

A typological study of applicative markers of spatial origin

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Outline

1. Introduction
2. Applicative markers of spatial origin
 - Sample & data collection
 - Analysis & results
 - Summary
3. AM markers as applicatives
 - Sample & data collection
 - Preliminary observations
 - Summary & Conclusion

1. Introduction

What are applicatives?

(1) San Lucas Quiaviní Zapotec (Zapotecan; Munro 2000: 285–286 cited in Zúñiga & Creissels 2024: 4)

a. *B-ìì'llly* *Gye'eihlly* *cëhnn* *Jwaany*.
PFV-sing M. with J.

Base Construction = BC

b. *B-ìì'llly-nèe* *Gye'eihlly* [*Jwaany*].
PFV-sing-**APPL** M. J.

Applicative Construction = AC

‘Mike sang **with** John.’

Narrow definition: increase the valency of verbs (= the number of arguments), by allowing “the coding of a thematically peripheral argument or adjunct as a core-object argument” (Peterson 2007: 1)

Broader definition: introduced argument (applied phrase) need not be a core argument (Zúñiga & Creissels 2024: 4)

Previously established sources

Traditionally two independent (direct) sources for applicatives: **adpositions** and **verbs** (Peterson 2007:125)

New sources:

- + **nouns** (as direct source) (Nordlinger 2019: 423; Arkadiev 2021: 50)
- + classifiers (Rose 2019)
- + spatial verb morphology
 - Associated Motion (Pakendorf & Stoyanova 2021)
 - Directionals (Payne 2021)
 - Locationals (Van linden 2022)

AC

AC

-
- ```
graph TD; A[spatial marker] --> B[spatial, applicative]; B --> C[non-spatial, applicative];
```
- spatial marker
- spatial, applicative
- non-spatial, applicative
- grammaticalization

# Spatial verb morphology: Associated Motion

**AM**: a verbal grammatical category, separate from tense, aspect, mood and direction, whose function is to associate, in different ways, different kinds of translational motion to a (generally non-motion) verb event (Guillaume: 2016; Guillaume & Koch 2021: 3)

Expressing arguments of AM (e.g. goal) **is usually not allowed** (Guillaume & Koch 2021: 25) except for some languages, e.g. Tungusic → applicative use

(3) Bystraja Even (Tungusic; Russia, Eurasia; Pakendorf & Stoyanova 2021: 857)

*nan*      *ga-sčī-**na**-ri-n*                      [***akan-taki-n***]                      *asatkam*

and      take-CONAT-**AM**-PST-3SG ***father-ALL-POSS.3SG*** girl.ACC

‘And he **went to her father to** ask for (lit. take) the girl (in marriage).’

AC

## 2. Applicative markers of spatial origin

# Research questions

**RQ1:** *How widespread is the applicative use of spatial markers (SMs) in the world's languages? Any areal/genetic patterns?*

**RQ2:** *What are the characteristics of spatial markers with applicative uses or applicative markers of spatial origin?*

Some parameters of variation:

- (i) formal type of the marker
- (ii) meaning of the marker
- (iii) syntactic effect of the marker
- (...)

- Sample & data collection

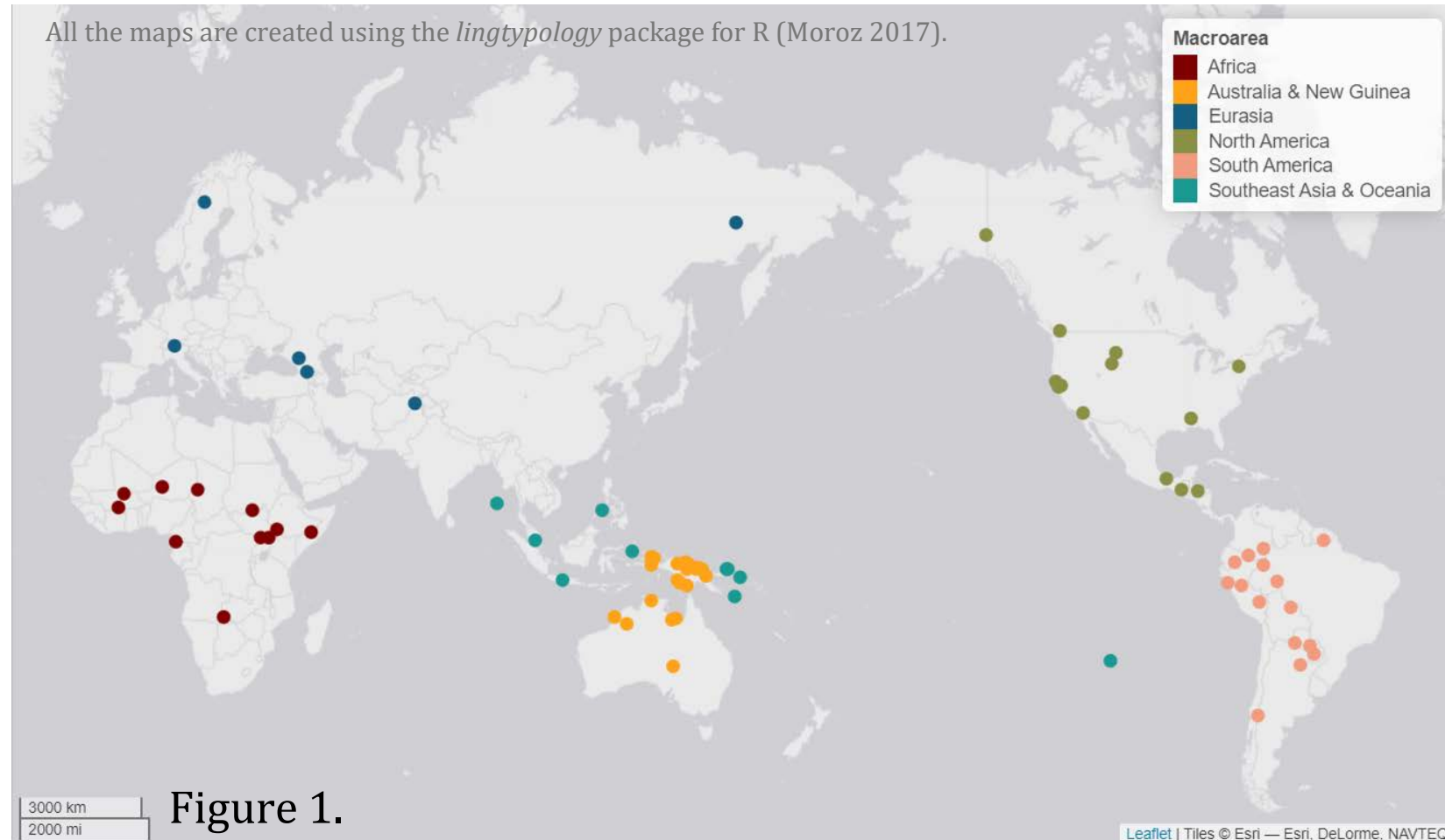
# Probability sample (PS)

## 75 languages

*Genus-Macroarea* method  
(Miestamo 2005):

- unrelated at level of **genus**
- from 6 **macroareas** in proportion to their genealogical diversity

+ from most recent sources  
(90% sources  $\geq$  2000)



- Analysis & results

# RQ1: Frequency of applicatives of spatial origin

- **25%** languages of the sample (n=19/75)
- 30 markers so far
- South America: ~50% relevant cases
- Australia & New Guinea: almost all applicatives of non-spatial origin

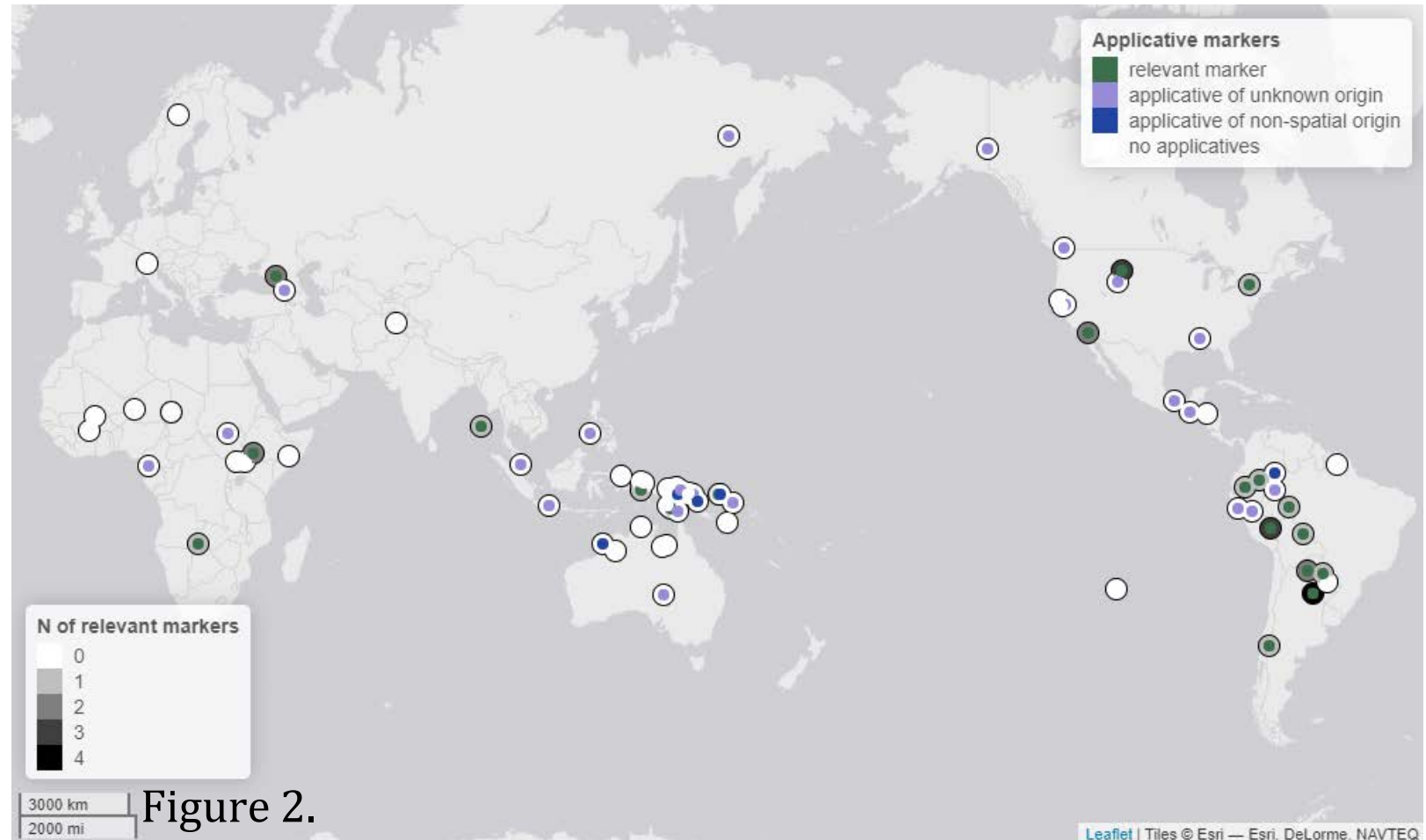


Figure 2.

## RQ2: Parameters of variation

- (i) formal type of the marker
  - (ii) meaning of the marker
  - (iii) syntactic effect of the marker
  - (iv) semantic role of the applied phrase
- ] spatial use
- ] applicative use

General problem with (ii): for spatial verb morphology so far, no comprehensive typological studies which provide an overview of all possible types of SMs (Plungian 2002: 3; Forker 2019: 92; Ross 2021: 32)

*Bottom-up approach*: data from grammars → language reports → typology of the parameters of variation

## RQ2: Formal type in spatial use

(4) Qaet (Baining; Papua NG, SEA&O; Hellwig 2019: 292)

- a. *ama=bari-ki*      *kia=at*  
ART=bee-SG.F      3SG.F.SBJ=fall  
'The beehive fell.'

→ non-verbal

- b. *kia=at*      *met=ara=rlua-ka*  
3SG.F.SBJ=fall      *in*=3SG.F.POSS=friend-SG.M  
'She fell/bumped *into* her friend.'

(5) Jarawara (Arauan; US, South America; Dixon 2004: 259)

- a. *jimawa*      *tama*      *o-ne*      *o-ke*  
knife(F)      hold.in.hand      1.SG.A-CONT.F      1.SG-DCL.F  
'I am holding the knife with my hand.'

→ verbal

- b. *sina*      *tama*      *o-ka-na*      *o-ke*  
snuff(F)      hold.in.hand      1.SG.A-*APPL*-AUX      1.SG-DCL.F  
'I hold the snuff *in* my hand.'

## RQ2: Meaning in spatial use

Classification of SMs in this study based on two parameters:

### 1. **Type of spatial meaning coded** (Ross 2021: 35; Plungian 2002)

- Direction (e.g. VENTIVE *go* → *come*)
- Localization(+spatial role) (e.g. SUPER-ESSIVE *sleep on X*)
- Associated Motion (e.g. SUBSEQUENT VENTIVE *sleep and then come*)

### 2. **Semantic type of verb with which verbal SM is attested**

- Motion verb (e.g. *walk*)
- Non-motion verb (e.g. *sleep*)

### → **Two major classes of verbal SMs:**

- Dedicated = one meaning regardless of the verb type
- Mixed = various types of meanings with different types of verb

## RQ2: Meaning in spatial use: mixed SM

(6) Mapudungun (Araucanian; Argentina, Chile, South America) (Smeets 2008: 421, 205)

a. *re*     *putu-yekü -me-tu-y-ng-ün*

only *drink*-ITR-TH-**RE**-IND-NSG-PL

*re*     *witra-künü-w-yekü-me-tu-y-ng-ün.*

only *get.up/stand.still*-PFPS-REF-ITR-TH-**RE**-IND-NSG-PL

‘All the time they *drank* and they *stood* still **on their way back.**’

→ reversive concurrent AM

b. *iñchiñ*     *amu-fal-tu-fel*

we     *go*-force-**RE**-IPD.OVN

‘We should *go* **back.**’

→ reversive DIR

## RQ2: Meaning in spatial use

Table 1 (n = number of markers).

|                     | verbal           | non-verbal      |
|---------------------|------------------|-----------------|
| LOC (n=14)          | 38% (9)          | 83% (5)         |
| AM (n=6)            | 25% (6)          | NA              |
| AM/DIR (n=4)        | 17% (4)          | NA              |
| other (n=3)         | 13% (3)          | —               |
| DIR (n=2)           | 8% (2)           | —               |
| lexical (n=1)       | —                | 17% (1)         |
| <b>total (n=30)</b> | <b>100% (24)</b> | <b>100% (6)</b> |

- Most frequent meaning of LOC = IN (n=7/14) or SUPER (n=7/14)
- Other markers = no preferences

## RQ2: Meaning in spatial use: other

(7) Harakmbut (isolate; Peru, South America; Van linden 2022: 2, 9)

a. *ken on-ti-pok mboerek-ta*

then 3PL.IND-**SPAT:up**-pass man-ACC

‘Then they pass the man (who is **high up**, on a ladder).’

→ elevational deixis

b. *o-k-ket-on pĩã*

3SG.IND-**SPAT:separation**-break-PFV arrow

‘The arrow broke **into pieces**.’

→ separation

(8) Shiwiar (Jivaroan; Ecuador, Peru, South America; Kohlberger 2020: 299)

a. *uku-á-hmĩ.*

leave-IPFV-1SG.SBJ>2SG.OBJ

‘I’m leaving you.’

→ location highlighting

b. *ukú-r-ki-ár-mia-jĩ.*

leave-**APPL**-PFV-PL-DIST.PST-3.SBJ

‘They left her **there**.’

## RQ2: Syntactic effect in applicative use

### 1. Syntactic Status of the applied phrase (AppP) in the Applicative Cxn (AC):

- *P-applicative* — AppP = direct object
- *D-applicative* — AppP = dative/indirect object
- *X-applicative* — AppP = oblique

### 2. Status of the semantic equivalent (BaseP) of the AppP in the Base Cxn (BC):

- *Optional* applicative — BaseP present in the BC
- *Obligatory* applicative — BaseP obligatorily absent from the BC

### 3. Sensitivity to syntactic valency (relevant for P-applicatives):

- *Transitivizing* applicative — increases number of core syntactic arguments in BC
- *Redirecting* applicative — introduction of AppP + demotion of non-Actor argument (up to omission)

## RQ2: Syntactic effect in applicative use

(9) Abaza (Northwest Caucasian; Eurasia; Arkadiev 2021: 40; O’Herin 2002: 64)

AC

*a-č’k<sup>w</sup>ən*    [*a-3əχ’*]    *d-[a]-qa-ĉ-t*  
DEF-youth    DEF-spring    3SG.H.ABS-3SG.N.IO-APPL:LOC-sleep(AOR)-DECL  
‘The guy fell asleep **over** **the spring of water**.’

→ location  
obligatory  
D-applicative

(10) Enxet Sur (Mascoian; Paraguay, South America; Elliot 2021: 541, 563)

BC

a. *ap-teyek-m-ek*    *na-xop*  
M-fall-TERM-DECL    LOC-earth  
‘He fell to **the ground**.’

AC

b. [*e*]-*tyeg-wak-t-eyk*    [*ko’o*] *meteymog*  
1SG.PAT-fall-ARR-CISL-DECL    1SG    stone  
‘A rock fell **on** **me**.’ ([1]: 563)

→ goal optional  
P-applicative

## RQ2: Syntactic effect in applicative use

(11) Kalamang (Greater West Bomberai; Indonesia, A&NG; Visser 2022: 273)

BC

- a. *kaden-un=at*      *mu*    *yuon*  
body-3.POSS=OBJ    3PL    rub  
'His body they rub.'

AC

- b. [*mingtun=at*      *bolon-i*]      *ko=yuon*  
*coconut\_oil=OBJ*    *little-OBJQNT*    *APPL=rub*  
'Rub (the sore body part) *with* a little coconut oil.'

→ redirecting  
P-applicative

Direct object = ?Experiencer in BC (11a) → Direct object = Instrument in AC (11b)

## RQ2: Semantic role of AppP

Functions of applicative markers:

- Adding a “**spatial**” applied phrase
- Adding a “**non-spatial**” applied phrase

Table 2 (n = number of meanings).

|                      | verbal             | non-verbal        |
|----------------------|--------------------|-------------------|
| Goal (n=18)          | 29% (14)           | 44% (4)           |
| Source (n=7)         | 13% (6)            | 11% (1)           |
| Location (n=6)       | 13% (6)            | —                 |
| Beneficiary (n=5)    | 10% (5)            | —                 |
| Stimulus (n=4)       | 8% (4)             | —                 |
| Recipient (n=3)      | 4% (2)             | 11% (1)           |
| Maleficiary (n=3)    | 6% (3)             | —                 |
| Subject Matter (n=2) | 2% (1)             | 11% (1)           |
| Comitative (n=2)     | 4% (2)             | —                 |
| Instrument (n=2)     | 2% (1)             | 11% (1)           |
| SoC (n=2)            | 4% (2)             | —                 |
| Experiencer (n=1)    | 2% (1)             | —                 |
| Path (n=1)           | —                  | 11% (1)           |
| Reason (n=1)         | 2% (1)             | —                 |
| <b>total (n=57)</b>  | <b>100% (n=48)</b> | <b>100% (n=9)</b> |

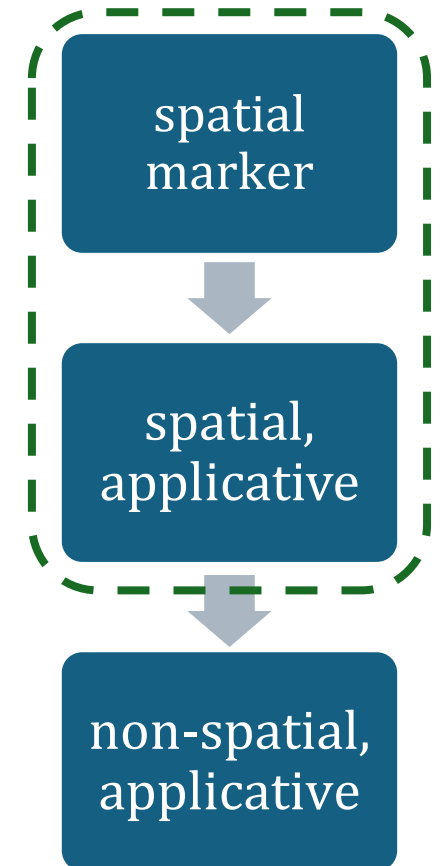
## RQ2: Semantic role of AppP: **spatial**

(12) Kxoe (Khoe-Kwadi; Namibia et al, Africa; Kilian-Hatz 2008: 352, 257, 163)

a. *tí*    *ǎ*    *vé*    *màkí*    *xà-hé*    *kúũ-a-hã*    *ó*    *à.*  
 1SG    know NEG    where    DEM-3SG.F    go-ACT-PST    **place**    OBJ  
 ‘I don't know (**the place**) where she has gone.’

b. *tí*    *ki*    *yaá-nyà-lòè*    *xó-hè*    *nǎũ*    *rè?*  
 1SG    LOC    come-NEG-1-HAB    thing-3SG.F    which    Q  
 ‘Why do you never come to **me**?’

c. *tí*    *yaá-ò-à-tè*    [*tí*    *wécan-nà*].  
 1SG    come-LOC-1-PRES    1SG    friend-3PL  
 ‘I go right up **to my friends**.’



BC

AC

## RQ2: Semantic role of AppP: **non-spatial**

(13) Jarawara (Arauan; US, South America; Dixon 2004: 259, 255-256)

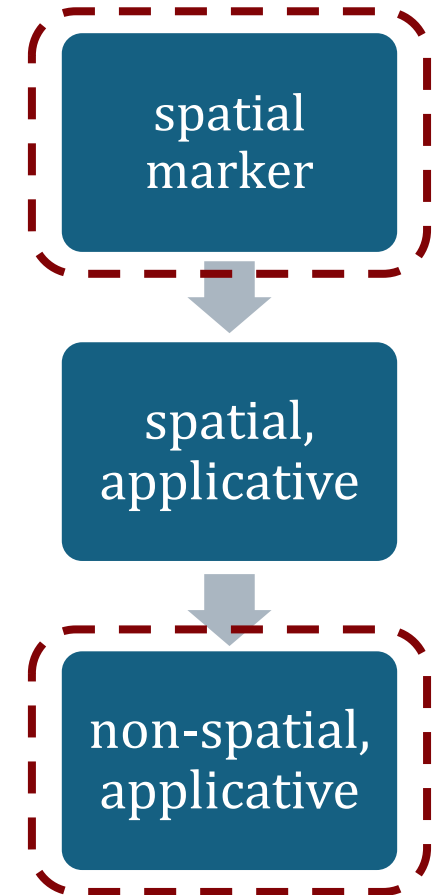
a. *sina*      *tama*                      *o-ka-na*                      *o-ke*  
 snuff(F) hold.in.hand      1.SG.A-**APPL**-AUX 1.SG-DCL.F  
 ‘I hold the snuff **in** my hand.’ (=5b)

b. *okobi*                                      *wine*                      *otaa ni-jaa.*  
 1SG.POSS.father(M) live.M      1EXC PERI  
 ‘My father lived with **us**.’

c. *okobi*                                      [*otara*]                      *ka-wine...*  
 1SG.POSS.father(M) 1EXC                      **APPL**-live.M  
 ‘My father lived-**with** **us**...’

BC

AC



## RQ2: Semantic role of AppP

Table 3 (n = number of markers).

|                                          | verbal           | non-verbal      |
|------------------------------------------|------------------|-----------------|
| spatial applicative only (n=14)          | 48% (11)         | 60% (3)         |
| spatial & non-spatial applicative (n=10) | 35% (8)          | 40% (2)         |
| non-spatial applicative only (n=4)       | 17% (4)          | —               |
| <b>total (n=28)</b>                      | <b>100% (23)</b> | <b>100% (5)</b> |

## RQ2: Meaning in spatial use & Semantic role of AppP

Skewed distribution of **non-spatial** semantic roles over types of SMs:

- AM, AM/DIR, DIR only attested with: **Standard of Comparison**
- LOC only attested with: **Maleficiary, Reason, Comitative**
- All SMs attested with: **Recipient, Stimulus, Instrument, Beneficiary, Subject Matter**

Table 4 (n = number of meanings).

|                       | SOC | REC | SUBJM | INST | BEN | STIM | REAS | COM | MAL |
|-----------------------|-----|-----|-------|------|-----|------|------|-----|-----|
| AM, AM/DIR, DIR (n=9) | 2   | 1   | 1     | 1    | 2   | 2    | —    | —   | —   |
| LOC (n=12)            | —   | 2   | 1     | 1    | 1   | 1    | 1    | 2   | 3   |

- Summary

# Applicative markers of spatial origin

RQ1:

- 25% of languages
- In all macroareas, but ~50% in South America

RQ2:

- Except for the optional D-applicative, all types of applicatives are attested
- Skewed distribution of non-spatial semantic roles over types of SMs

AM markers with applicative use: 28% of AM languages (n=7/25)

### 3. AM markers as applicatives

# Research questions

**RQ1:** *What are the characteristics of AM markers with applicative uses?*

**RQ2:** *Are there any correlations between specific parameters of AM and parameters related to the applicative use?*

Additional parameter of variation:

+ polyfunctionality of AM marker

- Sample & data collection

# Convenience sample (CS)

26 languages so far

=only languages with **relevant AM** markers (including AM/DIR):

- 7 languages from **Probability Sample** + 19 additional languages
- 34 markers

Table 5.

| Language     | Genus                     | Markers |
|--------------|---------------------------|---------|
| Mursi        | South Surmic              | 2       |
| Cupeño       | Northern Uto-Aztecan      | 2       |
| Mapudungun   | Araucanian                | 1       |
| Paunaka      | Arawakan                  | 1       |
| Enxet Sur    | Mascoian                  | 1       |
| Huitoto      | Witoto                    | 1       |
| Nivacle      | Matacoan                  | 2       |
| 5 languages  | Tungusic                  | 5       |
| 5 languages  | W, E, S Nilotic           | 7       |
| Guató        | Guató                     | 4       |
| Assiniboine  | Mississippi Valley Siouan | 1       |
| Guajá        | Maweti-Guarani            | 2       |
| Toba         | Qom                       | 2       |
| ?Aymara      | Aymaran                   | ?       |
| Iquito       | Zaparoan                  | 1       |
| Bora         | Boran                     | 1       |
| ?Diola-Fogny | Jola                      | ?       |
| ?Kaytetye    | Central Pama-Nyungan      | ?       |

# Convenience sample (CS)



Figure 3.

- Preliminary observations

# RQ1: Polyfunctionality

(14) Murui (Witotoan; Colombia, Peru, South America; Wojtylak 2020: 344)

AC

[*Alexis jo-fo-mona*] *Fransiska=di-no-moloc* *gui-zaibi-t-epred.*  
*Alexis*house-CLF-ABL *Francisca=at-CLF-LOC* *eat-VENTV-LK-3*  
'*From the house of Alexis* (she) *came to eat* at *Francisca's*.'

→ applicative  
& AM together

(15) Paunaka (Arawakan; Bolivia, South America; Terhart 2024: 394-395)

a. *nÿ-nekupu-bi.*

1SG-see.*coming*-2SG

'I see you *coming*.'

b. *pero pi-yunu pi-sane-yae?*

but 2SG-go 2sg-field-LOC

'But did you go to *your field*?'

→ applicative & AM separately

c. *kuina Jose ti-yunu-pu [*uneku*].*

NEG José 3-go-DLOC town

'José isn't here, he went *to town*.'

BC

AC

# RQ1: Meaning in spatial use

Three subparameters (Guillaume & Koch 2021: 9, 12):

1. Temporal relation between the motion and the verb event
2. Direction of the motion
3. Argument role of the moving figure

(16) Paunaka (Arawakan; Bolivia, South America; Terhart 2024: 394-395)

*nȳ-neku**pu**-bi.*

1SG-see.**coming**-2SG

'I see you **coming**.' (=15a)

→ concurrent ventive non-subject AM

No limitations in meaning found:

- PRIOR > CONCURRENT > SUBSEQUENT
- ITIVE or VENTIVE > REVERSIVE, ANDATIVE (unoriented), ADLOCATIVE (*arrive*)
- SUBJECT > NON-SUBJECT

# RQ1: Semantic role of AppP

(17) Nivacle (Matacoan; Bolivia, Paraguay, South America; Fabre 2013: 11)

AC

*a-pitej*-[*yi*]-*c'oya*

2s-be.tall-1-AM

'You are taller than me.'

→ non-spatial

Fewer roles are attested for AM than for other spatial markers:

- Source, Path, Goal
- Recipient, Beneficiary, Standard of comparison

# RQ1: Syntactic effect in applicative use

Almost all types of applicative uses are attested:

(18) Agar Dinka (East. Sudanic; Africa; Payne 2021: 719; Andersen 1992-1994: 10)

BC

a. *d̪ɔ̌k à-bòk dít*

boy DECL-throw bird

‘The boy is throwing at the bird.’

→ redirecting  
P-applicative

AC

b. *d̪ɔ̌k à-bók [dòòt]*

boy DECL-throw:**ITV** **stone**

‘The boy is throwing **a stone thither**.’

Not attested: D-applicatives

## RQ2: Meaning in spatial use & Semantic role of AppP

Previously established path (Schulze 2014: 179): *come to* (ventive) > *benefactive*

(19) Mursi (Eastern Sudanic, Ethiopia, Africa; Worku 2020: 380, 440, 584)

- a. áíw-**é**-na      gón-á      bì-ò  
come-**ITV**-SEQ    watch-PL    cow-PL  
'**Go** (pl.), see the cattle!'

→ itive DIR

- b. áín-**é**      zùw-á      íláág-ε-á      zùwò  
give-**ITV**    people-RTSR    hang-3PL.SBJ-RTSR    people  
'...delivered (?**go&give**) him to the tormentors...'

→ ?itive AM

- c. nòη      číb-Ø      búηái  
3SG      tie-3SG.SBJ    bull.SG  
'He ties the bull.'

→ benefactive  
applicative

- d. nòη      číb-**èsèn**-Ø      [lúsi]      búηái  
3SG      tie-**ITV**-3SG.SBJ    boy      bull.SG  
'He ties the bull **for the boy**.'

- Summary & Conclusion

# AM markers as applicatives

Some preliminary qualitative observations:

- In all macroareas except for SEA&O: only few cases in A&NG and North America
- Found with various types of AM
- Transitivity applicative uses without AM reading (?previously unreported)
- Fewer roles and no D-applicatives comparing to other SMs

One issue: finding relevant data

Absence of relevant examples  $\neq$  absence in language

→ We need your help!

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# Thank you!

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