Problems of polysynthesis, with special reference to the Northwest Caucasian languages
Lecture 2: Internal variation and fringes of polysynthesis

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Recapitulation from Seminar 1

- Polysynthesis is extreme morphological complexity of verbs.
- A constellation of several phenomena:
  - head-marking and polypersonalism
  - "lexical affixation"
  - various types of incorporation
- Internal heterogeneity and fuzzy boundaries.

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Roadmap

- Typologising polysynthesis
- Compounding and incorporation
- Lexical affixation
- Internal organisation
- Participant indexing
- Diachronic outlook
- Polysynthesis beyond verbs
- Interim summary and perspectives

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Typologising polysynthesis

Central Siberian Yupik (Eskimo-Aleut, USA; de Reuse 2009: 23):

(1)   *negh-yaghtugh-yug-uma-yagh-pet-aa*
       eat-AND-DESID-PST-FRUSTR-INFR-IND.3SG>3SG
       'It turns out s/he wanted to go eat it, but…'

AND – andative
DESID – desiderative
FRUSTR – frustrative
IND – indicative
INFR – inferential

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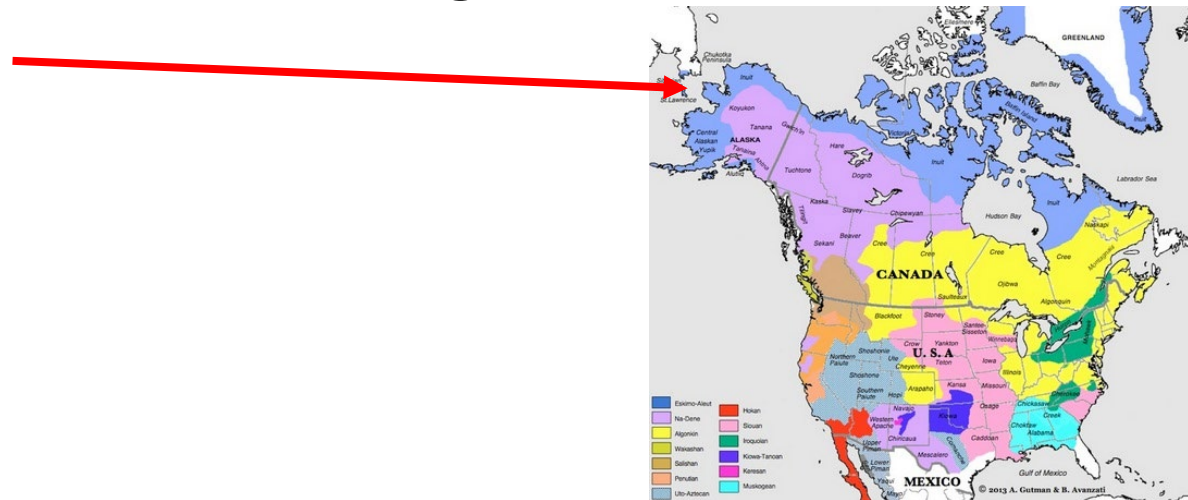
Typologising polysynthesis

Western Apache (Athapaskan, USA; de Reuse 2009: 24):

(2) *na-nāā-ná-da-go-ch'i-l-zéh*
     TH-RE-ITER-PL-3SG.OBJ-3SBJ-CL-do.ITER
     'They usually play again.'

CL – "classifier"
ITER – iterative
RE – repetitive
TH – "thematic"

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- Polysynthetic languages differ widely along many parameters, both quantitative and qualitative:
  - average or maximal number of morphemes per word;
  - number and type of semantic features grammaticalised;
  - number of paradigmatically opposed affixes in each slot;
  - maximal number of participants expressed by pronominal affixes;
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  - presence, productivity and types of incorporation

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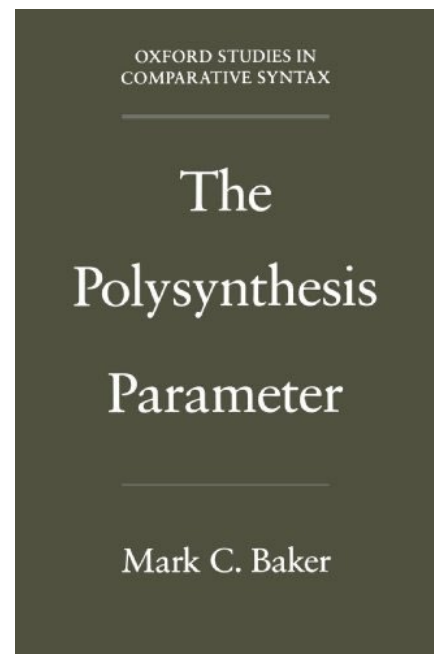
Typologising polysynthesis

- There are not many comparative works based on representative samples of polysynthetic languages and aiming at mapping their diversity and parameterising similarities and differences between them (e.g. Fortescue 1994, Drossard 1997).

Typologising polysynthesis

- Most important publications on polysynthetic languages deal with just one language or several selected languages (e.g. many articles by Marianne Mithun, de Reuse 2009, most contributions to Evans & Sasse (ed.) 2002 and Fortescue et al. (eds.) 2017).

Typologising polysynthesis

- A famous (for some, notorious) exception is Baker (1996) approaching polysynthesis from a generative perspective.

Typologising polysynthesis

- Johanna Mattissen (University of Cologne)

2004: "Structural typology of polysynthesis".

2006: "The ontology and diachrony of polysynthesis".

2017: "Sub-types of polysynthesis".

Based on a 75-language sample.

Typologising polysynthesis

- Parameters of Mattissen's typology:
  1. Whether the verb stem can contain more than one lexical root: compositional (sic!) vs. affixal.
  2. Internal organisation of the polysynthetic verb: scope-ordered vs. templatic.
  3. Number of arguments indexed in the verb by pronominal affixes: polypersonal (two or more), monopersonal (just one), apersonal (none).

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Compounding and incorporation

- Subtypes of compounding/incorporation:
  - noun incorporation (the best-known phenomenon subject to an enormous literature; NB by no means limited to languages usually considered polysynthetic, e.g. Frisian or Soninke, see e.g. Olthof 2020, Vinyar 2021);
  - adverb incorporation;
  - verb-root serialisation.

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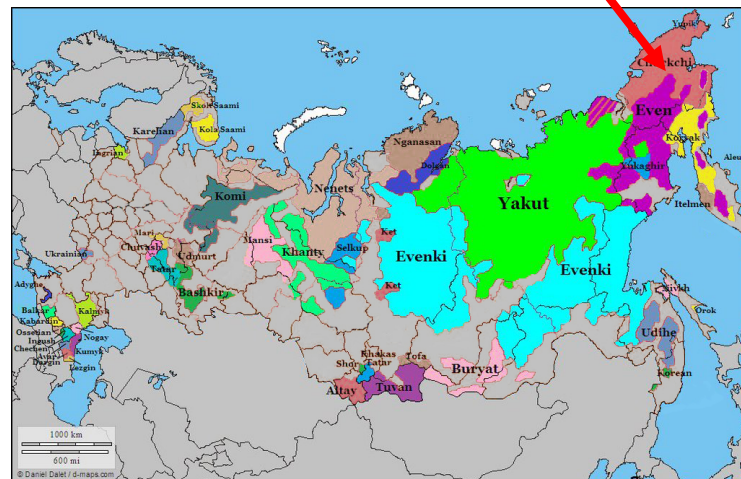 - adverb incorporation;
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Compounding and incorporation

- Chukchi (Chukotkan, Russia) noun incorporation (Skorik 1961: 103):
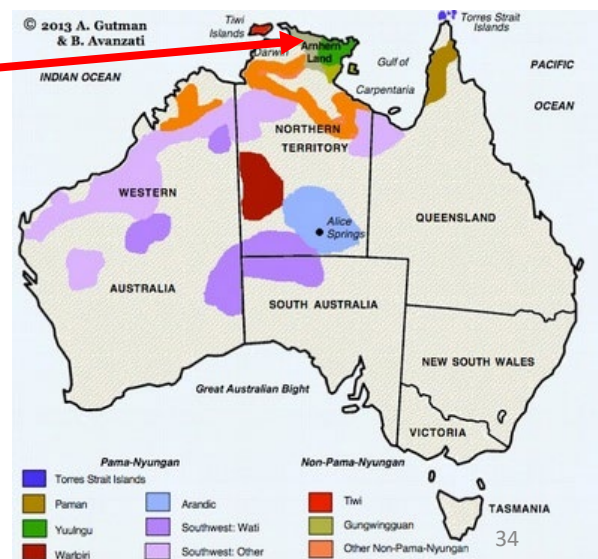
(3)   *tə-tor-taŋ-pəlwəntə-pojgə-pela-rkən*
        1SG-new-good-metal-spear-leave-PRS.1SG
        'I am leaving a good new metal spear.'

Compounding and incorporation

- Bininj Gun-wok (Gunwinyguan, Australia) adverb incorporation (Evans 2017: 315):
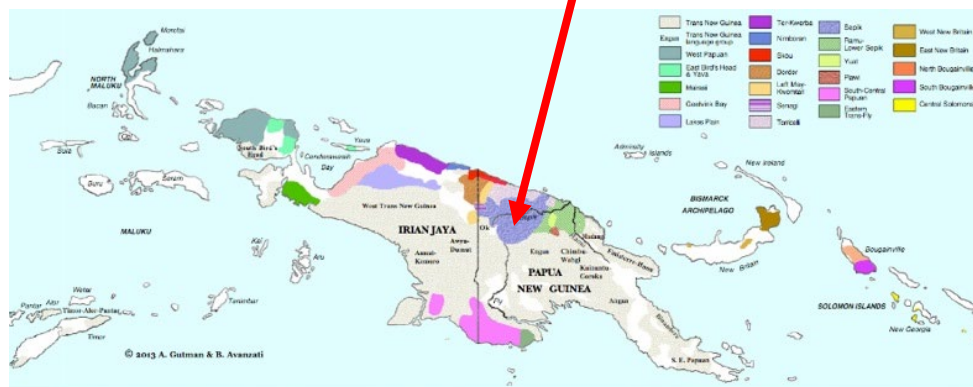
(4)   *a-ban-yawoyʔ-wargaʔ-maɲe-gaɲ-giɲe-ŋ*
      1SG.SBJ-3PL.OBJ-again-wrongly-BEN-meat-cook-PST
      'I cooked the wrong meat for them again.'

Compounding and incorporation

- Yimas (Lower Sepik-Ramu, New Guinea) verb-root serialisation (Foley 1991: 331)

(5) *num-n*   *na-way-mpi-waraca-mpi-ya-ntut*

   village-OBL   3SG.S-turn-SEQ-return-SEQ-come-RPST

   'He came back to the village.'

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- Many languages usually considered polysynthetic lack incorporation (e.g. Navajo, Tariana).

- Many languages with incorporation are not usually considered polysynthetic.

Compounding and incorporation

- Modern Greek (Indo-European; Smirniotopoulos & Joseph 1998: 449):

(6)   *i*   *maría*   *ϑa* *to*   *αναροðo-jir-ísi*
        DEF   Mary.NOM FUT   it   upside_down-turn-3SG
        'Mary will turn it upside down.'

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Lexical affixation

- "Lexical affixes" (Fortescue's "lexically heavy morphemes", Mattissen's "non-root bound morphemes with rather concrete meanings"):
  - bound morphemes unable to form words by themselves;
  - express meanings similar to those encoded by roots or independent words in the same/other languages;
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Lexical affixation

Semantic types of "lexical affixes" (Mithun 1997 and especially Mattissen 2006: 297-333):

- direction and position
- body parts
- classifiers
- animals / plants / humans
- artefacts
- medium / natural force
- motion / manner

- degree
- temporality
- phasal
- scale / focus
- reversative
- quantification

Lexical affixation

- Purepécha (Tarascan, Mexico) locative suffixes (Chamoreau 2017: 683):

(7) a. *waxa-nu-x-ti* 'He sat on the patio.'

  b. *waxa-ru-x-ti* 'He sat in the street.'

  c. *waxa-k'ara-x-ti* 'He sat inside the house.'

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Lexical affixation

- Bella Coola (Salishan, Canada) body-part suffixes (Mithun 1997: 361):

(8)   a. *cp-ak-m-c*   'I am wiping my hands.'
         b. *ip'-ak-m-tic*   'I am grabbing them with my hand.'
         c. *pusm-ak-c*   'My hand is swelling.'

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Lexical affixation

- Central Alaskan Yupik (Eskimo-Aleut, Alaska) "predicative" suffixes (Woodbury 2017: 551):
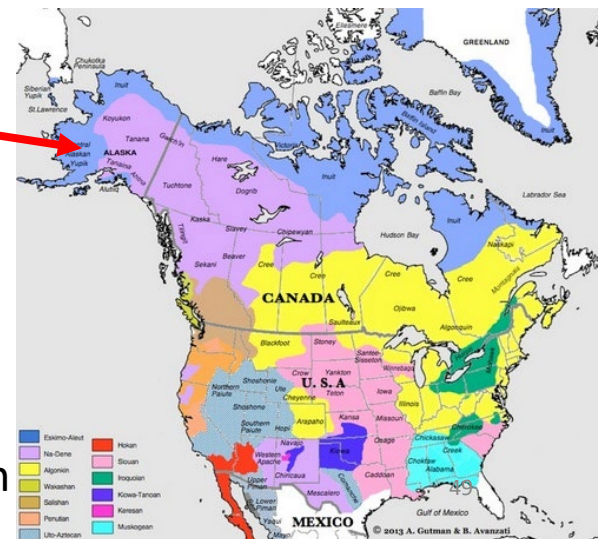
(9)   a. *qaya-ngqer-tua*   'I have a kayak'.
        b. *taryaqvag-tur-tua*   'I'm eating king salmon'.
        c. *citegta-lngu-unga*   'I'm tired of tomcods'.

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Lexical affixation

- Nuuchahnulth (Wakashan, Canada) lexical affixes attached to a dummy root (Nakayama 2001: 135):

(10) *Ɂu-qḥỷuu-Ɂiƚ-Ɂan-ina-Ɂaaƚ-Ɂaƚ*

   PRO-together-in.the.house-INV-INDF.1PL-always-PL

   'They used to live with us.'

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Lexical affixation

• "Lexical affixes" in non-polysynthetic languages?

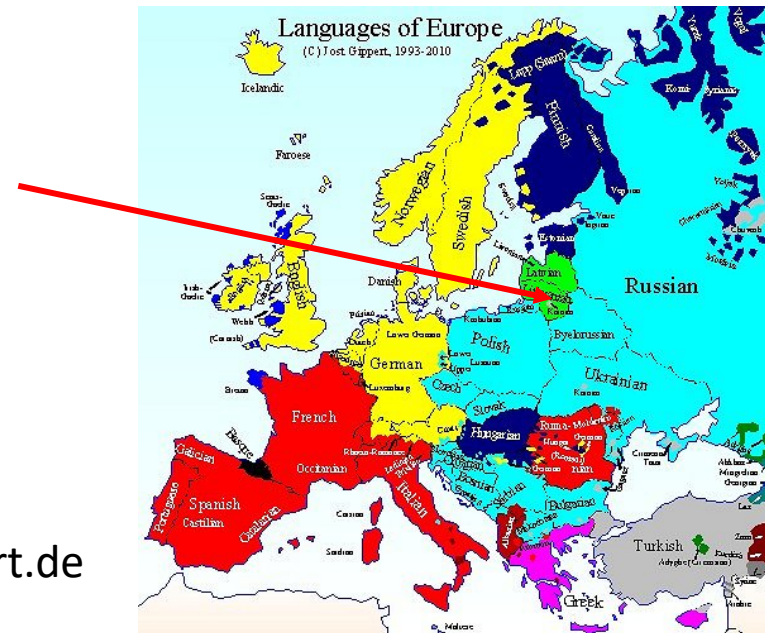Lithuanian (Indo-European, Europe; Arkadiev 2021):

(11)   a. *api-bėgti* 'run around'
      b. *nu-bėgti* 'run down'
      c. *par-bėgti* 'run home'
      d. *at-rašyti* 'write back'
      e. *per-statyti* 'rebuild'

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     e. *per-statyti* 'rebuild'   reversative prefixes

Lexical affixation

- "Lexical affixes" in non-polysynthetic languages?

Lithuanian (Arkadiev 2010, 2021):

(12) *Te-mat-au*   *jos*   *tams-us*   *plauk-us*
      RSTR-see-PRS.1SG   her   dark-ACC.PL.M   hair-ACC.PL
      'I see only her dark hair.' (CCL)

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     'I see only her dark hair.' (CCL)

     restrictive (scalar / focus) prefix

Lexical affixation

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- Clearly a non-argument:
  - some of the local and non-local preverbs of the European languages are highly productive;
  - polysynthetic affix-root combination are just as prone to lexicalisation (e.g. Dorais 2017).

Lexical affixation

- Productive noninflectional concatenation (PNC, de Reuse 2009).

- A special type of morphology: neither derivational, nor inflectional.

- According to de Reuse, one of the hallmarks of "core" polysynthesis.

Lexical affixation

- Properties of PNC (de Reuse 2009: 22):

	Inflection	Derivation	PNC	Syntax
Productivity	yes	no	yes	yes
Recursivity	no	no	yes	yes
Necessarily concatenative	no	no	yes	yes
Variable order	no	no	yes	yes
Interaction with syntax	yes	no	yes	yes
Category change	no	yes	yes	yes

Lexical affixation

- Central Siberian Yupik (Eskimo-Aleut, Alaska; de Reuse 2009: 24) recursive affixation
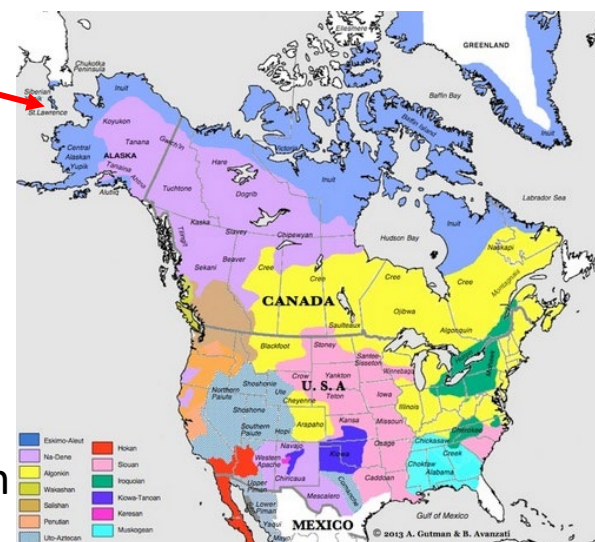
(13) *iitghe-sqe-saghii-sq-aa*
      come_in-ROG-AND-ROG-IND.3SG>3SG
      'He$_i$ asked him$_j$ to go ask him$_k$ to come in.'

AND – andative 'go to V'
ROG – rogative 'ask to V'

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Lexical affixation

- Central Siberian Yupik (Eskimo-Aleut, Alaska; de Reuse 2009: 25) variable affix order

(14) a.   *aa-nanii-tk-aa*

      go_out-CESS-CAUSE-IND.3SG>3SG

    b.   *aan-utke-nanigh-aa*

      go_out-CAUSE-CESS-IND.3SG>3SG

    'a=b He ceased going out on account of this.'

CAUSE – causal 'V on account of'
CESS – cessative 'cease V-ing'

Lexical affixation

- Slavic "superlexical" prefixes (Romanova 2004, Tatevosov 2008, 2009, 2013 etc.): a kind of PNC?
- Bulgarian (Istratkova 2004: 316) variable order of prefixes

(15) a.   *do-pre-raz-pro.da-m*

         CMPL-REP-DISTR-sell-PRS.1SG

   b.   *do-raz-pre-pro.da-m*

         CMPL-DISTR-REP-sell-PRS.1SG

         'I finish selling it again to the very end.'

CMPL – completive, DISTR – distributive, REP – repetitive

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Lexical affixation

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- Russian prefix recursion (google):

(16) *pere-pere-pis-yva-t'*
       REP-REP-write-IPFV-INF
       'to rewrite many times'

Lexical affixation

- The notion of PNC is useful for morphological theory in general.
- However, such characteristics as recursion and variable ordering of affixes seem to be exceptional even in the languages traditionally considered "polysynthetic".

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    - templatic (rigid and often opaque order).
    - Many languages show elements of both types of organization in different subparts of their morphology.

Stump (1997, 2006), Bickel & Nichols (2007: 214-220).

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Internal organisation

- Central Alaskan Yupik (Eskimo-Aleut; Woodbury 2017, 542) scope-based suffixation:

(17) *quuyurni-*   'be smiling'

quuyurni-arte-   'suddenly be smiling'

quuyurni-arte-llru-   'suddenly smiled'

quuyurni-arte-llru-yaaqe-

                    'suddenly smiled, but alas'

quuyurni-arte-llru-yaaqe-llini-

         'evidently suddenly smiled, but alas'

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               'suddenly smiled, but alas'

    quuyurni-arte-llru-yaaqe-llini-

        'evidently suddenly smiled, but alas'

Internal organisation

- Central Alaskan Yupik (Eskimo-Aleut; Woodbury 2017, 542) scope-based suffixation:

(17) *quuyurni-*   'be smiling'

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    raz-dam   'distribute'

    pre-raz-dam   'redistribute'

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(19) a.   *ʔetal-nuk:u-lumhu-:*

return-CAUS-ready-PRS.IPF.3SG

'He is ready to make him go home.'

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'He is ready to make him go home.'

b. *ʔetla-lamhy-nuk:u-:*

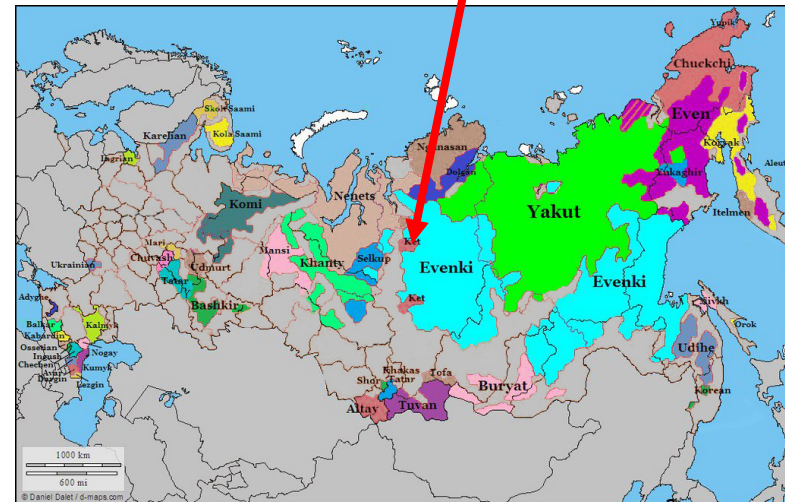return-ready-CAUS-PRS.IPF.3SG

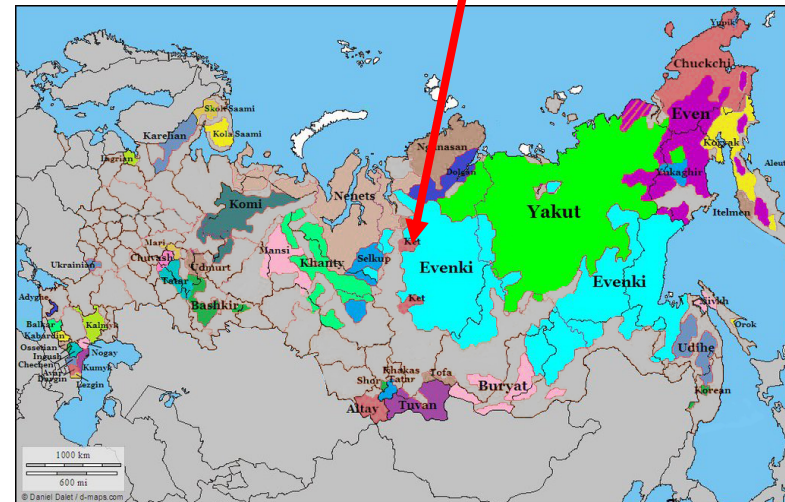'He is making him ready to go home.'

Internal organisation

- Ket (Yeniseian, Siberia) templatic morphology (Vaida 2017: 907):

(20) *da=in-ba-h-a-ted*

3F.SBJ=needle-1SG.OBJ-area-PRS-hit.endwise

'She pokes me with a needle (once).'

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Grammatical morphemes
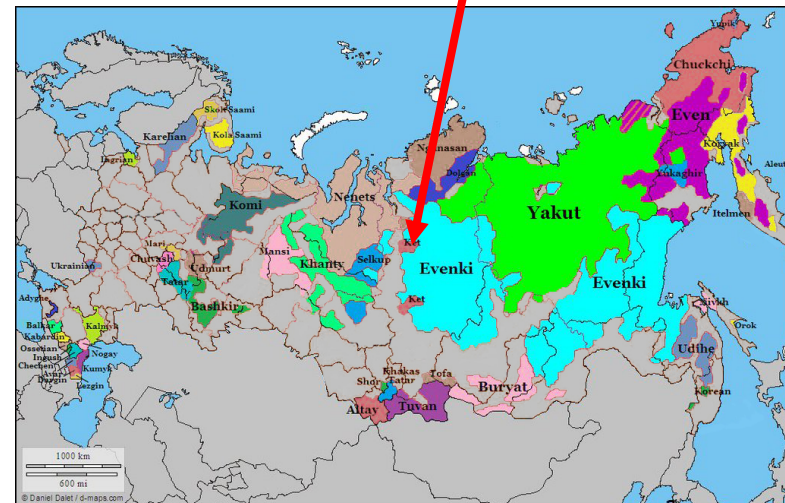
Internal organisation

Subtypes of polysynthetic languages (Mattissen 2017: 82):

layered	templatic	NI	VRS	language	subclass
−	+	+	+	Sora	
+	+	+	+	Lakhota	compositional
+	−	+	+	Pano	
−	+	+	−	Takelma	compositional
+	+	+	−	Blackfoot	noun
+	−	+	−	?	incorporation
−	+	−	+	Awtuw	compositional
+	+	−	+	Yimas	verb-root
+	−	−	+	Yagua	serialisation
−	+	−	−	Navajo	
+	+	−	−	Tariana	affixal
+	−	−	−	Greenlandic	

Roadmap

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Participant indexing

Polypersonalism (indexing of at least two arguments by bound pronominals in the verb, i.e. head-marking, Nichols 1986, 1992) is wrought into some definitions of polysynthesis.

- Fortescue (2017: 122):

  "To qualify as core polysynthetic a language must display holophrasis (i.e. be able to represent a whole clause – including all bound core pronominals – by a single word)"

However, it also can (and probably should) be viewed as a parameter of variation.

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Participant indexing

Yuracaré (isolate, Bolivia) tripersonal indexing (van Gijn 2006: 11):

(21) *ti-ma-la-che-m*
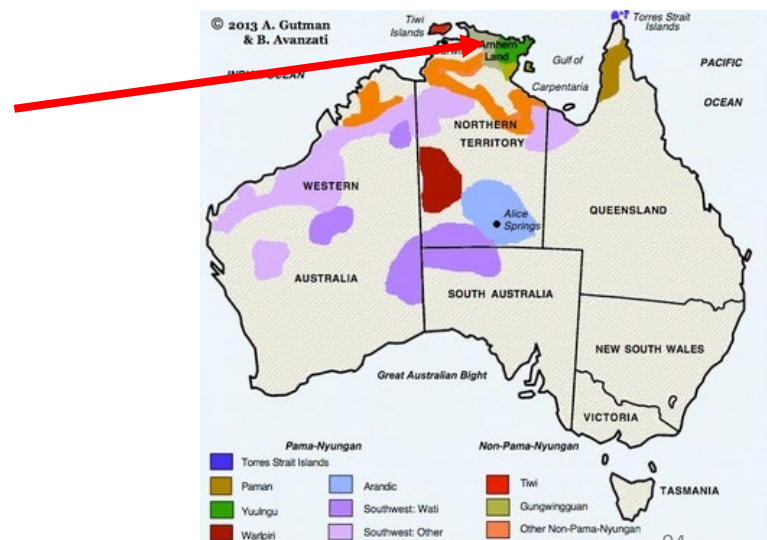   1SG.OBJ-3PL.OBJ-APPL-eat-2SG.SBJ
     'You ate them from me.'

APPL – applicative

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Participant indexing

Kunbarlang (Gunwinyguan, Australia) bipersonal indexing (Kapitonov 2021: 167):

(22) *la   rrubbiya   balkkime kanjbadda-ngun-wunj.*
    CONJ money   today   3PL.SBJ.FUT-2SG.OBJ-give
    '…and they will give you money today.'

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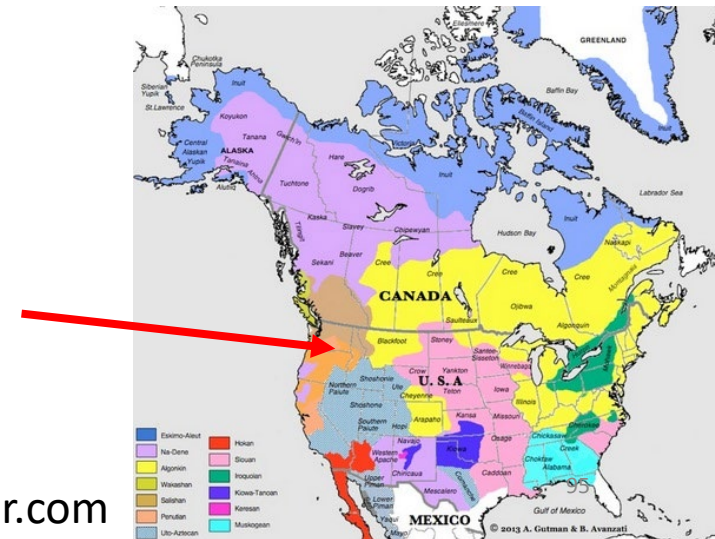# Participant indexing

Yakima (Sahaptian, USA) monopersonal indexing (Jansen 2010: 222):

(23) *pá-x̱á-watík-ásha-sh=nam*
       INV-unexpected-step-on-PST=2SG
       'You just stepped on me!'

INV – inverse

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Participant indexing
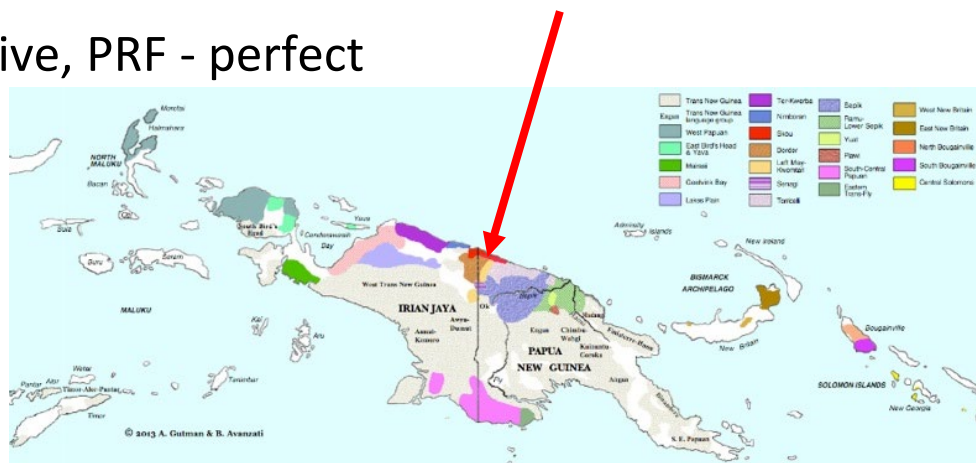
Awtuw (Sepik, New Guinea) apersonal polysynthesis (Feldman 1986: 52):

(24) *ka-d-ma-taw-owra-t-akla-kow-kay-e*
      NEG-FACT-go-yet-again-DU-dig-BEN-PRF-PST
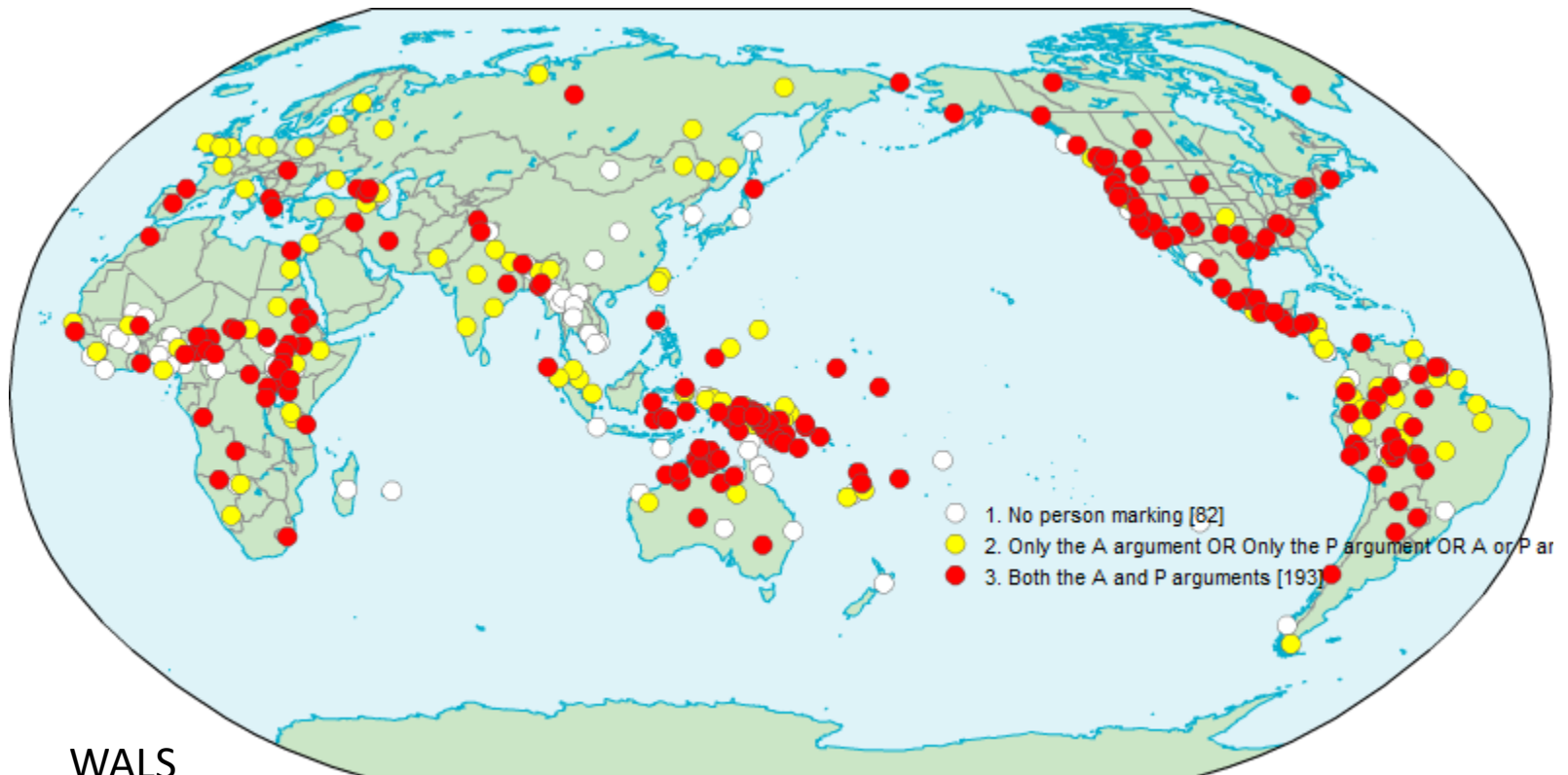'(two) hadn't gone and dug again for (someone) yet'

BEN – benefactive, FACT – factive, PRF - perfect

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Participant indexing

Polypersonalism is found in many non-polysynthetic languages (Siewierska 2005):

1. No person marking [82]
2. Only the A argument OR Only the P argument OR A or P ar
3. Both the A and P arguments [193]

WALS

Participant indexing

Basque (isolate, Europe) tripersonal indexing
(Saltarelli 1988: 238):
(25) *ni-k*   *aita-ri*   *diru-a*
    1SG-ERG   father-DAT   money-DEF[ABS.SG]
    eska-tu   *d-i-o-t*
    ask-PRF   3.ABS.PRS-DAT-3SG.IO-1SG.ERG
    'I have asked father for money.'

Languages of Europe
(C) Jost Gippert, 1993-2010

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Participant indexing

Polypersonalism is found in many non-polysynthetic languages (Siewierska 2005).

Fortescue (2016: 6):

"Whereas head-marking is essentially a matter of inflection, polysynthesis <…> contains an essential derivational component."

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Diachronic outlook

- Most polysynthetic languages do not have any documented historical records.

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- Most polysynthetic languages do not have any documented historical records.

- The only way to glance into their diachrony is by means of internal and comparative reconstruction.

Diachronic outlook

"Old" vs. "new" polysynthesis (Fortescue 2007: 21):

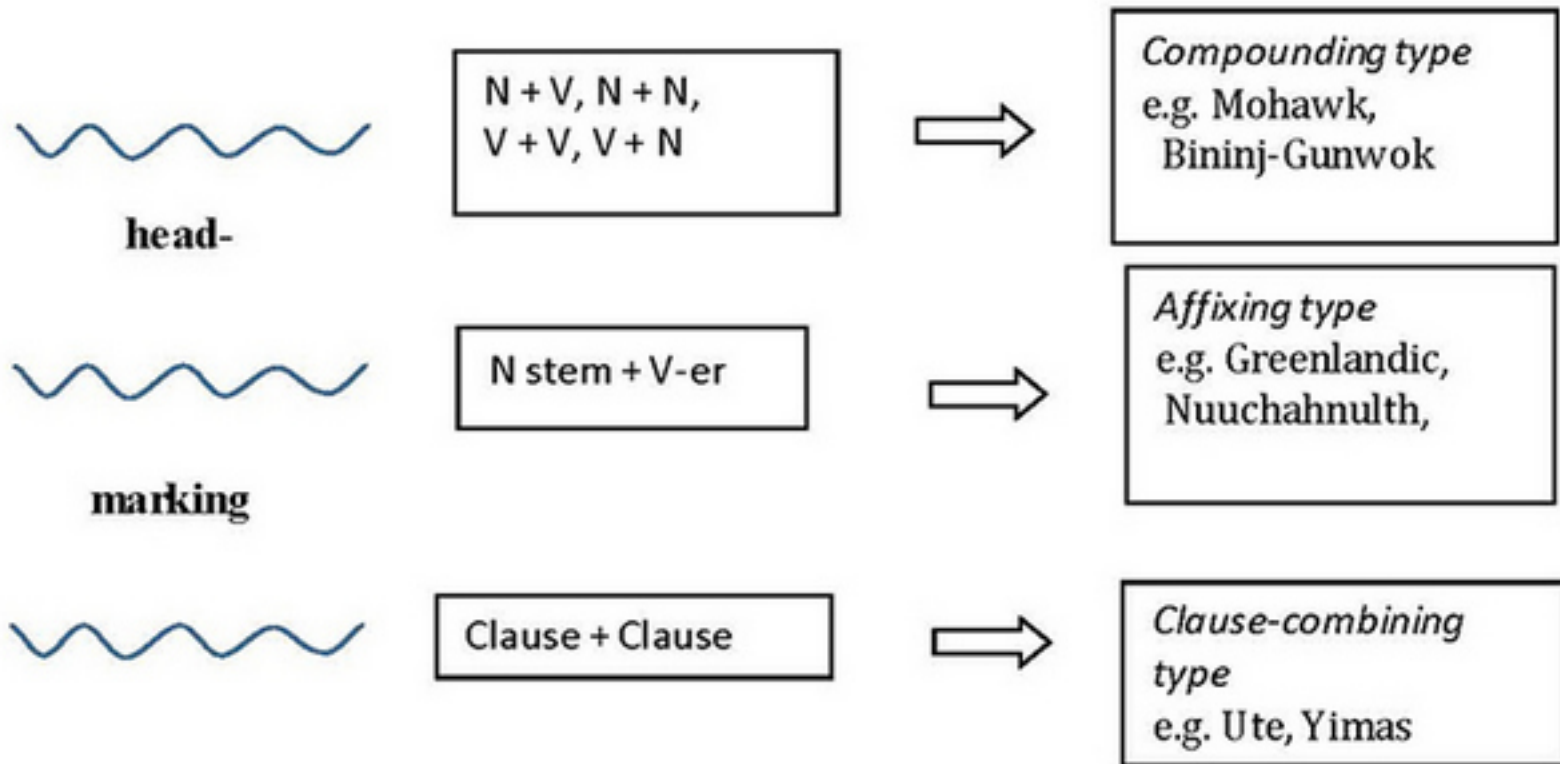| older polysynthesis	newer polysynthesis
a) few if any lexical sources of affixes to be found; b) no independent stress on incorporated morphemes; c) entangled ordering of derivational and inflectional morphemes; d) evidence of successive layering of affixes, with fossilisation.	a) lexical sources of affixes transparent; b) residual stress on incorporated stems; c) derivational morphemes closer to stem than inflectional morphemes; d) productivity of incorporation or verb-root serialisation.

Diachronic outlook

- Fortescue (2016: 6):
  - "Embedding in a larger geographical region where head-marking is already dominant is a prerequisite" for the emergence of polysynthesis.

Diachronic outlook

- Fortescue (2016: 6):
  - "Head-marking languages … appear to follow three main pathways into polysynthesis according to whether they already at an early stage display

  (a) productive verbalizing affixes but little or no compounding;

  (b) compounding of various kinds but no productive verbalizing affixes;

  (c) verb serialization in a fixed order".

Diachronic outlook

- Pathways into polysynthesis (Fortescue 2016: 7):

head-

N + V, N + N,
V + V, V + N
⟹
Compounding type
e.g. Mohawk,
Bininj-Gunwok

N stem + V-er
⟹
Affixing type
e.g. Greenlandic,
Nuuchahnulth,

marking

Clause + Clause
⟹
Clause-combining type
e.g. Ute, Yimas

Diachronic outlook

- Possibility of "abrupt" rise of polysynthesis-like patterns due to univerbation of former analytic or clitic structures?

Diachronic outlook

Written vs. spoken French (Ashby 1977; Lambrecht 1981; Arkadiev 2005; Kibrik 2011: 253-9)

(26) a. *Il me les a toujours fait voir*. (Google)

b. *i-mə-lez-a-tužuʁ-fɛ-vwaʁ*

3SG.SBJ-1SG.OBJ-3PL.OBJ-PST.PFV-always-CAUS-see

'He has always made me see them.'

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Cf. also Charitonidis (2008) on Modern Greek and Moreno Cabrera (2014) on spoken Spanish.

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Polysynthesis beyond verbs

- Polysynthetic languages show "a tendency to develop their morphological complexity primarily within their verbs" (Mithun 1988: 442).

- By contrast, nominal morphology in polysynthetic languages is often believed to be empoverished.

- However, this is not always the case.

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- However, this is not always the case.

Polysynthesis beyond verbs

- Mattissen (2011: 79):

"Although nominal complexity is independent of the morphological type of a language in principle, it is most common in polysynthetic languages, e.g. Chukchi, Ainu, Ket, Lakhota, Nez Perce, Greenlandic, Tunica".

Polysynthesis beyond verbs

- Tariana (Arawakan, Brazil) polysynthetic noun (Aikhenvald 2017: 731):

(27) *pedalia-ma-pe=yana-pe=tupe=miki*
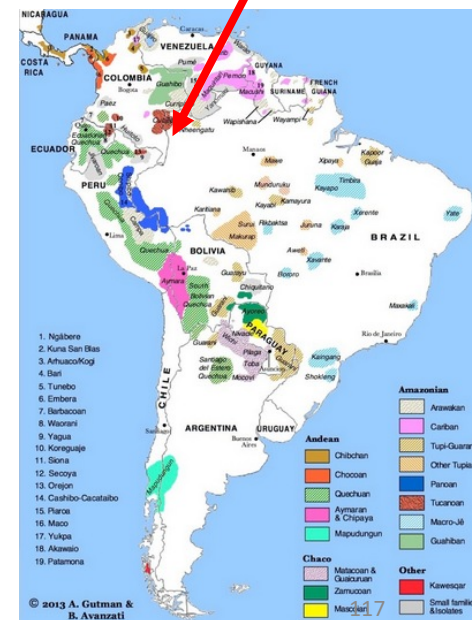   old.person-CL.F-PL=PEJ-PL=DIM.PL=NOMPST.PL
    'little bad/poor dead old women'

CL.F – feminine classifier
DIM – diminutive
NOMPAST – nominal past
PEJ – pejorative

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Polysynthesis beyond verbs

- Chukchi incorporating noun (Skorik 1961: 100):

(28) *ga-ŋeran-tor-majŋǝ-wǝkwǝ-rǝpa-ma*
COM-two-new-big-stone-hammer-COM
'with two new big stone hammers'

Polysynthesis beyond verbs

- Kalaallisut (Eskimo-Aleut, Greenland) "ping-pong" affixal nominalisation and verbalisation (Fortescue 1984: 315):

(29) *aamaruti-ssar-siur-vi-tua-a-suq*
     coal-N:future-V:look.for-N:place-N:only-V:be-PTCP
     'which is the only place for getting coal'

Polysynthesis beyond verbs

- Not only in polysynthetic languages:

Lithuanian

(30) *vargon-inink-av-im-as*

   organ-NAG-VRB-NAC-NOM.SG

   'the profession of organ player'

NAC – action nominal
NAG – agent nominal
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German (Mattissen 2011: 86)
(31) *mein   Lieblings-ex-Hauptstadt-Bewohner*

     'my favourite resident of the former capital'

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Interim summary and perspectives

- Polysynthesis is an evasive and vague notion, but is it useless?
  - Depends on one's point of view.
  - For formulating universal generalisations, probably, yes.
  - For mapping the blank spots of linguistic diversity, surely, no.

Interim summary and perspectives

- Polysynthetic languages are highly variable and in many respects exceptional.

- Both their variation and their exceptionality offer linguists and linguistics unique treasures of empirical facts and testing grounds for hypotheses and methods.

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- Both their variation and their exceptionality offer linguists and linguistics unique treasures of empirical facts and testing grounds for hypotheses and methods.

- Most still living polysynthetic languages being endangered, it is the linguists' responsibility to avail themselves of these treasures – before it is too late.

Thank you for your attention!
Merci de votre attention!