

Approaching valency patterns in Spanish Sign Language (*Lengua de Signos Española* [LSE])

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Goals

- To describe argument structure in Spanish Sign Language [LSE] using data that must be:
 - contextualized
 - comparable with other languages (both signed & spoken)
- To approach sign languages from a typological perspective.
- Sign languages are interesting , because:
 - they use a visual-gestural modality
 - they are ‘young languages’ like pidgins and creoles
 - few individuals acquire them in a strict native way

Antecedents:

The typology of grammatical relations

- Alignment types based on coding and behavior properties of core arguments
- Development of quantitative / inductive methods
- Typological databases: *WALS*, *ValPaL*
 - But no Sign Language in ValPaL nor in WALS chapters about argument structure
 - Although it is true that sign languages are receiving increasing attention in typological literature

Antecedents: Typology, GRs, and sign languages

- Some well-studied phenomena related to argument structure
 - Verb types ('agreement verbs', 'classifier predicates'), and their syntactic properties
 - The use of space for tracking referents in discourse and marking syntactic-semantic relations
 - the use of different perspectives on event conceptualization
- Several comparative and typologically informed analysis of sign languages.
- However, we feel that there is much to be done yet

Antecedents: argument structure and GRs in LSE

- Lack of detailed studies about the syntax of the clause and the syntax of the verb in LSE
 - Herrero (2009): *Gramática didáctica de la LSE*, chapters on simple sentence
- Vocabularies/dictionaries of LSE
 - (*DILSE*, *sematos.eu*, *spreadthesign*)
 - Mostly, signs out of context

Data for this study

- 80 core verb meanings of ValPaL
 - Easily comparable
 - Focus on the meaning / the event described
- Elicitation and videotaping, using as stimuli:
 - an event to be described, provided as a verb in Spanish,
 - one or more suggested participants,
 - a suggested orientation of the action
 - (avoiding to suggest a wording or a word order)
- 300 elicited sentences produced by 3 signers (2 deaf people and 1 hearing person with deaf parents)

(We will complement these data from elicited sentences with data from comparable narratives)

- We try to use comparable data aiming to highlight the coding devices used by LSE for the expression of each verb meaning taking as reference a crosslinguistically defined semantic map

Basis of comparison

- 80 core verb meanings in ValPaL and their 'Basic coding schemas' in 37 languages (Hartman et al. 2013)
- Distance matrix between verbs has been calculated
- Neighbor-joining hierarchical clustering to induce semantic classes (alternatives: NeighborNet, MDS)
- Method similar to inducing semantic roles clusters (Cysouw 2014, Bickel et al. 2014, Hartman et al 2014)

Argument structure in LSE: Problems of delimitation

- Meaning equivalences:
 - correspondence between ValPaL verb meanings and LSE signs is far from biunivocal
 - An onomasiological perspective (ValPaL --> LSE) has been adopted here
- Other relevant problems:
 - Categorial flexibility of nouns and verbs in LSE --> identification of predicates and arguments
 - Lexicalization patterns: fully lexical signs, depicting signs, and constructed action for the expression of events
 - Simple verbs, serial verbs and complex constructions, for the expression of what a priori was intended as a single meaning

COMPLEX EVENTS

Many elicited sentences include two or more verbs (*):
 serial verbs?, complex constructions?, paractactic clauses?

“The man broke the window with a stone”
 ==> MAN WINDOW STONE THROW-stone BREAK-window

Intended meaning	Obtained pattern	
BREAK(x, y, with z)	THROW(z, at y)	+ BREAK(y)
COOK(x, y)	PUT(y, in pan)	+ COOK(y)
FEAR(x, y)	SEE(x, y)	+ FEAR(x)
FRIGHTEN(x, y)	THREATEN(x, y)	+ FRIGHTEN(x, y)
GRIND(x, y, with z)	PUT(y, in z)	+ GRIND(x, y, with z)
HIDE(x, y, to z)	HIDE(x, y)	+ NOT.SEE(z, y)
KILL(x, y)	BEAT(x, y)	+ [DIE(y)]
KNOW(x, y)	MEET(x, y)	+ KNOW(x, y)
MEET(x, y)	SEARCH FOR (x, y)	+ MEET(x, y)
PUSH(x, y, to z)	PUSH(x, y)	+ FALL(y, to z)
WASH(x, y)	HELP(x, y)	+ WASH(x, y)
WIPE(x, y, off z)	REMOVE(y, from z)	+ CLEAN(z)

MANNER + RESULT/CHANGE_OF_STATE

The formal coding of participants:

- Word order
- Flagging
- Indexing
(--> 'directional predicates')
- Noun incorporation / verbal classifiers
(--> 'depicting predicates')

Core argument flagging (and TAM marking) in sign languages (Gil 2014)

		TAM marking		
		Optional	Obligatory	total
Core-argument flagging	restricted or absent	32	0	32
	usual or obligatory	0	0	0
	total	32	0	32

Gil, D. (2014): “Sign languages, creoles, and the development of predication”
 ==> sign languages and creoles tend to be simpler than other types of
 languages
 => predication is only weakly developed in “young languages”

Flagging in LSE

- No flagging
- A few dubious cases, that could be the starting point of a grammaticalization process*
 - focus (interr: *what?*) --> P

MAN FEAR WHAT-BEAR
The man fears the bear

- Signs with the meaning “topic/about”, “place”, ... accompanying some ‘oblique’ arguments

Word order

- Variable order in LSE
- One-participant clauses: SV
- Two-participant clauses:
A-V-P > A-P-V > A-V-P-V
- Three participant clauses:
A-T-V-R > A-V-R-T > A-V-T-R

Order may serve to disambiguate some sentences, given the clear tendency to correlate A / subject / topic / initial position; but there is no fixed word order pattern, and no significant differences between verb classes (number of arguments apart)

Indexing predicates

Nature of indexing in SLs:

- Some ‘nominals’ may be articulated at different locations in front of the signer: ***Referential-locus***
- Some ‘verbs’ may be articulated as a movement from an initial locus to a final locus: those two loci may serve as a mean for indexing participants in the event
- The signer h/self may serve as locus for any of the participants (esp. in cases of “role-shift” or “constructed action”)
- Locus indexing as basically a referent-tracking device in discourse

“The men followed the women”



MEN

CL.PL.a

FOLLOW.a>b

CL.PL.b

WOMEN



The bear saw the man

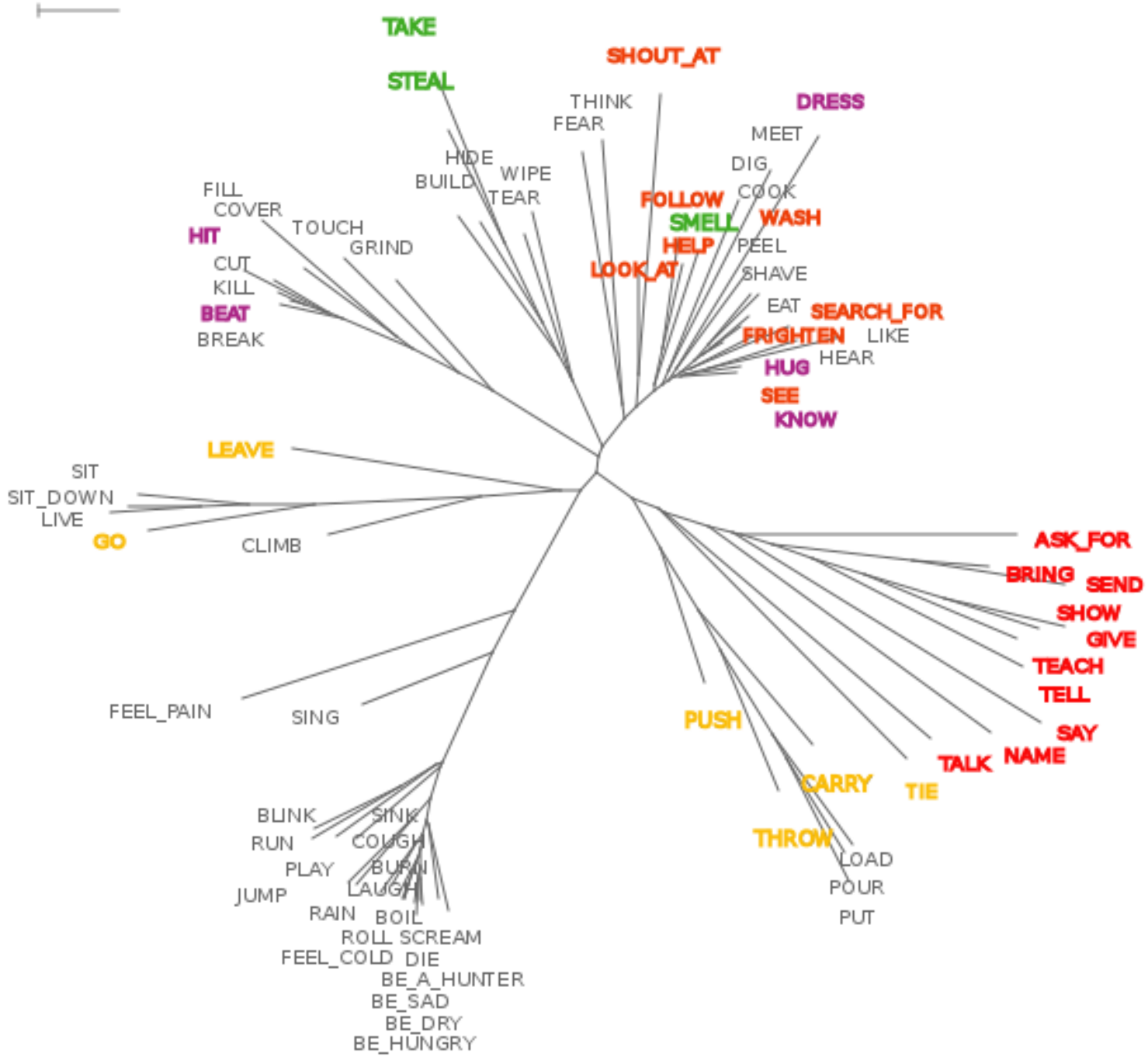
Indexing predicates

- The status of indexing
 - grammatical ‘agreement’ for many authors (e.g. Padden 1988, Lillo-Martin & Meier 2011, ...)
 - ‘Indicating predicates’ (Liddell 2003)
 - Better seen as a form of argument indexing (as defined by Haspelmath 2013)

Indexing in LSE

- which verb meanings?
- which participants?
- where is it expressed?
(directional verbs or indexing auxiliary markers
[eye gaze may be relevant also])

Indexing in LSE is never obligatory. It is expected with “directional verbs”, and it is somehow possible for most 2+ participant events



Indexing verbs(A > R)

ASK FOR	A > R	asker > askee
BRING	A > R	bringer > bringing recipient
GIVE	A > R	giver > giving recipient
NAME	A > R	namer > namee
SAY	A > R	sayer > saying addressee
SEND	A > R	sender > sending recipient
SHOW	A > R	shower > showing addressee
SHOW	A > R	shower > shown thing > showing addressee
TALK	A > R	talker > talked to person
TEACH	A > R	teacher > teachee
TELL	A > R	teller > tellee

Indexing verbs(A > P)

(FEAR)	A > P	fearer > fear stimulus
FOLLOW	A > P	follower > followee
FRIGHTEN	A > P	frightener > frightenee
HELP	A > P	helper > helpee
LOOK AT / SEE	A > P	looker > looked at entity
		seer > seen entity
(MEET)	A > P	meeter > met person
SEARCH FOR	A > P	searcher > searched for thing
SHOUT AT	A > P	shouter > shoutee
SMELL	A > P	smeller > smelled entity
WASH	A > P	washer > washed entity
PUSH	A > P	pusher > pushee

Verb meanings accompanied by an indexing auxiliary (A>P)

The verb is not directional (mostly, body-anchored), but the signer produces an auxiliary that moves between the R-loci

DRESS	A>P	dresser > dressee
FRIGHTEN	A>P	frightener > frightenee
HIT	A>P	hitter > hittee
HUG	A>P	hugger > huggee
KNOW	A>P	knower > known thing/person
PUSH	A>P	pusher > pushee
WASH	A>P	washer > washed entity

'locative' indexing verbs: source > goal

Source ~ Agent location

CARRY	A/So > L	carrier > carrying goal
THROW	A/So > L	thrower > throwing goal
PUSH	A/So > L	pushee > pushing goal
GO	S/So > L	goer > going goal
LEAVE	S/So > X	left place/person > x

Auxiliary with a non-directional verb

TIE	P>L	tied thing > tying goal
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'backward' verbs: Goal ~ Agent location

STEAL	So > A	stealing source > stealer
TAKE	So > A	taking source > taker
SMELL	So > A	smelled entity > smeller

Auxiliaries

TAKE	A > So	taker > taking source
STEAL	A > So	stealer > stealing source

Indexing verb and indexing auxiliary

'The man takes the money from his friend'



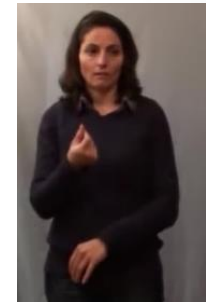
HOMBRE CL.a
MAN CL.a



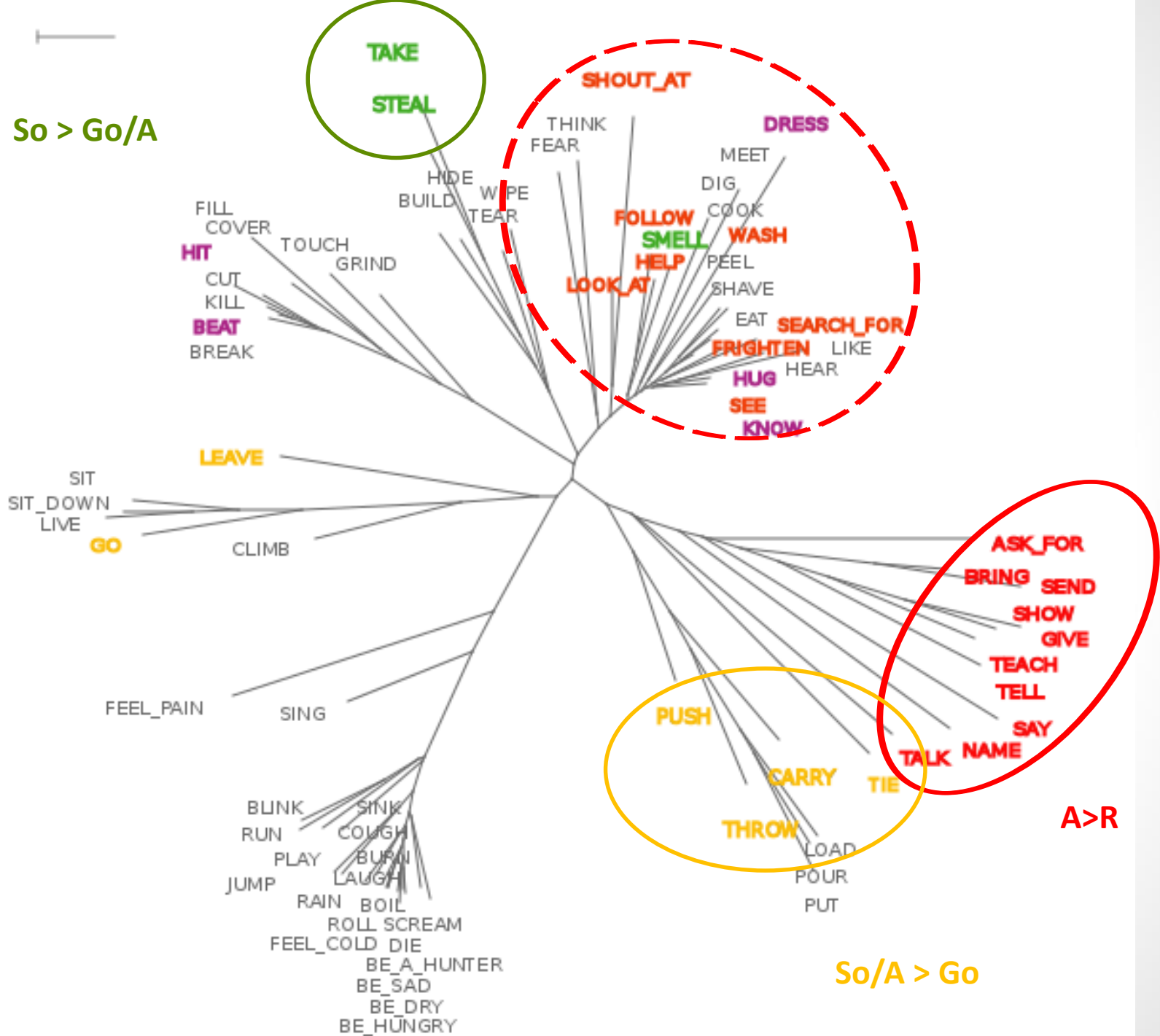
AUX.a>b AMIGO.b
AUX.a>b FRIEND.b



COGER.b>a DINERO
TAKE.b>a MONEY



So > Go/A



Indexing predicates: summary

- Two oriented tiers (that may eventually conflict)
 - Spatial relations and movements (Source > Goal)
 - Action chains (Agt > Patient/Receiver) [more abstract]
- Spatial relations/movements, transfer predicates, two-argument predicates which can be interpreted as a metaphorical transfer
- Preference for the indexing of **human** referents
- P or R as second argument (~PO, not DO)
- Incipient grammaticalization process (abstract relations, emergency of auxiliaries, ... but not obligatory)

More on the use of space in LSE: 'locative' predicates

- Predicates articulated at the locus of one of the participants

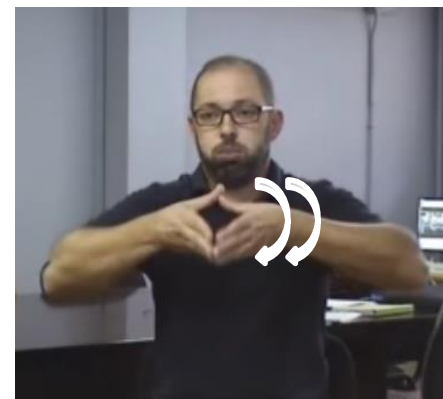
COVER	P	covered thing
DRESS	P	dressee
SHAVE	P	shaved body part
WASH	P	washed entity
HIT	P	hittee
KILL	P	killlee
PEEL	P	peeled object
TIE	L [??]	tying goal
SIT(DOWN)	L	sitting place

Incorporating predicates

- Complex signs that can be analyzed into
 - A *verbal movement root* symbolizing a state or process (location, movement, contact, handling, ...)
 - A *handshape* that symbolizes a particular entity (~ ‘incorporation’) or a class of entities (~ ‘classifier’) and corresponds to a participant in the event



PERSON.CLIMB.TREE



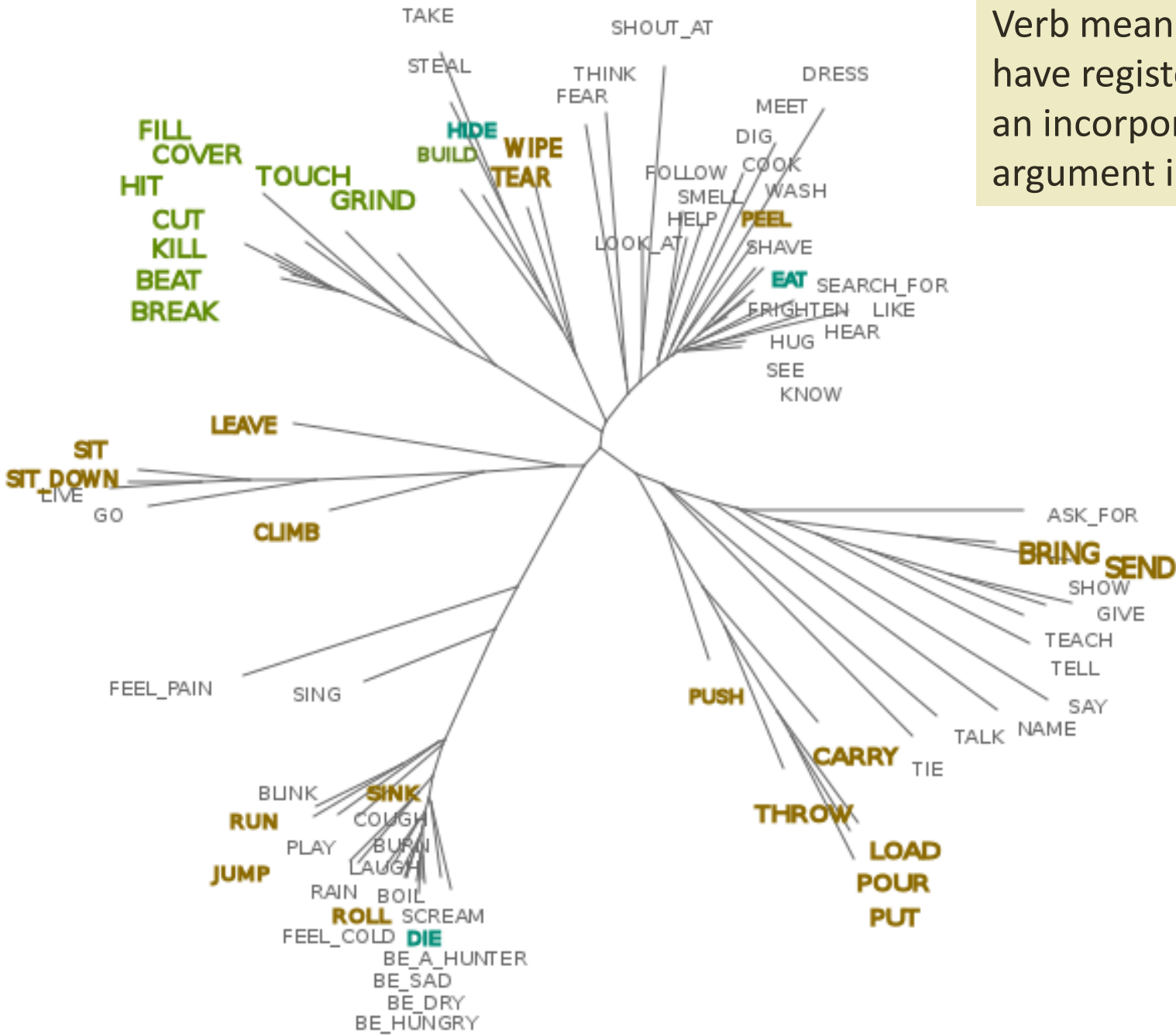
SINK.BOAT

Incorporating predicates

- Which verb meanings?
- Which participants?

A related problem: handshape types (whole entity, size and shape, instrumental, ...)

Verb meanings we have registered with an incorporated argument in LSE



Incorporated participant: 'Themes' (i.e. object in motion)

CARRY	T	carried thing
LOAD	T (L)	loaded thing, loading place
PUT	T (L)	put thing, (putting goal)
TEAR	T (So)	torn thing, tearing source
BRING	T	brought thing
SEND	T	sent thing
POUR	T (L)	poured substance (pouring goal)
FALL	S	fallee
JUMP	S	jumper
LEAVE	S	leaver, left place/person
ROLL	S	rolling entity
RUN	S	runner
SINK	S	sunken entity
SIT (DOWN)	S (L)	sitter (sitting place)

PUSH (T) (pushee) [* PUSH + FALL-T]

Incorporated participant: Patients

BREAK	P (I)	broken thing, (breaking instrument)
BUILD	P	built thing
CUT	P (I)	cut thing, (cutting instrument)
FILL	P (I)	filled container, filling material
GRIND	P (I)	ground thing, grinding instrument
HIDE	P	hidden thing
EAT	P	eaten food
DIE	S	dieer

Theme incorporation and localization

		Incorporated Theme: Active (right) hand	Reference location: Passive (left) hand shape or L locus
LOAD	T L	loaded thing	loading place
PUT	T L	put thing	putting goal
POUR	T L	poured substance	pouring goal
TIE	T L	tied thing	tying goal
CLIMB	S L	climber	climbing goal
SIT (DOWN)	S L	sitter	sitting-down place
PEEL	T So	peel	peeled object
TEAR	T So	torn thing	tearing source
WIPE	T So	wiped material	wiping Surface

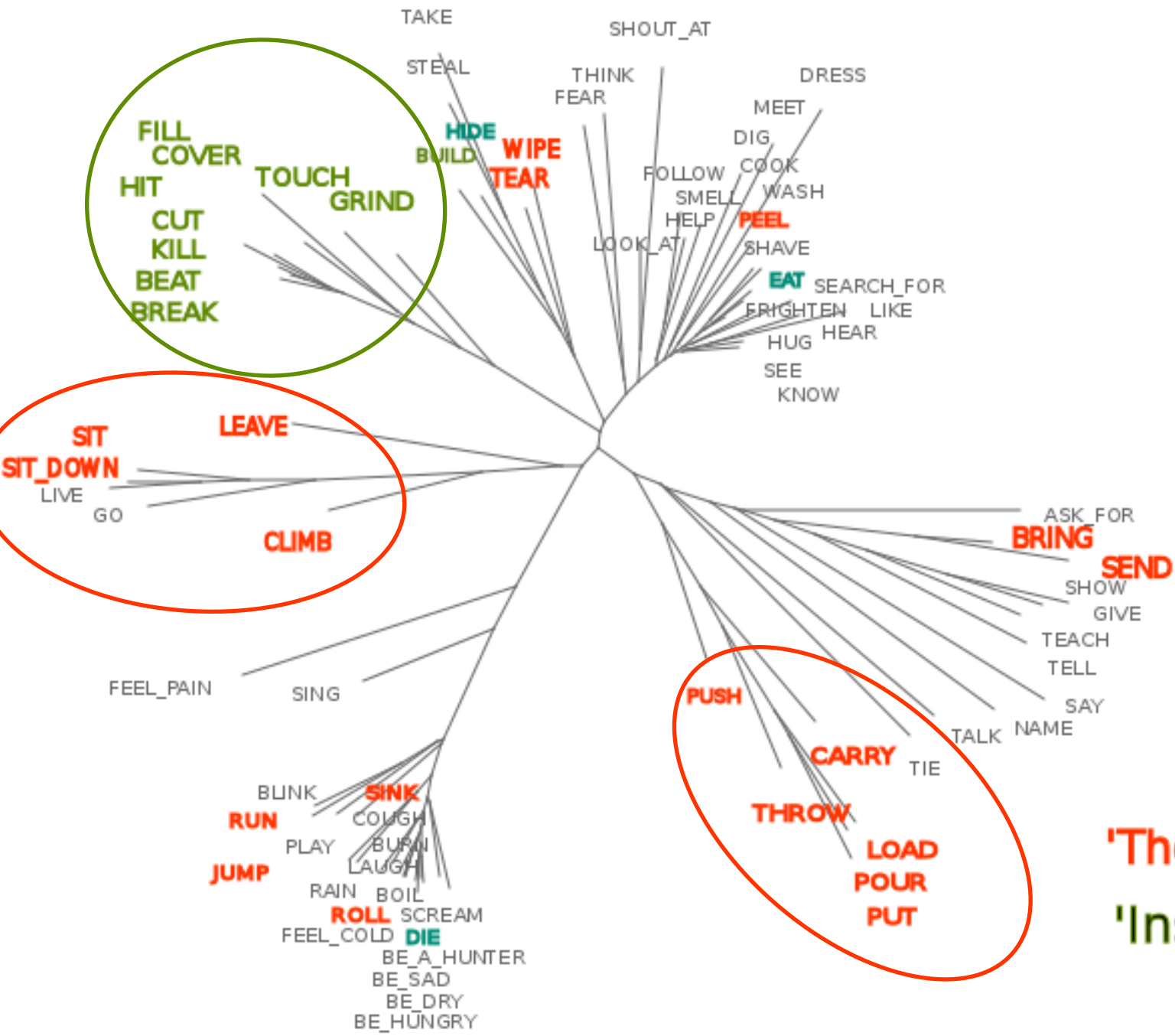
Incorporated participants

‘Handling classifiers’: they represent hands holding instruments as they act on objects

Instrument: active (right) hand shape

Affected object: LOCUS or passive (left) hand shape

BEAT/HIT	I (P)	beating/hitting instrument	
COVER	I (P)	cover	
TOUCH	I (P)	touching instrument	
CUT	I P	cutting instrument	
KILL	I (P)	(killee), killing instrument	BEAT.[I]-[P] (+DIE.[P])
BREAK	I P	broken thing, breaking instrument	THROW.[I]-at-[P] + BREAK.[P]
FILL	I P	filling material, filled container	POUR.[I]-into-[P] + FILL.[P]
GRIND	I P	ground thing, grinding instrument	PUT.[P]-into-[I] + GRIND[I]



Verb meanings registered with an incorporated argument in LSE

'Theme' InCorp.
'Instr. incorp.'

Summing Up

- LSE (as other sign languages) makes little or no use of some coding devices pervasive in spoken languages: flagging and (to a lesser extent) word order
- But it is developing grammatical mechanisms of indexation and derivational mechanisms of incorporation
- Ongoing grammatical mechanisms have a semantic motivation that can be traced partly through semantic maps
- Typological comparison may throw more light on sign languages, and sign languages may throw more light on understanding linguistic diversity.

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