# RAUMRELATIONEN
SPATIAL RELATIONS
RELATIONS SPATIALES
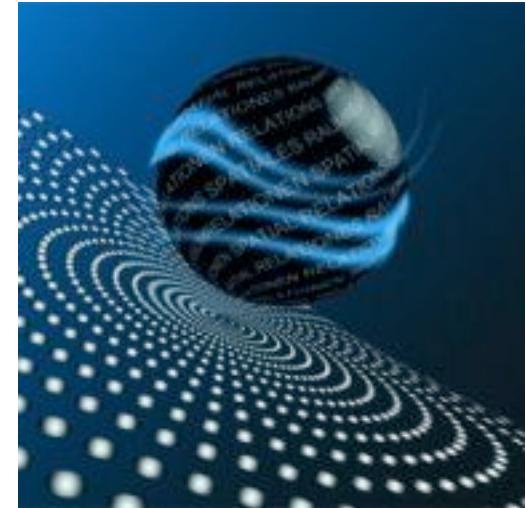
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ON THE MORPHO-SYNTAX OF PATH-EXPRESSING CONSTRUCTIONS: TOWARD A TYPOLOGY

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Trajectoire Project
http://www.ddl.ish-lyon.cnrs.fr/trajectoire/

Outline

1. *Context of the present study: the Trajectoire Project*

2. *The initial framework: Talmy's typology*

3. *Problems of Talmy's typology*

4. *Our approach*

5. *Conclusion*

1

The Trajectoire Project

The Trajectoire Project

Our work is part of the *Trajectoire Project* (*Trajectoire* was one of the programs supported by the French *Fédération Typologie et Universaux Linguistiques*).

The goal of the project is to describe the ways languages describe the **PATH** of an object which changes place.

Path information is related to:
Leaving a **source**, moving **across** a path of a certain **shape**, reaching a **goal,** with respect to a **viewpoint** and / or **directions** of the environment (Grinevald 2011 for a definition).

The Trajectoire Project

The *Trajectoire Project* has 25 members, collaborations with 7 external researchers (in Germany: Eliese-Sophia Lincke, Humboldt University, Excellence Cluster Topoi)

Sample: 15 families, 34 languages.
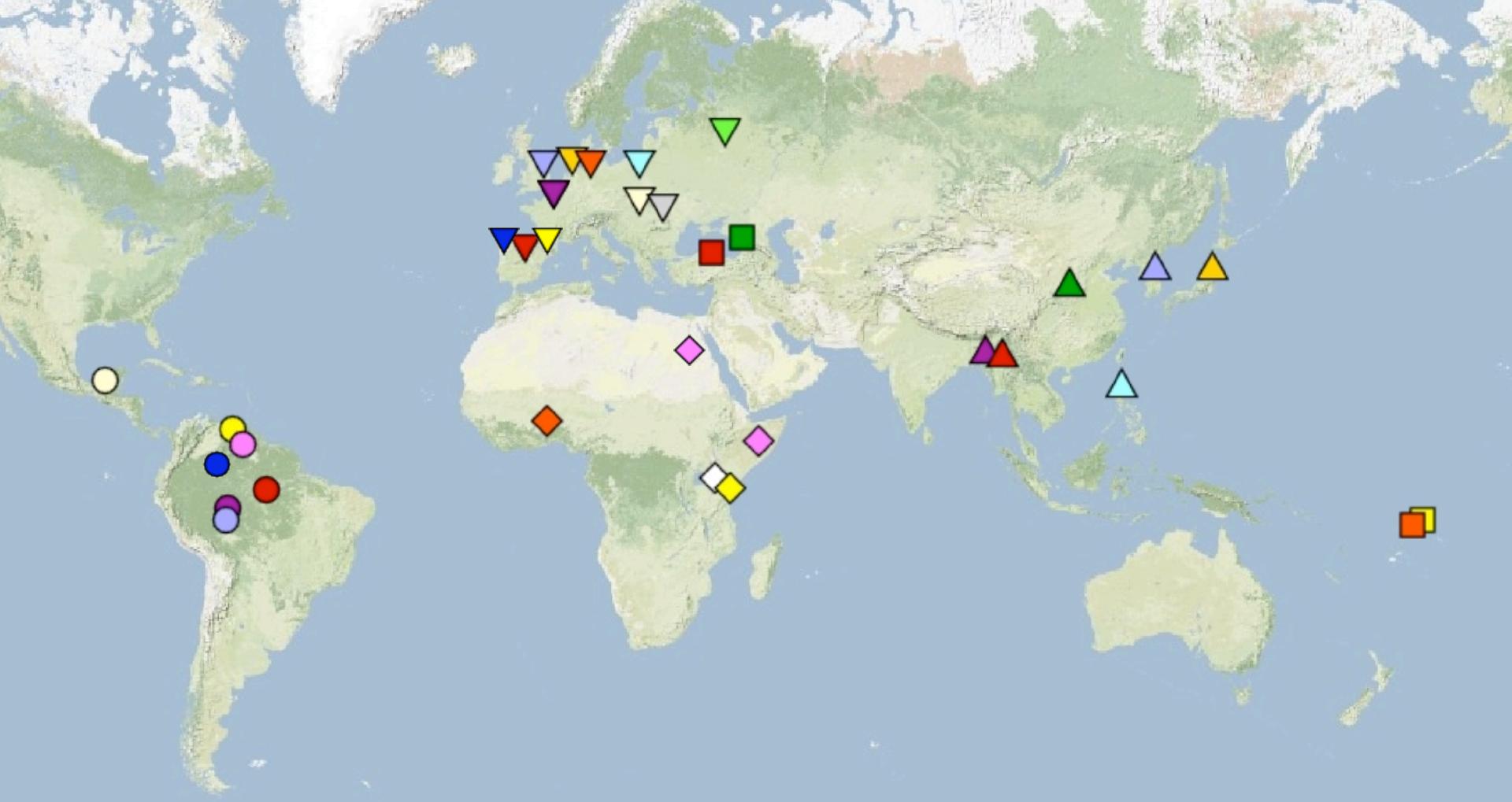
🔺🔺 Burmese, Arakanese	◆ Swahili	🔻 Galician
🔺 Mandarin	◆ Kposo	🔻 Spanish
🔺 Korean Sign Lang.	◆ Egypt., Coptic	🔻 Catalan
🔺 Japanese	◇ Langi	🔻 French, Sign Lang.
🔺 Tagalog	🟩 Laz	🔻 English
🟧🟨 Futunian, Wallisian	🟥 Turkish	🔻 Dutch

🔻 German	⚪ Ye'kwana
🔻 Polish	⚪ Yanomami
🔻 Hungarian	⚪ Munduruku
🔻 Romanian	⚪ Ese ejja
🔻 Russian	⚪ Cavineña, Reyesano
⚪ Tojol ab'al, Jakaltek	🔵 Tanimuca, Yuhup

The Trajectoire Project

The topics:

Inventories of adnominals (adpositions and cases; Papahagi)
Typology of constructions (Fortis & Vittrant)
Typology of satellites (Grinevald, Imbert & Söres)
Source-goal asymmetry (Kopecka & Ishibashi)
Diachrony (evolution of path markers and constructions; Fagard & Iacobini)
Localism (Fagard & Fortis)

First results published in a collective volume:
Fortis, Grinevald, Kopecka, Vittrant, ed. (2011) L'expression de la trajectoire: perspectives typologiques, *Faits de Langues. Les cahiers*, 3.

Goal of our typology

Method:

Monographies, survey of the literature, fieldwork...
Constitution of a corpus through an elicitation procedure
(description of videos by speakers; Ishibashi, Kopecka &
Vuillermet 2006).
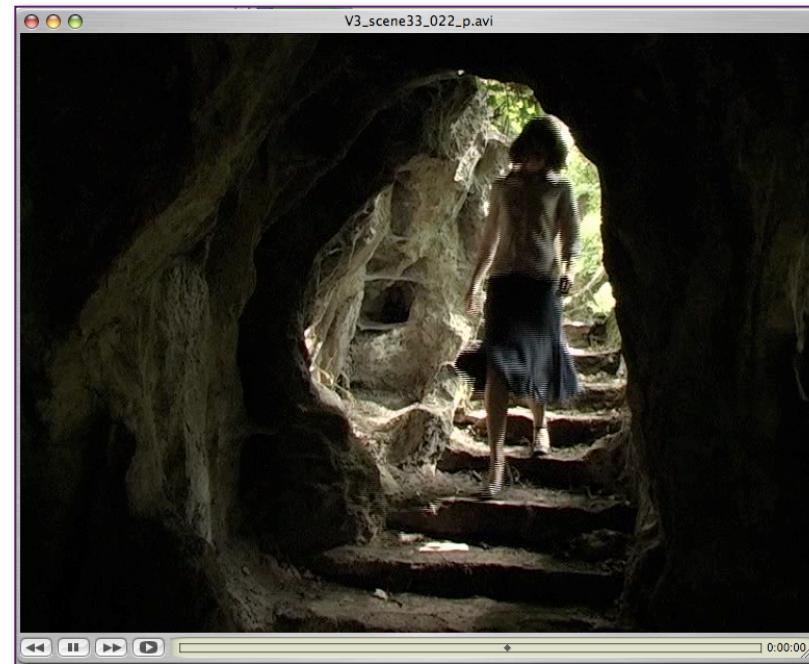
Goal of our typology

One of the topics of the Trajectoire Project is to *elaborate a typology of constructions* describing a **PATH**.

Reminder
Path refers to information related to:
Leaving a **source**, moving **across** a path of a certain **shape**, reaching a **goal,** possibly with respect to a **viewpoint** and / or **directions** of the environment (Grinevald 2011 for a definition).

Goal of our typology

A sample of linguistic diversity (elicited utterances; spatial rel. and motion in bold; Ishibashi, Moyse-Faurie & Fagard, p.c.):

- *French*: Elle **descend dans** la cave

- *English*

She **went down into** the cave.

- *Japanese (*Ishibashi)

Kaidan-o **ori**-te   dookutu-no **naka-ni**   **hait**-te   **ki**-ta.
stairs-ACC go down-CON   grotto-GEN   interior-DAT enter-CON come-PST

- *Futunian* (Moyse-Faurie)

E   **ifo**   **mai**   le   ta'ine **ki**   **loto**   o   le   ana.
NPST   go down   CPET ART   girl   toward interior POSS ART grotto

- *German (*Fagard)

Eine Frau **steigt** eine Treppe **hinab in** eine Höhl**e**.

Goal of our typology

Our typology is confined to **intra-clausal constructions**.

There are strategies in which path is expressed in more than one clause ("ultra-clausal strategies").

- See **Burmese** (from Vittrant) :

ကလေးတစ်ယောက်	ပင်လယ်	သောင်စပ်ကနေ	ပင်လယ်ထဲကို	ပြေးဆင်းသွားတယ် ။		
[kəle³	tə-yaɔʔ	piN².lɛ²	θɔN²	sɛʔ	Ka¹-ne²]$_{CL}$	
child	one-CLF	sea	- shore	bank	S. –REL/V:stay	

piN².lɛ²	tʰɛ³-Ko²	pye³	sʰin¹	θwa³	Tɛ²
sea	interior-DIR	run	go down	AUX:go	PVF:R

(A) child runs down into the see from the see-shore bank.

Lit: (A) child runs down (away from DC) into the see (from) having stayed at the sea-shore bank.

- See **Ese Ejja** (from Vuillermet)

Eta'a	**=jo**	**neki**	kwaji-kwaji	-jaasowa-ani
river	=loc	stand	run-red	-go.up-prs

Lit: He stands at the river, he goes up running.

'He runs up from the river'.

2

Talmy's typology

Initial framework of our typology

Talmy (1972, 1985, 1991, 2009) has provided the framework on which most current analyses are based.

Talmy was also inspirational for us. However, his typology has its problems.
Hopefully, what follows will help us overcome these problems and improve on our first proposal (Fortis & Vittrant 2011).

(before Talmy, see Charles Bally, 1932, *Linguistique Générale et Linguistique Française*, then Malblanc on comparative stylistics of German and French, and Tesnière, who refers to Malblanc, and enlarges the discussion; ref. in Fortis & Fagard 2010)

Talmy's typology

Talmy (1972) is a comparative study of the structure of English and of a polysynthetic language of California, Atsugewi.

His orientation is universalist, presumably under the influence of the Chomskyan trend.

His approach may be characterized as an offshoot of generative semantics (cf. also Wallace Chafe 1970 for Onondaga; the model of *Aspects* was clearly inappropriate for polysynth. lang.).

Talmy argues that English and Atsugewi share the same fundamental deep structure.

Talmy's typology

This fundamental deep structure is the underlying linguistic representation of a *translatory situation*.

Every *translatory situation* (an event in which a Figure moves along a path or is in a spatial relation to a Ground) is analyzed into a fixed structure (*translatory structure*) of 4 components :

FIGURE , MOTIVE , DIRECTIONAL , GROUND

Like Gruber's theory of thematic roles (1965), Talmy's theory is **localist** (Fortis, to appear). E.g. causative situations are decomposed into the translatory structure.

$S_{translatory}(s_T)$

N(F) V(M) P(D) N(G)

MOVE /
BE_{LOC}
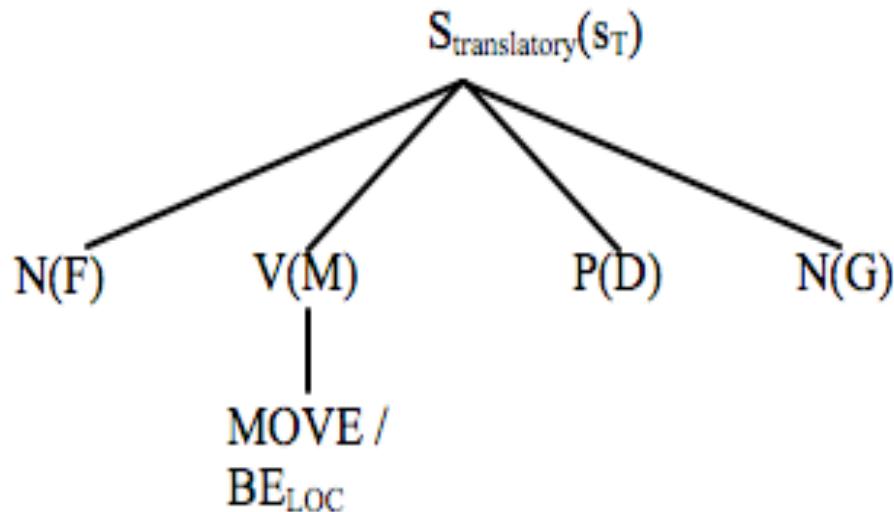
COMPONENTS :
F : Figure
M : Motive
D : Directional
G : Ground

Surface structures are derived by tree adjunction (which brings in external components) and **conflation** (akin to *predicate raising* in generative semantics).

> it rained into the bedroom
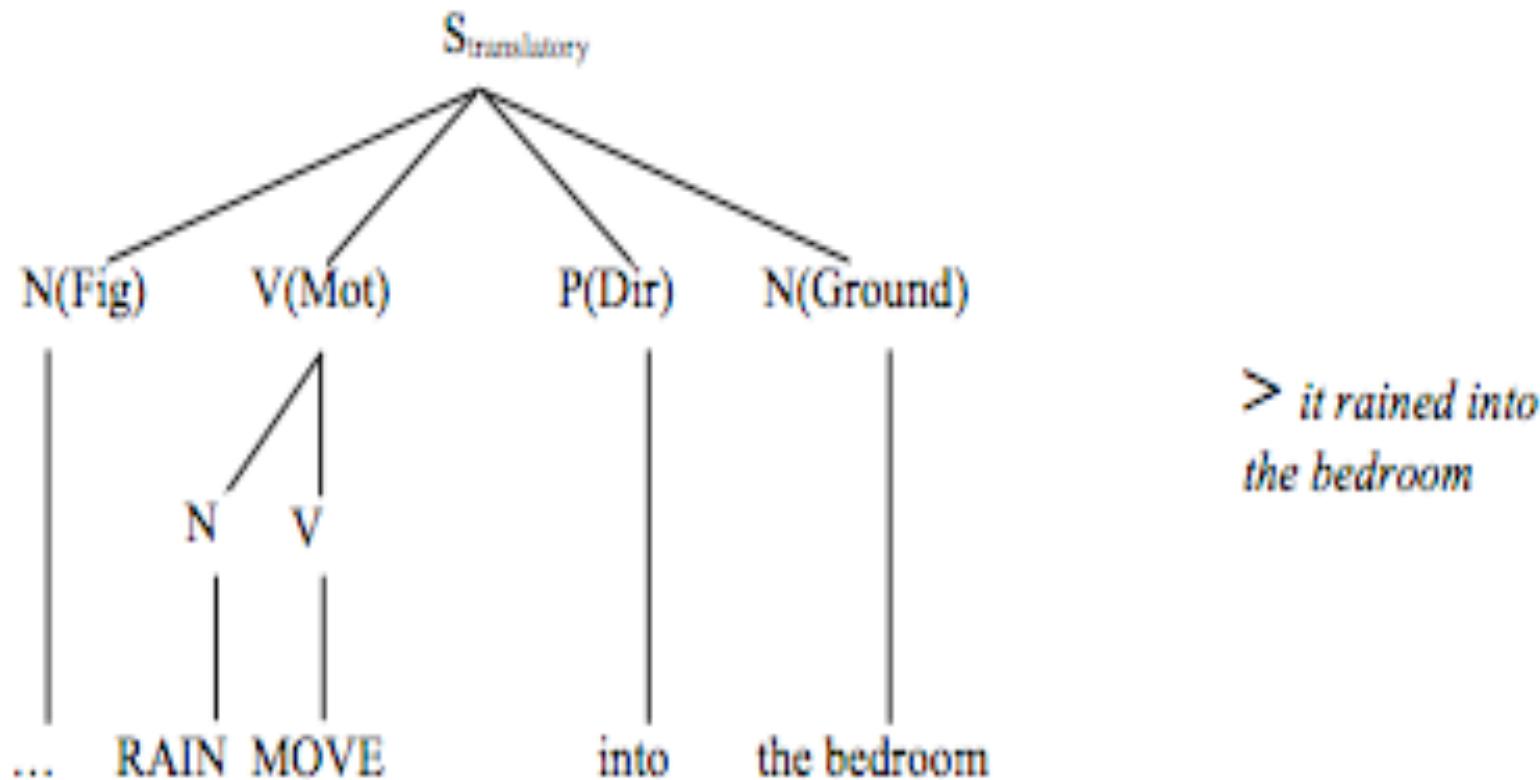
Talmy's typology

- In Atsugewi, the lexicalization of a motion event is strikingly different:

- *w̓-oqʰputíćta* < ʔ-w-uh-qput-ićt-ᵃ-,

STH-INFL-FREEBODY-DIRT-INTO.LIQUID-INFL-

'sth dirty fell into sth liquid'

Talmy's typology

- There are many kinds of conflation:

To rain is a FM verb.

To box is a MDG verb

To peel is a FMDG verb.

- In some languages the Motive typically conflates with an external Manner component ("m"), and yields a Mm verb:

    Cf. *the bottle floated into the cove*   <   DS: 'the bottle MOVEd AFLOAT into the cove' (Talmy 1972 : 19).

    Cf. also Mm verbs in Russian : *on v-bežal v dom* ('he ran-in into the house').

Talmy's typology

- Some elements are closer to the V than prepositions, for ex. *by* in *he drove by past it* (cf. **he drove past it by*). Russian *v-* or English *by* in *he drove by past it* are called **satellite**s.

- **Satellite** = "The grammatical category of any constituent other than a noun-phrase or prepositional phrase complement that is in a sister relation to the verb root." (Talmy 1985 : 102)

- Examples include English verb particles, Latin, Russian and German verb prefixes, Chinese verb complements, Caddo incorporated nouns ('water-enter' : Talmy 1985 [2000] : 113), some Atsugewi stems / affixes.

Talmy's typology

- Next stage of the theory: Talmy (1985), "Lexicalization patterns".

- The 4 components of a motion event are :

  FIGURE   MOTION   PATH   GROUND

  (MOTION= MOVE or BE_{LOC})

- Constructions that describe motion events are classified according to whether they lexicalize path in a verb or in a satellite.

Talmy's typology

"Path appears in the verb root in "**verb-framed**" languages such as Spanish, and it appears in the satellite in "**satellite-framed**" languages such as English and Atsugewi."

(Talmy 2000 [1985] : 117-8; emphasis is ours).

NB: there are other systems: Greek is a **parallel system**, i.e. uses S-framed and V-framed constructions to a comparable degree (Talmy 2000 [1985] : 66).

Spanish is classified as V-framed above but as a **split-system** in another place (2000 [1985] : 65]), i.e. as having both S-framed and V-framed constructions (though not in the same circumstances, unlike parallel systems).

3

The problems of Talmy's typology

Problems of Talmy's typology

According to Talmy's own definition of satellite his arch-example

The bottle floated into the cave

is neither verb-framed nor satellite-framed (it cannot be classified).

(in the initial version of the theory, e.g. Talmy 1975, this incoherence was not present since *float into* resulted from *FLOAT-IN into*, with a deep satellite *IN,* and was therefore satellite-framed).

Problems of Talmy's typology

There are other problems:

•If path is expressed both in the verb and in a satellite, the construction does not qualify for being exclusively V-framed nor S-framed. This is the problem of "**double [or multiple] framing**" (Croft et al. 2010).

•Some languages which are predominantly V-framed exhibit S-framed constructions (and conversely). This is the problem of "**split systems**" (Talmy's term). While this problem is acknowledged by Talmy, it threatens to render his typology vacuous (there are few pure systems, like Russian).

Problems of Talmy's typology

E.g. French, Italian and Spanish have a number of S-framed constructions:

(1) manner V with "marked" prepositions (*nous avons marché jusqu'à la Seine;* Fortis 2007);

(2) V with preverbs (*accourir* 'run to'), attesting to an ancient state of the language (Kopecka 2006, 2009a);

(3) particles, esp. in Italian (*volare via* 'voler au loin'; voir Iacobini & Fagard 2011);

(4) manner V and unmarked prepositions, like *courir / correre* (It.) or *glisser / scivolare* (It.) (Folli 2008; Kopecka 2009b; Fortis & Fagard 2010);

(5) some restricted idioms (*marcher à l'échafaud* 'walk to the scaffold').

Problems of Talmy's typology

Also, as noted by Talmy, some languages instantiate a **parallel system**, i.e. V-framed and S-framed constructions may alternate without lexical / grammatical constraints.

Besides Greek, Shona would be an example of a parallel system.

In Shona (Schaefer & Gaines 1997 : 213s), a manner V can be deranked to participial status in a clause whose main V is a path V. But the reverse situation happens too : the manner V can be the main clause predicate and the path V be deranked to participial status.

This constitutes an additional argument for considering the V-framed / S-framed distinction as applying to constructions rather than to languages.

Problems of Talmy's typology

- The spatial information conveyed in an utterance cannot be exhaustively localized on particular morphemes but is expressed by the syntactic organization itself. This is the problem of "**distributed semantics**" (after Sinha & Kuteva 1995).

- There is a confusion between parts of speech and grammatical functions: if the path component is expressed in the head, this head may be a verb, a noun, a satellite, an adnominal (see Matsumoto 2003, who argues that *V-framed* should be rephrased *H-framed*).

- Some constructions were or are still not taken into account in the literature (cf. infra).

Neglected constructions (1)

1) The clausal head is not a verb.

Russian	*Spoken Indonesian*
ja domoj.	*məreka kə bioskop.*
I home	3P toward movies
I (am going) home.	They (are going) to the movies.
	(Hagège 2010 : 247)

2) Path is encoded in a nominal.

French

*L'**acheminement à** l'aéroport **depuis** Paris se fait par une navette.*

(lit.) The transfer to the airport from Paris is done by a shuttle.

[*à* is goal oriented in the context of *acheminement*, *depuis* is source-oriented; Fortis 2007]

Neglected constructions (2)

3) Path is conveyed by a grammatical morpheme which specifies a direction only in a "spatial" context. We think here of applicatives:

Zulu (Taylor 1996; see also Creissels 1998)

umfana	*ugijimele*	*esikole-__ni.__*
boy	he.ran.**APPL**	school-**LOC**

The boy ran to school.

4) A diathetic morpheme indexes an argument as undergoing a motion event, and thereby **indirectly specifies direction.**

Tagalog

***i-**bote*	*mo*	*ang*	*lambanog.*
CV.IRR-bottle	2SG.GEN	NOM	coconut wine

Bottle the coconut wine. [CV: *conveyance voice*; term is from Himmelmann 2004]

Neglected constructions (3)

5) Path is specified by syntactic organization, for ex. word order or transitivity. This "constructional" strategy illustrates the issue of *distributed semantics*.

Dutch (Sinha & Kuteva 1995: 173)

a. de   jongen loopt   het   bos   **in** .

the   boy   walks   the   woods   in

The boy walks <u>into </u>the woods.   [path: boy enters woods]

b. de   jongen loopt   **in**   het   bos.

the   boy   walks   in   the   woods

The boy walks <u>in </u>the woods.   [static localization]

Neglected constructions

6) Source and goal arguments are indexed on the verb, that is, marked as source and goal on the verb and cross-referenced outside of the verb.

For ex., in French Sign Language (Risler, p. c.)

7) Path is specified in a morpheme that co-expresses time, i.e. the temporal relation of the motion event to the main event (*suffix of associated motion*, in French "suff. de mouvement associé")
Ese Ejja (Vuillermet, p.c.; see also Guillaume 2009)

ekwana taxa-taxa-**ña** -'ya- (a)ni.

1INCL wash -RED- COME&ACT – TEL - PRS

When we arrive (at the source), we wash (clothes)

Neglected constructions

and initially complex predicates were not included:

8) Manner and path are both V-framed (**equipollently-framed** language, ap. Slobin 2004).

Thai

chán	*dǝǝn*	*khâam*	*thanǒn*	*khâw*	*paj*	*naj*	*sǔan.*
I	walk	cross	road	enter	go	in	park

I walked across the road and into the park.

(Zlatev & Yangklang 2004: 160).

NB: this problem is not really an objection to Talmy's typology (in Talmy's framework, equipoll.-framed constructions are V-framed).

4

Our approach

Our approach

To solve these problems
- we go beyond the verb- / satellite- / (and equipollently)-framed classification (more on this shortly).

- we distinguish parts of speech and functions (loci).

- we classify constructions first, not languages. The type of a language is given by the constructions that we have been able to identify for this language (and by constraints on these constructions or "prevalent patterns"; Iacobini & Fagard 2011).

Our approach

We look for the locus (or loci) where path is encoded:

- Clausal head (**H**) (following Matsumoto 2003)

- Satellite of the clausal head (**S_H**) (= Talmy's narrow definition, i.e. excluding cases and adpositions)

- Argument (**A**)

- Relator attached to an argument, i.e. adposition or case (**R**)

- Satellite of an argument (**S_A**). In the case of satellites, S_H and S_A are loci, and S is a lexical supercategory.

NB: in Fortis & Vittrant 2011, A was N (confusing!), and no distinction was made between S_H and S_A.

Our approach

Following Talmy's usage, a path-encoding construction is labelled according to the locus or loci where path is encoded

(1) a. She <u>left</u> the hotel.　　　　　　　**H-framed**

    b. She ran <u>to</u> the hotel　　　　　　　**R-framed**

    c. Ich muß <u>hinein</u>.　　　　　　　**S$_H$-framed**
　　　　I must there.in i.e. *I must go in*

    d. She <u>came</u> <u>to</u> the hotel　　　　**HR-framed**

Our approach

Assigning the head is not always an easy matter.

Cf. *Japanese* (Ishibashi, p.c.):

ee	onnanohito-ga	dookutu-no	naka-**kara**	**de**-te	**iki**-masi-ta.
Mmh	woman-NOM	cave-GEN	inside-ABL	go out-CVB	go-HON-PST

(lit.) 'The woman went out of the inside of the cave away from me.'

Ishibashi: the arguments are introduced by V1 (usually regarded as a satellite), but the inflection is on V2.

Our approach

In some cases, path is not specified by dedicated markers, but the construction does carry information on the path. These examples are tagged C-framed (C for *Constructional*).

(2) Susan walked the Appalachian Trail in sixty days.

(Tenny 1994)

(3) Japanese (Ishibashi, scene 065)

kodomo-ga	yamamiti-o	arui-te	i-masu.
child-NOM	mountain trail-ACC	walk-CV	PROG-POLI

The child is walking the mountain trail.

Our approach

Theoretically, there are 28 families of constructions (leaving aside C-framed constructions).

1 path-encoding locus	2 loci	3 loci	4 loci	5 loci
H-framed	HR-framed	HS_HR-framed	HS_HAR-framed	HS_HARS_A-framed
S_H-framed	HS_H-framed	HS_HA-framed	$HARS_A$-framed	
A-framed	HA-framed	HAR-framed	…	
R-framed	SR-framed	ARS_A-framed		
S_A-framed	AS_A-framed	…		
…	…			

* About projecting all possibilities in doing typological work, see also Corbett (2005) on canonical typology.

Our approach

Besides loci our parameters are

2. Nature of H, S$_H$ etc. (for ex.: verb/preverb? complex predicates?).

3. Semantics of HEAD and non-HEAD loci (for ex.: manner or path of motion? neither?).

4. Type and number of locative complements

Our approach

Functional categories and lexical categories are **fluent**.
Craig and Hale (1988)— cf. Imbert & Grinevald 2008— show that some **postpositions** of Rama have evolved to **relational preverbs** in circumstances where the postposition has lost its argument. A case in point is *ka* 'from':

- *Rama (Maya)*
naing taata   ka   na-ngalbi-u.
my   father   from   I-run-PAST
'I ran away from my father.'

When the complement is omitted, the postposition is cliticized to the verb:
Ø   ka-na-ngalbi-u.   [zero-anaphora]
(him)   from-I-run-PAST
'I ran away from (him).' (Imbert- Grinevald & Söres 2011: 110)

Our approach

At a more advanced stage of grammaticalization, the postposition remains in preverbal position in spite of the fact that its argument is overt, as is the case for *yu* 'with':

- *Rama*

naing taata   ngabang   yu-i-siik-i   nguu-ki.
my   father   silkgrass   with-he-come-ASP   house-in
'My father brings (< come+with) the silkgrass (PATIENT) in the house.'

Such "incorporated relational preverbs" (as they call them) correspond to applicative constructions in other languages.

Our approach

Imbert (2009) claims that Homeric Greek exhibits the same pattern: there are relational preverbs whose argument takes the same case as the corresponding preposition (2nd stage of Craig & Hale).

On the other hand, "incorporated relational preverbs" no longer command the same case as their prepositional counterpart (3rd stage of Craig & Hale). They correspond to a more advanced stage of grammaticalization:

- *Homeric Grec*

*Táphron   d'   **ek**-dia-bántes   oruktè:n.*
 ditch.ACC   LNK   out-through-walk.PART.AOR.PL   digged:ACC
'So they walked through and out (from) the digged ditch.'
 [the prep. *ek* commands the GEN]

➢ **Satellization** of adnominals (Imbert, Grinevald & Söres 2011)

Our approach

• **Concerning** *complements (parameter 4)*:

Path complement specify the FROM / VIA and TO directions (and may co-express other dimensions, e.g. shape and medium):

• Dynamic complement => $COMP_{+DIR}$

• No R, no S, orR / S adynamic => $\emptyset$ / $COMP_{-DIR}$

Our approach

Since we also want to capture the fact that some languages license only one locative complement per verb, we should specify it in our inventory ("**unipolar**"):

Ex.	Family	Nb of loc. comp.
Swahili ni-li-toka busta-ni. 1S-PST-leave garden-LOC *I left the garden.*	H-framed	**unipolar**

Our approach

Some languages have adnominals which are indifferent to direction (are neutral between FROM / VIA / TO):

Jakaltek (Grinevald 2010)

a.   **a'-ok-toj**   q'ap kamixhe   y-**ul**   te'   kaxha.
             move-in-CFUG   CL/cloth shirt   its-in   CL/wood   chest
             Put the shirt in the chest!

b.   **a'-el-tij**   q'ap kamixhe   y-**ul**   te'   kaxha.
             move-out-CPET   CL/cloth shirt   its-**IN**   CL/wood   chest
             Take the shirt out of the chest!

> COMP$_{-DIR}$

Examples	Family	Head zone (H & S_H)	Argument zone (A, R & S_A)
məreka kə bioskop (lit.) they to movies	H-framed	Adnominal	$\emptyset$
ibote mo ang lambanog	H-framed	$^+V_{PATH}$	$\emptyset$
she ran to the hotel	R-framed	$^+V_{MAN}$	$COMP_{+DIR}$
l'acheminement à l'aéroport se fait par une navette	AR-framed	—	N $COMP_{+DIR}$
Ken-wa gakkoo-ni arui-te it-ta Ken-TOP school-to walk-CV go-PST	HR-framed	$^-V_{MAN}$ $^+V_{PATH}$	$COMP_{+DIR}$
ich muß hinein I must (go) in	S_H-framed	V^-_{MOV}	—

Our approach

There is much variability among languages which share a family of constructions, for example among languages with prevalent S_H-framed constructions. This should be accounted for (cf. Slobin's boundary crossing constraint for Romance lang.).

Ex.: Fon, English and German accept manner V with satellites, the range of German V compatible with S_H appears to be wider:

- *Eben rattert die Strassenbahn der Linie 3 heran*
[sound emission V, possible in English, but restricted]
As the tram of the Line 3 rattles by.

- *Meine Eltern wollen zu den Amisch (…) Ich will aber nicht ins Mittelalter.* [modal]
My parents want <to move> to the Amish (…) but I don't want <to go back> to the Middle-Ages. [modal V]

- *Ein erhabenes Schicksal sinnt den Kidron hinab* (Georg Trakl).
(lit.) A sublime destiny ponders the Cedron down. [cognition V]

5

Conclusion

Conclusion

➢ Talmy's typology lacks coherence and does not do justice to linguistic diversity. It needs revision.

➢ Our proposal is an attempt at capturing this diversity. It has led us to posit 28 types of constructions (with 40 subtypes identified so far; Fortis & Vittrant 2011).

➢ Typologically, a language is characterized by **a set of constructions** (on the agenda…).

➢ The strategies evoked here are intra-clausal. But there are also ultra-clausal strategies ('he is at the river, he comes' = 'he comes from the river').

Conclusion

Further problems:

➢ Define the clausal head (the constituent that assigns arguments, or the inflectional head? Cf. Japanese).

➢ Find criteria for attributing dynamicity to adpositions (e.g. for Vandeloise 1987, *à* is not a path-prep.).

➢ Account for variations within typologically similar languages (cf. S_H-framed constructions in English and German).

downloadable at
http://htl.linguist.univ-paris-diderot.fr/jmfortis.htm

Danke!

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