# Combined marking of reflexivity Typology and grammaticalization 

Riccardo Giomi \& An Van linden
(University of Amsterdam \& University of Liège)
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## 1. Introduction

Topic: Combination of two or more separate grammatical markers to express reflexivity (CMRs)
(1) Dyirbal (Pama-Nyungan)

| bayin-dilu | dangay-mari-nu |
| :--- | :--- |
| DET-SELF | eat-INTR-NFUT |

'He is eating himself.' (Dik 1983: 244; glosses adapted)
Lit. "he himself is eating"

## Aims:

- Typological overview of the construction-types
- Pathway of grammaticalization
- Significance: Diachrony of some CMRs seems to defy unidirectionality hypotheses


## Outline

1. Introduction
2. Data
3. Typology of CMRs
4. Grammaticalization
5. (Uni)directionality?
6. Conclusions

## 2. Data

- Convenience sample: 47 typologically and areally diverse languages from 23 families; in total, 78 CMRs (62 double marking + 16 triple marking)
- Only languages for which we have proof of existence of CMRs (impossible to exclude existence thereof when not reported in grammars) $\rightarrow$ Some families overrepresented (3 to 8 languages > different genera)

Table 1: Overview of the languages in the sample

| Macro-area | Lngs | Families | CMRs | Names of families |
| :--- | :---: | :---: | :---: | :--- |
| Eurasia | 13 | 5 | 23 | Abkhaz-Adyghe; Dravidian; Indo-European; Nakh-Daghestanian; Sino-Tibetan |
| South-America | 11 | 8 | 14 | Guaicuruan; Mosetenan; Naduhup; Pano-Tacanan; Quechuan; Tupian; Yahgan; <br> Yurakaré |
| North-America | 9 | 5 | 11 | Athabaskan-Eyak-Tlingit; Iroquoian; Ktunaxa; Mayan; Otomanguean |
| Papunesia | 8 | 1 | 18 | Austronesian |
| Australia | 3 | 2 | 8 | Nyulnyulan; Pama-Nyungan |
| Africa | $\mathbf{3}$ | $\mathbf{2}$ | $\mathbf{4}$ | Afro-Asiatic; Atlantic-Congo |
| TOTAL | $\mathbf{4 7}$ | $\mathbf{2 3}$ | $\mathbf{7 8}$ |  |

## 3. Typology of combined marking

- Combined-marking reflexives may involve four types of grammatical elements:
i) personal, logophoric or reflexive (pro)noun;
ii) a middle(-like) marker, usually with valency-reducing functions (e.g. reflexive/reciprocal, passive, antipassive, etc.);
iii) an intensifier (adnominal vs. adverbial, actor- vs. non-actor oriented)
iv) a refactive marker (< 'again', 'return', 'back(wards)')


## 3. Typology of combined marking

- 6 out of 10 logically possible two-marker combinations attested:

Markers of different classes:
(pro)noun + intensifier
(pro)noun + middle(-like) marker
middle(-like) marker + intensifier
(pro) noun + refactive
middle(-like) marker + refactive
intensifier + refactive

Markers of the same class:
(pro)noun + (pro)noun
middle(-like) marker + middle(-like) marker
intensifier + intensifier
refactive + refactive

- 6 out of 20 logically possible three-marker combinations also attested


## 3. Typology of combined marking

Double marking, different class (1): (pro)noun + intensifier

- logophoric pronoun + intensifier (adnominal)
(2)
a.
Khwarshi (Nakh-Daghestanian)
Ražab- $i_{i} \quad$ žuč ${ }_{i / j} \quad \varnothing$-uwox-i.
Razhab-erg log.abs I-kill-pST
'Razhab ${ }_{\mathrm{i}}$ killed him $\mathrm{I}_{\mathrm{j}}$ / himselfi.' (Khalilova 2009: 427; glossed adapted)
b. $\quad$ Ražab-i $i_{i} \quad$ žu-žuči/**j $\quad \varnothing$-uwox-i.
Razhab-erg ints-Log.ABS I-kill-PST
'Razhab ${ }_{i}$ killed himself;.' (Khalilova 2009: 427; glossed adapted)
Lit. "Razhab killed [him himself]"


## 3. Typology of combined marking

Double marking, different class (2): (pro)noun + middle(-like) marker

- middle(-like) marker (antipassive) + reflexive noun
(3) Mam (Mayan)
ma kub' t-b'iyoo-n t-iib' xiinaq

REC.PST DIR 3.SG.ERG-kill-ANTP 3.SG-REFLman
'The man killed himself.' (England 1983: 74; glosses adapted)

## 3. Typology of combined marking

Double marking, different class (3): middle(-like) marker + intensifier

- middle(-like) marker (anticausative, facilitative, grooming) + intensifier (adverbial)
(4) Sinhala (Indo-European)

Mamə ibeemə sedhaa/naa gatta.
1.SG by_SELF wash/bathe.PTCP.PERF INTR.PST
'I washed/bathed by myself.' (Beavers \& Zubair 2016: 98; glosses adapted)

## 3. Typology of combined marking

Double marking, different class (4): (pro)noun + refactive

- reflexive pronoun + refactive
(5) Adyghe (Abkhaz-Adyghe)

1.SG-POSS-neighbour-obl REFL.ABS-3.SG.A-kill-REFACT-PST
'My neighbour killed himself' (Arkadiev \& Letuchiy 2014: 505)
Lit. "my neighbour killed himself again"


## 3. Typology of combined marking

Double marking, same class (1): middle(-like) general + middle(-like) specific

- middle(-like) general (various functions) + middle(-like) specific (reflexive/reciprocal)
(6) Caoden rGyalrong (Sino-Tibetan)
ogjip-kz ogjip to-gje-na-sasmet-kja
3.SG-A 3.SG PFV.INV-REFL-MID(NVOL)-wound-EVID
'He hurt himself ([inadvertently,] through his own fault).'
(LaPolla 1996: 1950; glosses adapted)


## 3. Typology of combined marking

Double marking, same class (2): intensifier + intensifier

- intensifier (actor-oriented adnominal) + intensifier (actor-oriented adverbial)
(7) Mezquital Otomí (Otomanguean)

Da hyan-sëhë-pä.
3.fUT see-SELF-3.EMPH
'He himself will see himself.' (Spanish: Se verá a si mismo él)
(Priego-Montfort 1989: 121)

## 3. Typology of combined marking

Triple marking (1): (pro)noun + intensifier + middle(-like) marker

- personal pronoun + intensifier (emphatic particle) + middle(-like) marker (several functions)
(8) Mizo (Sino-Tibetan)
kéy-maple? kéy-map kâ-in-bia
1-EMPH and 1-EMPH 1.s-MID-speak_to
'I'm talking to myself.'
(LaPolla 1996: 1950)
Lit. "I myself and I myself talk.INTR"


## 3. Typology of combined marking

Triple marking (2): (pro)noun + intensifier + refactive

- personal pronoun + intensifier (emphatic particle) + refactive ('again/back')
(9) Nengone (Austronesian)

| buhnij | ci | amani | buhnij | yawe | ko |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 2.PL | IMPF | pride | 2.PL | again | INTS |

'You pride yourselves.'
(Moyse-Faurie 2008: 142)
Lit. "you pride you again by yourselves"

## 3. Typology of combined marking

Triple marking (3): (pro)noun + middle(-like) marker + refactive

- personal pronoun + middle marker (several functions) + refactive ('again/return', 'backwards')
(10) Ajië (Austronesian)
gèrré vi-méari rré yâî
1PL.INCL INTR-like 1.PL.INCL.OBJ backwards
'We like ourselves/*each other.'
(Moyse-Faurie 2008: 148)
Lit. "we like.IntR us back"


## 3. Typology of combined marking

Table 2: Double-marking reflexive strategies by macro-area

| Strategies | Eurasia | South America | North America | Papunesia | Australia | Africa | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| mid+(pro)n | 3 | 3 | 4 | 3 | 2 | 2 | 17 |
| mid+ints | 5 | 8 | 1 |  | 1 | 1 | 16 |
| (pro)n+ints | 10 |  |  | 6 |  |  | 16 |
| mid+mid | 1 | 2 | 3 |  | 1 | 1 | 8 |
| pron+refact | 1 |  |  | 3 |  |  | 4 |
| ints+ints |  |  | 1 |  |  |  | 1 |
| TOTAL (45 lgs) | 20 | 13 | 9 | 12 | 4 | 4 | 62 |

## 3. Typology of combined marking

Table 3: Triple-marking reflexive strategies by macro-area

| Strategies | Eurasia | South <br> America | North America | Papunesia | Australia | Africa | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| mid+pron+ints | 1 |  |  | 1 | 2 |  | 4 |
| pron+ints+ints | 2 |  | 1 | 1 |  |  | 4 |
| mid+mid+ints |  | 1 |  |  | 2 |  | 3 |
| pron+mid+refact |  |  |  | 2 |  |  | 2 |
| pron+ints+refact |  |  |  | 2 |  |  | 2 |
| mid+mid+mid |  |  | 1 |  |  |  | 1 |
| Total (12 lgs) | 3 | 1 | 2 | 6 | 4 | 0 | 16 |

## 4. Grammaticalization

Table 4: Diachronic hypothesis: combined-marking reflexives arise in grammaticalization $\rightarrow 4$ stages

Stage 1 Each marker performs its original function: semantics of construction is always compositional, either exceeding reflexivity or not reflexive at all

Stage 2 Combination of markers starts conventionalizing as a reflexive construction, but compositional interpretation is still possible in context

Stage 3 Compositional interpretation is no longer possible: combination has grammaticalized as full-fledged reflexive construction, but is not strictly obligatory

Stage 4 Combination has become obligatory for the expression of reflexivity

## 4. Grammaticalization

Stage 1: Each marker performs its original function: semantics of construction is always compositional, exceeding mere reflexivity or not reflexive at all
(11) Huallaga Quechua (Quechuan)
(Kiki-n) wañu-chi-ku-ra-n
SELF-3POSS die-CAUS-REFL-PST-3.SBJ
'He (himself) killed himself.' (Weber 1989: 167, ex. (591); glossed adapted)
(12) Amharic (Afro-Asiatic)
lamma ras-и-n ta-la-č'č'
Lemma head-3M.POSS-ACC MID-shave-PERF-3.M
'Lemma shaved his head’ ('*Lemma shaved himself’) (Amberber 2000: 326)

## 4. Grammaticalization

Stage 2: Combination of markers starts conventionalizing as a reflexive construction, but compositional interpretation is still possible in context
(13) Mezquital Otomí (Otomanguean)

Da hyan-sëhë-pä.
3.fUT see-SELF-3.EMPH
'He himself will see himself.' (Priego-Montfort 1989: 121)

'I want Juan to see himself in the mirror.' (Priego-Montfort 1989: 121)

## 4. Grammaticalization

Stage 3: Compositional interpretation is no longer possible: combination has grammaticalized as full-fledged reflexive construction, but is not strictly obligatory
(15) Kambaata (Afro-Asiatic)

| is gag-á-s saaxx-án | biir-óochch $\quad$ biir-úta | zahh-áyyoo'u |  |
| :--- | :--- | :--- | :--- | :--- |
| 3м.NOM SELF-M.ACC-3M.POSS | praise.MID-3.M.IPFV.CVB | office-F.ABL | office-F.ACC |
| walk-3.M.PROG |  |  |  |
| 'he walked from office to office praising himself' (Treis 2023: 158) |  |  |  |

(16) Gag-á-s ba'-íshsh-o
self-m.Acc-3m.poss be_destroyed-caus-3.m.pFV
'He killed himself.' (Treis 2023: 158)

## 4. Grammaticalization

Stage 4: Combination has become obligatory for the expression of reflexivity
(17) Ktunaxa (isolate)
hu-n $\quad$ Piktu-qu-ア-m-ik
1.SG-PRED COP.VERTICAL-in_water-APPL-MID(ASSOC)-REFL
'I washed myself'. (Morgan 1992: 165; glosses adapted)

## 4. Grammaticalization

- Double-marking strategies

Table 5: Range of grammaticalization stages attested per strategy

| Grammaticalization <br> stage | mid+(pro)n | mid+ints | (pro)n+ints | mid+mid | pron+refact | ints+ints |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $X$ |
| 2 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| 3 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $X$ |
| 4 | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ | $X$ | $X$ |

## 4. Grammaticalization

- Double-marking strategies

Table 6a: Most advanced grammaticalization stage per strategy

| Most advanced <br> grzn stage | mid+(pro)n | mid+ints | (pro)n+ints | mid+mid | pron+refact | ints+ints | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 | 11 | 1 | 1 | 2 |  | 16 |
| 2 | 5 | 3 | 2 |  | 1 | 1 | 12 |
| 3 | 8 | 1 | 7 | 2 | 1 |  | 19 |
| 4 | 3 | 1 | 6 | 5 |  |  | 15 |
| Total (45 Igs) | $\mathbf{1 7}$ | $\mathbf{1 6}$ | $\mathbf{1 6}$ | $\mathbf{8}$ | $\mathbf{4}$ | $\mathbf{1}$ | $\mathbf{6 2}$ |

- $1 / 3$ of Stage 4 CMRs are of the otherwise rare type mid+mid; probably due to one of the two middle markers having grammaticalized from a pronoun (explicitly claimed by Thompson 1996 for AET)


## 4. Grammaticalization

- Triple-marking strategies

Table 7a: Most advanced grammaticalization stage per strategy

| Most advanced <br> grzn stage | mid+(pro)n <br> +refact | mid+(pro) $n$ <br> +ints | (pro)n+ints <br> +refact | (pro)n+ints <br> +ints | mid+mid <br> +ints | mid+mid <br> +mid | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  | 1 | 2 |  | 3 |
| 2 | 2 | 2 |  | 1 | 1 |  | 4 |
| 3 |  |  | 1 | 2 |  |  | 7 |
| 4 | 2 | 1 |  |  | 1 | 2 |  |
| Total (12 lgs) | $\mathbf{2}$ | $\mathbf{4}$ | $\mathbf{2}$ | $\mathbf{4}$ | $\mathbf{3}$ | $\mathbf{1}$ | $\mathbf{1 6}$ |

## 5. (Uni)directionality?

- Of "our" 6 double-marking strategies, 3 involve intensifiers (expression of emphasis/focus/contrast); 2 of these have reached full grammaticalization (Stage 3/4)

Table 6b: Potential counterexamples to unidirectionality hypothesis in red (15/62; 24\%)

| Most advanced <br> grzn stage | mid+(pro)n | mid+ints | (pro)n+ints | mid+mid | pron+refact | ints+ints | TOTAL |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 | 11 | 1 | 1 | 2 |  | 16 |
| 2 | 5 | 3 | 2 |  | 1 | 1 | 12 |
| 3 | 8 | 1 | 7 | 2 | 1 |  | 19 |
| 4 | 3 | 1 | 6 | 5 |  |  | 15 |
| Total (45 lgs) | $\mathbf{1 7}$ | 16 | 16 | 8 | 4 | 1 | 62 |

## 5. (Uni)directionality?

- As for triple-marking strategies, 4 out of 6 involve intensifiers; 3 of these have reached full grammaticalization (Stage 3/4)

Table 7b: Potential counterexamples to unidirectionality hypothesis in red (4/16; 25\%)

| Most advanced grzn stage | $\begin{aligned} & \text { mid+(pro)n } \\ & + \text { refact } \end{aligned}$ | $\begin{gathered} \text { mid }+ \text { (pro) } \mathrm{n} \\ \text { +ints } \end{gathered}$ | (pro)n+ints +refact | (pro) $n+i n t s$ +ints | $\begin{gathered} \text { mid+mid } \\ \text { +ints } \end{gathered}$ | $\begin{aligned} & \text { mid+mid } \\ & \text { +mid } \end{aligned}$ | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  | 1 | 2 |  | 3 |
| 2 |  | 2 |  | 1 | 1 |  | 4 |
| 3 | 2 | 2 | 1 | 2 |  |  | 7 |
| 4 |  |  | 1 |  |  | 1 | 2 |
| Total (12 lgs) | 2 | 4 | 2 | 4 | 3 | 1 | 16 |

## 5. (Uni)directionality?

- It has been claimed that the change from emphatic to "plain" reflexive conforms to the diachronic paths identified by (i.a.) Meillet (1912) and Lehmann (1982) ("loss of expressivity"), Traugott \& König (1991) and Heine (2002) ("semanticization of pragmatic inferences"), Givón (1979) ("syntacticization of discourse patterns"): from discourse pragmatics to grammar
"Since it is commonly assumed in grammaticalization research that (pragmatic) emphasis often gives rise to the development of grammatical formatives, we seem to have a first clue as to why [...] intensifiers and reflexives are formally related in many languages."
(Gast \& Siemund 2006: 361)
$\rightarrow$ Intensifiers regarded as a discourse phenomenon (extragrammatical), later grammaticalized as "grammatical formatives" (reflexives)
- In our opinion, intensifiers are grammaticalized, intersubjective expressions of pragmatic (interpersonal) meaning: emphasis, (contrastive) focus, unexpectedness


## 5. (Uni)directionality?

- Intensifiers regarded as grammaticalized, intersubjective expressions of pragmatic (interpersonal) meaning
- Therefore, a change from emphatic to plain reflexive is potentially problematic, as it seems to defy directionality constraints in functional grammaticalization:
- (inter)subjectification (Traugott 1982, i.a.): propositional > textual, expressive
- increase in discourse orientation (Hengeveld 1989, Narrog 2012, i.a.)

i.e. from semantic (propositional/representational) not to be confused with "loss of to pragmatic meaning (interpersonal/interactional) (within the grammar)
expressivity", semanticization of pragmatic inferences, syntacticization of discourse patterns (from discourse to grammar)


## 5. (Uni)directionality?

- Intensifiers regarded as grammaticalized, intersubjective expressions of pragmatic (interpersonal) meaning
- Therefore, a change from emphatic to plain reflexive is potentially problematic, as it seems to defy directionality constraints in functional grammaticalization:
- (inter)subjectification (Traugott 1982, i.a.): propositional > textual, expressive
- increase in discourse orientation (Hengeveld 1989, Narrog 2012, i.a.)
- Explanation: it is not the intensifier that loses its pragmatic meaning to turn into a reflexive marker; it is the whole combination that loses its compositional interpretation as it grammaticalizes as a plain reflexive marker: constructionalization
(18) Tsakhur (Nakh-Daghestanian: Lyutikova 2000: 229)

$$
\begin{array}{lll}
\text { Rasul-e: wuふ̌-e: } & \text { wuß̌ } & \text { get-u. } \\
\text { rasul-ERG INTS-ERG } & \text { LOG.ABS } & \text { beat-PFV }
\end{array}
$$

Lit. "Rasul himself beat him(self)" $\rightarrow$ 'Rasul beat himself.'

## 5. (Uni)directionality?

- Intensifiers regarded as grammaticalized, intersubjective expressions of pragmatic (interpersonal) meaning
- Therefore, a change from emphatic to plain reflexive is potentially problematic, as it seems to defy directionality constraints in functional grammaticalization:
- (inter)subjectification (Traugott 1982, i.a.): propositional > textual, expressive
- increase in discourse orientation (Hengeveld 1989, Narrog 2012, i.a.)
- Explanation: it is not the intensifier that loses its pragmatic meaning to turn into a reflexive marker; it is the whole combination that loses its compositional interpretation as it grammaticalizes as a plain reflexive marker: constructionalization
(18) Tsakhur (Nakh-Daghestanian) ..... cf. (19) Old English (Gast \& Siemund 2006: 362)
Rasul-e: wuž-e: wuž get-u. Judas aheng [hine self-ne].


## 6. Conclusions

- While the grammaticalization of plain reflexives from more complex constructions is a well-known phenomenon, this study has shed further light on
- its different subtypes and their respective frequencies:
- double-marking strategies: combinations of different types of markers (53) much more frequent than combinations of same type of marker (9);
- triple-marking strategies less common than double-marking ones, but not exceptionally rare: 16/78 total cxns (from 12/47 languages), 9 of which grammaticalized (8 languages);
- its areal distribution: +Eurasia, +Americas, +Papunesia; -Africa, -Australia;
- its diachronic workings: 4 stages, characterized by increasing constructionalization (Traugott \& Trousdale 2013), context expansion (Heine 2002) and specialization (Hopper 1991)
- Despite the loss of pragmatic/interpersonal meaning, the grammaticalization of CMRs involving intensifiers does not display a decrease in intersubjectivity or discourse orientation but merely a loss of compositionality (constructionalization): the whole combination grammaticalizes as a reflexive marker.
thank you!

Table 8: Overview of the languages in the sample

| ${ }^{\circ}$ | Language | Family | Genus | Macro-area |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Amharic | Afro-Asiatic | Semitic | Africa |
| 2 | Kambaata | Afro-Asiatic | Cushitic | Africa |
| 3 | Joola Keeraak | Atlantic-Congo | North-Central Atlantic | Africa |
| 4 | Yawuru | Nyulnyulan | Yawuric | Australia |
| 5 | Dyirbal | Pama-Nyungan | Dyirbal | Australia |
| 6 | Kuuk Thaayorre | Pama-Nyungan | Paman | Australia |
| 7 | Adyghe | Abkhaz-Adyghe | Circassian | Eurasia |
| 8 | Kannada | Dravidian | South Dravidian | Eurasia |
| 9 | Dutch | Indo-European | Germanic | Eurasia |
| 10 | Sinhala | Indo-European | Indo-Iranian | Eurasia |
| 11 | Avar | Nakh-Daghestanian | Avar-Andic-Tsezic; Avar | Eurasia |
| 12 | Khwarshi | Nakh-Daghestanian | Avar-Andic-Tsezic; Tsezic | Eurasia |
| 13 | Tsakhur | Nakh-Daghestanian | Lezgic | Eurasia |
| 14 | Tsez | Nakh-Daghestanian | Avar-Andic-Tsezic; Tsezic | Eurasia |
| 15 | Caoden rGyalrong | Sino-Tibetan | Burmo-Qiangic | Eurasia |
| 16 | Dulon-Rawang | Sino-Tibetan | Nungish | Eurasia |
| 17 | Galo | Sino-Tibetan | Macro-Tani | Eurasia |
| 18 | Khaling | Sino-Tibetan | Himalayish | Eurasia |

Table 8 (continued): Overview of the languages in the sample

| No $^{\circ}$ | Language | Family | Genus | Macro-area |
| :--- | :--- | :--- | :--- | :--- |
| 25 | Kaqchikel | Mayan | Quichean | North America |
| 26 | K'iche' | Mayan | Quichean | North America |
| 27 | Mam | Mayan | Mamean | North America |
| 28 | Mezquital Otomí | Otomanguean | Western Otomanguean | North America |
| 29 | Ajië | Austronesian | Oceanic; South New Caledonian | Papunesia |
| 30 | Bwatoo | Oceanic; North New Caledonia | Papunesia |  |
| 31 | East Futunan | Austronesian | Oceanic; Nuclear Polynesian | Papunesia |
| 32 | laai | Austronesian | Oceanic; New Caled.; Loyalty Islands | Papunesia |
| 33 | Mwotlap | Oceanic; Vanuatu | Papunesia |  |
| 34 | Nengone | Austronesian | Oceanic; New Caled.; Loyalty Islands | Papunesia |
| 35 | Sri Lanka Malay | Austronesian | Malayo-Sumbawan | Papunesia |
| 36 | Taba | Southern Halmahera | Papunesia |  |
| 37 | Toba | isolate | Guaicuru del Sur | South America |
| 38 | Hup | isolate | South America |  |
| 39 | Yahgan | isolate | isolate | South America |
| 40 | Yurakaré | Mosetenan | isolate | South America |
| 41 | Chimane | Chimane | South America |  |
| 42 | Moseten | Moseten | South America |  |

## 2. Data

Figure 1: Areal distribution of the languages in the sample


