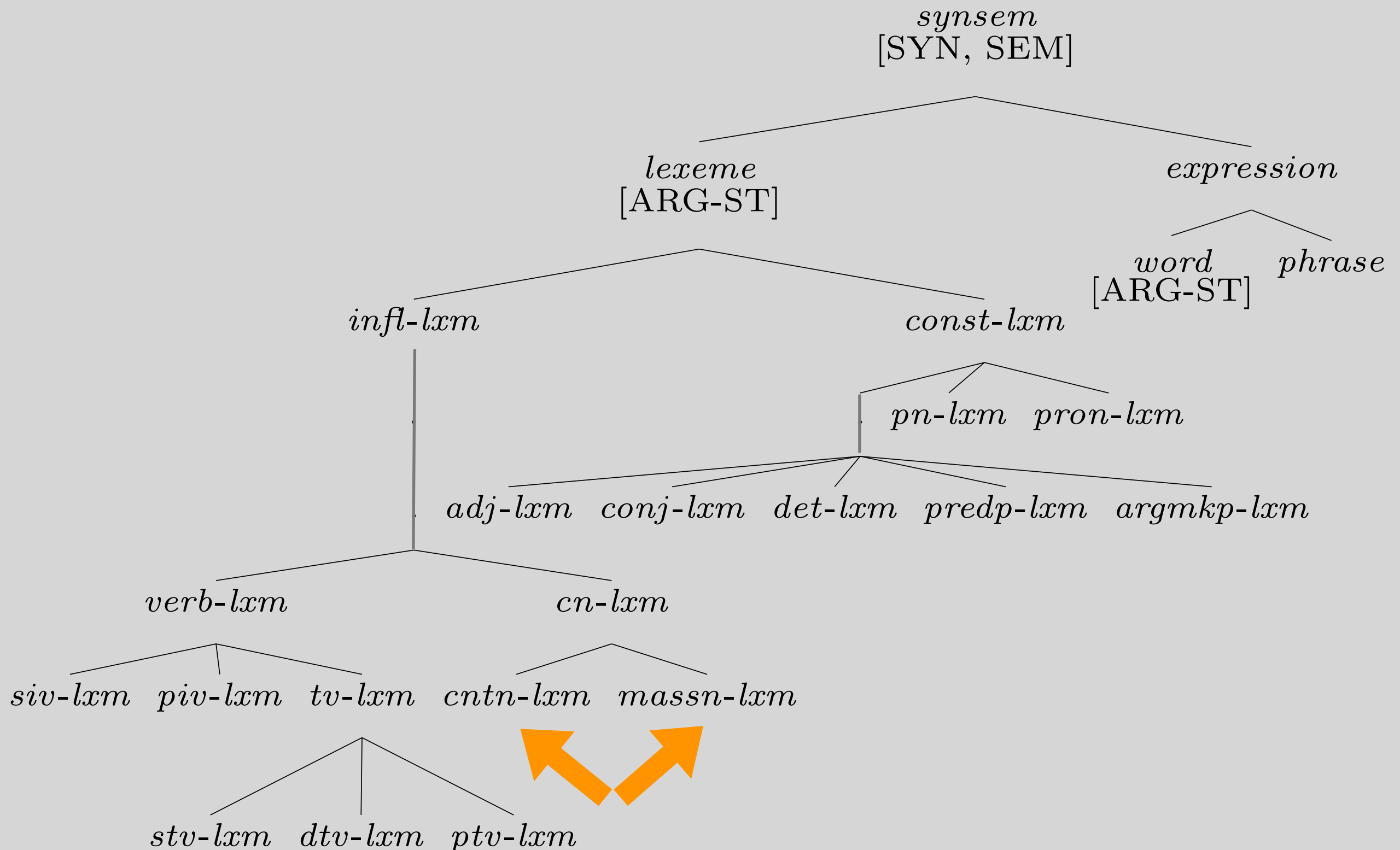
Constraints on *cn-lxm*



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

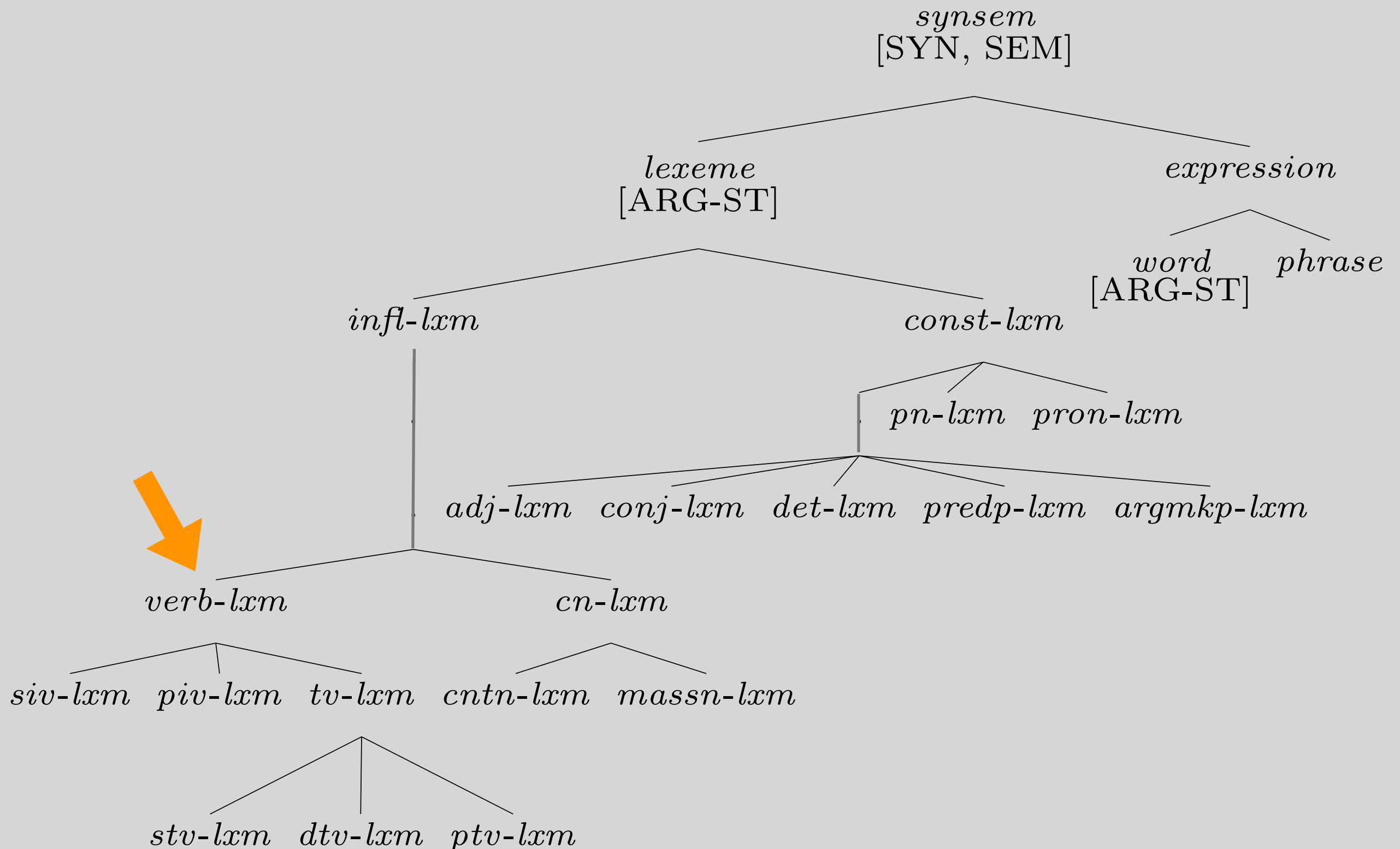


Formally Distinguishing Count vs. Mass Nouns

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

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

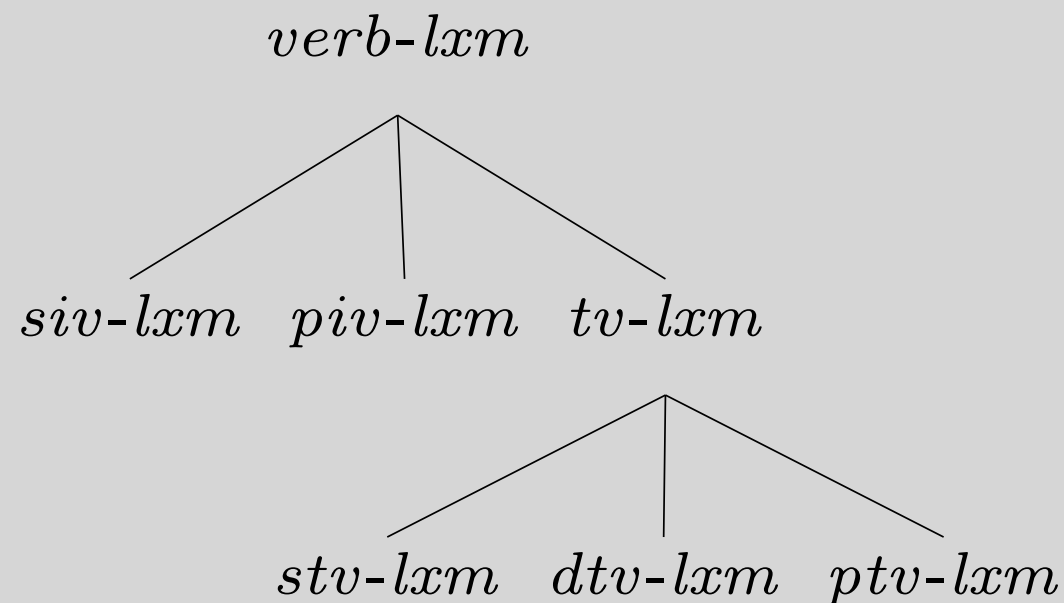
Constraints on *verb-lxm*



Constraints on *verb-lxm*

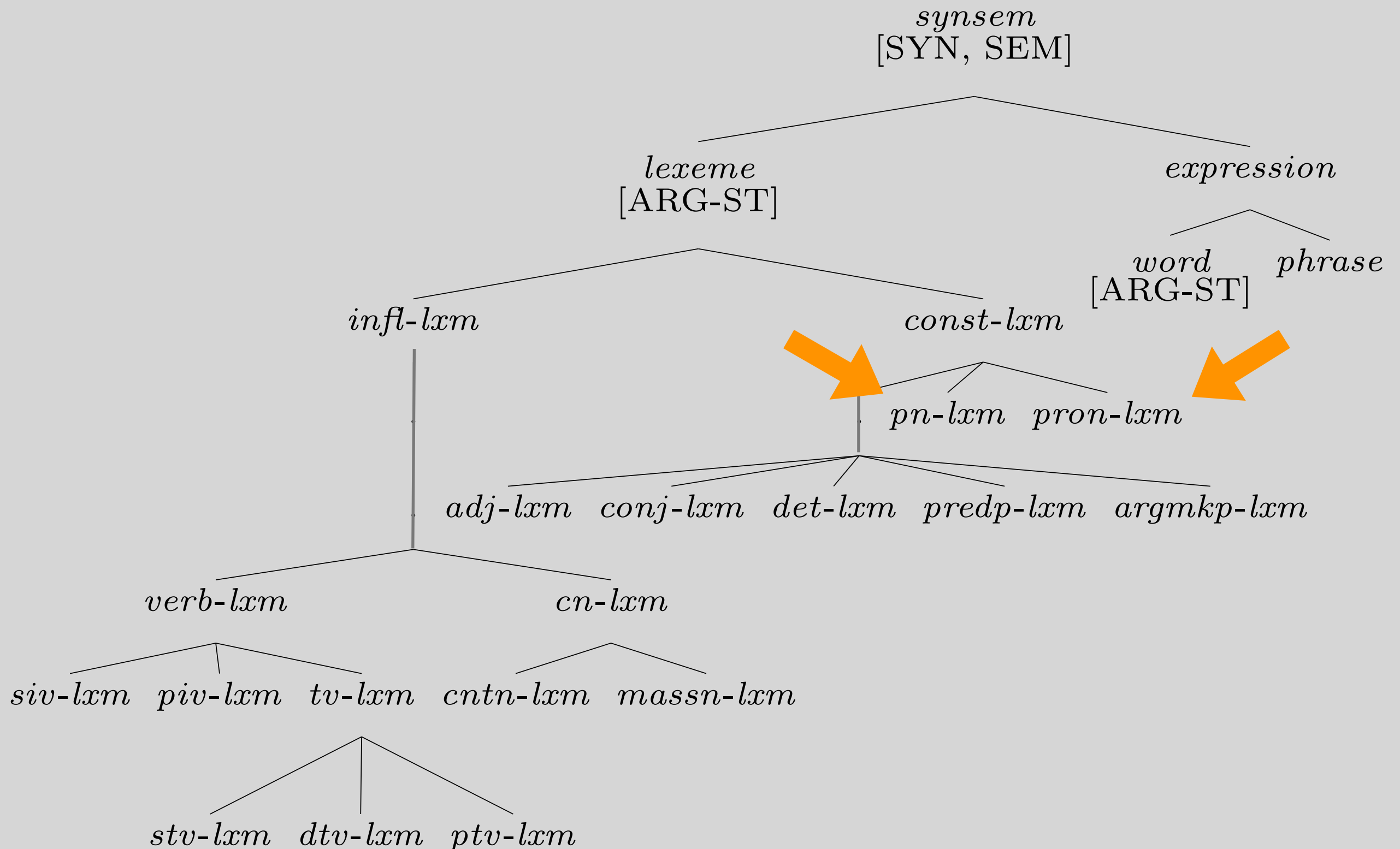
verb-lxm:
$$\left[\begin{array}{l} \text{SYN} \\ \text{SEM} \\ \text{ARG-ST} \end{array} \left[\begin{array}{ll} \text{HEAD} & \textit{verb} \\ \text{MODE} & \textit{prop} \\ / & \langle \text{NP}, \dots \rangle \end{array} \right] \right]$$

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

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Yes ...?

0

Yes

0

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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: lemma lexeme stem root

- How do lexemes compare/contrast with the idea of the “root” of a word?
- Why is "lexeme" at a higher level than word or phrase in the hierarchy?

RQs: Lexical entry v. lexical sequence

- "These lexical sequences then give rise to a family of lexical sequences whose second member is a feature structure of type word." What does the "family" here refer to? Does this mean that the lexical sequence is a set that contains multiple tuples (where the first element is a word and the second element is a feature structure that has "lxm" mark on it)?

RQs: Lexical entry v. lexical sequence

- What is the difference between a lexical entry and a lexical sequence? Do the lexical sequences also have to satisfy our lexical rules and principles?

RQs: Lexemes v. pos

- Will lexemes replace the pos when we build syntax trees and lexical entries from now on?

RQs: Lexemes v. pos

- In many of the constraints on lexical types in these sections, we "inform" lexical types about parts of speech by allowing them to constrain the HEAD value of their lexemes. On the flip side, would we ever want to inform parts of speech about the lexical types that select for them? Is there a deep (i.e., beyond the practicality of the way the grammar is put together) reason for this lack of parallelism between two apparently very similar parts of the grammar?

RQs: Irregularity & defaults

- How does the lexicon handle exceptions to default rules in cases like irregular verbs or nouns with irregular plurals? Specifically, how do the inherited properties interact with specific overrides, and how does the grammar prioritize these constraints?

RQs: ARP

- In verbal lexemes, we put an NP at the beginning of ARG-ST. Is there any linguistic intuition that leads us to place it in ARG-ST rather than in SPR? Also, does a verbal lexeme that begins with an NP in ARG-ST always imply that there must be an NP in SPR?