Unblurring the inflection/derivation divide in Laz

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- Laz conjugation presents a challenge for the split morphology hypothesis (Anderson, 1982; Perlmutter, 1988):
  - Inflectional and derivational affixes are interspersed.
  - Some position classes host either lexemic or inflectional material.
- The puzzle can be solved by allowing inflection rules to access structured lexemic representations.
- The analysis is couched in a modified version of Paradigm Function Morphology (Stump, 2001).

−4	−3	−2	−1	root	1	2	3	4	5	6
ko	go	m	o	k'untsx	in	am	t'	i	t	doe
AFF	LOC	OBJ.1	CAUS	wake_up	CAUS	THS	IPFV	PST	SBJ.12PL	EVD

'You (pl) were waking me up, I'm told.'

inflectional material
lexemic material (base or derived)
inflectional or lexemic material

1 Empirical evidence

1.1 Purely inflectional slots

-4 : affirmative preverbs

-2 : agreement with subject, object and/or indirect object

3 & 4 : tense/aspect/mood

5 : agreement with subject, object and/or indirect object

6 : tense/aspect/evidentiality

See (Lacroix, 2009) for a full description and (Bonami and Lacroix, 2010) for a full analysis of person markers.

1.2 Purely derivational slots

1 causative suffixes (*in*, *ap*)

-3 preverbs deriving productively locative verb lexemes

☞ In many cases a nonlocative meaning is lexicalized.

root	2	5
ul	u	n
go	THS	SBJ.3SG

‘he goes’

⇒

−3	root	2	5
gam	ul	u	n
LOC	go	THS	SBJ.3SG

‘he exits’

root	2	5
č	am	s
feed	THS	SBJ.3SG

‘he feeds’

⇏

−3	root	2	5
gama	č	am	s
LOC	feed	THS	SBJ.3SG

‘he sells’

1.3 Mixed slots

-1 Usually filled by a valence marker reflecting a derivational operation.

−2	root	2
p	č’op	um
1 > 3	catch	THS

‘I catch it’

⇒

−2	−1	root	2	5
m	a	č’op	e(r)	n
SBJ.1	POT	catch	THS	OBJ.3SG

‘I am able to catch it’

Some underived verbs begin with the valence marker *o-*

−2	−1	root	2
b	o	gn	am
1 > 3	TRANS	hear	THS

‘I hear it.’

In the perfect, hosts an inflectional exponent cumulating subject person marking.

−2	−1	root	2	5
b	u	č’op	u(r)	t
3 > 1	PRF.SUBJ.3SG	catch	PRF	OBJ.PL

‘he has caught us’

2 In some TAM combinations, filled by a lexemically specified thematic suffix.

root	2	5
ɣur	u(r)	n
die	THS	SUBJ.3SG

‘he dies’

root	4 – 5
ɣur	u
die	PST.PFV.SUBJ.3SG

‘he died’

Some derivation operations provide their own thematic suffix.

−1	root	1	2	5
o	ɣur	in	am	s
CAUS	die	CAUS	THS	SUBJ.3SG

‘he kills’

Others percolate the base lexeme’s thematic suffix.

root	2	5
k’od	um	s
build	THS	SBJ.3SG

‘he builds it’

⇒

−2	−1	root	2	5
m	i	k’od	um	s
OBJ.1	APP	build	THS	SBJ.3SG

‘he builds it for me’

root	2	5		−2	−1	root	2	5
dzir	om	s	$\neq$	m	i	dzir	om	s
see	THS	SBJ.3SG		OBJ.1	APP	see	THS	SBJ.3SG

‘he sees it’ ‘he finds it for me’

In other TAM combinations, hosts an inflectional suffix

root	2	3	4 – 5
ɣur	a	t’	u
die	PST.OPT	IPFV	PST.PFV.SUBJ.3SG

‘if only he could die!’

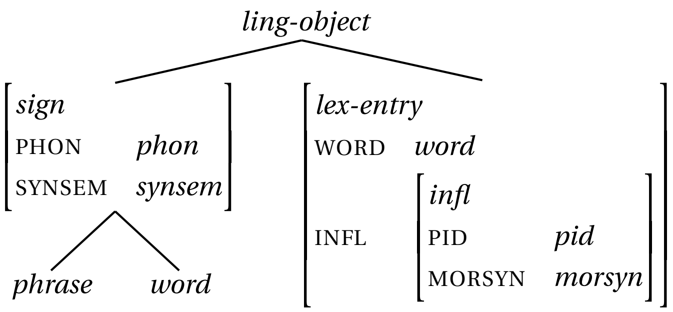
2 Proposed analysis

2.1 The framework

- We rely on a modified version of Paradigm Function Morphology Stump (2001) integrated as the inflectional component of an HPSG grammar Pollard and Sag (1994); see (Bonami, 2011)
  - Provides PFM with an articulated theory of the lexicon and an explicit interface with syntax and semantics.
  - Allows for straightforward accounts of inflectional periphrasis (Bonami and Webelhuth, ress, this conference) and morphosyntactic mismatches (Bonami and Lacroix, 2010)

2.1.1 Revised HPSG architecture

- Lexical entries are not signs, but a new type of object constraining the relation between a syntactic word and a feature structure characterizing the inflectional paradigm that word belongs to:



- **The Lexical Licencing Principle**: any object of type *word* used as part of an utterance must correspond to the value of the WORD feature of some lexical entry in the lexicon.

- The inflectional component is defined by a relation **pdgm-rln** relating objects of type *pid* and objects of type *morsyn* to objects of type *phon*:

- **The Inflection Principle**

$$\textit{lex-entry} \rightarrow \begin{bmatrix} \text{WORD} & \begin{bmatrix} \text{PHON} \ \boxed{3} \end{bmatrix} \\ \text{INFL} & \begin{bmatrix} \text{PID} & \boxed{1} \\ \text{MORSYN} & \boxed{2} \end{bmatrix} \end{bmatrix} \wedge \textbf{pdgm-rln}(\boxed{1}, \boxed{2}, \boxed{3})$$

- We use a relation rather than a function, because of the phenomenon of *overabundance* (Thornton, ress): there may be more than one form filling a given paradigm cell (e.g. English *dived/dove*.

- Contra Bonami and Boyé (2007), this is still compatible with Pāṇinian rule competition; see (Bonami and Stump, ming) for discussion.

2.1.2 Paradigm identifiers

- PID (PARADIGM IDENTIFIER) is the home of all idiosyncratic information characterizing an inflectional paradigm, such as:
  - Minimally, the phonological representation of a STEM
  - Inflection class information, coded as a subtyping of *pid* values
  - In some languages, discontinuous thematic elements (preverbs, theme vowels, etc.)
  - In some languages, indexed collections of allomorphic stems (Bonami and Boyé, 2006)
- The structure of the *pid* hierarchy needs to be fine-grained enough that quasi-homophonous lexemes (e.g. English *lie/lied* vs. *lie/lay* have different *pid* values.
- No need to introduce individual types for inflectional identifiers (contra Spencer, 2010): the inflection of quasi-homophonous lexemes always differ either in terms of inflection class or lexemic phonological information.
- PID is complementary with LID (Sag, ress) but plays a different role: homophonous lexemes will have the same PID value but different LIDs.

2.1.3 Morphosyntactic features

- Inflection normally realizes syntactic features residing within WORD. However:
  - Which features are available for inflectional realization is a highly parochial matter
    - Some, but not all, HEAD features
    - In languages with agreement and/or pronominal affixes, some, but not all, aspects of ARG-ST
    - In many languages, some EDGE features (e.g. Kupść and Tseng, 2005; Samvelian and Tseng, 2010)
  - Existence of **morphosyntactic mismatches**: cases where morphology seems to realize feature values other than those provided by syntax
    - Default agreement to 3sg for non-nominal subject in English or French
    - Deponency phenomena (Stump, 2006; Baerman, 2007)
    - Here: Lack of number agreement in the 3rd person in Laz
- For this reason, it is best to constrain explicitly the relationship between word-level syntactic properties and the input to inflection
- This is done by positing a MORSYN structure whose feature values are related to features in WORD explicitly.

(1) a. $\left[\text{WORD}\left[\cdots|\text{HEAD}\begin{bmatrix}\textit{verb}\\ \text{VFORM}\ \boxed{1}\end{bmatrix}\right]\right] \rightarrow \left[\text{INFL}\left[\text{MORSYN}\ [\text{TAM}\ \boxed{1}]\right]\right]$

b. $\left[\text{WORD}\begin{bmatrix}\cdots|\text{HEAD} & \textit{verb}\\ \text{ARG-ST} & \left\langle[\text{IND}\ \boxed{1}],\ldots\right\rangle\end{bmatrix}\right] \rightarrow \left[\text{INFL}\left[\text{MORSYN}\ [\text{AGR1}\ \boxed{1}]\right]\right]$

c. $\left[\text{WORD}\begin{bmatrix}\cdots|\text{HEAD} & \textit{verb}\\ \text{ARG-ST} & \left\langle[\,],\left[\text{IND}\ [\text{PER}\ \boxed{1}]\right]\right\rangle\end{bmatrix}\right] \rightarrow \left[\text{INFL}\left[\text{MORSYN}\left[\text{AGR2}\ [\text{PER}\ \boxed{1}]\right]\right]\right]$

d. $$\begin{bmatrix}\text{WORD} & \begin{bmatrix}\ldots|\text{HEAD} & \textit{verb}\\ \text{ARG-ST} & \left\langle [\,], \begin{bmatrix}\text{IND} & \begin{bmatrix}\text{PER} & \textit{non-3}\\ \text{NB} & \boxed{1}\end{bmatrix}\end{bmatrix}\right\rangle\end{bmatrix}\end{bmatrix} \rightarrow \begin{bmatrix}\text{INFL} & \begin{bmatrix}\text{MORSYN} & \begin{bmatrix}\text{AGR2} & [\text{NB}\ \boxed{1}]\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

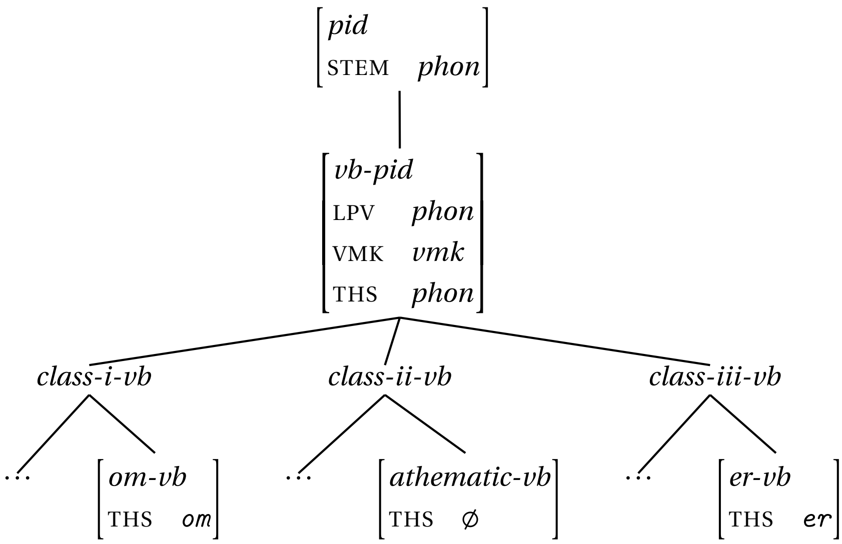
e. $$\begin{bmatrix}\text{WORD} & \begin{bmatrix}\ldots|\text{HEAD} & \textit{verb}\\ \text{ARG-ST} & \left\langle [\,], \begin{bmatrix}\text{IND} & [\text{PER}\ \ \textit{3}]\end{bmatrix}\right\rangle\end{bmatrix}\end{bmatrix} \rightarrow \begin{bmatrix}\text{INFL} & \begin{bmatrix}\text{MORSYN} & \begin{bmatrix}\text{AGR2} & [\text{NB}\ \ \text{SG}]\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

f. $$\begin{bmatrix}\text{WORD} & \begin{bmatrix}\ldots|\text{HEAD} & \textit{verb}\\ \text{ARG-ST} & \left\langle [\,] \right\rangle\end{bmatrix}\end{bmatrix} \rightarrow \begin{bmatrix}\text{INFL} & \begin{bmatrix}\text{MORSYN} & \begin{bmatrix}\text{AGR2} & \begin{bmatrix}\text{PER} & \textit{3}\\ \text{NB} & \textit{sg}\end{bmatrix}\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

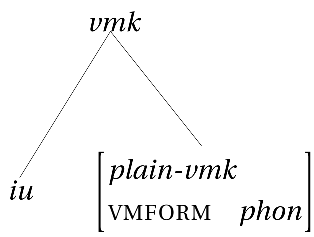
2.1.4 Realization rules

Realization rules associate a description of an inflectional identifier and a morphosyntactic description with a function from forms to forms:

2.2 Lexical entries



- Valence markers are modelled using a subhierarchy, to capture the commonalities between applicatives and the perfect.



- Sample lexical entries:

$$\textit{dzir}: \begin{bmatrix}\text{WORD} & \begin{bmatrix}\text{SYNSEM} & \begin{bmatrix}\text{CAT} & \begin{bmatrix}\text{HEAD} & \begin{bmatrix}\textit{verb}\\ \text{LID} & \textit{see-rel}\end{bmatrix}\end{bmatrix}\end{bmatrix}\end{bmatrix}\\ \text{INFL} & \begin{bmatrix}\text{PID} & \begin{bmatrix}\textit{om-vb}\\ \text{STEM} & \texttt{dzir}\\ \text{LPV} & \emptyset\\ \text{VMK} & \emptyset\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

$$\textit{gook'untsxinam}: \begin{bmatrix} \text{WORD} & \begin{bmatrix} \text{SYNSEM} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} & \\ \text{LID} & \textit{wake-up-rel} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{INFL} & \begin{bmatrix} \text{PID} & \begin{bmatrix} \textit{am-vb} & \\ \text{STEM} & \texttt{k'untsx} \\ \text{LPV} & \texttt{go} \\ \text{VMK} & \texttt{o} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

$$\textit{ibir}: \begin{bmatrix} \text{WORD} & \begin{bmatrix} \text{SYNSEM} & \begin{bmatrix} \text{CAT} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} & \\ \text{LID} & \textit{sing-rel} \end{bmatrix} \end{bmatrix} \end{bmatrix} \end{bmatrix} \\ \text{INFL} & \begin{bmatrix} \text{PID} & \begin{bmatrix} \textit{athematic-vb} & \\ \text{STEM} & \texttt{bir} \\ \text{PVB} & \emptyset \\ \text{VMK} & \texttt{i} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

2.3 Inflection rules

$$-4 \quad \left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{AFF} & +\end{bmatrix}\right) \Longrightarrow \left(x \mapsto \mathsf{ko} \oplus x\right)$$

$$-3 \quad \left(\begin{bmatrix}\textit{vb-pid} & \\ \text{LPV} & y\end{bmatrix}, []\right) \Longrightarrow \left(x \mapsto y \oplus x\right)$$

$$-2 \quad \left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{AGR2} & \begin{bmatrix}\text{PER} & \textit{1}\end{bmatrix}\end{bmatrix}\right) \Longrightarrow \left(x \mapsto \mathsf{m} \oplus x\right)$$

$$\left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{AGR2} & \begin{bmatrix}\text{PER} & \textit{2}\end{bmatrix}\end{bmatrix}\right) \Longrightarrow \left(x \mapsto \mathsf{g} \oplus x\right)$$

$$\left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{AGR1} & \begin{bmatrix}\text{PER} & \textit{1}\end{bmatrix} \\ \text{AGR2} & \begin{bmatrix}\text{PER} & \textit{3}\end{bmatrix}\end{bmatrix}\right) \Longrightarrow \left(x \mapsto \mathsf{b} \oplus x\right)$$

$$-1 \quad \left(\lambda{:}\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \sigma{:}[]\right) \Longrightarrow \left\langle \lambda, \sigma \right\rangle{:}E$$

$$\left(\lambda{:}\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \sigma{:}\begin{bmatrix}\text{PRF} & +\end{bmatrix}\right) \Longrightarrow \left\langle \lambda!\begin{bmatrix}\text{VMK} & \textit{iu}\end{bmatrix}, \sigma \right\rangle{:}E$$

$$0 \quad \left(\begin{bmatrix}\textit{vb-pid} & \\ \text{STEM} & y\end{bmatrix}, []\right) \Longrightarrow \left(x \mapsto y\right)$$

$$1 \quad \left(\begin{bmatrix}\textit{vb-pid} & \\ \text{THS} & y\end{bmatrix}, \begin{bmatrix}\text{PFV} & -\end{bmatrix}\right) \Longrightarrow \left(x \mapsto x \oplus y\right)$$

$$\left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{PRF} & +\end{bmatrix}\right) \Longrightarrow \left(x \mapsto x \oplus \mathsf{ur}\right)$$

$$\left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{TNS} & \textit{pst} \\ \text{MOOD} & \textit{opt}\end{bmatrix}\right) \Longrightarrow \left(x \mapsto x \oplus \mathsf{a}\right)$$

$$2 \quad \left(\begin{bmatrix}\textit{vb-pid}\end{bmatrix}, \begin{bmatrix}\text{TNS} & \textit{pst} \\ \text{PFV} & -\end{bmatrix}\right) \Longrightarrow \left(x \mapsto x \oplus \mathsf{t'}\right)$$

3 $\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{TNS} & pst\\ \text{PRF} & -\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{i}\right)$

4 $\left(\lambda{:}\left[vb\text{-}pid\right],\sigma{:}[]\right)\Longrightarrow\left\langle\lambda,\sigma\right\rangle{:}A$

$\left(\lambda{:}\left[vb\text{-}pid\right],\sigma{:}\begin{bmatrix}\text{AGR1} & \begin{bmatrix}\text{PER} & 3\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left\langle\lambda,\sigma\right\rangle{:}B$

$\left(\lambda{:}\left[vb\text{-}pid\right],\sigma{:}\begin{bmatrix}\text{AGR1} & \begin{bmatrix}\text{PER} & 3\\ \text{NB} & sg\end{bmatrix}\\ \text{AGR2} & \begin{bmatrix}\text{NB} & sg\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left\langle\lambda,\sigma\right\rangle{:}C$

$\left(\lambda{:}\left[vb\text{-}pid\right],\sigma{:}\begin{bmatrix}\text{AGR1} & \begin{bmatrix}\text{PER} & non3\\ \text{NUM} & pl\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left\langle\lambda,\sigma\right\rangle{:}D$

$\left(\lambda{:}\left[vb\text{-}pid\right],\sigma{:}\begin{bmatrix}\text{AGR1} & \begin{bmatrix}\text{PER} & non3\\ \text{NUM} & sg\end{bmatrix}\\ \text{AGR2} & \begin{bmatrix}\text{PER} & non3\\ \text{NB} & pl\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left\langle\lambda,\sigma\right\rangle{:}D$

5 $\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{MOOD} & ind\\ \text{EVID} & indir\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{doren}\right)$

Block sequence **-1 → 1 → 2 → 3 → 4 → -2 → -3 → -4 → 5**

Portmanteau 3 > 4 **rules**

$\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{TNS} & pst\\ \text{PFV} & +\\ \text{AGR1} & \begin{bmatrix}\text{PER} & 3\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{es}\right)$

$\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{TNS} & pst\\ \text{PFV} & +\\ \text{AGR1} & \begin{bmatrix}\text{PER} & 3\\ \text{NB} & sg\end{bmatrix}\\ \text{AGR2} & \begin{bmatrix}\text{NB} & sg\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{u}\right)$

Unordered rule blocks

A $\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{TNS} & fut\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{are}\right)$

B $\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{TNS} & fut\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{anoren}\right)$

$\left(\left[vb\text{-}pid\right],\begin{bmatrix}\text{TNS} & prs\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{nan}\right)$

$\left(\left[class\text{-}i\text{-}vb\right],\begin{bmatrix}\text{TNS} & prs\\ \text{PRF} & -\end{bmatrix}\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{an}\right)$

$\left(\left[vb\text{-}pid\right],[]\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{n}\right)$

$$C\ \left(\left[\mathit{vb\text{-}pid}\right],\left[\textsc{tns}\quad \mathit{fut}\right]\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{asen}\right)$$
$$\left(\left[\mathit{class\text{-}iii\text{-}vb}\right],\left[\textsc{tns}\quad \mathit{prs}\right]\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{n}\right)$$
$$\left(\left[\mathit{vb\text{-}pid}\right],[]\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{s}\right)$$

$$D\ \left(\left[\mathit{vb\text{-}pid}\right],\left[\textsc{tns}\quad \mathit{fut}\right]\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{aten}\right)$$
$$\left(\left[\mathit{vb\text{-}pid}\right],[]\right)\Longrightarrow\left(x\mapsto x\oplus\mathsf{t}\right)$$

$$E\ \left(\left[\begin{bmatrix}\mathit{vb\text{-}pid} & \\ \textsc{vmk} & \mathit{iu}\end{bmatrix}\right],[]\right)\Longrightarrow\left(x\mapsto \mathsf{i}\oplus x\right)$$
$$\left(\left[\begin{bmatrix}\mathit{vb\text{-}pid} & \\ \textsc{vmk} & \mathit{iu}\end{bmatrix}\right],\begin{bmatrix}\textsc{agr2} & \begin{bmatrix}\textsc{per} & \mathit{3}\\ \textsc{num} & \mathit{sg}\end{bmatrix}\end{bmatrix}\right)\Longrightarrow\left(x\mapsto \mathsf{u}\oplus x\right)$$
$$\left(\left[\begin{bmatrix}\mathit{vb\text{-}pid} & \\ \textsc{vmk} & \begin{bmatrix}\mathit{plain\text{-}vmk} & \\ \textsc{vmform} & y\end{bmatrix}\end{bmatrix}\right],[]\right)\Longrightarrow\left(x\mapsto y\oplus x\right)$$

Portmanteau $-1>5$ rule

$$\left(\lambda{:}\left[\mathit{vb\text{-}pid}\right],\sigma{:}\begin{bmatrix}\textsc{inv} & +\\ \textsc{agr1} & \varphi\\ \textsc{agr2} & \psi\end{bmatrix}\right)\Longrightarrow\left\langle\lambda,\sigma!\begin{bmatrix}\textsc{agr1} & \psi\\ \textsc{agr2} & \varphi\end{bmatrix}\right\rangle{:}-1>5$$

2.4 Derivation rules

Potential:

$$\begin{bmatrix}\mathit{lex\text{-}entry} & \\ \textsc{word} & \begin{bmatrix}\textsc{sem} & R\end{bmatrix}\\ \textsc{infl} & \begin{bmatrix}\textsc{pid} & \begin{bmatrix}\textsc{stem} & s\\ \textsc{lpv} & l\\ \textsc{vmk} & v\\ \textsc{ths} & t\end{bmatrix}\end{bmatrix}\end{bmatrix}\Longrightarrow\begin{bmatrix}\mathit{lex\text{-}entry} & \\ \textsc{word} & \begin{bmatrix}\textsc{sem} & \mathbf{able}(R)\end{bmatrix}\\ \textsc{infl} & \begin{bmatrix}\textsc{pid} & \begin{bmatrix}\textsc{stem} & s\\ \textsc{lpv} & l\\ \textsc{vmk} & \begin{bmatrix}\mathit{plain\text{-}vmk} & \\ \textsc{vmform} & \mathsf{a}\end{bmatrix}\\ \textsc{ths} & \mathsf{er}\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

Causative:

$$\begin{bmatrix}\mathit{lex\text{-}entry} & \\ \textsc{word} & \begin{bmatrix}\textsc{arg\text{-}st} & L\\ \textsc{sem} & R\end{bmatrix}\\ \textsc{infl} & \begin{bmatrix}\textsc{pid} & \begin{bmatrix}\textsc{stem} & s\\ \textsc{lpv} & l\\ \textsc{vmk} & v\\ \textsc{ths} & t\end{bmatrix}\end{bmatrix}\end{bmatrix}\Longrightarrow\begin{bmatrix}\mathit{lex\text{-}entry} & \\ \textsc{word} & \begin{bmatrix}\textsc{arg\text{-}st} & \langle NP_i\rangle\oplus L\\ \textsc{sem} & \mathbf{cause}(i,R)\end{bmatrix}\\ \textsc{infl} & \begin{bmatrix}\textsc{pid} & \begin{bmatrix}\textsc{stem} & s\oplus\mathsf{in}\\ \textsc{lpv} & l\\ \textsc{vmk} & \begin{bmatrix}\mathit{plain\text{-}vmk} & \\ \textsc{vmform} & \mathsf{o}\end{bmatrix}\\ \textsc{ths} & \mathsf{am}\end{bmatrix}\end{bmatrix}\end{bmatrix}$$

Applicative:

$$\begin{bmatrix} \textit{lex-entry} & \\ \text{WORD} & \begin{bmatrix} \text{ARG-ST} & L \end{bmatrix} \\ \text{INFL} & \begin{bmatrix} \text{PID} & \begin{bmatrix} \text{STEM} & s \\ \text{LPV} & l \\ \text{VMK} & v \\ \text{THS} & t \end{bmatrix} \end{bmatrix} \end{bmatrix} \Longrightarrow \begin{bmatrix} \textit{lex-entry} & \\ \text{WORD} & \begin{bmatrix} \text{ARG-ST} & L \oplus \langle NP \rangle \end{bmatrix} \\ \text{INFL} & \begin{bmatrix} \text{PID} & \begin{bmatrix} \text{STEM} & s \\ \text{LPV} & l \\ \text{VMK} & iu \\ \text{THS} & t \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

3 Conclusions

- In Laz, inflectional and derivational affixes do not cleanly align in separate parts of the word
- We propose an analysis where:
  - Inflection and derivation rules are of a different nature.
  - Competition between lexemic and inflectional material amounts to a distinction of two modes of exponence within the same position class.
- The analysis is semi-templatic (Simpson and Whitgott, 1986): lexemes come equipped with a template, which relates indirectly to position classes.
- We extend to 'discontinuous stems' the use of vectorial representations motivated by the treatment of stem allomorphy (Bonami and Boyé, 2006).
- This constitutes an alternative to the use of reified morphs (Crysmann, 2002) for the treatment of unusual affix orderings.

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