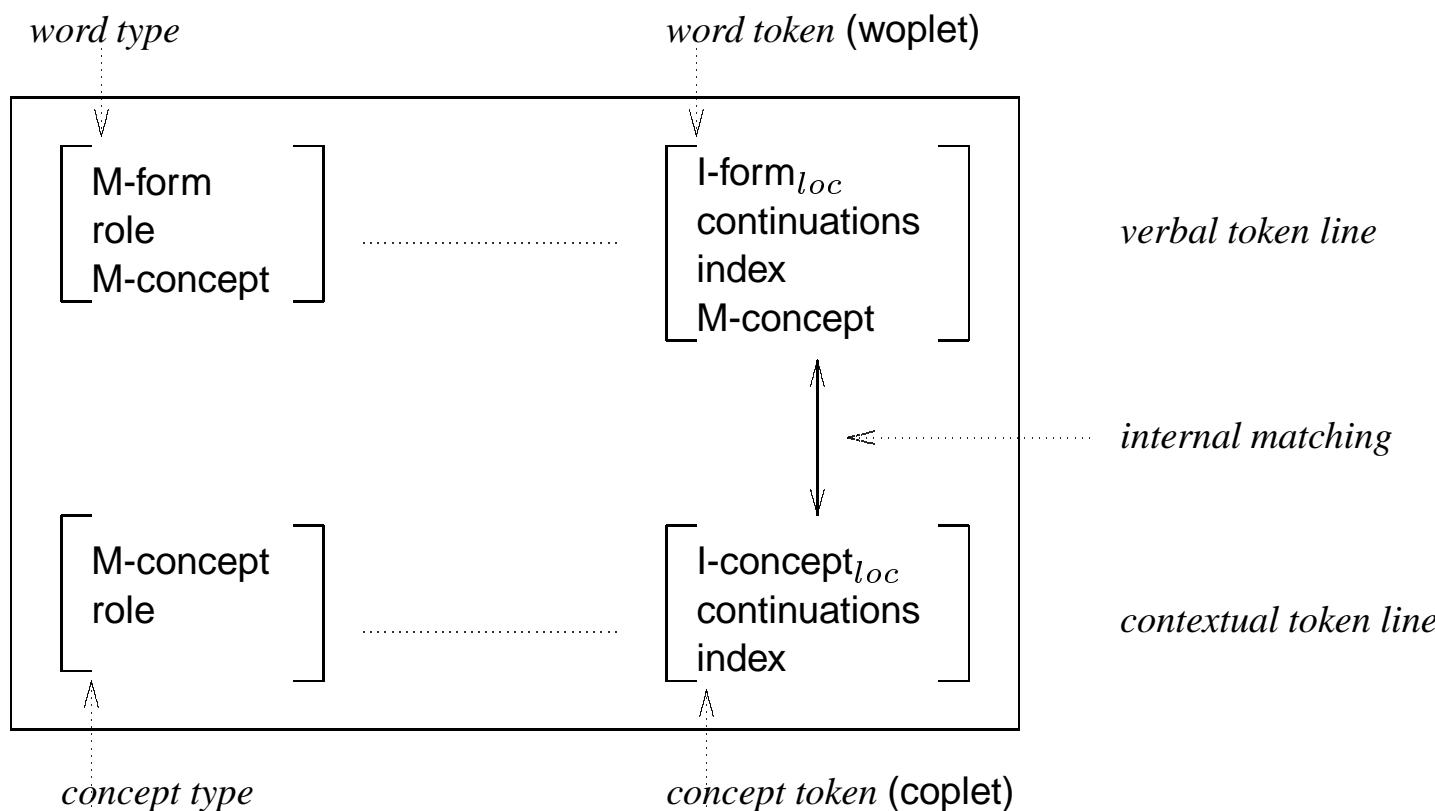


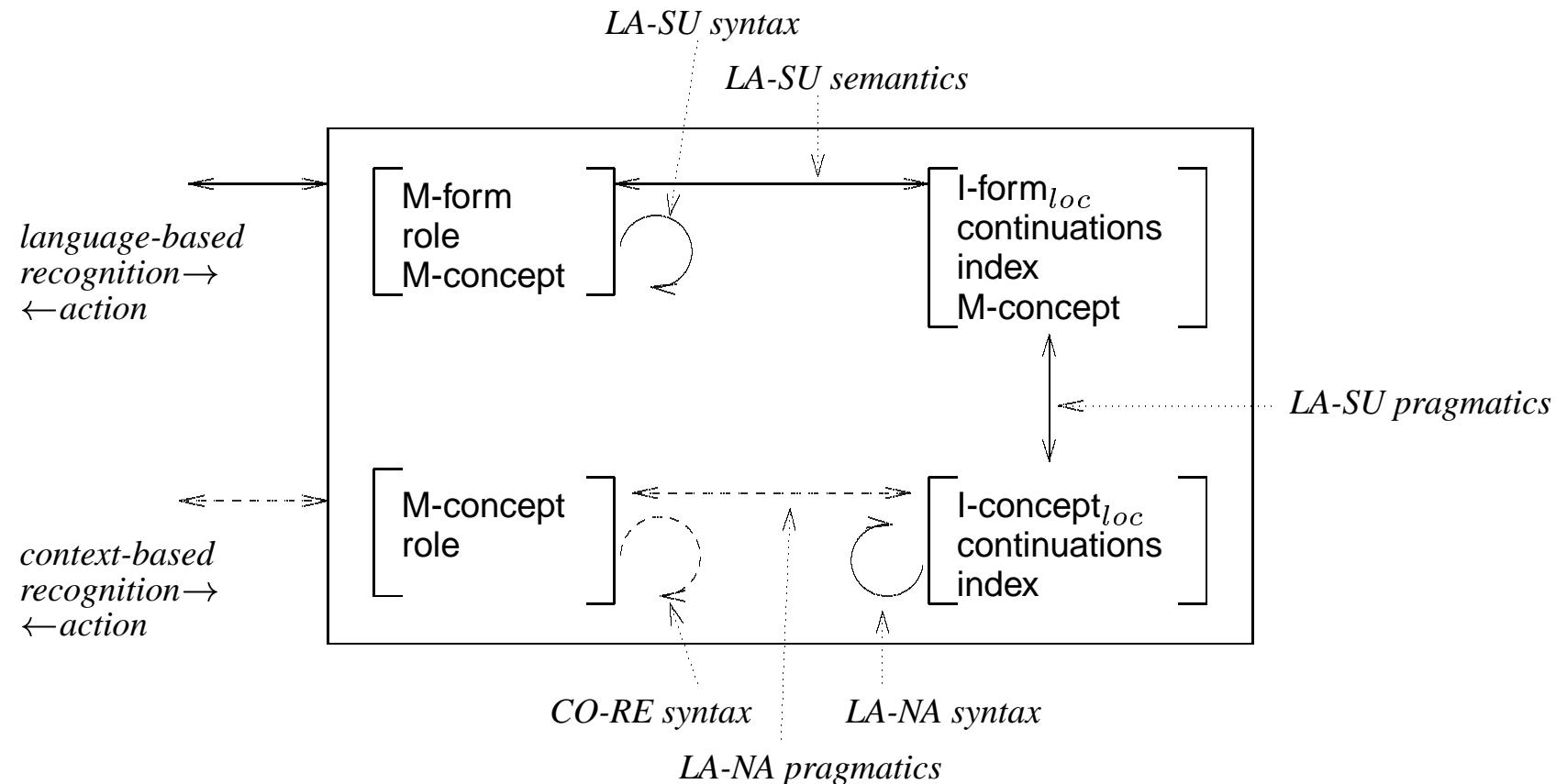
23. SLIM machine in the hearer mode

23.1 External connections and motor algorithms

23.1.1 Static structures of the SLIM machine

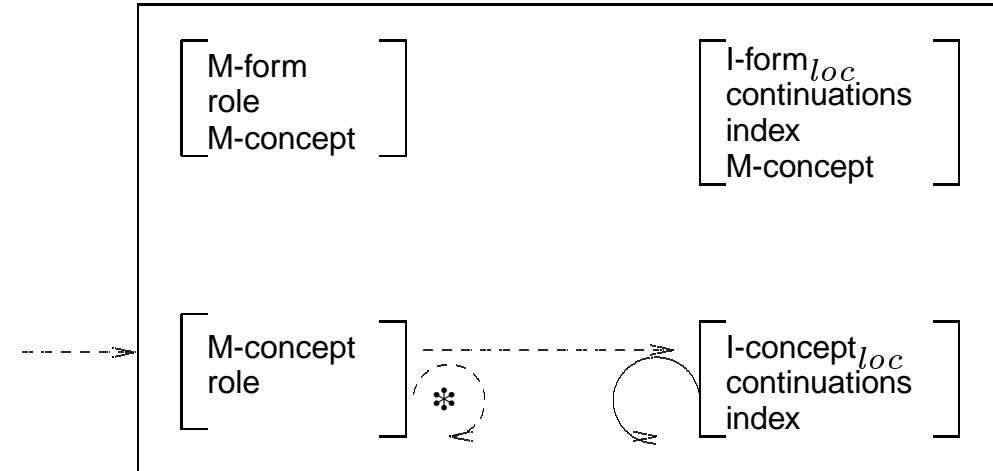


23.1.2 External connections and motor algorithms of the SLIM machine

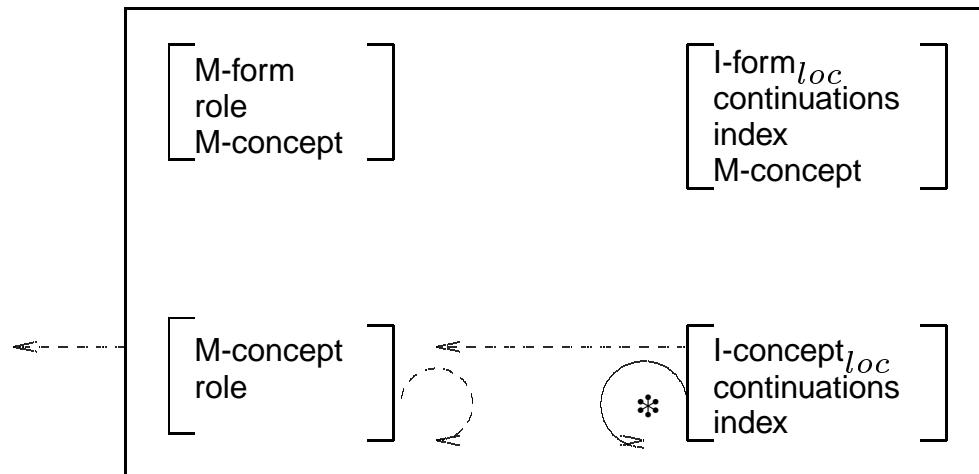


23.2 Ten SLIM states of cognition

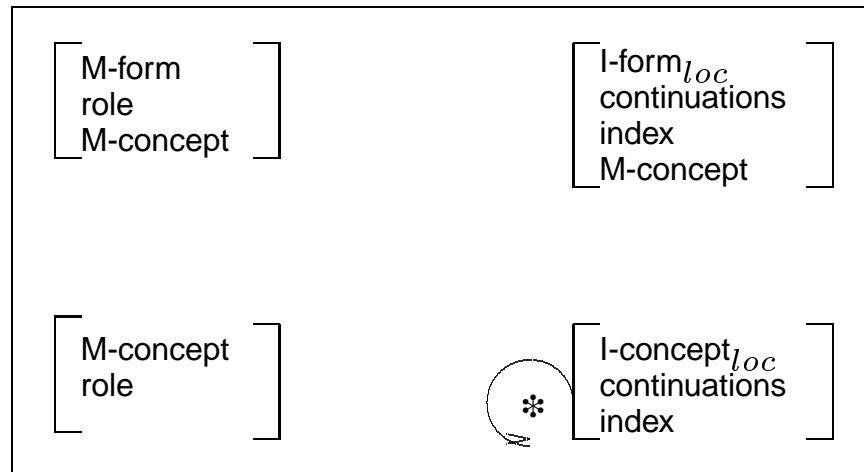
23.2.1 SLIM 1: Recognition (contextual)



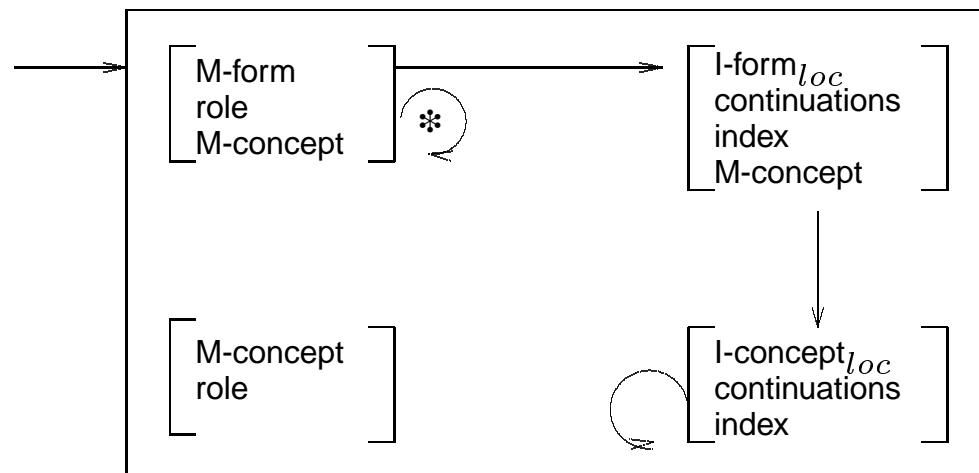
23.2.2 SLIM 2: Action (contextual)



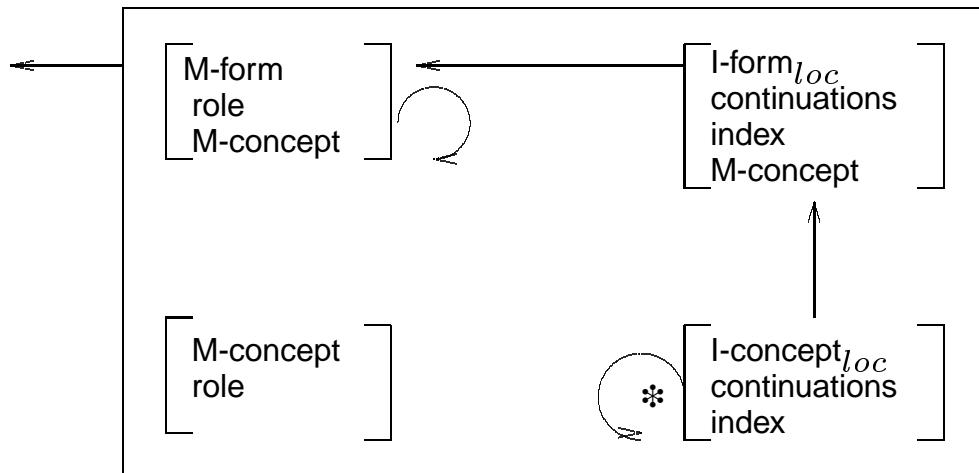
23.2.3 SLIM 3: Inference (contextual)



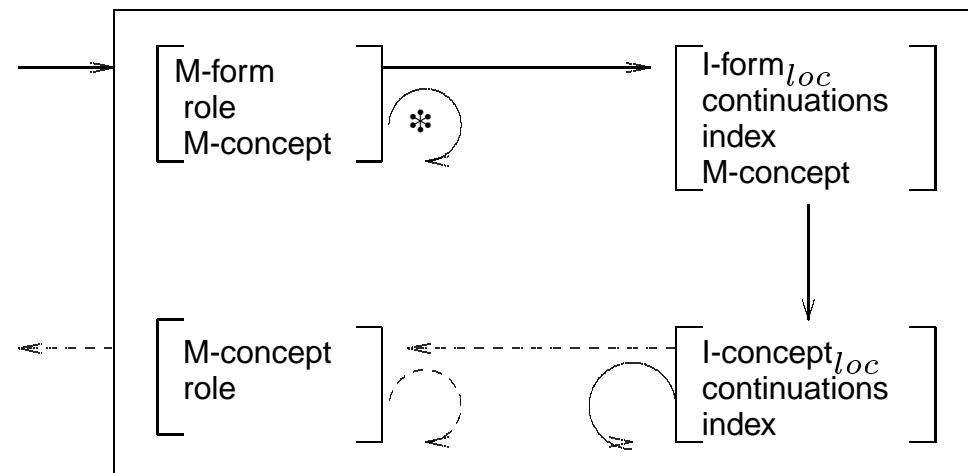
23.2.4 SLIM 4: Interpretation of language (mediated reference)



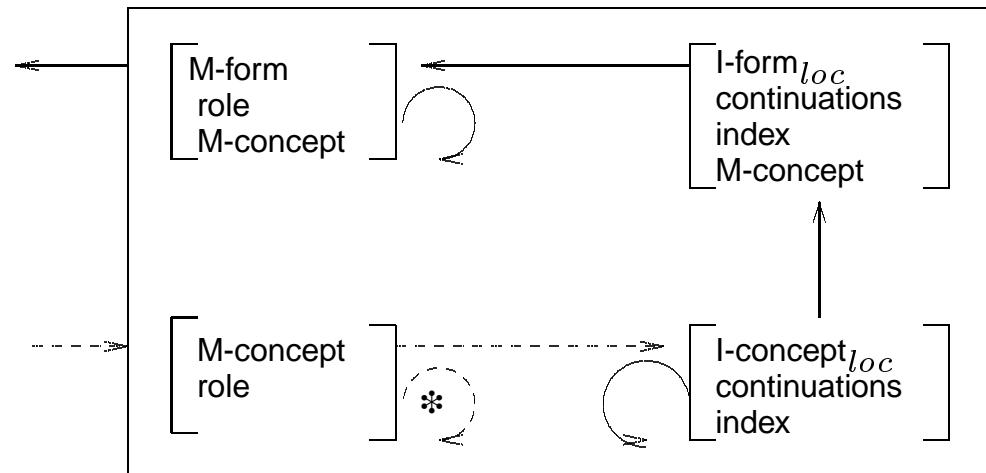
23.2.5 SLIM 5: Production of language (mediated reference)



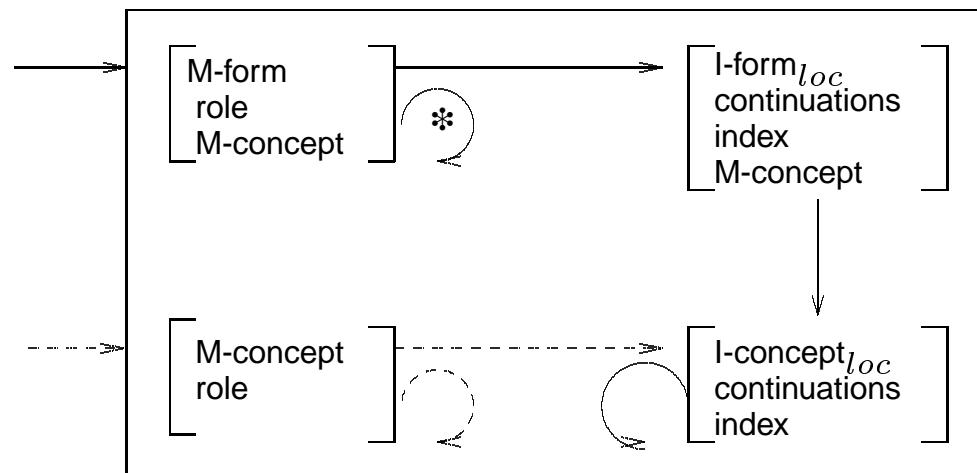
23.2.6 SLIM 6: Language-controlled action (immediate reference)



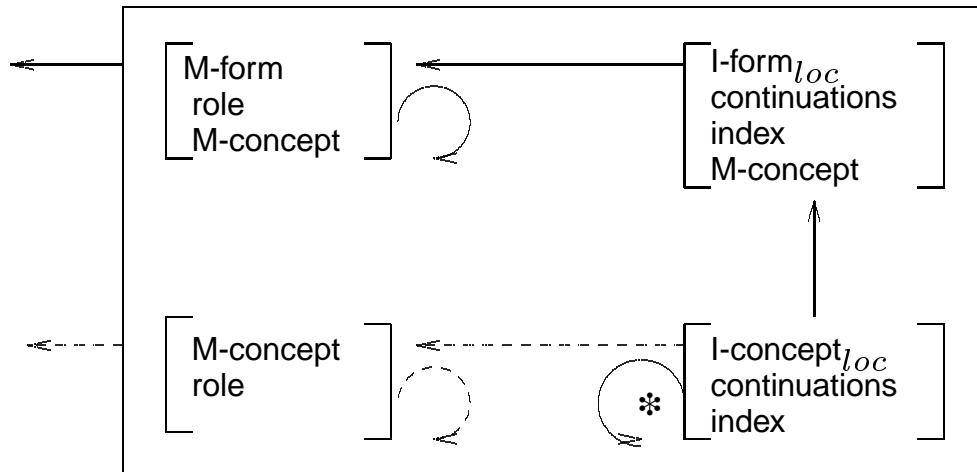
23.2.7 SLIM 7: Commented recognition (immediate reference)



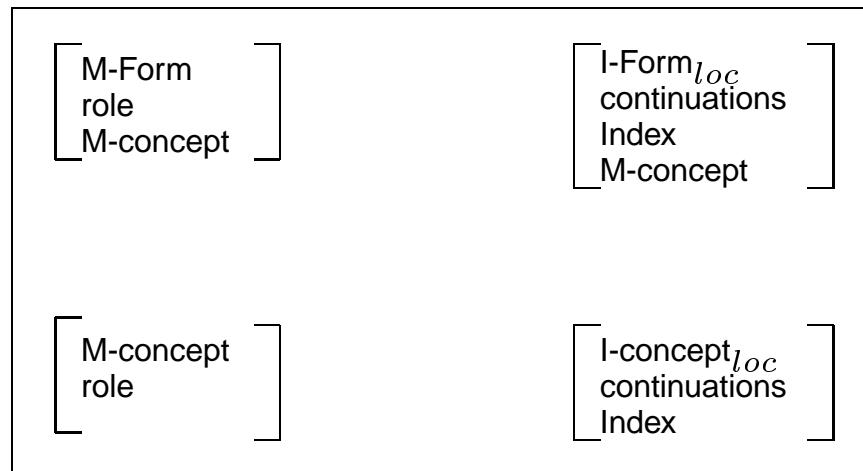
23.2.8 SLIM 8: Language-controlled recognition (immediate reference)



23.2.9 SLIM 9: Commented action (immediate reference)



23.2.10 SLIM 10: Cognitive stillstand



23.2.11 Notions grounded in the ten SLIM states

Context-based cognition is represented by SLIM 1 to SLIM 3,

Language-based cognition is represented by SLIM 4 and SLIM 5,

Simultaneous context- and language-based cognition is represented by SLIM 6 to SLIM 9.

Context-based cognition distinguishes between *recognition* (SLIM 1), *action* (SLIM 2), and *inferencing* (SLIM 3).

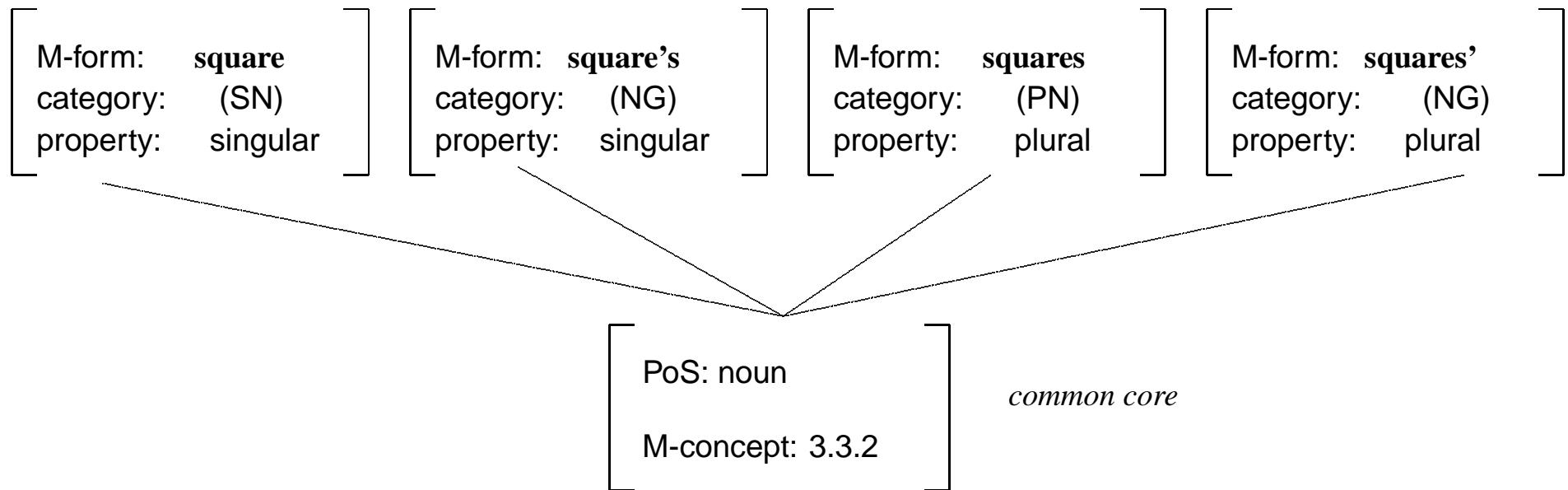
Language-based cognition distinguishes between the *hearer mode* (SLIM 4, SLIM 6, SLIM 8), and the *speaker mode* (SLIM 5, SLIM 7, SLIM 9).

Mediated reference (SLIM 6 to SLIM 9) is distinguished from *immediate* reference (SLIM 4, SLIM 5).

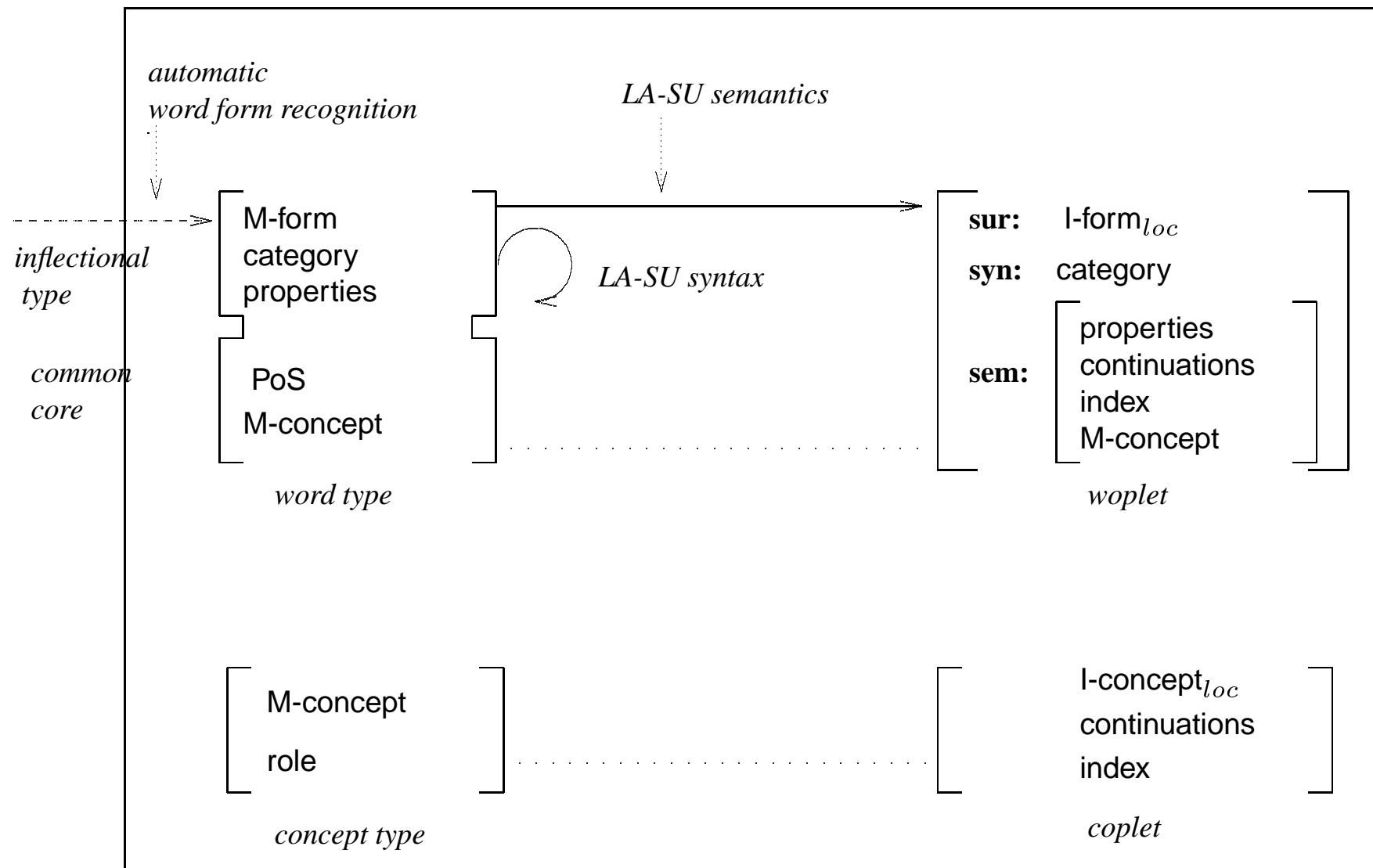
In *immediate reference*, language-based *control* (SLIM 6, SLIM 8) is distinguished from context-based *commenting* (SLIM 7, SLIM 9).

23.3 Semantic interpretation of LA-SU syntax

23.3.1 Representing inflectional variants in a word type



23.3.2 Word form recognition and derivation of a woplet



23.3.3 Nominal, verbal, and adjectival woplet structures

nominal woplet

sur:	
syn:	
sem:	properties: cont.: $\begin{bmatrix} \text{MOD:} \\ \text{VERB:} \end{bmatrix}$
index:	$\begin{bmatrix} \text{prn:} \\ \text{id:} \end{bmatrix}$
M-concept:	

verbal woplet

sur:	
syn:	
sem:	properties: cont.: $\begin{bmatrix} \text{MOD:} \\ \text{NP:} \end{bmatrix}$
index:	$\begin{bmatrix} \text{prn:} \\ \text{epr:} \end{bmatrix}$
M-concept:	

adjectival woplet

sur:	
syn:	
sem:	properties: cont.: $\begin{bmatrix} \text{NP:} \\ \text{VERB:} \end{bmatrix}$
index:	$\begin{bmatrix} \text{prn:} \end{bmatrix}$
M-concept:	

23.3.4 Schema of semantically interpreted LA-SU rule

rule:

$$\begin{array}{ccc} \text{syn: } \langle \text{ss-pattern} \rangle & & \langle \text{nw-pattern} \rangle \implies \langle \text{ss}'\text{-pattern} \rangle \\ \text{sem:} & & \text{semantic operations} \end{array}$$

input:

$$\left[\begin{array}{c} \text{sur: } \\ \text{syn: } \langle a \rangle \\ \text{sem: } b \end{array} \right]_1 \dots \left[\begin{array}{c} \text{sur: } m \\ \text{syn: } \langle c \rangle \\ \text{sem: } d \end{array} \right]_i + \left[\begin{array}{c} \text{sur: } n \\ \text{syn: } \langle e \rangle \\ \text{sem: } f \end{array} \right]_{i+1}$$

output:

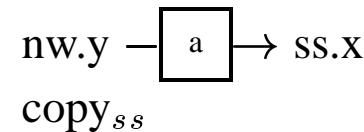
$$\left[\begin{array}{c} \text{sur: } \\ \text{syn: } \langle a \rangle \\ \text{sem: } b \end{array} \right]_1 \dots \left[\begin{array}{c} \text{sur: } m+n \\ \text{syn: } \langle g \rangle \\ \text{sem: } h \end{array} \right]_{i+1}$$

23.3.5 The six basic operations of the LA-SU semantics

1. copy_{ss} : include the woplets of the sentence start in the result.
2. copy_{nw} : include the wplet of the next word in the result.
3. $n_1.x - \boxed{a} \rightarrow n_2.y$: copy the values of the source feature x in n_1 additively into the goal feature y in n_2 , whereby n_1 and n_2 may be the woplets of the sentence start or the next word.
4. $n_1.x - \boxed{e} \rightarrow n_2.y$: copy the values of the source feature x in n_1 exclusively into the goal feature y in n_2 , whereby the value of y must be NIL (empty value).
5. $n_1.x - \boxed{r} \rightarrow n_2.\textcircled{1}$: substitute all occurrences of the variable $\textcircled{1}$ in n_2 simultaneously with the value of the source feature x in n_1 .
6. $n.x - \boxed{m} \rightarrow n.x$: mark the first value of the source feature x in n , whereby the value of x must be a list.

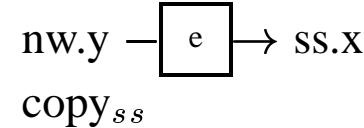
23.3.6 Comparison of additive and exclusive copying

Additive:



$$[\text{x}: a]_1 [\text{x}:]_2 + [\text{y}: b]_3 \Rightarrow [\star \text{x}: a\ b]_1 [\star \text{x}: b]_2$$

Exclusive:



$$[\text{x}: a]_1 [\text{x}:]_2 + [\text{y}: b]_3 \Rightarrow [\text{x}: a]_1 [\star \text{x}: b]_2$$

23.4 Example of syntactic-semantic derivation (LA-E4)

23.4.1 The man gave Mary a flower because he loves her.

23.4.2 LA-E4 for adverbial subclauses of English

$LX = LX \text{ of } LA-E3 \text{ plus } \{(\text{slowly} (\text{ADP}) *), (\text{because} (\# \text{ ADP}) *)\}$

Variable definitions = those of $LA-E3$ plus $mn \in \{np \cup \{V, VI\}\}$

$ST_S =_{def} \{ [(x) \{ 1 \text{ DET+ADJ}, 2 \text{ DET+N}, 3 \text{ NOM+FV}, 4 \text{ AUX+MAIN}, 5 \text{ STRT-SBCL} \}] \}$

$\text{DET+ADJ: } (n x) (\text{ADJ}) \Rightarrow (n x) \{ 6 \text{ DET+ADJ}, 7 \text{ DET+N} \}$

$\text{DET+N: } (n x) (n) \Rightarrow (x) \{ 8 \text{ NOM+FV}, 9 \text{ FV+MAIN}, 10 \text{ AUX+NFV}, 11 \text{ ADD-ADP}, 12 \text{ IP} \}$

$\text{NOM+FV: } (np \# x) (np' y V) \Rightarrow (y \# x)$

$(np) (np' x V) \Rightarrow (x V) \{ 13 \text{ FV+MAIN}, 14 \text{ AUX+NFV}, 15 \text{ ADD-ADP}, 16 \text{ IP} \}$

$\text{FV+MAIN: } (np' \# x) (y np) \Rightarrow (y x)$

$(np' x \# y) (z np) \Rightarrow (z x \# y)$

$(np' x V) (y np) \Rightarrow (y x V) \{ 17 \text{ DET+ADJ}, 18 \text{ DET+N}, 19 \text{ FV+MAIN}, 20 \text{ IP} \}$

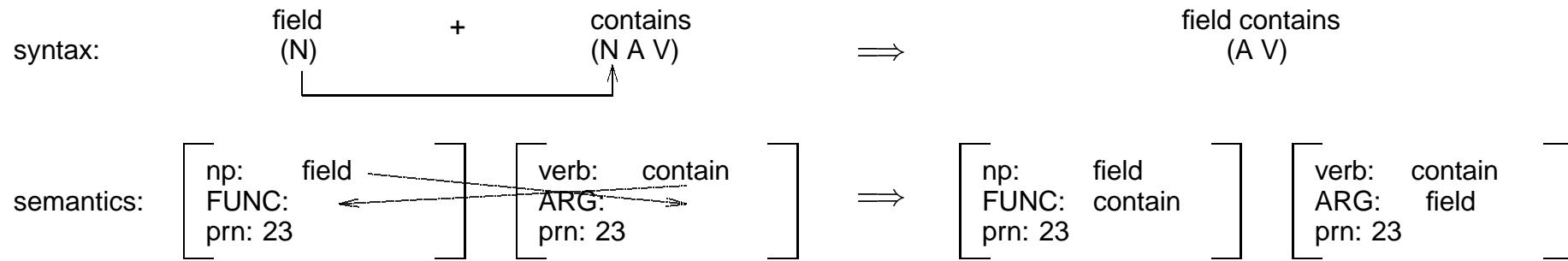
$\text{AUX+NFV: } (aux \# x V) (aux) \Rightarrow (x V)$

$(aux \# x V) (y aux) \Rightarrow (y \# x V)$

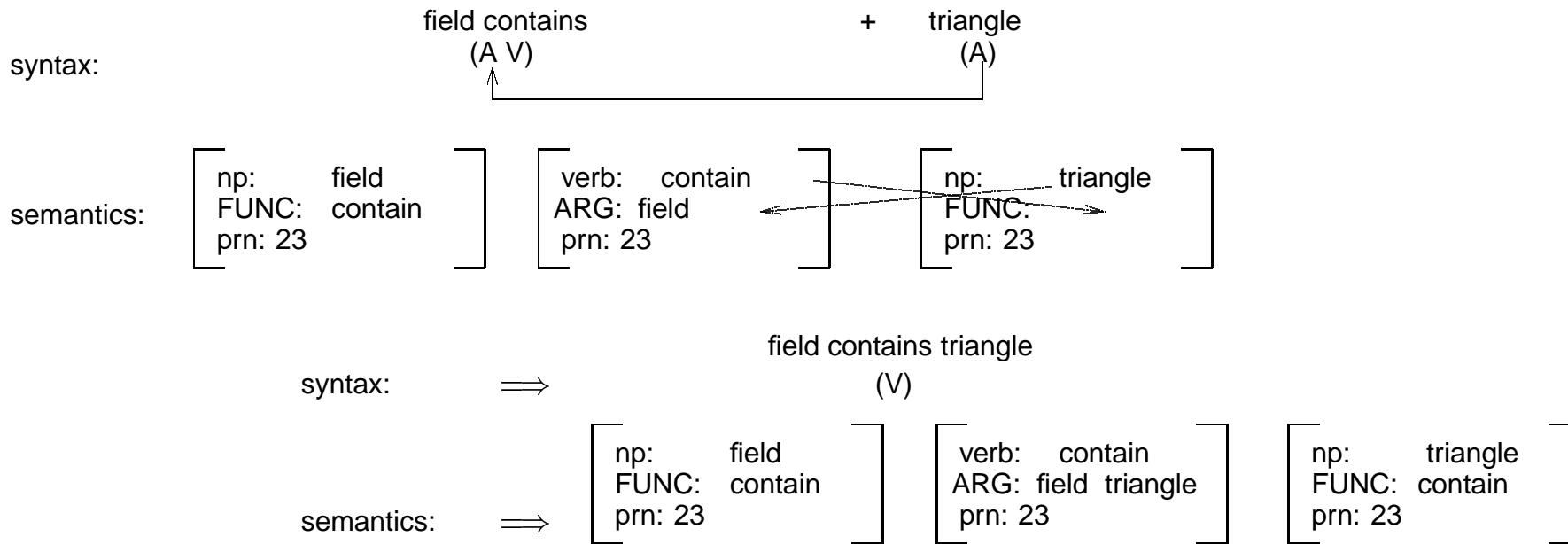
$(aux \ V) \ (x \ aux)$ $\Rightarrow \ (x \ V) \ \{21 \ FV+MAIN, 22 \ IP\}$
 AUX+MAIN: $(np \ aux \ V) \ (x \ np')$ $\Rightarrow \ (x \ aux \ VI) \ \{23 \ AUX+NFV, 24 \ DET+ADJ, 25 \ DET+N\}$
 ADD-ADP: $(x \ ADP) \ (mn \ y)$ $\Rightarrow \ (x \ mn \ y)$
 $(mn \ y) \ (x \ ADP)$ $\Rightarrow \ (x \ mn \ y) \ \{26 \ STRT-SBCL, 27 \ NOM+FV, 28 \ FV+MAIN\}$
 STRT-SBCL: $(\# \ x) \ (y \ np)$ $\Rightarrow \ (y \ np \ \# \ x) \ \{29 \ DET+ADJ, 30 \ DET+N, 31 \ NOM+FV,$
 $\qquad \qquad \qquad 32 \ ADD-ADP\}$
 IP: $(vt) \ (vt \ x)$ $\Rightarrow \ (x) \ \{\}$
 $ST_F =_{def} \{ \ [(V) \ rp_{ip}], [(VI) \ rp_{ip}] \}$

23.4.3 SYNTACTICO-SEMANTIC ANALYSIS OF field contains triangle

combination step 1:



combination step 2:



23.4.4 The man gave Mary a flower because he loves her.

23.4.5 Applying DET+N to *the + man*

syn: $\langle n \ x \rangle$

$\langle n \rangle$

\Rightarrow

$\langle x \rangle$

sem:

nw.M — $\boxed{r} \rightarrow$ ss.①

copy_{ss}

sur: the	+	sur: man	⇒	sur: the man
syn: $\langle SN' SNP \rangle$		syn: $\langle SN \rangle$		syn: $\star \langle SNP \rangle$
P: $\langle sg \ def \rangle$		P:		P: $\langle sg \ def \rangle$
C: $\left[MOD: \right]$		C: $\left[MOD: \right]$		C: $\left[MOD: \right]$
I: $\left[prn: \langle 1 \rangle \right]$		I: $\left[prn: = \right]$		I: $\left[prn: \langle 1 \rangle \right]$
M: ①		M: <i>man</i>		M: $\star man$
sem:		sem:		sem:
$\left[\begin{array}{l} P: \langle sg \ def \rangle \\ C: \left[MOD: \right] \\ I: \left[prn: \langle 1 \rangle \right] \\ M: ① \end{array} \right]_1$		$\left[\begin{array}{l} P: \left[MOD: \right] \\ C: \left[VERB: \right] \\ I: \left[prn: = \right] \\ M: man \end{array} \right]_2$		$\left[\begin{array}{l} P: \langle sg \ def \rangle \\ C: \left[MOD: \right] \\ I: \left[prn: \langle 1 \rangle \right] \\ M: \star man \end{array} \right]_1$

23.4.6 Applying NOM+FV to *the man + gave*

syn: $\langle \text{np} \rangle$ $\langle \text{np}' \ x \ V \rangle$ \Rightarrow $\langle x \ V \rangle$

sem:

nw.M — \boxed{e} \rightarrow ss.VERBss.M — \boxed{a} \rightarrow nw.NPcopy_{ss} copy_{nw}

sur: the man	+	sur: gave	⇒	sur:	⇒	sur: the man gave
syn: $\langle \text{SNP} \rangle$		syn: $\langle N' D' A' V \rangle$		syn: $\langle \text{SNP} \rangle$		syn: $\star \langle D' A' V \rangle$
P: $\langle \text{sg def} \rangle$		P: past tense		P: $\langle \text{sg def} \rangle$		P: $\langle \text{past tense} \rangle$
C: $\left[\begin{smallmatrix} \text{MOD:} \\ \text{VERB:} \end{smallmatrix} \right]$		C: $\left[\begin{smallmatrix} \text{MOD:} \\ \text{NP:} \end{smallmatrix} \right]$		C: $\left[\begin{smallmatrix} \text{MOD:} \\ \text{VERB: } \star \text{give} \end{smallmatrix} \right]$		C: $\left[\begin{smallmatrix} \text{MOD:} \\ \text{NP: } \star \langle \text{man} \rangle \end{smallmatrix} \right]$
I: $\left[\begin{smallmatrix} \text{prn: } \langle 1 \rangle \\ \text{id: } 1 \end{smallmatrix} \right]$		I: $\left[\begin{smallmatrix} \text{prn: } = \\ \text{epr:} \end{smallmatrix} \right]$		I: $\left[\begin{smallmatrix} \text{prn: } \langle 1 \rangle \\ \text{id: } 1 \end{smallmatrix} \right]$		I: $\left[\begin{smallmatrix} \text{prn: } \star \langle 1 \rangle \\ \text{epr:} \end{smallmatrix} \right]$

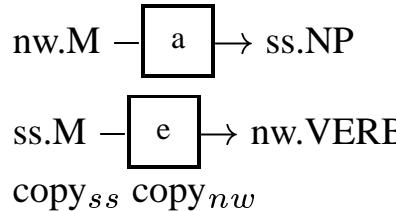
M: <i>man</i>		M: <i>give</i>		M: <i>man</i>		M: <i>give</i>
sem:		sem:		sem:		sem:

23.4.7 Applying FV+MAIN to *the man gave + Mary*

syn: $\langle np' x V \rangle$

sem:

sur: the man gave
syn: $\star \langle D' A' V \rangle$
P: \langle past tense \rangle
C: $\left[\begin{array}{l} \text{MOD:} \\ \text{NP: } \langle \text{man} \rangle \end{array} \right]$
sem: $\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{epr:} \\ \text{M: give} \end{array} \right]$

 $\langle y np \rangle$ \Rightarrow  $\langle y x V \rangle$

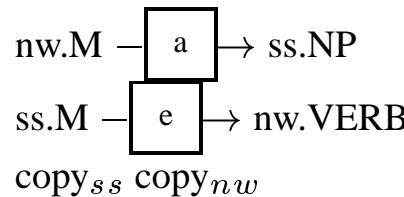
$$\left[\begin{array}{l} \text{sur: the man gave} \\ \text{syn: } \star \langle D' A' V \rangle \\ \text{P: } \langle \text{past tense} \rangle \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{NP: } \langle \text{man} \rangle \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{epr:} \\ \text{M: give} \end{array} \right] \end{array} \right]_3 + \left[\begin{array}{l} \text{sur: Mary} \\ \text{syn: } \langle \text{SNP} \rangle \\ \text{P: } \langle \text{sg name} \rangle \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{VERB:} \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{prn: } = \\ \text{id: } +1 \\ \text{M: Mary} \end{array} \right] \end{array} \right]_4$$

$$\Rightarrow \left[\begin{array}{l} \text{sur: the man gave Mary} \\ \text{syn: } \star \langle A' V \rangle \\ \text{P: } \langle \text{past tense} \rangle \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{NP: } \langle \text{man}, \star \text{Mary} \rangle \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{epr:} \\ \text{M: give} \end{array} \right] \end{array} \right]_3 \left[\begin{array}{l} \text{sur:} \\ \text{syn: } \langle \text{SNP} \rangle \\ \text{P: } \langle \text{sg name} \rangle \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{VERB: } \star \text{give} \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{prn: } \star \langle 1 \rangle \\ \text{id: } \star 2 \\ \text{M: Mary} \end{array} \right] \end{array} \right]_4$$

23.4.8 Applying FV+MAIN to *the man gave Mary + a*

syn: $\langle np' x V \rangle$

sem:

 $\langle y np \rangle$ \Rightarrow  $\langle y x V \rangle$

sur: the man gave Mary

syn: $\langle A' V \rangle$ P: \langle past tense \rangle

C: MOD:

NP: \langle man, Mary \rangle I: prn: $\langle 1 \rangle$

epr:

M: give

sem:

+

sur: a

syn: $\langle SN' SNP \rangle$ P: \langle sg indef \rangle

C: MOD:

VERB:

I: prn: =

M: ①

sem:

sur:

syn: $\langle SN' SNP \rangle$ P: \langle sg indef \rangle

C: MOD:

VERB: * give

I: prn: $\langle 1 \rangle$

M: ①

 \Rightarrow

sur: the man gave Mary a

syn: * $\langle SN' V \rangle$ P: \langle past tense \rangle

C: MOD:

NP: \langle man, Mary, * ① \rangle I: prn: $\langle 1 \rangle$

M: give

sem:

sur:

syn: $\langle SN' SNP \rangle$ P: \langle sg indef \rangle

C: MOD:

VERB: * give

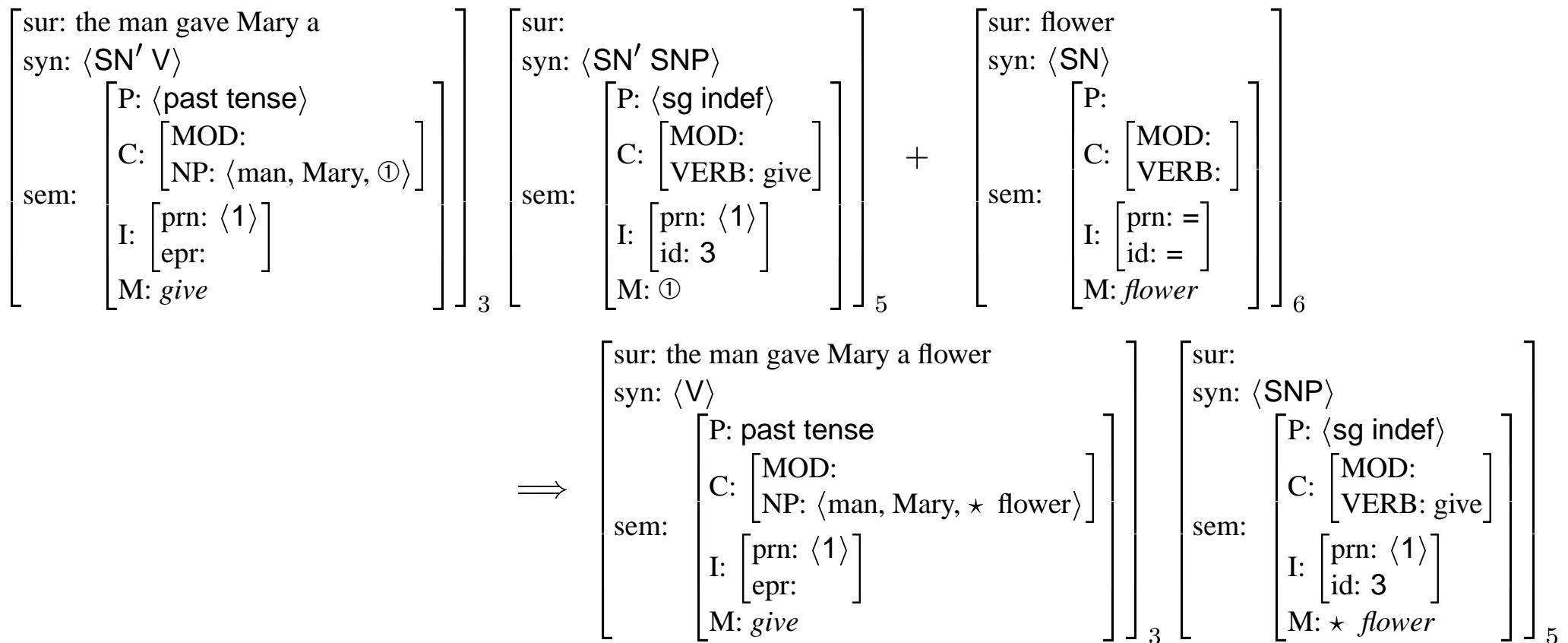
I: prn: $\langle 1 \rangle$

M: ①

23.4.9 Applying DET+N to *The man gave Mary a + flower*

syn: $\langle n \ x \rangle$

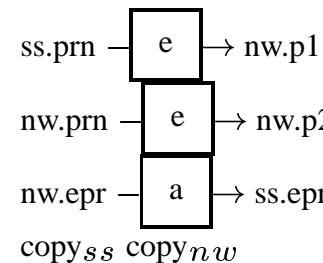
sem:

 $\langle n \rangle$ \implies $\langle x \rangle$ nw.M - r → ss.①
copy_{ss}

23.4.10 Applying ADD-ADP to *The man gave Mary a flower + because*

syn: $\langle mn\ y \rangle$ $\langle x\ ADP \rangle$ \Rightarrow $\langle x\ mn\ y \rangle$

sem:

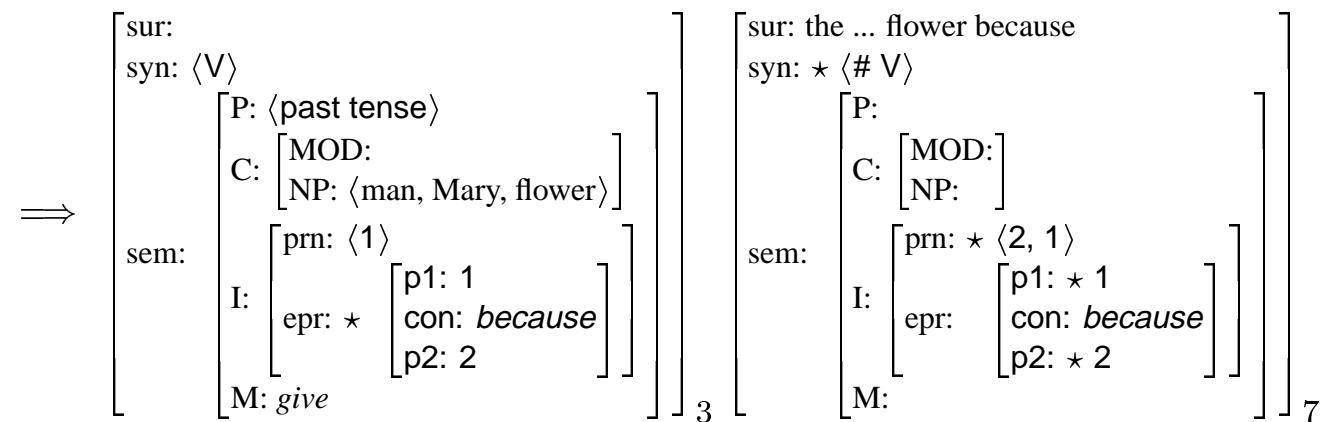


sur: the man gave Mary a flower
syn: $\langle V \rangle$
P: \langle past tense \rangle
C: $\left[\begin{array}{l} \text{MOD:} \\ \text{NP: } \langle \text{man, Mary, flower} \rangle \end{array} \right]$
I: $\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{epr: } \end{array} \right]$
M: give

+

sur: because
syn: $\langle \# \text{ ADV} \rangle$

P:	$\left[\text{MOD:} \right]$
C:	$\left[\text{NP: } \right]$
sem:	$\left[\begin{array}{l} \text{prn: } \oplus \\ \text{epr: } \left[\begin{array}{l} \text{p1: } \\ \text{con: because} \\ \text{p2: } \end{array} \right] \end{array} \right]$
I:	$\left[\begin{array}{l} \text{prn: } \oplus \\ \text{epr: } \left[\begin{array}{l} \text{p1: } \\ \text{con: because} \\ \text{p2: } \end{array} \right] \end{array} \right]$
M:	7



23.4.11 The epr feature structure introduced by the The conjunction because

$$\left[\begin{array}{l} \text{p1:} \\ \text{epr: } \left[\begin{array}{l} \text{con: } \textit{because} \\ \text{p2:} \end{array} \right] \end{array} \right]$$

23.4.12 Applying START-SUBCL to *The man gave Mary a flower because + he*

syn: $\langle \# x \rangle$

sem:

 $\langle y \text{ np} \rangle$ \implies $\langle y \text{ np } \# x \rangle$ copy_{ss} copy_{nw}

$$\left[\begin{array}{l} \text{sur: the man gave M. a f. because} \\ \text{syn: } \langle \# V \rangle \\ \text{P:} \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{NP:} \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{I: } \left[\begin{array}{l} \text{prn: } \langle 2, 1 \rangle \\ \text{epr: 1 bec 2} \end{array} \right] \\ \text{M:} \end{array} \right] \end{array} \right]_7$$

+

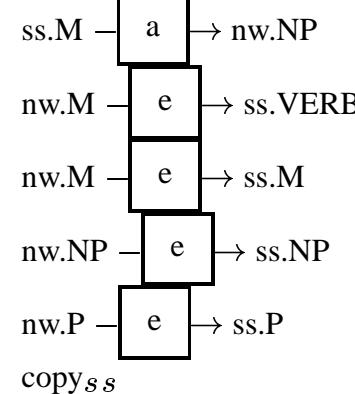
$$\left[\begin{array}{l} \text{sur: he} \\ \text{syn: } \langle \text{SNP} \rangle \\ \text{P: } \left[\begin{array}{l} \text{nom sg} \end{array} \right] \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{VERB:} \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{I: } \left[\begin{array}{l} \text{prn: =} \\ \text{id: +1} \end{array} \right] \\ \text{M: } \text{pro-1} \end{array} \right] \end{array} \right]_8$$

$$\implies \left[\begin{array}{l} \text{sur: the man gave M. a f. because he} \\ \text{syn: } * \langle \text{SNP } \# V \rangle \\ \text{P:} \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{NP:} \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{I: } \left[\begin{array}{l} \text{prn: } \langle 2, 1 \rangle \\ \text{epr: 1 bec 2} \end{array} \right] \\ \text{M:} \end{array} \right] \end{array} \right]_7 \left[\begin{array}{l} \text{sur:} \\ \text{syn: } \langle \text{SNP} \rangle \\ \text{P: } \left[\begin{array}{l} \text{nom sg} \end{array} \right] \\ \text{C: } \left[\begin{array}{l} \text{MOD:} \\ \text{VERB:} \end{array} \right] \\ \text{sem: } \left[\begin{array}{l} \text{I: } \left[\begin{array}{l} \text{prn: } * \langle 2, 1 \rangle \\ \text{id: } * 1 \end{array} \right] \\ \text{M: } \text{pro-1} \end{array} \right] \end{array} \right]_8$$

23.4.13 Application of NOM+FV to *The man g. M. a f. because he + loves*

syn: $\langle \text{np} \# x \rangle$

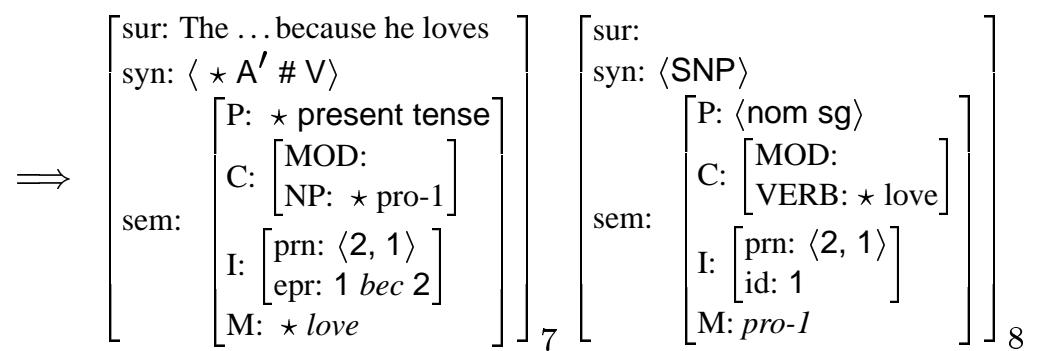
sem:

 $\langle \text{np}' y V \rangle$ $\Rightarrow \langle y \# x \rangle$ 

sur: The ... because he	syn: $\langle \text{SNP} \# V \rangle$
syn: $\langle \text{SNP} \# V \rangle$	
P: [MOD:]	sem: [sur: syn: $\langle \text{SNP} \rangle$
C: [NP:]	
I: [prn: <2, 1>]	sem: [P: <nom sg>]
M: [epr: 1 <i>bec</i> 2]	
	+ [C: [MOD:]
	I: [prn: <2, 1>]
	M: <i>pro-1</i>

sur: The ... because he	syn: $\langle \text{SNP} \rangle$
syn: $\langle \text{SNP} \rangle$	
P: <nom sg>	sem: [sur: syn: $\langle \text{S3}' A' V \rangle$
C: [MOD:]	
I: [prn: <2, 1>]	sem: [P: <present tense>]
M: <i>pro-1</i>	
	+ [C: [MOD:]
	I: [prn: =]
	M: <i>love</i>

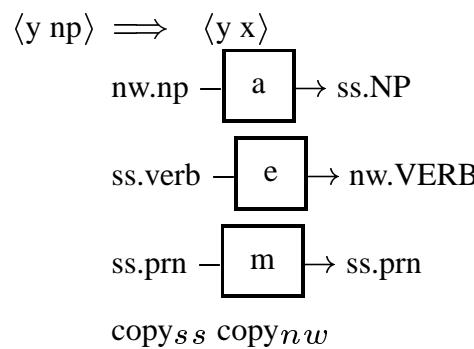
sur: loves	syn: $\langle \text{S3}' A' V \rangle$
syn: $\langle \text{S3}' A' V \rangle$	
P: <present tense>	sem: [sur: syn: $\langle \text{SNP} \rangle$
C: [MOD:]	
I: [prn: =]	sem: [P: <nom sg>]
M: <i>love</i>	
	+ [C: [MOD:]
	I: [prn: <2, 1>]
	M: <i>pro-1</i>



23.4.14 Application of FV+MAIN to *The m. g. M. af. because he loves + her*

syn: $\langle np' \# x \rangle$

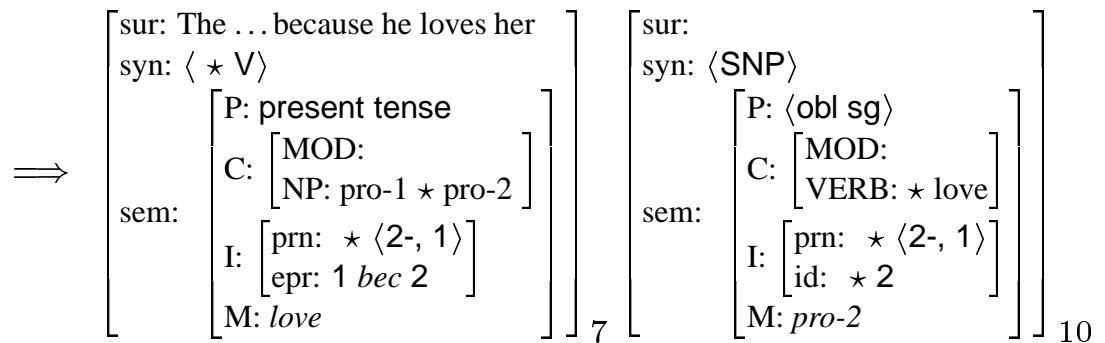
sem:



sur: The ... because he loves
syn: $\langle A' \# V \rangle$
P: present tense
C: MOD: NP: pro-1
I: prn: $\langle 2, 1 \rangle$ epr: 1 bec 2
M: love

+

sur: her
syn: $\langle SNP \rangle$
P: $\langle \text{obl sg} \rangle$
C: MOD: VERB:
I: prn: = id: +1
M: pro-2



23.4.15 Proposition number of embedded subclause

the man, gave her a flower.
prn: ⟨1⟩ because he loves Mary prn: ⟨2-, 1⟩
prn: ⟨2, 1⟩

23.5 From SLIM semantics to SLIM pragmatics

23.5.1 SLIM semantic representation of example 23.4.1

the man

sur:	$\langle \text{SNP} \rangle$
syn:	$\langle \text{sg def} \rangle$
P:	$\langle \text{sg def} \rangle$
C:	$\left[\text{MOD: } \langle \text{VERB: give} \rangle \right]$
sem:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{id: 1} \end{array} \right]$
I:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{id: 1} \end{array} \right]$
M:	man

gave

sur:	$\langle \text{V} \rangle$
syn:	$\langle \text{past tense} \rangle$
P:	$\langle \text{past tense} \rangle$
C:	$\left[\text{MOD: } \langle \text{NP: man, Mary, flower} \rangle \right]$
sem:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{epr: 1 bec 2} \end{array} \right]$
I:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{epr: 1 bec 2} \end{array} \right]$
M:	give

Mary

sur:	$\langle \text{SNP} \rangle$
syn:	$\langle \text{sg name} \rangle$
P:	$\langle \text{sg name} \rangle$
C:	$\left[\text{MOD: } \langle \text{VERB: give} \rangle \right]$
sem:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{id: 2} \end{array} \right]$
I:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{id: 2} \end{array} \right]$
M:	Mary

a flower

sur:	$\langle \text{SNP} \rangle$
syn:	$\langle \text{sg indef} \rangle$
P:	$\langle \text{sg indef} \rangle$
C:	$\left[\text{MOD: } \langle \text{VERB: give} \rangle \right]$
sem:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{id: 3} \end{array} \right]$
I:	$\left[\begin{array}{l} \text{prn: } \langle 1 \rangle \\ \text{id: 3} \end{array} \right]$
M:	flower

because loves

sur:	
syn: <V>	
P: <3sg, present tense>	
C: [MOD: NP: pro-1, pro-2]	
sem:	
I: [prn: <2-, 1>] epr: 1 <i>bec</i> 2	
M: <i>love</i>	

he

sur:	
syn: <SNP>	
P: <nom sg>	
C: [MOD: VERB: love]	
sem:	
I: [prn: <2-, 1>] id: 1	
M: <i>pro-1</i>	

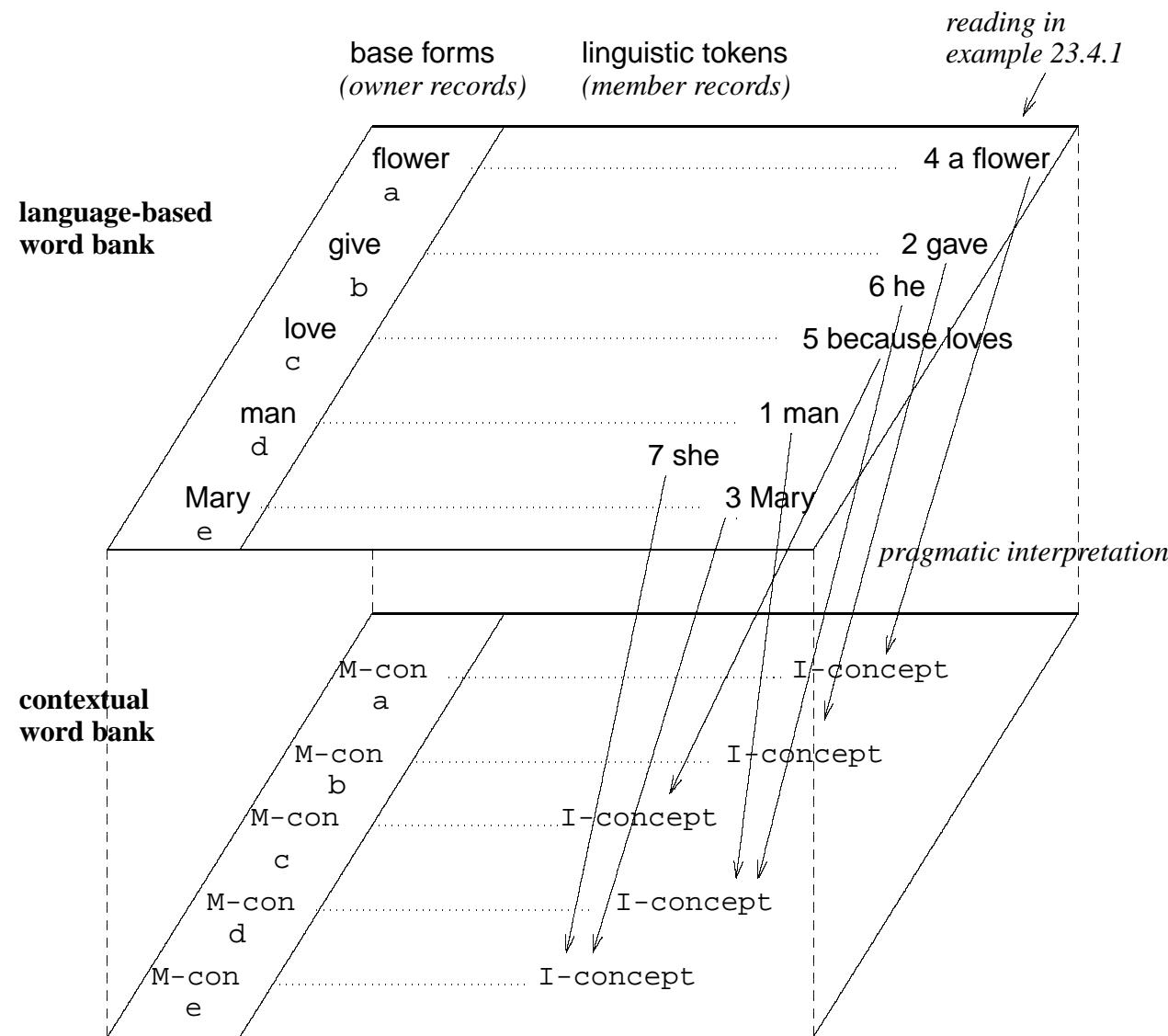
her

sur:	
syn: <SNP>	
P: <obl sg>	
C: [MOD: VERB: love]	
sem:	
I: [prn: <2-, 1>] id: 2	
M: <i>pro-2</i>	

23.5.2 Components of meaning₁

- Compositional semantics (sentence semantics)
 1. Decomposition of input into elementary propositions.
 2. Functor-argument structure within an elementary proposition.
 3. Extrapropositional relations among elementary propositions.
- Lexical semantics (word semantics)
 1. Properties and M-concepts of woplets.
 2. Extrapropositional relations between word types by means of *absolute propositions*.

23.5.3 Embedding 23.5.1 into the contextual word bank



23.5.4 Contextual reconstruction of language information

