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Typology of polysynthesis and Northwest Caucasian languages

Peter Arkadiev

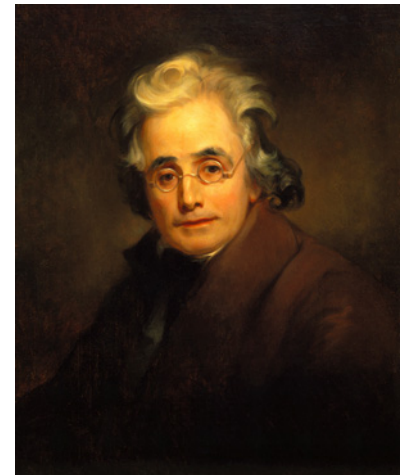
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What is “polysynthesis”?

- Term coined by Pierre-Étienne Du Ponceau a.k.a. Peter Duponceau (1760-1844) to refer to structures “in which the greatest number of ideas are comprised in the least number of words” (Duponceau 1819, quoted after Zúñiga 2019: 1).

Le caractère général des langues américaines consiste en ce qu'elles réunissent un grand nombre d'idées sous la forme d'un seul mot; c'est ce qui leur a fait donner par les philologues américains le nom de *langues polysynthétiques*.

(Du Ponceau 1838: 89)



What is “polysynthesis”?

- First applied to the languages of Native Americans, then to Chukotkan languages, later similar structures were found elsewhere.
- A holistic notion: linguists still tend to speak about “polysynthetic languages” rather than “polysynthetic constructions” (cf. the fate of “ergative” or “flexive” “languages”).

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- The extreme point of the cline “isolating – analytic – synthetic – polysynthetic”, cf. Greenberg (1960: 194):
 - analytic 1.00-1.99 morphemes per word
 - synthetic 2.00-2.99
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- Fortescue (2016: 2):

“Polysynthetic languages are more than just languages with very long words”.

What is “polysynthesis”?

- Barbareño (Chumashan, USA; extinct; Applegate 2017: 233):

(1) *s-iy-qili-wali-ʔiša-s-axwɨwɨk*
3.SBJ-PL.SBJ-HAB-PRIOR-PART-CAUS-dry
‘They first semi-dry it.’

HAB – habitual

PART – partitive

PRIOR – priorative (‘first’)



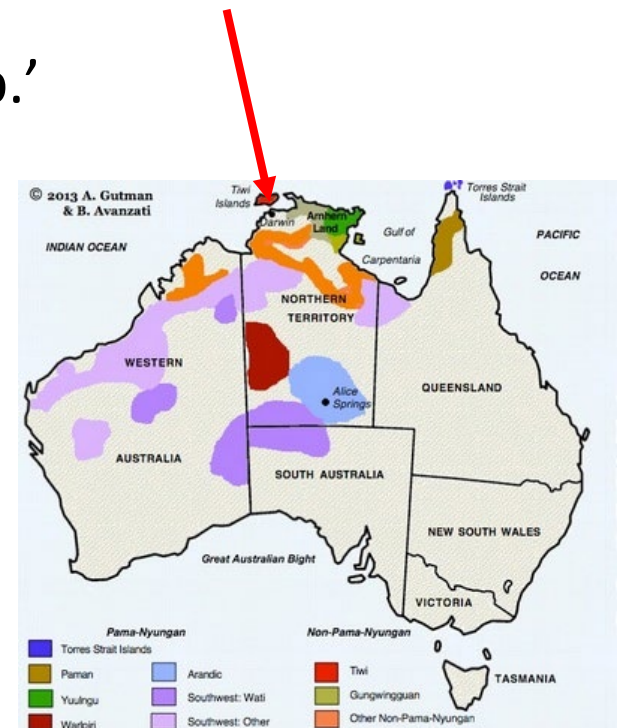
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- Tiwi (Tiwi, Northern Australia; Osborne 1974, 47)

(2) *ji-məni-ŋilimpaŋ-alipi-aŋkina*

3SG.SBJ-1SG.OBJ-sleeping-meat-steal

‘He stole my meat while I was asleep.’



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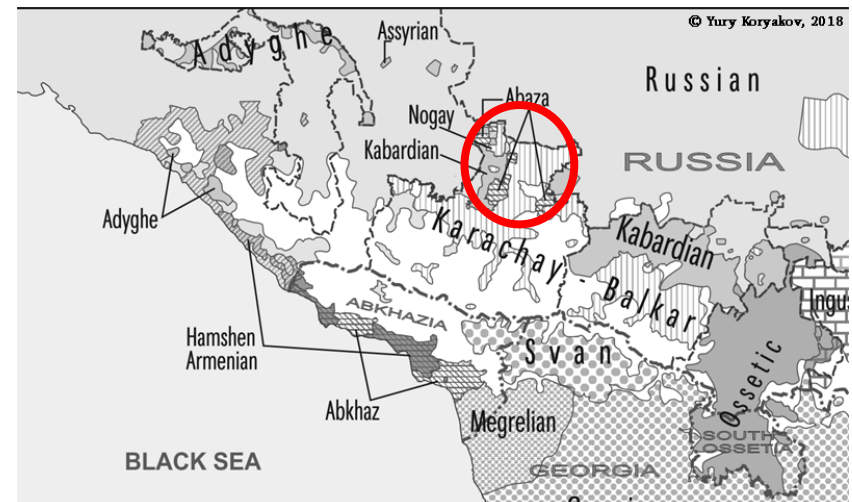
- Abaza (Northwest Caucasian, Russia; own fieldwork data, textual example):

(3) *s-z-a-la-nəq^wa-wa-3ə-j-š'a-t*

1SG.ABS-POT-3SG.N.IO-PVB-pass-IPF-PVB-3SG.IO-seem(AOR)-DCL

‘It seemed to him that I would be able to pass there.’

ABS – absolutive
AOR – aorist
DCL – declarative
IPF – imperfective
N – non-human
POT – potential
PVB – preverb



What is “polysynthesis”?

- Lithuanian (Indo-European > Baltic; tekstynas.vdu.lt)

(4) *ne-be-su-si-skamb-in-dav-o-me*

NEG-CNT-PVB:together-REC-ring-CAUS-HAB-PST-1PL

‘We did not habitually call each other any more.’

CNT – continuative, REC - reciprocal



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Is this also polysynthesis?

If not, why?

see a discussion in Arkadiev 2021a

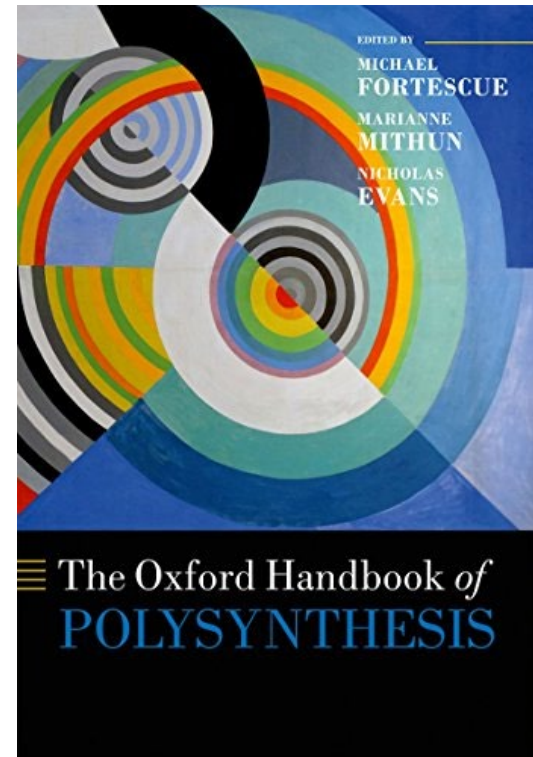


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- Even in this book.

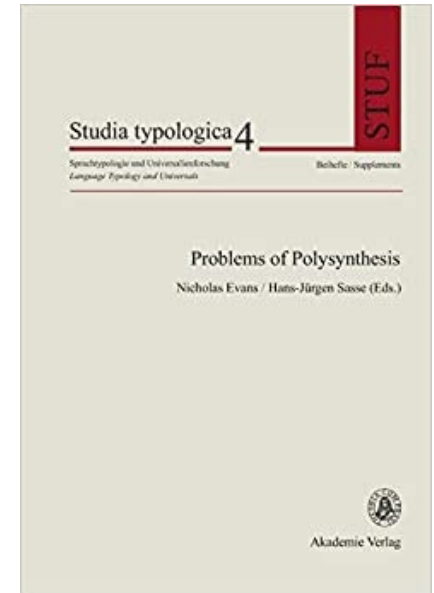


What is “polysynthesis”?

Some recent definitions:

- Evans & Sasse (2002: 3):

“Essentially, then, a prototypical polysynthetic language is one in which it is possible, in a single word, to use processes of morphological composition to encode information about both the predicate and all its arguments <...> to a level of specificity allowing this word to serve alone as a free-standing utterance without reliance on context.”

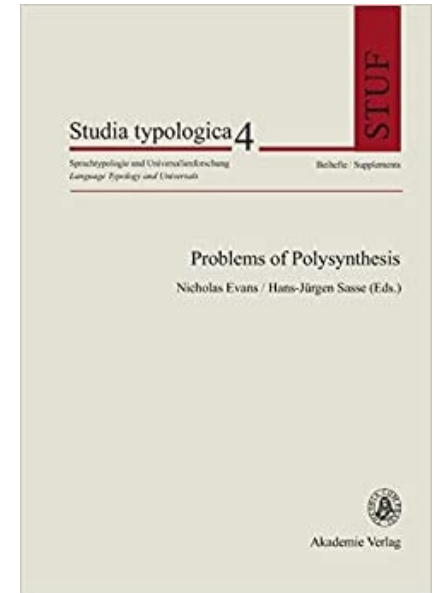


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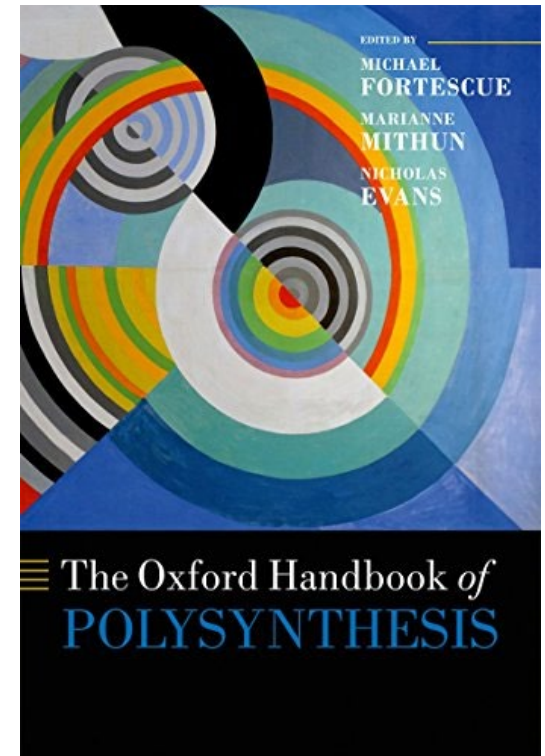


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“To qualify as core polysynthetic a language must display holophrasis (i.e. be able to represent a whole clause – including all bound core pronominals – by a single word) *and* must allow more than one lexically ‘heavy’ morpheme within the holophrastic verb, whether it be lexical or affixal”.

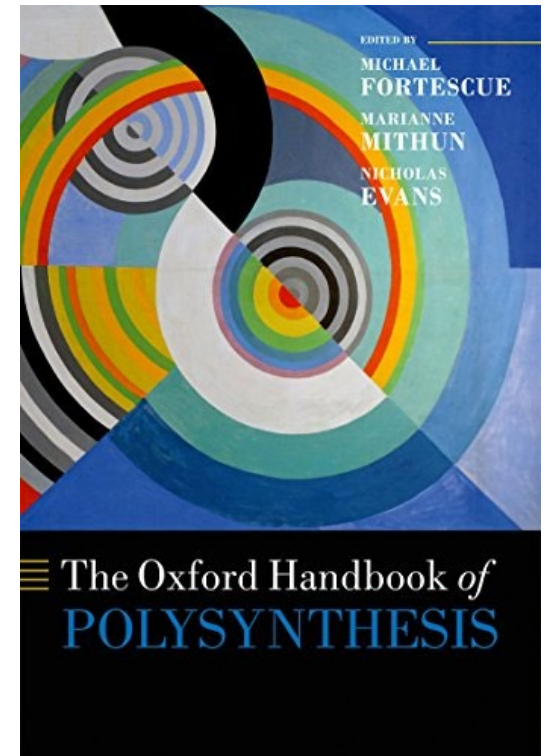


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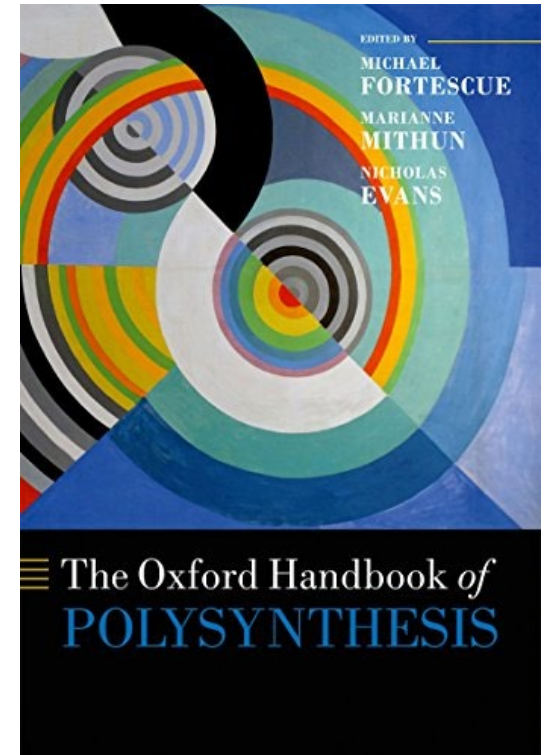


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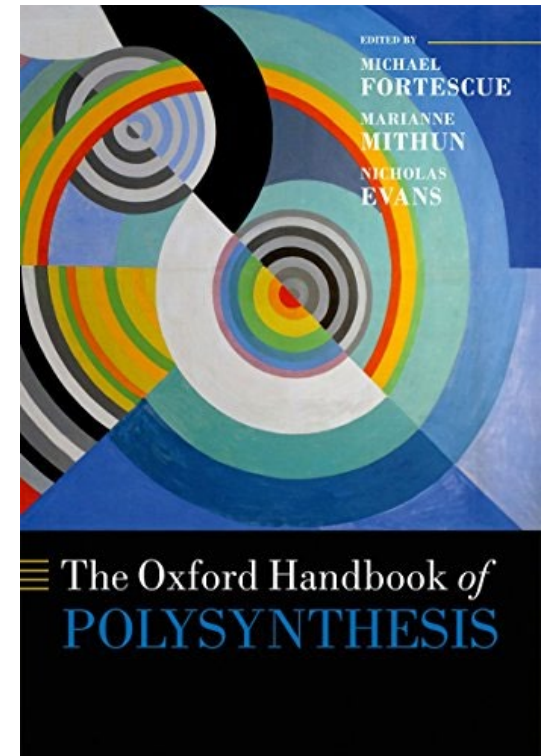


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- Mattissen (2017: 72):

“Languages qualify as polysynthetic if they have complex, polymorphemic verbal units which necessarily integrate productive<ly> non-root bound morphemes with ‘lexical’ and grammatical meanings, especially local ones, and optionally allow concatenation of lexical roots within a verbal wordform”.

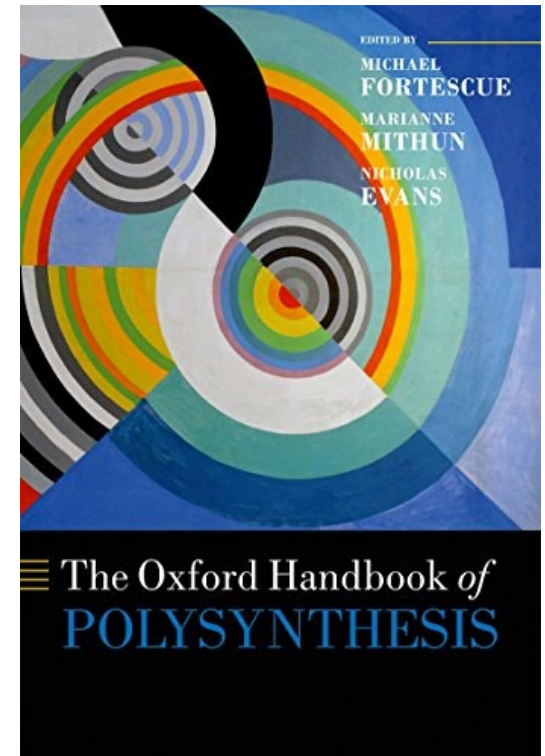


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What is “polysynthesis”?

- Mattissen (2004: 290-1):

“Language internally, polysynthesis is not a homogeneous principle of language structure, but comprises a range of heterogeneous phenomena, such as polypersonalism (marking of more than one participant on the verb), noun incorporation (integration of a noun stem into a finite verb), verb root serialization (integration of another verb stem into a finite verb), derivation, and affixation.”

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- Mithun (1988: 451-2):

“The propensity of polysynthetic languages to develop morphological complexity primarily within their verbs can have a subtle effect both on the semantic nature of the categories they grammaticize, and on the resulting structure of their morphological systems.”

“Verb-centered polysynthetic languages thus differ semantically and structurally from those with more elaborate nominal morphology. What one asserts, the other can imply. What is inflectional in one is derivational in the other.”

Also Mithun 1989a

What is “polysynthesis”?

- Characteristic features of polysynthesis:
 - holophrasis (verbal form standing for a whole clause);
 - polypersonalism (expression of arguments by bound pronominal affixes);
 - “productive noninflectional concatenation” (de Reuse 2009) as a special kind of morphology;
 - “lexical affixes” (Mithun 1997, 1998) with very concrete meanings;
 - incorporation or “dependent-head synthesis” (Mattissen 2003).

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 - If, according to Du Ponceau (1838: 90), in polysynthetic languages “on peut former des mots à l’infini”, the distinction between inflection and derivation and, more generally, between lexical storage vs. online creation of complex morphological units is blurred (cf. de Reuse 2009; but perhaps much more is actually stored than one might imagine, see Mithun 2010, 2020 and Dorais 2017).

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- Polysynthesis is a specific way of drawing boundaries between lexicon and grammar and, within grammar, between morphology and syntax.
 - Evidence from L1 acquisition, cf. Allen (2017: 470): “Children acquiring Inuit languages <...> become competent with this complex morphosyntax at an early age, producing productive causatives, passives, and noun incorporation structures as early as age two. <...> This presents a striking contrast to children learning English, who are still struggling with basic morphology at the same age”.

What is “polysynthesis”?

- Polysynthesis is a specific way of drawing boundaries between lexicon and grammar and, within grammar, between morphology and syntax.
 - Fortescue (2016: 17): the learners’ “ability to produce new verb forms will continue throughout life, limited purely by utility and individual verbal ability. It is these skills of imitation, interpretation, and innovation that are passed on from generation to generation and which may nudge the language forward gradually to greater and greater complexity”.

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 - However, cf. Mithun (1989b: 312) on Mohawk: “the lexicon, the memory of existing words, may play a much greater role in this language than the highly productive morphology might lead a casual observer to suspect.”

What is “polysynthesis”?

- Polysynthesis is a specific way of drawing boundaries between lexicon and grammar and, within grammar, between morphology and syntax.
 - In polysynthetic languages, (verbal) morphology is employed to express and manage syntactic relations both intra- and inter-clausally to a greatest possible extent.
 - In turn, the productive subsystems of polysynthetic morphology often display syntax-like properties like additivity, compositionality and recursion (cf. “productive noninflectional concatenation”, de Reuse 2009).

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 - In turn, the productive subsystems of polysynthetic morphology often display syntax-like properties like additivity, compositionality and recursion (cf. “productive noninflectional concatenation”, de Reuse 2009).
- Still, even in polysynthetic languages morphology and syntax tend to remain distinct.
- NB the validity of this distinction recently put to doubt by Haspelmath (2011) and others (e.g. Bickel & Zúñiga 2017) is orthogonal to polysynthesis as such.

What is “polysynthesis”?

- Extreme morphological complexity (Dahl 2017), which takes extended periods of time to develop (Dahl 2004, Fortescue 2016) and is vulnerable in situations of asymmetric language contact (Gruzdeva & Vakhtin 2017).
- Polysynthesis is favoured by specific sociolinguistic conditions (Trudgill 2017):
 - small communities with dense social networks;
 - geographical isolation and low contact;
 - no or few second-language speakers.
- Most polysynthetic languages are endangered.

Typologising polysynthesis

- Mapudungun (Araucanian, Chile; Zúñiga 2017: 699):

(5) *küpa-l-el-nge-rke-la-i*

come-CAUS-APPL-PASS-REP-NEG-IND

‘they did not bring it to him, they say’

APPL – applicative, IND – indicative, REP – reportative



- Western Apache (Athapaskan, USA; de Reuse 2017: 530):

(6) *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”



Typologising polysynthesis

- 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 for each slot;
 - maximal number of participants expressed by pronominal affixes;
 - arrangement of morphemes within the word;
 - degree of morphological and morphophonological opacity (fusion, cumulation, multiple exponence, suppletion etc.);
 - presence, productivity and types of incorporation (noun incorporation, adverb incorporation, verb-root serialisation);
 - etc.

Typologising polysynthesis

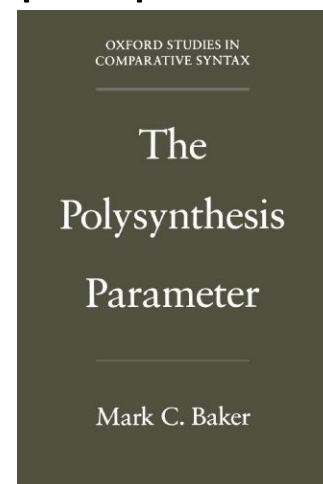
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- Most important publications on polysynthetic languages deal with just one language or several selected languages (e.g. many articles by Marianne Mithun, de Reuse 2009, most contributions to Evans & Sasse (ed.) 2002 and Fortescue et al. (eds.) 2017).

Typologising polysynthesis

- 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).
- 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.



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Definitely not the last word on the issue and not free of shortcomings, but a useful basis to build future work upon.

Typologising polysynthesis

- Parameters of Mattissen's typology:
 1. Whether the verb stem can contain more than one lexical root: **compounding** 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).

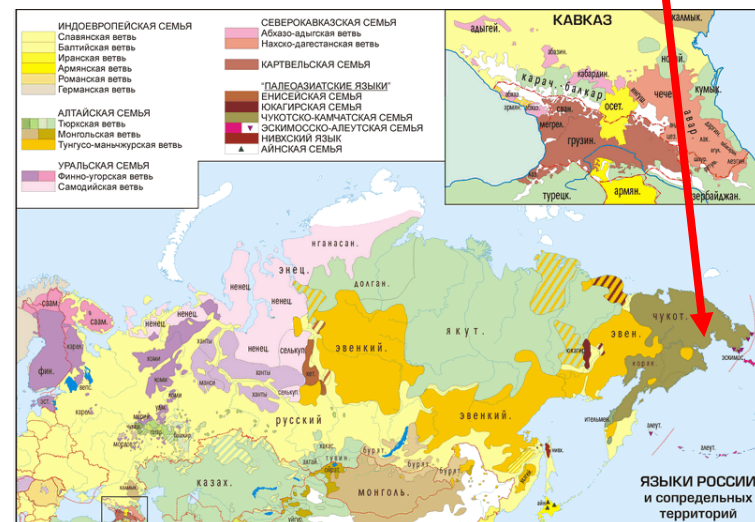
Typologising polysynthesis

- Subtypes of compounding in polysynthetic languages:
 - **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**.

Typologising polysynthesis

- Chukchi (Chukotkan, Russia) noun incorporation (Skorik 1961: 103, quoted from Mattissen 2006: 292):

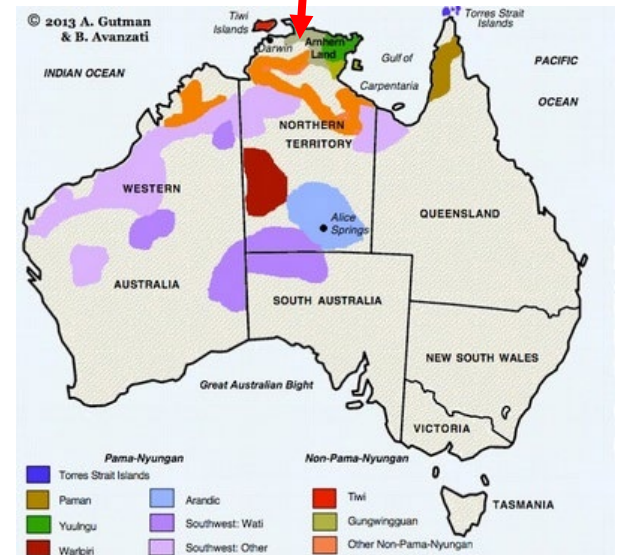
(7) *tə-tor-taŋ-pəlwəntə-pojgə-pela-rkən*
1SG-new-good-metal-spear-leave-PRS.1SG
'I am leaving a good new metal spear.'



Typologising polysynthesis

- Bininj Gun-wok (Gunwinyguan, Australia) adverb incorporation (Evans 2017: 315):

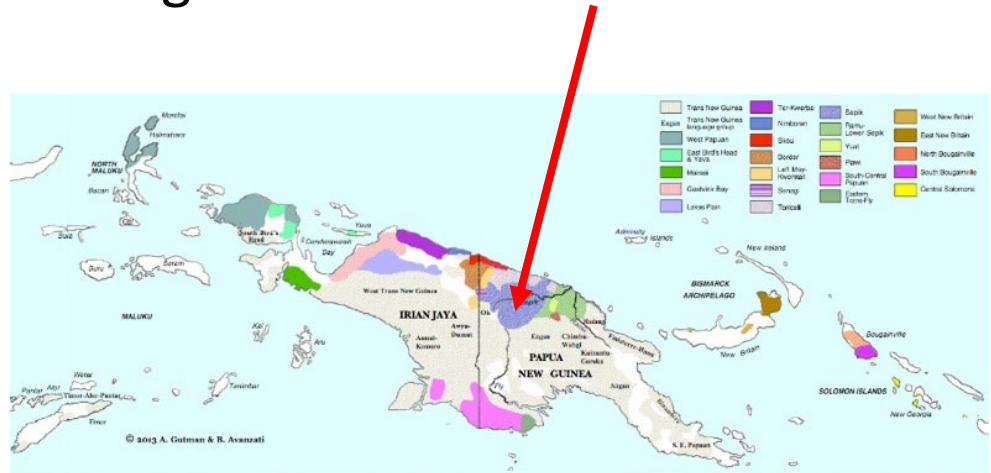
(8) *a-ban-yawoy?-warga?-maŋe-gaŋ-gine-ŋ*
1SG.SBJ-3PL.OBJ-again-wrongly-BEN-meat-cook-PST
'I cooked the wrong meat for them again.'



Typologising polysynthesis

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

(9) *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.'



Typologising polysynthesis

- “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;
 - expressing meanings similar to those encoded by roots or independent words in the same or other languages;
 - while clear cases are uncontroversial, the notion is necessarily fuzzy (cf. critique in Haspelmath 2018).

Typologising polysynthesis

- Semantic types of “lexical affixes” (Mithun 1997 and especially Mattissen 2006: 297-333):
 - direction and position
 - body parts
 - classifiers
 - animals / plants / humans
 - artefacts
 - motion / manner
 - degree
 - temporality
 - phasal
 - etc.

Typologising polysynthesis

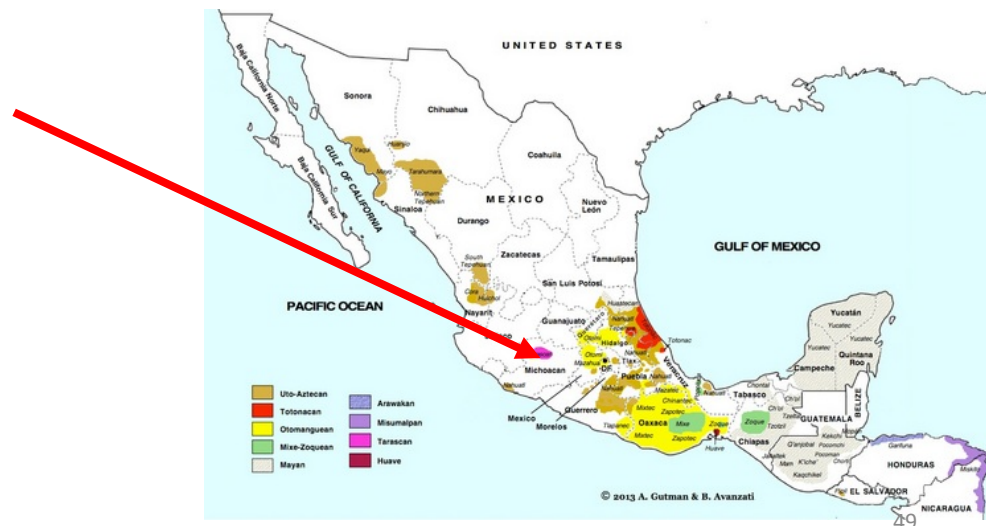
- Purepecha (Tarascan, Mexico) locative suffixes (Chamoreau 2017: 683):

- (10) a. *waxa-nu-x-ti*
b. *waxa-ru-x-ti*
c. *waxa-k'ara-x-ti*

‘He sat **on the patio.**’

‘He sat **in the street.**’

‘He sat **inside the house.**’



Typologising polysynthesis

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

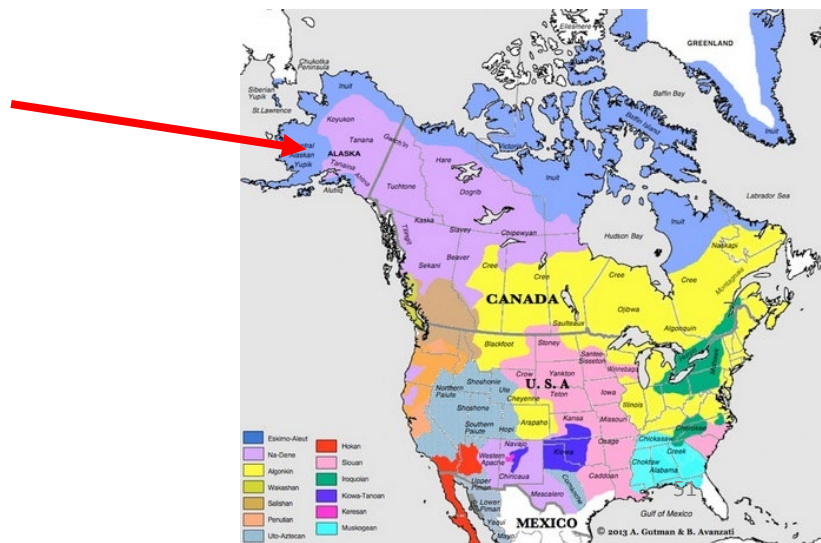
- (11) a. *cp-ak-m-c* 'I am wiping my **hands**.'
- b. *ip'-ak-m-tic* 'I am grabbing them with my **hand**.'
- c. *pusm-ak-c* 'My **hand** is swelling.'



Typologising polysynthesis

- Central Alaskan Yupik (Eskimo-Aleut, Alaska) “predicative” suffixes (Woodbury 2017: 551):

- (12) a. *qaya-ngqer-tua* ‘I **have** a kayak’.
b. *taryaqvag-tur-tua* ‘I’m **eating** king salmon’.
c. *citegta-ingu-unga* ‘I’m **tired** of tomcods’.



Typologising polysynthesis

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

(13) *ʔu-qh̥yuu-ʔit-ʔan-ina-ʔaat-ʔat*

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

‘They used to live with us.’



Typologising polysynthesis

- “Lexical affixes” in non-polysynthetic languages?

Lithuanian (Arkadiev 2021a):

(14) a. *api-bėgti* ‘run around’

b. *nu-bėgti* ‘run down’

c. *par-bėgti* ‘run home’

d. *at-rašyti* ‘write back’

e. *per-statyti* ‘rebuild’

(15) *Te-mat-au* *jos* *tams-us* *plauk-us*
RSTR-see-PRS.1SG her dark-ACC.PL.M hair-ACC.PL

‘I only see her dark hair.’ (tekstynas.vdu.lt)

Typologising polysynthesis

- Internal organisation of polysynthetic morphology:
 - **layered** (order of elements determined by their semantic scope);
 - **templatic** (rigid and 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.

Typologising polysynthesis

- Southern Sierra Miwok (Miwok-Costanoan, California)
scope-ordered morphology (Broadbent 1964: 39-40):

- (16) a. *ʔetal-nuk:u-lumhu-*:
return-CAUS-ready-PRS.IPF.3SG
'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.'



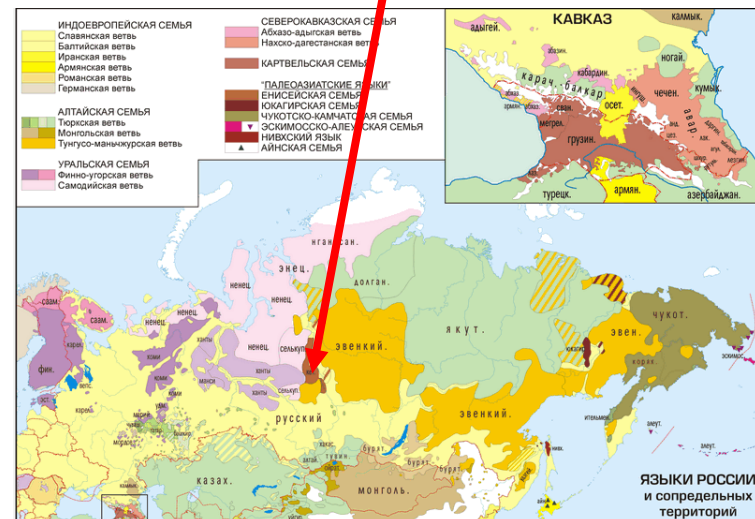
Typologising polysynthesis

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

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

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

‘She pokes me with a needle (once).’



Typologising polysynthesis

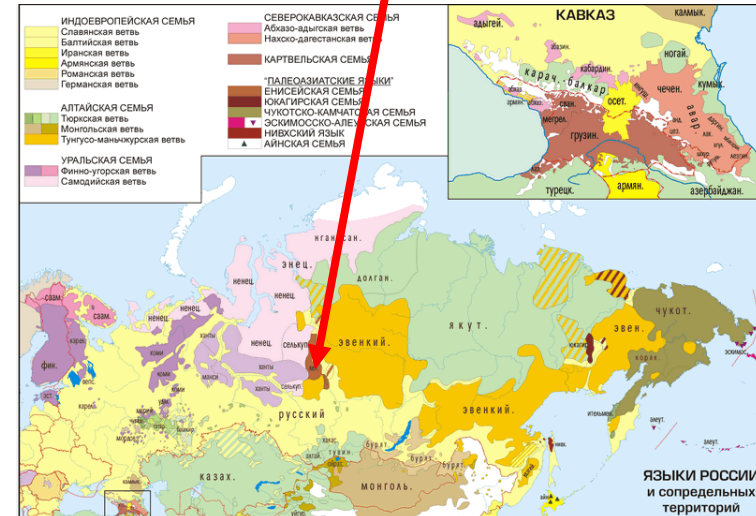
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Lexical morphemes



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Grammatical morphemes



Typologising polysynthesis

Subtypes of polysynthetic languages (Mattissen 2017: 82):

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

Typologising polysynthesis

Polypersonalism (indexing of at least two participants 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) <...>”

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

Typologising polysynthesis

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

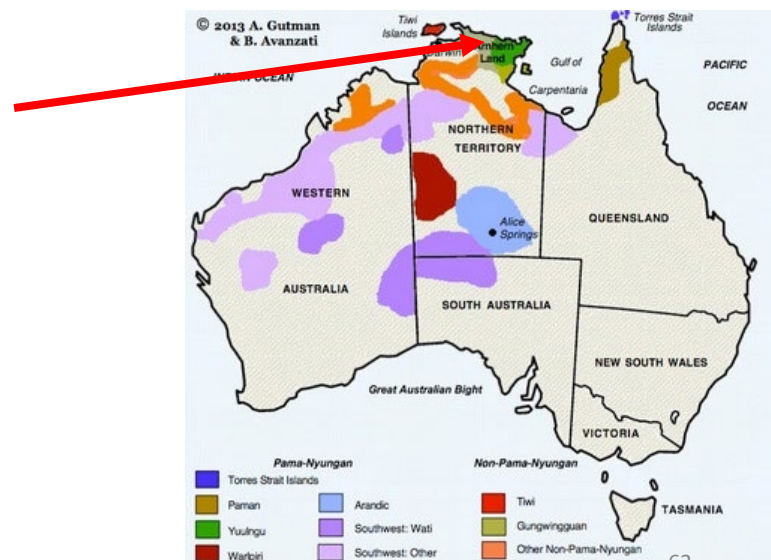
(18) *ti-ma-la-che-m*
1SG.OBJ-3PL.OBJ-APPL-eat-2SG.SBJ
'You ate them from me.'



Typologising polysynthesis

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

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



Typologising polysynthesis

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

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

INV – inverse

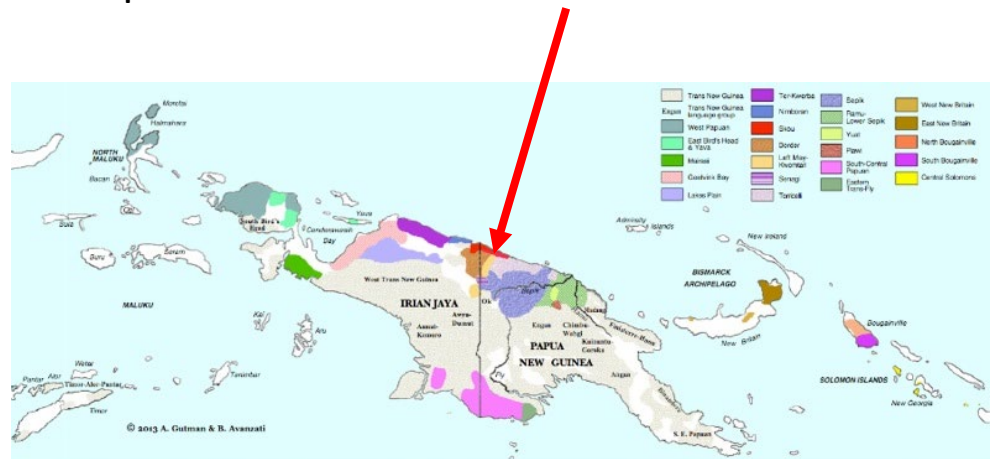


Typologising polysynthesis

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

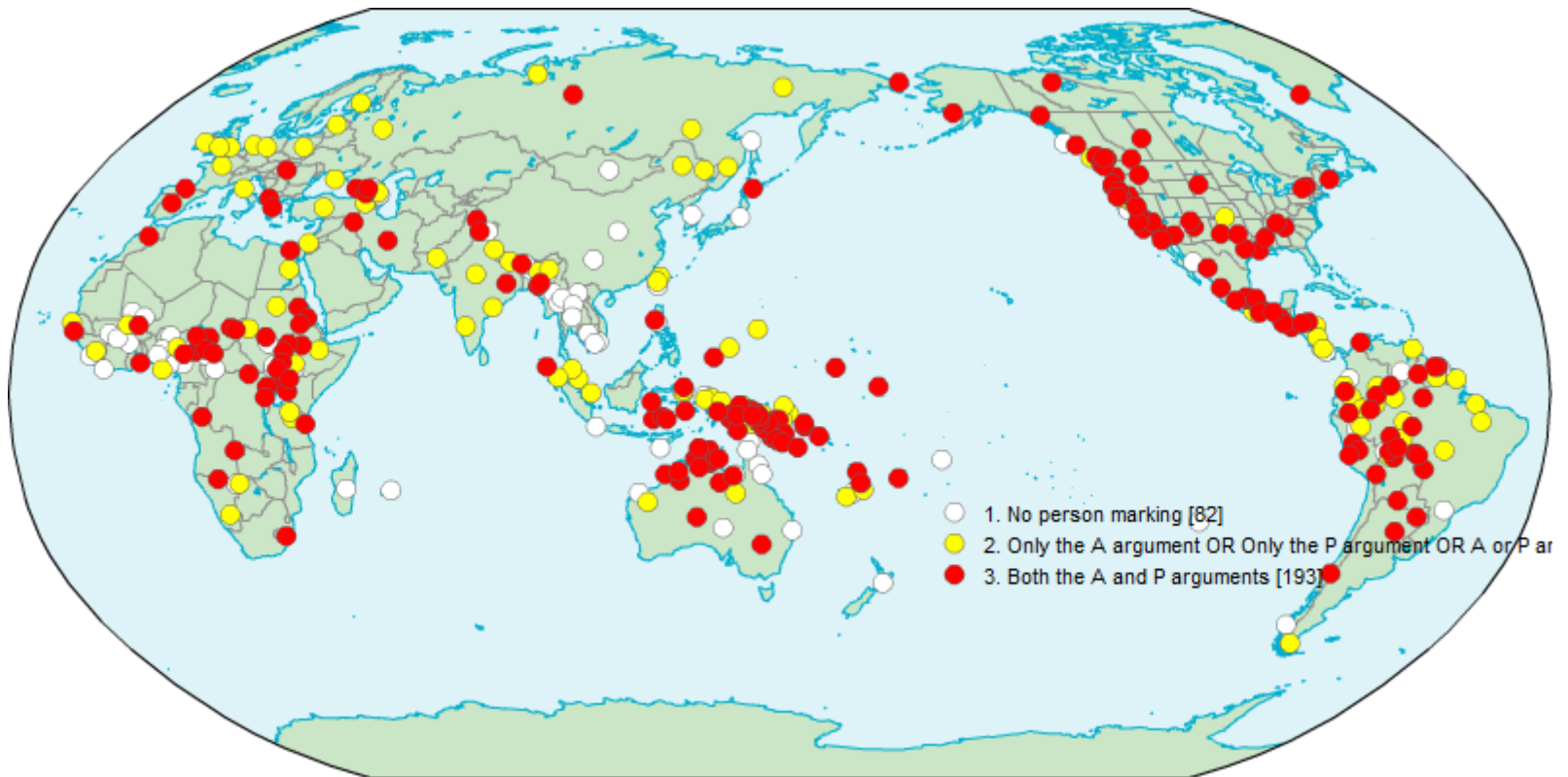
(21) *ka-d-ma-taw-owra-t-akla-kow-kay-e*
NEG-FACT-go-yet-again-DU-dig-BEN-PRF-PST
'(two) hadn't gone and dug again for (someone) yet'

BEN – benefactive, FACT – factive, PRF - perfect



Typologising polysynthesis

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



Typologising polysynthesis

Basque (isolate, Europe) tripersonal indexing (Saltarelli 1988: 238):

(22) *ni-k* *aita-ri* *diru-a*
1SG-ERG father-DAT money-ABS.SG
eska-tu *d-io-t*
ask-PRF 3.ABS-3SG.DAT-1SG.ERG
'I have asked father for (some) money.'



Typologising polysynthesis

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.”

Typologising polysynthesis

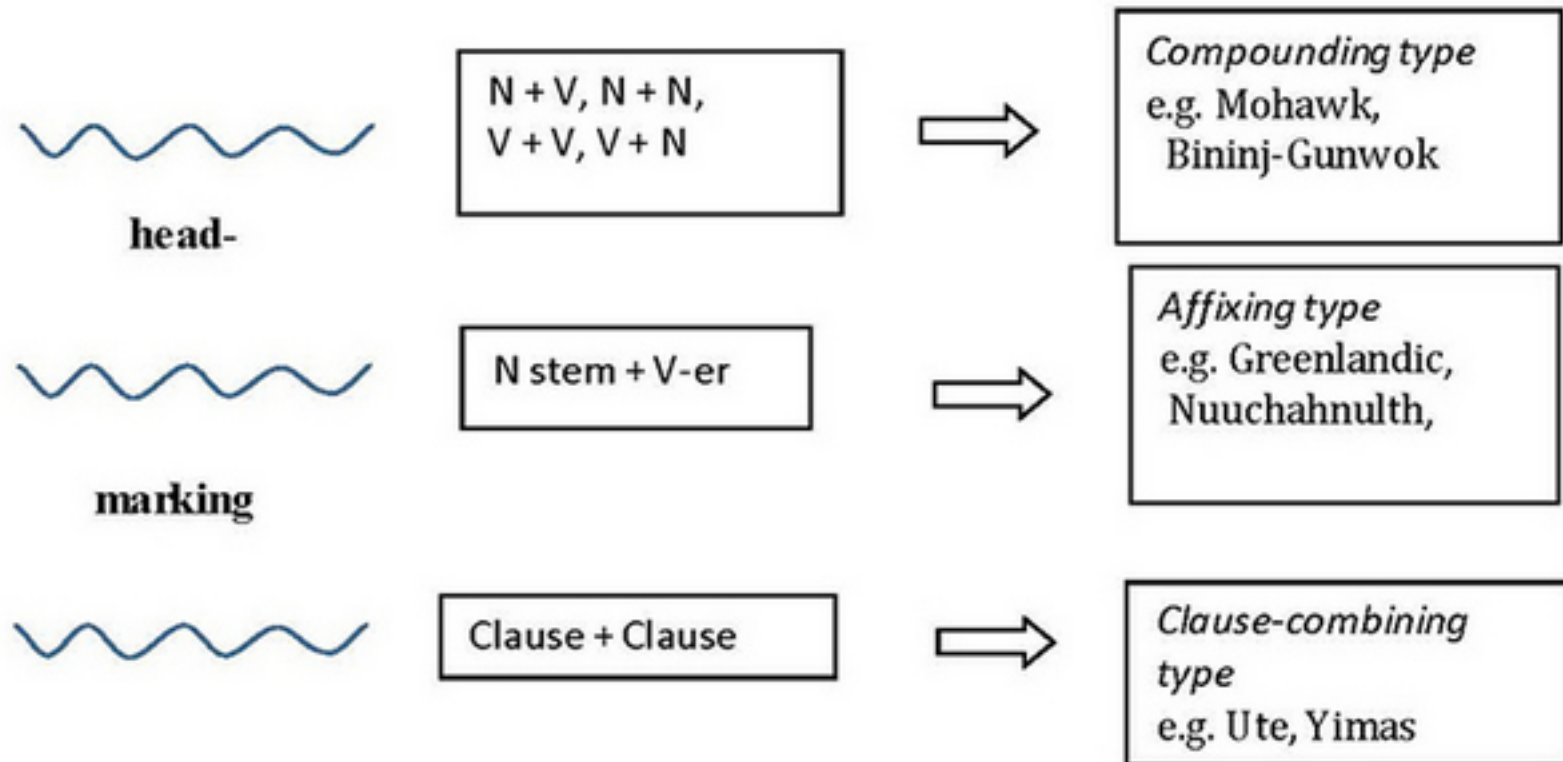
“Old” vs. “new” polysynthesis (Fortescue 2007: 21):

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

Nuuchahnulth > West Greenlandic > Chukchi

Typologising polysynthesis

Pathways into polysynthesis (Fortescue 2016: 7):



Typologising polysynthesis

Possibility of “abrupt” rise of polysynthesis-like patterns due to univerbation of former analytic / clitic structures?

Written vs. spoken French (Lambrecht 1981, Auger 1993, Arkadiev 2005, Kibrik 2011: 253-9)

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

b. *i-mə-lez-a-tužUB-fε-vwaB*

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

‘He has always made me see them.’

Cf. also Charitonidis (2008) on Modern Greek.

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 impoverished.
- 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):

(24) *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



Polysynthesis beyond verbs

- Chukchi incorporating noun (Skorik 1961: 100):

(25) *ga-**ŋeran-tor-majŋə-wəkwə-rəpa**-ma*

COM-two-new-big-stone-hammer-COM

‘with two new big stone hammers’

Polysynthesis beyond verbs

- West Greenlandic (Eskimoan, Greenland) “ping-pong” affixal nominalisation and verbalisation (Fortescue 1984: 315):

(26) *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

(27) *vargon-inink-av-im-as*
organ-NAG-VRB-NAC-NOM.SG
'the profession of organ player'

NAC – action nominal
NAG – agent nominal
VRB - verbaliser

German (Mattissen 2011: 86)

(28) *mein Lieblings-ex-Hauptstadt-Bewohner*
'my favourite resident of the former capital'

Interim summary

- Polysynthesis is a composite notion not reducible to a single feature such as high syntagmatic complexity, head marking or incorporation.
- Polysynthetic languages show considerable variation on such parameters as availability and types of incorporation, semantic types of affixation, morphological makeup and many others.
- Some polysynthetic traits are found in non-polysynthetic languages as well.

Northwest Caucasian languages

- One of the three indigenous language families of the Caucasus alongside Nakh-Daghestanian and Kartvelian.

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 - Circassian: West Circassian (Adyghe), Kabardian
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 - Ubykh (extinct since 1992)

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- Arguably distantly related to the Nakh-Daghestanian family (Nikolaev & Starostin 1994).

Northwest Caucasian languages

- West Caucasian peoples and languages have severely suffered during the Caucasian war (1763-1864) and the ensuing expulsions and resettlements.
- A number of varieties have become extinct, and the whole linguistic landscape has been disrupted.
- Currently spoken by ca. 700-800 thousand people in Abkhazia and the Russian republics of Adygeya, Karachaevo-Cherkessia and Kabardino-Balkaria, as well as neighbouring regions.
- A large Northwest Caucasian diaspora in Turkey and other countries of the Middle East, exact number of speakers unknown.

Northwest Caucasian languages



Northwest Caucasian languages

- Major typological traits (Hewitt 2005, Arkadiev & Lander 2020):
 - rich consonantism and impoverished vocalism;
 - weak distinction between major lexical classes;
 - ergativity;
 - rich system of spatial marking in the verb;
 - complex system of clause-combining;
 - head-marking and polysynthesis.

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Northwest Caucasian languages

- Sources of data apart from grammars and other publications:
 - fieldwork in Adygeya on the Temirgoy dialect of West Circassian (2004-2006, 2008, 2010), on the Bzhedugh dialect of West Circassian (2014), on the Besleney dialect of Kabardian (2011-2013), on the Kuban dialect of Kabardian (2015-2016);
 - fieldwork in Karachaevo-Cherkessia on the Tapanta dialect of Abaza (2017-2019, 2021).
 - Elicited as well as corpus examples.

Polysynthesis in Northwest Caucasian

Besleney Kabardian polysynthetic predicate (own fieldwork, v. Ulyap, 2011-2013)

(29) *sə-ǰə-zer-a-x^wə-č'erə-mə-ṭetə-č'ə-ž'-a-r*

1SG.ABS-CSL-REL.FCT-3PL.IO-BEN-LOC-NEG-tie-ELAT-RE-PST-ABS

'that they could not untie me from there'

ABS – absolutive

BEN – benefactive

CSL – cislocative

ELAT - elative

IO – indirect object

LOC – locative preverb

RE - reffective

REL.FCT – factive relativization

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(30) *d-jə-[ɸ^wəneɸ^w-bzəλx^wəɸe-daxe-dede]-m*

1PL.PR-POSS-neighbour-woman-beautiful-very-OBL

'our very beautiful lady-neighbour'

OBL – oblique case

POSS – possession marker

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Polysynthesis in Northwest Caucasian

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Polysynthesis in Northwest Caucasian

- On the so-called nominal complex in Circassian, see Lander 2017.
- On different morphosyntactic mechanisms beyond verbal and nominal polysynthesis in Circassian, see Ershova 2020.

Polysynthesis in Northwest Caucasian

- Polysynthetic features of Northwest Caucasian (cf. Lander & Testeletts 2017 on West Circassian):
 - exuberant polypersonalism;
 - a rich system of locative affixes;
 - productive affixes with different degrees of “lexicality”;
 - an intricate mixture of templatic and layered organisation;
 - a complex system of morphological expression of syntactic information.

Polysynthesis in Northwest Caucasian

- Polypersonalism in Abaza (Inzhich-Chukun, 2017, textual example):

(31) *j-ŝə-z-j-á-s-h^w-ṗ*

3SG.N.ABS-2PL.IO-BEN-3SG.M.IO-DAT-1SG.ERG-say-NPST.DCL

‘I will tell this to him about you.’

ABS – absolutive

BEN – benefactive applicative

DAT – “dative” marker

ERG- ergative

IO – indirect object

M – masculine

N – non-human

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 - three-participant forms common;
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 - five-participant forms can be constructed and parsed by speakers, and are reported in grammars of Circassian languages written by native speakers;
 - apparently impossible in Abkhaz-Abaza (cf. Chirikba 2003: 39 on Abkhaz).

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 - five-participant forms can be constructed and parsed by speakers, and are reported in grammars of Circassian languages written by native speakers;
 - apparently impossible in Abkhaz-Abaza (cf. Chirikba 2003: 39 on Abkhaz).
 - *prima facie* counterexample to the frequent claims that predicates in natural languages cannot take more than three arguments (e.g. Babby 2009).

Polysynthesis in Northwest Caucasian

- Polypersonalism and applicatives:
 - NWC polypersonalism is facilitated by a rich system of semantically specialized applicatives introducing indirect objects (“open head-marking”, Nichols 2017);
 - applicatives are very numerous (up to several dozens in Abaza and Abkhaz);
 - do not normally affect core arguments (S, A and P);
 - combine with all types of verbs (transitive and intransitive);
 - semantically, range from underspecified to highly specialised;
 - are in many cases obligatory and often lexicalised;
 - allow stacking and limited recursion.

Fell 2012, O’Herin 2001, Letuchiy 2009, Lander & Letuchiy 2017

Polysynthesis in Northwest Caucasian

- Applicative stacking in West Circassian (Lander & Letuchiy 2010: 266; elicited)

(32) *sə-qə-t-de-p-fə-∅-r-a-βa-že-š'tə-β*

1SG.ABS-CSL-1PL.IO-COM-2SG.IO-BEN-3SG.IO-DAT-3PL.ERG-CAUS-
read-IPF-PST

‘They were making me read it to you together with us.’

BEN – benefative

COM – comitative

CSL – cislocative

DAT – “dative”

Polysynthesis in Northwest Caucasian

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'I write to him for their benefit.'

Polysynthesis in Northwest Caucasian

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Polysynthesis in Northwest Caucasian

- Obligatory ‘dative’ applicative in Besleney Kabardian (Ulyap, 2011-2013, textual examples):

(34) \emptyset -*q*-*a-r*-*jə-t-a*

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‘She gave it to them.’

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Recipient of
ditransitive verbs

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‘He ordered them to throw him away.’

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‘She gave it to them.’

Recipient of
ditransitive verbs

(35) *č-a-r-jə-βe-ʒ-a*

LOC-3PL.IO-DAT-3SG.ERG-CAUS-throw-PST

‘He ordered them to throw him away.’

Causee of causatives
from transitive verbs

(36) *q-Ø-je-mə-ʔab-əw*

CSL-3SG.IO-DAT-NEG-touch-ADV

‘without touching it’

Polysynthesis in Northwest Caucasian

- Obligatory ‘dative’ applicative in Besleney Kabardian (Ulyap, 2011-2013, textual examples):

(34) Ø-*q*-*a-r*-*jə-t-a*

3.ABS-CLS-3PL.IO-DAT-3SG.ERG give-PST

‘She gave it to them.’

Recipient of
ditransitive verbs

(35) *č*-*a-r*-*jə-βe-ʒ-a*

LOC-3PL.IO-DAT-3SG.ERG-CAUS-throw-PST

‘He ordered them to throw him away.’

Causee of causatives
from transitive verbs

(36) *q*-Ø-*je*-*mə-ʔab-əw*

CSL-3SG.IO-DAT-NEG touch ADV

‘without touching it’

Second argument of bivalent
intransitive verbs

Polysynthesis in Northwest Caucasian

- Locative applicatives in Abaza (textual examples):

(37) *ph^wəs-k d-ʒa-rə-l-s-χə-n*
wife-INDF 3SG.H.ABS-CSL-3PL.IO-LOC:among-1SG.ERG-take-PST
'I chose a wife among them.'

(38) *d-na-sá-š'ta-lə-n*
3SG.H.ABS-TRL-1SG.IO-LOC:behind-go-PST
'He followed me.'

CSL – cislocative

TRL – translocative

Polysynthesis in Northwest Caucasian

- Lexicalised applicatives in Abaza (textual examples):

(39) *ŝə-r-c-qrɑʒɑ-rɑ* *ɑ-tɑqə-ḗ*
2PL.ABS-3PL.IO-COM-help-MSD 3SG.N.IO-need-NPST.DCL
'We have to help them.'

(40) *s-ɑ-z-pš-áj-ṭ*
1SG.ABS-3SG.N.IO-BEN-watch-PRS-DCL
'I am waiting for it.'

COM – comitative

MSD – masdar

NPST – non-past

Polysynthesis in Northwest Caucasian

- “Lexical affixes” in Northwest Caucasian and the ontology from Mattissen (2006: 297):
 - direction and position (prefixes and suffixes);
 - body parts (prefixes);
 - artefacts (prefixes);
 - degree (suffixes);
 - reversative and repetitive (prefixes and suffixes);
 - ‘just’ and ‘only’ (suffixes);
 - phasal: inchoative, continuative (prefixes and suffixes);
 - modality: possibility, necessity (prefixes and suffixes);
 - + similitude (suffixes);
 - + subjective evaluation (suffixes).

Polysynthesis in Northwest Caucasian

- “Lexical suffixes” in Ubykh (Fenwick 2011: 127, transcription and glosses adapted):

(41) *jǎ-∅-s-tw-aj-le-f-ew-mǎ-t*

3SG.ABS-3SG.IO-1SG.ERG-give-RE-CMPL-HBL-FUT-NEG-FUT

‘I won’t be able to give it back to him completely.’

CMPL – completive

HBL – habilitive

RE – reflexive

Polysynthesis in Northwest Caucasian

- “Lexical suffixes” in Ubykh (Fenwick 2011: 127, transcription and glosses adapted):

(41) *jə-∅-s-tw-aj-le-f-ew-mə-t*

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RE – reflexive

Polysynthesis in Northwest Caucasian

- “Lexical” suffixes and prefixes in Abaza (elicited, Inzhich-Chukun, 2019):

(42) *a-ž'á* *ata-s-rá-ʒ-âa-χ-məɸ^wa-ɸ^waca-ɬ*

DEF-meat REP-1SG.ERG-CAUS-fry-EXC-RE-DPR-RSTR-DCL

‘Unfortunately, I have just fried the meat excessively again.’

DPR – depreciative

REP – repetitive

EXC – excessive

RSTR – restrictive

Polysynthesis in Northwest Caucasian

- “Lexical” suffixes and prefixes in Abaza (elicited, Inzhich-Chukun, 2019):

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Polysynthesis in Northwest Caucasian

- “Lexical” suffixes and prefixes in Abaza (elicited, Inzhich-Chukun, 2019):

(42) *a-ž'á* *ata-s-rá-ʒ-čá-χ-məʕ^wa-ʕ^waca-t*

DEF-meat REP-1SG.ERG-CAUS-fry-EXC-RE-DPR-RSTR-DCL

‘Unfortunately, I have just fried the meat excessively again.’

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Polysynthesis in Northwest Caucasian

- The largest set of “lexical” affixes in NWC express spatial meanings:
 - simplex and complex locative prefixes (“preverbs”), from ca. 30 in Circassian to ca. 150 in Abkhaz and Abaza;
 - directional suffixes (most prominent in Circassian);
 - prefixes and suffixes often combine with each other, some combinations are lexicalised;
 - many locative preverbs are applicatives, cf. (37), (38) above.

Polysynthesis in Northwest Caucasian

Locative prefixes in Standard Kabardian (Kumakhov 1964: 165):

- (43) a. *tjepšeč'ə-m* *jə-λə-n*
plate-OBL LOC:container-lie-MSD
'to be on a plate'
- b. *škampə-m* *de-λə-n*
cupboard-OBL LOC:enclosure-lie-MSD
'to be in a cupboard'
- c. *dave-m* *xe-λə-n*
oil-OBL LOC:mass-lie-MSD
'to be in oil'

Polysynthesis in Northwest Caucasian

- Directional suffixes and “circumfixes” in Besleney Kabardian (textual examples):

(44) *ž'emehat-xe-r* *q̇-a-k̇^wə-h-xe*
part.of.village-PL-ABS CLS-3PL.ERG-pass-CIRCUM-PL

‘They go **around** all parts of the village.’

(45) *pšex^wə-r* *d-a-hə-je-ž'-a*
chain-ABS LOC:enclosure-3PL.ERG-carry-UP-RE-PST

‘They carried the chain **up**.’

Polysynthesis in Northwest Caucasian

- Diachronically, most locative preverbs in NWC go back to incorporated nouns, mainly denoting parts of body or other objects.
- Directional suffixes go back to verbs of motion.

Kumakhov (1964: 139-146, 164-182, 1989: 200-228); Lomtadze 1983; Klychev 1994; Avidzba 2017; Arkadiev & Maisak (2018: 121-127)

Polysynthesis in Northwest Caucasian

West Circassian locative preverbs related to nouns
(Kumakhov 1964: 177-179):

- (46) *ḵ^weçə* ‘intestines’: *ḵ^weçə-lhe-n* ‘put **inside** smth’
 ḵ^weçə-rə-čə-n ‘run **through** smth’
- (47) *ʔ^wə* ‘mouth’: *ʔ^wə-c^we-n* ‘stand **near** smth’
 ʔ^wə-š’ə-n ‘lead **away** from smth’

Polysynthesis in Northwest Caucasian

- Some preverbs can be synchronically viewed as incorporated nouns (Arkadiev 2021b):
 - denote the same object as the noun;
 - can host pronominal prefixes referring to the possessor;
 - marginal in Circassian (only a few body-part nouns), more widespread in Abaza and Abkhaz (both relational and non-relational nouns).

Polysynthesis in Northwest Caucasian

Standard Kabardian incorporated body-part nouns
(Kumakhov 1964: 181-182):

(48) *ʃhe* 'head': *ʃhe-rə-xə-n* 'take from one's head'

(49) *ʔe* 'hand': *ʔe-ʃe-xə-n* 'take from one's hands'

Polysynthesis in Northwest Caucasian

Standard Kabardian incorporated body-part nouns
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Abaza incorporated body-part noun (Klychev 1995: 154):

(50) *a-saba* *ʃa-rə-lakta-pl-əw-n*
DEF-dust CSL-3PL.IO-LOC:face-pour.powder-IPF-PST
‘Dust was pouring onto their faces.’

Polysynthesis in Northwest Caucasian

Abaza incorporated non-relational noun (Klychev 1995: 67) :

- (51) *a-sabəj* *d-gara-l-g^wa-n*
DEF-child 3SG.H.ABS-LOC:cradle-3SG.ERG-lay-PST
'She laid the child **into the cradle.**'

Abkhaz incorporated non-relational noun (Avidzba 2017: 99):

- (52) *a-raχ^w* *ʁə-çə-h-ga-ra.wə-ṗ*
DEF-cattle LOC:winter-LOC:under-1PL.ERG-carry-DEB-NPST.DCL
'We have to keep the cattle **during the winter.**'

Polysynthesis in Northwest Caucasian

- Some directional suffixes clearly involve synchronic verb-root serialisation (cf. discussion of “incorporation” in Circassian by Kumakhov 1964: 139-146):
 - can be used as roots of independent verbs with the same directional meaning;
 - introduce goal or source arguments by means of applicative preverbs.

Polysynthesis in Northwest Caucasian

West Circassian verb-root serialisation:

- (53) a. *de-ṭas-ha-n*
LOC:enclosure-sit.down-enter-MSD
'to sit down in between' (Kumakhov 1964: 143)
- b. *je-pλə-xə-n*
DAT-look-descend-MSD
'to look down' (Kumakhov 1964: 139)

Cf. *de-ha-n* 'to go into an enclosure', *je-xə-n* 'to descend'.

Polysynthesis in Northwest Caucasian

Abaza verb-root serialisation:

- (54) a. *ŝ-sə-d-thawsəχ'a-l-χ-əj-ṭ*
 2PL.ABS-1SG.IO-LOC:close-complain-enter-RE-PRS-DCL
 ‘You come to me with complaints.’ (Klychev 1972: 96)
- b. *d-a-ḱ^wə-z-ga-š'a-ṭ*
 3SG.H.ABS-3SG.N.IO-LOC-1SG.ERG-carry-go.around-DCL
 ‘I carried it around.’ (Klychev 1995: 138)

Cf. *a-də-l-ra* ‘approach’, *a-ḱ^w-š'a-ra* ‘go around’.

Polysynthesis in Northwest Caucasian

- In terms of Mattissen's typology, NWC polysynthesis is transitional between compounding and affixal:
 - many if not most “lexical” affixes have cognate roots;
 - some “lexical” affixes retain the original semantics of their root counterparts;
 - both noun incorporation and verb-root serialisation are attested, but apply to closed classes of roots;
 - incorporated roots tend to become grammaticalised and pattern with affixes (e.g. become applicatives).

Polysynthesis in Northwest Caucasian

Morphological organisation of Northwest Caucasian languages presents an intricate and complex interplay of templatic and scope-ordered principles (Korotkova & Lander 2010, Arkadiev & Letuchiy 2011, Lander 2016 on West Circassian, Panova 2018 on Abaza).

Polysynthesis in Northwest Caucasian

The schematic verbal template (Arkadiev & Lander 2020: 404)

prefixes				root	suffixes					
argument structure zone			pre-stem elements	stem (Σ)				endings		
absolutive	subordinators	applicatives and indirect objects	ergative	preradical negation	causative	root	aspectual, modal and evaluative operators	temporal operators	suffixal negation	illocutionary operators or subordinators
1	1	>1	1	1	1 or 2	may be complex	>1	>1	1	>1

Polysynthesis in Northwest Caucasian

- Scope-ordering of suffixes:
actional modifiers < aspect < tense < negation < clause-type
- Partial scope-ordering of prefixes:
subordinators > potential > compositional > lexicalised
applicatives applicatives

Polysynthesis in Northwest Caucasian

West Circassian scopal reordering of suffixes
(Lander 2016: 3523)

- (55) a. $g^w\hat{a}\hat{s}^we-\hat{s}^we-\check{z}'\hat{a}-\mathcal{B}$ reflexive > simulative
be.glad-SML-RE-PST
's/he pretended again that s/he was happy'
- b. $g^w\hat{a}\hat{s}^we-\check{z}'\hat{a}-\hat{s}^wa-\mathcal{B}$ simulative > reflexive
be.glad-RE-SML-PST
's/he pretended that s/he was happy again'

Polysynthesis in Northwest Caucasian

Abaza counter-scopal ordering of prefixes (textual examples):

- (56) a. *h-a-k^w-də-r-ç̣a-ṭ*
1PL.ABS-3SG.N.IO-LOC:top-3PL.ERG-CAUS-sit(AOR)-DCL
'they put us on it' (causative > locative applicative)
- b. *j-g'ə-z-ç̣a-tá-m-ç̣-ṭ*
3PL.ABS-NEG-POT-CSL-LOC.ELAT-NEG-pass(AOR)-DCL
'They could not get out of there.'
(negation > potential > locative applicative)

Polysynthesis in Northwest Caucasian

Dependencies between non-adjacent slots in Ubykh (Dumézil & Esenç 1975: 173, transcription adapted, glosses added):

- (57) a. *sə-w-də-ǰ^we.t^w-ǰe*
1SG.ABS-2SG.ERG-CAUS.SG-stop.SG-PST
'You (sg) made me stop.'
- b. *š'ə-w-βe-ǰ^we.χe-ǰe-n*
1PL.ABS-2SG.ERG-CAUS.PL-stop.PL-PST-PL
'You (sg) made us stop.'

Polysynthesis in Northwest Caucasian

Dependencies between non-adjacent slots in Abkhaz
(Chirikba 2003: 44; glosses added):

- (58) a. *də-r-ga-wa-n*
3SG.H.ABS-3PL.ERG-carry-IPF-PST.FIN
'they were taking him/her'
- b. *jə-r-ga-wa-z*
REL.ABS-3PL.ERG-carry-IPF-PST.NFIN
'the one they were taking'

Polysynthesis in Northwest Caucasian

Outward sensitivity in Abaza (elicited):

- (59) a. *s-a-ba-t̚*
1SG.ABS-3SG.N.ERG-see(AOR)-DCL
'It (non-human) saw me.'
- b. *j-ʕa-s-na-t̚*
3SG.N.ABS-CSL-1SG.IO-3SG.N.ERG-give(AOR)-DCL
'It (non-human) gave it to me.'

Polysynthesis in Northwest Caucasian

Floating prefixes in Besleney Kabardian (elicited, Ulyap, 2011):

- (60) a. *sə-ǰ-a-de-ḵ^w-a*
1SG.ABS-DIR-3PL.IO-COM-go-PST
- b. *s-a-ǰə-de-ḵ^w-a*
1SG.ABS-3PL.IO-DIR-COM-go-PST
a=b 'I came with them.'

Polysynthesis in Northwest Caucasian

- Morphological organisation in Northwest Caucasian is not uniform and defies any straightforward analysis aiming to reduce affix combinatorics and ordering to semantic scope or syntactic derivation.
- Obviously reflects different historical layers of successive grammaticalisation and morphologisation (as well as lexicalisation).

Polysynthesis in Northwest Caucasian

- A large part of the Northwest Caucasian polysynthetic morphology serves the purposes of syntax:
 - pronominal affixes;
 - applicatives and “open head-marking”;
 - causative and other valency-changing mechanisms;
 - reflexive and reciprocal marking;
 - nominalisations and converbs;
 - the nominal complex;
 - relativisation.

Polysynthesis in Northwest Caucasian

West Circassian reflexives (Letuchiy 2012: 342, 344):

- (61) a. *zə-sə-wəpsə-ʁ*
RFL.ABS-1SG.ERG-shave-PST
'I shaved (myself).'
- b. *tə-zə-š'ə-g^wəpšə-ʁ*
1PL.ABS-RFL.IO-LOC-forget-PST
'We forgot about ourselves.'

Polysynthesis in Northwest Caucasian

- Reflexive affixes in Circassian occupy the same slots as the corresponding personal affixes and do not decrease the verb's valency (Lander & Letuchiy 2017, Ershova 2019).
- Morphologically bound reflexive pronouns.

Polysynthesis in Northwest Caucasian

- Relativisation in Abaza (elicited):

(62) *a-ph^wəspa çɑ j-lə-s-t-ṭ*

DEF-girl apple 3SG.N.ABS-3SG.F.IO-1SG.ERG-give(AOR)-DCL

‘I gave the girl an apple’

(63) [*a-ph^wəspa j-lə-s-tə-z*]

DEF-girl REL.ABS-3SG.F.IO-1SG.ERG-give-PST.NFIN *a-çɑ*
DEF-apple

‘the apple that I gave to the girl’

Polysynthesis in Northwest Caucasian

- Relativisation in Abaza (elicited):

(62) *a-ph^wəspa çɑ j-lə-s-t-t̚*
DEF-girl apple 3SG.N.ABS-3SG.F.IO-1SG.ERG-give(AOR)-DCL
'I gave the girl an apple'

(64) [*a-çɑ zə-s-tə-z*] *a-ph^wəspa*
DEF-apple REL.IO-1SG.ERG-give-PST.NFIN DEF-girl
'the girl whom I gave the apple'

Polysynthesis in Northwest Caucasian

- Relativisation in Abaza (elicited):

(62) *a-ph^wəspa çɑ j-lə-s-t-ṭ*
DEF-girl apple 3SG.N.ABS-3SG.F.IO-1SG.ERG-give(AOR)-DCL
'I gave the girl an apple'

(65) [*a-ph^wəspa çɑ lə-z-tə-z*] *a-č'k^wən*
DEF-girl apple 3SG.F.IO-REL.ERG-give-PST.NFIN DEF-youth
'the boy who gave an apple to the girl'

Polysynthesis in Northwest Caucasian

- Relative affixes in Northwest Caucasian occupy the same slots as the corresponding personal affixes.
- Morphologically bound resumptive pronouns (Lander & Daniel 2019).

Hewitt 1979a, 1979b, O'Herin 2002, Caponigro & Polinsky 2011, Lander 2012, Ershova 2021

Polysynthesis in Northwest Caucasian

- Abaza headless relatives (Arkadiev & Caponigro 2021):
 - referring to an individual:

(66) [*zarina* *jə-l-χ^wʕa-wa*] *s-f-əj-t*
Zarina REL.ABS-3SG.F.ERG-buy-IPF 1SG.ERG-eat-PRS-DCL
'I eat what Zarina buys.'

Polysynthesis in Northwest Caucasian

- Abaza headless relatives (Arkadiev & Caponigro 2021):
 - referring to an individual:

(66) [*zarina* *jə-l-χ^wʕa-wa*] *s-f-əj-t*
Zarina REL.ABS-3SG.F.ERG-buy-IPF 1SG.ERG-eat-PRS-DCL
'I eat what Zarina buys.'

- conveying a matrix question (Arkadiev 2020):

(68) [*zarina* *jə-l-χ^wʕa-wa*]-*ja?*
Zarina REL.ABS-3SG.F.ERG-buy-IPF-QN
'What does Zarina buy?'

QN – non-human interrogative

Polysynthesis in Northwest Caucasian

- Abaza headless relatives (Arkadiev & Caponigro 2021):

- referring to an individual:

(66) [*zarina* *jə-l-χ^wʕa-wa*] *s-f-əj-t*
Zarina REL.ABS-3SG.F.ERG-buy-IPF 1SG.ERG-eat-PRS-DCL
‘I eat what Zarina buys.’

- conveying a matrix question (Arkadiev 2020):

(69) [*a-xš* *jə-z-χ^wʕa-wa*]-*da?*
DEF-milk 3SG.N.ABS-REL.ERG-buy-IPF-QH
‘Who buys milk?’

QH – human interrogative

Polysynthesis in Northwest Caucasian

- Northwest Caucasian languages adhere to the cross-linguistic “prototype” of polysynthesis, but show a number of specific features:
 - extraordinary polypersonalism enhanced by an extremely rich system of applicatives;
 - vestiges of different types and diachronic layers of incorporation in the system of “lexical affixes” on verbs;
 - predominantly spatial profile of “lexical affixation” (NB an areal feature even going beyond the Caucasus itself);
 - highly developed syntactic functions of morphology, including a cross-linguistically rare pattern of relativisation forming one of the core aspects of morphosyntax.

Conclusions and perspectives

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Conclusions and perspectives

- Polysynthesis is an evasive and vague notion, but it is useless?
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 - 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.
 - Most still living polysynthetic languages being endangered, it is the linguists' responsibility to avail themselves of these treasures – before it is too late.

Тхъа шъуегъэпсэу!

tha š^w-j-e-ve-psew!

god 2PL.ABS-3SG.ERG-DYN-CAUS-live

ШвызгIвадахатI!

šə-zʃ^wada-xa-ɬ!

2PL.ABS-healthy-INC(AOR)-DCL

Thank you for your attention!

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