Ling 566
Nov 10, 2020

Passive Construction

Overview

- Passive

  - Arguments for lexicalist account

  - Details of our analysis

- Reading Questions

The Passive in Transformational Grammar

- Passive was the paradigmatic transformation in early TG.
- Motivations
  - Near paraphrase of active/passive pairs.
  - Simplified statement of cooccurrence restrictions.
    - E.g. *devour* must be followed by an NP, *put* by NP-PP
    - Such restrictions refer to pre-transformational ("deep") structure.
  - Intuition that active forms were more basic, in some sense.
- Its formulation was complex:
  - Promote object
  - Demote subject, inserting *by*
  - Insert appropriate form of *be*, changing main verb to a participle.

But transforming whole sentences is overkill

- Passive sentences look an awful lot like some actives:

  The cat was chased by the dog   vs

  The cat was lying about the dog

- Passives occur without *be* and without the *by* phrase:

  Cats chased by dogs usually get away.

  My cat was attacked.

So a lexical analysis seems called for

- What really changes are the verb's form and its cooccurrence restrictions (that is, its valence).
- There are lexical exceptions
  - Negative:

    Pat resembles Bo but **Bo is resembled by Pat*

    That look suits you but **You are suited by that look*
  - Positive

    Chris is rumored to be a spy but

    *They rumor Chris to be a spy

We posit a lexical rule

- Why not just list passive participles individually?
  - To avoid redundancy
  - To capture productivity (for example?)

- We make it a derivational (lexeme-to-lexeme) rule. Why?
  - Our constraints on lexeme-to-word rules wouldn't allow us to make Passive one.

Polls!

The Passive Lexical Rule

$$
\begin{bmatrix}
\textit{d-rule} \\[4pt]
\text{INPUT} \quad \left\langle \boxed{1} \, , \begin{bmatrix} \textit{tv-lxm} \\ \text{ARG-ST} \quad \langle\, [\text{INDEX } i] \,\rangle \ \oplus \ \boxed{\text{A}} \end{bmatrix} \right\rangle \\[20pt]
\text{OUPUT} \quad \left\langle \text{F}_{PSP}(\boxed{1}) \, , \begin{bmatrix} \textit{part-lxm} \\ \text{SYN} \qquad \begin{bmatrix} \text{HEAD} \quad [\text{FORM} \quad \text{pass }] \end{bmatrix} \\[12pt] \text{ARG-ST} \quad \boxed{\text{A}} \ \oplus \ \left\langle \begin{pmatrix} \text{PP} \\ \begin{bmatrix} \text{FORM} \quad \text{by} \\ \text{INDEX} \quad i \end{bmatrix} \end{pmatrix} \right\rangle \end{bmatrix} \right\rangle
\end{bmatrix}
$$

Questions About the Passive Rule

$$
\begin{bmatrix}
\textit{d-rule} \\[4pt]
\text{INPUT} \quad \left\langle\; \boxed{1} \;,\; \begin{bmatrix} \textit{tv-lxm} \\ \text{ARG-ST} \quad \langle\, [\text{INDEX } i] \,\rangle \;\oplus\; \boxed{A} \end{bmatrix} \right\rangle \\[20pt]
\text{OUPUT} \quad \left\langle\; \text{F}_{PSP}(\boxed{1}) \;,\; \begin{bmatrix} \textit{part-lxm} \\ \text{SYN} \qquad \begin{bmatrix} \text{HEAD} & [\text{FORM} \;\; \text{pass}\,] \end{bmatrix} \\[10pt] \text{ARG-ST} \quad \boxed{A} \;\oplus\; \left\langle \begin{pmatrix} \text{PP} \\ \begin{bmatrix} \text{FORM} & \text{by} \\ \text{INDEX} & i \end{bmatrix} \end{pmatrix} \right\rangle \end{bmatrix} \right\rangle
\end{bmatrix}
$$

- Why is the morphological function F_{PSP}?

- Why do we have a separate FORM value pass? Why not say the output is [FORM psp]?

- What kind of a PP is the *by*-phrase (that is, argument-marking or predicational)?

More Questions

$$
\begin{bmatrix}
\textit{d-rule} \\[4pt]
\text{INPUT} \quad \left\langle \boxed{1} \,, \begin{bmatrix} \textit{tv-lxm} \\ \text{ARG-ST} \quad \langle\, [\text{INDEX } i]\, \rangle \;\oplus\; \boxed{A} \end{bmatrix} \right\rangle \\[20pt]
\text{OUPUT} \quad \left\langle \text{F}_{PSP}(\boxed{1}) \,, \begin{bmatrix} \textit{part-lxm} \\ \text{SYN} \qquad \begin{bmatrix} \text{HEAD} \quad [\text{FORM} \;\; \text{pass}\,] \end{bmatrix} \\[14pt] \text{ARG-ST} \quad \boxed{A} \;\oplus\; \left\langle \begin{pmatrix} \text{PP} \\ \begin{bmatrix} \text{FORM} \quad \text{by} \\ \text{INDEX} \quad i \end{bmatrix} \end{pmatrix} \right\rangle \end{bmatrix} \right\rangle
\end{bmatrix}
$$

- What makes the object turn into the subject?
- Why is the type of the input *tv-lxm*?
- What would happen if it were just *verb-lxm*?

Intransitives have passives in German
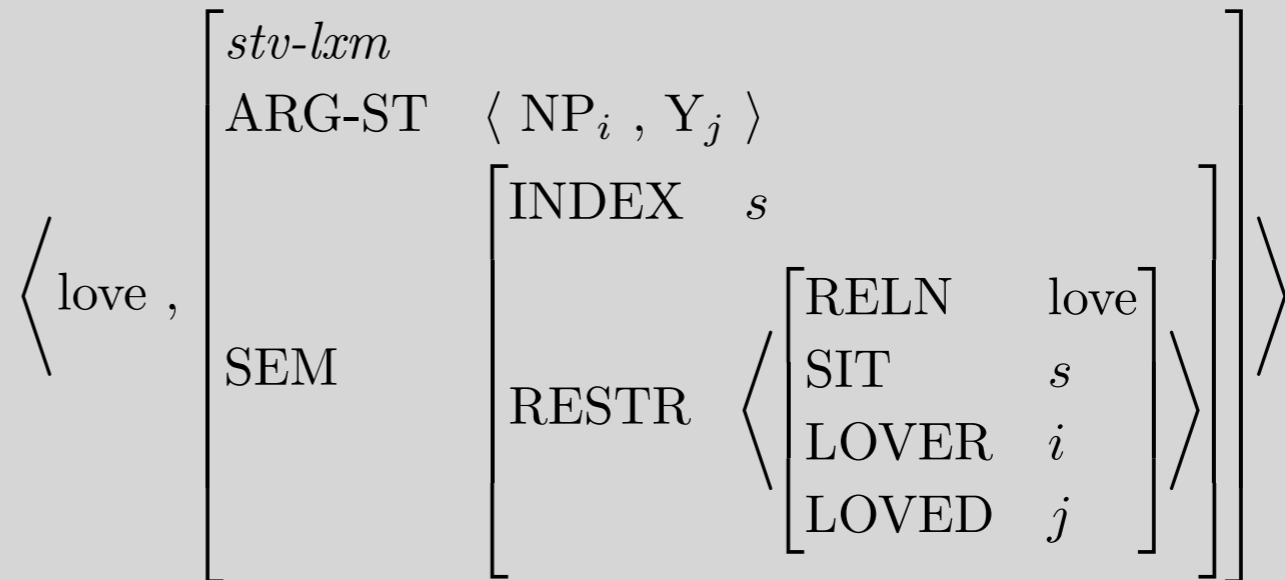
In der Küche wird nicht getanzt.
in the kitchen   is   not   danced
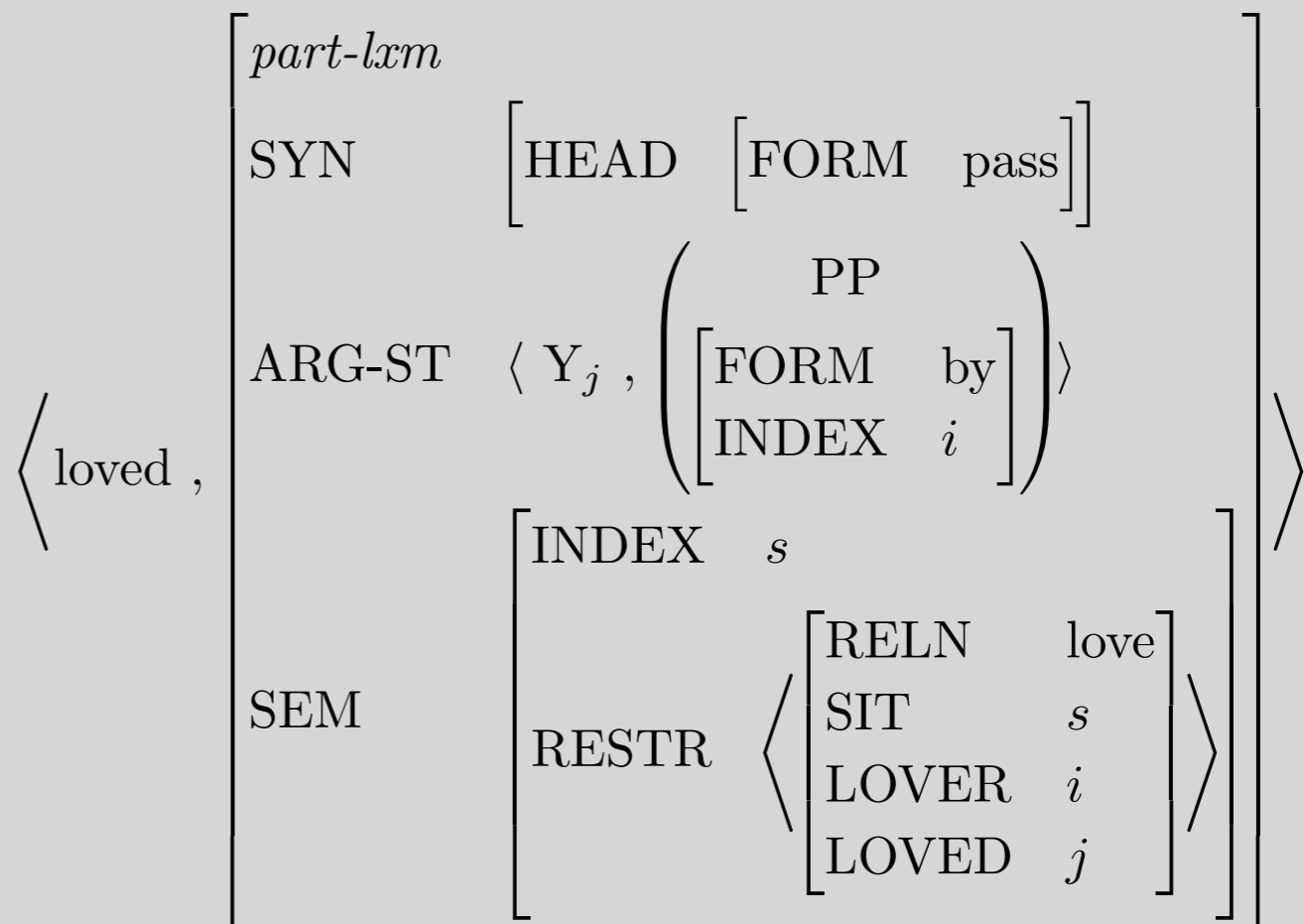 'There is no dancing in the kitchen.'

NB: The exact analysis for such examples
is debatable, but German, like many other
languages, allows passives of intransitives,
as would be allowed by our analysis if the
input type in the Passive LR is *verb-lxm*.
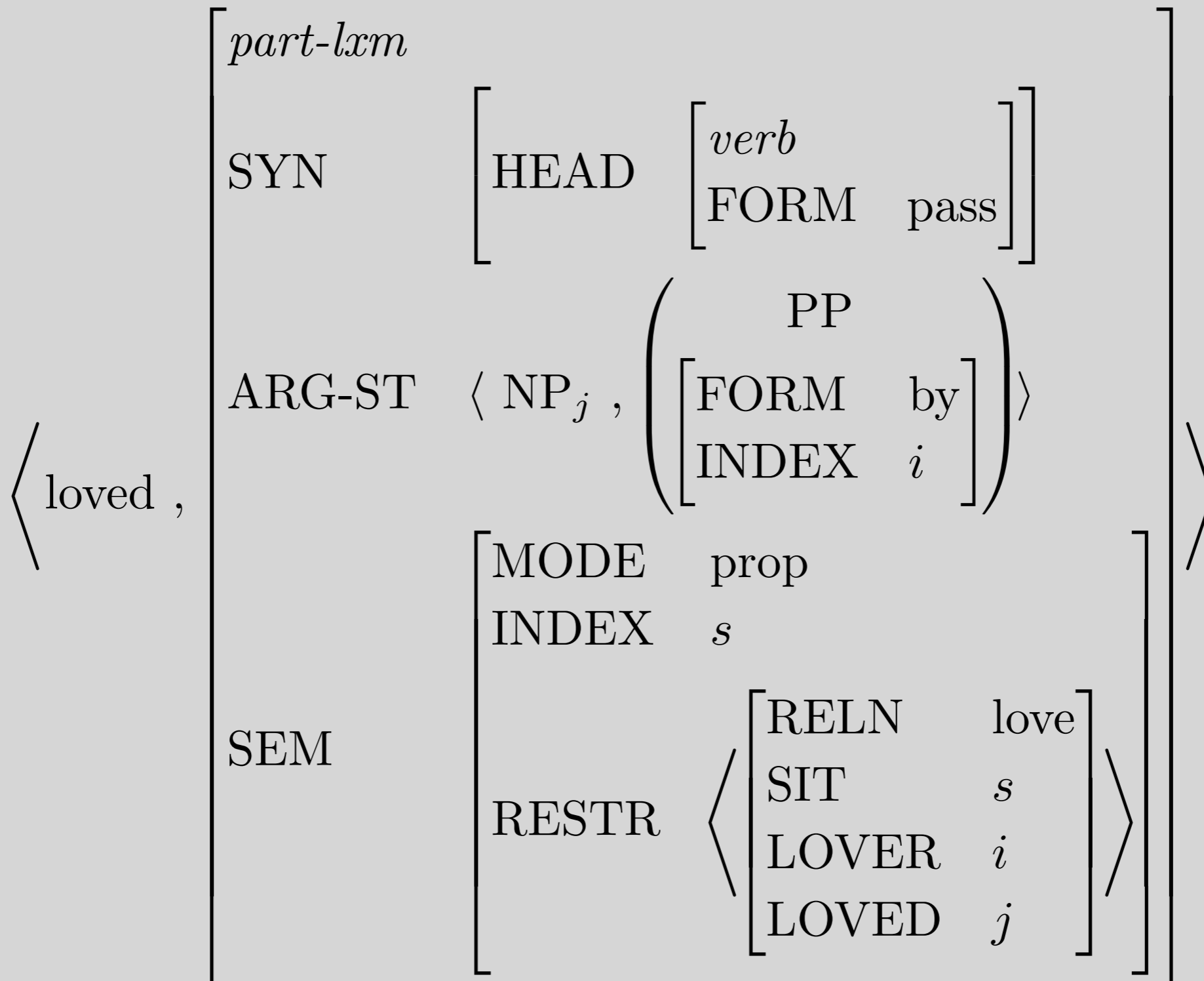
Passive Input & Output

If you have one of these....

$$\left\langle \text{love} , \begin{bmatrix} \textit{stv-lxm} \\ \text{ARG-ST} & \langle \text{NP}_i , \text{Y}_j \rangle \\ \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{love} \\ \text{SIT} & s \\ \text{LOVER} & i \\ \text{LOVED} & j \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

Then you also get one of these....

$$\left\langle \text{loved} , \begin{bmatrix} \textit{part-lxm} \\ \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{FORM} & \text{pass} \end{bmatrix} \end{bmatrix} \\ \\ \text{ARG-ST} & \left\langle \text{Y}_j , \begin{pmatrix} \text{PP} \\ \begin{bmatrix} \text{FORM} & \text{by} \\ \text{INDEX} & i \end{bmatrix} \end{pmatrix} \right\rangle \\ \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{love} \\ \text{SIT} & s \\ \text{LOVER} & i \\ \text{LOVED} & j \end{bmatrix} \right\rangle \end{bmatrix} \end{bmatrix} \right\rangle$$

In a bit more detail…

$$
\left\langle \text{loved} ,
\begin{bmatrix}
\textit{part-lxm} \\[4pt]
\text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} \\ \text{FORM} & \text{pass} \end{bmatrix} \end{bmatrix} \\[12pt]
\text{ARG-ST} & \left\langle \text{NP}_j , \begin{pmatrix} \text{PP} \\ \begin{bmatrix} \text{FORM} & \text{by} \\ \text{INDEX} & i \end{bmatrix} \end{pmatrix} \right\rangle \\[16pt]
\text{SEM} & \begin{bmatrix} \text{MODE} & \text{prop} \\ \text{INDEX} & s \\[4pt] \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \text{love} \\ \text{SIT} & s \\ \text{LOVER} & i \\ \text{LOVED} & j \end{bmatrix} \right\rangle \end{bmatrix}
\end{bmatrix}
\right\rangle
$$

The *be* that Occurs with Most Passives

$$
\left\langle \text{be} , \begin{bmatrix} \textit{be-lxm} \\[2ex] \text{ARG-ST} \quad \left\langle \boxed{1} , \begin{bmatrix} \text{SYN} \quad \begin{bmatrix} \text{HEAD} \quad \begin{bmatrix} \textit{verb} \\ \text{FORM} \quad \text{pass} \end{bmatrix} \\[2ex] \text{VAL} \quad \begin{bmatrix} \text{SPR} \quad \langle \boxed{1} \rangle \\ \text{COMPS} \quad \langle \; \rangle \end{bmatrix} \end{bmatrix} \\[3ex] \text{SEM} \quad \begin{bmatrix} \text{INDEX} \quad s \end{bmatrix} \end{bmatrix} \right\rangle \\[5ex] \text{SEM} \quad \begin{bmatrix} \text{INDEX} \quad s \\ \text{RESTR} \quad \langle \; \rangle \end{bmatrix} \end{bmatrix} \right\rangle
$$
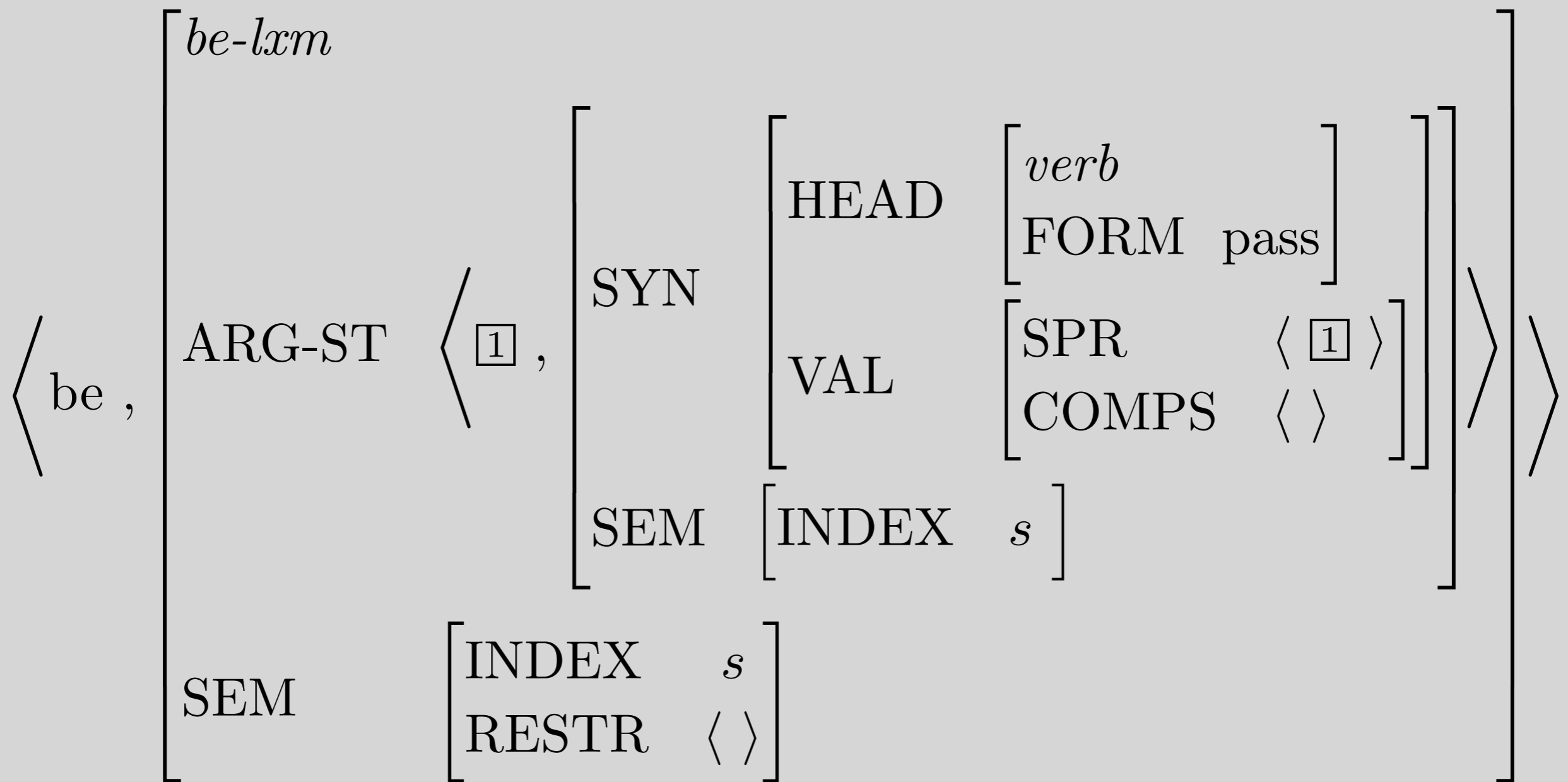
Questions About the Entry for *be*

$$
\left\langle \text{be},
\begin{bmatrix}
\textit{be-lxm} \\
\text{ARG-ST} \quad \left\langle \boxed{1}, \begin{bmatrix}
\text{SYN} & \begin{bmatrix}
\text{HEAD} & \begin{bmatrix} \textit{verb} \\ \text{FORM} \quad \text{pass} \end{bmatrix} \\
\text{VAL} & \begin{bmatrix} \text{SPR} & \langle \boxed{1} \rangle \\ \text{COMPS} & \langle \, \rangle \end{bmatrix}
\end{bmatrix} \\
\text{SEM} & \begin{bmatrix} \text{INDEX} & s \end{bmatrix}
\end{bmatrix} \right\rangle \\
\text{SEM} \quad \begin{bmatrix} \text{INDEX} & s \\ \text{RESTR} & \langle \, \rangle \end{bmatrix}
\end{bmatrix}
\right\rangle
$$
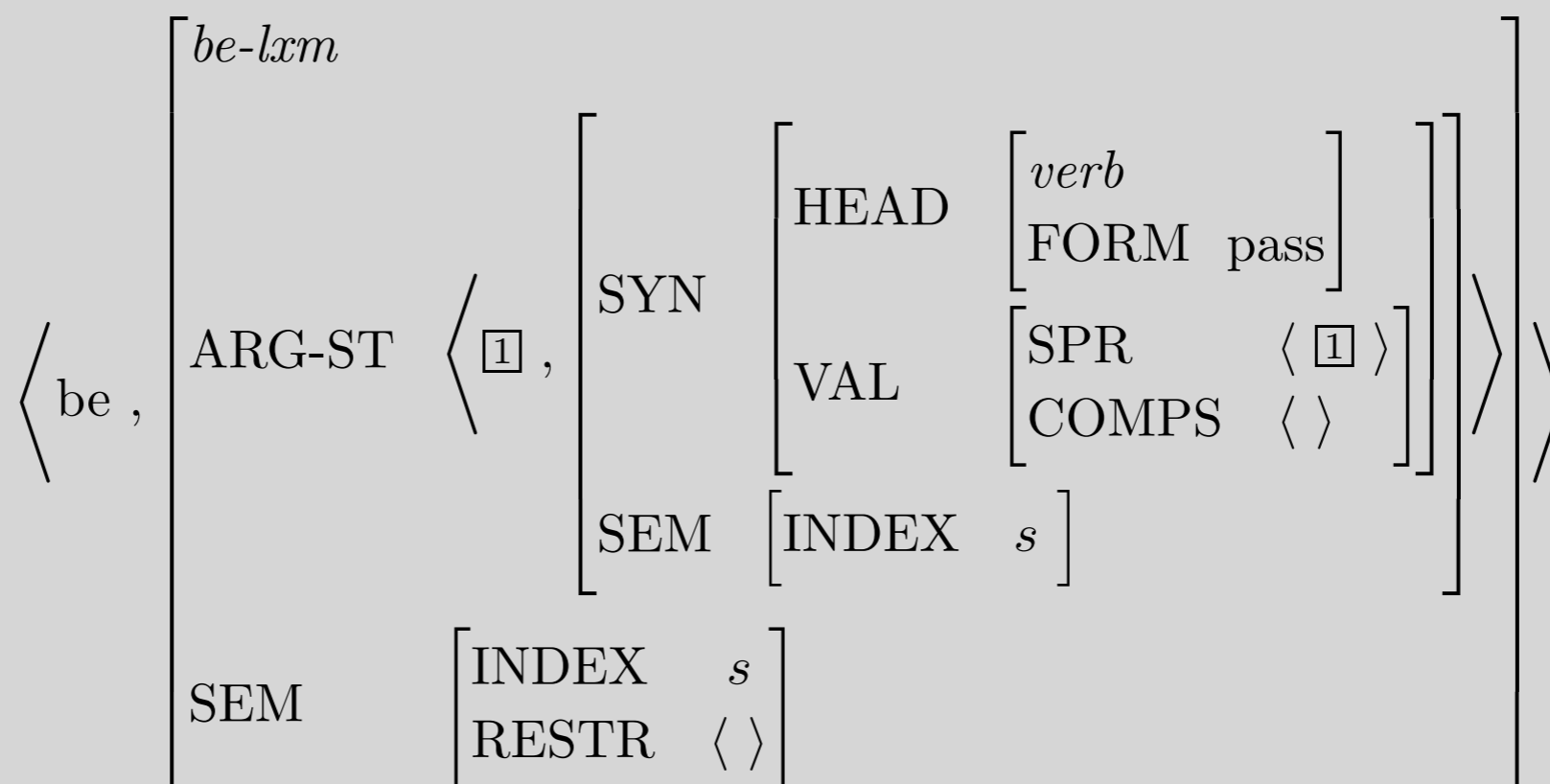
- Why doesn't it include valence features?
- What is the category of its complement (i.e. its 2nd argument)?
- What is its contribution to the semantics of the sentences it appears in?
- Why is the first argument tagged as identical to the second argument's SPR value?

Passive tree

Which rule licenses each node?

What is the SPR value of the upper VP?

What is the SPR value of the lower VP?

What is the SPR value of *is*?

Any questions?
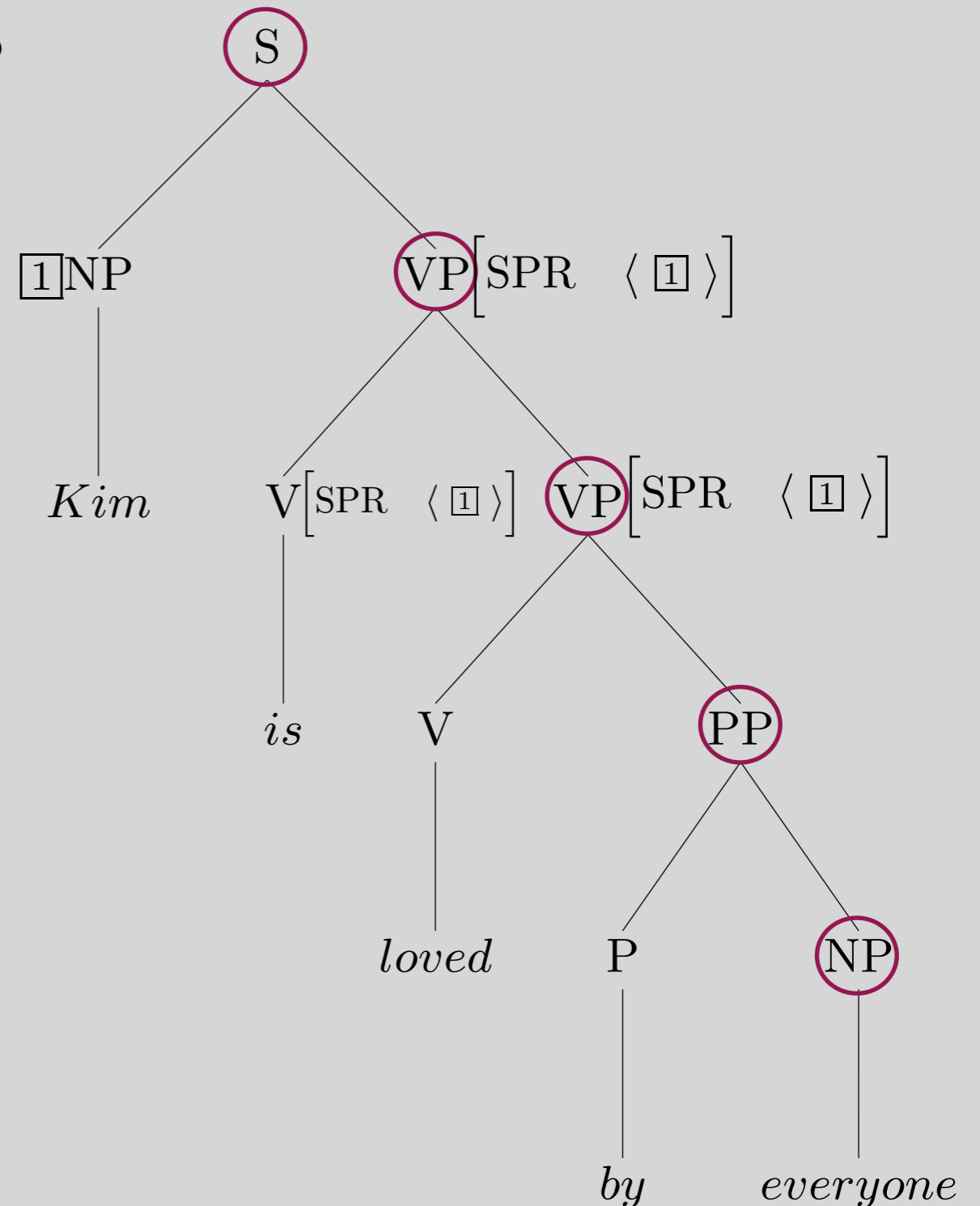
Poll!

More Questions

- Why do we get

  They are noticed by everyone

  and not

  *Them are noticed by everyone?

- Why don't we get

  *They is noticed by everyone?

- What would facts like these entail for a transformational analysis?

Overview

- Passive

  - Arguments for lexicalist account

  - Details of our analysis

- Reading Questions

Reading Questions

- On page 312, it was mentioned that, when we are transforming the active sentence to the passive one, the subject can be either turned into an object or be omitted. However, the semantics of these sentences should keep the same, I am wondering how could the semantics be identical if the object (from the active sentence) is omitted in its passive sentence

Reading Questions

- The chapter says passive construction "leaves the valence features unchanged" but then immediately after says the "subject can become object of the PP by or omitted altogether." Doesn't the optionality of the PP make the valence technically changed?

Reading Questions

- Why does the ARP only take effect after the Constant Lexeme Lexical Rule is applied? I don't understand why it can't apply to lexemes, and I can't see what problems would be caused by having the ARP apply within d-rules like the Passive Lexical Rule.

- Was the need for a way of rearranging passive arguments a deciding factor for the Argument Realization Principle?

Reading Questions

- So when we define lexical entries now, we should only define ARG-ST and not VAL, right? My reasoning is that the order of ARG-ST can be changed by lexical rules, but then once a lexical rule changes an entry from type lexeme to word, ARG-ST can't be changed anymore and the ARP will kick in and bind the VAL features to ARG-ST to allow for the HSR and HCR to occur.

- I'm still a little unclear about the point made when we decided to make the Passive Lexical Rule a d-rule instead of an i-rule. Specifically, I was confused about the motivation for the i-rule to keep the same ARG-ST for the output. I still don't understand why we designed it this way.

Reading Questions

- I'm a little confused why Binding theory is mentioned for (30). Is binding theory shown in (30) and not (29) because each SPR and COMPS item is being tagged to explicitly show ARP?

Reading Questions

- The book says it will only use FORM for the following prepositions: of, by, to, on, upon, at, in, about, and for. Does that mean the other prepositions don't need FORM, meaning FORM is a feature that can be omitted if not needed?

- There are many FORM values for prepositions. Does this imply that there are as many versions of the Passive Lexical rule as there are FORM values? I'm a little confused about why we seem to be able to switch them out freely.

Reading Questions

- How are passives with no passive be handled. We at least need a lexical entry for passive got, as in "The cat got bitten (by the dog)", which would be nearly identical to passive be. How do we handle "Anyone handed a note will be watched closely" though?

Reading Questions

- Would we need another lexical entry for the 'be' used in 'he is happy', for example? Would this also be of type be-lxm?

Reading Questions

- I'm still not sure if I understand why the passive rule doesn't assign nominative case to the subject of the resulting passive participle. What's the reason for this?

- I'm confused about why the passive rule doesn't mention case and there is no need to unassign an accusative case specification.

- In the example in section 10.5, why does the Case Constraint only come into play in the word structure in (30) and not in any of the lexical sequences described earlier in the example?

Reading Questions

- If multiple d-rules are applied (filtered?) before any i-rule converts a lexeme to word, does the order of those d-rules matter? If so, how do we keep track of all the possible ordering?

- Also, why are word structures also called lexical trees?

Reading Questions

- In the sentence "Chris was handed a note by Pat", was and handed have the same specifier Chris. It seems like the Head-Specifier Rule only applies to S -> NP VP [FORM fin] in this case. The fact that the HSR doesn't apply to the VP handed a note by Pat although the VP has a non-empty SPR value is somewhat counterintuitive. Are there any other similar situations that a phrase doesn't combine with its specifier to form a subtree?

Reading Questions

- Do heads have to be next to each other to share a specifier? Could we have a specifier appearing later in a sentence satisfying an earlier word's SPR by identity? Do we have to worry about crossing branches?

Reading Questions

- How common are passive constructions cross-linguistically? It seems like this way of constructing passives would be pretty easily adjustable to differences in passive constructions in languages other than English, does it apply well cross-linguistically?

- Also, are there languages which have the passive/active alternation but don't have a semantically null ~bridging~ verb of sorts doing what "be" is doing in English?

Reading Questions

- In footnote 1 on page 313, it mentions how French again confirms their conclusion about (8), the Passive Lexical Rule. But is evidence from one other language really enough to validate a conclusion? Or do they mean that the conclusion holds at least for similar types of languages?

Reading Questions

- I can imagine the concepts from the passive/alternation being incredibly useful in NLP applications, insofar as we know that one sentence in one form is always equivalent in meaning to another with the other form. Has there been considerable success in this regard?

- We have this transformation from (27) to (30). For the HPSG parser's real-world implementation, since the input is already in the passive form, does the parsing begin directly at (29)? If so, how does (29) retrieve the information (ARG-ST, SEM ...) it needs from (27) and (28)? Or does the system store everything that allows parsing starts at (29)'s level without (27) and (28)?