Typology and diachrony
of ambifixes:
some preliminary observations

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Disclaimer

- Most of this presentation is based on my joint work with Yury Lander (e.g. Arkadiev & Lander 2022)

- Almost exactly the same as the invited talk I gave at IMM21 in Vienna in August 2024 and at the colloquia in Cologne and Mainz in October 2024.

- Not just work in progress, but a pilot study to be developed further thanks to the funding of the Deutsche Forschungsgemeinschaft and generous hosting by the Potsdam Typology Lab.

Roadmap

1. Definition
2. Database
3. Typology
4. Diachronic speculations
5. Summary and outlook

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that can occur both as a prefix (i.e. before the root)
and as a suffix (i.e. after the root).

The term was used for the first time by Eric Hamp (1959), cf. also Malkiel (1978: 145), Plungian (2000: 88-89), Hall (2000: 536), Mugdan (2015: 268).

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- One of the well-known cases is the Lithuanian reflexive
  Nevis & Joseph 1993, Embick & Noyer (2001: 578–580), Korostenskienė (2017), Šereikaitė (2017, 2024), and Stump (2022: 193-211).

- Suffix if the verb is unprefixed, prefix in the presence of any other prefixes.

(1) a. *domėj-au-si*
    be_interested-PST.1SG-RFL
    'I was interested.'

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Some caveats:

- ambifixes should not be confused with circumfixes, which obligatorily contain two parts; however, there are cases where both the prefixal and the suffixal versions of an ambifix co-occur in one form;

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The term "ambifix" is more appropriate than "mobile affix":

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Besleney Kabardian (Northwest Caucasian, Russia; own fieldwork): mobile prefix, not ambifix

(2)   a.   *sə-q̇-**a**-de-ḳʷ-a*
             1SG.ABS-CSL-3PL.IO-COM-go-PST

      b.   *s-**a**-q̇ə-de-ḳʷ-a*
             1SG.ABS-3PL.IO-CSL-COM-go-PST

      a=b 'I came with them.'
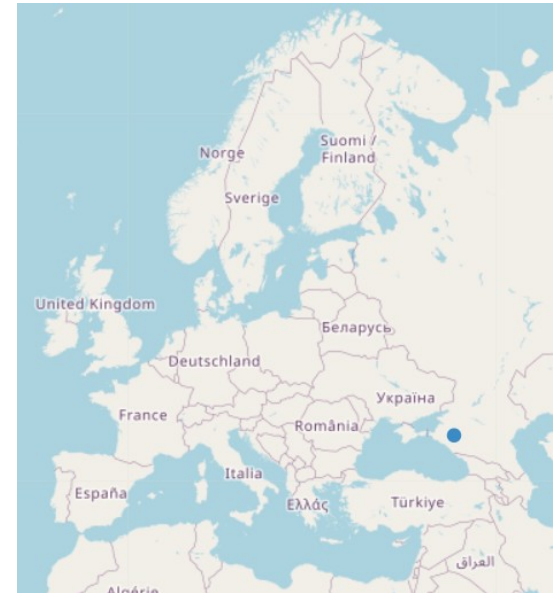
ABS – absolutive, CSL – cislocative, COM – comitative applicative,
IO – indirect object

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Affixes vs. clitics (cf. Spencer & Luís 2012, 2013):
- both are bound morphs, i.e. cannot occur in isolation;
- affixes are positioned with respect to roots, stems or words;
- clitics are positioned with respect to larger constituents (phrases or clauses).

Hinges on the definition of "word", which is itself loaded with problems (Haspelmath 2011, Tallman 2020 etc.).
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Macedonian (Indo-European > Slavic; Spencer & Luís 2012: 65):

(3) a. ***Mi=go****=dad-e*   *Vera*   *včera*

        1SG.IO=3SG.M.DO=give-AOR.3SG   Vera   yesterday

        'Vera gave it to me yesterday.'

    b. *Nosi=****mi=go****!*

        bring.IMP.2SG=1SG.IO=3SG.M.DO

        'Bring it to me!'

AOR – aorist, DO – direct object, IMP – imperative,
IO – indirect object, M - masculine

1. Definition

Bulgarian (Indo-European > Slavic; Google):

(4)   a.   *Dad-e=mi=go*   *včera*.
                give-AOR.3SG=1SG.IO=3SG.M.DO   yesterday
                'S/he gave it to me yesterday.'

        b.   *Včera=mi=go*   *dad-e*.
                yesterday=1SG.IO=3SG.M.DO   give-AOR.3SG
                'Yesterday s/he gave it to me.'

        c.   **Mi=go=dad-e*.
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Cf. e.g. Avgustinova 1997

1. Definition

Both Bulgarian and Macedonian bound pronouns are verb-adjacent, however, there is a major difference:

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Cf. Aronson (1997: 33, 36):

- "the distribution of object clitics in Bulgarian is to a great extent syntactically determined"

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Ambifix vs. unrelated prefix and suffix:

- identity of function: the prefix and the suffix should express the same featural / semantic content;

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Some borderline cases with respect to identity of function:

- instrumental case suffix *-la* vs. instrumental applicative prefix *la-* in Abkhaz and Abaza (Northwest Caucasian);

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2. Database

Ambifixes have so far received little attention from linguists.

- in theoretical morphology only recently (Embick & Noyer 2001: 576-578; Crysmann & Bonami 2016; Stump 2017, 2022);

- in morphological typology not at all (e.g. not mentioned in Bickel & Nichols 2007: 198–201; Haspelmath & Sims 2010; nor recognised in WALS or Grambank).

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Area	Languages	Genera	Families
Eurasia	24	16	8
Africa	13	9	6
Oceania	5	4	3
Australia	1	1	1
North America	5	4	4
South America	6	5	5

2. Database

Map created with Lingtypology, Moroz (2017)

2. Database

Sources:
- grammatical descriptions;
- special publications on morphology and morphosyntax

2. Database

Some better-represented families:

- Indo-European: 12 languages
- Atlantic-Congo: 8 languages
- West Caucasian: 4 languages

2. Database

The database includes the following information about each instance of ambifixation:

- single affix vs. a class of affixes;
- function(s) expressed;
- type of conditioning for the choice of orientation;
- (putative) diachronic origins;
- any other relevant information.

2. Database

Some languages have more than one type of ambifixation differing along some of these parameters:

- Abaza: 3
- Abkhaz, Fula, French, Máku: 2

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The proposed typology of ambifixes is based on the type of conditioning factors determining the prefixal vs. suffixal orientation of ambifixes:

- phonological
- morphotactic
- paradigmatic
- part of speech
- lexical
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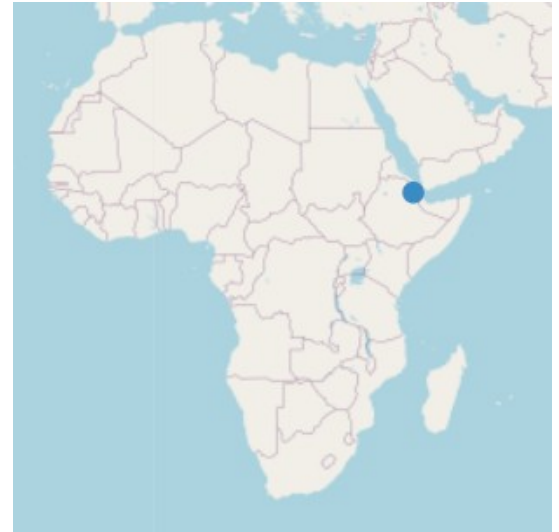
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- Other potential factors: stress (so far unattested) and tone (disputable, see Jenks & Rose 2015 on Moro)

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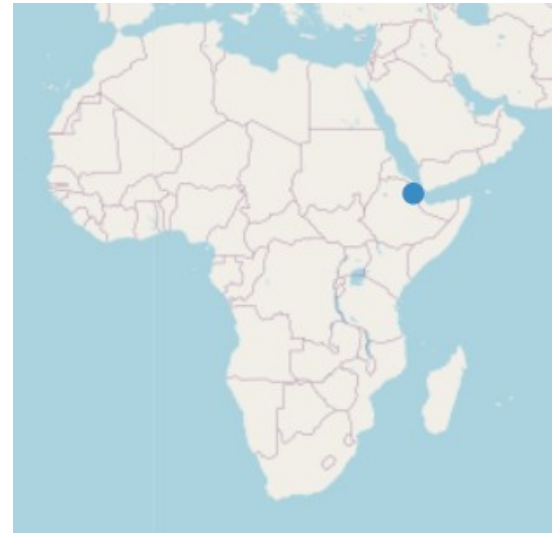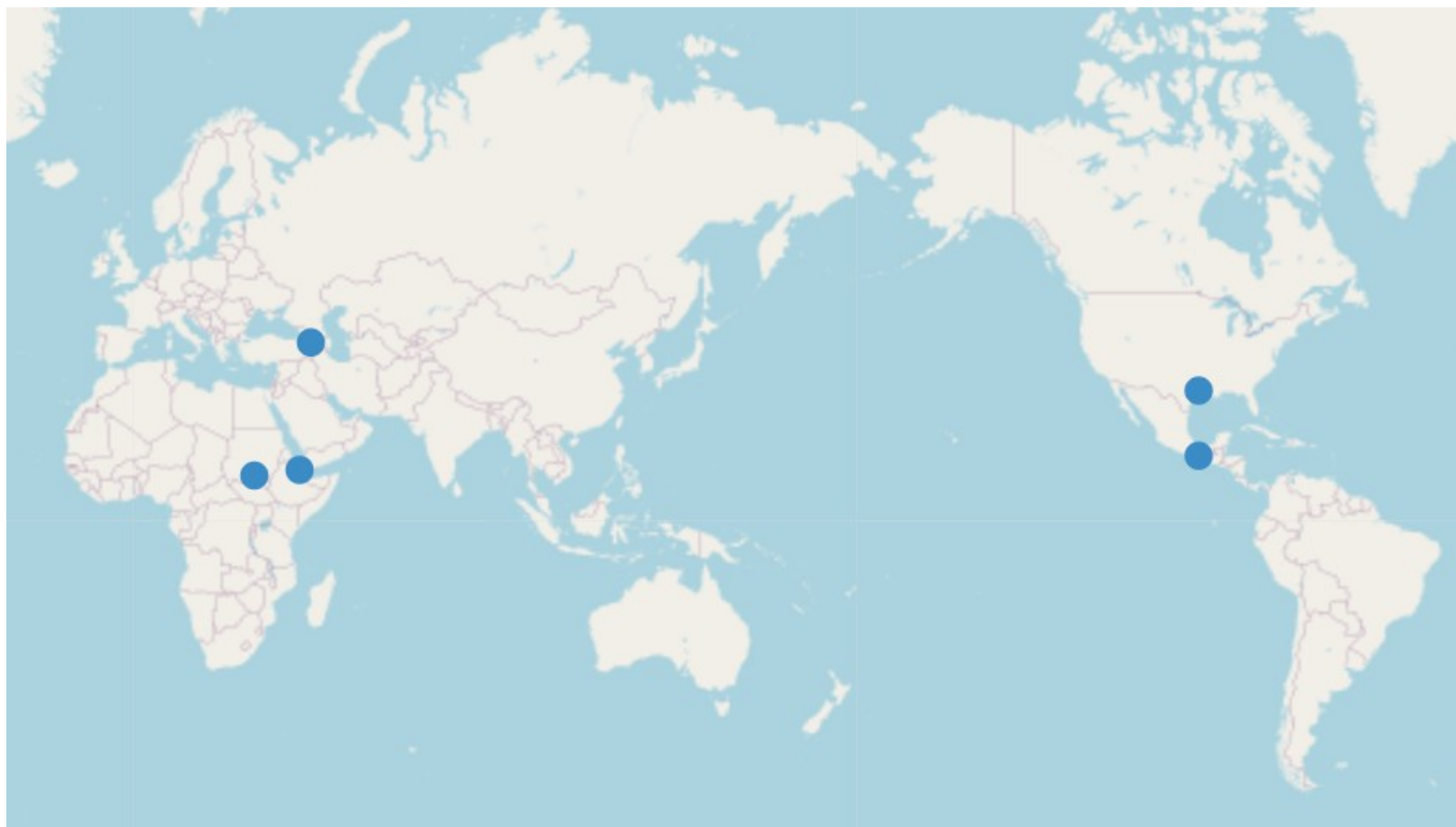
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Murrinhpatha (Southern Daly, Northern Australia; Nordlinger 2010: 334) dual non-sibling marker occurs in prefixal position, but when the latter is occupied by an object marker, it appears as a suffix:

(6) a. *bam-**ngintha**-ngkardu*

3SG.SBJ.NFUT-DU.F-see

'They two (non-siblings) saw him/her'

  b. *bam-**ngi**-ngkardu-**ngintha***

3SG.SBJ.NFUT-1SG.OBJ-see-DU.F

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3.3. Paradigmatic conditioning

The orientation of the affix is determined by the inflectional features of the wordform it occurs in (but cannot be reduced to the presence/absence of any particular [types of] morphemes).

3.3. Paradigmatic conditioning

Map created with Lingtypology, Moroz (2017)

3.3. Paradigmatic conditioning

Catalan object bound pronominals, traditionally called "clitics" (Wheeler et al. 1999: 172-174):

- prefixes in finite forms (except positive imperative);
- suffixes in positive imperative and non-finite forms

(8)   a.   *m'ajuda* 's/he helps me'
       b.   *ajuda'm* 'help me!'
       c.   *ajudar-me*   'to help me'

The same rule in Spanish and Italian and, remarkably, also in Macedonian (Friedman 2002: 38-39).

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3.3. Paradigmatic conditioning

Abkhaz (Northwest Caucasian; Chirikba 2003: 44-45) negation marker *-m-*:

- stative verbs: suffix in all forms;
- dynamic verbs:
    - prefix in all non-finite forms and non-declarative moods;
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Abaza and Ubykh: the same basic principle, but the details differ.

3.3. Paradigmatic conditioning

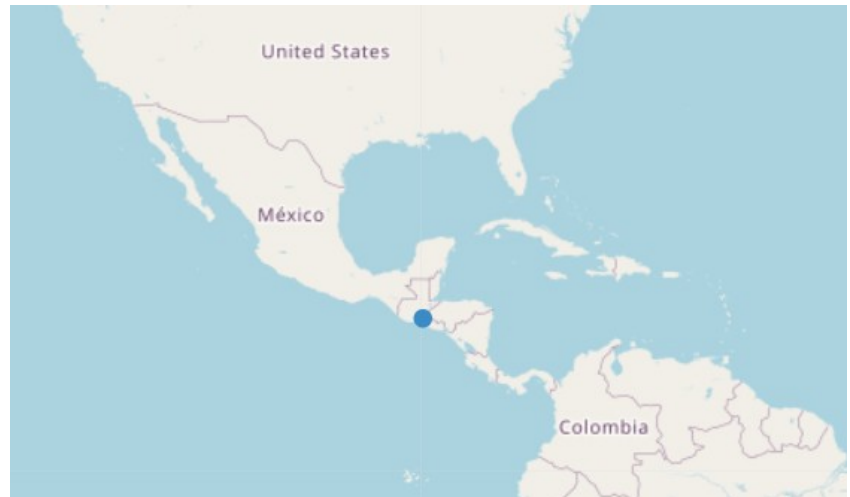Abkhaz negation (Chirikba 2003: 44-45, *-ga-* 'take', 3Pl>3Sg):

	Finite	Non-finite
Present	*də-r-ga-wá-m*	*jə́-rə-m-ga-wa*
Aorist	*d-rə-m-gá-jṭ*	*jə́-rə-m-ga*
Future I	*də-r-ga-rə́-m*	*jə́-rə-m-ga-ra*
Perfect	*d-rə-m-gá-c-ṭ*	*jə́-rə-m-ga-c*

3.3. Paradigmatic conditioning

Yupiltepeque (extinct; Xincan, Guatemala; Rogers 2010: 224-231) subject markers:

- intransitive verbs: always prefixes

- transitive verbs: prefixes in the imperfective, suffixes in the perfective

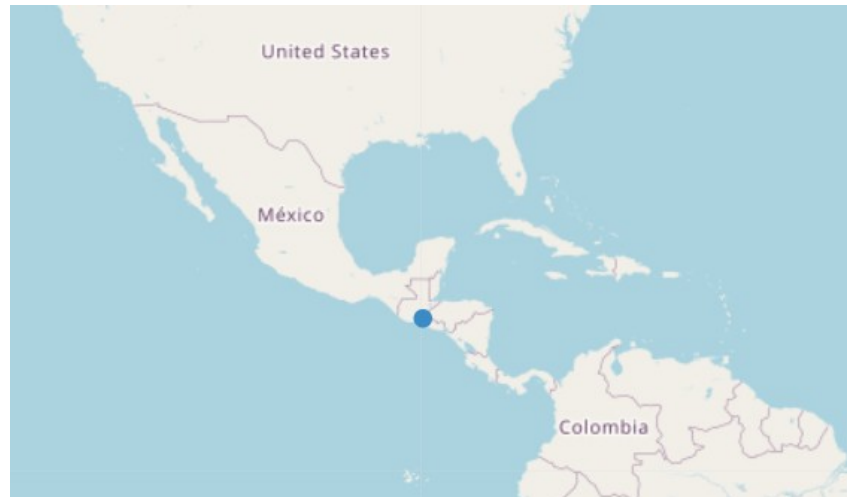NB Not all prefixes and suffixes criterion.

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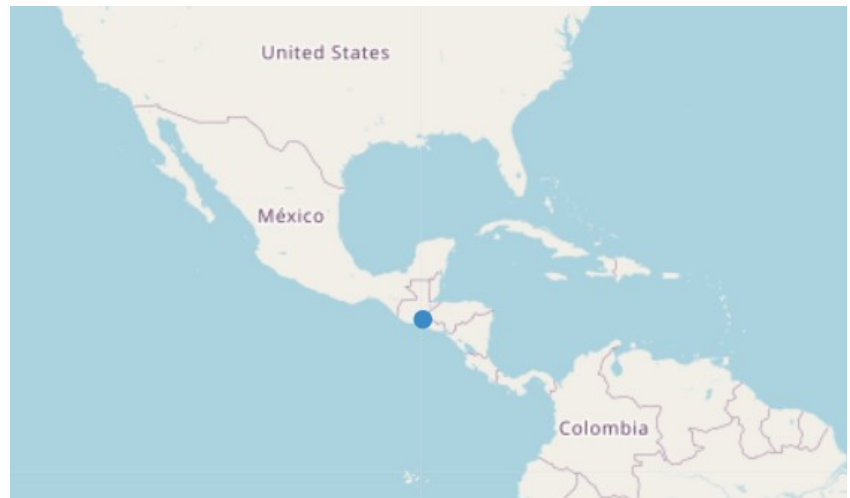
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	prefixes		suffixes	
	Sg	Pl	Sg	Pl
1	*n-*	*lki-*	*-n/-n'*	*-lki'*
2	*k-*	*lka-/lik-*	*-ka'*	*-lik*
2 formal	*y-*	*liy-*	*-y*	*-liy*
3	*h-*	*lih-*	*-yi*	*-hri*

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3.4. Part-of-speech conditioning

The orientation of the affix depends on the word class of its host.

3.4. Part-of-speech conditioning

Agreement markers in Walman (Torricelli, New Guinea; Dryer 2019: 176-176): prefixes with verbs and suffixes with adjectives.

(9) a. *pelen* ***y**-aykiri*

dog   PL-bark

'The dogs are barking.'   verb

b. *nypeykil*   *lapo-**y***

tree.PL   big-PL

'big trees'   adjective

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Abaza and **Abkhaz** instrumental marker: (case) suffix with nominals, (applicative) prefix with verbs:
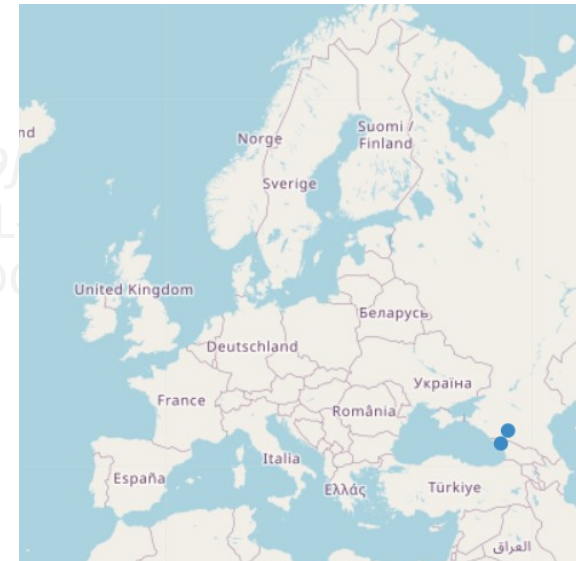
Abaza (own fieldwork, textual examples)

(10) a. *a-bacaçaχʷa-kʷa-la*   *s-a-gʷ-lə-r-cə-d*
DEF-rod-PL-INS   1SG.ABS-3SG.N.IO-LOC-3SG.F.ERG-
beat-DCL

'She beat me with rods.'

b. *a-ĉərʁʷá*   *a-zernó* *a-lá-ʕ-ça-r-g-aj*
DEF-spade   DEF-corn 3SG.N.IO-INS-CSL-
carry-PRS-DCL

'They gather corn with a spade.'

100

3.4. Part-of-speech conditioning

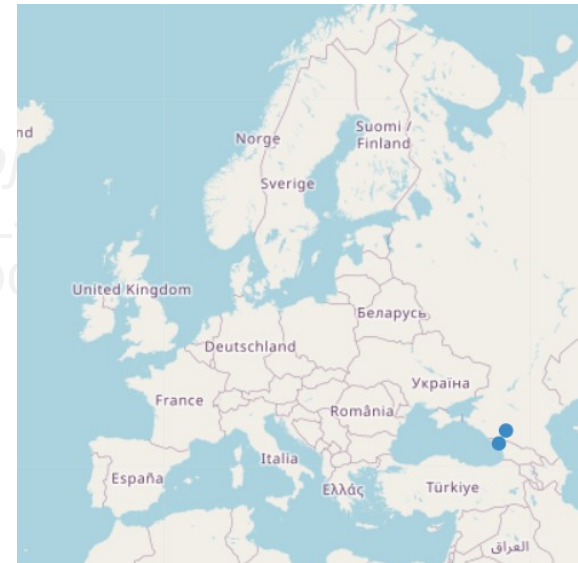Abaza and Abkhaz instrumental marker: (case) suffix with nominals, (applicative) prefix with verbs:

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     'They gather corn with a spade.'

ABS – absolutive, CSL – cislocative, DCL – declarative,
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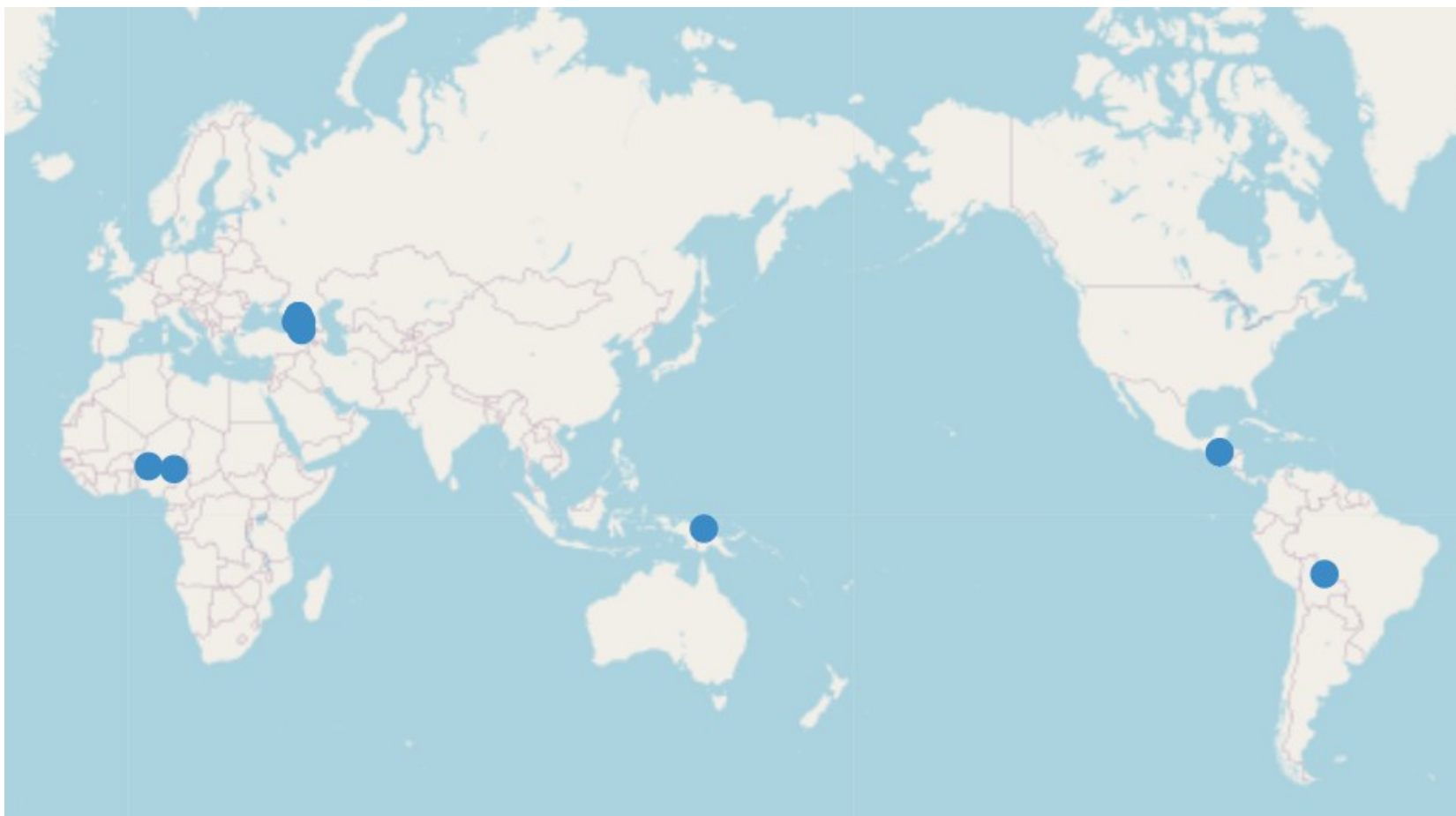
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Map created with Lingtypology, Moroz (2017)

3.5. Lexical conditioning

The orientation of the affix is determined by lexically-specified features of the base (e.g. inflection class).

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Máku (isolate, Brazil; Zamponi 2021: 102-108) subject agreement markers are prefixes with some verbs, infixes with others and suffixes with yet others:

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	'stand'	'wash'	'see'
1Sg	*te-kai*	*ku<te>ʦi*	*ku-te*
1DuIncl	*ʦe-kai-nuʔu*	*ku<ʦi>ʦi*	*ku-ʦe-nuʔu*
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English denominal/deadjectival verbs in {*en*}:

(11) prefix with Latinate: *en*large, *en*sure, *en*courage, *en*rage …
suffix with Germanic: *deafen, harden, sharpen, strengthen* …
both: *en*light*en*, *en*liv*en*, *em*bold*en* + *em*bigg*en*   etc
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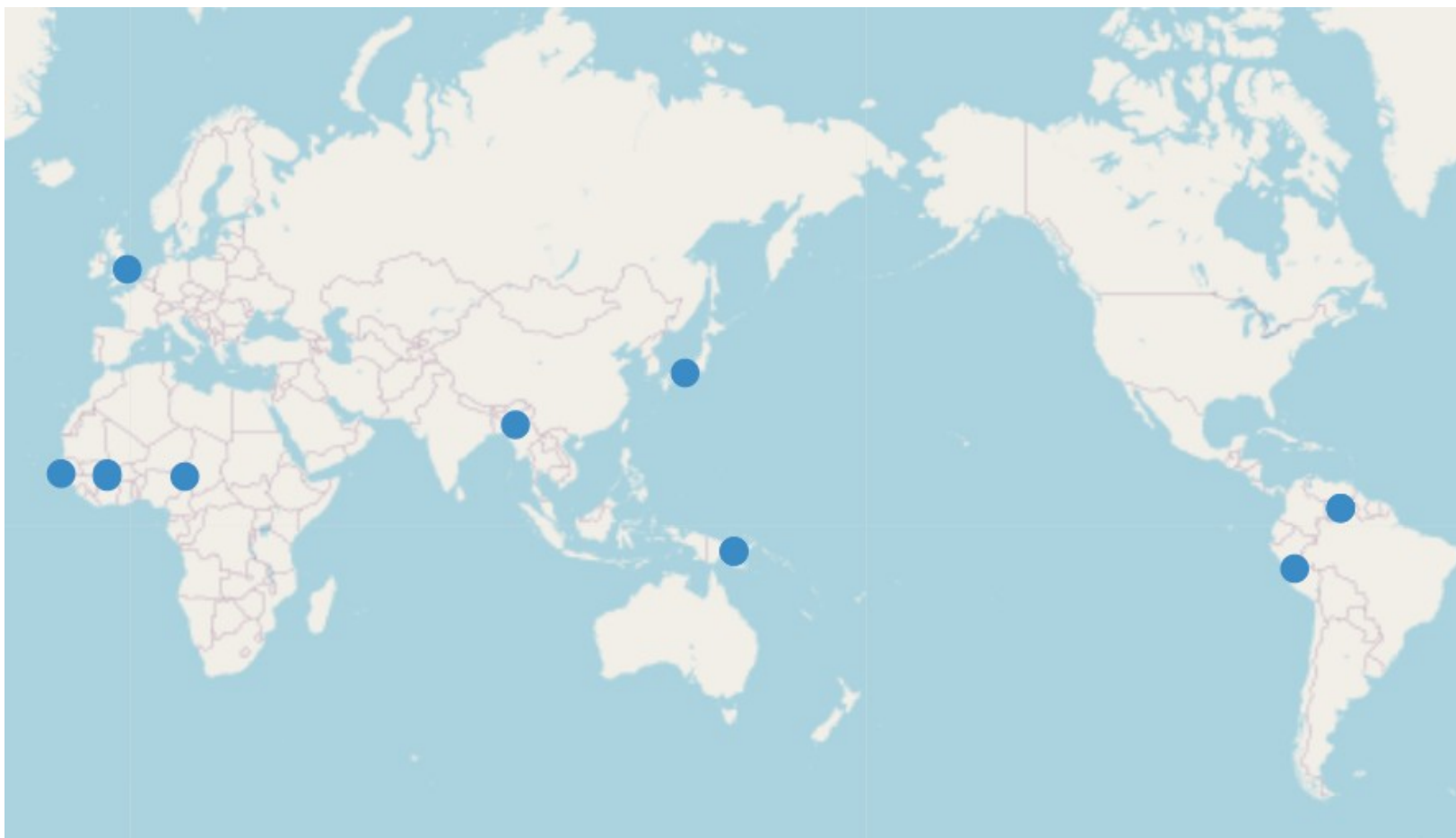*deafen*, *harden*, *sharpen*, *strengthen* …

or even both:
enlighten, *enliven*, *embolden* + *embiggen* etc
(Jespersen 1939; Klégr 2018)

3.5. Lexical conditioning

Map created with Lingtypology, Moroz (2017)

3.6. Syntactic/semantic conditioning

The orientation of the affix is determined by syntactic or semantic properties of the construction its hosting word occurs in.

- Shouldn't all such cases be recast in terms of paradigmatic features?
- Possibly, but still they look different from the cases discussed in 3.3.
- Depends on point of view.

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- Possibly, but still they look different from the cases discussed in 3.3.
- Depends on the basic assumptions and definitions.

3.6. Syntactic/semantic conditioning

French subject indexes: prefixes in declarative, suffixes in interrogative clauses (+ other cases of inversion).

(11) a. *Il travaillait* 'He was working'

b. *Travaillait-il*? 'Was he working?'

c. *Où travaillait-il*? 'Where was he working?'

"Declarative" vs. "interrogative" feature signalled by the position of the subject marker?

Cf. Auger 1994, Bonami & Boyé 2007, Culbertson 2010 on affixal status.

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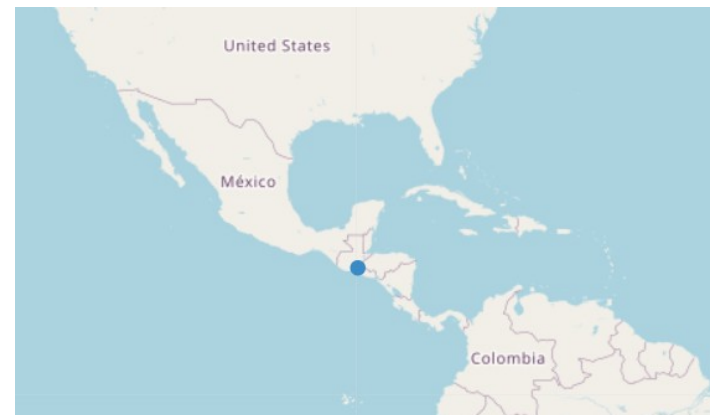
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3.6. Syntactic/semantic conditioning

Xincan person markers again (Rogers 2010: 176-186), but now with nouns:

- suffixes in inalienable possession
- prefixes in alienable possession
- not a purely lexical distinction, since some nouns allow alternative construal

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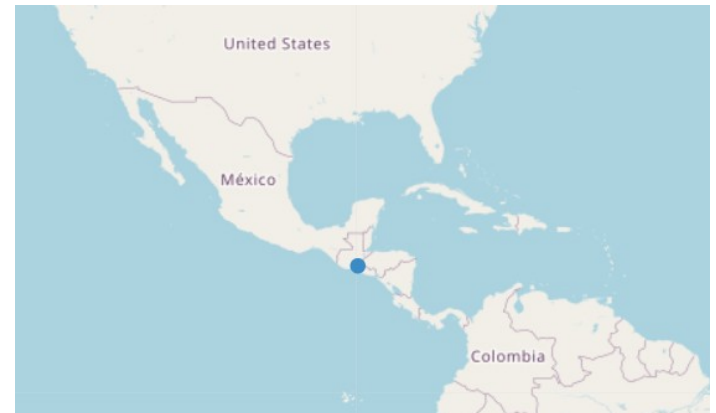
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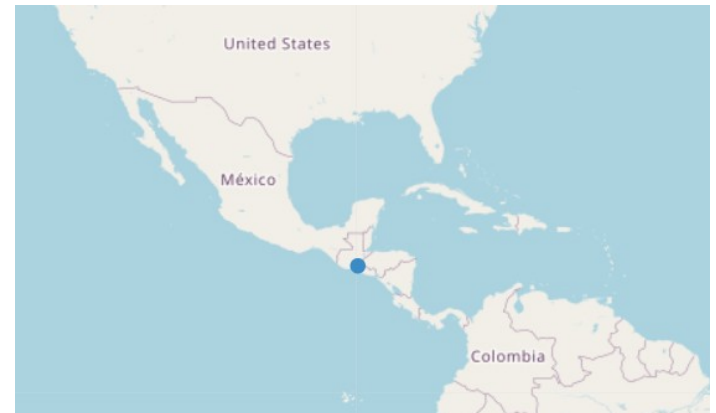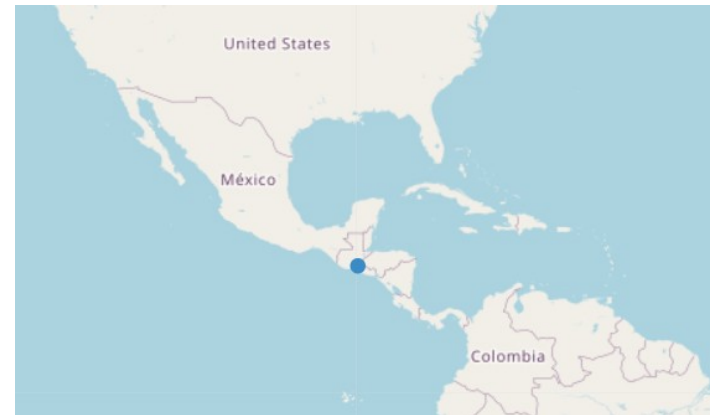
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Guazacapán (Xincan; Rogers 2010: 178, 182, 185)

(12) a.   *uxti-**ka'***   'your spouse's parents' (inalienable)
     b.   ***ka**-xuxi*   'your beard' (alienable)

(16) a.   *mak'u-**ka'***   'your house' (you earned it from
                          personal effort)
     b.   ***ka**-maku*   'your house'
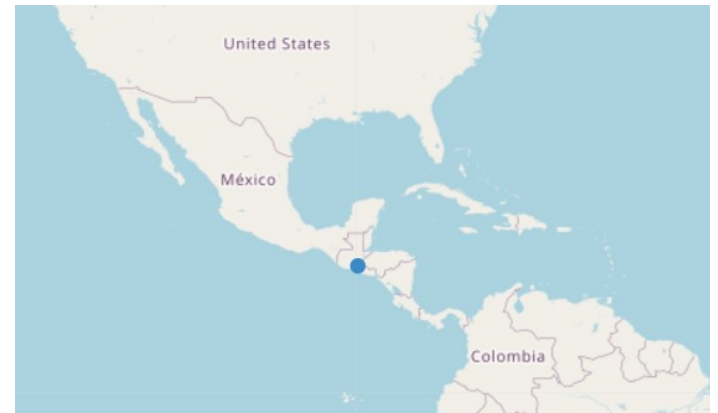
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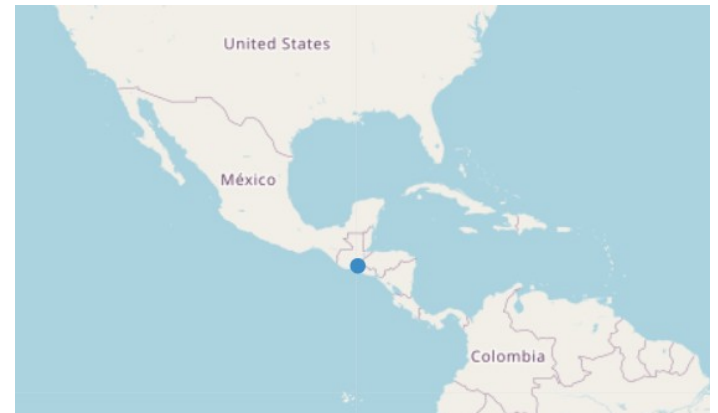
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Gyumri Armenian indicative marker (Bezrukov, Dolatian 2020):
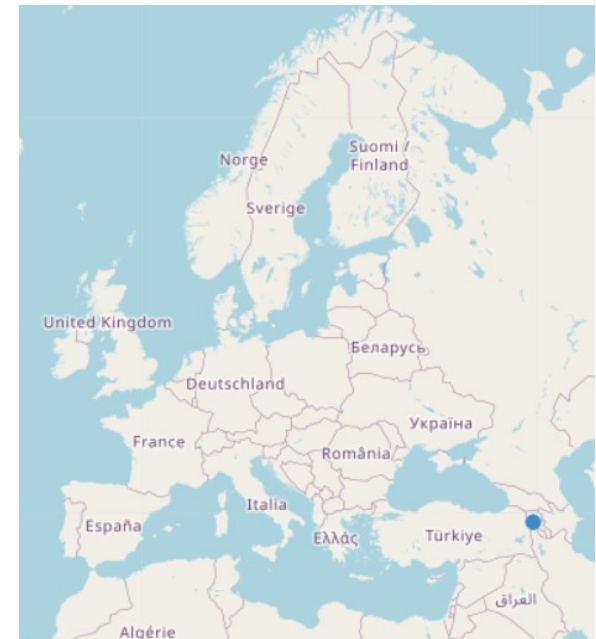
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Gyumri Armenian indicative marker (Bezrukov, Dolatian 2020):

prefix	suffix
habitual	progressive
realis	irrealis
preverbal nuclear stress	no preverbal nuclear stress
narrow argument focus	broad focus

3.6. Syntactic/semantic conditioning

Gyumri Armenian (Bezrukov, Dolatian 2020: 3-5):

(14) a. *šun-ə*   *vazze-**gə***   progressive

      dog-DEF   run-**IND**

      'The dog is running.'

   b. *šun-ə*   ***kə**-vazze*   habitual

      dog-DEF   **IND**-run

      'The dog (habitually) runs.'

3.6. Syntactic/semantic conditioning

Gyumri Armenian (Bezrukov, Dolatian 2020: 3-5):
(14) a. *šun-ə*   *vazze-**gə***   broad focus
          dog-DEF   run-**IND**
          'The dog is running.'

    b. *šun-ə*   ***kə**-vazze*   narrow focus
          dog-DEF   **IND**-run
          'The dog (habitually) runs. / The DOG is running.'

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Gyumri Armenian (Bezrukov, Dolatian 2020: 3-5):

(14) a.   *šun-ə*   *vazze*-**gə**   no preverbal stress
          dog-DEF   run-**IND**
          'The dog is running.'

    c.   *šun-ə*   **<u>tun</u>**   **kə**-*vazze*   preverbal stress
          dog-DEF   <u>home</u>   **IND**-run
          'The dog is running home.'

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         'The dog is running.'

    c. *šun-ə*   **tun**   ***kə*-*vazze***
         dog-DEF   home   **IND**-run
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Which feature(s) determine affix orientation?

3.6. Syntactic/semantic conditioning

Gyumri Armenian (Bezrukov, Dolatian 2020: 3-5):

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dog-DEF   <u>home</u>

'The dog is runni

Which feature(s) determi

> Or, perhaps, such cases should not be included at all, since the rules determining the position of the elements in question are sensitive to phrase- or clause-based factors?

3.6. Syntactic/semantic conditioning

Ut-Ma'in (Atlantic-Congo, Nigeria; Paterson 2019: 104) gender markers: suffixed to the noun in some syntactic environments and prefixed in others.

(13) a.   *mɔ́ŋgɔ̀r-tə̀*   *àzgə̀-sː-tɛ̀*   subject

         mango.fruit-**C6**   pour-ITR-PRF

         'Mango fruit rolled out (of the basket)'

    b.   *wā*   *ká-ːn*   *ə̄t-mɔ́ŋgɔ̀r*

         C1.SBJ   pluck-DIST   **C6**-mango.fruit

         'He picked mango fruits.'

C – gender marker, DIST – distal, ITR – intransitive, PRF

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3.6. Syntactic/semantic conditioning

Ut-Ma'in (Atlantic-Congo, Nigeria; Paterson 2019: 104) gender markers: suffixed to the noun in some syntactic environments and prefixed in others.

(15) a. *mɔ́ŋgɔ̀r-**tɔ̀*** *àzgɔ̀-sː-tɛ̀* subject

mango.fruit-**C6** pour-ITR-PRF

'Mango fruit rolled out (of the basket).'

b. *wā* *ká-ːn* *ɔ̄t-mɔ́ŋgɔ̀r* object

C1.SBJ pluck-DIST C6-mango.fruit

'He picked mango fruits.'

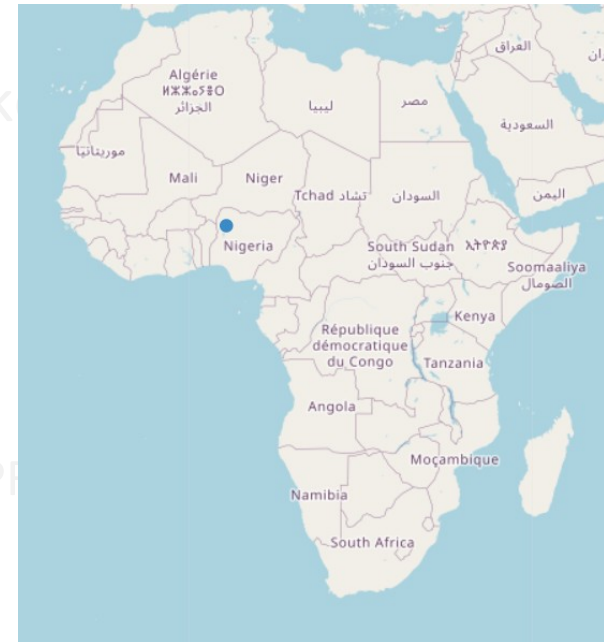C – gender marker, DIST – distal, ITR – intransitive, PRF – perfect

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C – gender mar[...]   [...]PRF – perfect

> NOT a subject vs. object distinction!

3.6. Syntactic/semantic conditioning

Ut-Ma'in gender markers (Paterson 2019: 59-61):

prefixes	suffixes
citation form	modified by an adjective, definite marker, possessive pronoun or relative clause
modified by a numeral	
unmodifed object	unmodified subject
modifier of another noun	
object of adpositions	

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> What kind of a morphosyntactic feature could the orientation of Ut-Ma'in gender markers be associated with?

3.6. Syntactic/semantic conditioning

Map created with Lingtypology, Moroz (2017)

3.7. Free variation?

Yuqui (Tupi-Guarani, Bolivia; Villafañe 2004: 168; van Gijn & Zúñiga 2014: 152): the focus marker and the past tense marker occur either suffixally or prefixally in apparently free variation:

(16) a. *yagua*   *bia-ño-ke*   *yukia*
       jaguar   man-FOC-PST   3sg.kill
       'The man killed the jaguar.'

    b. *so-natut-ĩ*   *ño-ke-bia*   *u*
       meat-EMPH-EMPH   FOC-PST-man   3SG.eat
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3. Typology: summary

- Some of the types are less clear-cut than others.

- Some ambifixes show mixed and transitional types of conditioning.

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Roadmap

1. Definition
2. Database
3. Typology
4. Diachronic speculations
5. Summary and outlook

Roadmap

4. Diachronic speculations

- Very tentative, since in most cases the origins of ambifixes can only be inferred or reconstructed.

- Still, at least three pathways to ambifixation can already be discerned:
  - Affixalisation of phrasal/sentential clitics.
  - Adverbs/adpositions suffixed to nouns and prefixed to verbs.
  - Univerbation of inflected grammatical elements "on the wrong side" of the host.

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- Still, at least three pathways to ambifixation can already be discerned:

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  - Adverbs/adpositions becoming suffixes and prefixes with different word classes.

  - Univerbation of inflected grammatical elements "on the wrong side" of the host.

4.1. Clitics > ambifixes

- Romance and Balkan Slavic object markers:
unstressed pronouns →
Wackernagel (second position) enclitics →
adverbal clitics subject to Tobler-Mussafia law
("no clitics in first position of the clause") →
ambifixes whose position wrt verb
depends on its inflectional features

- Benacchio 1988, Pancheva 2005 on Balkan Slavic
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- NB the applicability of Wackernagel's law is subject to qualifications and variation in both early Romance (Wanner 1987, Pescarini 2021) and early Slavic (Pancheva 2005)

4.1. Clitics > ambifixes

stage 1 (BCMS):   X=om (Y) V ~ V=om X

stage 2 (Bulgarian):   X=om (*Y) V Y ~ V=om X

- In the transition from stage 1 to stage 2 clitics become verb-adjacent.

- A precondition for this is a statistically significant share of verb-adjacent clitics already at stage 1 (Benacchio 1988: 466; Pancheva 2006: 151-2; Bennett 2006; Pescarini 2021: Ch. 7).

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- "What was a syntagmatic condition, enclisis in the [$_S$ V-context, became a paradigmatic differentiation of declarative vs. imperative clauses" (Wanner 1987: 278)

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- Conventionalisation of statistical tendencies in the use of different verbal forms in V=om X vs. X=om V clauses as paradigmatic restrictions on the position of verb-adjacent markers (Wanner 1987: 269-270, 278; Bennett 2006; Russi 2008: 78-9).

4.1. Clitics > ambifixes

- A separate important question: how do enclitics become proclitics and subsequently prefixes?

- See e.g. the notion of "prosodic realignment" proposed for different yet related developments in Hill et al. (2019).

4.2. Affixalisation of adverbs or adpositions

- Adverbials or adpositions (and probably other word classes, e.g. classifiers) can encliticise to nouns becoming (e.g. case) suffixes and procliticise to / incorporate into verbs becoming (e.g. spatial) prefixes (or vice versa).

- The few examples I am aware of come from the languages of the Caucasus, but I am sure that this pathway is attested more broadly.

- Cf. Kuryłowicz (1964: 171–178), Pinault (1995) on Indo-European spatial adverbs developing into adpositions and preverbs.

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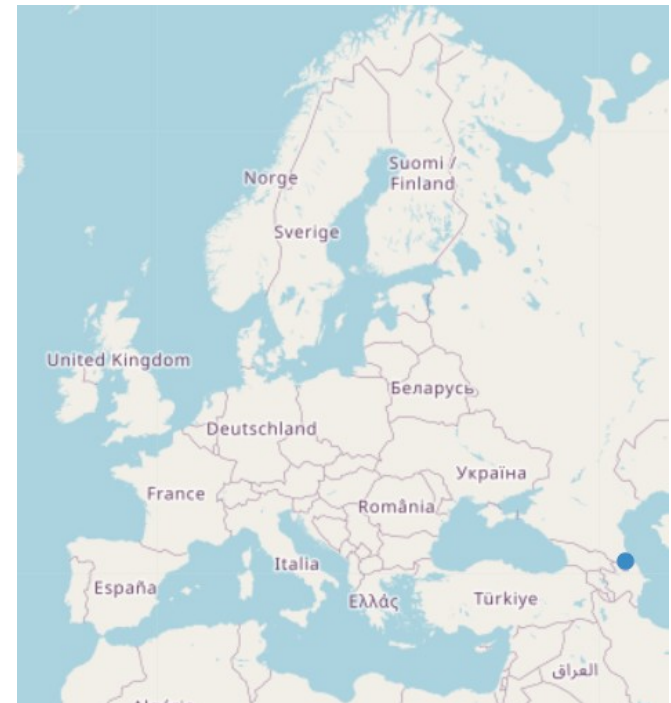
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function	verbal prefix	nominal suffix
INTER	ʕ(a)-	-ʕ
ANTE	hV-	-h
POST	qV-	-q
APUD	f(a)-	-w
SUPER	(a)l-	-l
SUB/CONT	kV-	-k

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Aghul (Nakh-Daghestanian > Lezgic, Russia; Maisak 2014)
verbal spatial prefixes (preverbs) and nominal locative (case)
suffixes:

(17) *ruš.a* *gardani-q* *šarf* *q-ix.i-ne*
   girl.ERG neck-POST scarf POST-put.PFV-AOR
   'The girl put a scarf on her neck.'

4.2. Affixalisation of adverbs or adpositions

- The formally cognate and functionally similar (though not identical) nominal suffixes and verbal prefixes in a number of Nakh-Daghestanian languages are hypothesised to go back to spatial adverbs (cf. e.g. Alekseev 1985: 117-121).

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- In some languages different stages of this or similar development can be observed even synchronically.

4.2. Affixalisation of adverbs or adpositions

Abkhaz (Northwest Caucasian, Hewitt 1979: 114) instrumental:

(18) a.　*a-ž'ahʷa*　　**a-la**　　*sə-jə-sə-jṭ*
DEF-hammer　　3SG.IO.N-with　　1SG.ABS-3SG.M.IO-hit-DCL
'I hit him with the/a hammer.' (adposition)

ABS – absolutive, DCL – declarative, DEF – definite, M – masculine,
N – non-human, IO – indirect object

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(18) b.　　*a-ž'ahʷa-**la**　　sə-jə-sə-jṭ*
　　　　DEF-hammer-INS　1SG.ABS-3SG.M.IO-hit-DCL
　　　　'I hit him with the/a hammer.'
　　　　(enclitic > case suffix)

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         (incorporation > applicative prefix)

ABS – absolutive, DCL – declarative, DEF – definite, M – masculine,
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4.2. Affixalisation of adverbs or adpositions

- Does this pathway ever lead to "true" ambifixes fully satisfying the Identity of Function criterion?

4.3. Univerbation in counterposition

An element hosting a prefix resp. suffix can be suffixed resp. prefixed to a host, resulting in so-called "counterposed affixes" (Stump 2022):

(19) a.   m-X ~ X m-Y >   m-X ~ X-m(-y)

     b.   X-m ~ Y-m X >   X-m ~ (y-)m-X

4.3. Univerbation in counterposition

Ono (Trans-New-Guinea > Finisterre-Huon, New Guinea; Wacke 1930-31: 174, 178), cf. Suter (2012, 2018) and Windschuttel (2018) for a comparative and historical perspective.

- A limited number of verbs take object prefixes.

- Two of such verbs, *-an-* 'see' and *-in-* 'give', productively suffix to non-inflected verbs and serve as markers of P and R indexing.

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Ono (Wacke 1930-31: 174-5, 178-9), present tense 3Sg subject:

	'see'	'protect'
1Sg	*n-an-maike*	*ware-nan-maike*
2Sg	*g-an-maike*	*ware-gan-maike*
1Pl	*ŋ-on-maike*	*ware-ŋon-maike*

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Ono (Wacke 1930-31: 174-5, 178-9), present tense 3Sg subject:

	'give'	'cook for smb'
1Sg	*n-in-maike*	*mire-nin-maike*
2Sg	*g-in-maike*	*mire-gin-maike*
1Pl	*ŋe-bon-maike*	*mire-ŋebon-maike*

4.3. Univerbation in counterposition

- An interesting case from Gunwinyguan languages (northern Australia), superficially similar to that of the Abaza/Abkhaz instrumental but apparently involving a distinct diachronic pathway (Evans 2024).

- Case suffixes "surfing a ride on incorporated nominals" to become applicative prefixes:

(a)	(b)	(c)	(d)
N-m >	[N-m]-V >	N-[m-V] >	(N)-[m-V]
nominal case-marker	incorporation of suffixed N	reanalysis from suffix to verbal prefix	incorporated noun becomes optional

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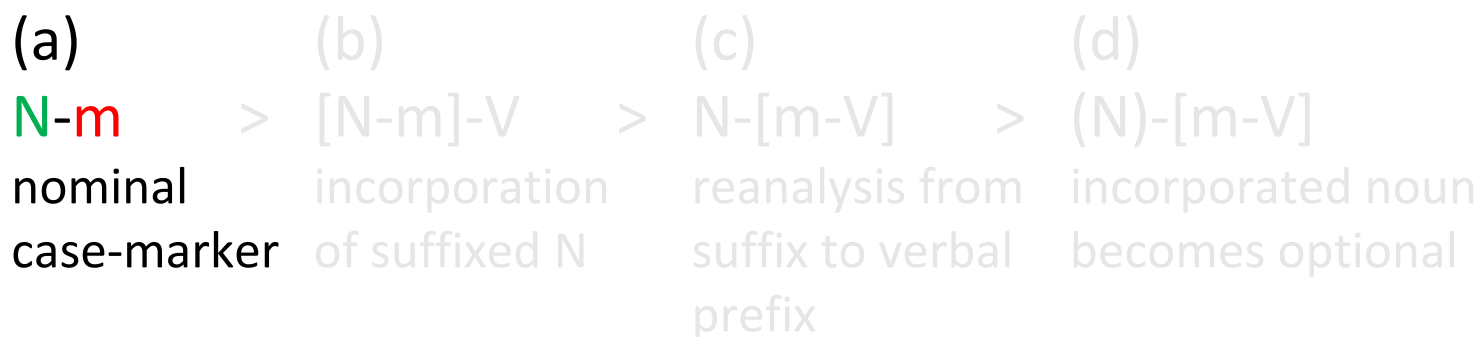| (a)		(b)		(c)		(d)
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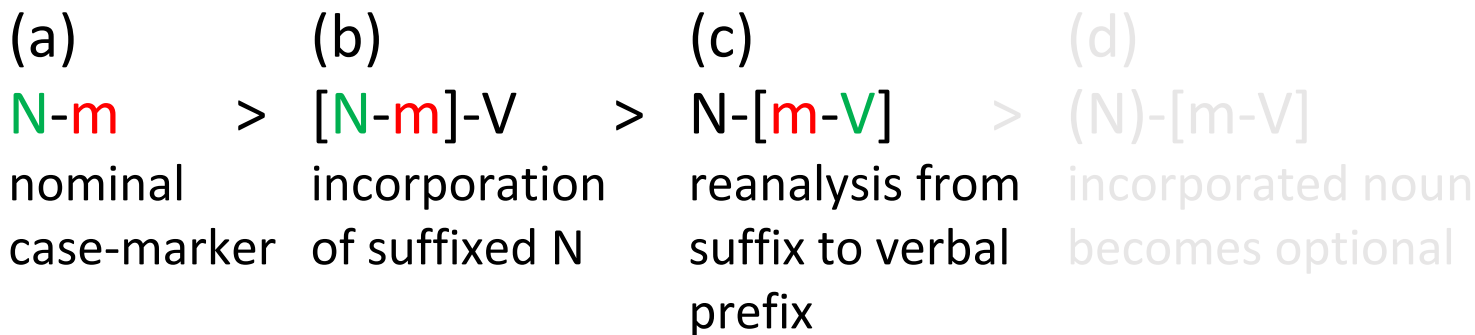
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4.3. Univerbation in counterposition

Bininj Gun-wok (Gunwinyguan, Australia; Evans 2003)

(20) a.   *Balloon barri-dukga-ng   gun-yarl-yi*
           balloon   3pl>3-tie-PST.PFV   CL-string-INS
           'They tied the balloon with a string.' (139)

     b.   *Yi-[yiuk-yi]-rrurnde-ng*
         2-honey-COM-return-NPST
         'You are returning with the honey.'

     c.   *Gun-yarl   ba-yi-dukga-ng*
         CL-string   3>3-COM-tie-PST.PFV
         'He tied it up with string.' (434)

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balloon   3pl>3-tie-PST.PFV   CL-string-INS
'They tied the balloon with a string.' (139)

b. *Yi-[yiuk-yi]-rrurnde-ng*
2-honey-INS-return-NPST
'You are returning with the honey.' (433)

c. *Gun-yarl   ba-yi-dukga-ng*
CL-string   3>3-INS-tie-PST.PFV
'He tied it up with string.' (434)

4.3. Univerbation in counterposition

- In nominals:

No doubtless examples yet, but nominal gender suffixes in a number of Niger-Congo languages with generally prefixing gender marking (e.g. Fula, Mc Laughlin 2015, or Akebu, Makeeva & Shluinsky 2018) might stem from encliticised pronouns, see Creissels (to appear: fn 11) for this scenario.

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Thank-you for your-attention!

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