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# Case in head-marking languages: towards a comprehensive typology

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# Roadmap

- What it is all about
- Database and sample
- Some quantitative observations
- The typology
- Summary and outlook

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# What it is all about

- Dependent-marking (flagging, DM) is morphological marking of participants expressed by nominals for the grammatical and/or semantic role they play in the sentence.
- Head-marking (indexing, HM) is morphological indexation on the predicate of such properties of participants as person, number and gender, as well as their grammatical and/or semantic role.

Nichols 1986, 1992, Lander & Nichols 2020, Haspelmath 2013, 2019

Cf. also Milewski 1950 and Lehmann 1983, 1985

# What it is all about

- The terms “dependent-marking” and “head-marking” have been introduced by Nichols (1986), see also Lander & Nichols (2020).
- The terms “flagging” and “indexing” have been introduced by Haspelmath (2005), see also Haspelmath (2013, 2019).
- They serve as typologically-grounded extensions of such notions as “case-marking” and “verbal agreement” or “cross-referencing”, respectively.
- Both are grammatical mechanisms central for the encoding of syntactic and semantic relations in many languages of the world.

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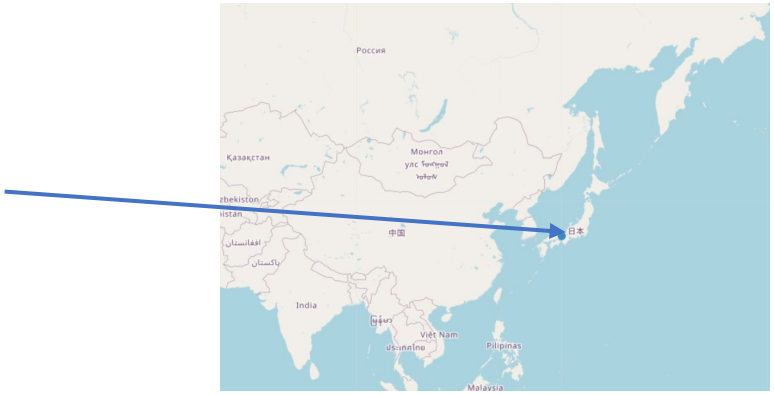

Map created with Lingtypology (Moroz 2017)

- Dependent-marking (flagging)

(1) Japanese (Altaic; constructed)

| *shōjo-ga* | *shōnen-o* | *mi-ta* |
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| girl-NOM | boy-ACC | see-PST |

'The girl saw the boy.'

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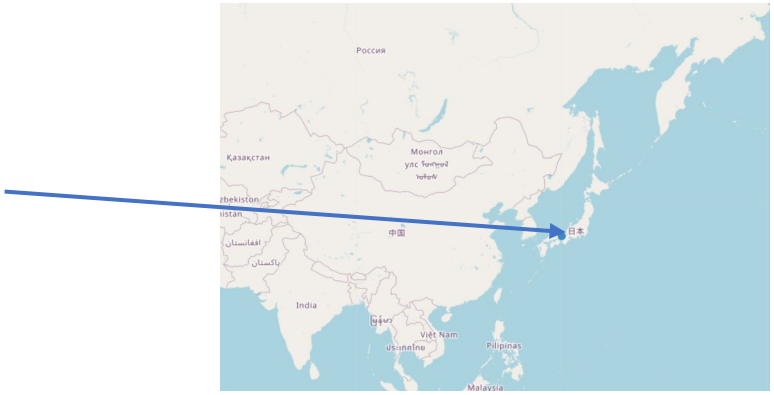

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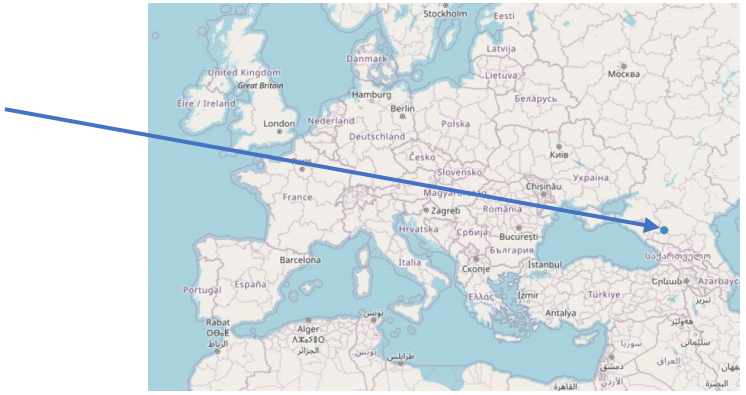


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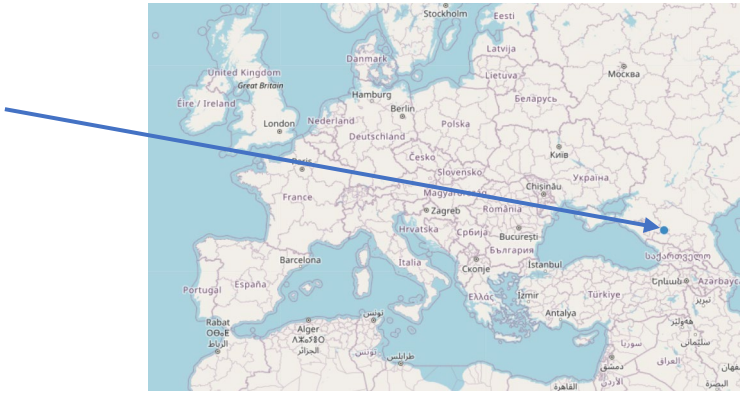


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- DM and HM do not exclude each other and often co-occur in languages, both paradigmatically and syntagmatically, i.e. jointly applying to the same argument → double-marking or bilocal marking (M. Haspelmath, p.c.).

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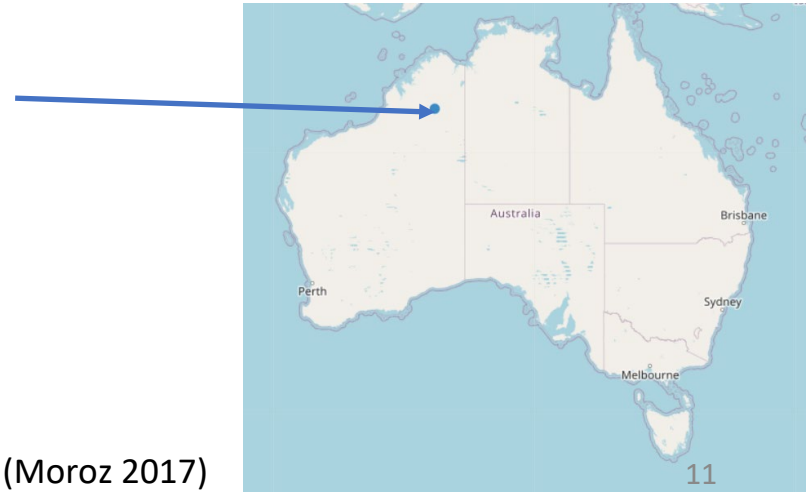
(3) Gooniyandi (Bunaban, Australia; McGregor 1990: 322)
*nganyi-ngga mawoolyi-yoo mila-limi-widdangi*
1SG-ERG children-LOC see-1SG.SBJ-3PL.OBJ
'I glanced at the children.'

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- Patterns of co-occurrence of HM and DM are not sufficiently studied from a cross-linguistic perspective (Vakhtin & Volodin 1986; Foster & Hofling 1987; Bakker & Siewierska 2009; Keine 2010; Baker 2013).
- This is particularly true about languages with rich head-marking (i.e. “polypersonal” indexing), which are often assumed to lack dependent-marking, at least of core arguments.
  - E.g. Kibrik (2012: 213): “the head-marking technique of role-marking is functionally equivalent to nominal cases”.

# What it is all about

- Existing typological generalisations are few and pertain to:
  - patterns of alignment in monotransitive and ditransitive constructions (Comrie 1978; Vakhtin & Volodin 1986; Siewierska 2003; Haspelmath 2005; Malchukov et al. 2010; Bárány 2021);
  - inverse preferences of HM and DM with respect to core vs. peripheral semantic roles (Nichols 1986);
  - double-marking for agents, patients and recipients (Bakker & Siewierska 2009, qualified in Arkadiev 2013, 2016, 2024);
  - some rather bold claims within the generative framework, e.g. “NPs do not have grammatical Case in any polysynthetic language” (Baker 1996: 132) or “There is no true ergative agreement” (Woolford 2006: 304).

# What it is all about

- Several major questions remain understudied:
  - How frequent are languages with both HM and DM?
  - Which types of distribution of HM and DM recur cross-linguistically?
  - Which participants tend to receive double/bilocal-marking in the languages of the world and in which ways?
  - To what extent and under which conditions do HM and DM match each other or function independently?
  - What (if anything) motivates rare patterns of interactions between HM and DM attested in individual languages and language families or areas?

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  - to arrive at a comprehensive typology of the interactions of DM and HM, with attention to both cross-linguistically recurring and rare patterns;
  - to try to uncover functional, diachronic and areal motivations behind these patterns and their distribution.

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  - However, most grammatical theorizing so far has been based on the European languages, which are predominantly DM.
  - At the same time, a whole line of research within both functionalist (e.g. Van Valin 1985, 2013; Kibrik 2012) and formalist (e.g. Jelinek 1984; Jelinek & Demers 1994; Baker 1996) traditions has emphasized the sharp contrast between DM- and HM-languages, downplaying the fact that DM and HM often co-occur.

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  - Both types of bias have to be overcome in order for an empirically adequate typology and theory of grammatical relations to be possible (cf. e.g. Witzlack-Makarevich & Bickel 2019).

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  - a convenience sample representative of cross-linguistic diversity and aiming to cover typologically rare phenomena;
  - no exclusion of closely related languages, since family-internal variation and possible diachronic developments should also be captured.

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  - at least some 3rd person objects (P, T, R etc.) must have overt indexes;
  - not limited to verbal affixes: e.g. Wackernagel clitics are also included (“construction-marking”, Lander & Nichols 2020).

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  - preference given to more grammaticalised systems, but not necessarily to "morphological case" as traditionally defined; criterion of a well-defined closed class of markers is more important;
  - all languages where any type of DM (including adpositions) is able to co-occur with HM, are included.

# Database and sample

- Information included into the database:
  - metadata (languoid name, glottocode, macroarea, family and genus according to Glottolog, sources);
  - number of participants simultaneously indexed by HM;
  - number of distinct DM-constructions (e.g. morphological cases): not always easy to determine and probably not so relevant;
  - alignment(s) of HM and DM in monotransitive and ditransitive constructions;
  - distribution of HM and DM (complementarity vs. co-occurrence);
  - patterns of double-marking (e.g. which morphological cases allow simultaneous indexing);
  - presence of valency-changing mechanisms affecting HM and DM, in particular, applicatives.

# Database and sample

- Current state of the database:
  - the bulk of the data was collected in 2009-2011, especially during my research stay at the Max-Planck Institute for Evolutionary Anthropology in Leipzig in 2010;
  - currently being updated and revised within the framework of my FRIAS project;
  - 176 languages, but at least 250 are aimed for;
  - all macroareas, 80 families (116 genera), including 19 isolates.

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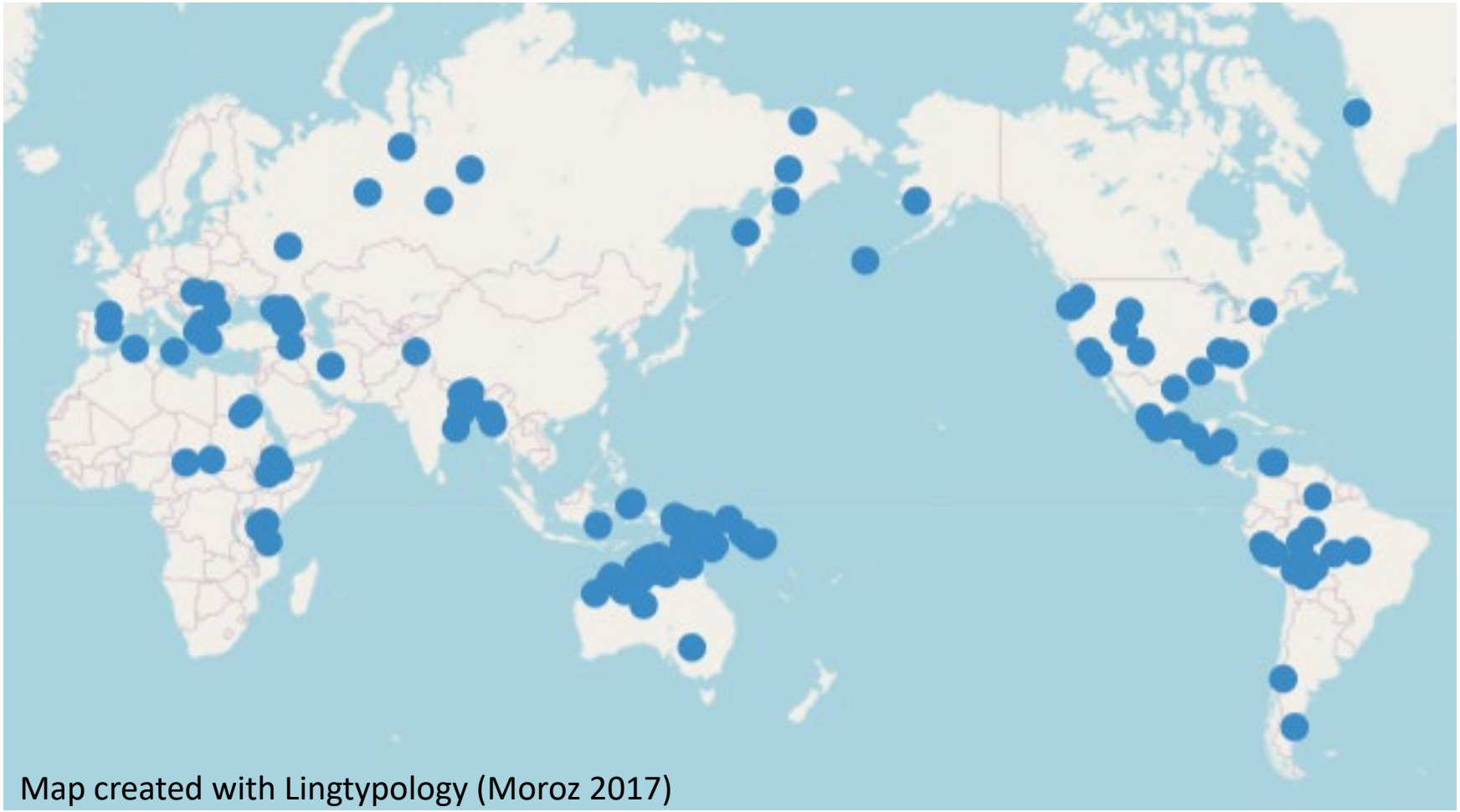

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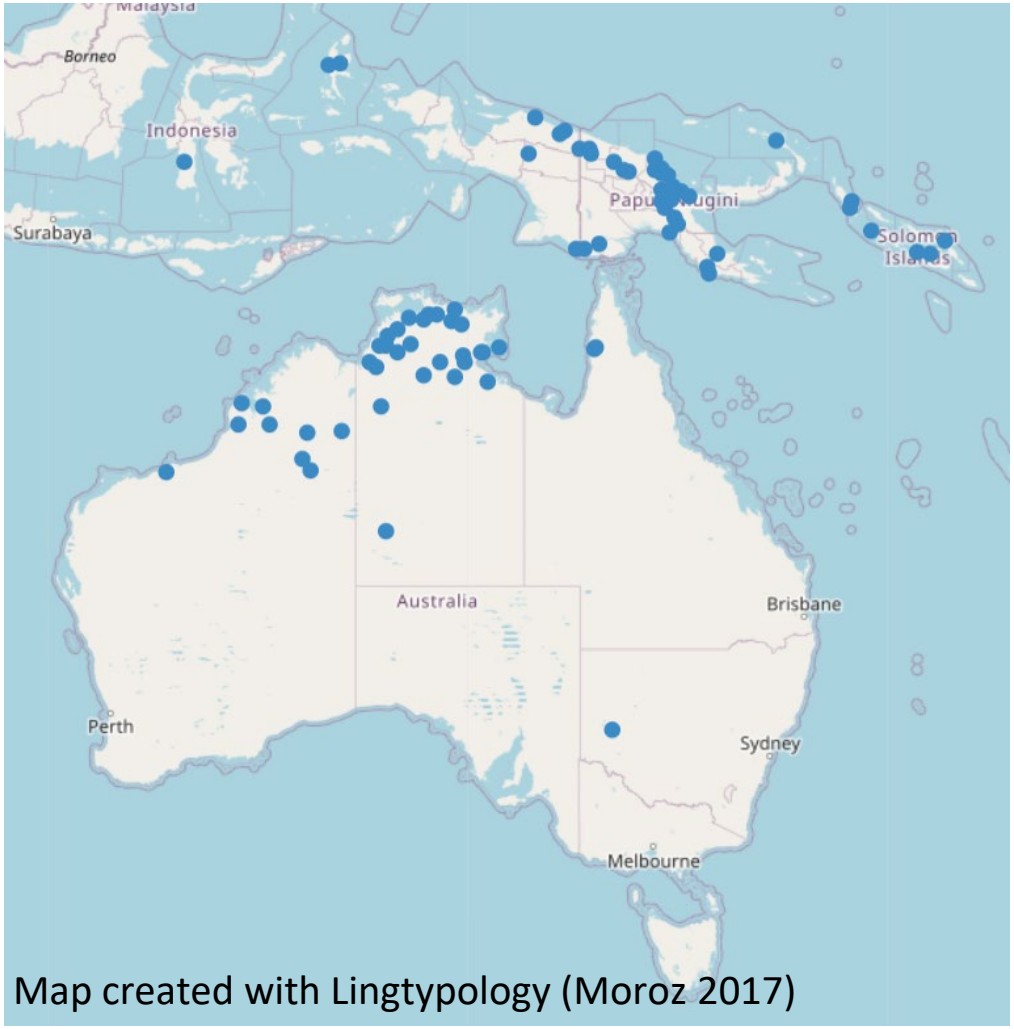
# Database and sample

| Macroarea | No. languages | No. genera | No. families |
|---|---|---|---|
| Africa | 12 | 8 | 4 |
| Eurasia | 41 | 21 | 11 |
| Australia | 38 | 27 | 17 |
| Oceania | 42 | 28 | 21 |
| North America | 23 | 18 | 15 |
| South America | 20 | 15 | 14 |

NB Semitic (Afroasiatic) in both Africa and Eurasia,
Chibchan in both North and South America

# Database and sample

- Clear bias towards (Northern) Australia and Papua



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- Some better-represented language families:
  - Nuclear Trans-New-Guinean 13
  - Afro-Asiatic 10
  - Pama-Nyungan 9
  - Indo-European 8
  - Sino-Tibetan 7
  - Gunwinyguan 6

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- NB! Families and genera are counted several times if they contain languages with differing values of a parameter.

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- Number of (overtly marked) cases in the languages of the sample:

| No. | languages | genera | families | example |
|---|---|---|---|---|
| 1-2 | 26 | 18 | 15 | Yimas |
| 3-4 | 30 | 25 | 23 | Nobiin |
| 5-6 | 37 | 33 | 26 | Albanian |
| 7-8 | 29 | 25 | 22 | Manambu |
| >8 | 36 | 27 | 22 | Uchumataqu |
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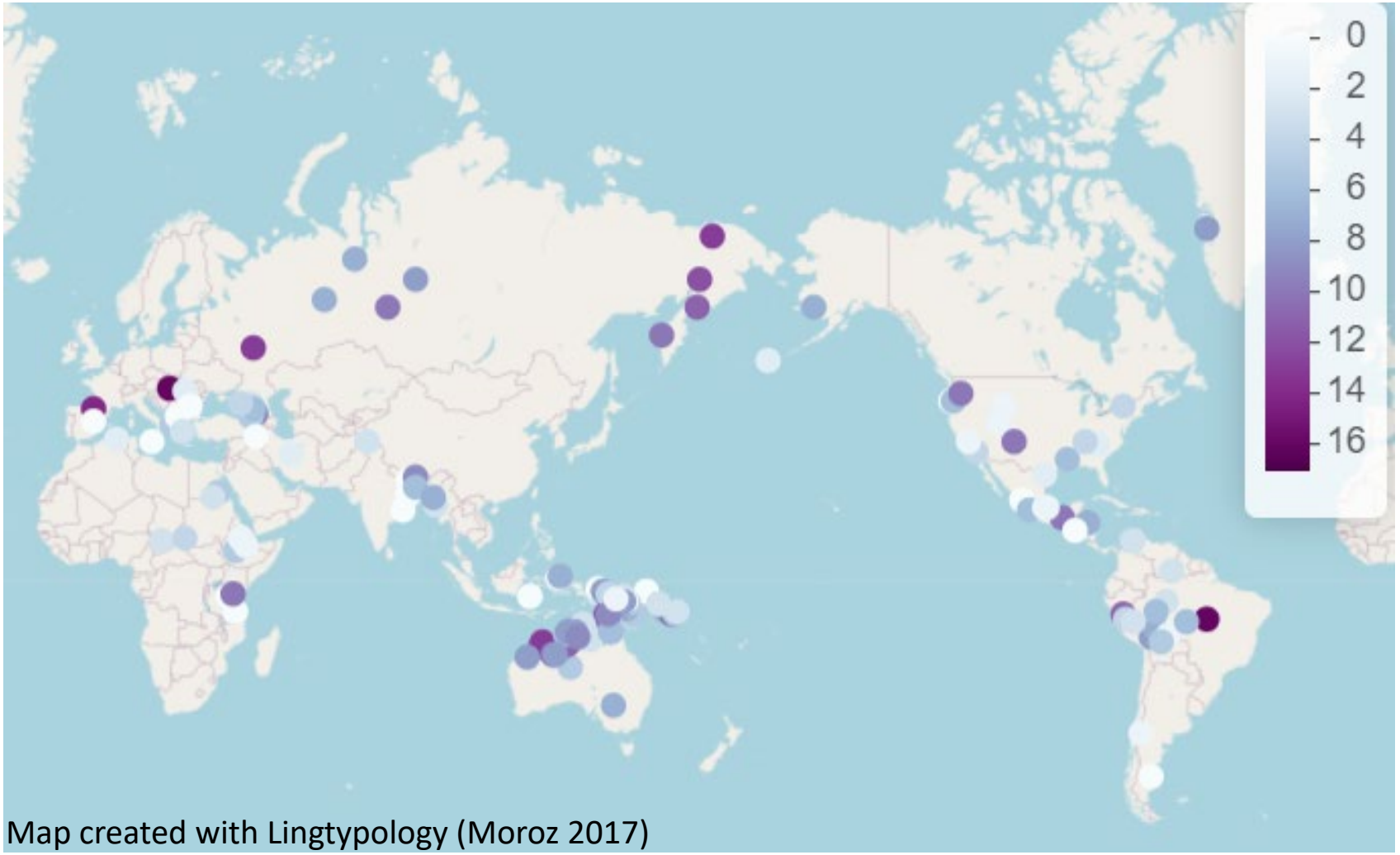


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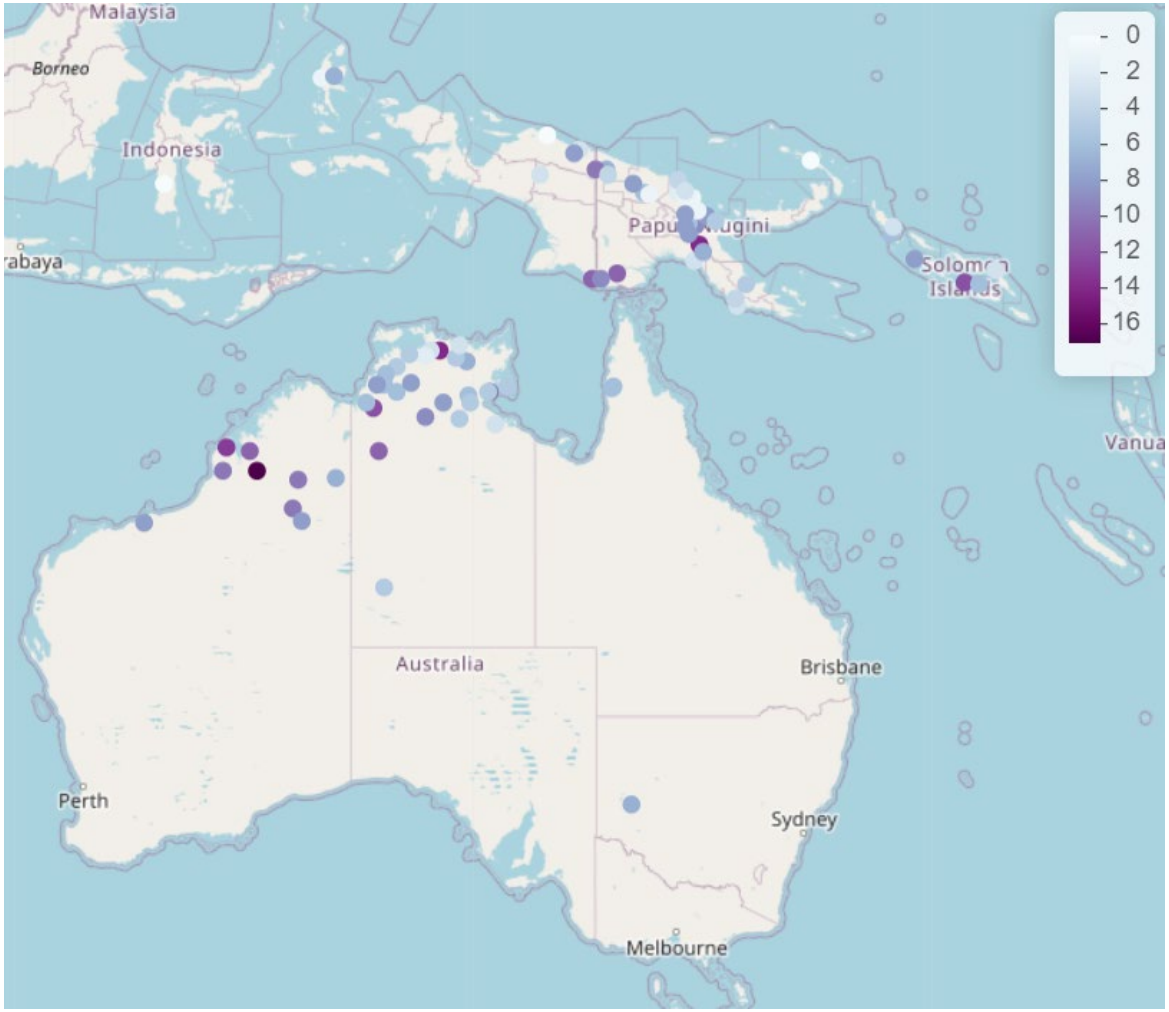

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- Particularly case-rich families:
  - Chukotko-Kamchatkan, Nyulnyulan, Pama-Nyungan, Sino-Tibetan, Nuclear Trans-New-Guinean, Uralic, Yam

# Some quantitative observations

- Maximal number of simultaneously indexed participants:

| No. | languages | genera | families | example |
|---|---|---|---|---|
| 2 | 137 | 94 | 63 | Ket |
| 3 | 35 | 31 | 26 | Basque |
| >3 | 4 | 3 | 2 | Abaza |

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‘I will tell this to him about you.’

ABS – absolutive, BEN – benefactive applicative, DAT – dative applicative, IO – indirect object, N – non-human, NPST – non-past

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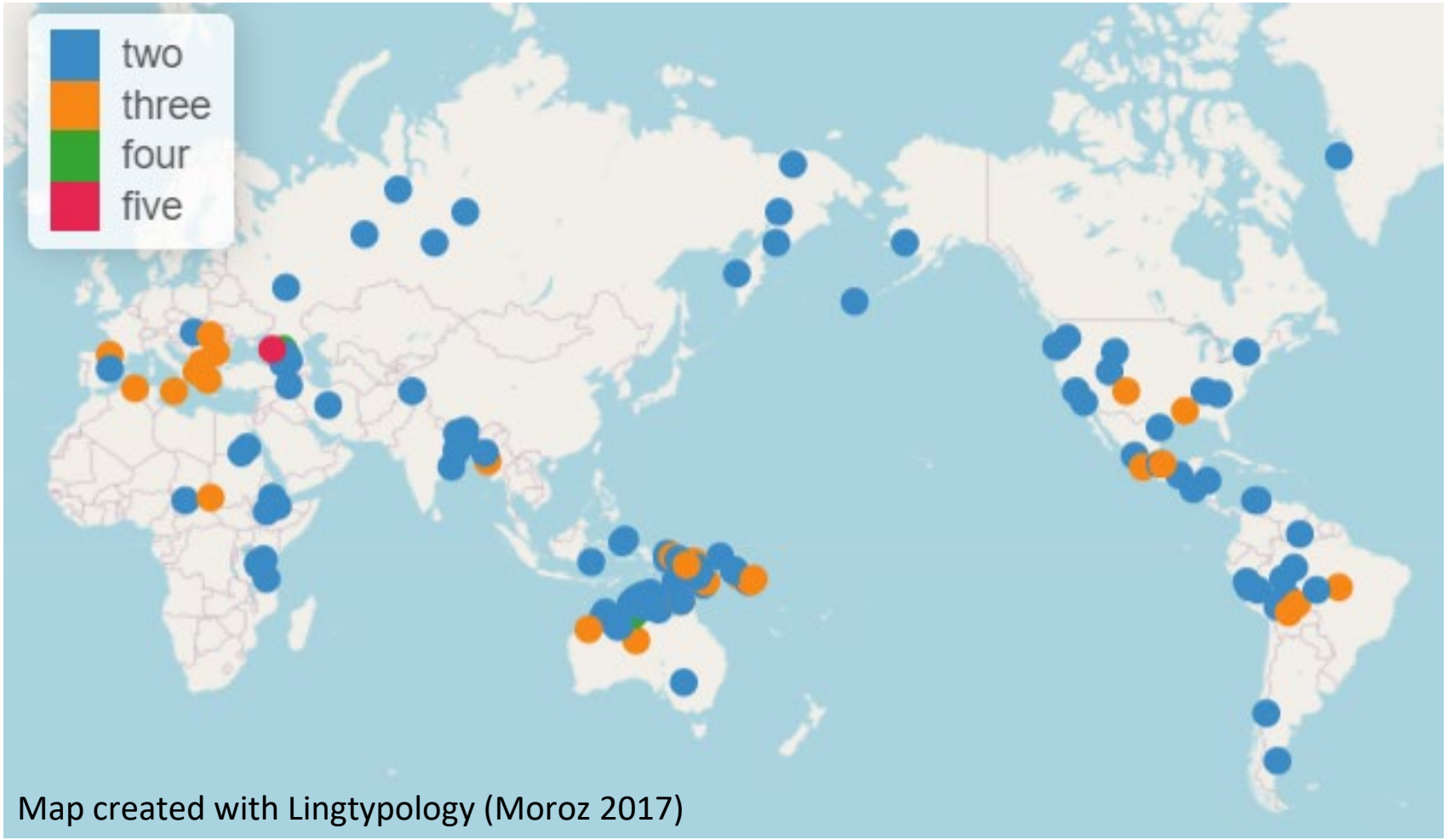


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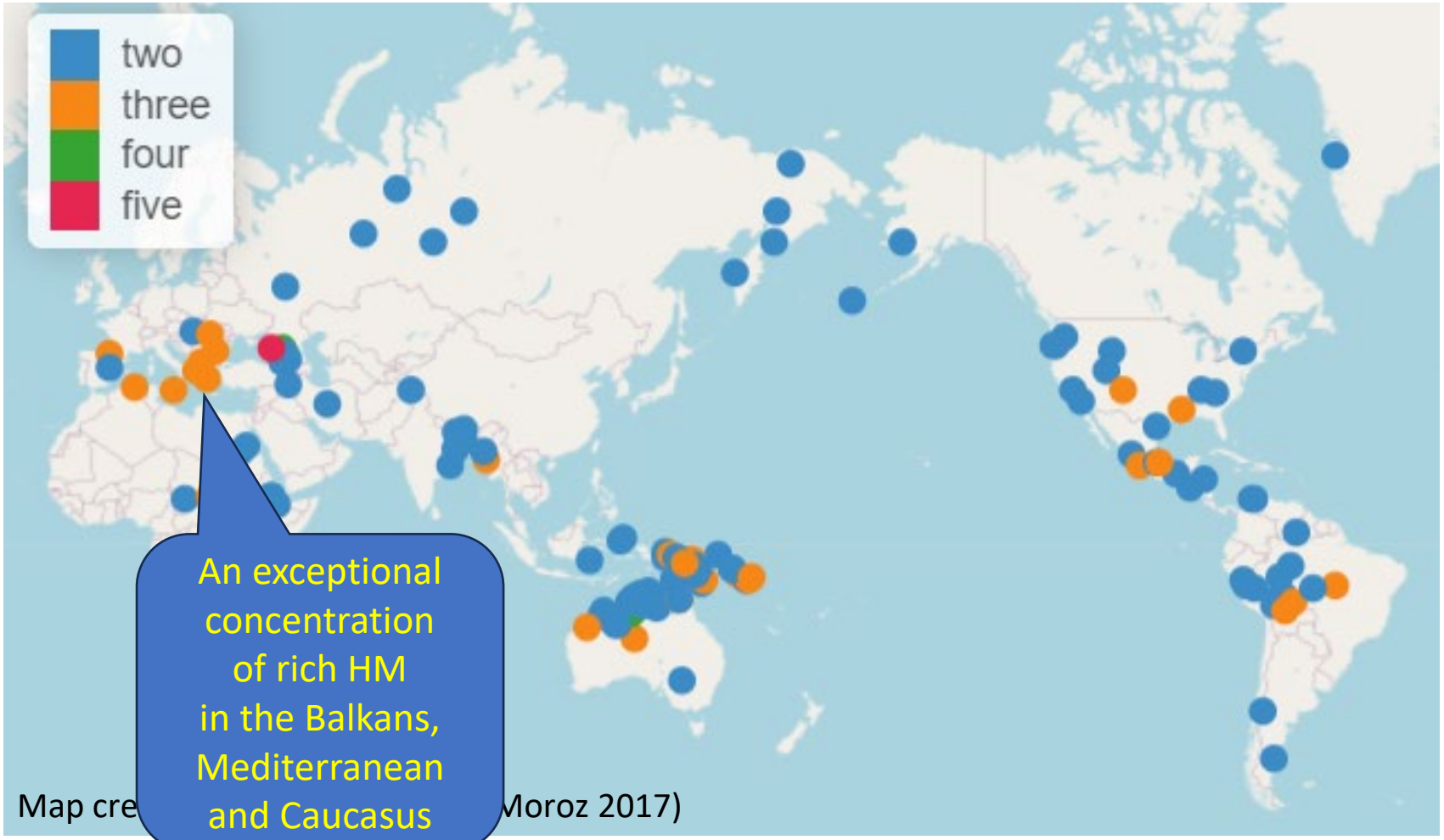


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# Some quantitative observations

- Monotransitive alignment (differential accusative/optional ergative marking merged with accusative resp. ergative):

| type | languages | genera | families | example |
|---|---|---|---|---|
| neutral | 51 | 40 | 34 | Mapudungun |
| accusative | 43 | 32 | 22 | Amharic |
| marked-nominative | 5 | 5 | 5 | Kaki Ae |
| ergative | 59 | 45 | 32 | Chukchi |
| active | 6 | 6 | 4 | Nyigina |
| tripartite | 8 | 7 | 5 | Yakima |
| no dominant | 4 | 3 | 2 | Svan |

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A notably high incidence of ergative alignment, even when stratified

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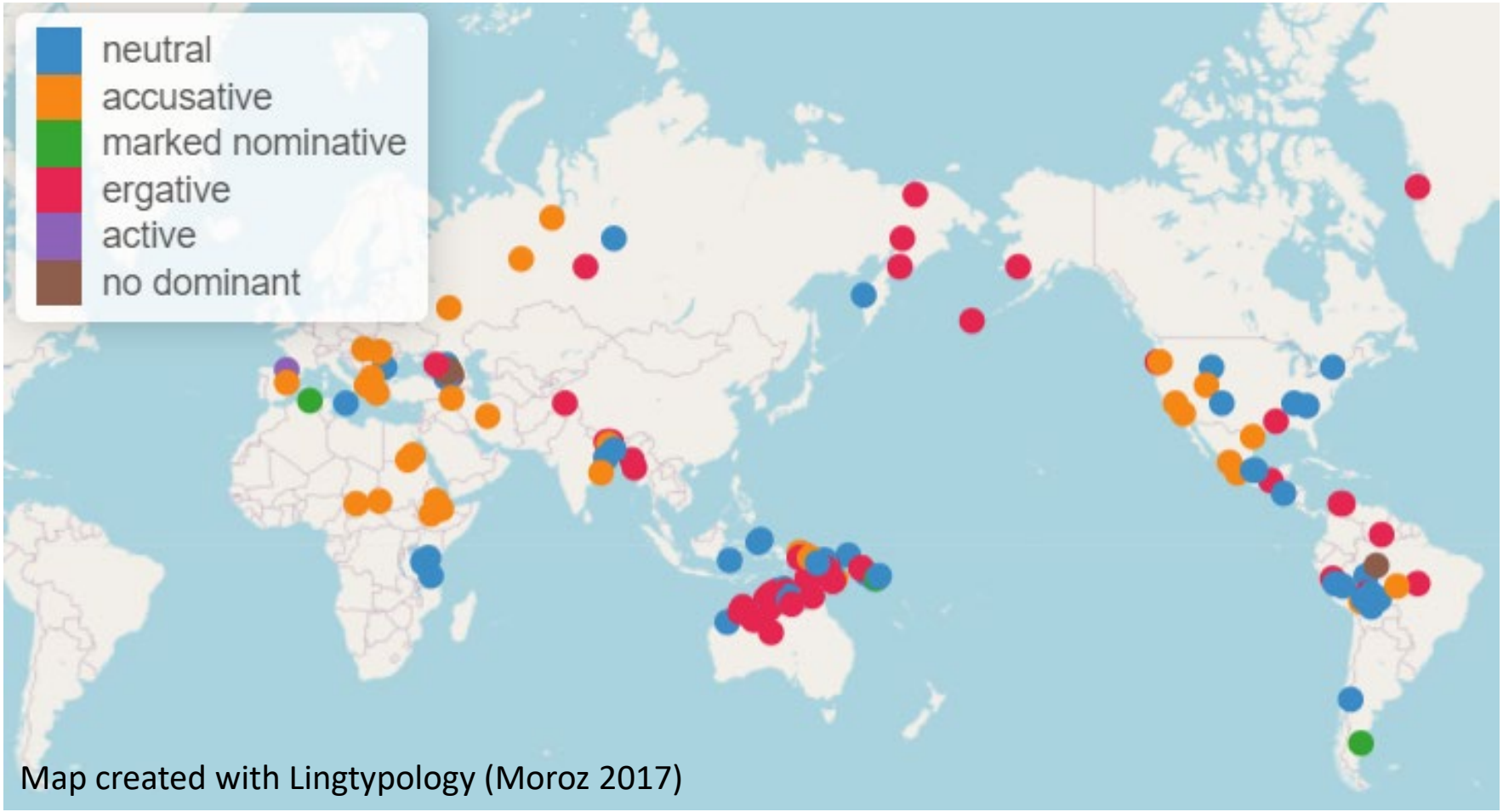


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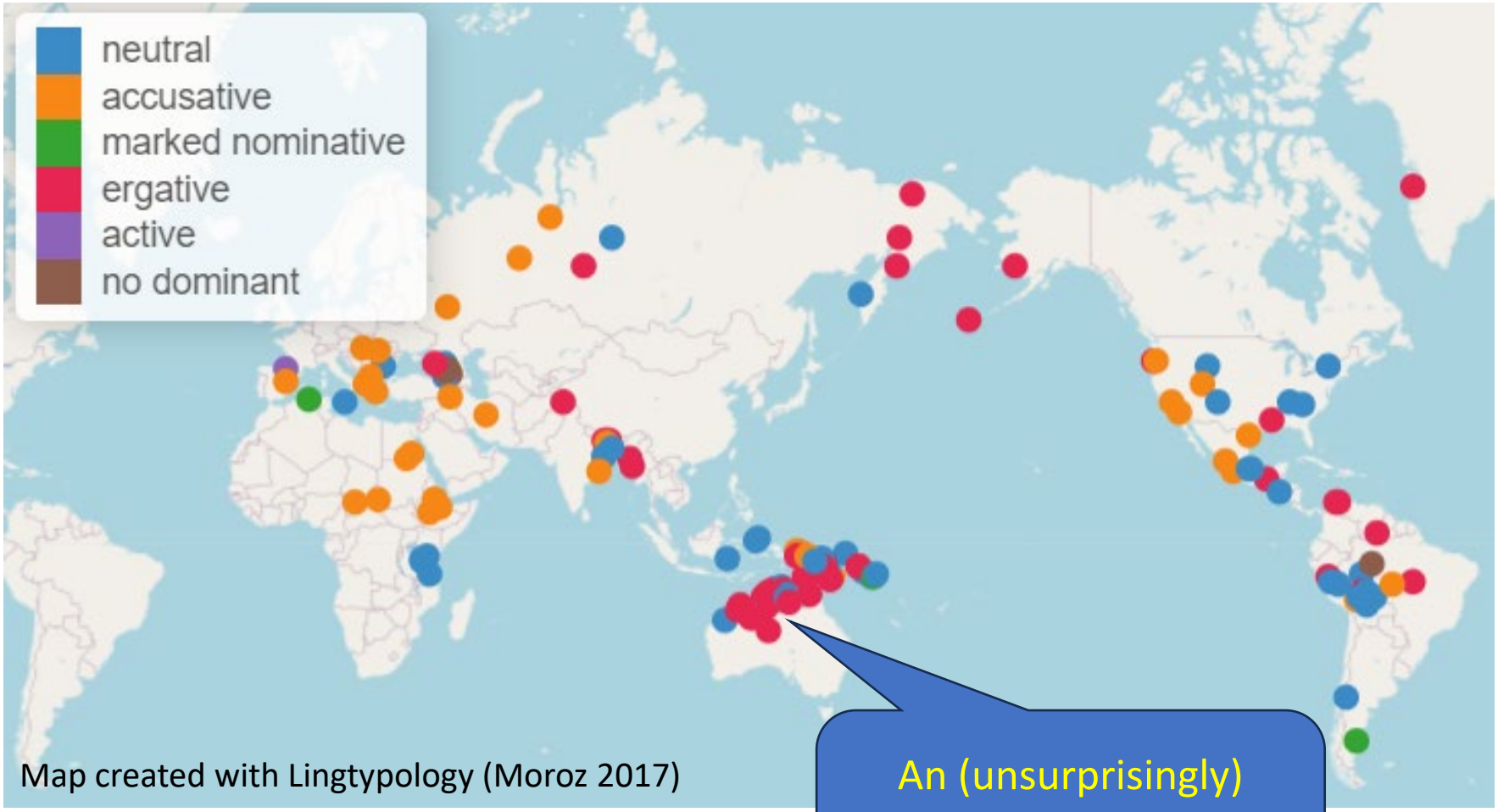

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- For comparison, the world-wide distribution of monotransitive alignments (WALS, Comrie 2013):

| type | total lgs. | lgs. indexing both A and P |
|---|---|---|
| neutral | 98 | 60 |
| accusative | 46 | 13 |
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| ergative | [illegible] | 17 |
| active | [illegible] | 2 |
| tripartite | [illegible] | 1 |

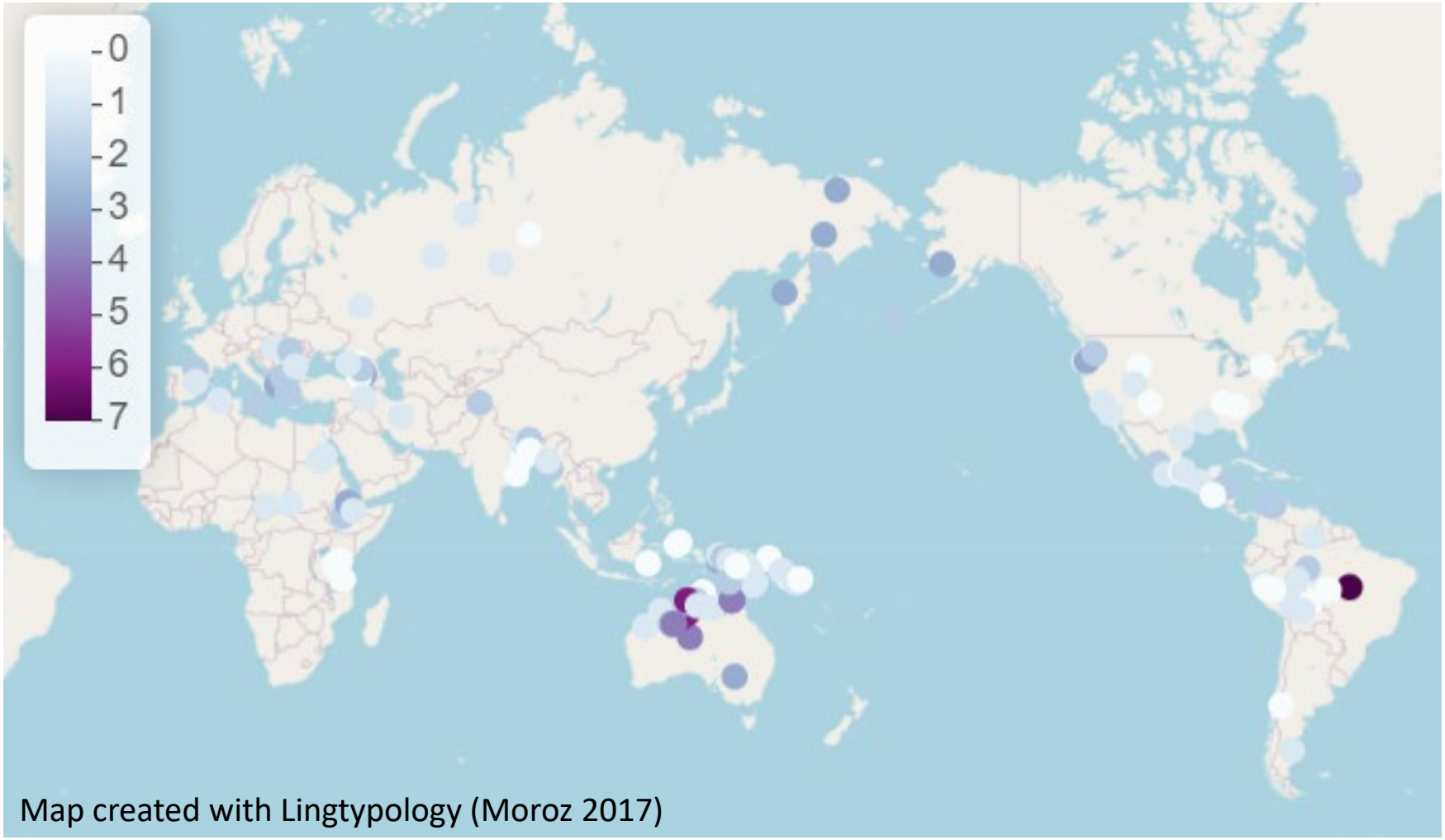
A similar higher incidence of ergativity in languages with rich indexing

# Some quantitative observations

- Number of overt flagging-types that can be simultaneously indexed:

| No. | languages | genera | families | example |
|---|---|---|---|---|
| 0 | 39 | 31 | 27 | Alamblak |
| 1 | 69 | 53 | 41 | Cahuilla |
| 2 | 36 | 32 | 21 | Maithili |
| 3 | 21 | 17 | 13 | Molalla |
| 4 | 5 | 3 | 2 | Pintupi |
| 5 | 2 | 2 | 2 | Jaminjung |
| 6 | 3 | 2 | 2 | Djaru |
| 7 | 1 | 1 | 1 | Panará |

# Number of “indexed flags”




Map created with Lingtypology (Moroz 2017)

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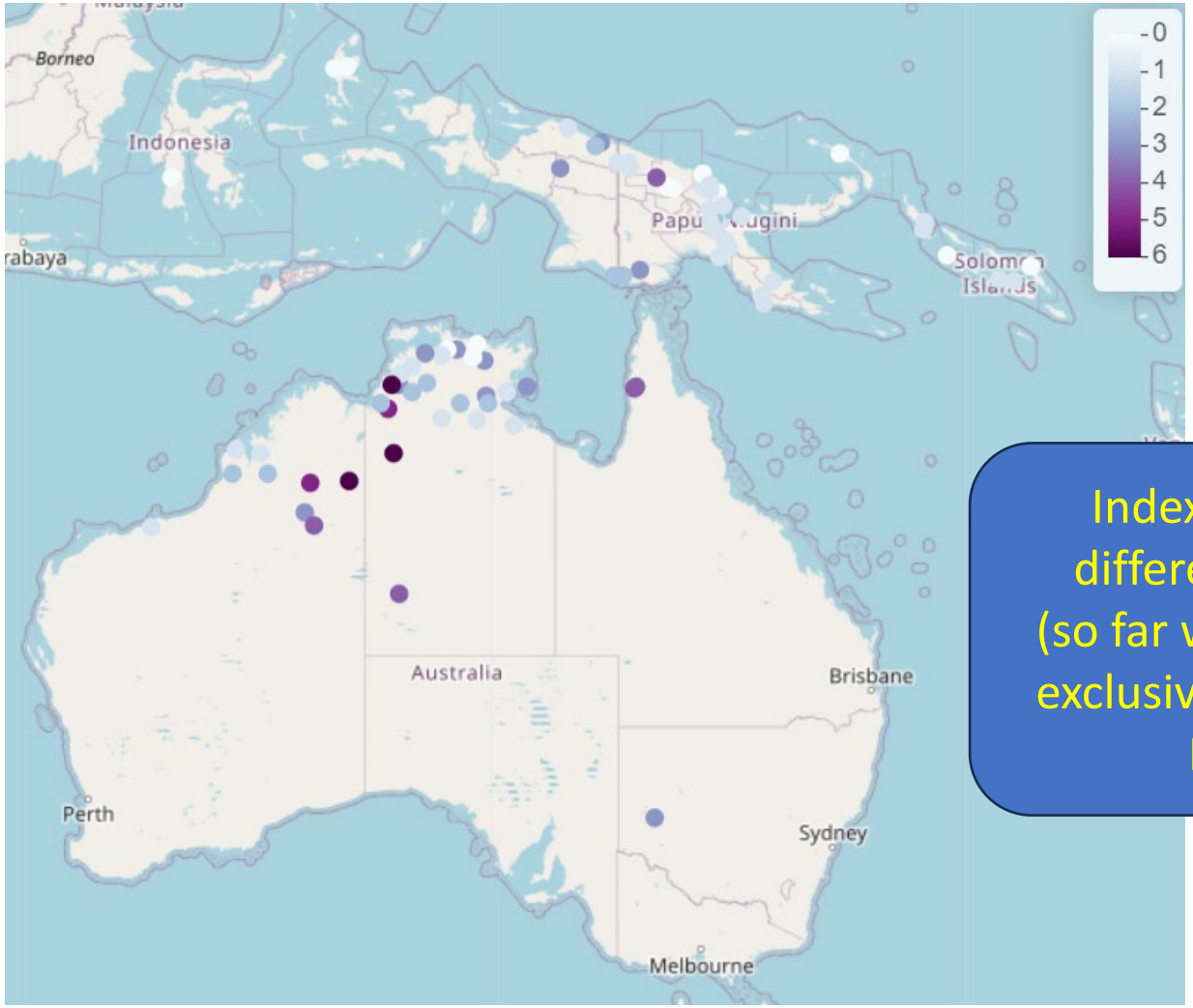


Indexing of 4 or more different cases is found (so far with one exception) exclusively in Australia and New Guinea

# Some quantitative observations

- Which overt flagging-types are indexed
  (NB I count "cases", not semantic roles, but labels are – as far as possible – role-based):

| flagging-type | languages | genera | families | example |
|---|---|---|---|---|
| ergative | 71 | 50 | 34 | Tauya |
| dative | 52 | 36 | 23 | Maltese |
| spatial | 25 | 19 | 15 | Ungarinjin |
| accusative | 24 | 21 | 15 | Moksha |
| objective | 20 | 17 | 14 | Georgian |
| nominative/ absolutive | 14 | 10 | 9 | Aleut |
| other | 33 | 28 | 25 | Pintupi |

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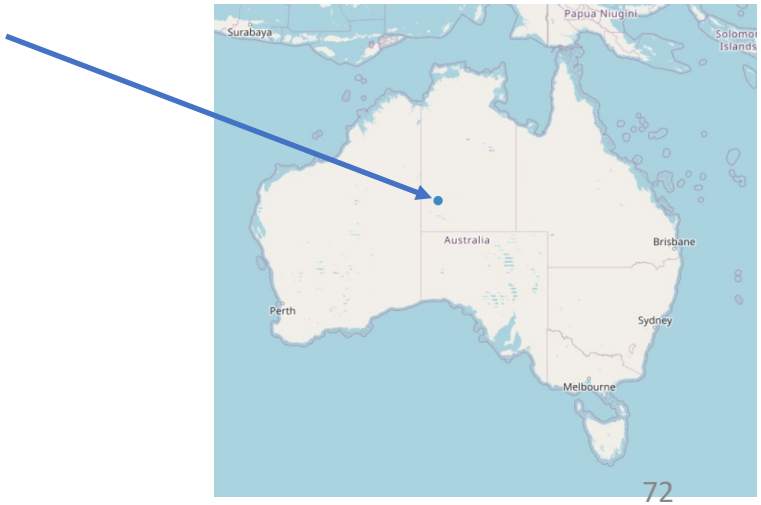
"Avoidance" case

# Indexation of “weird” cases

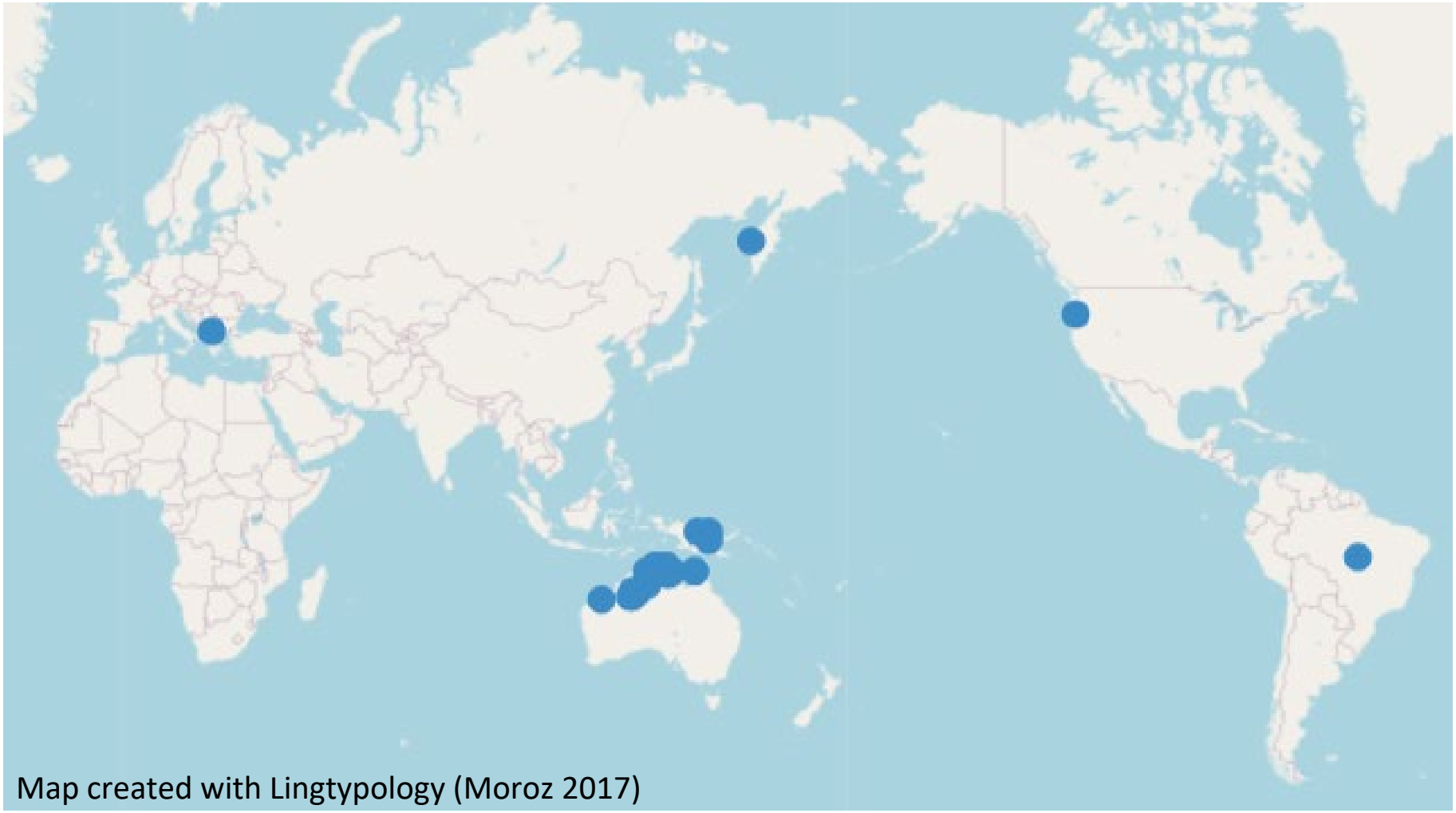
(5) Pintupi (Pama-Nyungan > Desert Nyungic; Hansen & Hansen 1978: 61)

*ma̲laku=latju-tjanampalura* *pitjangu*
return=1PL.EX.SBJ-3PL.AV went
*ma̲lpu-ngkamarra* *patjal-tjakumarra*
spirit-AV biting-AV
‘We turned back to avoid the spirits biting us.’

AV – avoidance, EX – exclusive



# Indexation of spatial cases



Map created with Lingtypology (Moroz 2017)

# Indexation of spatial cases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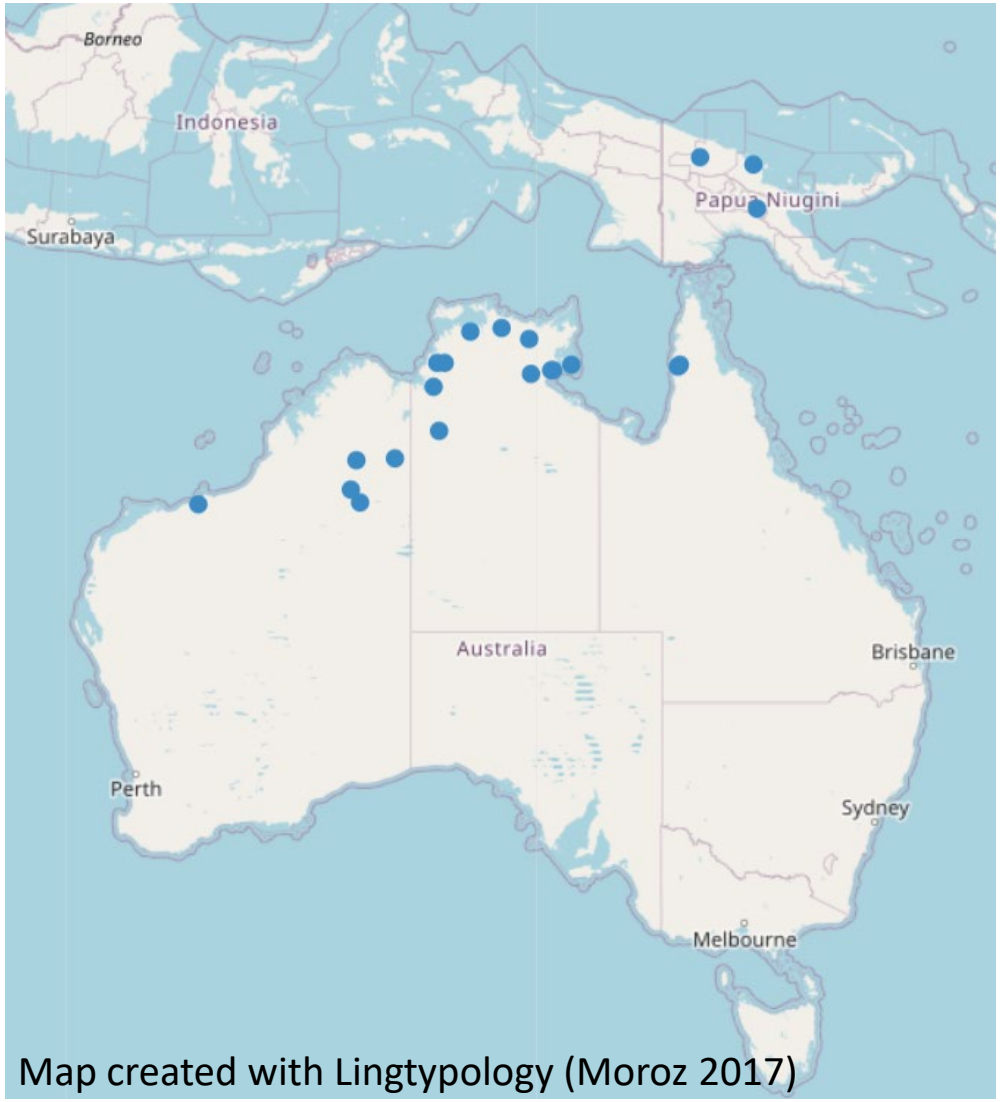


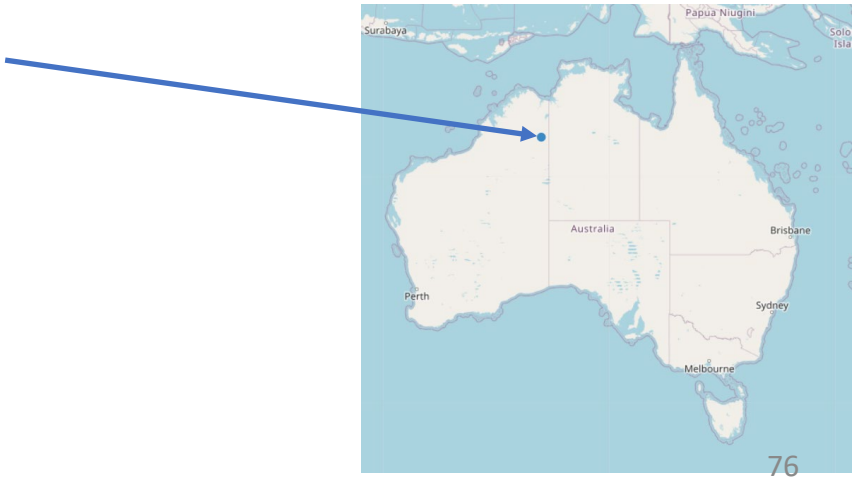

Map created with Lingtypology (Moroz 2017)

# Indexation of spatial cases

Djaru (Pama-Nyungan > Desert Nyungic)

(6) *ŋaɟu* *ŋa=ɳa=ɳanda* *jan-i* *mawun-dawu*.
1SG.ABS AUX=1SG.NOM=3SG.OBL go-PST man-ALLAT
'I went to a man.' (Tsunoda 1981: 104)

(7) *mawun* *ŋa=ŋguwulala* *wuɳa jan-i* *ɲunbulaŋiɲ-ŋu*.
man AUX=2DU.OBL away go-PST 2DU-ABL
'A man went away from you (two)' (ibid.: 115)



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NB Indexation of obliques is almost always restricted to human nominals.

# Roadmap

- What it is all about
- Database and sample
- Some quantitative observations
- The typology
- Summary and outlook

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# The typology

- A preliminary classification into three major types:
  - complementary (A): overt DM is incompatible with HM, e.g. Yimas;
  - harmonic (B): particular patterns of HM and DM match each other to a significant degree, e.g. Modern Greek;
  - disharmonic (C): DM and HM show systematic mismatches and operate largely independently of each other, e.g. Burushaski.

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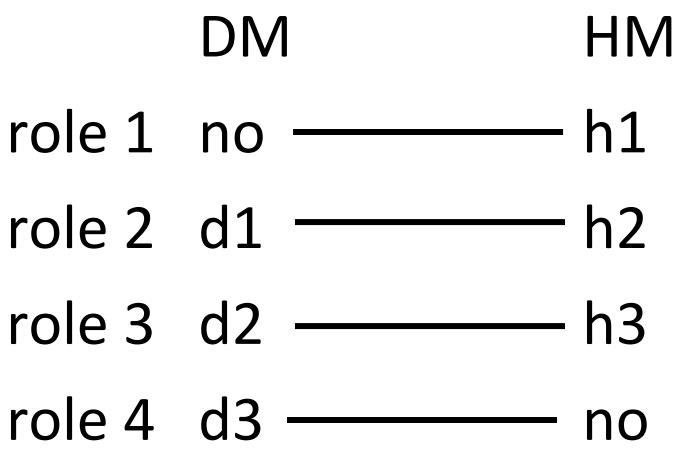
# The typology

- Complementary systems

| | DM | HM |
|---|---|---|
| role 1 | yes | no |
| role 2 | yes | no |
| role 3 | no | yes |
| role 4 | no | yes |

# The typology

- Harmonic systems



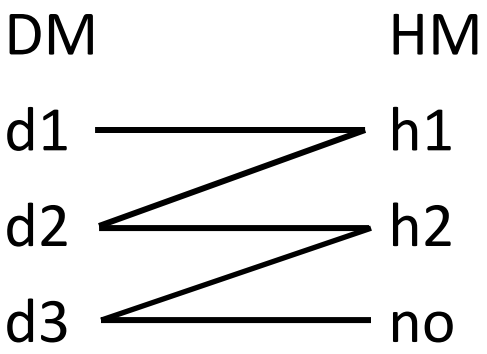
# The typology

- Disharmonic systems

| | DM | HM |
|---|---|---|
| role 1 | d1 | h1 |
| role 2 | d2 | h1 |
| role 3 | d2 | h2 |
| role 4 | d3 | h2 or no |

# The typology

- Disharmonic systems



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- Some caveats:
  - the proposed types are to a considerable degree idealised and will be revised and probably even refuted;
  - it is particularly hard to draw a clear boundary between the harmonic and the disharmonic types, e.g. because many languages combine more or less (dis)harnomic subsystems;
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# The typology

- Distribution (languages):

| | Complementary | Harmonic | Disharmonic | Transitional or unclear |
|---|---|---|---|---|
| Africa | 3 | 7 | 1 | 1 |
| Eurasia | 7 | 20 | 12 | 2 |
| Australia | 3 | 3 | 25 | 7 |
| Oceania | 10 | 12 | 13 | 7 |
| N.America | 8 | 7 | 7 | 1 |
| S.America | 8 | 7 | 3 | 2 |
| Total | 39 | 56 | 61 | 20 |

# The typology

- Distribution (genera):

| | Complementary | Harmonic | Disharmonic | Transitional or unclear |
|---|---|---|---|---|
| Africa | 2 | 4 | 1 | 1 |
| Eurasia | 4 | 13 | 6 | 2 |
| Australia | 3 | 2 | 16 | 7 |
| Oceania | 9 | 11 | 9 | 6 |
| N.America | 7 | 5 | 7 | 1 |
| S.America | 6 | 7 | 3 | 2 |
| Total | 31 | 41 | 42 | 19 |

# The typology

The disharmonic type is underrepresented in Africa and South America

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|---|---|---|---|---|
| Africa | 2 | 4 | 1 | 1 |
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# The typology

The disharmonic type is exceptionally frequent in Australia

- Distribution (genera):

| | Complementary | Harmonic | Disharm | Transitional or unclear |
|---|---|---|---|---|
| Africa | 2 | 4 | 1 | 1 |
| Eurasia | 4 | 13 | 6 | 2 |
| Australia | 3 | 2 | 16 | 7 |
| Oceania | 9 | 11 | 9 | 6 |
| N.America | 7 | 5 | 7 | 1 |
| S.America | 6 | 7 | 3 | 2 |
| Total | 31 | 41 | 42 | 19 |

# The typology

The harmonic type is dominant in Africa and Eurasia

- Distribution (genera):

| | Complementary | Harm[illegible] | Disharmonic | Transitional or unclear |
|---|---|---|---|---|
| Africa | 2 | 4 | 1 | 1 |
| Eurasia | 4 | 13 | 6 | 2 |
| Australia | 3 | 2 | 16 | 7 |
| Oceania | 9 | 11 | 9 | 6 |
| N.America | 7 | 5 | 7 | 1 |
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# The typology

The complementary type is better represented in Oceania and the Americas

- Distribution (genera):

| | Complementary | H | Disharmonic | Transitional or unclear |
|---|---|---|---|---|
| Africa | 2 | 4 | 1 | 1 |
| Eurasia | 4 | 13 | 6 | 2 |
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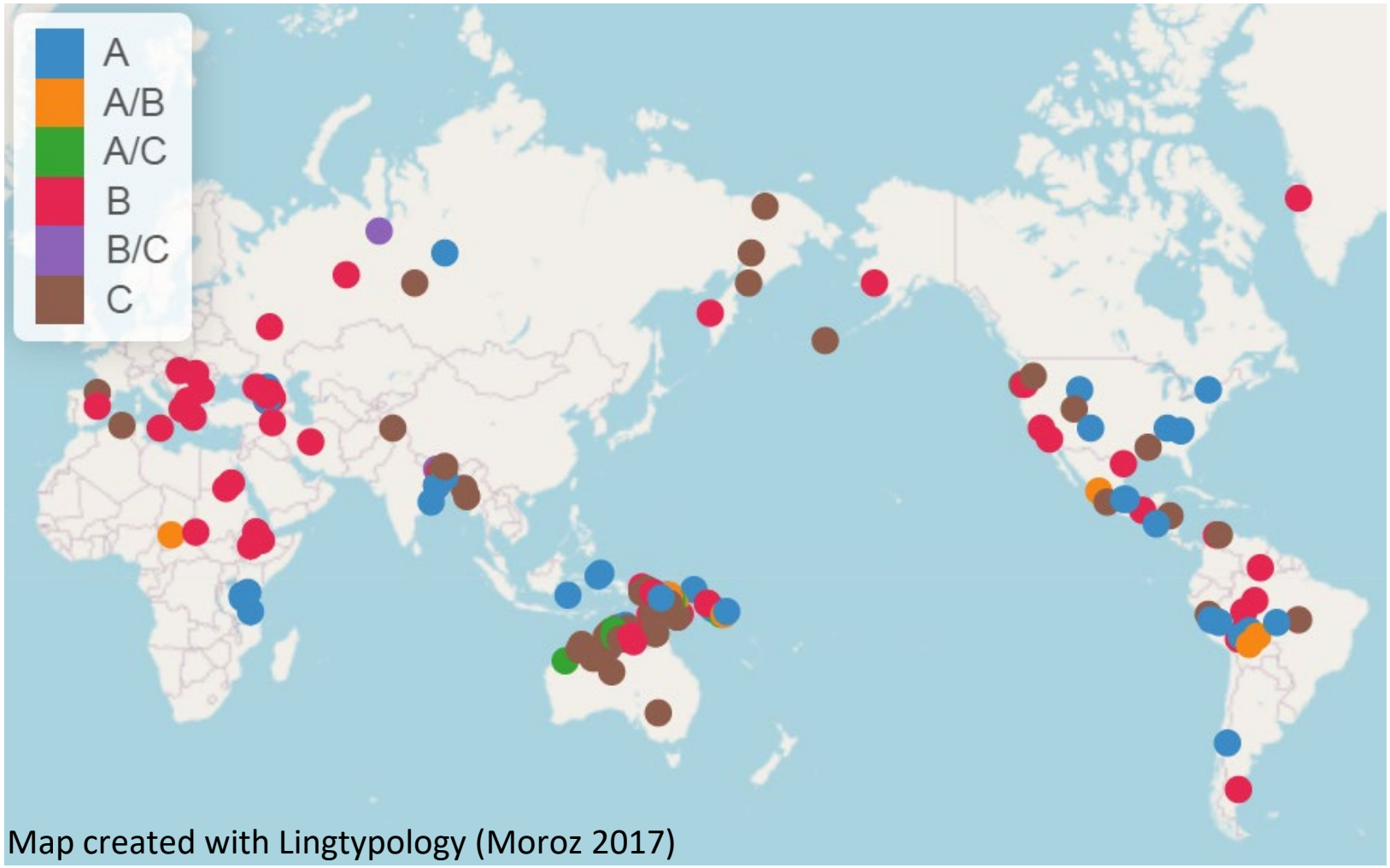
# Distribution of the types

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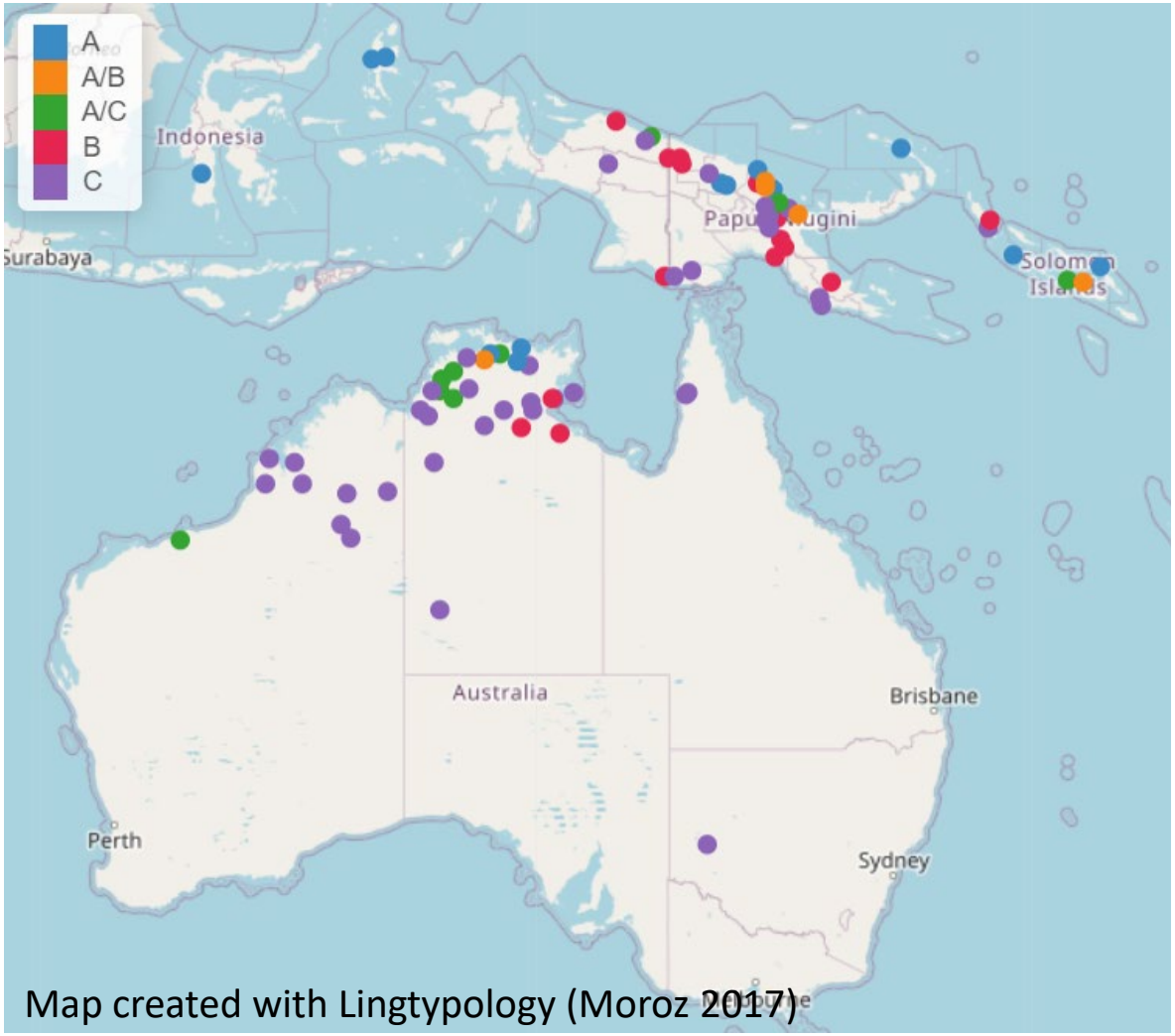


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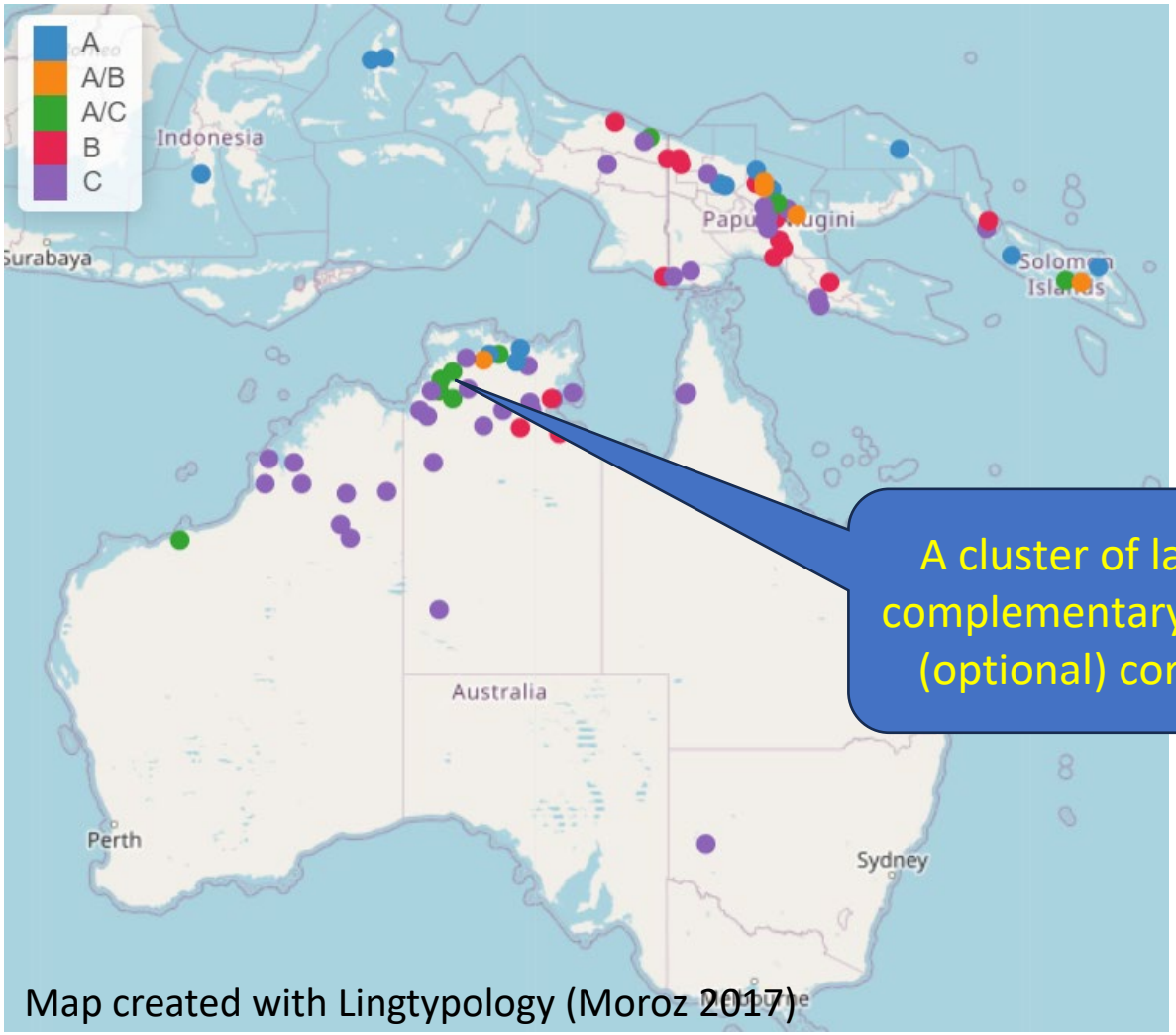


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# The typology

- Family-internal stability vs. variability of types:
  - “consistent” families: Indo-European (harmonic), Sino-Tibetan, Nyulnyulan (disharmonic);
  - “inconsistent” families: Afro-Asiatic (but Semitic consistently harmonic), Austronesian, Northwest Caucasian, Nuclear Trans-New-Guinean, Uto-Aztecan;
  - families/genera with one type clearly dominant: Munda (complementary), Uralic, Kartvelian (harmonic), Gunwinyguan, Pama-Nyungan, Chukotko-Kamchatkan (disharmonic).

# The typology


- Northwest Caucasian:

(8) Abkhaz (Hewitt 1979: 36)

*a-χáṣa* *a-phʷás* *a-šʷq̇ʷá* *lá-j-te-jṭ*
ART-man ART-woman ART-book 3SG.F.IO-3SG.M.ERG-give-DCL
'The man gave the book to the woman.'

(9) West Circassian (constructed)

*χʷəlfəʁe-m bzəlfəʁe-m* *txələ-r* *r-jə-tə-ʁ*
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ART – article, OBL – oblique case

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Harmonic

ART – article, OBL – oblique case

# Complementary type

- Complementary or nearly complementary distribution of flagging and indexing.
- Alignment of core flagging neutral (by definition).
- General schema: “verbal affixation for the core participants and nominal case for the peripheral ones” (Foley 1986: 96).

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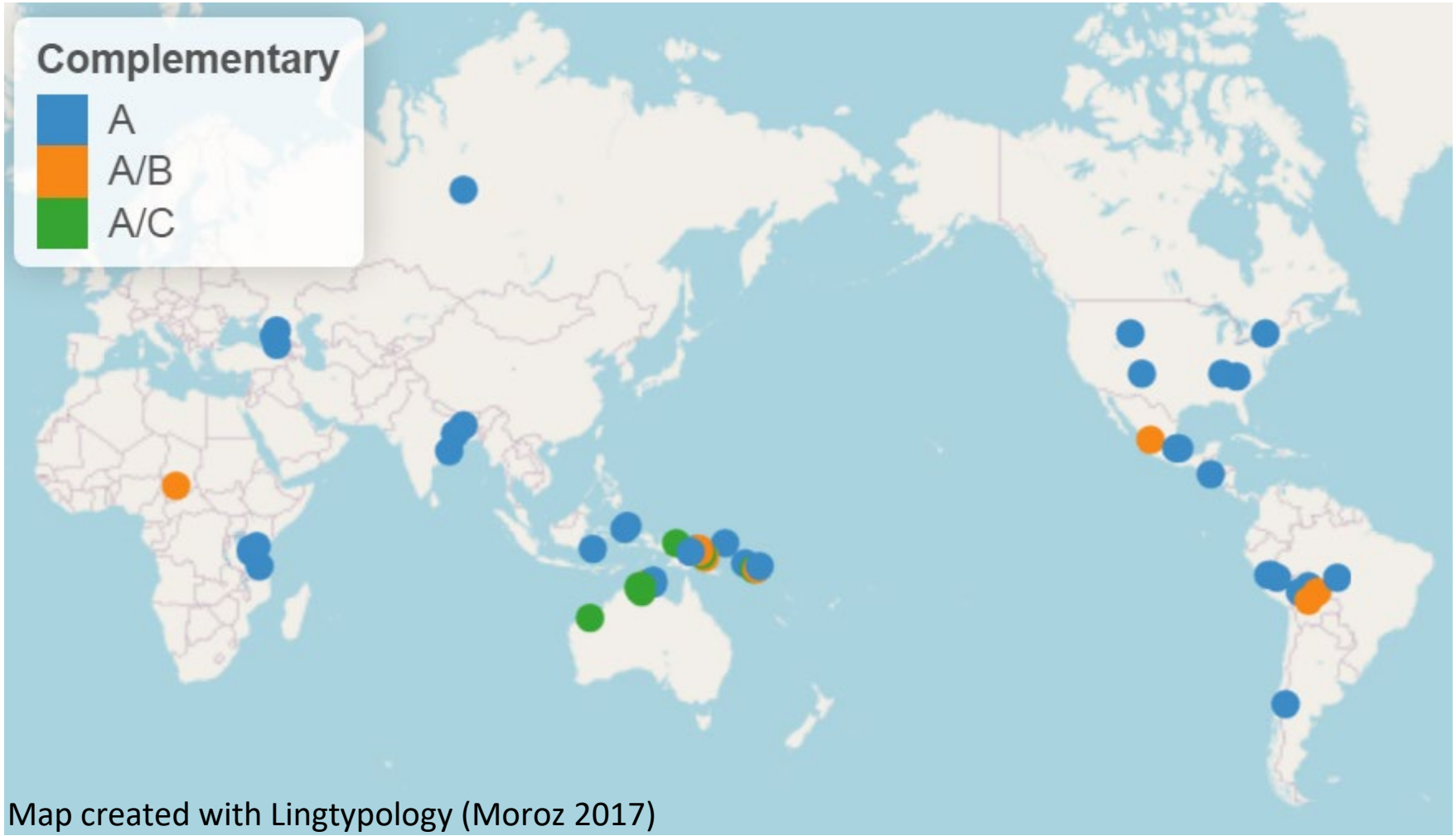


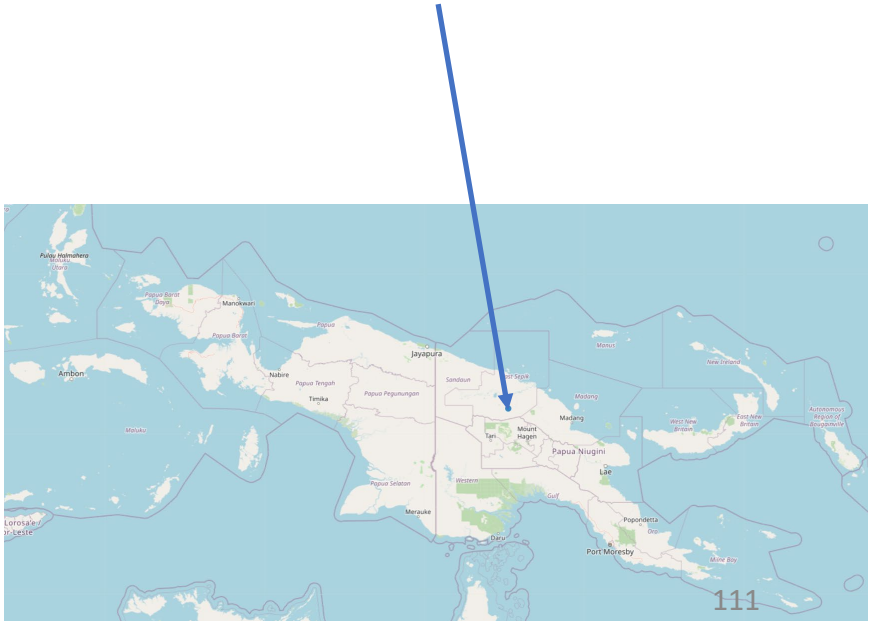

Map created with Lingtypology (Moroz 2017)

# Complementary type

Yimas (Lower Sepik-Ramu, Papua New Guinea)

- HM for core participants:
- S of an intransitive verb (Foley 1986: 94)

(10) *narmaŋ na-pu-t*
woman 3SG.S-go-PRF
'The woman went.'



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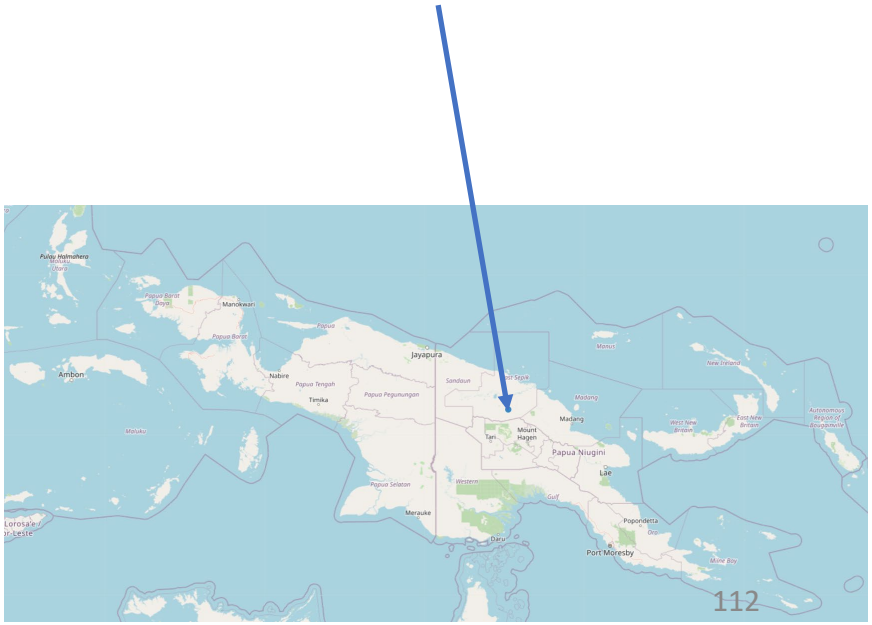

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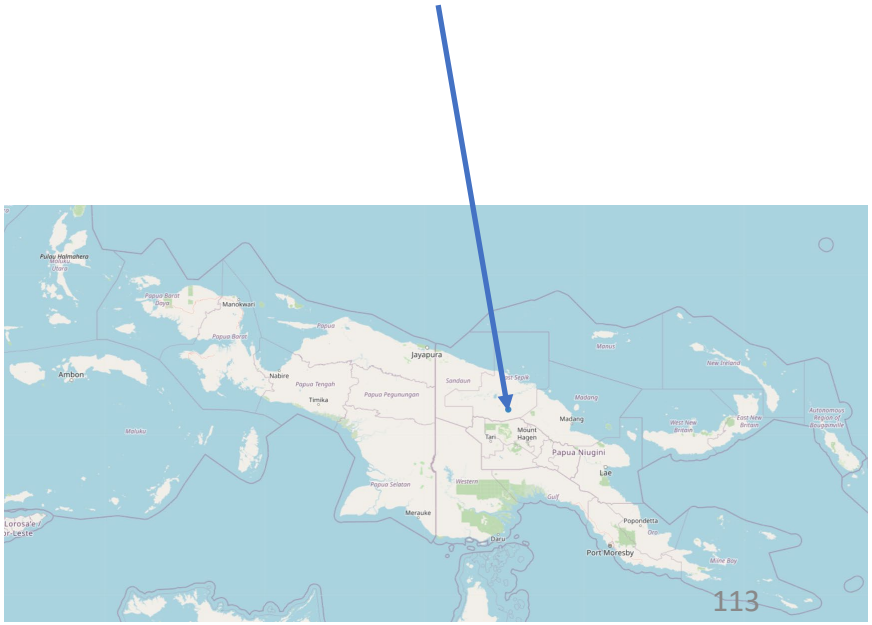
PRF – perfect



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- HM for core participants:

A and P of a monotransitive verb (Foley 1986: 94)

(11) *narmaŋ uraŋk kɨ-n-am-ɨt*
woman coconut 3SG.P-3SG.A-eat-PRF
'The woman ate the coconut.'

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- HM for core participants:

A, T and R of ditransitive verbs (Foley 1986: 94)

(12) *namat* *uraŋk* *narmaŋ* *kɨ-n-ŋa-r-umpun*
man.PL coconut woman 3SG.P-3SG.A-give-PRF-3PL.R
'The woman gave the coconut to the men.'

# Complementary type

Yimas (Lower Sepik-Ramu, Papua New Guinea)

- The Oblique case for peripheral participants:

location (Foley 1991: 165)

(13) *tnumut-ɲan* *ama-na-irm-n*
sago_palms-OBL 1SG.S-ASP-stand-PRS
'I am standing at the two sago palms.'

ASP – aspect marker, PRS – present

# Complementary type

Yimas (Lower Sepik-Ramu, Papua New Guinea)

- The Oblique case for peripheral participants:

time (Foley 1991: 169)

(14) *tmat-ɲan* *nma-kay-wark-wat*
day-OBL house-1PL.A-build-HAB
'We always build a house during the day.'

HAB – habitual

# Complementary type

Yimas (Lower Sepik-Ramu, Papua New Guinea)

- The Oblique case for peripheral participants:

instrument (Foley 1991: 165)

(15) *tktntrm-nan namarawt na-ŋa-tpul*
chair.DU-OBL person 3SG.A-1SG.P-hit
'The person hit me with two chairs.'

# Complementary type

Yimas (Lower Sepik-Ramu, Papua New Guinea)

- Valency-alternations are particularly telling (Foley 1991: 299-300):

(16) a. *ikn-an* *antki* *ya-urkpwica-t*
smoke-OBL thatch.PL 3Pl.S-blacken-PRF
'The roof got blackened from the smoke.'

b. *ikn* *antki* *ya-n-tal-urkpwica-t*
smoke thatch.PL 3PL.P-3SG.A-CAUS-blacken-PRF
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CAUS – causative

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flagging: yes

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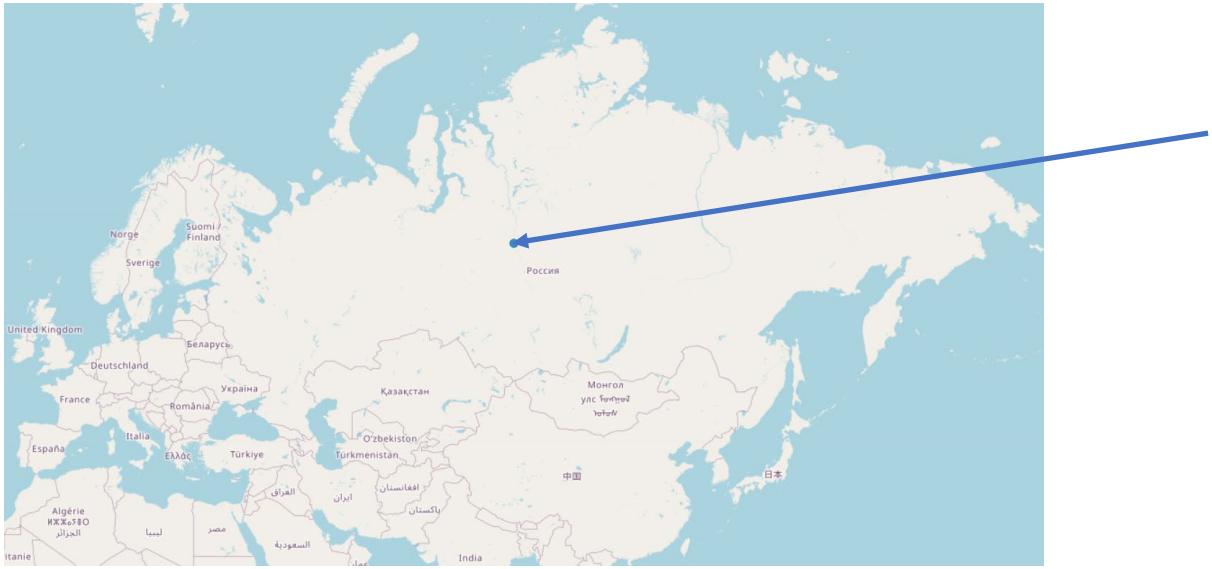
- Languages of this type can also have rich case systems.
- Ket (Yeniseian, Russia)



# Complementary type

- Ket case system (Georg 2007: 103-104):

| | Sg Masculine | Sg Feminine | Pl animate | Pl inanimate |
|---|---|---|---|---|
| Nominative | *Ø* | | | |
| Genitive | *-da* | *-di* | *-na* | *-di* |
| Dative | *-daŋa* | *-diŋa* | *-naŋa* | *-diŋa* |
| Benefactive | *-data* | *-dita* | *-nata* | *-dita* |
| Ablative | *-daŋal* | *-diŋal* | *-naŋal* | *-diŋal* |
| Adessive | *-daŋta* | *-diŋta* | *-naŋta* | *-diŋta* |
| Locative | *n/a* | *-ka* | *n/a* | *-ka* |
| Prosecutive | *-bes* | | | |
| Instrumental | *-as* | | | |
| Abessive | *-an* | | | |
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|---|---|---|---|---|
| Domain of head-marking | | | | |
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| Dative | *-daŋa* | *-diŋa* | *-naŋa* | *-diŋa* |
| Benefactive | *-data* | *-dita* | *-nata* | *-dita* |
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# Complementary type

Ket (Yeniseian, Russia; Vajda 2004: 82)

(17) *ām* *dílgàt* *súùl-as* *da-óŋ-d-p-taŋ*
mother kids sled-INS 3SG.F.SBJ-3AN.PL.O-across-APPL-drag
'The mother takes her kids by sled.'

(18) *qɬm tēt* *qɬmdɬl* *da-ó-v-ìj-aq*
wife husband woman.child 3SG.F.SBJ-3M.O-APPL-PST-give
'She gave her husband a baby girl.'

AN – animate, APPL – applicative, INS – instrumental

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A participant devoid of either flagging or indexing

AN – animate, APPL – applicative, INS – instrumental

# Complementary type leaks

- Optional overt flagging of some core participants in languages with otherwise complementary DM and HM.
- Bininj Gun-wok (Gunwinyguan, Australia): Ablative and Instrumental may be used to mark transitive Agents, especially inanimate (18a) or when ambiguity may arise (18b).

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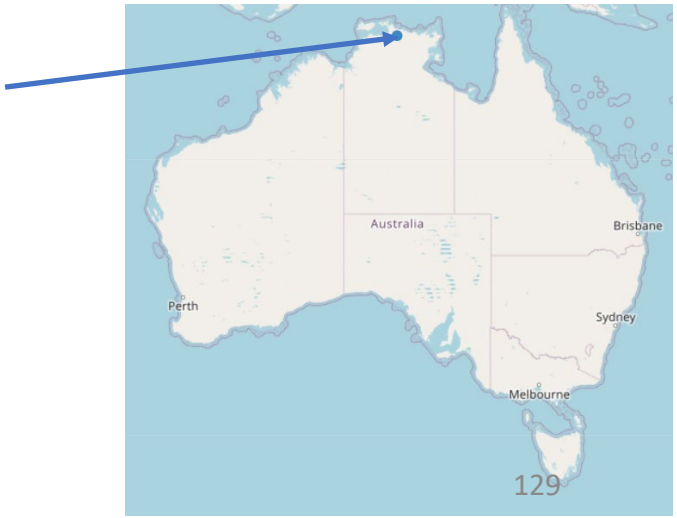

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(19) a. *gubunj-be ba-gubunj-djirrkka-ng*.
canoe-ABL 3SG>3SG-canoe-push-PST.PRF
'One canoe pushed another.' (Evans 2003: 138)

b. *Kodjok bi-karrme-ng Kamarrang-yih*.
kin_name 3SG>3SG-grab-PST.PRF kin_name-INS
'Kamarrang grabbed Kodjok.' (ibid.: 140)

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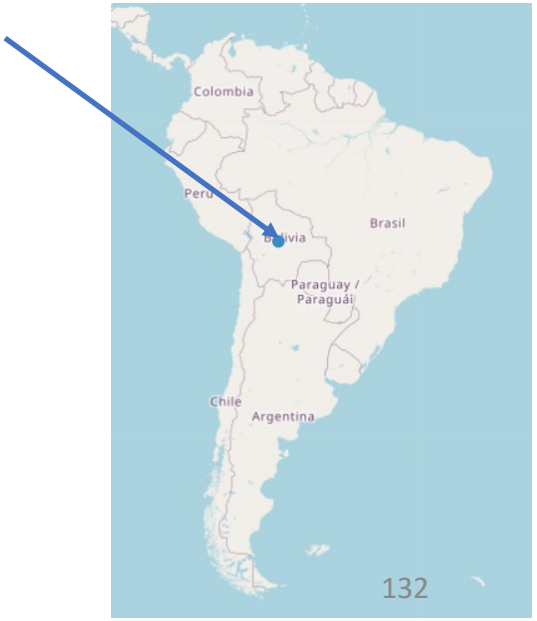

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(20) *më-jti* *lëtta-m* *ku-winani-shta-m*
2SG-only one-2SG.SBJ 3SG.OBJ+APPL-walk-FUT-2SG.SBJ
*mi-ye=tina*.
2SG-sister-COM
'You will be the only one that is going to live [sic!] together with your sister.'

# Harmonic type

- One-to-one or one-to-many correspondences between HM and DM.
- Predominantly accusative alignment of flagging (35/56):
  - in this type alignments of DM and HM must be identical (otherwise mismatch);
  - alignment of indexing is well-known to tend towards accusativity (e.g. Siewierska 2013).
- Particularly well-attested in Western Eurasia and East Africa (Indo-European and Afro-Asiatic).

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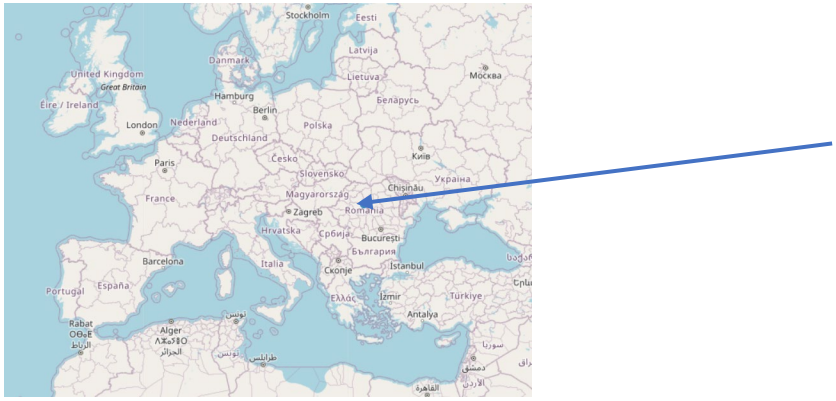
# Harmonic type

Map created with Lingtypology (Moroz 2017)

# Harmonic type

Romanian (Indo-European > Romance; Mallinson 1987)

| role | flagging | indexing |
|---|---|---|
| S/A | NOM (often zero) | SBJ |
| indefinite P | NOM (often zero) | no |
| definite P | *pe=* | DO |
| R | DAT | IO |



# Harmonic type

Romanian (Indo-European > Romance)

(21) a. *Ana* *l-a* *văz-ut* *pe* *Radu*.
Ana.NOM 3SG.DO-AUX.3SG.SBJ see-PTCP ACC Radu
'Anna saw Radu.' (Mallinson 1987: 207)

b. *Băiat-ul-ui* *i-a-m* *da-t* *un* *cadou*.
boy-DEF-DAT 3SG.IO-AUX-1SG.SBJ give-PTCP INDEF present
'I gave the boy a present.' (ibid.: 209)

AUX – auxiliary, DO – direct object, PTCP - participle

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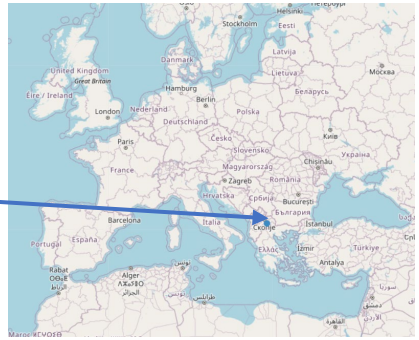
'I gave the boy a present.' (ibid.: 209)

Systems like Romanian, where prominent (animate and/or definite) P and R are simultaneously flagged and indexed, are quite widespread (see my talk on Monday, 13 May)

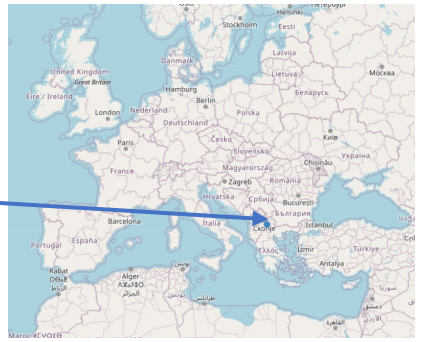
# Harmonic type




Macedonian (Indo-European > Slavic; Lunt 1952, Mišeska-Tomić 2006, 2012)

| role | flagging | indexing |
|---|---|---|
| S/A | zero | SBJ |
| indefinite P | zero | no |
| definite P | zero/ACC | DO |
| R | *na* | IO |
| various | prepositions | IO (optional) |

# Harmonic type

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| role | flagging | indexing |
|---|---|---|
| S/A | zero | SBJ |
| indefinite P | zero | no |
| definite P | zero/ACC | DO |
| R | *na* | IO |
| various | prepositions | IO (optional) |

Many-to-one relations

# Harmonic type

Macedonian:

(22) *Jana* *mu=go=dad-e* *pismo-to*
Jana 3SG.M.IO=3SG.M.DO=give-AOR.3SG.SBJ letter-DEF
*na* *edno* *dete*.
DAT one child
'Jana gave the letter to a child (that I know).'
(standard, Mišeska-Tomić 2006: 255)

AOR – aorist

(23) *Naizlego-a* *gluvc-i* *i* *mu=pojdo-a*
come.out-AOR.3PL.SBJ rat-PL and 3SG.M.IO=go-AOR.3PL.SBJ
*kaj* *adži* *mačor-ot...*
to Haji cat-DEF
'The rats came out in crowds and went to Haji Cat...'
(Lunt 1952: 108)

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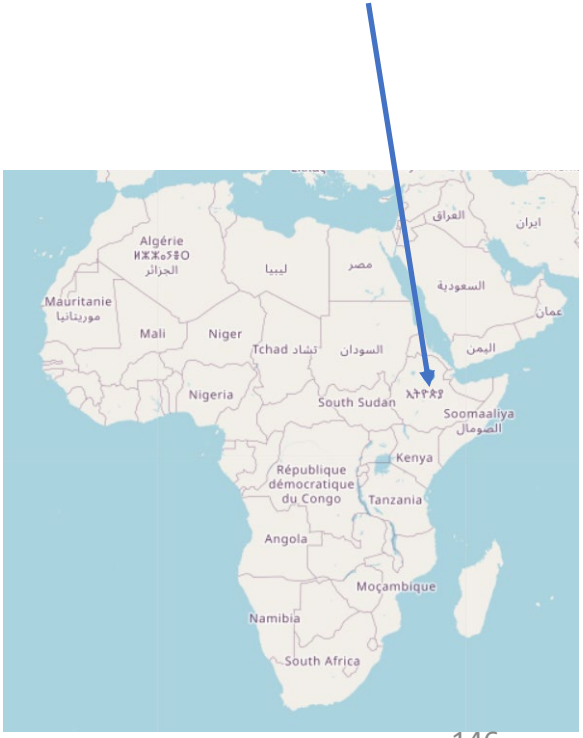
A remarkable European parallel to the Australian indexing of animate locatives

# Harmonic type leaks

Amharic (Afro-Asiatic > Semitic; Ethiopia):

| role | flagging | indexing |
|---|---|---|
| S/A | no | SBJ |
| indefinite P | no | no |
| definite P | ACC | (OBJ) |
| R | ACC/DAT | OBJ |
| benefactive | DAT | DAT+OBJ |
| instrument | INS | INS+OBJ |



# Harmonic type leaks

Amharic (Afro-Asiatic > Semitic; Ethiopia):

(24) a. *lämma ṭärmus-u-n säbbär-ä-w*.
Lemma bottle-DEF-ACC break:PST-3SG.M.SBJ-3SG.M.OBJ
'Lemma broke the bottle.' (Amberber 2005: 299)

b. *lä-ləğ-u bet-u-n asayy-ä-w*.
DAT-child-DEF.M house-DEF.M-ACC showed-3SG.M.SBJ-3SG.M.OBJ
'He showed the house to the child.' (Leslau 1995: 893)

c. *ənnatəyya-wa lä-ləğo-čč-əwa šänkora agäda gäzza-čč-əll-aččäw*.
mother-DEF.F DAT-child-PL-3SG.F.POSS sugar.cane stalk buy.PST-3SG.SBJ-BEN-3PL.OBJ
'The mother bought sugar cane for her children.' (ibid.: 429–430)

# Harmonic type leaks

Object indexes correspond to both Accusative and Dative flags

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Dative flags correspond to both object and benefactive indexes

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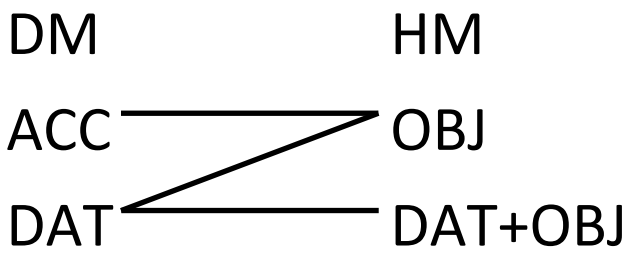

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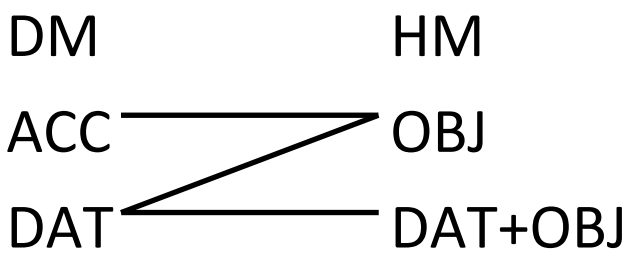


Enough many-to-many correspondences to be considered disharmonic?

# Disharmonic type

- Many-to-many correspondences between DM and HM, which work largely independently of each other.
- The most widespread and varied type, especially densely concentrated in Australia and New Guinea.
- A predominance of ergative alignment in flagging (41/61):
  - indexing tends to accusativity;
  - hence, most languages with accusative flagging fall into the harmonic type;
  - ergative flagging + accusative indexing = mismatch.

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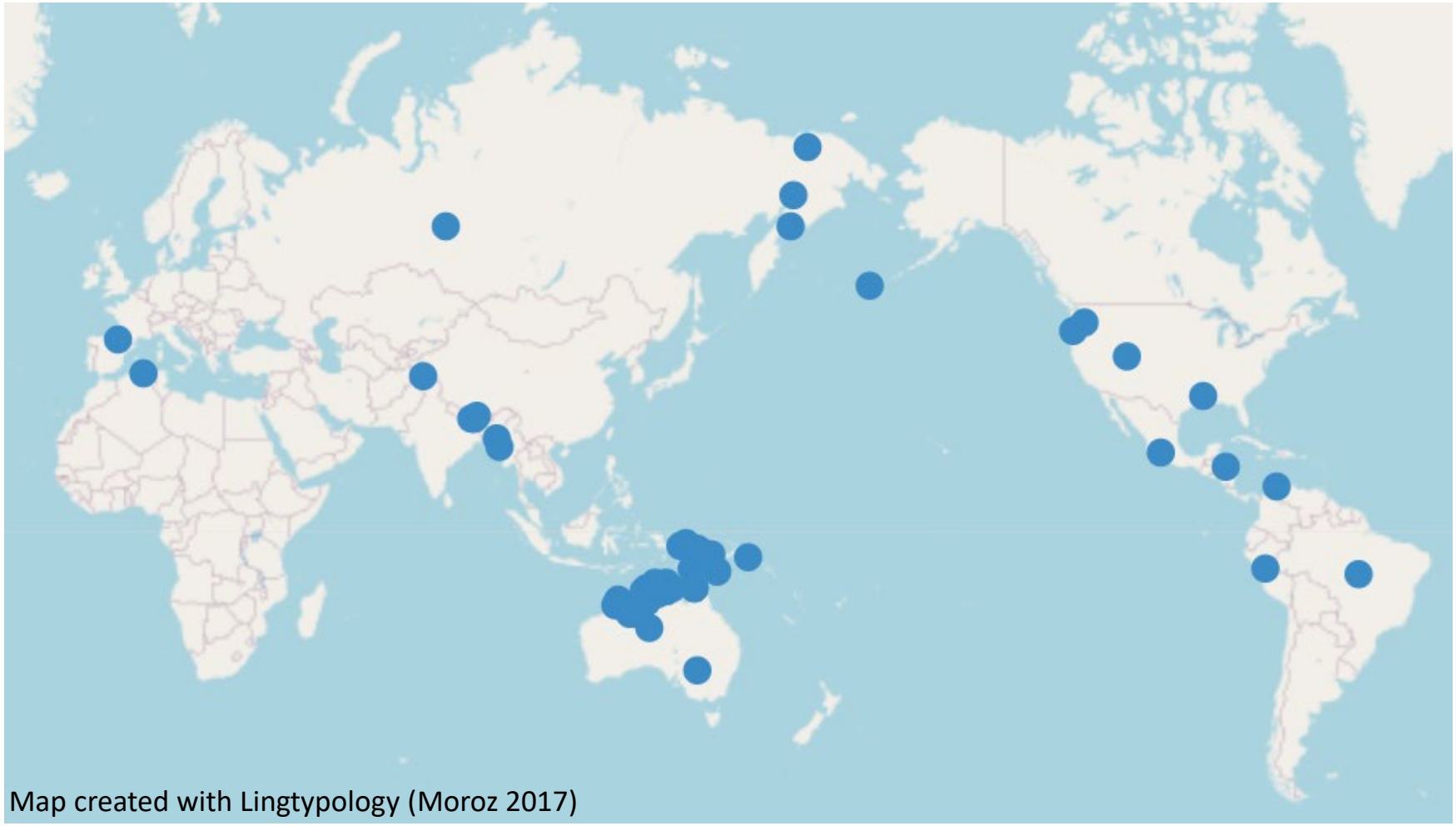

Map created with Lingtypology (Moroz 2017)

# Disharmonic type

- Common sources of flagging-indexing mismatches:
  - co-occurrence of ergative flagging and accusative indexing in monotransitive constructions;
  - co-occurrence of indirective flagging and secundative indexing in ditransitive constructions (Haspelmath 2005; Malchukov et al. 2010);
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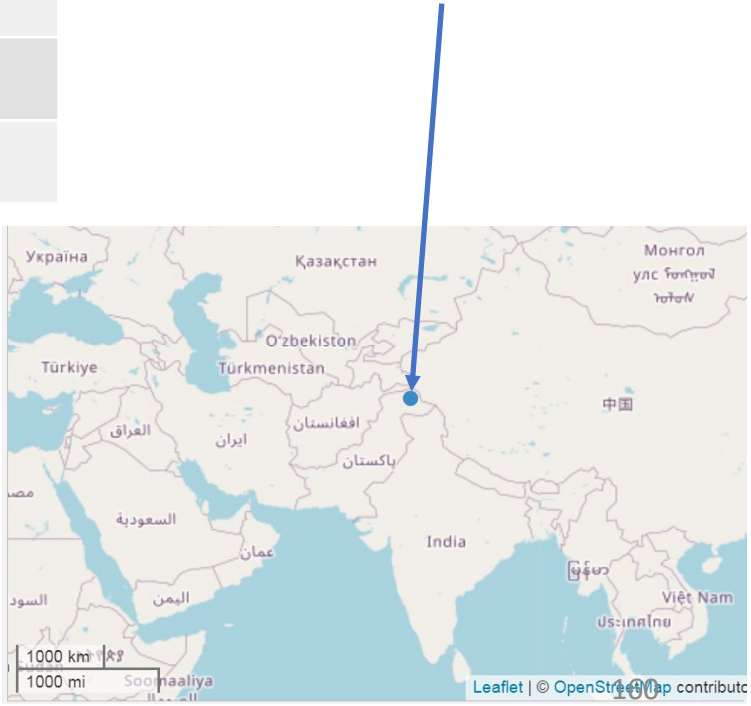
  - often in the same language.

# Disharmonic type

Burushaski (isolate, Pakistan; Munshi 2019)

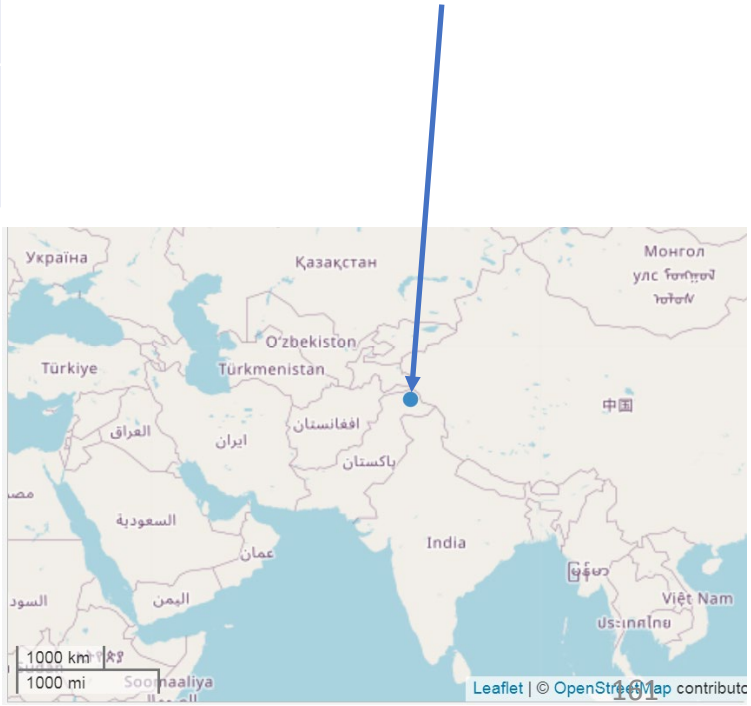
| role | flagging | indexing |
|---|---|---|
| S | no | suffix(+prefix) |
| A | ERG | suffix |
| P | no | prefix (if animate) |
| R | DAT | prefix (if animate) |



# Disharmonic type

Burushaski (isolate, Pakistan; Munshi 2019)

| DM | HM |
|---|---|
| no | suffix |
| ERG | |
| DAT | prefix |



# Disharmonic type

Burushaski (isolate, Pakistan)

(25) a. *in* *mu-val-umo*.
3SG 3SG.F.ABS-fall.PST-3SG.F.SBJ
'She fell down.' (Munshi 2019: 92)

b. *saliim-e* *huma* *mu-yeec-imi*.
Salim-ERG Huma 3SG.F.ABS-see.PST-3SG.M.SBJ
'Salim (M) saw Huma (F).' (ibid.: 96)

c. *in-e* *in-mo-re* *kitaab-an* *mu-u-č-o*.
3SG-ERG 3SG-GEN-DAT book-INDF.SG 3SG.F.ABS-give-IPFV-3SG.F.SBJ
'She will give her a book.' (ibid. : 100)

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3SG-ERG 3SG-GEN-DAT book-INDF.SG 3SG.F.ABS-give-IPFV-3SG.F.SBJ
'She will give her a book.' (ibid. : 100)

Suffixal indexes correspond to both absolutive (zero) and ergative flags

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b. *saliim-e* *huma* *mu-yeec-imi*.
Salim-ERG Huma 3SG.F.ABS-see.PST-3[illegible].M.SBJ
'Salim (M) saw Huma (F).' (ibid.: 96)

c. *in-e* *in-mo-re* *kitaab-an* *mu-u-č-o*.
3SG-ERG 3SG-GEN-DAT book-INDF.SG 3SG.F.ABS-give-IPFV-3SG.F.SBJ
'She will give her a book.' (ibid. : 100)

Prefixal indexes correspond to both absolutive (zero) and dative flags

# Disharmonic type

- Mismatches between flagging and indexing need not necessarily involve “alignment splits”.
- Nyigina (Nyulnyulan, Australia; Stokes 1982):
  - for subjects, both HM and DM show “agentive/patientive” alignment, but the factors are different;
  - for objects, both HM and DM are semantically motivated, but the factors are again different.

# Disharmonic type

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Nyigina (Nyulnyulan, Australia; Stokes 1982: 258-259):

(26) a. *wamba-ni yin-marra-n waɭi.*
man-ERG 3SG.A-burn-PRS meat
'The man is cooking the meat.'

b. *dyuŋgu-ni yi-marra-n waɭi.*
fire-ERG 3SG.S-burn-PRS meat
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c. *dyuŋgu yi-marra-n.*
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Ergative flagging occurs when a "second entity is significantly affected by the activity" (ibid.: 130)

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Agentive indexing occurs when the subject shows a "degree of control over the activity" (ibid.: 260)

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Nyigina (Nyulnyulan, Australia; Stokes 1982):

(27) a. *yin-alga-na-da-yirr* *wamba* *maɳin.*
3SG.A-eat-PST-HAB-3NSG.O man woman
'He used to kill them, men and women.' (ibid.: 391)

b. *gaɖady* *yi-na-yina* *ginya* *wamba*.
search 3SG.A-PST-3SG.IO DEM man
'He searched for that man [in vain].' (ibid.: 78)

c. *gaɖady* *yi-na-yina* *ginya-yi* *wamba*.
search 3SG.A-PST-3SG.IO DEM-DAT man
'He searched for that man [and found him].' (ibid.: 79)

# Disharmonic type

Special series of indexes for objects not directly affected by the event

Nyigina (Nyulnyulan, Australia; Stokes 1982):

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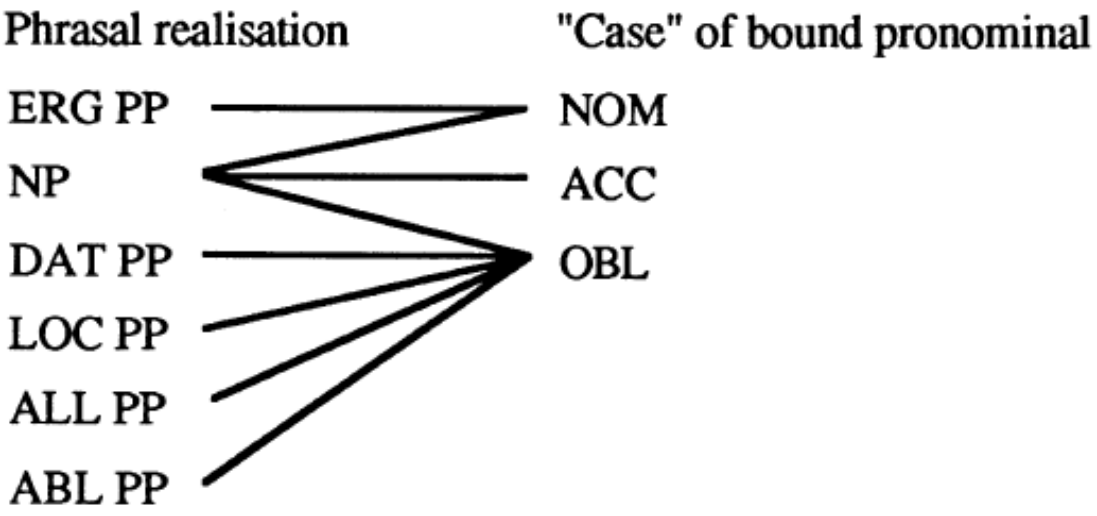
Such objects get Dative flagging when "attainable"

# Disharmonic type leaks

- McGregor (1990: 317) on Gooniyandi:

Figure 5-1: *Pairing of phrase types and cross-referencing bound pronominals*



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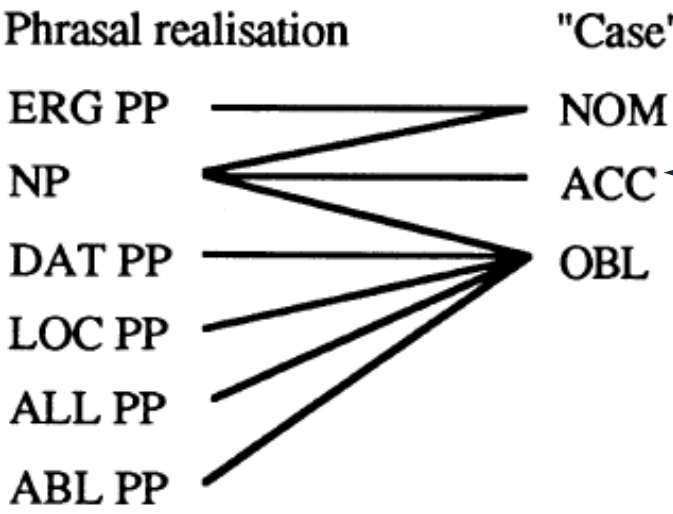


A disharmonic (many-to-many) subsystem

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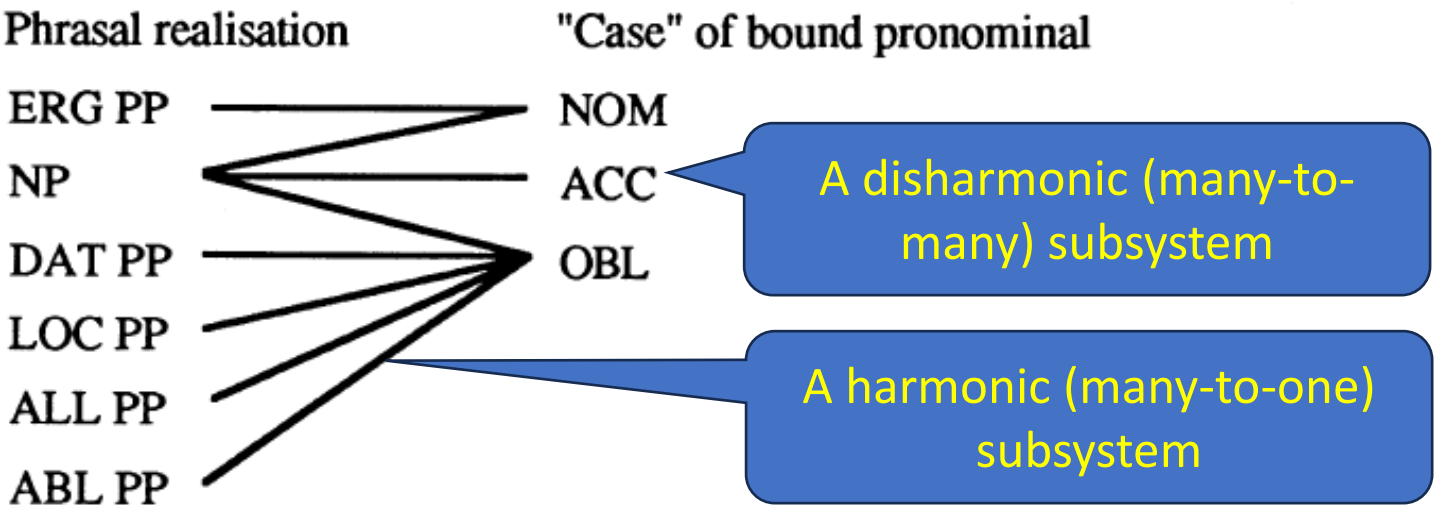

# Disharmonic type leaks

- Harmonic subsystems in apparently disharmonic systems.
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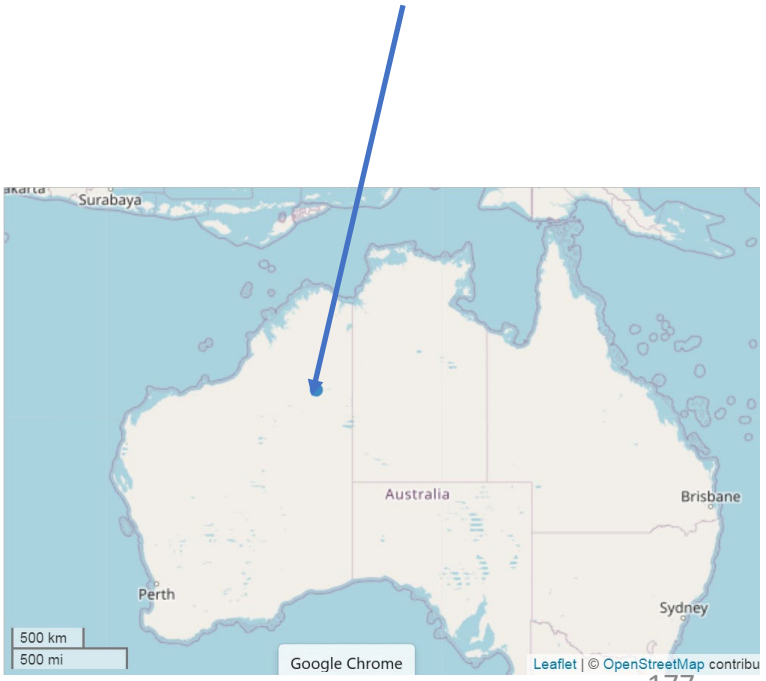
| flagging | indexing |
|---|---|
| ERG (A) | Subject |
| ABS (S) | Subject |
| ABS (P, R) | Object |
| DAT (goal) | Dative |
| LOC, ALL (human) | Accessory |
| ABL (human) | Ablative |



# Disharmonic type leaks

Wangkajunga (Pama-Nyungan > Desert Nyungic, Australia):

(28) a. *tuju=ra* *wirrja-nin* *mirrka-ku* *talakutu-ku*
woman=3SG.DAT run-PRS food-DAT mango-DAT
'The woman is running for a mango.' (Jones 2011: 139)

b. *ya-nku=lu-npula* *Jukuja-kutu*
go-FUT=3SG.ACS-2DU.SBJ name-ALL
'You two go to Jukuja (a person).' (ibid.: 140)

c. *ya-nu=rna-janampalura* *Sydney-janu*
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ABL – ablative, ACS – accessory, ALL – allative

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# The typology

- While one-to-one, one-to-many and many-to-many correspondences between flagging and indexing exist and should be distinguished, it is unclear that whole-language systems can be meaningfully classified into “harmonic” and “disharmonic” types.
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# Roadmap

- What it is all about
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- Summary and outlook

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- HM tends to syntagmatically co-occur with DM, double-marking of various kinds being more widespread than strict complementarity of HM and DM → disconfirms the contention that HM and DM are just different realisations of the same basic mechanism (cf. Kibrik 2012).

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- Not infrequent situations when some grammatical role assumes both DM and HM, suggests that grammatical systems not only tolerate, but in some cases favour redundancy of encoding.
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- Two emergent generalisations:

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The more animate/definite/topical is a participant, the greater is the probability that it receives both overt DM and overt HM.

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Quite robust for P and R (Arkadiev 2013, 2016, 2024), but seems to apply to a broader set of roles.

# Summary and outlook

- Two emergent generalisations:

(2) “D/H-harmony” tends to be aligned with obliqueness:

In languages with distinct paradigms of indexes for different types of objects, the more oblique arguments (e.g. recipients, comitatives, animate locations etc.) tend to show more consistent alignment of HM and DM than the less oblique ones.

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Thank you for your attention!
Danke für Ihre Aufmerksamkeit!

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