Variable morphotactics in a nutshell: the case of French pronominal affixes

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Paris HPSG Workshop — November, 2014

The goal of this talk

- Noncanonical morphotactics (Stump, 1993; Bonami and Stump, forthcoming; Crysmann and Bonami, 2012):
  - Positional disambiguation (Swahili)
  - Conditioned reordering (Fula)
  - Free reordering (Chintang)
  - Mobile stems (Italian)
  - Wackernagel affixes (Sorani Kurdish)
- Bonami and Crysmann (2013) presents an information-based theory of realizational morphology which aims at:
  - Limiting the amount of structure in morphological derivations
  - Accounting for the typology of deviations

  by taking seriously the idea of a template of positions.
- Main focus: conjugation of contemporary informal Parisian French.
- We show how the theory readily accounts for multiple deviations in a single system, by simple accumulation of constraints.

Noncanonical morphotactic phenomena

Misaligned exponence

- In the canonical situation, exponents for different values of the same feature appear in the same position.
- However exceptions to this are common. For instance in Nepali (Bonami and Boyé, 2008):

	PRESENT	FUTURE
1	birsã-tʃʰa-aũ	birse-aũ-lā
2.LOW	birsã-tʃʰa-s	birse-lā-s
2.MID	birsã-tʃʰa	birse-lā
3.LOW	birsã-tʃʰa-au	birse-au-lā
3.MID	birsã-tʃʰa-n	birse-lā-n

Table: Masculine singular forms of the Nepali verb BIRSANU 'forget'

Misaligned exponence

- If we assume 4 linear positions for tense and person, then each affix can be assigned to a fixed position.

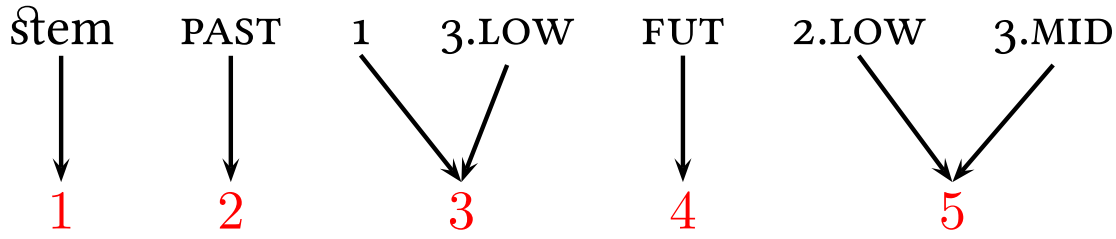

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Table: Masculine singular forms of the Nepali verb BIRSANU 'forget'

Free placement

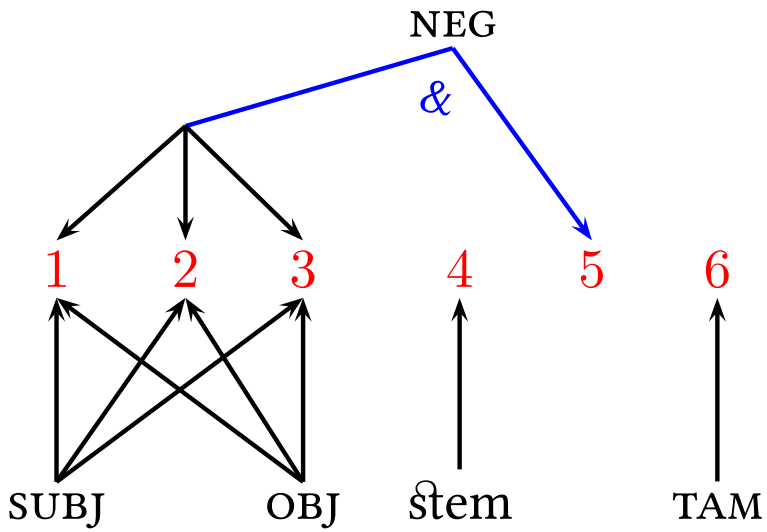
- Chintang verb prefixes (Bickel et al., 2007)
  - can be freely permuted
  - prefixes encode subject and object agreement, as well as negation
  - Suffixes in Chintang, however, are strictly ordered in position classes

u	kha	ma	cop	yokt	e	'They didn't see us.'
u	ma	kha	cop	yokt	e	'They didn't see us.'
kha	u	ma	cop	yokt	e	'They didn't see us.'
kha	ma	u	cop	yokt	e	'They didn't see us.'
ma	u	kha	cop	yokt	e	'They didn't see us.'
ma	kha	u	cop	yokt	e	'They didn't see us.'

Accounting for the Chintang data

u	kha	ma	cop	yokt	e	‘They didn’t see us.’
u	ma	kha	cop	yokt	e	‘They didn’t see us.’
kha	u	ma	cop	yokt	e	‘They didn’t see us.’
kha	ma	u	cop	yokt	e	‘They didn’t see us.’
ma	u	kha	cop	yokt	e	‘They didn’t see us.’
ma	kha	u	cop	yokt	e	‘They didn’t see us.’

- We allow some morphs to underspecify their position classes:
  - Here, three series of morphs are specified as prefixal but do not select for a specific position.



Misaligned exponence+Free placement

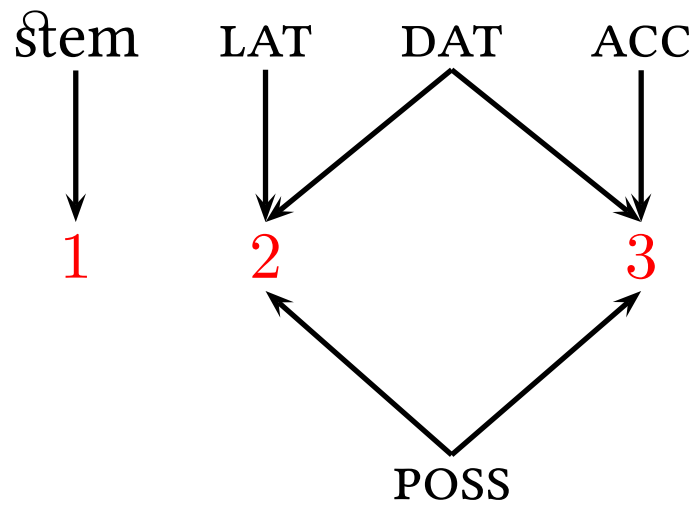
- Order of possessive and case markers in Mari (Luutonen, 1997)
  - Some case markers obligatorily follow the possessive marker (ACC)
  - Some case markers obligatorily precede the possessive marker (LAT)
  - Some cases (like DAT) permute freely with possessive marker

	NOPOSS	1PL.POSS	
		POSS ≺ CASE	CASE ≺ POSS
NOM	pört	pört-na	
ACC	pört-əm	pört-na-m	*
DAT	pört-lan	pört-na-lan	pört-lan-na
LAT	pört-eš	*	pört-eš-na

Accounting for the Mari situation

- We can redeploy the analytic tools used for misaligned exponence and free placement:
  - The stem goes in position 1
  - The LAT marker goes in position 2
  - The ACC marker goes in position 3
  - Possessive markers are underspecified for position
  - The dative marker is likewise underspecified

	NOPOSS	1PL.POSS	
		POSS ≺ CASE	CASE ≺ POSS
NOM	pört	pört-na	
ACC	pört-əm	pört-na-m	*
DAT	pört-lan	pört-na-lan	pört-lan-na
LAT	pört-eš	*	pört-eš-na



Conditional placement

- Swahili relative agreement markers are found in two positions, but the choice of the position is conditional (Stump, 1993):

(1) Tensed:

a. *a-na-ye-soma*
M/WA.S-PROG-M/WA.REL-read
'(person) who is reading'

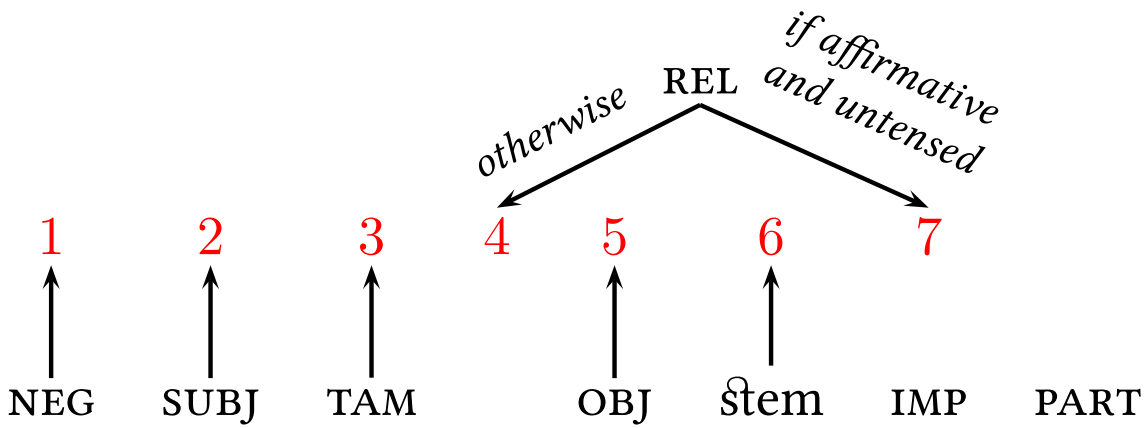
b. *a-na-cho-ki-soma*
M/WA.S-PROG-KI/VI.REL-KI/VI.O-read
'(book) which he is reading'

(2) Untensed:

a. *a-soma-ye*
M/WA.S-read--M/WA.REL
'(person) who reads'

b. *a-ki-soma-cho*
M/WA.S-read-ki/vi.o-KI/VI.REL
'(book) which he reads'

- Schematically:



Absolute and relative placement: Italian

- Italian pronominal affixes (Monachesi, 1999):
  - Occur in a fixed order of 6 positions

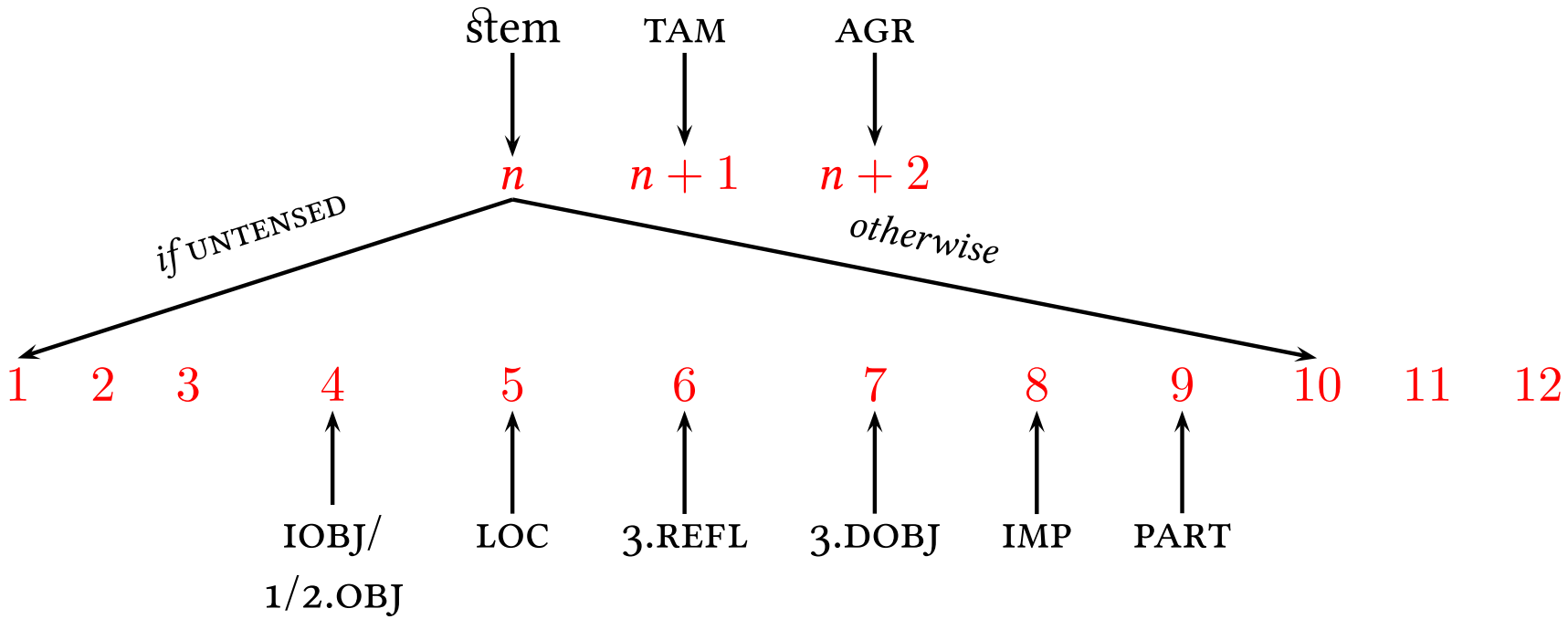
A	B	C	D	E	F
[*obj,1sg*]:	[*loc*]:	[*obj, 3, refl*]:	[*d-obj,3sg,m*]:	[*obj, imp*]:	[*part*]:
mi	ci	si	lo	si	ne
...			...		

  - Occur on either side of the stem depending on context
  - Order within the cluster is the same on either side of the stem
  - Other affixes (TAM and agreement) are always suffixed to the stem

	me	lo	da	-te		'You give it to me.'
			da	-te	me lo!	'Give it to me!'
*			da	-te	lo me!	
*	lo	me	da	-te		
*			te-	da	me lo!	
*	me	lo	te-	da.		

Accounting for relative placement

- We submit that this is best accounted for by distinguishing two separate position indexing schemes:
  - *Absolute positioning* in named positions
  - *Relative positioning* at a specific distance from the stem
- The stem itself is then the element whose position varies in Italian.



The morphotactics of French pronominal affixes

French pronominal affixes

- Cf. Morin (1979a,b, 1981); Stump (1981); Miller (1992); Auger (1995); Miller and Sag (1997); Abeillé et al. (1998); Bonami and Boyé (2007)
- Subject pronominal affixes:
  - Preverbal by default
  - Postverbal in an arbitrary collection of constructions, including:
    - Matrix interrogatives
    - Clauses starting with a handful of sentence adverbs (*jamais* 'never', *probablement* 'probably', *encore* 'still', etc.)
    - Quotative clauses
- Complement pronominal affixes:
  - Preverbal by default
  - Postverbal in the imperative in the absence of preverbal negative marker *ne*

Elle le prend.	*Elle prend le.	'She takes it.'
* Le prends!	Prends-le!	'Take it!'
Ne le prends pas. Le prends pas	*Ne prends-le pas Prends-le pas.	'Do not take it!'

French pronominal affixes: prefixal use

- In prefixal position, French pronominal affixes are organized in strictly ordered position classes:

PRESENT INDICATIVE		translation
il me les donne	*il les me donne	‘He gives them to me.’
il m’en donne	*il en me donne	‘He gives me some.’
il m’y envoie	*il y m’envoie	‘He sends me there.’
il les leur donne	*il leur les donne	‘He gives them to them.’
il les en blâme	*il en les blâme	‘He blames them for it.’
il les y envoie	*il y les envoie	‘He sends them there.’
il leur en parle	*il en leur parle	‘He talks to them about it.’
il leur y parle	*il y leur parle	‘He talks to them there.’
il y en mange	*il en y mange	(int.) ‘He eats some there.’

Positional analysis

- This is standardly analyzed by positing 7 slots:

(3)

1	2	3	4	5	6	7
SUBJ	NE	1/2/REFL	3.DOBJ	3.IOBJ	LOC	*DE*-X
je						
tu						
il						
elle		*me*				
on		*te*	*le*	*lui*		
ce	*ne*	*se*	*la*	*leur*	*y*	*en*
ça		*nous*		*les*		
nous		*vous*				
vous						
ils						
elles						

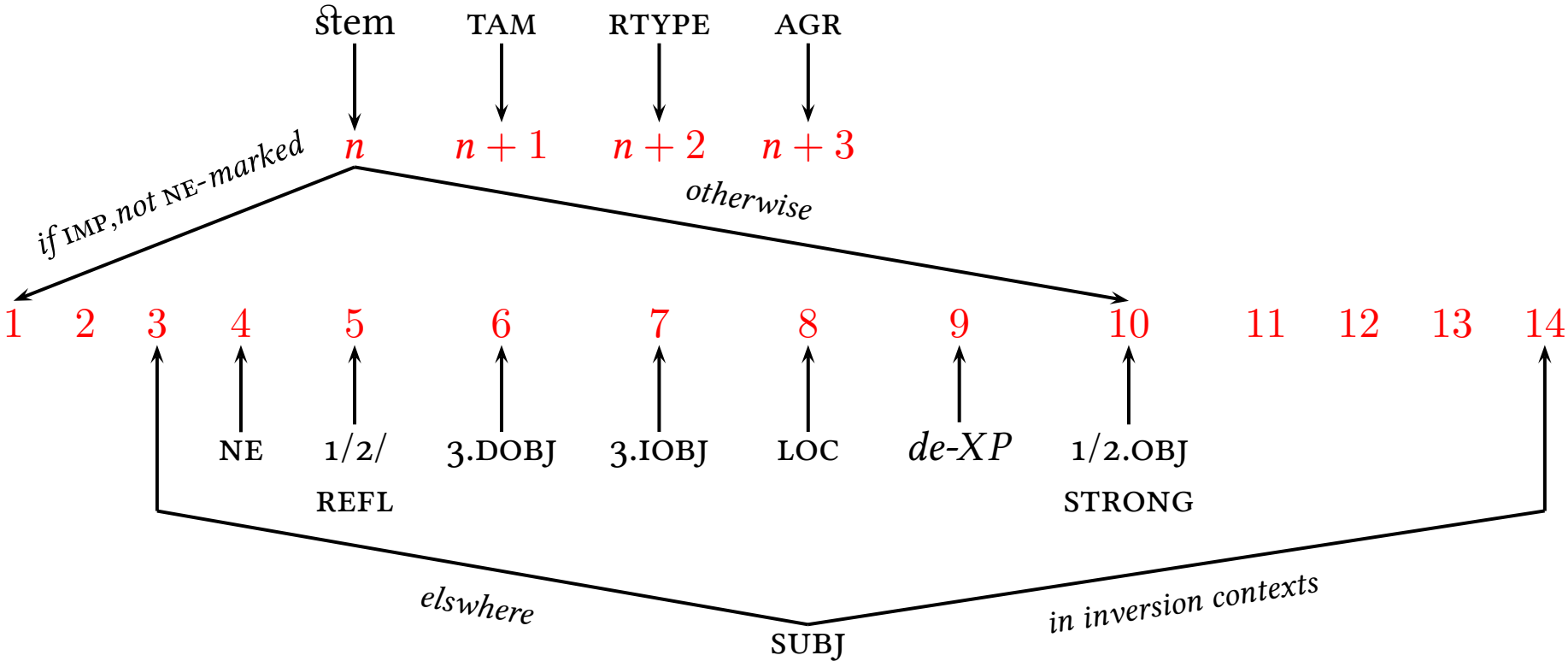
French pronominal affixes: suffixal use

Pedagogical and prescriptive grammars give the following distribution for suffixal use (in the imperative):

PRESENT INDICATIVE	POSITIVE IMPERATIVE	translation
il me les donne	donne-les-moi	'Give them to me.'
il m'en donne	donne-m'en	'Give me some.'
il m'y envoie	envoie-m'y	'Send me there.'
il les leur donne	donne-les-leur	'Give them to them.'
il les en blâme	blâme-les-en	'Blame them for it.'
il les y envoie	envoie-les-y	'Send them there.'
il leur en parle	parle-leur-en	'Talk to them about it.'
il leur y parle	parle-leur-y	'Talk to them there.'
il y en mange	manges-y-en	'Eat some there.'

Notice that there is no evidence for any mirroring effect: in the only case of a reversed order, the shapes are actually not the same.

The conservative French system



- But actually, morphotactic variation in this area is documented since the 17th century.
- In contemporary informal French, clear corpus evidence for variability, despite prescriptive pressures.

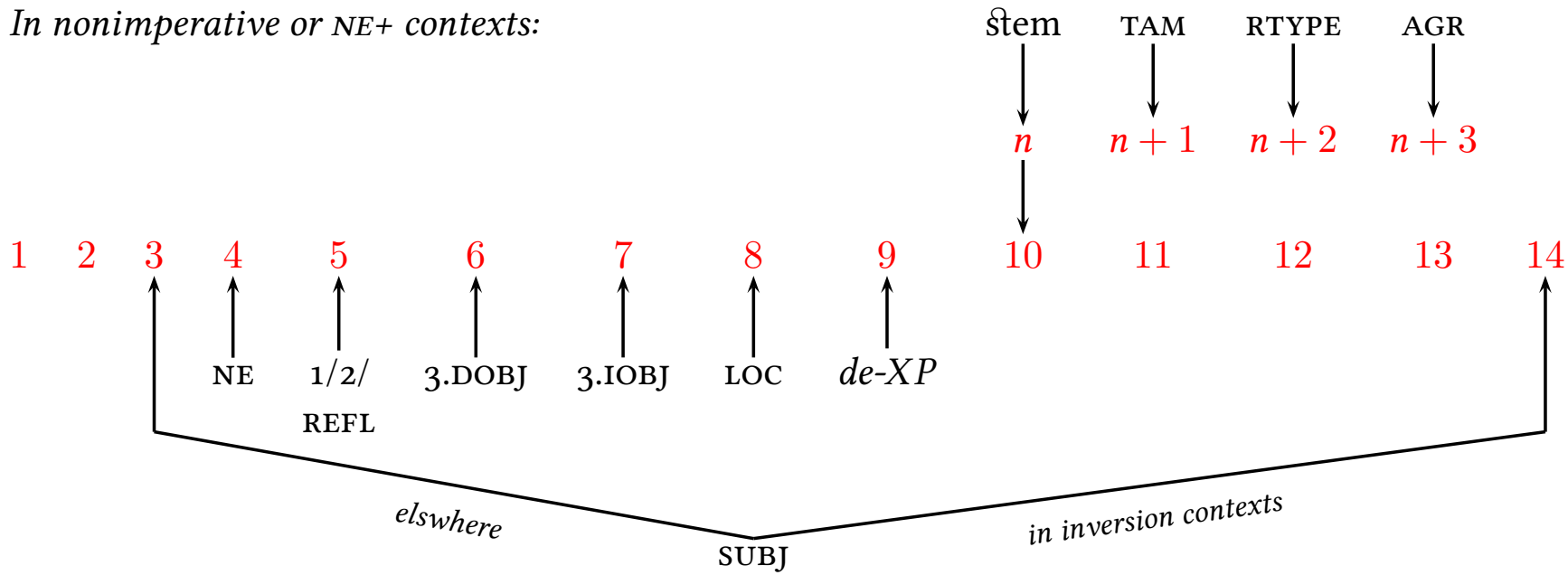
Suffixal use in informal Parisian French

- In contemporary informal Parisian French, there is clear overabundance.
  - Reduced 1SG and 2SG forms *me*, *te* are not used.
  - For most combinations of affixes, both orders are possible
  - In some cases there is a perceivable sociolinguistic preference.
  - Only one combination is excluded.

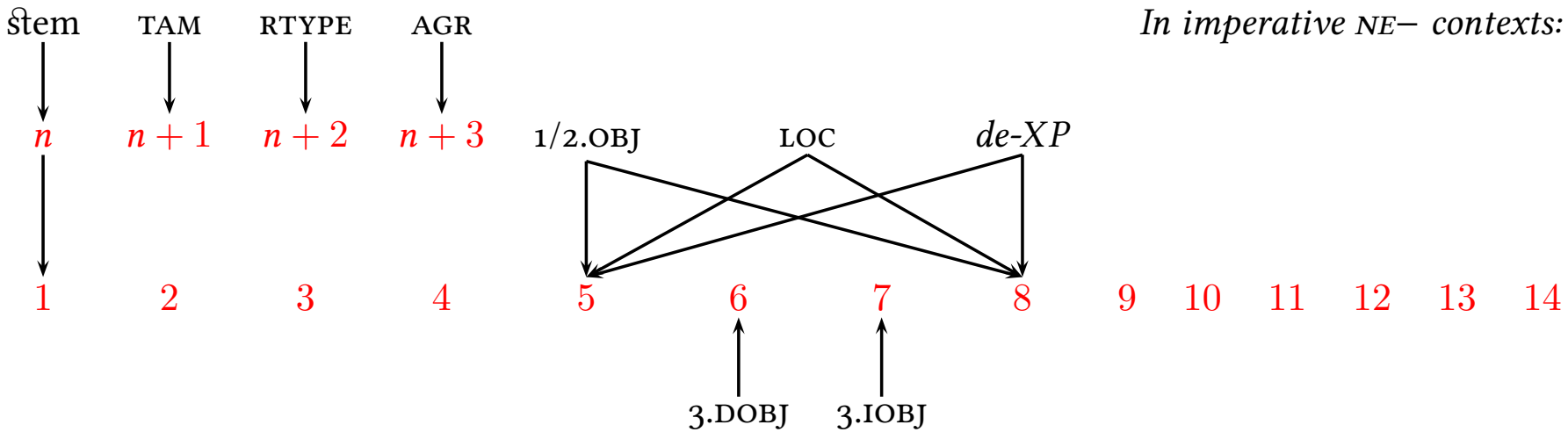
PRESENT INDICATIVE	POSITIVE IMPERATIVE		translation
il me les donne	*donne-les-moi*	donne-moi-les	'Give them to me.'
il m'en donne	*donne-m'en*/-moi-z-en	*donnes-en-moi*	'Give me some.'
il m'y envoie	*envoie-m'y*/-moi-z-y	envoies-y-moi	'Send me there.'
il les leur donne	donne-les-leur	*donne-leur-les	'Give them to them.'
il les en blâme	blâme-les-en	blâmes-en-les	'Blame them for it.'
il les y envoie	envoie-les-y	envoies-y-les	'Send them there.'
il leur en parle	parle leur-z-en	*parles-en-leur*	'Talk to them about it.'
il leur y parle	parle leur-z-y	*parles-y-leur*	'Talk to them there.'
il y en mange	??manges-y-z-en	??manges-en-z-y	(int.) 'Eat some there.'

The informal Parisian French system

In nonimperative or NE+ *contexts:*

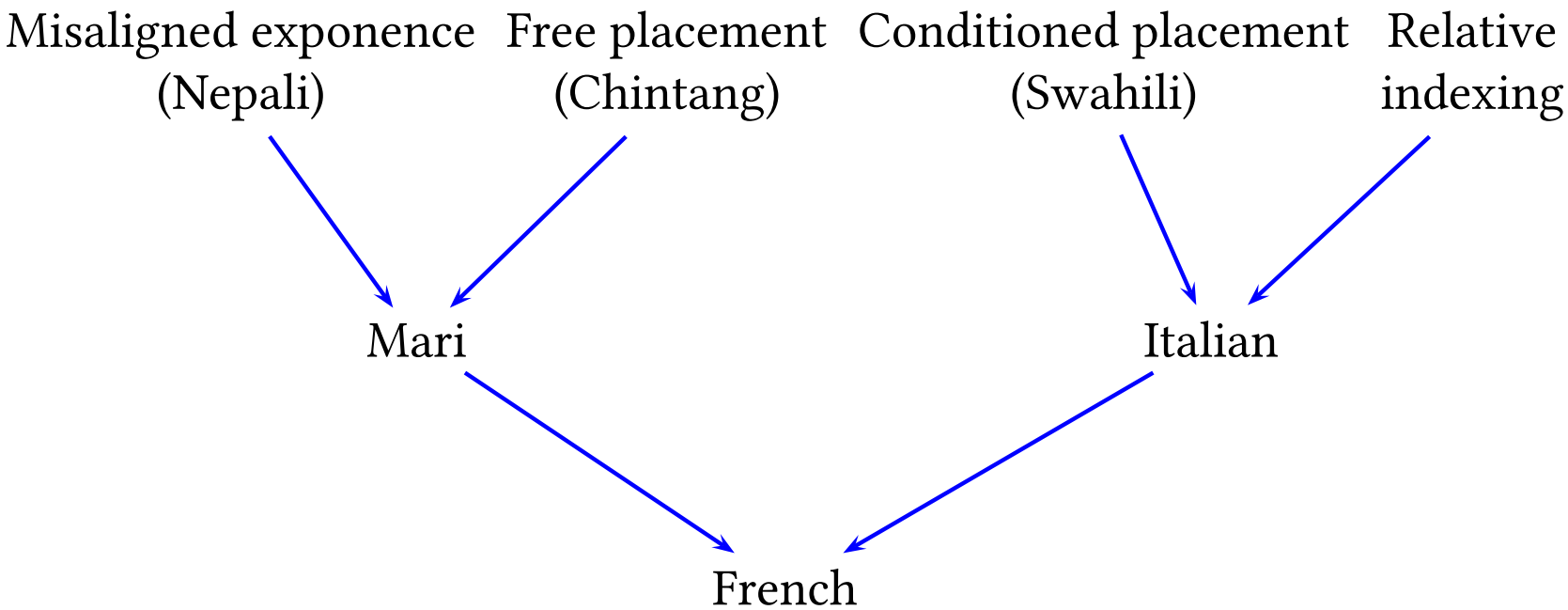


In imperative NE– *contexts:*



The informal Parisian French system

- This intricate system can be derived by redeploying previously used strategies:



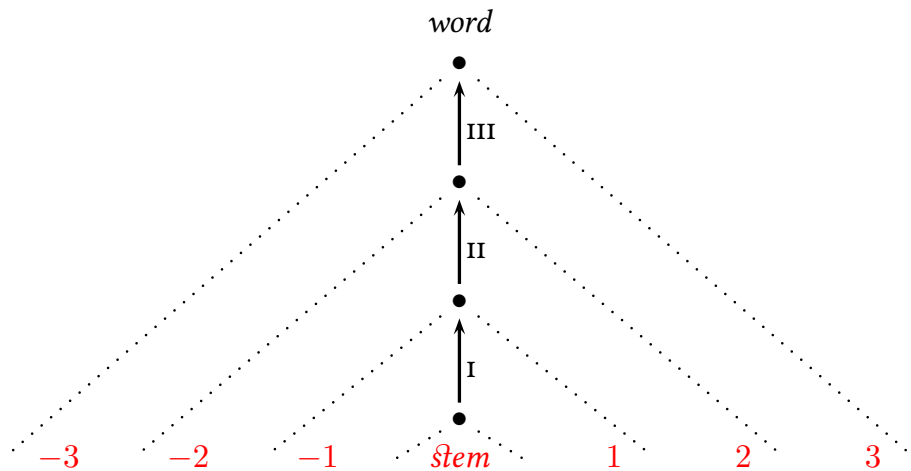
An HPSG approach to variable morphotactics

Taking the template seriously

- We have described different types of morphotactics in templatic terms.

$$1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7$$

- This is rather unusual: most generative approaches to morphology rely on stem-centric composition.



- If the template is a good descriptive tool, why should we forget about it when we write grammars?
- The following is an attempt to take the template seriously as a theoretical construct.

Realizational, template-based morphology

- We pursue the detailed formalization of a template-based approach.
- Crucial addition: possible underspecification of positions.
- Formalized in HPSG:
  - Easy to formulate precise claims on the morphology-syntax interface
  - Relaxation of strict ordering by underspecification of position
  - Realization rules are organized in inheritance hierarchies, allowing for the expression of generalizations over positions, shapes, or combinations of positions and shapes.
- No extrinsic ordering of rules: the only order is the surface order of exponents.
- The approach is otherwise very similar to Paradigm Function Morphology (Stump, 2001)
  - Fully lexicalist
  - Inferential and realisational
  - No ordering of morphosyntactic features
  - Conflict between rules resolved by Pāṇini's Principle

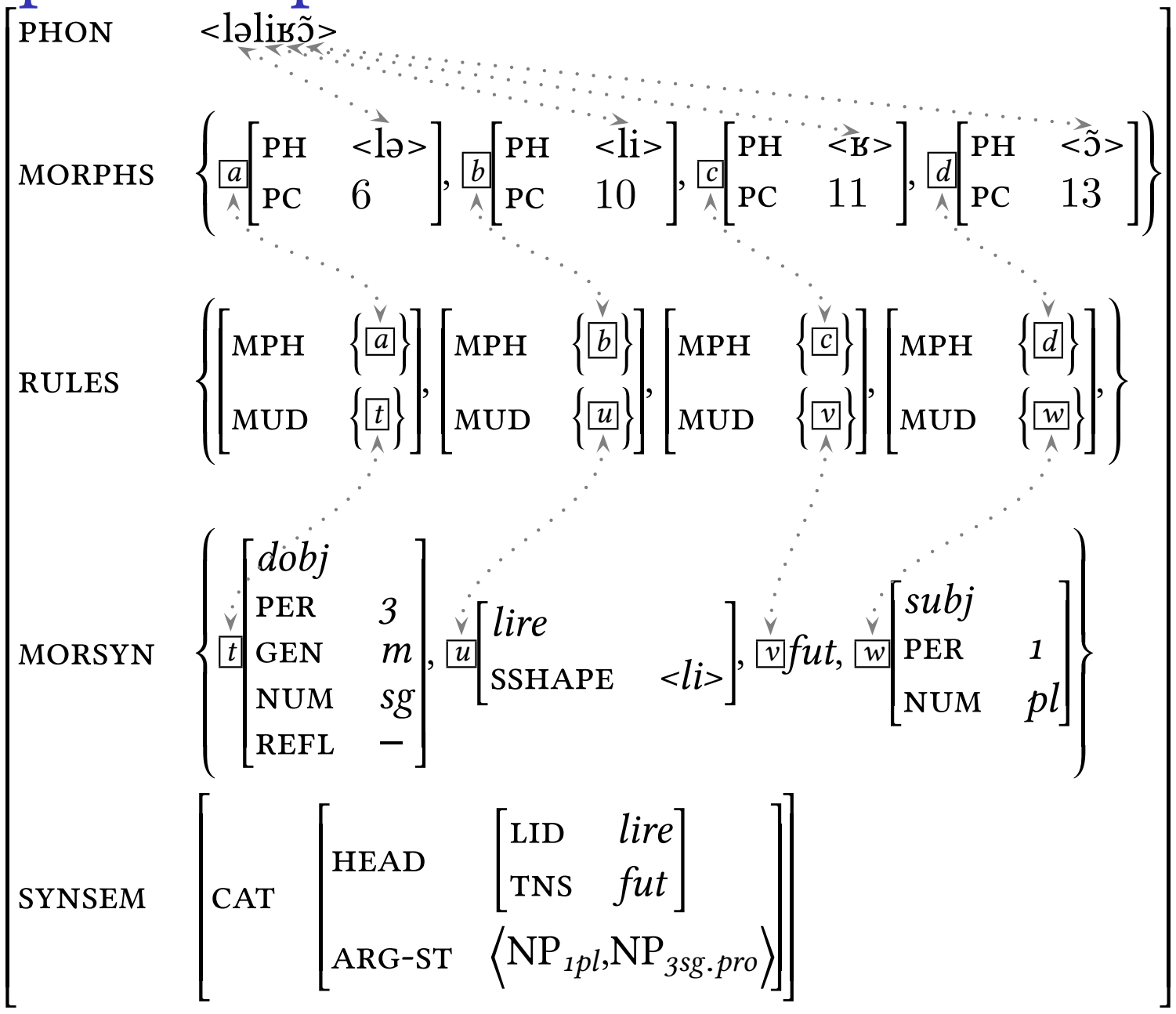
Realisation rules

- Realisation rules are triplets of
  - a description of a set of morphs
  - the Morphosyntax Under Discussion (MUD), i.e. the morphosyntactic properties realized by the rule
  - a full description of morphosyntactic property set, including a specification of lexeme identity (*lid*)

$$\begin{bmatrix} \textsc{morphs} & \left\{ \begin{bmatrix} \textsc{ph} & \text{<lə>} \\ \textsc{pc} & 6 \end{bmatrix} \right\} \\ \textsc{mud} & \boxed{1} \left\{ \begin{bmatrix} \textit{dobj} & \\ \textsc{per} & \textit{3} \\ \textsc{num} & \textit{sg} \\ \textsc{refl} & - \end{bmatrix} \right\} \\ \textsc{morsyn} & \boxed{1} \cup \textit{set} \end{bmatrix}$$

- A single rule may introduce more than one morph
- The MUD/MORSYN distinction implements an opposition between *realizing* and *being conditioned by* a feature (Carstairs, 1987)

A simple example



Word well-formedness

- A word is well-formed only if the set of rules licensing it exhausts its morphosyntactic description.

(4) $$word \rightarrow \left[\begin{array}{ll} \textsc{morphs} & \boxed{e_1} \cup \cdots \cup \boxed{e_n} \\ \textsc{rules} & \left\{\left[\begin{array}{ll} \textsc{morph} & \boxed{e_1} \\ \textsc{mud} & \boxed{m_1} \\ \textsc{morsyn} & \boxed{0} \end{array}\right], \ldots, \left[\begin{array}{ll} \textsc{morph} & \boxed{e_n} \\ \textsc{mud} & \boxed{m_n} \\ \textsc{morsyn} & \boxed{0} \end{array}\right]\right\} \\ \textsc{morsyn} & \boxed{0} \left(\boxed{m_1} \uplus \cdots \uplus \boxed{m_n}\right) \end{array}\right]$$

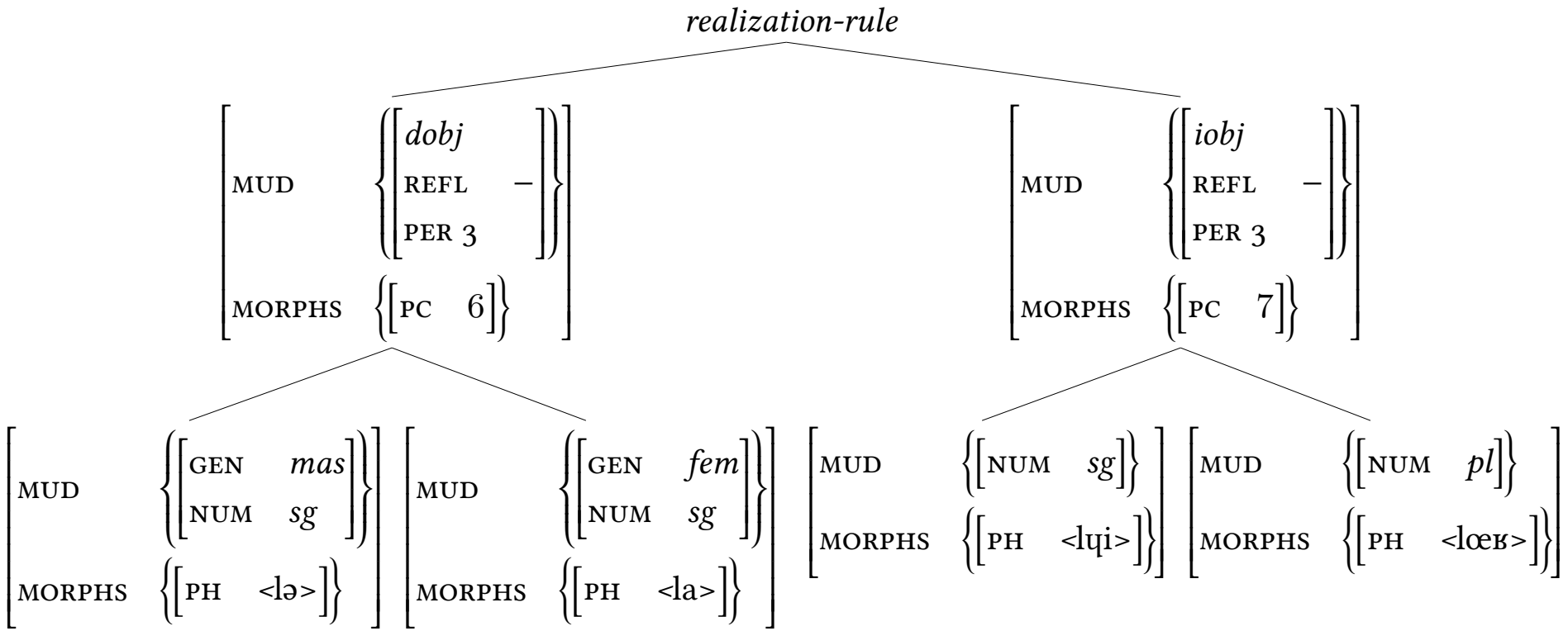
- The phonology of the word is the concatenation of the phonology of its morphs, respecting positional specifications

(5) $$word \rightarrow \left[\begin{array}{ll} \textsc{phon} & \boxed{p_1} + \boxed{p_2} + \cdots + \boxed{p_n} \\ \textsc{morphs} & \left\{\left[\begin{array}{ll} \textsc{ph} & \boxed{p_1} \\ \textsc{pc} & \boxed{i_1} \end{array}\right], \left[\begin{array}{ll} \textsc{ph} & \boxed{p_1} \\ \textsc{pc} & \boxed{i_2} \end{array}\right], \ldots, \left[\begin{array}{ll} \textsc{ph} & \boxed{p_n} \\ \textsc{pc} & \boxed{i_n} \end{array}\right]\right\} \end{array}\right]$$

where $\boxed{i_1} < \boxed{i_2} < \cdots < \boxed{i_n}$

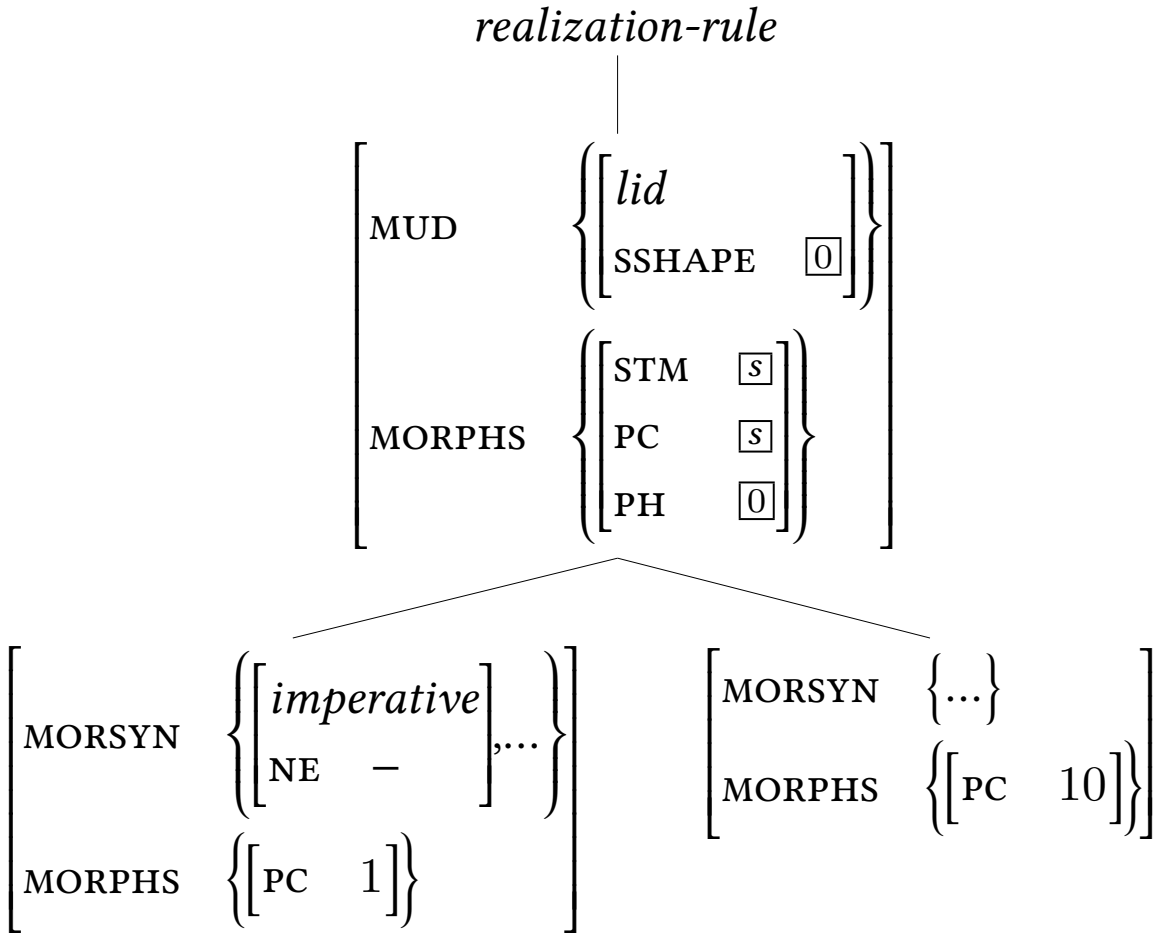
Inheritance hierarchy of rules

- Realization rules are organized in an inheritance hierarchy
  - Captures commonalities between rules
  - Avoidance of redundancy



Conditional placement

- Multiple rules (organized in a hierarchy) account for the conditional placement of the stem.

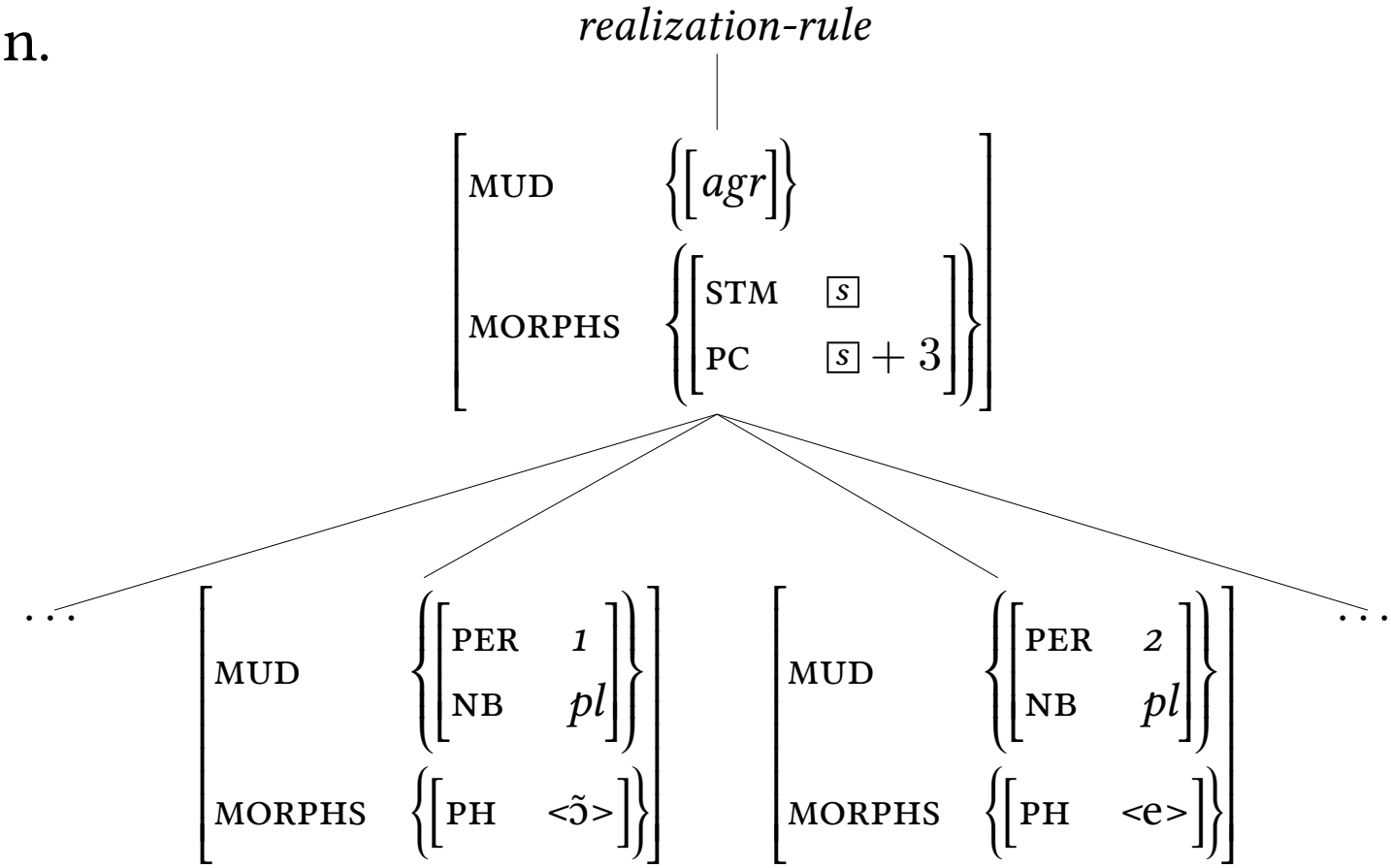


Relative placement

- We introduce a feature on morphs recording the position of the stem.

(6) $$word \rightarrow \left[\textsc{morphs} \quad \left\{\left[\textsc{stm}\ \boxed{s}\right], \left[\textsc{stm}\ \boxed{s}\right], \ldots, \left[\textsc{stm}\ \boxed{s}\right]\right\}\right]$$

- Rules may then place their morphs relative to this distinguished position.



Free placement

- Free placement of morphs simply amounts to underspecified placement
  - Here: any position strictly higher than 4

$$\begin{bmatrix} \textsc{morsyn} & \left\{ \begin{bmatrix} \textit{imperative} \\ \textsc{ne} & - \end{bmatrix}, \ldots \right\} \\ \textsc{mud} & \left\{ \begin{bmatrix} \textit{obj} \\ \textsc{per} & \textit{1} \\ \textsc{num} & \textit{sg} \end{bmatrix} \right\} \\ \textsc{morphs} & \left\{ \begin{bmatrix} \textsc{ph} & \text{<mwa>} \\ \textsc{pc} & 4 + n \end{bmatrix} \right\} \end{bmatrix}$$

Conclusion

Conclusion

- Main empirical claim: deviations from canonical morphotactics combine in a cumulative fashion
  - Mari: misaligned exponence + free placement
  - Italian: conditioned orderding + relative indexing
  - French: Italian + Mari
- Two theoretical constructs are crucial to our formal account:
  - Template with possible positional underspecification of morphs
  - Realization rules organized in an inheritance hierarchy
- Jointly these capture the conjunctive nature of constraint interaction in morphotactic systems.

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Does the conservative system exist?

- In fact it is unclear that the conservative system is anything but a prescriptive artefact.
  - Sequences such as *donne-m'en*, *envoie-m'y* have been debated since the 17th century, and are seldom used outside of edited text.

    Il faut dire, menez y moy, *& non pas,* menez m'y, *& au ſingulier auſſi,* menes-y moy, *& non pas,* mene-m'y. *Et cela à cauſe du mauvais & ridicule ſon que fait,* menez-m'y, *&* mene-m'y *[...]*

    (Vaugelas, 1647, 95)

  - Sequences such as *donne-moi-le*, although they have an informal character, have always been an alrernative to *donne-le-moi*

    Si le monde nous le refuse, donnons-nous-le à nous-mêmes.

    Bossuet, *Premier sermon pour le dimanche des rameaux*, 1660

    Pas un nom dans l'aſſiſtance qui ne fût notoire à quelque titre, et quant à celui de l'auteur, acclamé et fêté par nous, rappelez-vous-le pour l'applaudir un jour sur la dernière scène fidèle à la poésie.

    S. Mallarmé, *La dernière mode*, 7e livraison, 12/6/1874

Suffixal use: the evidence

- Establishing the data is quite hard:
  - Strong prescriptive urge not to accept the dispreferred order
  - Imperatives with two pronouns are seldom found in corpora: hands-on interactions between the speakers are needed.
  - The only large enough relevant corpus (New and Spinelli, 2013) exhibits a 100:1 ratio between the two orders
  - This suggests that even elicitation in an ecological setting will only provide very few relevant examples
- Given this we may conclude that:
  - The positive grammaticality judgements above are not disputable, confirmed by hundreds of examples in various corpora.
  - The negative judgements are less firmly established
    - Documented as such in (Morin, 1979b; Auger, 1995); no evidence given to the contrary anywhere in the literature.
    - Not attested in available corpora, but the amount of relevant data precludes a firm conclusion
    - Congruent with the impressionistic judgements of various speakers of the relevant variety, but not tested systematically.

Comparision with a-morphous approaches

- In the present theory:
  - Position class templates are modeled directly
  - Morphs are represented explicitly in morphological derivations
  - Realization rules are morph licensing statements: they don't modify an input string.
  - Realization rules are not ordered: an unstructured set of rules jointly licenses a word under a condition of informational completeness.
  - Under strong lexicalist assumptions, syntactic rules have no access to morphological structure either.
- Thus arguably, although the theory uses reified morphs:
  - It presupposes *less* structure in morphological derivations than stem-centric approaches (no derivation tree).
  - It makes exactly the same predictions as a-morphous approaches on the inaccessibility of morphological boundaries to both inflection rules and syntax.
  - It avoids the use of empirically undermotivated theoretical devices such as rule blocks.

Impossible combinations

- A single feature cooccurrence restriction accounts for the impossibility of

(7)
a.	* Il me lui présente.	'He introduces me to her.'
b.	* Il me te présente.	'He introduces me to you.'
c.	* Présente moi lui.	'Introduce me to her'.
d.	* Présente moi toi.	'Introduce yourself to me'.

(8) $$\left[\textsc{morsyn} \quad \left\{\left[dat\right],\ldots\right\}\right] \rightarrow \neg \left[\textsc{morsyn} \quad \left\{\left[\begin{array}{l} acc \\ 1 \vee 2 \vee refl \end{array}\right],\ldots\right\}\right]$$

- This is exactly as stipulative as placing the relevant exponents in the same rule block
- In any case, this is only a placeholder for an analysis taking into account periphrastic alternatives

(9)
a.	Il lui présente Paul	'He introduces Paul to her.'
b.	* Il présente Paul à elle	

Morphs with phonologically constrained distribution

- Well-known observations:
  - Suffixal *me* and *te* are licensed only when immediately followed by *y* or *en*.
  - Pronouns *y* and *en* take different shapes depending on whether or not they are preceded by a vowel-final morph in the same word.
  - Pronoun *les* takes a special shape when followed by a vowel-initial morph in the same word.
- All these observations can easily be modeled within the assumptions of contextualized declarative phonology (Walther, 1999; Crysmann, 2002)

$$word \rightarrow \left[\begin{array}{ll} \textsc{phon} & \left\langle \left[\begin{array}{ll} \textsc{prev} & \# \\ \textsc{self} & \boxed{1} \\ \textsc{next} & \boxed{2} \end{array}\right], \left[\begin{array}{ll} \textsc{prev} & \boxed{1} \\ \textsc{self} & \boxed{2} \\ \textsc{next} & \boxed{3} \end{array}\right], \ldots, \left[\begin{array}{ll} \textsc{prev} & \boxed{n-1} \\ \textsc{self} & \boxed{n} \\ \textsc{next} & \# \end{array}\right] \right\rangle \end{array}\right]$$

Morphs with phonologically constrained distribution

- Suffixal *me* vs. *moi*:

$$\begin{bmatrix} \textsc{stm} & \boxed{s} \\ \textsc{pc} & \boxed{s}+3+n \\ \textsc{ph} & \left\langle \begin{bmatrix} \textsc{self} & \text{m} \\ \textsc{next} & \textit{vow} \end{bmatrix} \right\rangle \end{bmatrix} \text{ vs. } \begin{bmatrix} \textsc{stm} & \boxed{s} \\ \textsc{pc} & \boxed{s}+3+n \\ \textsc{ph} & \left\langle \begin{bmatrix} \textsc{self} & \text{m} \end{bmatrix}, \begin{bmatrix} \textsc{self} & \text{w} \end{bmatrix}, \begin{bmatrix} \textsc{self} & \text{a} \end{bmatrix} \right\rangle \end{bmatrix}$$

- *y* vs. *z-y*:

$$\begin{bmatrix} \textsc{ph} & \left\langle \begin{bmatrix} \textsc{self} & \text{y} \\ \textsc{prev} & \neg \textit{vow} \end{bmatrix} \right\rangle \end{bmatrix} \text{ vs. } \begin{bmatrix} \textsc{ph} & \left\langle \begin{bmatrix} \textsc{self} & \text{z} \\ \textsc{prev} & \textit{vow} \end{bmatrix}, \begin{bmatrix} \textsc{self} & \text{y} \end{bmatrix} \right\rangle \end{bmatrix}$$

- This predicts correctly *envoies-y-moi*, *envoie-m'y*, *envoie-moi-z-y*, **envoie-m-z-y*, **envoie-moi-y*

Mari: the full data

- When plural markers are taken into account, surprising ordering possibilities arise.

	ABSOLUTE		1SG POSS	
	SG	PL	SG	PL
NOM	pört	pört-ßlak	pört-em	pört-ßlak-em pört-em-ßlak
ACC	pört-əm	pört-ßlak-əm	pört-em-əm	pört-ßlak-em-əm pört-em-ßlak-əm
DAT	pört-lan	pört-ßlak-lan	pört-em-lan pört-lan-em	pört-ßlak-em-lan pört-em-ßlak-lan pört-ßlak-lan-em
LAT	pört-eš	pört-ßlak-eš	pört-eš-em	pört-ßlak-eš-em pört-em-ßlak-eš

The full Mari data: Analysis

- This situation can be modeled easily if one assumes a position for POSS to the left of the plural marker that is unavailable in the singular
- All the right ordering possibilities then follow without further stipulation.