Variability of Languages in Time and Space

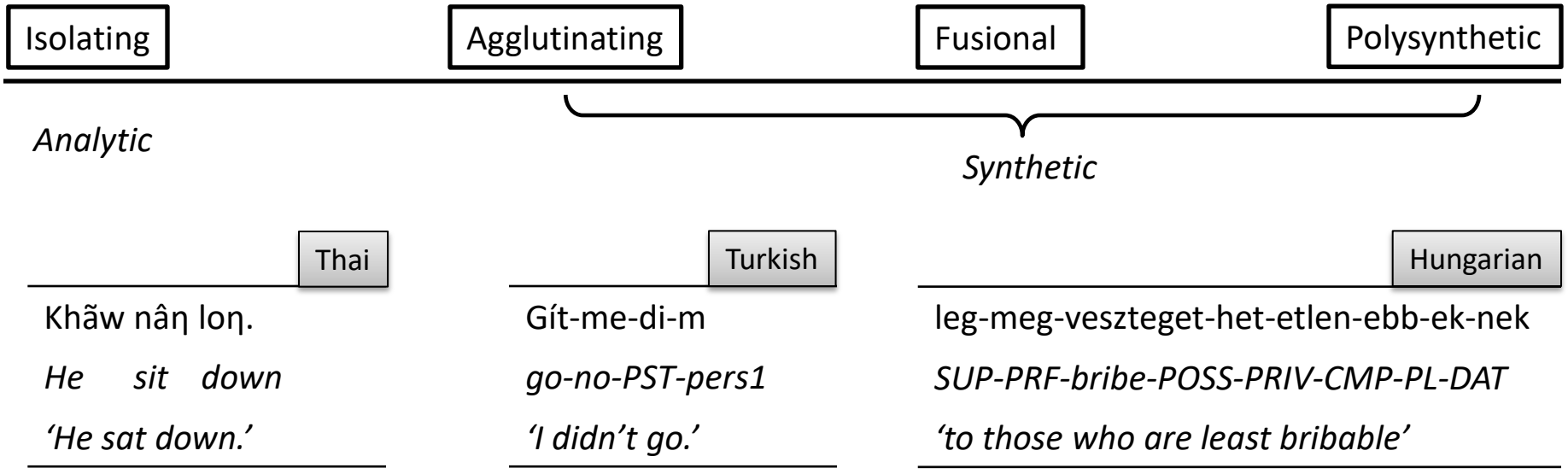
Variability in Morphology, part 2

- Finish morphology types: agglutinating, fusional, isolating, polysynthetic
- Part of speech classification
- Typology of grammatical categories
- Nominal categories: Number, Case, Head-marking, Determination
- Linguistic quizes

Anja Nedoluzhko

Parameters of Variation

- Stems and Affixes
  - What combinations of stems and affixes are possible in a language?
- Separatist vs. cumulative affixes
  - Does an affix has one or more meaning at the same time?
- The form of morphemes
  - Segmental morpheme (different types), operations (e.g. reduplication), suprasegmentals
- Monosemous vs. polysemous affixes
- Invariance vs. variance of affixes
  - Declination classes
- Overt vs. zero affixes
  - What kind of affixes have overt forms and what kinds are zero?
- The order of morphemes
  - e.g. *stem – deriv – number – case*



Types of morphology

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- Invariance vs. variance of affixes
  - One or more realization for a grammatical meaning

Agglutinating morphology

- A word may consist of more than one morpheme, mostly many morphemes.
- One morpheme designates one grammatical meaning.
- Affixes are mostly monosemous. Just a few exceptions (almost no “irregular” verbs in Japanese, Turkish)
- The boundaries between morphemes in the word are clear-cut.

	Singular	**Plural**
Nominative	*adam*	*adam-lar*
Accusative	*adam-ı*	*adam-lar-ı*
Genitive	*adam-ın*	*adam-lar-ın*
Dative	*adam-a*	*adam-lar-a*
Locative	*adam-da*	*adam-lar-da*
Ablative	*adam-dam*	*adam-lar-dam*

Turkish

adam ‘man’

- Frequent in Turkish, Indonesian, Eskimo, Hungarian, Japanese, Basque, etc.

Fusional morphology

(flective, inflective)

- no clear-cut boundaries between morphemes
  - alternations
- the expression of different categories within the same word is fused together to give a single unsegmentable morpheme
- restrictions to morpheme combinations
  - affix variance

ruk-a 'hand'
ruc-e 'hand' (Nom.Pl, Lok&Dat. Sg)
ruč-n-í 'hand' (adj.)

Czech

Marie *sp - **í***
'Mary' 'sleep' – 3.pers.+SG+present
'Mary is sleeping.'

*přátel-**é***
'friends'

*politi**c**-**i***
'politicians'

*vítěz-**ové***
'winners'

Nom+Plural

Polysynthetic morphology

(incorporating)

- Even more synthetic than fusional morphology
- Lexical morphemes are combined together into a single word
  - noun incorporation
  - long "sentence-words",
  - subject may be separated, but the rest stays very close
- Words are composed of many morphemes
  - have independent meaning but cannot stay alone
  - High morpheme-to-word ratio
- Morpheme and word boundaries are not clear cut
- Often polypersonal agreement

Polysynthetic morphology

(incorporating)

- In Paleosiberian Eskimo-Aleut languages

Chukchi

təmeyŋəlevtəpəɣtərkən				
tə	meyŋə	levtə	pəɣt	ərkən
1.SG	big	head	ach	IMPF

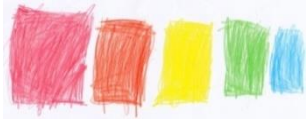
'I have a fierce headache'

Yupik

tuntussuqatarniksaitengqiggtuq

'He had not yet said again that he was going to hunt reindeer.'

kewæpeqtaq	we1+2 begin
kawaham	he fells it by tool
nepɪtohnæm	I walk here (to this place)
keskenam	he breaks it through by hand
pahkæsam	he cuts it off
kekætohnæq	we1+2 walk out
pɪtenam	he passes it here
kewæpanæhkæq	we1+2 begin to dig
tawæsam	he cuts a hole in it
nekætahan	I pry it out by tool
pahkaham	he opens it by tool (by raising a lid or opening a door)
kekeskahtæq	we1+2 bite it through
wackohnæw	he walks roundabout, by a detour
newackesan	I cut around it
ketænam	he takes it out by hand
ketawahtæq	we1+2 bite, gnaw a hole in it
wæpohnæw	he begins walking
nekaweqtam	I lie down
pahkeqtaw	he opens up
kepɪtahtæq	we1+2 come eating it; we1+2 bring it in our mouths
nekawahpem	I fall over laughing



Isolating and Analytical morphology

- Grammatical meanings are expressed with function words
  - One word – one morpheme
- More of isolation → Less of morphology
- Very important word order
- Many compound words

Vietnamese

Khi tôi đèn nhà ban tôi, chúng tôi bắt đầu làm bài.

Khi	tôi	đèn	nhà	ban	tôi	chúng	tôi	bắt	đầu	làm	bài
when	I	come	house	friend	I	plural	I	begin	head	do	lesson

'When I came to my friend's house, we began to do lessons.'

Rough comparison of morphologies

	isolating	**agglutinating**	**fusional**	**polysynthetic**
stems and affixes	separated	combined	combined	combined+
separatist ↔ cumulative	separatist	separatist	cumulative	cumulative
monosemous ↔ polysemous	monosemous	monosemous	polysemous	polysemous
invariance ↔ variance	invariance	invariance	variance	variance

- Stems and Affixes
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English?

I am a student
You are a student
He/she/it is a student

We are students.
You are students.
They are students.

I love spring.

anti-dis-establish-ment-arian-ism

EN. *The dog of my father is barking.*
def. Gen. poss. praes. actual

CZ. *Tatínkův pes štěká.*
farther+poss dog+NomSg bark+praes.

Turkish –English

Given Turkish word forms and their translations into Latin and English

yazmışım	—	I've probably written
yazmışsın	—	You$_{sg}$ have probably written
yazmış	—	He has probably written
yazmışsınız	—	You$_{pl}$ have probably written
yazar	—	He writes
yazarlar	—	They write

çalışırım	—	I work
çalışır	—	He works
çalışırsın	—	You$_{sg}$ work
çalışırlar	—	They work
çalışırsınız	—	You$_{pl}$ work
yazarsın	—	You$_{sg}$ write

yazarsınız	_____
yazmışlar	_____
_____	They have probably written
_____	He writes
_____	I write

Typology of Grammar

- Not universal, but many categories are present in many languages
- Nouns
  - semantic meanings (number, determination, possessivity)
  - syntactic meanings (agreement classes, case, head-marking)
- Verbs
  - temporal categories, aspect, modality, epistemic possibility, evidentiality, causality, (gender)
- Distinguishing word classes
  - nouns vs. verbs
    - semantic features (denote a thing vs. denote an action)
    - pragmatically (nouns introduce participants to the scene, and verbs deploy them)
    - formally (e.g. inflectional morphology)
    - syntactically (how they are combined with other word classes)

!

Word Classes (Parts of Speech, POS)

- traditional distinction into nouns, verbs, adjectives…
  - Dionysios Thrax (217–145 BC) defines eight (!) parts of speech in his *Tékhnē grammatikē* (Art of Grammar).
- semantic distinctions like ‘nouns denote objects’, ‘verbs denote actions’, or ‘adjectives denote properties/qualities’ is not enough
  - e.g. *movement* does not refer to an object
- discussion on distinguishing word classes is based on four sets of criteria:
  - semantic criteria
  - pragmatic criteria/criteria of discourse function
  - formal criteria
  - distinction between lexical and syntactic levels of analysis

!

Word Classes (Parts of Speech, POS)

- nouns
- verbs
- adjectives
- adverbs

open word classes

Cross-linguistically valid criteria for distinguishing word classes can be applied

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- pronouns (personal, possessive, reflexive, reciprocal, demonstrative, relative, interrogative, indefinite)
- articles
- adpositions
- conjunctions
- numerals
- interjections

!

Criteria for *noun* ↔ *verb* distinguishing

semantic	pragmatic/discourse	formal	lexical vs. syntactic

- Most approaches to word classes are based on semantic criteria like object, property, or action (‘thing-like concepts’ and ‘event-like concepts’)
- Notional description of nouns and verbs (detailed in Langacker 1987: 74ff.)
  - A **noun** designates entities characterized as being static and holistic.
  - A **verb** is […] ‘a temporal’ predication in the sense of following a situation, state by state, as it evolves through conceived time.
- Such approach does not provide a discovery procedure for POS identification
- Semantic criteria are too general to match word classes across languages
  - A concept may be not lexicalized universally

Criteria for *noun* ↔ *verb* distinguishing

semantic	**pragmatic/discourse**	formal	lexical vs. syntactic

- Distinction between nouns and verbs is related to discourse function (Hopper and Thompson 1984: 708ff.)
  - semantic properties of prototypical N's and V's are […] derivative of (and perhaps even secondary to) their discourse roles
- The prototypical discourse function of **nouns** (referents)
  - introduce participants and deploy them
  - scale: low categoriality for e.g. predicate nominals, anaphora
- The prototypical discourse function of **verbs** (predicates)
  - assert the occurrence of an event, 'What happened?'
  - scale: low categoriality in stativity (predicative adjectives, attribution, existential clauses, copula clauses), irrealis, negation, serial verbs, compound verbs, dependent clauses.

!

Criteria for *noun* ↔ *verb* distinguishing

semantic	pragmatic/discourse	**formal**	lexical vs. syntactic

- Crucial role of morphology and syntactic distribution
  - word-internal (compatibility with certain morphemes, e.g. *darkness,* paradigmatic issues)
  - word-external (compatibility with other words, e.g. *a leg*)
- Phonological form
  - Distinct word classes take phonologically different forms whose structure cannot be characterized in a general way (e.g. English *speech* vs. *speak* or *die* vs. *death*)
  - Lexemes within each class have different phonological properties (e.g. nouns are monosyllabic, verbs are disyllabic)

Universality of the Distinction?

- The difference between denotational and non-denotational words seems to be universal
  - languages which seem to have no noun/verb distinction ('omnipredicativity' in classical Natuatl, Tagalog, Riau Iroquoian languages, Indonesian)

classical Natuatl

0-qui-cua	in	piltōontli	in	nacatl
3SG.A-3SG.O-eat	LNK	child	LNK	meat
'S/he eats it'		'It is a child'		'It is meat'

'The child eats the meat.'

- Transcategorial morphemes
  - deminutive&positive affix *–ke* in Mansi

Mansi

sāli-**ke**	low-**ke**	toti-**ke**
deer-**small,nice**	ten-**small,nice**	carry-**nicely,glad**

!

Other Word Classes: Adjectives

- Property-denoting lexemes in the function of modification,
- Non-universal distinction
- Languages
  - with adjectives
    - English: very separate category (degrees, no verbal categories of tense or aspect, no nominal category of number)
  - verbal (special class of static predicates like ‘be good’)

kër	**gu**	**baax**
house	which	‘be-good’ (verb)
(en.) *a good house*		

Wolof

  - nominal (‘adjectives’ are morphologically same as nouns)

bon**us**	**vs.**	amīc**us**
good		*friend*
nomen adjectivum		nomen substantivum

Latin

*Amīc**us** Plat**o**, sed magis amīc**a** verit**ās**.*

Other Word Classes: Adverbs

- Much more heterogeneous class
- Modifiers of constituents other than nouns
  - mostly verbs and adjectives, with some exceptions
  - *very fast, extremely clever* but also *during his stay here*
- Traditionally sub-classified into four semantic groups
  - local
  - temporal
  - modal or manner
  - causal

Word Classes (Parts of Speech, POS)

- nouns
- verbs
- adjectives
- adverbs

open word classes

Cross-linguistically valid criteria for distinguishing word classes can be applied

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- pronouns (personal, possessive, reflexive, reciprocal, demonstrative, relative, interrogative, indefinite)
- articles
- adpositions
- conjunctions
- numerals
- interjections

References to POS classification

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Grammatical categories of nouns

- Number
- Agreement classes
- Nominal case
- Head-marking (Ezāfe)
- Determination

!

Grammatical categories of nouns: Number

- Grammatical category of nouns, pronouns, adjectives, and verb agreement
- Expresses count distinctions
- Most often: singular vs. plural, but there are also
  - *dual* (Lithuanian, Arabic, Maltese, Icelandic, Old Church Slavonic, Slovenian, Sorbian)
  - *trial* (Tok Pisin, Tolomako Lihir) (Papua New Guinea)
  - *paucal* (old Arabic, some languages of Papua New Guinea)
- Very rare numerical uncertainty system
  - one – more than one – indefinite number in some African languages

Expression of Nominal Plurality

Reduplication

Indonesian

rumah	‘house’	rumah-rumah	‘houses’
perubahan	‘change’	perubahan-perubahan	‘changes’

Special word

Hawaiian

‘elua	a‘u	**mau**	i‘a
two	my	**pl**	fish
‘my two fishes’			

Tones

ngiti (Sudan)

kamà	‘chief’	kámá	‘chiefs’
màlàyikà ,	‘angel’	màlàyíká	‘angels’
màlimò	‘teacher’	màlímó	‘teachers’
adɔ̀du	‘my brother’	adɔ́du	‘my brothers’

Prefixation

Anindilyakwa

(North Australia)

wirr-iyikwayiwa
pl-child
‘children’

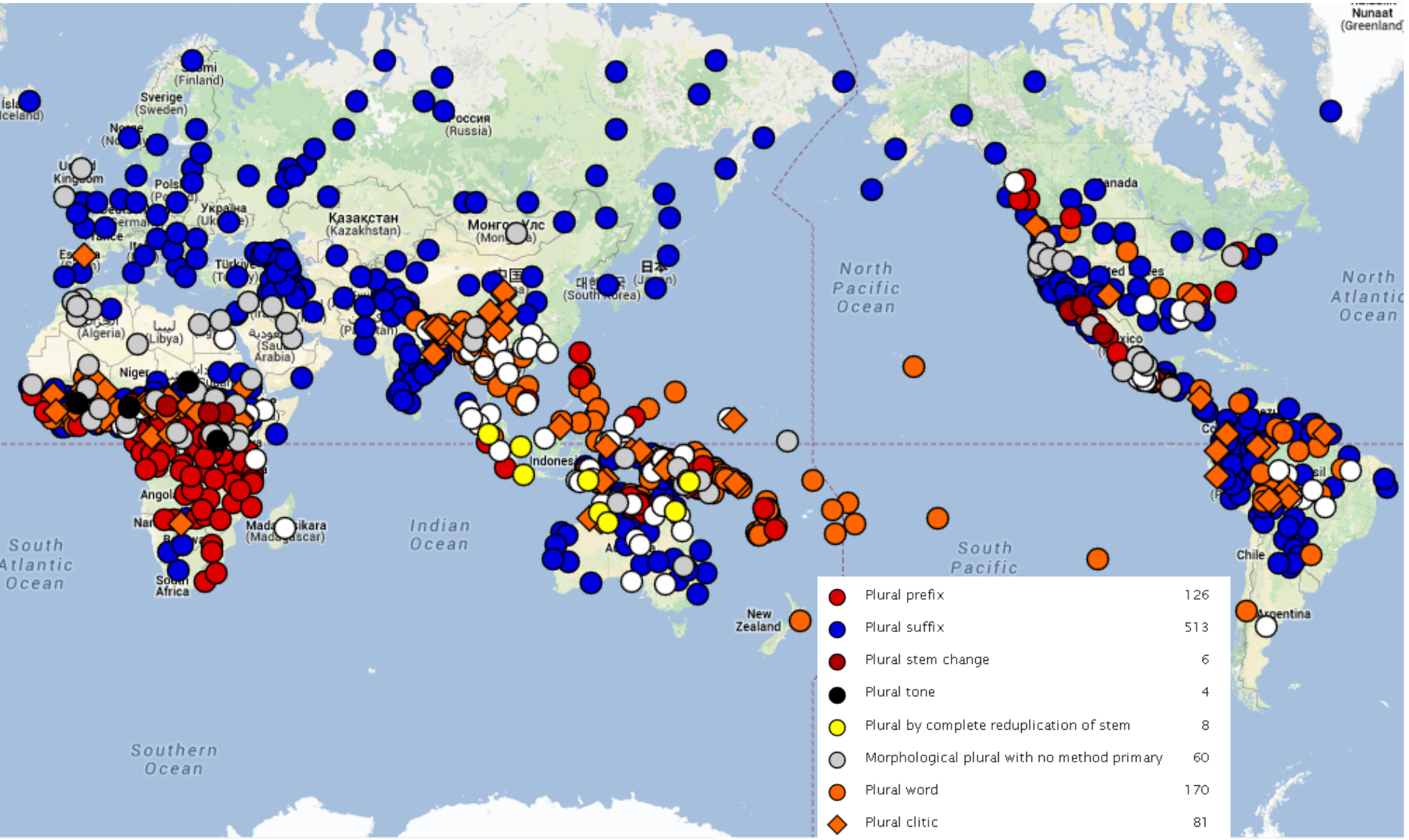
Change in the root

Maricopa, USA

humar	‘child’	humaar	‘children’
nchen	‘older sibling	nchiin	‘older siblings’
hat	‘dog’	haat	‘dogs’
mhay	‘boy’	mhaa	‘boys’

!

Expression of Nominal Plurality



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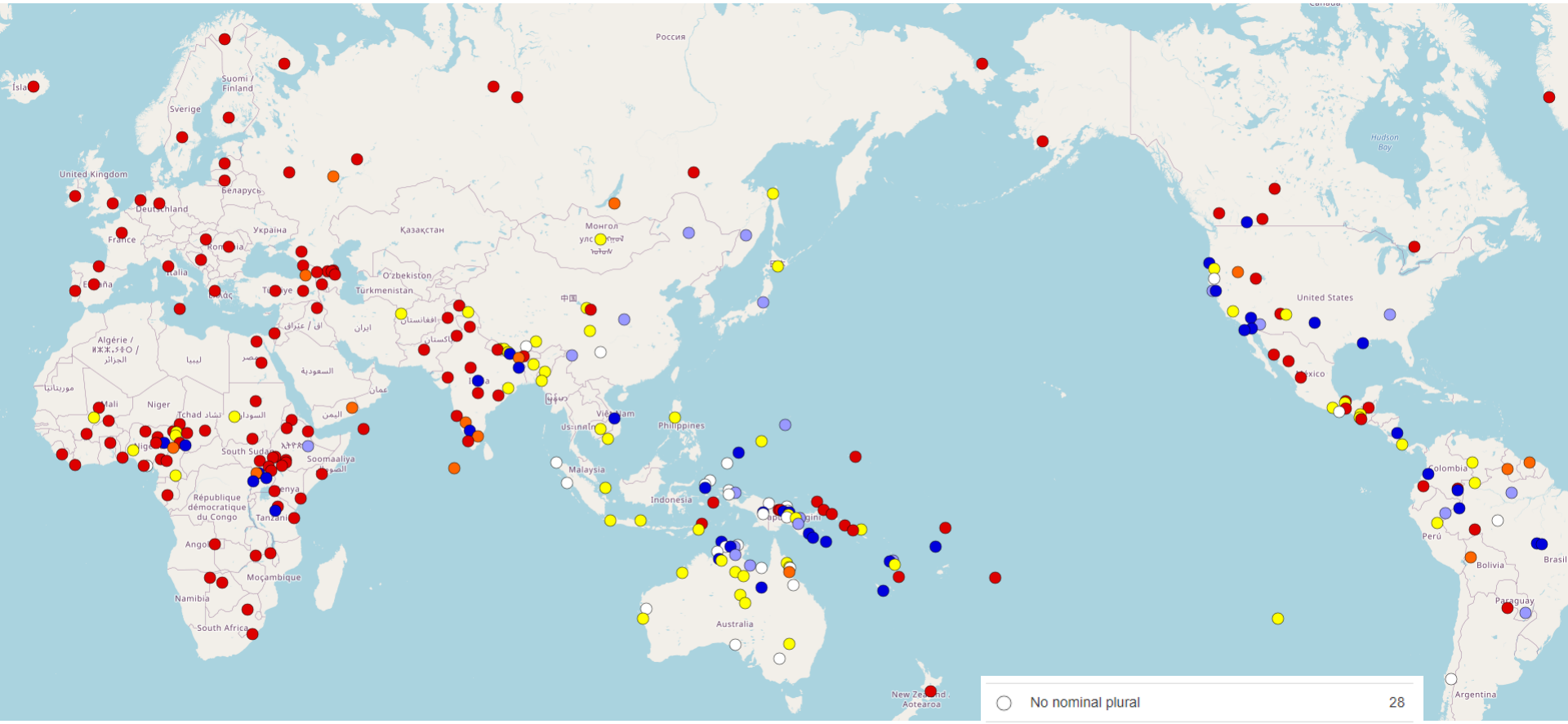
Occurrence of Nominal Plurality



No nominal plural	28
Plural only in human nouns, optional	20
Plural only in human nouns, obligatory	40
Plural in all nouns, always optional	55
Plural in all nouns, optional in inanimates	15
Plural in all nouns, always obligatory	133
Total:	291

Evenki

Bi	uluki-je	va:-d'a-m
I	squirrel-IND.ACC	kill-PRES-1SG.SUBJ

I hunt for squirrels.

!

Swahili

	SINGULAR		PLURAL	
1.	*ubao*	'plank'	*mbao*	'planks'
2.	*ubawa*	'wing'	*mbawa*	'wings'
3.	*udevu*	'hair'	*ndevu*	'hairs'
4.	*ugwe*	'string'	*ŋgwe*	'strings'
5.	*ufuŋguo*	'key'	*fuŋguo*	'keys'
6.	*ufagio*	'broom'	*fagio*	'brooms'
7.	*ufizi*	'gum'	*fizi*	'gums'
8.	*usiku*	'night'	*siku*	'nights'
9.	*ušaŋga*	'bead'	*šaŋga*	'beads'
10.	*wakati*	'season'	*ñakati*	'seasons'
11.	*wavu*	'net'	*ñavu*	'nets'
12.	*wayo*	'footprint'	*ñayo*	'footprints'
13.	*wembe*	'razor'	*ñembe*	'razors'
14.	*wimbo*	'song'	*ñimbo*	'songs'

(a) Identify the morphemes and their allomorphs.
(b) In (5)–(9), it seems the plural is less marked than the singular. Why?
(c) What might be a historical explanation of the plural prefix in (10)–(14)?

Grammatical Categories: Nouns

- Number
- Agreement classes
- Nominal case
- Head-marking (Ezāfe)
- Determination

Number of Cases

Old French (*king*)

	singular	plural
direct	roy-s	roy-0
oblique	roy-0	roy-s

2

Hungarian (*ship*)

Nominative:	hajó
Accusative:	hajó-t
Inessive:	hajó-ban
Elative:	hajó-ból
Illative:	hajó-ba
Superessive:	hajó-n
Delative:	hajó-ról
Sublative:	hajó-ra
Adessive:	hajó-nál
Ablative:	hajó-tól
Allative:	hajó-hoz
Terminative:	hajó-ig
Dative:	hajó-nak
Instrumental-Comitative:	hajó-val
Formal:	hajó-képp
Essive:	hajó-ul
Essive-Formal(-Similitive):	hajó-ként
Translative-Factitive:	hajó-vá
Causal-Final:	hajó-ért
Distributive:	hajó-nként
Sociative:	hajó-stul

19

Khanty Siberia (*house*)

Direct:	xo:t
Locative:	xo:t-na
Translative:	xo:t-ti

3

Icelandic (*horse*)

Nominative:	hest-ur
Accusative:	hest
Genitive:	hest-s
Dative:	hest-i

4

Trumai Brazil (*child*)

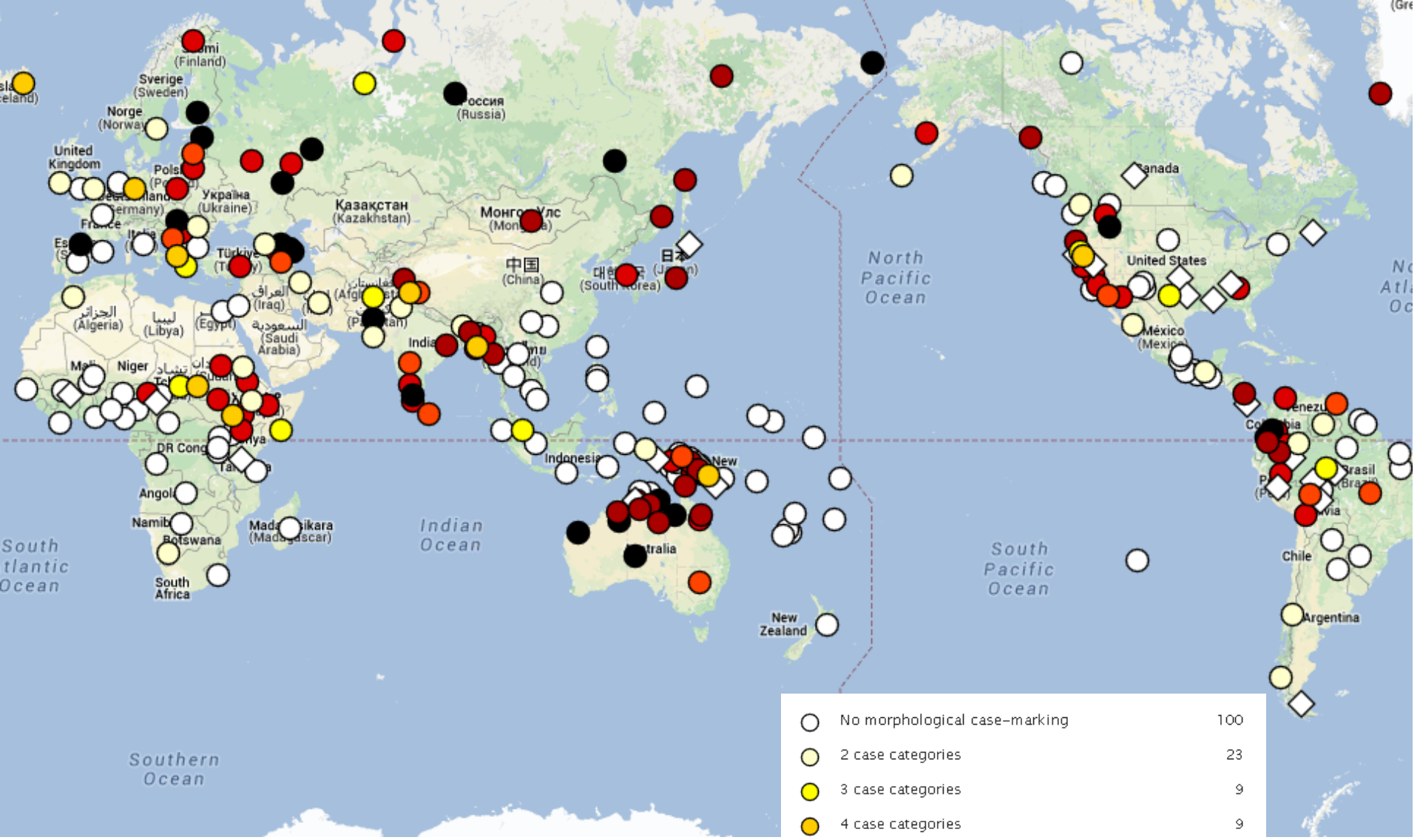
Absolutive:	axos
Ergative:	axos-ak
Dative:	axos-atl, axos-ki
Genitive:	axos-kate
Locative:	(esak-en)

5

Russian (*zavod – 'factory', karta – 'map'*)

Nominative:	zavod	kart-a
Accusative:	zavod	kart-u
Genitive:	zavod-a	kart-y
Dative:	zavod-u	kart-e
Instrumental:	zavod-om	kart-oj
Locative:	zavod-e	kart-e

6



Number of Cases

Locative Cases

Basic Localization	Direction	Some combinations in Hungarian
IN – inside APUD – near SUB – under SUPER – over POST – behind AD – on surface CIRKUM – around ULTRA – far from	LOKATIVE=ESSIVE (where, LOC) ABLATIVE=ELATIVE (from where, DIR1) LATIVE=DIREKTIVE (to where, DIR3)	Inessive Elative Illative Superessive Delative Sublative Adessive Ablative Allative

!

Given Alutor words and their English translations:

kujŋətenək	near to the glass
raralqək	on the roof
raraɣiŋən	into the basement
aŋqakin	from the sea
aŋqan	the sea
keŋən	the bear
keŋəlqəkin	from the bear
raralqən	the roof
kujŋəŋ	into the glass
keŋək	inside the bear
aŋqatenək	on the beach

Interesting cases: Comitative

- Relationship of "accompaniment“: "in company with", "together with"
  - *John washed the car **with Mary***.

ja	Barber	rüüpa-b	koos	Balthasari-ga
and	Barber	drink-3.SG	together	Balthasar-COM

And Barber drinks together with Balthasar.

Estonian

suffix “-ga”

a'aček	nytoskyčak-g’e	**ga**-melgar-**ma**
boy	ran.out-PERF	**COM**-gun-**COM**

The boy ran out with a gun.

Chukchi

circumfix „ga-ma“

ruhá-**stul**	és	cipő-**stül**	feküd-t-em	az	ágy-ban
clothes-**COM**	and	shoe-**COM**	lie-PAST-1sg	the	bed-INE

I was lying in bed with my clothes and shoes on.

Hungarian

suffix “-stul”

Interesting cases: Abessive
(caritive and privative)

- The lack or absence of the marked noun

  John washed the car **without Mary**.
- Especially used in Uralic languages

Finnish

raha "money“
rahatta "without money“
ilman rahaa "without money"

Hungarian

pénz "money“
pénztelen "without money“

haza "home(land)“
hazátlan "(one) without a homeland"

!

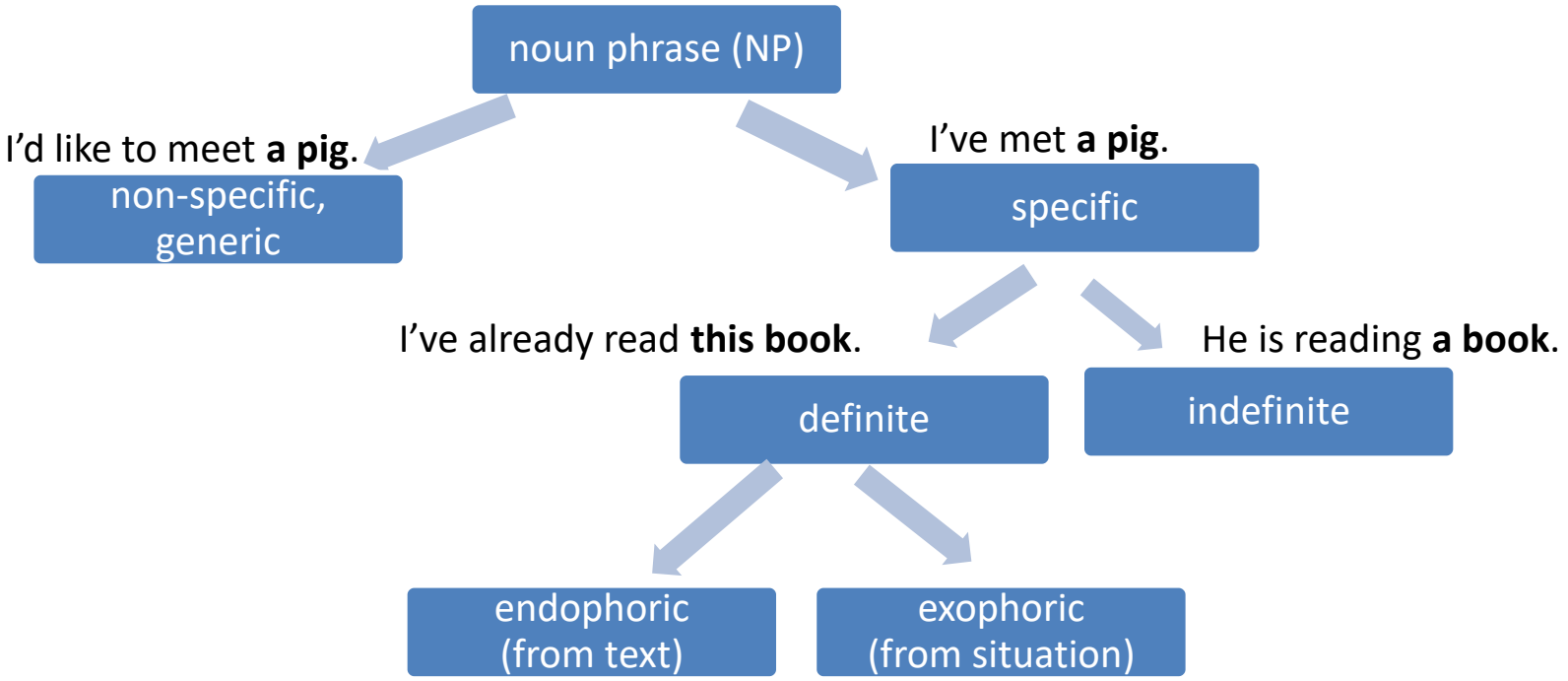
Grammatical Categories: Nouns

- Number
- Agreement classes
- Nominal case
- Head-marking (Ezāfe)
- Determination

Determination

- Abstract meaning (words in dictionary, lists) → Realization in text
  - By noun phrases: Specific and non-specific NPs
  - By specific NPs: Definite and indefinite NPs
  - By definite NPs: Textual and situational definiteness (e.g. some Frisian and German dialects have distinct markers for textual and situational definiteness)
- The meaning of definiteness seems to be universal, but not the grammaticalization
  - Articles, pronouns
  - Expressing vs. non-expressing other grammatical categories
  - Syntactic means (e.g. word order)
  - Suprasegmentals (e.g. intonation)

Determination: Semantic Classification



I'd like to marry John, I know **him** well already.
I finished eating my apple and threw **the stub** out the window.

The earth revolves around **the sun**.
I'll tell you more if you come closer to **the computer**.

Determination and Referentiality

<table>
<tr><th>Marking referentiality</th><th>Marking definiteness</th></tr>
<tr><td>> languages (Turkic, Iranian, many African)</td><td>< languages (west-European)</td></tr>
<tr><td>The meaning must not be expressed by extra morphemes, may be reflected in grammar (e.g. case and number may be expressed only by referential nouns)</td><td>• both specific and non-specific NPs are classified according to definiteness, without non-specifics being classified into a special group.
• often expressed by clitics → not always grammaticalized</td></tr>
<tr><td>Bemba language (Bantu family): indefinite prefix of class&number marker:

Bemba

i-ci-tabo ‘a book, non-specific’

ci-tabo ‘specific, definite or indefinite book’</td><td><u>English</u>:
A teacher should be patient. vs.
The telephone was invented by Alexander Bell. vs.
Ø Gentleman should never insult Ø woman.
<u>German:</u>
Das Auto ist des Deutschen liebstes Kind. vs. Die Heuschrecke ist ein Insekt.</td></tr>
</table>

Given are phrases in the Vai language as well as their English translations:

kàíɛ̌ á lèndéɛ̌	the man's vessel
kɔ̀ánjà-lèŋɛ̌ fă	the baby-eagle's father
gbòmùɛ̌ á nyìmììɛ̌	the fish's snake
kàíɛ̌ kàfà	the man's shoulder
nyìmìì jăŋɛ̌ á gbòmù-lèndèɛ̌	the long snake's boat
mùsú jăŋɛ̌ lɔ̀ɔ̀-kàì	the tall woman's brother
nyìmìì kúndúɛ̌ já	the short snake's eye
kɔ̀ánjà lɔ̀ɔ̀ɛ̌ kènjì	the small eagle's claw
kándɔ̀ jăŋɛ̌	the high sky

(a) Translate into English:

mùsúɛ̌ á gbòmùɛ̌; **léŋ kúndúɛ̌ á nyìmììɛ̌;** **gbòmù-lèndɛ̀ kúndúɛ̌.**

(b) There is an error in the Vai phrase **kándɔ̀-lèndɛ́ lɔ̀ɔ̀ɛ̌**
Correct it and translate the phrase into English.

(c) Translate into Vai:
the eagle's snake; the small child's eye;
the tall man's sister; the small baby-snake.

Vai belongs to the Central group of the Mande language family. It is spoken by approx. 105 000 people in Liberia and Sierra Leone. ny and ŋ are consonants; ɛ and ɔ are vowels. The marks "ˊ" , "ˆ" and "ˇ" denote tones.