

"Iconicity", "depiction"

Linguistic analysis and **categories**:

- lexical vs. non-lexical
- iconic handshapes vs. structures
- depicting signs, enactments, transfers...
- size & shape vs. classifier predicates
- Johnston: DSM, DSG, DSL, DSS...

Iconic-lexical **mixes**/continuum:

- annotations are either-or (element/category dissymmetry!)
- linguistic analysis: more sub-types when mixes accounted for
- e.g. semiological approach: double transfers, pseudo-transfers...

First AZee pass on Mocap1

"Mocap1" corpus:

- 187 videos, 1h20 of LSF
- high depiction density

AZee transcription:

- 60 videos, 30 min
- 22,307 expression nodes
- 5,471 rule applications



AZee

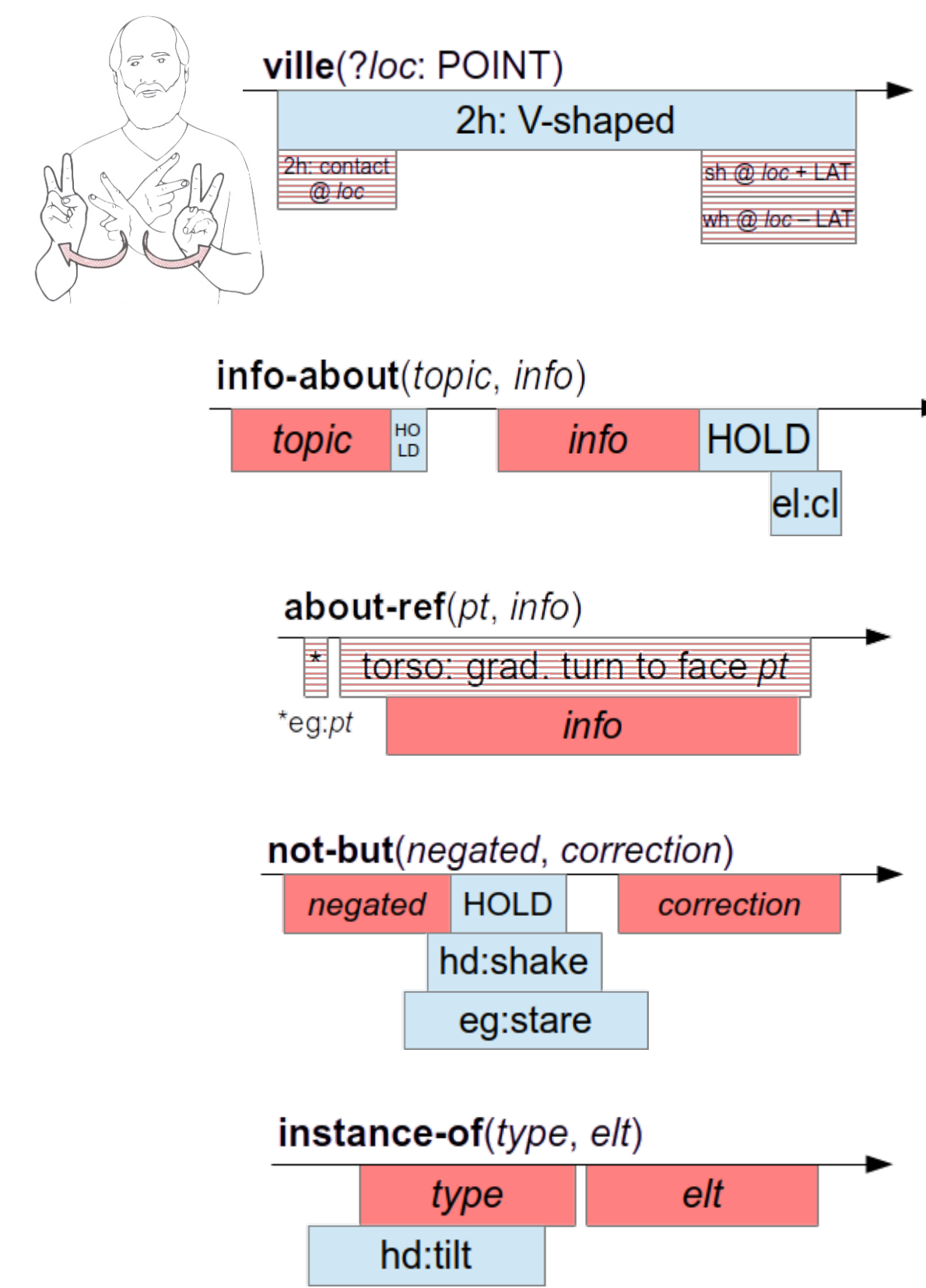
Formal SL representation model:

- parameterised **linguistic rules: meaning → forms**
- no "parts of speech" assumed (verb, adjective...)
- no language levels assumed (lexicon, phonology, syntax...)
- no surface sequence assumed (as with gloss annotations)
- no iconic vs. non-iconic categories assumed

Discourse/utterance expressions:

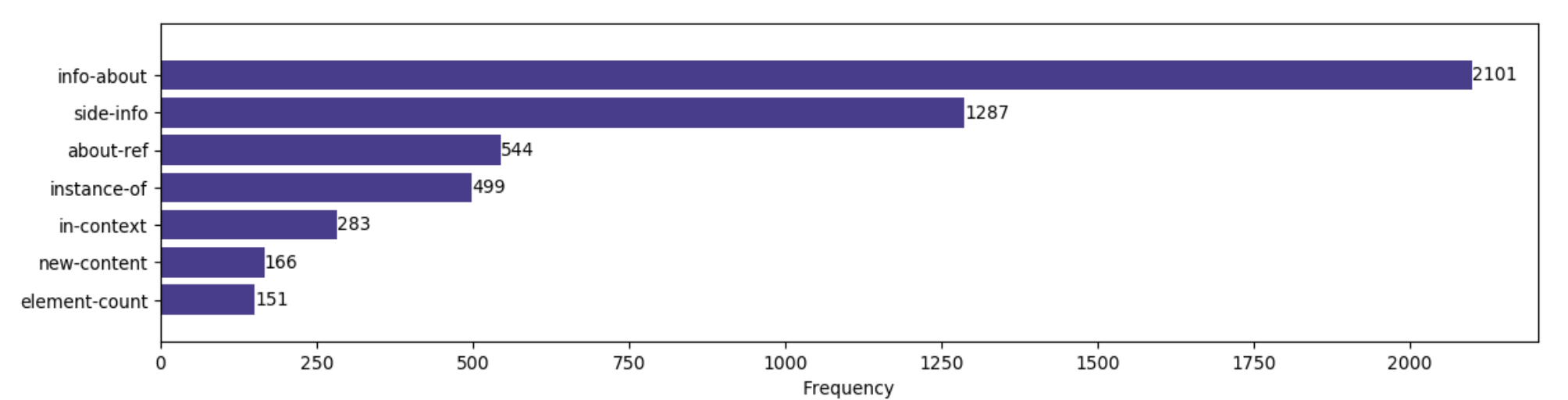
- can be read semantically
- determine a fully specified timeline of forms

```
:about-ref
'pt
^Rssp
'info
:info-about
'topic
:France
'info
:not-but
'negated
:almost-reaching
'sig
:deuxième
'correction
:nb-1
```



"40 brèves" reference corpus:

- 120 videos, 3 signers, 1h of LSF
- 12,452 AZee rule applications
- low depiction density



"Classifier handshake"?



Stable meaning attached to an observable form → linguistic rule!

- class-flat-round-large(loc: POINT, nrmsurface: VECT) → POSTURE
- class-flat-surface-narrow(loc: POINT, nrmsurface: VECT, ?dirsurface: VECT, ?hand: SIDE) → POSTURE
- class-person-standing(loc: POINT, ?facing: VECT, ?hand: SIDE) → POSTURE

Common factor to all is the signature:

(loc: POINT) → POSTURE

⇒ a useful definition of "classifier"?

- return an instant articulatory spec
- not necessarily hands
- arguments are rule-specific

"Iconic structures"?

All units linguistically analysed as such were covered by rule combinations of the prior group plus the following (→ TIMELINE):

- place-object(class, loc, ?nrmsurface)
- move-object(class, path)
- deploy-shape(class, path)
- mult-in-a-row(item: (loc: POINT) → TIMELINE, path)
- mult-around(item, loc, ?nrmsurface, ?radius)
- landmark-in-place(lm: POSTURE, sig: TIMELINE)

All timeline-yielding linguistic rules were already known!

All structures use at least one rule with a mandatory argument of a geometric type (POINT, VECT, PATH).
⇒ a useful definition of "iconic rule"?

```
:place-object
'class
.class-person-standing
'facing
fwd
'loc
^p

:landmark-in-place
'lm
:landmark-in-place
'loc
^bridge % def'ed anchor point
'hand
w
'nrmsurface
dwn % horizontal surface
'dirsurface
lat % strip direction

:deploy-shape
'path
[fwd & upward from chest]
'class
.class-cylindrical-medium
'hand
s
'nrmsurface
addvect| fwd| up
```

Iconic-lexical continuum?

AZee expressions indifferently mix iconic & non-iconic rules

- count number or ratios in expressions
 - compare ★ 3/4 to ☆ 3/6
- ⇒ a useful metric of "iconic weight", "iconic ratio"?

Linguistic rule node ratio (vs. native nodes, e.g. translate):

- 40 brèves: 12,452/15,090 ≈ 83%
- Mocap1: 5,471/22,307 ≈ 25%

Lexical rule ratio (with mandatory arg's, vs. other ling. rules):

- 40 brèves: 5,299/12,452 ≈ 43%
- Mocap1: 620/5,471 ≈ 11%

⇒ useful metrics to characterise **corpus genre**?

Limitations & prospects



Recurring pattern with sh-wh path symmetry

- 167 occurrences in Mocap1
- consistent in form & meaning
- often 100+ lines of code each

Code factoring wanted:

deploy-edges-symmetric-shape(class, rhedges: LIST)

```
:all-of
'items
list
:simultaneous
'sig1
[deploy-shape sh1]
'sig2
[deploy-shape wh1]
:simultaneous
'sig1
[deploy-shape sh2]
'sig2
[deploy-shape wh2]
:simultaneous
'sig1
[deploy-shape sh3]
'sig2
[deploy-shape wh3]
```

⇒ introduce **wrappers**

- linguistic form-meaning assoc.
- not necessary for encoding
- shorthand for complex structure

Problem with move-object

- cases of complex displacements, rotations, etc.
- full iconicity: any movement can mean itself



Solution: geometric changes given in the expression
Hypothesis: a linguistic rule indicates such a segment

⇒ **same rule as role-shift**?

- meaning: illustrative content
- form: TBD