

Labex EFL International Chair, INALCO, Paris, 9 May 2023

**Problems of polysynthesis, with
special reference to the Northwest
Caucasian languages**

Lecture 1: What is polysynthesis?

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Roadmap

- A brief history of the notion
- Some examples
- Definitions of polysynthesis
- Vagueness and heterogeneity
- Possible correlates
- Outlook

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A brief history of the notion

- Pierre-Étienne Du Ponceau a.k.a. Peter Duponceau (1760-1844)

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*.

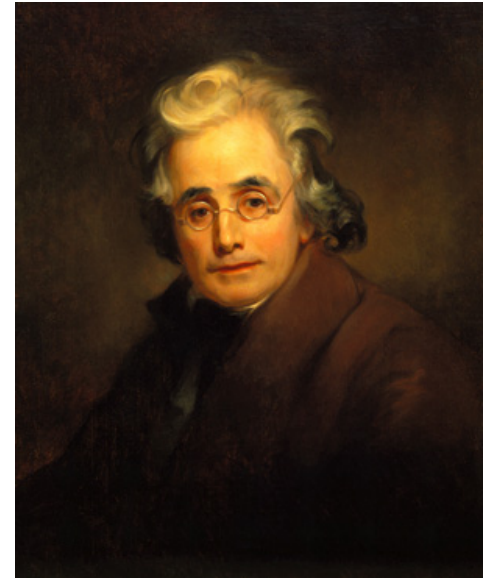
(Du Ponceau 1838: 89)



[wikipedia.org](https://en.wikipedia.org/wiki/Pierre-Étienne_Du_Ponceau)

A brief history of the notion

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



wikipedia.org

A brief history of the notion

- First applied to the languages of Native Americans, then to Chukotkan languages, later similar structures were found elsewhere.

A brief history of the notion

- A holistic notion: linguists still tend to speak about “polysynthetic languages” rather than “polysynthetic constructions” (cf. the fate of the terms “ergative” or “flexive”).

A brief history of the notion

- Mithun (1988: 442):

“Polysynthetic languages are by definition those that exhibit a high number of morphemes per word”.

A brief history of the notion

- The extreme point of the cline of synthesis, cf. Greenberg (1960: 194)

isolating – analytic – synthetic – polysynthetic

- analytic 1.00-1.99 morphemes per word
- synthetic 2.00-2.99
- polysynthetic 3.00+

A brief history of the notion

- Greenberg (1960: 193)

Language	Synthesis index
Vietnamese	1.06
Persian	1.52
Modern English	1.68
Old English	2.12
Yakut	2.17
Swahili	2.55
Sanskrit	2.59
West Greenlandic	3.72

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A brief history of the notion

- Mithun (1988: 442):

“Polysynthetic languages are by definition those that exhibit a high number of morphemes per word”.

- Fortescue (2016: 2):

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

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Some examples

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

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

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



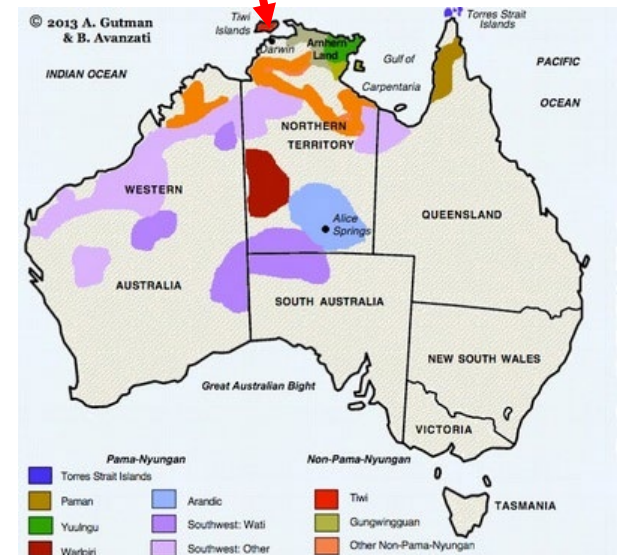
Some examples

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.’



Some examples

Abaza (Northwest Caucasian, Russia; textual example):

(3) *s-z-a-la-nəq^wa-wa-ʒə-j-š'a-t*

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

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

ABS – absolutive
DCL – declarative
IO – indirect object
IPF – imperfective
N – non-human
POT – potential
PVB – preverb



Some examples

Lithuanian (Indo-European > Baltic; CCL)

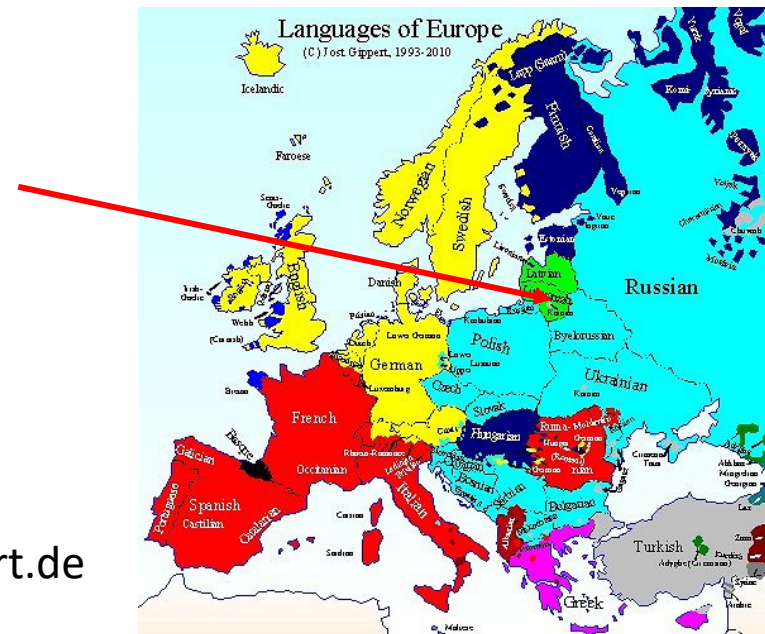
(4) *ne-be-su-si-skamb-in-dav-o-me*

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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Some examples

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Is this also polysynthesis?

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Is this also polysynthesis?

If not, why?

see a discussion in Arkadiev 2021

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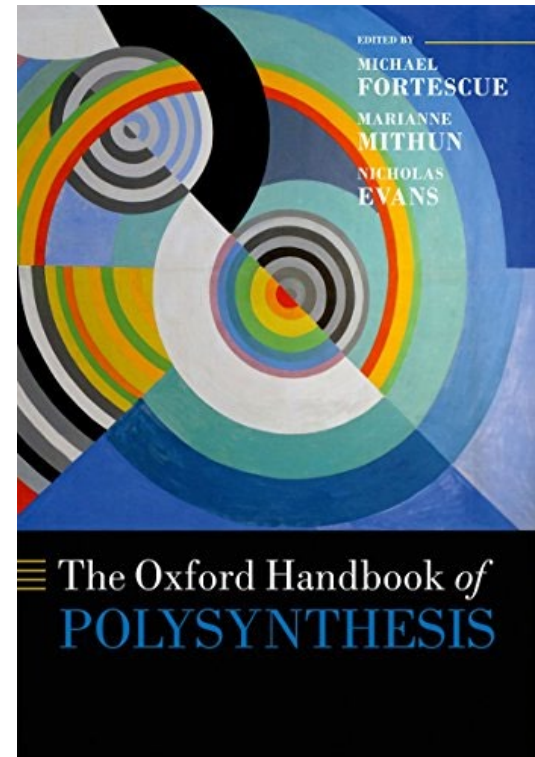
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Definitions of polysynthesis

- There is no general and agreed-upon definition of “polysynthesis” (cf. Lander 2011, Zúñiga 2019).

Definitions of polysynthesis

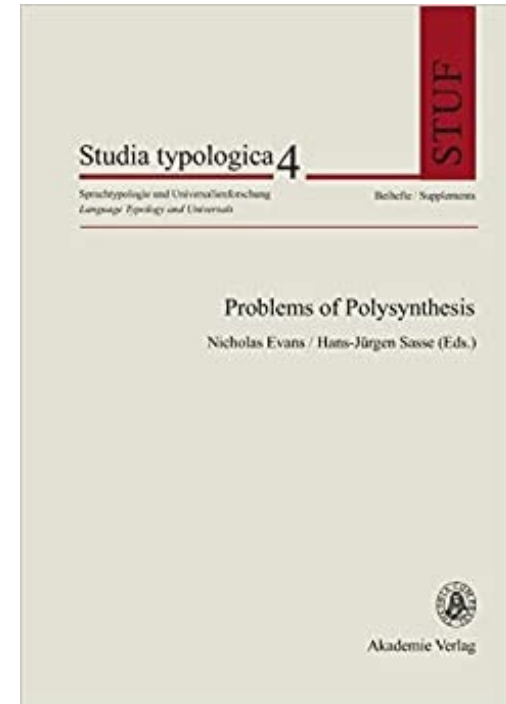
- There is no general and agreed-upon definition of “polysynthesis” (cf. Lander 2011, Zúñiga 2019).
- Even in this book.



Definitions of polysynthesis

- Evans & Sasse (2002: 3):

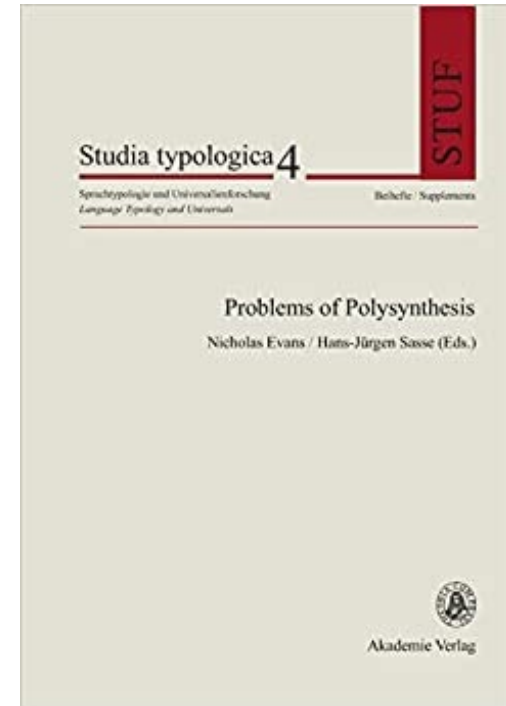
“Essentially, then, a prototypical polysynthetic language is one in which it is possible, in a single word, to use processes of morphological composition to encode information about both the predicate and all its arguments <...> to a level of specificity allowing this word to serve alone as a free-standing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



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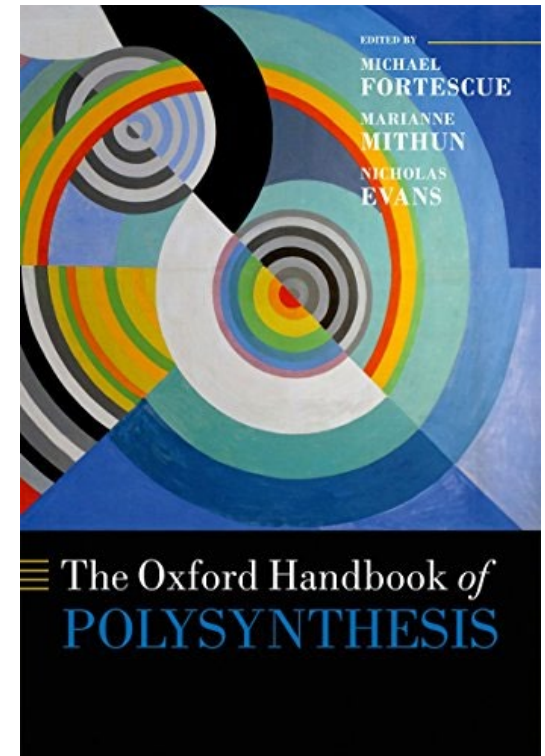
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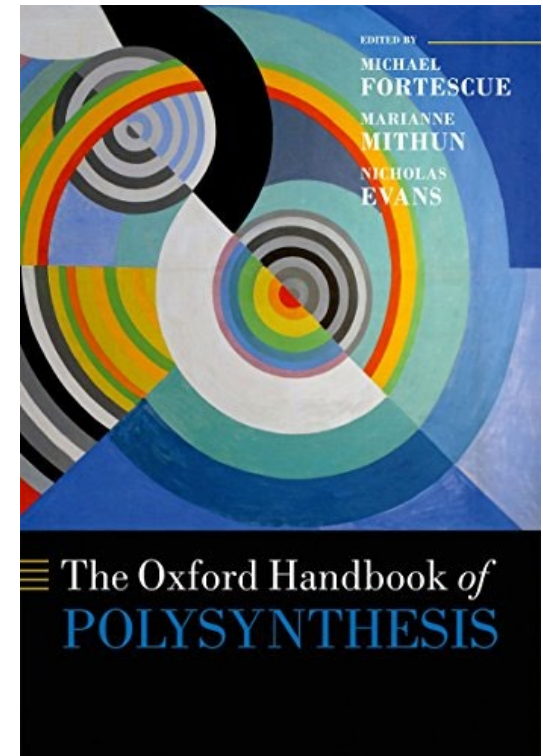
Definitions of polysynthesis

- 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) *and* must allow more than one lexically ‘heavy’ morpheme within the holophrastic verb, whether it be lexical or affixal”.



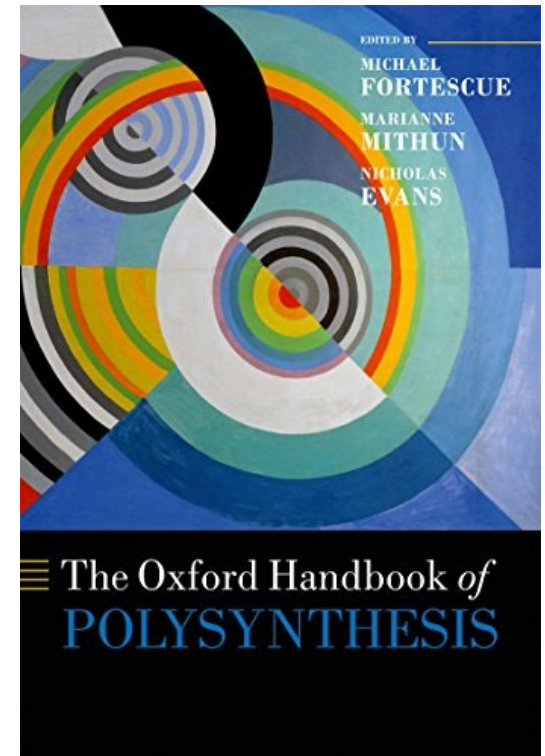
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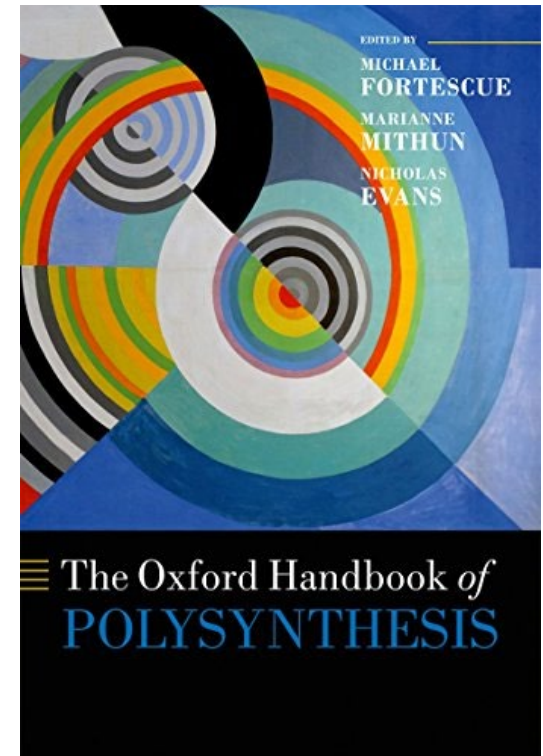
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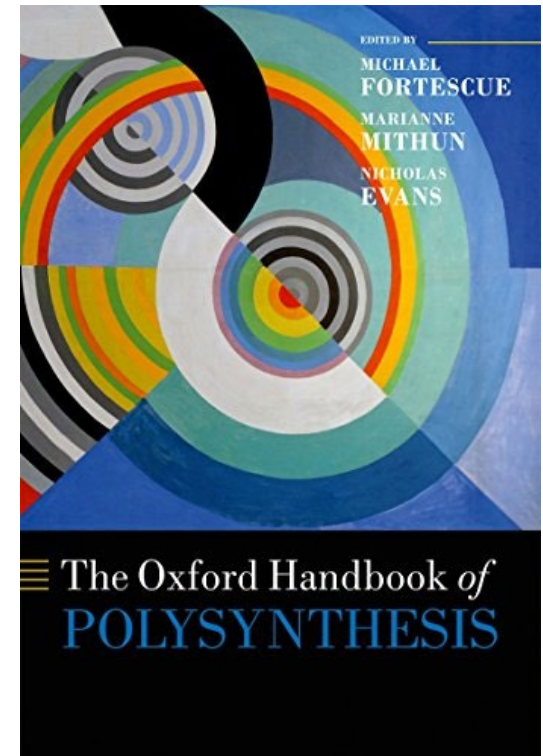
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“Languages qualify as polysynthetic if they have complex, polymorphemic verbal units which necessarily integrate productive<ly> non-root bound morphemes with ‘lexical’ and grammatical meanings, especially local ones, and optionally allow concatenation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



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- Cf. references to “prototypical” resp. “core” polysynthetic languages in many definitions.
- Which criteria define this prototype and how can they be evaluated (qualitatively/quantitatively)?

Vagueness and heterogeneity

- What counts as “lexically heavy”?

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Lithuanian (Arkadiev 2021):

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

Vagueness and heterogeneity

- What counts as “holophrasis”?

Vagueness and heterogeneity

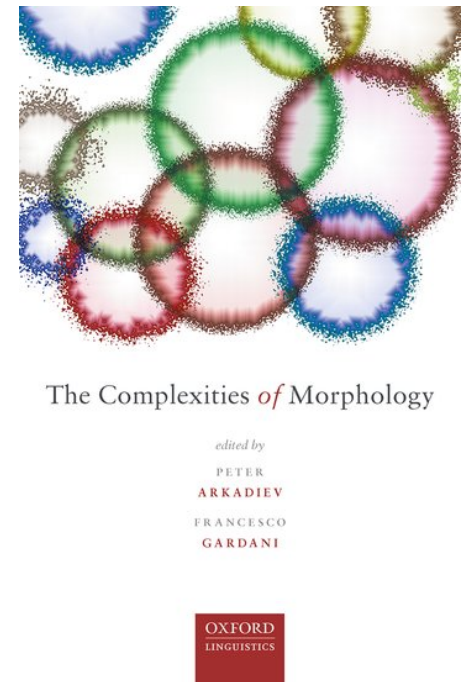
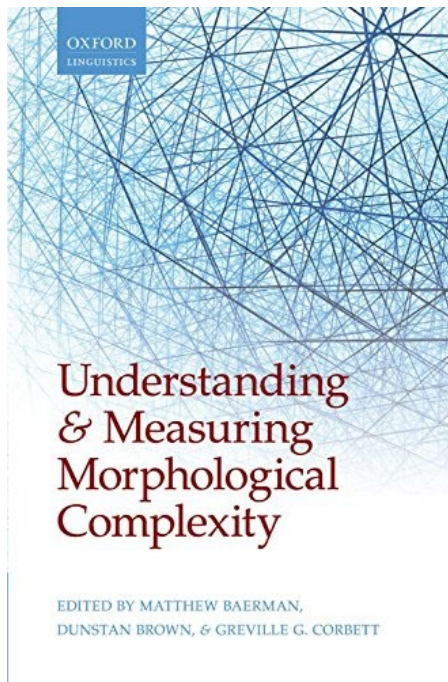
- What counts as “holophrasis”?
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Vagueness and heterogeneity

- What counts as “holophrasis”?
 - Usually, indexing of both arguments of transitive verbs.
 - But what about
 - Indexing of three arguments in ditransitives?
 - Indexing of applied objects?
 - Indexing of peripheral arguments, e.g. locations with verbs of displacement?

Vagueness and heterogeneity

- How to measure morphological complexity beyond Greenberg's syntheticity index (cf. Baerman et al. ed. 2015; Arkadiev & Gardani eds. 2020)?



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 - How productive these morphemes are?

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 - How many “lexically heavy” morphemes are there in the system (paradigmatically) or can co-occur in a single verb (syntagmatically)?
 - How productive these morphemes are?
 - How freely do they combine with roots and with each other?

Vagueness and heterogeneity

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- What is a “word”?
- Haspelmath (2011), Bickel & Zúñiga (2017), Tallman (2020, 2021), Tallman & Auderset (2022)
- Phonological and morphosyntactic criteria do not always converge.
- Languages vary in the degree of robustness of the word vs. phrase distinction.

Vagueness and heterogeneity

Mapudungun (Araucanian, Chile; Bickel & Zúñiga 2017: 174)

(6) *entu-soyum-yaw-küle-i*

remove-shrimp-PERAMB-PROG-IND

‘They are going around gathering shrimp.’



wikipedia.org

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- morphosyntactically, a coherent string
- phonologically, three separate domains of stress assignment



wikipedia.org

Vagueness and heterogeneity

Chácobo (Panoan, Bolivia; Tallmann 2018)



Vagueness and heterogeneity

Chácobo (Panoan, Bolivia; Tallmann & Epps 2020: 259)

(7) *honi siri oša-mis=tikin=kas=?itá=ki=rí*
man old sleep-APASS=AGAIN=DES=REC.PST=DEC:PST=LAMENT
‘What a shame that the old man only wanted to
sleep again yesterday.’

APASS – antipassive

DEC – declarative

DES – desiderative

REC.PST – recent past

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“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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- Characteristic features of polysynthesis:
 - 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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Possible correlates

- 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.”

Possible correlates

- Mithun (1988: 451-2):

“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.”

Cf. also Mithun 1989a

Possible correlates

- Highly complex verbs ~ simpler nouns?

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Possible correlates

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Possible correlates

- Polysynthesis is a specific way of drawing boundaries between
 - lexicon and grammar
 - within grammar, between morphology and syntax.

Possible correlates

- 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** and **online creation** of complex morphological units is blurred (cf. de Reuse 2009).

Possible correlates

- 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** and **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).

Possible correlates

- Evidence from L1 acquisition
- 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”.

Possible correlates

- Evidence from L1 acquisition
- 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”.

Possible correlates

- Evidence from L1 acquisition
- 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".

Possible correlates

- Evidence from L1 acquisition
- However, 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”.

Possible correlates

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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.

Possible correlates

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- Putative hallmarks of “polysynthetic syntax” (Baker 1996, Fortescue et al. 2017: 4-5):
 - non-configurationality (Hale 1983), i.e. free constituent order and optionality of nominals;
 - rare use of free pronouns;
 - absence of (core) case-marking;
 - absence of non-finite verbal constructions.

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 - rare use of free pronouns;
 - absence of (core) case-marking;
 - absence of non-finite verbal constructions.
- More in Seminar 4.

Possible correlates

- Polysynthesis presupposes 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).

Possible correlates

- 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.

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 - geographical isolation and low contact;
 - no or few second-language speakers.
- Most polysynthetic languages are endangered.

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Outlook

- Seminar 2: much more on cross-linguistic variation and fringes of polysynthesis.

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- Seminar 3: a general introduction to the Northwest Caucasian languages and an overview of their polysynthetic morphology.

Outlook

- Seminar 2: much more on cross-linguistic variation and fringes of polysynthesis.
- Seminar 3: a general introduction to the Northwest Caucasian languages and an overview of their polysynthetic morphology.
- Seminar 4: more on the relations between syntax and morphology in polysynthetic languages with a focus on Northwest Caucasian.

Thank you for your attention!
Merci de votre attention!

