

PRED values, non-verbal predicates,  
discourse status (“definiteness”)

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Ling 567

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# Overview

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- tdl details:
  - Grammar files, instances v. types
  - PRED values
  - Tdl style
- Non-verbal predicates
- Discourse status
- Lab 7 overview

# Grammar files

- matrix.tdl, head-types.tdl: Type files (core grammar)
- my\_language.tdl: Type file (language specific)
- rules.tdl: Instance file for phrase structure rules
- irules.tdl: Instance file for spelling changing lexical rules
- lrules.tdl: Instance file for non-spelling changing (no affix) lexical rules
- lexicon.tdl: Instance file for lexical entries
- roots.tdl: Instance file for root condition(s)
- labels.tdl: Instance file for node labels
- trigger.mtr: Instance file for trigger rules for generation
- my\_langauge-pet.tdl: Grammar spec file for compilation with 'flop'
- lkb/, ace/, pet/: Directories of files for lkb/ace/pet interaction

# Roots, Labels

- Why do we sometimes see ADJ or CP as the label on the root node?

```
adj-label := label &  
  [ SYNSEM.LOCAL[ CAT.HEAD adj,  
    COORD-STRAT "" ],  
  LABEL-NAME "ADJ" ].
```

```
cp-label := label &  
  [ SYNSEM.LOCAL.CAT [ HEAD comp,  
    VAL.COMPS < > ],  
  LABEL-NAME "CP"].
```

# Types v. instances

- Types define the feature geometry, possibilities for unification, and constraints inherited by instances.
- Instances are what the LKB actually uses to parse and generate.
- Types can have multiple supertypes.
- Instances can only inherit from one type.
- Types and instances exist in separate name spaces.

# Features and types

- Features can only be “declared” for one type. Any type mentioning that feature must inherit from the declaring supertype.
- Features can only be “declared” at the outermost level.

- Good: 

```
type1 := supertype &
  [ FEATURE BOOL ].
```

```
type2 := type1 &
  [ FEATURE + ].
```

- Bad:

```
type2 := supertype &
  [ FEATURE + ].
```

```
type3 := type1 &
  [ PATH.NEW-FEAT + ].
```

# PRED values

- For the MT exercise, we need to coordinate on pred values.
- Convention is `_English+lemma_pos_rel`, where pos is drawn from {n, v, q, a, p}
- Abstract (grammatical) preds don't have leading underscore:
  - `exist_q_rel`
  - `pron_rel`
- Featural information isn't replicated in PRED values: `*_went_v_rel`, `*_the_q_rel`

# Tdl style: Bad

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```
demonstrative-determiner-lex := determiner-lex-supertype &
  [ SYNSEM.LOCAL.CONT.RELS
    <!
      [ PRED "exist_q_rel" ],
        #altkeyrel & arg1-ev-relation &
      [ LBL #lbl,
        ARG1 #index ]
    !>,
  SYNSEM.LKEYS.ALTKEYREL #altkeyrel,
  SYNSEM.LOCAL.CAT.VAL.SPEC.FIRST.LOCAL.CONT.HOOK[ INDEX #index &
    [ COG-ST acti+fam ]
    LTOP #lbl ] ].
```

# Tdl style: Good

---

```
demonstrative-determiner-lex := determiner-lex-supertype &
  [ SYNSEM [ LOCAL [ CONT.RELS <! [ PRED "exist_q_rel" ],
    #altkeyrel & arg1-ev-relation &
    [ LBL #lbl,
      ARG1 #index ] !>,
    CAT.VAL.SPEC.FIRST.LOCAL.CONT.HOOK [ INDEX #index &
      [ COG-ST activ+fam ],
      LTOP #lbl ]],
    LKEYS.ALTKEYREL #altkeyrel ]].
```

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- Trigger rules

# Non-verbal predicates

- This section deals with sentences that have a “copula” verb in some languages and no verb at all in others.
- APs/PPs have a semantic role available
  - Required copula: Treat it as a raising verb
  - No copula: Let the APs/PPs be heads in the head-subj rule
- NPs are semantically saturated
  - Required copula: Different lex entry that introduces `_be_v_id_rel`
  - No copula: Non-branching rule that introduces `_be_v_id_rel` and the subject requirement

# Non-verbal predicates

- Some languages have a copula variably:
  - Across all contexts
  - Only with NPs, but not APs/PPs (etc)
  - Only in certain tenses
- First two can be handled with just appropriate combinations of the strategies discussed
- To get restriction to certain tenses, need to add constraints to the copula and/or the lexical or phrase structure rules involved in licensing verbless clauses.

# Non-verbal predicates

- Locative NPs
  - Some languages use NPs inflected with a particular case where others use PPs (as both modifiers and predicates)
  - The strategy we'll take involves a non-headed unary rule that builds a PP out of a [ CASE loc ] NP.
    - Why non-headed?
    - Why not do this with a lexical rule?

# Discourse status: What's that?

- A property of referents, describing their relationship to the common ground of a conversation
- Tends to be reflected syntactically in markers of “definiteness” as well as demonstratives and constraints on the availability of types of NPs in particular constructions.
- Closely related to (but distinct from) information structure
- The binary distinction “definite”/“indefinite” is not sufficient
- Furthermore, discourse status can be broken down into hearer-oriented “cognitive status” and speaker-oriented “specificity”

# Givenness hierarchy

(Gundel et al 1993, Prince 1981)

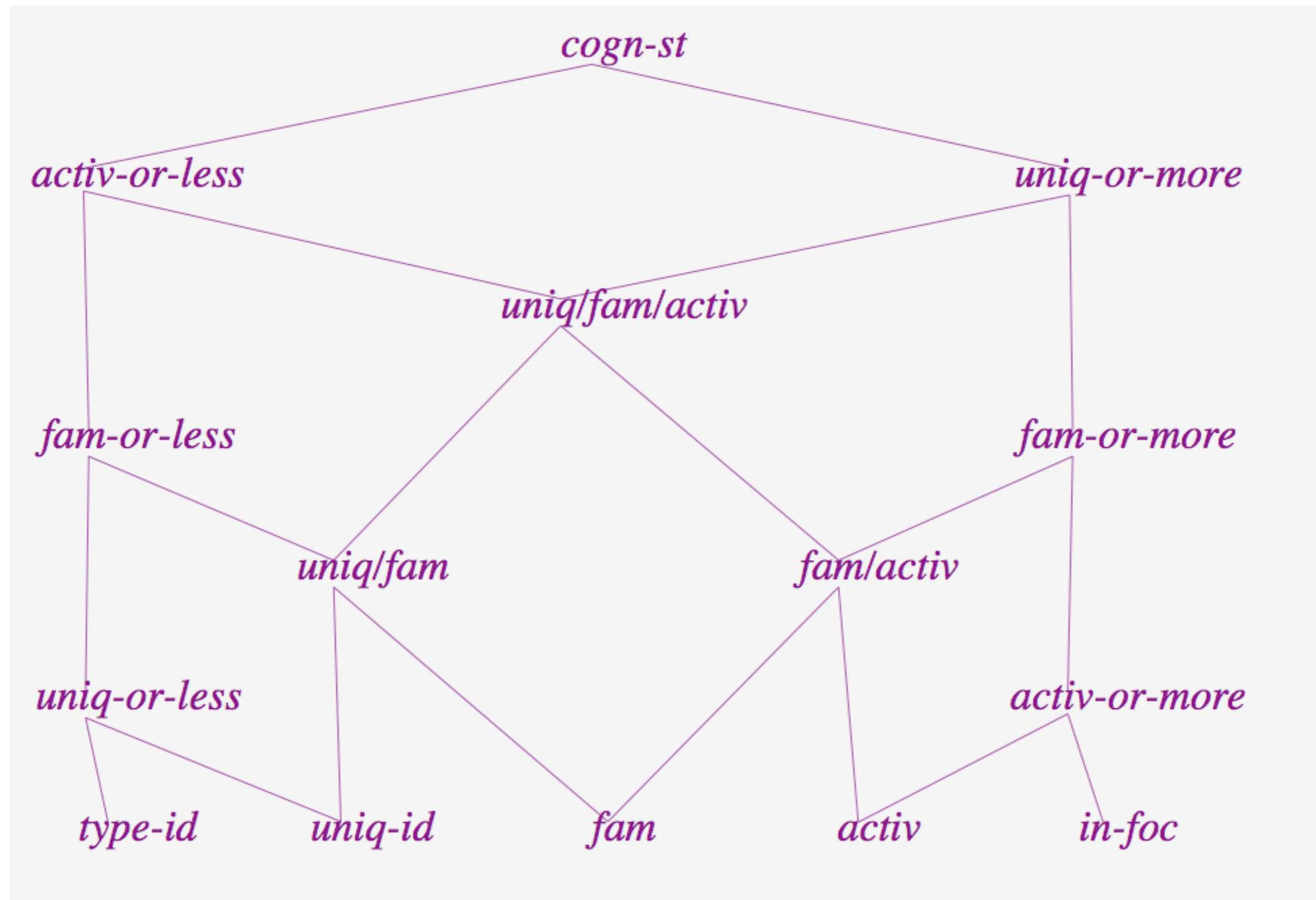
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Type id <	Referential <	Uniq. id. <	Familiar <	Activated <	In focus
<i>a N</i>	indefinite <i>this N</i>	<i>the N</i>	<i>that N</i>	<i>that, this</i> <i>this N</i>	<i>it</i>

NB: “In focus”  $\neq$  focus

# Borthen & Haugereid's proposal

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# Borthen & Haugereid's proposal

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SYNSEM.LOC.CONT.REF-PROP

*ref-prop*

INDEX

*ref*

PER

*per*

NUM

*num*

GEND

*gend*

COGN-ST

*cogn-st*

SPECI

*bool*

PART

*bool*

UNIV

*bool*

# Borthen & Haugereid's proposal

- SPECI indicates specificity (speaker-oriented)
- Compatible with both “definite” and “indefinite” NPs:
  - *The fastest runner won.*
  - *The next customer will receive a reward.*
  - *I'm looking for a book.*
- Corresponds to overt syntactic phenomena in at least Norwegian (specificity adjectives) and Turkish (accusative case precludes specific interpretation)

# Matrix-based proposal

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HOOK.INDEX	PNG	PER	<i>person</i>
		NUM	<i>number</i>
		GEND	<i>gender</i>
	COG-ST		
	SPECI		<i>cog-st</i>
			<i>bool</i>

# Lab 7 tasks

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