University of Zürich, fall semester 2022

Northwest Caucasian Languages: Grammar and Typology

III. An overview of polysynthetic features

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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)
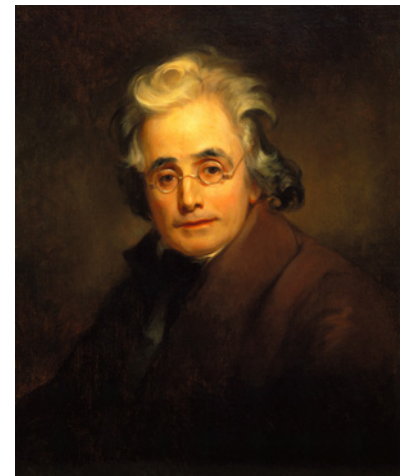
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- The extreme point of the cline "isolating – analytic – synthetic – polysynthetic", cf. Greenberg (1960: 194):
  - analytic   1.00-1.99 morphemes per word
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    - polysynthetic   3.00+

- Fortescue (2016: 2):
  "Polysynthetic languages are more than just languages with very long words".

What is "polysynthesis"?

- Abaza (own fieldwork data, textual example):

(1)   *s-z-a-la-nə$\dot{q}^w$a-wa-ʒə-j-š'a-ṭ*
      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 ë

What is "polysynthesis"?

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

(2)   *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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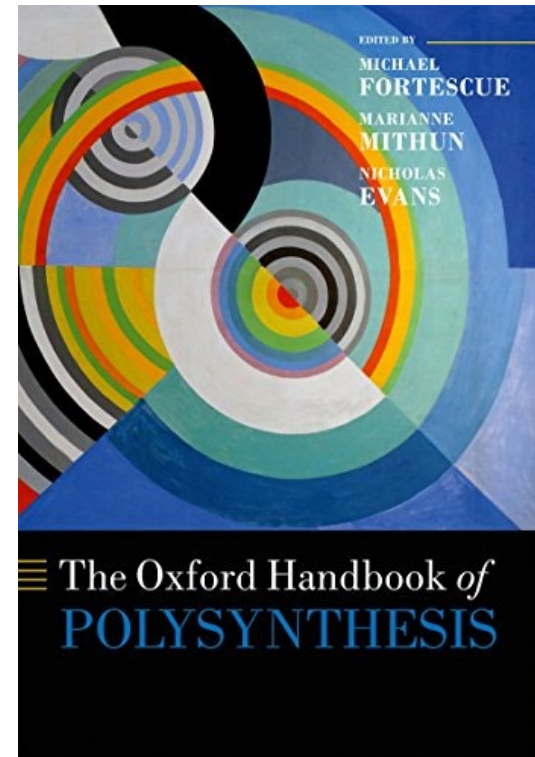
Is this also polysynthesis?

If not, why?

see a discussion in Arkadiev 2021a

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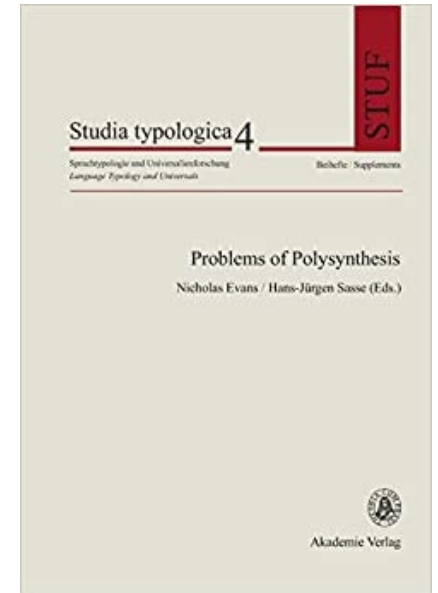- Even in this book.

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."

Studia typologica 4

STUF

Problems of Polysynthesis

Nicholas Evans / Hans-Jürgen Sasse (Eds.)

Akademie Verlag

What is "polysynthesis"?

Some recent definitions:

• 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) *and* must allow more than one lexically 'heavy' morpheme within the holophrastic verb, whether it be lexical or affixal".

EDITED BY
MICHAEL **FORTESCUE**
MARIANNE **MITHUN**
NICHOLAS **EVANS**

The Oxford Handbook *of*
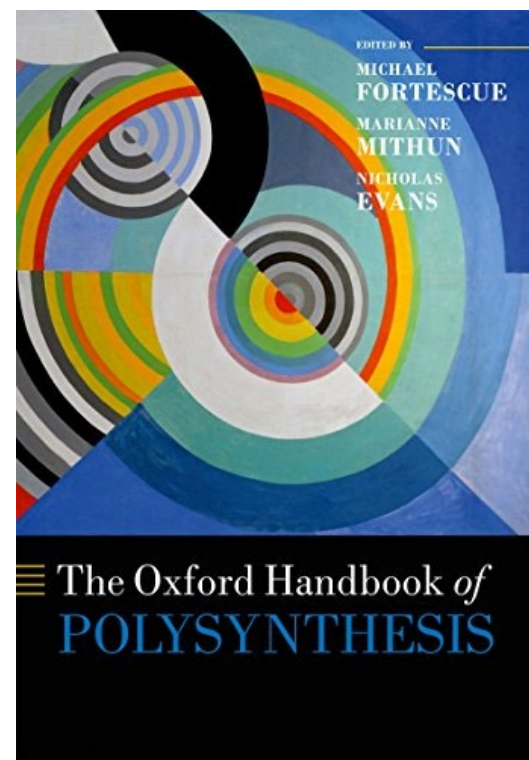**POLYSYNTHESIS**
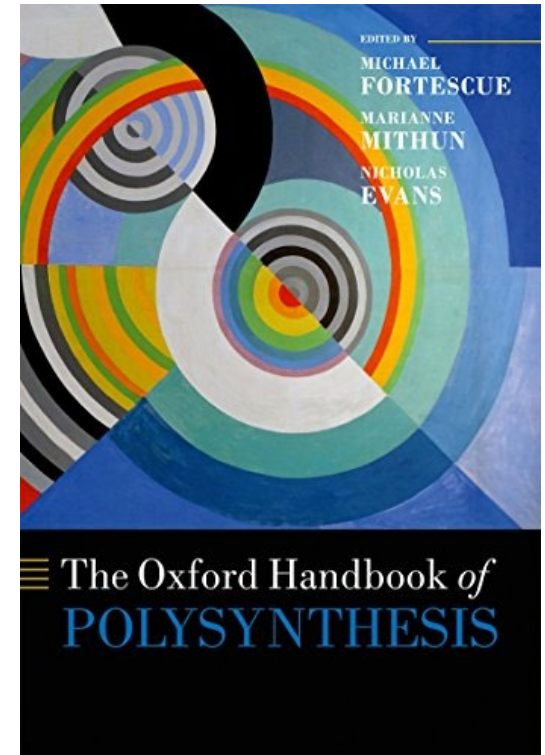
What is "polysynthesis"?

Some recent definitions:

- 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".

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 belonging neither to inflection nor to derivation;
  - "lexical affixes" (Mithun 1997, 1998) with very concrete root-like meanings;
  - incorporation or "dependent-head synthesis" (Mattissen 2003).

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: 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

- Compounding polysynthesis:

- 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.'
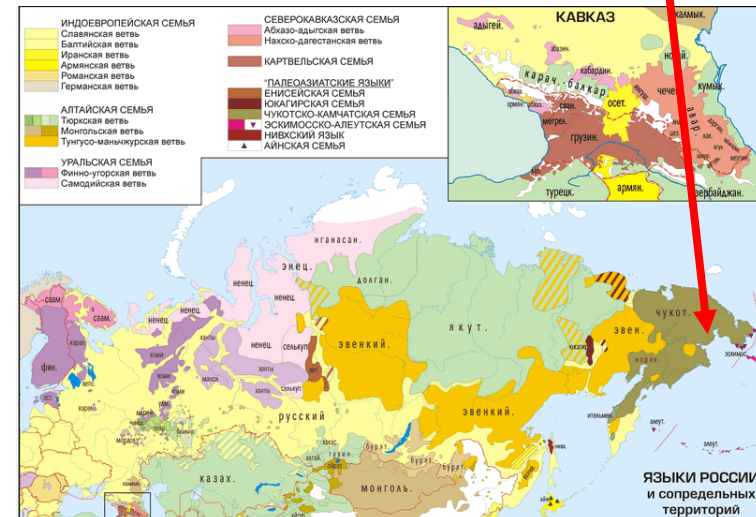
Typologising polysynthesis

- Affixal polysynthesis:

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

(4)   *s-iy-qili-wali-ʔiša-s-axwɨwɨk*
        3.SBJ-PL.SBJ-HAB-PRIOR-PART-CAUS-dry
        'Usually, they first semi-dry it.'

HAB – habitual
PART – partitive
PRIOR – priorative ('first')

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 2006, Bickel & Nichols 2007: 214-220.

Typologising polysynthesis

- Layered polysynthesis:

- Scope-ordering of suffixes in Central Alaskan Yupik (Eskimoan, USA; Mithun 2016: 15151)

(5)   a.   *quya-yuumi-it-u-a*
           thankful-yearn-NEG-INTR.IND-1SG
           'I don't want to be thankful.'

        b.   *quya-yuumi-ite-llru-u-nga*
           thankful-yearn-NEG-PST-INTR.IND-1SG
           'I didn't want to be thankful.'

        c.   *quya-yuumi-ite-llru-yugnarq-u-a*
           thankful-yearn-NEG-PST-probably-INTR.IND-1SG
           'I guess I didn't want to be thankful.'

Polysynthesis in Northwest Caucasian

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

(6)   *sə-q̇ə-zer-a-xʷə-č̣’erə-mə-ṭetə-č̣’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	IO – indirect object
BEN – benefactive	LOC – locative preverb
CSL – cislocative	RE - refactive
ELAT - elative	REL.FCT – factive relativization

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(7)   *d-jǝ-[ʁʷǝneʁʷ-bzǝλxʷǝʁe-daxe-dede]-m*
        1PL.PR-POSS-neighbour-woman-beautiful-very-OBL
        'our very beautiful lady-neighbour'

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- 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 & Testelets 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):

(8)   *j-ŝə-z-j-á-s-hʷ-p̣*
        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   IO – indirect object
BEN – benefactive applicative   M – masculine
DAT – "dative" marker   N – non-human
ERG- ergative

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41

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- Polypersonalism in Northwest Caucasian:
  - three-participant forms common;
  - four-participant forms uncommon, but attested in texts;
  - 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).

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 dozen in Abaza and Abkhaz);
  - do not normally affect core arguments (S, A and P);
  - combine will 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, Arkadiev et al. submitted

Polysynthesis in Northwest Caucasian

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

(9) *sə-qə-t-de-p-fə-Ø-r-a-ʁa-ǯe-š'tə-ʁ*

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

'They were making me read it for you together with us.'

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Polysynthesis in Northwest Caucasian

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- Applicative recursion in West Circassian (Lander & Letuchiy 2010: 269; elicited)

(10) *s-a-fə-Ø-f-e-txe*
        1SG.ABS-3PL.IO-BEN-3SG.IO-BEN-DYN-write
        'I write to him for their benefit.'

Polysynthesis in Northwest Caucasian

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Polysynthesis in Northwest Caucasian

• Locative applicatives in Abaza (textual examples):

(11) *phʷəs-ḳ* *d-ʕa-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.'

(12) *d-na-sə́-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

- "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):

(13)   *já-∅-s-tʷ-aj-le-f-ew-mǝ-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 – refactive

Polysynthesis in Northwest Caucasian

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       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 – refactive

Polysynthesis in Northwest Caucasian

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Polysynthesis in Northwest Caucasian

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

(14)   *a-ž'ə́*   *ata-s-rə́-ʒ-ĉa-χ-məʕʷa-ʕʷaca-ṭ*
        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):

(14)   *a-ž'ə́*   *ata-s-rə́-ʒ-ĉa-χ-məʕʷa-ʕʷaca-ṭ*
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Polysynthesis in Northwest Caucasian

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Polysynthesis in Northwest Caucasian

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Polysynthesis in Northwest Caucasian

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          'Unfortunately, I have just fried the meat excessively again.'

DPR – depreciative   REP – repetitive
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Polysynthesis in Northwest Caucasian

- Affixes like those shown in (13) and (14) do not fit well into the traditional classification of morphological phenomena into derivation vs. inflection (cf. critique by Spencer 2013 and Haspelmath Ms.):
  - they are derivation-like in being optional and expressing rather concrete semantic content;
  - they are inflection-like in being (at least in principle) highly productive, fully compositional and able to derive clearly ad-hoc forms.
- "Productive non-inflectional concatenation" (De Reuse 2009).

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. (8), (9) above.

Polysynthesis in Northwest Caucasian

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

(15)   a.   *tjepŝeč'ə-m*   *jə-λə-n*
                  plate-OBL   LOC:container-lie-MSD
                  'to be on a plate'

        b.   *škamṗə-m*   *de-λə-n*
                  cupboard-OBL LOC:enclosure-lie-MSD
                  'to be in a cupboard'

        c.   *daʁe-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):

(16) *ž'emehat-xe-r*   *q̇-a-ḳʷə-h-xe*
       part.of.village-PL-ABS CLS-3PL.ERG-pass-CIRCUM-PL
       'They go around all parts of the village.'

(17) *pŝeχʷə-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 displacement.

Kumakhov (1964: 139-146, 164-182, 1989: 200-228); Lomtatidze 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):

(18) *ḳʷeċə* 'intestines': *ḳʷeċə-ƛhe-n* 'put inside smth'
ḳʷeċə-rə-čə-n 'run through smth'

(19) *ʔʷə* 'mouth': *ʔʷə-cʷe-n* 'stand near smth'
ʔʷə-šʼə-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):

(20)   *ŝhe* 'head':   *ŝhe-rə-xə-n* 'take from one's head'

(21)   *ʔe* 'hand':   *ʔe-ṣe-xə-n* 'take from one's hands'

Polysynthesis in Northwest Caucasian

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

(22)   *ŝhe* 'head':   *ŝhe-rə-xə-n* 'take from one's head'

(23)   *ʔe* 'hand':   *ʔe-ṣe-xə-n* 'take from one's hands'

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

(24)   *a-saba*   *ʕa-rə-lakta-ṗl-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) :

(25)   *a-sabəj*   *d-gara-l-gʷa-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):

(26)   *a-raχʷ*   *ʁə-ċa-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 compounding/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:

(27)   a.   *de-ṭəs-ha-n*

            LOC:enclosure-sit.down-enter-MSD

            'to sit 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

- 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	
absolu-tive	subor-dinators	applicatives and indirect objects	erga-tive	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)

(28) a. *gʷəŝʷe-ŝʷe-ž'ə-ʁ*   refactive > similative

  be.glad-SML-RE-PST

  's/he pretended again that s/he was happy'

  b. *gʷəŝʷe-ž'ə-ŝʷa-ʁ*   similative > refactive

  be.glad-RE-SML-PST

  's/he pretended that s/he was happy again'

Polysynthesis in Northwest Caucasian

Abaza scopal (29) and counter-scopal (30) ordering of prefixes:

(29)   *d-ša-z-wə-c-nə-m-χ-əw-š*
3SG.H.ABS-SBD-POT-2SG.M.IO-COM-PVB-NEG-work-IPF-FUT
'[She said] that she won't be able to work with you.' (elicited)
(subordinator > <u>negation</u> > potential > applicative)

(30)   *a-wandər   h-a-kʷ-də-r-ĉa-ṭ*
DEF-cart   1PL.ABS-3SG.N.IO-LOC:top-3PL.ERG-CAUS-sit(AOR)-DCL
'they put us in the cart' (text) (causative > locative applicative)

Polysynthesis in Northwest Caucasian

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

(31)   a.   *sə-w-də-q̇ʷe.tʷ-q̇e*

                  1SG.ABS-2SG.ERG-CAUS.SG-stop.SG-PST

                  'You (sg) made me stop.'

        b.   *š'ə-w-ʁe-q̇ʷe.χe-q̇e-n*

                  1PL.ABS-2SG.ERG-CAUS.PL-stop.PL-PST-PL

                  'You (sg) made us stop.'

Polysynthesis in Northwest Caucasian

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

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

        b.   *s-a-q̇ə-de-ḳʷ-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, syntactic derivation or a uniform rigid template.

- Obviously reflects different historical layers of successive grammaticalisation and morphologisation (as well as lexicalisation).

Polysynthesis in Northwest Caucasian

- A large part of the Nortwest 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):

(33)   a.   *wə-sə-wəpsə-ʁ*
                  2SG.ABS-1SG.ERG-shave-PST
                  'I shaved you.'

          b.   *zə-sə-wəpsə-ʁ*
                  RFL.ABS-1SG.ERG-shave-PST
                  'I shaved (myself).'

Polysynthesis in Northwest Caucasian

West Circassian reciprocals (Letuchiy 2007: 788):

(34)   a.   *sə-ŝʷə-š'-e-gʷəʁə*
                  1SG.ABS-2PL.IO-LOC-DYN-rely
                  'I rely on you (pl).'

        b.   *tə-ze-š'-e-gʷəʁə-ž'ə-x*
                  1PL.ABS-REC.IO-LOC-DYN-rely-RE-PL
                  'We rely on each other.'

Polysynthesis in Northwest Caucasian

- Reflexive and reciprocal 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/reciprocal pronouns.

Polysynthesis in Northwest Caucasian

- Relativisation in Abaza (elicited):

(35) *a-phʷəspa   ĉa   lə-s-t-ṭ*
      DEF-girl   apple   3SG.F.IO-1SG.ERG-give(AOR)-DCL
      'I gave the girl an apple'

(36) [*a-phʷəspa   j-lə-s-tə-z*]   *a-ĉa*
      DEF-girl   REL.ABS-3SG.F.IO-1SG.ERG-give-PST.NFIN   DEF-apple
      'the apple that I gave to the girl'

Polysynthesis in Northwest Caucasian

- Relativisation in Abaza (elicited):

(35) *a-phʷəspa*   *c̣a*   *lə-s-t-ṭ*
      DEF-girl   apple   3SG.F.IO-1SG.ERG-give(AOR)-DCL
      'I gave the girl an apple'

(37) [*a-c̣a*   *zə-s-tə-z*]   *a-phʷəspa*
      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):

(35)   *a-phʷəspa*   *c̣a*   *lə-s-t-ṭ*
        DEF-girl   apple   3SG.F.IO-1SG.ERG-give(AOR)-DCL
        'I gave the girl an apple'

(38)   [*a-phʷəspa*   *c̣a*   *lə-z-tə-z*]   *a-c̣'ḳʷən*
        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 2010, 2012, Ershova 2021

Polysynthesis in Northwest Caucasian

- Externally vs. internally-headed relative clauses in West Circassian:

(39)　　a.　[[*zə-tje-s*]　　　*šə*]-*xe-r*　　　*psənč̣'-ew*　　*če-š'tə-ʁe-x*
　　　　　REL.IO-LOC:on-sit　horse-PL-ABS　fast-ADV　　　run-IPF-PST-PL

　　　　b.　[*š-ew*　　　*zə-tje-s*]-*xe-r* <…>　　　　*psənč̣'-ew če-š'tə-ʁe-x*
　　　　　horse-ADV　REL.IO-LOC:in-sit-PL-ABS　　fast-ADV　　run-IPF-PST-PL

　　　'The horses that they rode (lit. on which they sit) would run fast.'

Polysynthesis in Northwest Caucasian

- Externally vs. internally-headed relative clauses in West Circassian:

(39) a. [[*zə-tje-s*]   *šə*]-*xe-r*   *psənč̣'-ew*   *če-š'tə-ʁe-x*
           REL.IO-LOC:on-sit horse-PL-ABS   fast-ADV   run-IPF-PST-PL

      b. [*š-ew*   *zə-tje-s*]-*xe-r* <...>   *psənč̣'-ew* *če-š'tə-ʁe-x*
           horse-ADV REL.IO-LOC:in-sit-PL-ABS   fast-ADV   run-IPF-PST-PL
      'The horses that they rode (lit. on which they sit) would run fast.'

- Headless relative clauses:

(40) *zə-λeʁʷə-xe-re-m*   *a-ʁe-ŝeʁʷa-ʁ*
      REL.ERG-see-PL-DYN-OBL   3PL.ERG-CAUS-wonderful-PST
      'Those who saw him were surprised.' (text)

Polysynthesis in Northwest Caucasian

- Uses of headless relative clauses:
  - for reference (40) above;
  - in pseudoclefts marking focus (41) and constituent questions (42):

Besleney Kabardian

(41)   *wə-z-ʁe-gʷəmeč̣'ə-r*   *bze-ra*
        2SG.ABS-REL.ERG-CAUS-worry-ABS   language-PRED
        'What worries you is the language.' (text)

(42)   *səd-a*   *wə-z-ʁe-gʷəmeč̣'ə-r*
        what-Q   2SG.ABS-REL.ERG-CAUS-worry-ABS
        'What (is it that) worries you?' (constructed)

Sumbatova 2009a,b

Polysynthesis in Northwest Caucasian

- Uses of headless relative clauses:
  - for adverbial subordination (43) and complementation (44)

Abaza (text)

(43) [*ápχ'arta s-an-ʕá-lga*]   *a-institut   s-cá-ṭ*
      school   1SG.ABS-REL.TEMP-CSL-finish   DEF-college   1SG.ABS-go-DCL
      'When I finished school I went to college.'

Besleney Kabardian (text)

(44) [*mew-bə-m   ƛəʁe   ze-rə-xe-mə-λ-r-jə*]
      DIST-OBL-OBL   courage   REL.IO-INSTR-LOC:mass-NEG-lie-ABS-ADD
      q̇ə-gʷərəʔʷ-a
      CSL-understand-PST
      'She realised that he didn't have courage.'

Caponigro & Polinsky 2011

Polysynthesis in Northwest Caucasian

- Abaza headless relatives (Arkadiev & Caponigro 2021):

    - referring to an individual:

(45) a. [*zarina*   *jə-l-χʷʕa-wa*]   *s-f-əj-ṭ*

       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:

(45) a. [*zarina*   *jə-l-χʷʕa-wa*]   *s-f-əj-ṭ*

      Zarina   REL.ABS-3SG.F.ERG-buy-IPF   1SG.ERG-eat-PRS-DCL

      'I eat what Zarina buys.'

  - conveying an embedded question:

   b. [*zarina*   *jə-l-χʷʕa-wa*]   *s-a-z-çʕa-ṭ*

      Zarina   REL.ABS-3SG.F.ERG-buy-IPF   1SG.ABS-3SG.N.IO-BEN-ask-DCL

      'I asked what Zarina buys.'

Polysynthesis in Northwest Caucasian

- Abaza headless relatives (Arkadiev & Caponigro 2021):

    - referring to an individual:

(45) a. [*zarina*   *jə-l-χʷʕa-wa*]   *s-f-əj-ṭ*
         Zarina   REL.ABS-3SG.F.ERG-buy-IPF   1SG.ERG-eat-PRS-DCL
         'I eat what Zarina buys.'

    - conveying an embedded question:

    b. [*zarina*   *jə-l-χʷʕa-wa*]   *s-a-z-çʕa-ṭ*
         Zarina   REL.ABS-3SG.F.ERG-buy-IPF   1SG.ABS-3SG.N.IO-BEN-ask-DCL
         'I asked what Zarina buys.'

    - conveying a matrix question (Arkadiev 2020):

    c. [*zarina*   *jə-l-χʷʕa-wa*]-*ja*?
         Zarina   REL.ABS-3SG.F.ERG-buy-IPF-QN
         'What does Zarina buy?'

Polysynthesis in Northwest Caucasian

- Interrogative verbal morphology in Abaza (Arkadiev 2020):

(46) *j-wə́-c-kʷa-z-da*   *l-hʷa-n*
      REL.ABS-2SG.M.IO-be.with-PL-PST.NFIN-QH 3SG.F.ERG-say-PST.DCL
      'Who were with you? she asked.' (text)

(47) *arə́j*   *áχč'a*   *n-bá-ʕa-z-ʁəč'*
      PROX   DEF+money   REL.TEMP-QADV-CSL-1SG.ERG-steal
      'When did I steal this money?' (text)

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.