The morphology of trapping and climbing in French causatives

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HPSG 2024

Aims

- ▶ Combine
  - ▶ Information-based Morphology (Crysmann & Bonami, 2016) with
  - ▶ a theory of inflectional periphrasis (Bonami, 2015)
- ▶ Case study: different periphrastic relations in French
  - ▶ Tense periphrasis
  - ▶ Periphrastic realisations of pronominal affixes (clitic climbing)
  - ▶ Causatives
- ▶ Complement the periphrasis approach to clitic climbing (Aguila-Multner, 2023; Aguila-Multner & Crysmann, 2020a) with a proper morphological analysis
  Integrate periphrasis with existing accounts of the French clitic template (Crysmann & Bonami, 2013)
- ▶ Study the interaction between multiple periphrastic relations

Periphrasis

	INDICATIVE
FUTURE	aimera
PRESENT	aime
PAST	**a aimé**

Table: Partial 3sG paradigm of *aimer* 'love'

- ▶ A theory of periphrasis is needed to incorporate these forms in morphology
  - ▶ integration in the paradigm
    - ▶ Pāṇinian distribution
  - ▶ non-compositionality
    - ▶ auxiliary *a* is morphologically PRS
  - ▶ distribution of exponence: clitic climbing
    - ▶ pronominal affixes appear on the auxiliary

(1)   La professeure la   lui   a   écrite.
       the professor   DO.3SG.F IO.3SG has written
       'The professor wrote it to her.'

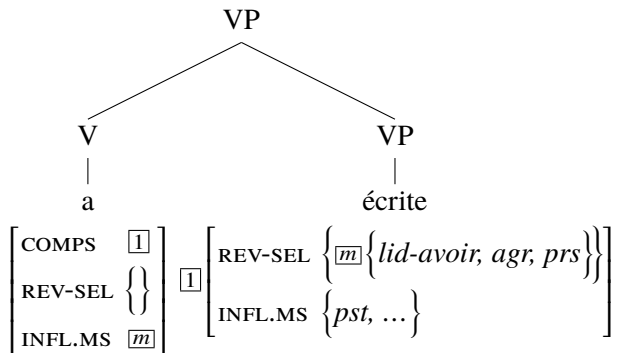# Periphrasis by reverse selection (Bonami, 2015)

Figure: Periphrasis by reverse selection (adapted from Aguila-Multner & Crysmann, 2020a)
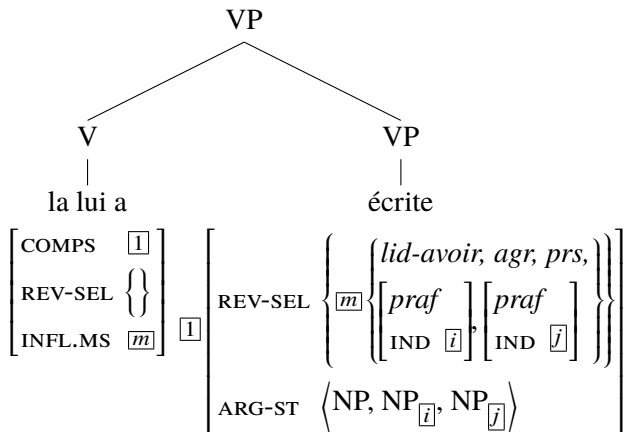
Clitic climbing

Figure: Periphrasis by reverse selection – clitic climbing (adapted from Aguila-Multner & Crysmann, 2020a)

More periphrasis: clitic climbing in causatives

▶ Clitic climbing is also found with *faire*-constructions

(2) La professeure la lui fait écrire.
     the professor DO.3SG.F IO.3SG makes write.
     'The professor makes her write it.'

▶ We view this case as causative periphrasis
  ▶ clause union as argument structure extension of the infinitive
  ▶ reverse selection allows for an inside-out approach rather than the outside-in
    approach based on argument composition (Miller & Sag, 1997; Abeillé & Godard,
    2002)
    → better control on the realisation of arguments (Koenig, 1998; Aguila-Multner &
      Crysmann, 2020b)
  ▶ high degree of grammaticalisation (non-compositional uses, morphosyntactic
    idiosyncrasies)

▶ Contrast with other infinitival periphrasis in French, e.g. the periphrastic
  future

(3) La professeure va l' écrire.
     the professor go.PRS.3SG DO.3SG write
     'The professor is going to write it.'

  ▶ downstairs realisation

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Se

▶ Another case of morphological voice alternation concerns *se*-forms

  ▶ Reflexive *se*

    (4) Louise et Matthieu se   rencontrent.
         Louise and Matthieu REFL.3 meet
         'Louise and Matthieu meet each other.'

  ▶ Medio-passive *se*

    (5) Ce problème se   remarque facilement.
         this problem REFL.3 notices   easily
         'This problem is noticed easily.'

▶ These forms combine in iconic order with causativisation

  ▶ Causativised reflexive

    (6) Je fais se   rencontrer Louise et Matthieu.
         I make REFL.3 meet   Louise and Matthieu
         'I make Louise and Matthieu meet each other.'

  ▶ Reflexivised causative

    (7) Martin se   fait payer ses repas.
         Martin REFL.3 makes pay   his meals
         'Martin gets his meals paid for himself.'

Se

- ▶ Another case of morphological voice alternation concerns *se*-forms
  - ▶ Reflexive *se*

    (4) Louise et Matthieu se   rencontrent.
         Louise and Matthieu REFL.3 meet
         'Louise and Matthieu meet each other.'

  - ▶ Medio-passive *se*

    (5) Ce problème se   remarque facilement.
         this problem REFL.3 notices   easily
         'This problem is noticed easily.'

- ▶ These forms combine in iconic order with causativisation
  - ▶ Causativised medio-passive

    (8) Son ampleur fait se   remarquer facilement le problème.
         its scale   makes REFL.3 notice   easily   the problem
         'Its scale makes the problem be noticed easily.'

  - ▶ Medio-passivised causative

    (9) Ce problème peut se   faire remarquer à   des   néophytes.
         this problem can REFL.3 make notice   to INDEF.PL neophytes
         'This problem can be shown to neophytes.'

Causativisation

$$
\begin{bmatrix}
\text{VFORM} & \textit{nonfinite} \\
\text{SUBJ} & \left\langle \text{NP}_{\boxed{i}} \right\rangle \\
\text{COMPS} & \left\langle \text{NP}_{\boxed{j}} \left[\textit{à/bare/par/de} \right] \right\rangle \oplus \boxed{c} \\
\text{INFL} & \left[\text{MS } \boxed{m} \cup \left\{ \textit{cause-lid, } \boxed{i} \textit{ agr} \right\} \right] \\
\text{DTR} & \begin{bmatrix}
\text{SUBJ} & \left\langle \text{NP}_{\boxed{j}} \right\rangle \\
\text{COMPS} & \boxed{c} \\
\text{INFL} & \left[\text{MS } \boxed{m} \right]
\end{bmatrix}
\end{bmatrix}
$$

$$
\wedge \neg \text{ member}(\begin{bmatrix} \textit{aff-ss} \\ \text{L|CONT } \textit{expl} \vee \textit{ana} \end{bmatrix}, \boxed{c})
$$

Figure: Lexical rule for causativised verbs

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se lexical rules

$$
\begin{bmatrix}
\text{SUBJ} & \left\langle \boxed{1}\,\text{NP} \right\rangle \\
\text{COMPS} & \left\langle \text{NP}[\textit{aff-ss}]_{\boxed{i}}{:}ana \right\rangle \oplus \boxed{a} \\
\text{DTR} & \begin{bmatrix} \text{SUBJ} & \left\langle \boxed{1}\,\text{NP}_{\boxed{i}} \right\rangle \\ \text{COMPS} & \left\langle \text{NP}_{\boxed{i}} \right\rangle \circ \boxed{a} \end{bmatrix}
\end{bmatrix}
\qquad
\begin{bmatrix}
\text{SUBJ} & \left\langle \boxed{1}\,\text{NP}_{\boxed{j}} \right\rangle \\
\text{COMPS} & \left\langle \text{NP}[\textit{aff-ss}]_{\boxed{j}}{:}ana \right\rangle \oplus \boxed{a} \\
\text{DTR} & \begin{bmatrix} \text{SUBJ} & \left\langle \text{NP}_i \right\rangle \\ \text{COMPS} & \left\langle \boxed{1}\,\text{NP}_{\boxed{j}} \right\rangle \oplus \boxed{a} \end{bmatrix}
\end{bmatrix}
$$

(a) Reflexive   (b) Medio-passives

Figure: Lexical rules for *se*

Trapping

▶ Lexically specified (expletive-like) 'intrinsic' pronominals enforce downstairs realisation

    (10)   Cela (*lui en) fait lui   en vouloir à Louise.
               this IO.3SG GEN makes IO.3SG GEN be_mad to Louise
               'This makes Louise be mad at her.'

▶ Various other contexts favour downstairs realisation

    (11)   Pierre a fait y comparer ce livre à Jean.
               Pierre has made LOC compare that book to Jean
               'Pierre had Jean compare that book to it.'

               (Rouveret & Vergnaud, 1980, 138)

▶ In all cases, the downstairs subject can only be realised upstairs

    (12)   Cela lui   fait   vous   en vouloir.
               this IO.3SG makes OBJ.2PL GEN be_mad
               'This makes her mad at you.'

    (13)   Pierre lui   a fait y comparer ce livre.
               Pierre IO.3SG has made LOC compare that book
               'Pierre had him compare that book to it.'
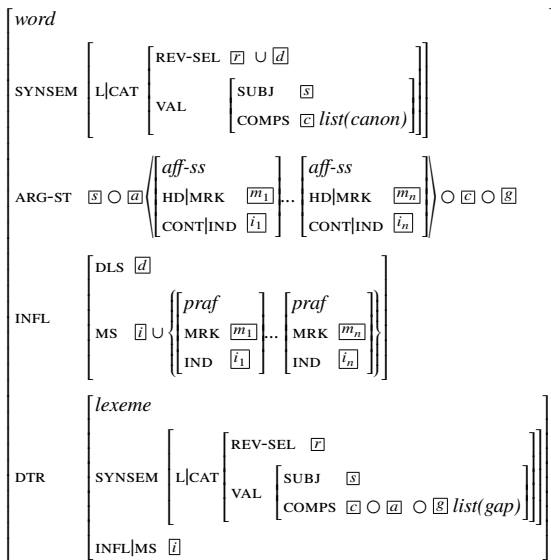
Argument mapping & the morphology interface

Figure: Argument mapping (Aguila-Multner & Crysmann, 2020a)

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Integrating periphrasis into IbM

- ▶ Existing formalisation of periphrasis in PFM (Bonami, 2015):
  - ▶ Syntactic percolation (reverse selection for properties ancillary element)
  - ▶ Morphological delegation (referral):
    - ▶ realisation rules not only return a form, but
    - ▶ may also specify a set of properties for reverse selection
- ▶ Information-based Morphology (Crysmann & Bonami, 2015)
  - ▶ Inferential-realisational model of inflection
  - ▶ Realisation rules are organised into cross-cutting inheritance hiearchies
  - ▶ Neo-templatic approach
    particularly well-suited to position class systems, such as clitic clusters
    (Crysmann & Bonami, 2013)
  - ▶ Rules pair
    - ▶ morphosyntactic properties being expressed (MUD) with
    - ▶ exponents (=morphs: MPH)
  - ▶ Systematic distinction between local expression and global conditioning
    - ▶ Morphosyntactic properties (MUD vs. MS)
    - ▶ Realisation (MPH vs. MPS; Crysmann, 2023)
- ▶ Augment IbM rules with delegation features
  - ▶ DEL: set of morphosyntactic properties the rule designates for periphrasis
  - ▶ DLS: set of sets of all periphrastic relations a word entertains
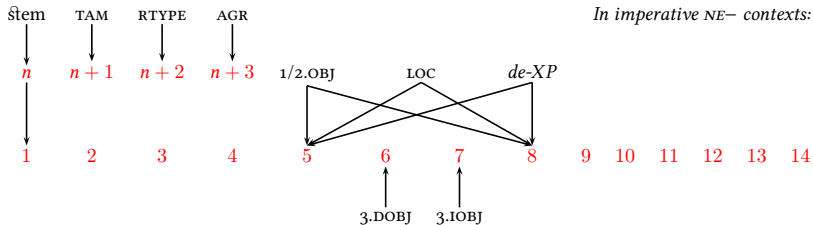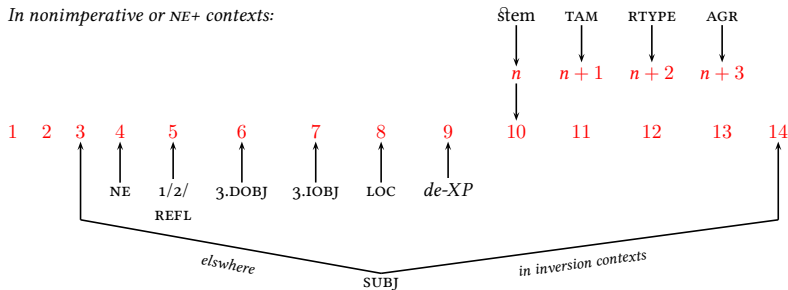
Integrating periphrasis into IbM

$$
word \rightarrow
\begin{bmatrix}
\text{PH} & \boxed{p_1} \oplus \ldots \oplus \boxed{p_n} \\[2mm]
\text{INFL} &
\begin{bmatrix}
\text{MPS} & \boxed{e}\left(\boxed{e_1}\Big[\text{PH}\ \boxed{p_1}\Big] \bigcirc \ldots \bigcirc \boxed{e_n}\Big[\text{PH}\ \boxed{p_n}\Big]\right) \\[2mm]
\text{MS} & \boxed{0}\left(\boxed{m_1} \cup \cdots \cup \boxed{m_n}\right) \\[2mm]
\text{RR} &
\left\{
\begin{bmatrix}
\text{MPH} & \boxed{e_1} \\
\text{MPS} & \boxed{e} \\
\text{MUD} & \boxed{m_1} \\
\text{MS} & \boxed{0} \\
\text{DEL} & \boxed{d_1} \\
\text{DLS} & \boxed{d}
\end{bmatrix}, \ldots,
\begin{bmatrix}
\text{MPH} & \boxed{e_n} \\
\text{MPS} & \boxed{e} \\
\text{MUD} & \boxed{m_n} \\
\text{MS} & \boxed{0} \\
\text{DEL} & \boxed{d_n} \\
\text{DLS} & \boxed{d}
\end{bmatrix}
\right\} \\[2mm]
\text{DLS} & \boxed{d}\left(\boxed{d_1} \cup \cdots \cup \boxed{d_n}\right)
\end{bmatrix}
\end{bmatrix}
$$

Figure: Well-formedness

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Morphotactics of French pronominal affixes

▶ Informal Parisian (Crysmann & Bonami, 2013)

Synthetic realisation

- ▶ Clitic climbing goes piggy-back on existing periphrastic relation
    - ▶ Composed tenses
    - ▶ Passives
    - ▶ Causatives etc.
- ▶ Direct realisation of pronominal affixes
    - ▶ absence of periphrasis
    - ▶ "near" tenses
- ▶ Direct praf realisation rules
    - ▶ express morphosyntactic properties by affixation
    - ▶ do not introduce a periphrastic dependency (empty DEL)
    - ▶ constrain presence of periphrastic dependencies within the word (via DLS)
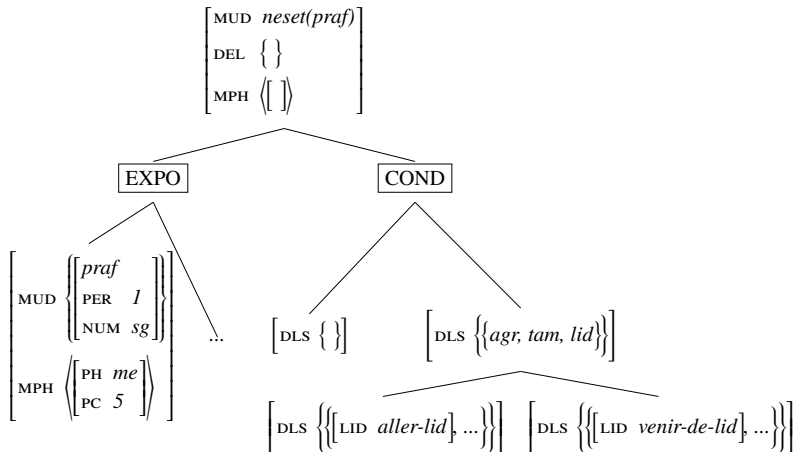
Local realisation rules

Figure: Local realisation

Periphrastic realisation

- ▶ Three types of periphrasis in French
    - ▶ "Near" tenses
        - ▶ Infinitival stem selection (sтм10)
        - ▶ No clitic climbing
    - ▶ Composed tenses
        - ▶ Compositional and non-compositional
        - ▶ Participial stem selection (sтм12)
        - ▶ Clitic climbing
    - ▶ Causatives
        - ▶ May combine with TAM periphrasis (causative of perfectives)
        - ▶ Climbing goes piggy-back on periphrastic causative
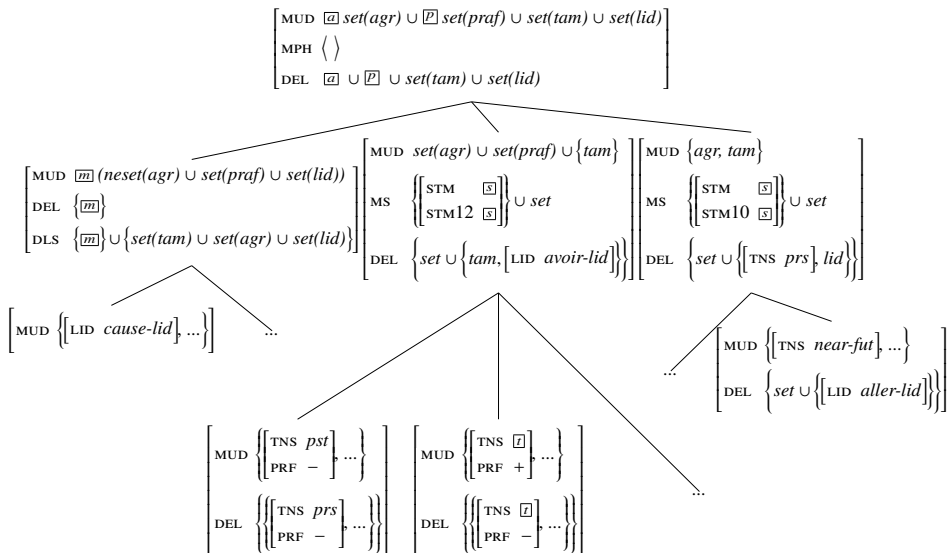
Periphrastic realisation rules

Figure: Periphrastic realisation

Two-stage realisation

- Ordering of reflexivisation and causation gives rise to two scenarios
    - Causative feeds reflexive:
        - Binding by causer
        - Clitic climbing of downstairs subject
        - Climbing of all downstairs pronominal arguments
    - Reflexive feeds causative:
        - Binding by downstairs subject
        - Clitic climbing of downstairs subject
        - Trapping of all other downstairs pronominal arguments

- Two places for inflection:
    - before causativisation: trapping
    - after causativisation: periphrasis
        - clitic climbing of downstairs subject
        - clitic climbing of downstairs objects

$$
\begin{bmatrix}
lexeme \\
\text{SYNSEM} \;\; \boxed{s} \\
\text{INFL} \quad \begin{bmatrix} \text{MS} \left\{ \begin{bmatrix} stem \\ \text{STM} \;\; \boxed{p} \end{bmatrix} \right\} \end{bmatrix} \\
\text{DTR} \quad \begin{bmatrix} word \\ \text{SYNSEM} \;\; \boxed{s} \\ \text{PH} \quad \boxed{p} \\ \text{INFL|MS} \; \left\{ [], [], ... \right\} \end{bmatrix}
\end{bmatrix}
$$

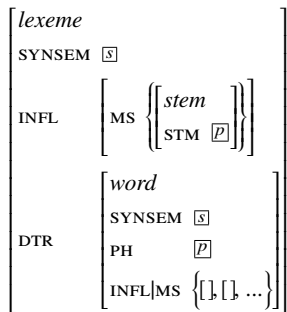Figure: Word-to-Lexeme LR

- Salehi & Koenig (2023)
    - convert inflected *word* into lexeme for further derivation
    - insert inflected form as derived stem

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Conclusion

- Integration of periphrasis in IbM
  - straightforward integration of Bonami (2015) via DEL feature
  - added benefit: global conditioning facilitates capturing interaction between periphrastic dependencies
- Periphrastic morphology in French
  - Rich set of periphrastic dependencies
    - TAM/agreement
      Compositional and non-compositional stacking
    - Pronominal affixation
      Dependency on existing periphrastic dependency
    - Grammatical function change (causation, passive etc.)
- Integrated morphological account of pronominal affixation
  - Clitic clusters (Crysmann & Bonami, 2013)
  - Clitic climbing (Aguila-Multner & Crysmann, 2020a; Aguila-Multner, 2023)
- Two-step inflection
  - reconciles trapping and climbing
  - provides a more flexible interface between inflection and derivation (Koenig & Michelson, 2020)

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