

Genders and classifiers in the perspective of dynamic functional typology

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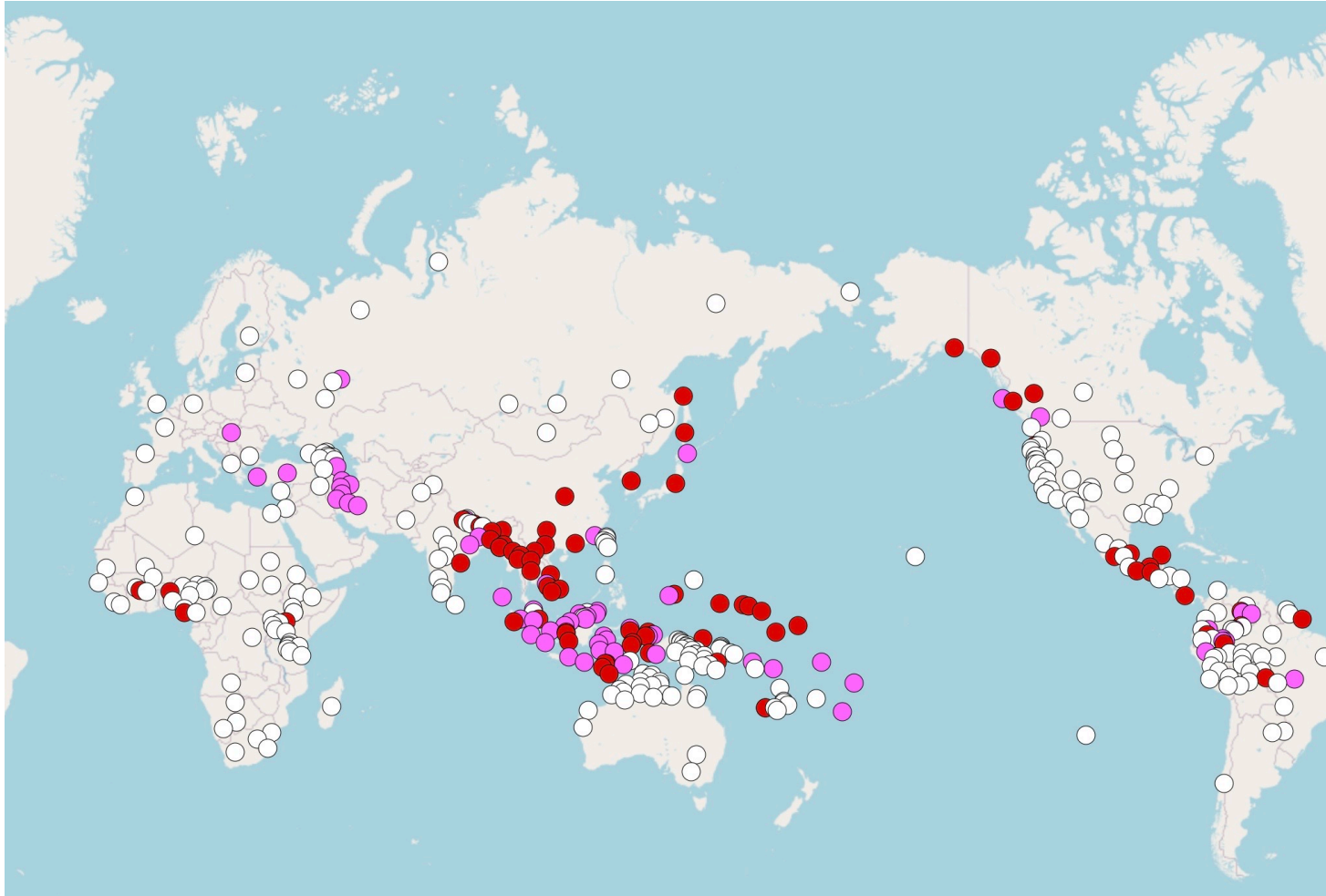
Introduction

Goals

- Motivate the typological framework dubbed “dynamic functional typology”.
- Starting with a look at the problems of the kind of typology assumed by “The World Atlas of Language Structure” (WALS) by the (former) Leipzig group.
- Illustrate how the proposed typological framework improves our understanding of the phenomena surrounding classifiers and (grammatical) gender
 - by allowing a new analysis that (1) unifies classifiers and genders (2) as classifying nominalizations, as opposed to ordinary nominalizations that yield nominal structures denoting “things” and thing-like objects without classification. CLFs/genders nominalize and then classify what the nominalized structures denote/refer.
 - by providing a theoretical framework that (1) constrains synchronic distributions of CLF-/gender-marked forms and that (2) predicts diachronic developments of classifying nominalization constructions.

The World Atlas of Language Structures Online

Feature 55A: Numeral Classifiers



Values

<input type="checkbox"/>	<input type="checkbox"/>	Absent	260
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Optional	62
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Obligatory	78

David Gil. 2013. Numeral Classifiers. In: Dryer, Matthew S. & Haspelmath, Martin (eds.) *WALS Online* (v2020.3) [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.7385533> (Available online at <http://wals.info/chapter/55>, Accessed on 2023-06-14.)

Problem 1

- Isolating classifier-marking of numerals from other cases of CLF-marking, often involving the same CLFs.

Haas (1942) already points out that the term “numeral classifier” may not be appropriate in view of the fact that classifiers in languages like Thai mark other structures in addition to numeral.

Haas, Mary. 1942 The use of numeral classifiers in Thai . *Language* 18:201-215.

Northern Thai*

Context

Responses/follow ups

Numeral

NP use

Modification use

tũa khây dâay bà-mũa

(pôn khây dâay)

2SG want take mango

[sǎw kèn]

bà-mũa [sǎw kèn]

kìi kèn?

two CLF

mango two CLF

how.many CLF_{FRUIT}

‘(I want) two.CLF’

‘two mangos’

‘How many mangos do you want?’

Demonstrative

pôn mii bà-mũa sì kèn.

[kèn níi] wǎan.

bà-mũa [(kèn) níi]

1SG have mango four CLF

CLF this sweet

mango CLF this

‘I have four mangos.’

‘This one is sweet.’

‘this mango’

*Research on Northern Thai reported here has been supported by the JSPS project “Cross-linguistic studies on grammatical nominalizations: with a focus on classifiers and gender markers” (22H00659 PI: Kazuhiro Kawachi)

Context

Genitive

tìn nĩ cín khǎɔŋ p̄əən.
CLF_{PIECE} this meat GEN 1SG
'This is my meat.'

Adjective

tũa khây dâay mǎa tũa day?
2SG want take dog CLF which
'Which dog do you want?'

Relative clause

cûay aw sîn tũa mǎy
help take sarong CLF new
maa hâu nòy!
come give ADV
'Please bring me the new sarong!'

Responses/follow ups

NP use

(tìn) [khǎɔŋ tũa]
CLF GEN 2SG
mii nǎy?
have where
'Where is yours?'

[tũa nỏy]
CLF small
'(The) small (one).'

(tũa) [tĩ hỏy
CLF NMLZR hang
nay tũu kǎ]?
in closet Q
'(The one) hanging in
the closet?'

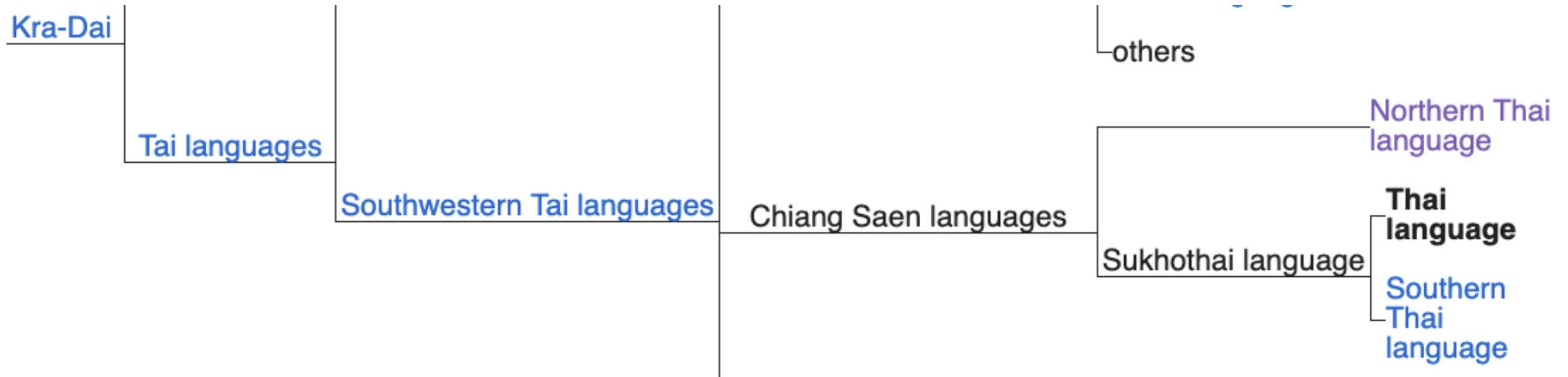
Modification use

cín [khǎɔŋ tũa]
meat GEN 2SG
'your meat'

mǎa [(tũa) nỏy]
dog CLF small
'small dog'

sîn (ủa) [tĩ hỏy
sarong CLF NMLZR hang
nay tũu kǎ]?
in closet Q
'The sarong that is hanging
in the closet?'

Position of Northern Thai



(https://en.wikipedia.org/wiki/Thai_language)

Problem 1

- Isolating classifier marking of numerals from other cases of CLF marking, often involving the same CLFs.
- This is unfortunate because the fact that classifiers mark structures other than numerals is important in understanding the basic function of classifiers

The most widely-held idea on the function of NUM CLF claims that **those languages without compulsory singular/plural morphological distinction need classifiers to individuate referred objects for the purpose of counting** (Greenberg 1994, Chierchia 1998, etc.).

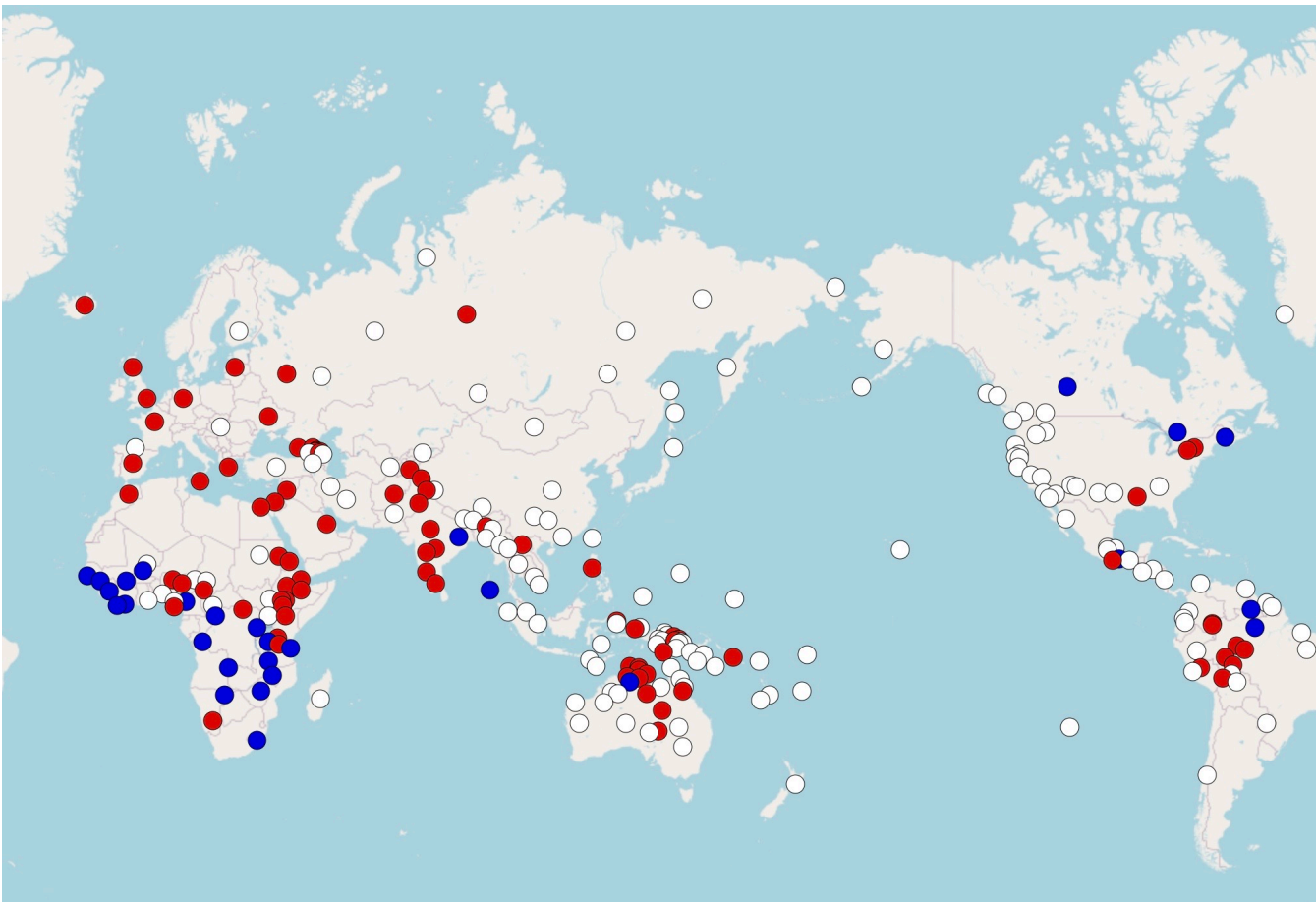
If so, why the same (numeral) classifiers are used to mark Demonstratives, Genitives, etc., as in Thai, that have nothing to do with counting?

Problem 2

- Treating CLFs and grammatical Gender separately

The World Atlas of Language Structures Online

Feature 31A: Sex-based and Non-sex-based Gender Systems



Values

<input type="checkbox"/>	<input type="radio"/>	No gender	145
<input checked="" type="checkbox"/>	<input type="radio"/>	Sex-based	84
<input checked="" type="checkbox"/>	<input type="radio"/>	Non-sex-based	28

Greville G. Corbett. 2013. Sex-based and Non-sex-based Gender Systems. In: Dryer, Matthew S. & Haspelmath, Martin (eds.) *WALS Online* (v2020.3) [Data set]. Zenodo.
<https://doi.org/10.5281/zenodo.7385533> (Available online at <http://wals.info/chapter/31>,
Accessed on 2023-06-14.)

- But classifiers and genders are both classificatory systems
 1. They both categorize nominal denotations/references
 2. They show similar distributions

(Brazilian) Portuguese gender marking

NP use

Numeral

Quantos carros você vê?

'How many cars do you see?'

(Eu vejo) **Um.**
(I see) 'One.M.'

'How many houses do you see?'

Uma.
'One.F'

Demonstrative

Qual é o seu carro?

'Which is your car?'

Este.
'This.M'

Qual é a sua casa?

'Which is your house?'

Esta.
'This.F.'

Modification use

um carro
'one.M car'

uma casa
'one.F house'

este carro
'this.M car'

esta casa
'this.F house'

M=masculine, F=femine

NP use

Modification use

Genitive

De quem é esse carro?
'Whose is this car?'

Meu.
'Mine.M.'

meu carro
'my.M car'

De quem é essa casa?
'Whose is this house?'

Minha.
'Mine.F.'

minha casa
'my.F house'

Adjective

Qual é o seu carro?
'Which is your car?'

O branco.
'The.M white.M.'

carro branco
'white.M car'

Qual é a sua casa?
'Which is your house?'

A branca.
'The.M white.F.'

casa branca
'white.F house'

Relative clause

NP use (Showing a family photo)

O [sentado na cadeira] é meu pai.
the.M sitting.M in.the chair is my father
'The.M [(one) sitting.M in the chair] is my father.'

A [sentada na cadeira] é minha mãe.
'The.F [(one) sitting.F in the chair] is my mother.'

Modification use

O homem [sentado na cadeira] é meu pai.
the.M man sitting.M in.the chair is my father
'The.M man sitting.M in the chair is my father.'

A mulher [sentada na cadeira] é minha mãe.
'The.F woman sitting.F in the chair is my mother.'

- But classifiers and genders are **both classificatory systems**

1. They both categorize nominal denotations/references

2. They show similar distributions

3. They both show “agreement”

German

ein großer Mann
one.M tall.M man(M)
'a/one tall man'

*eine große Mann
one.F tall.F man(M)
'a/one tall man'

eine große Frau
one.F tall.F woman(F)
'a/one tall woman'

Mandarin Chinese

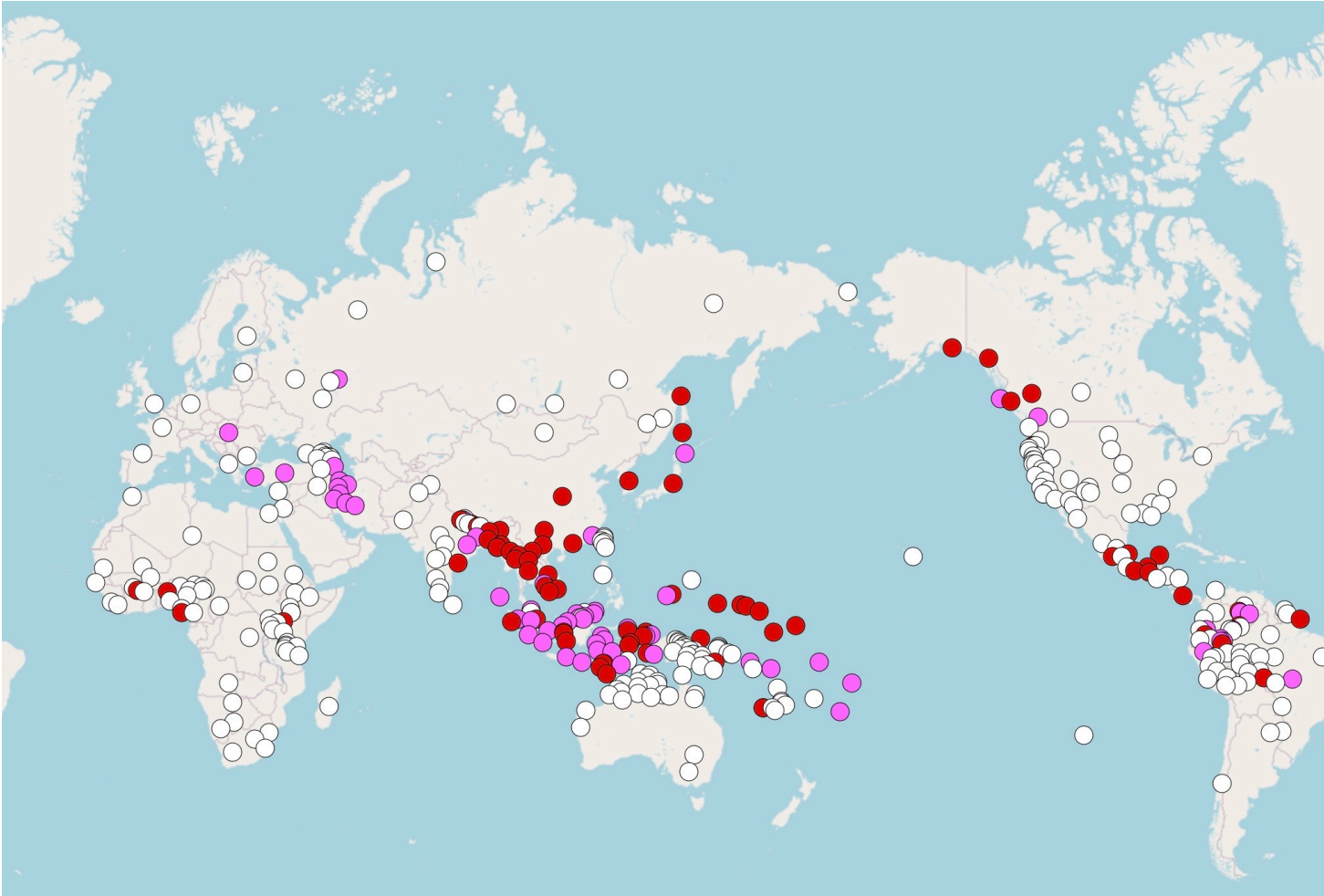
三 支 铅笔
sān zhī qiānbǐ
three CLF pencil

*三 本 铅笔
sān běn qiānbǐ
three CLF pencil

三 本 书
sān běn shū
three CLF book

Back to classifiers

Feature 55A: Numeral Classifiers



Values		
<input type="checkbox"/>	<input type="radio"/> ▾	Absent 260
<input checked="" type="checkbox"/>	<input type="radio"/> ▾	Optional 62
<input type="checkbox"/>	<input type="radio"/> ▾	Obligatory 78

Assumes holistic language typology: languages are (a) non-classifying, (b) optionally classifying or (3) classifying.

Such an approach entails erroneous/imperfect characterizations of the use of CLFs/genders at large and even limiting attention to NUM CLFs.

David Gil. 2013. Numeral Classifiers. In: Dryer, Matthew S. & Haspelmath, Martin (eds.) WALS Online (v2020.3) [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.7385533> (Available online at <http://wals.info/chapter/55>, Accessed on 2023-06-14.)

At large,

CLF-/Gender marking is construction-specific. Even if it is obligatory with numerals, it may be optional or impossible with other structures within a single language.

Northern Thai

NUM

bà-mûan [sǎɔŋ kèn]

mango two CLF
'two mangos'

DEM

bà-mûan [(kèn) níi]

mango CLF this
'this mango'

GEN

cín *tìn [khǎɔŋ tǔa]

meat CLF GEN 2SG
'your meat'

Cf. (tìn) [khǎɔŋ tǔa]
CLF GEN 2SG
mii nǎy?
have where
'Where is yours?'

More on this kind of pattern below

Even if we pick up just NUM CLFs, like WALS, we cannot say, more often than not, simply that CLF is Absent, Optional, or Obligatory.

All the three structures involved in NUM CLF constuctions affect the use of CLFs

NUM CLF N'

- CLF Different classifiers may behave differently

Murui (Witotoan; South-western Colombia; Wojtylak 2017)

General classifier

- (4.30) jiibi-e-na_o kue_{o:ADDRESSEE} ine!_{PRED}
coca-CLF:G-N.S/A.TOP 1sg give
'Give me coca (general, in any form; usually in powder)!'

Specific classifiers

- (4.29) jiibi-na-ia_i
coca-CLF:TREE-PL
'coca trees'

- (4.24) jiibi-koj_i
coca-CLF:CONTAINER.SMALL.ROUND
'small round coca container'

Wojtylak Katarzyna. 2017. *A Grammar of Murui (Bue)*. James Cook University Ph.D. thesis

Now published as *A Grammar of Murui (Bue) A Witotoan Language from Northwest Amazonia*
Series: [Brill's Studies in the Indigenous Languages of the Americas](#), Volume: 15.

Murui Num CLFs

- General classifier forms modify a noun

(4.17) [da-je] ñeki-na]_{NP}
one-CLF:G chambira-CLF:TREE
'one *chambira* palm tree'

(4.74) [da-je] jano-tava-na]_{NP:O} ati-d-e_{PRED}
one-CLF:G small-CLF.REP:CHICKEN-N.S/A.TOP bring-LK-3
'(She) brought one small (chicken).'

- Specific classifier forms do not

(4.33) da-ñainño_s beno-mo_{LOC} fiebi-t-e_{PRED}
one-CLF:PR.F HERE.CLF:SP.PLACE-LOC stay-LK-3
'One (female) stayed here.'

(3.49) mena-kai_o kue-mo_{O:ADDRESSEE} ine!_{PRED}
two-CLF:STICK 1sg-LOC give
'Give me two (stick-like forms, here: cigarettes)!'

NUM CLF N'

NUM Different numerals may affect the use of CLFs

- In general lower numerals call for CLFs, while higher numerals may not

日本語 A: 昨日のシンポジウム、何人ぐらい来てた？

B' : 150 (人) ぐらいは、来てたやろ。 (CLF optional)

B'' : 5 *(人) ぐらいは、来てたやろ。 (CLF obligatory)

Only “one” and “two” are gender-marked in Portuguese and Rumanian, and only “one” is so marked, as in some Germanic languages, in the other major Romance languages (more on this below).

But in [Mi'kmaq](#) (Eastern [Algonquian](#)) CLFs are limited to numerals 6 and above:

- (11) a. na'n-ijig ji'nm-ug
five-AGR man-PL
'five men'
b. *na'n te's-ijig ji'nm-ug
five CL-AGR man-PL

- (12) a. *asugom-ijig ji'nm-ug
six-AGR man-PL
b. asugom te's-ijig ji'nm-ug
six CL-AGR man-PL
'six men'

Bale, Alan, and Jessica Coon. 2014. Classifiers are for numerals, not for nouns: Consequences for the mass/count distinction. *Linguistic Inquiry* 45:695–707.

You cannot simply say NUM CLF is obligatory or absent

- Numeral “one” behaves differently vis-a-vis other numerals

Wuming Zhuang (武鸣壮语): “one” does not occur together with a CLF; CLF w/o a numeral is understood as “one CLF”. “one CLF X”

tu2 pit7
CLF duck
— 只 鸭子
yī zhǐ yāzi
‘one duck’

ko:n3 pit7
CLF pen
— 支 笔
yī zhī bǐ
‘one pen’

Cf.

sɔŋ1 ta8 nuəŋ4
two CLF y.sibling
两. 个 妹妹
liǎng gè mèimei
‘two y. sisters’

sam1 pau4 lɯk9ŋe2
three CLF child
三 个 孩子
sān gè háizi
‘three children’

Bahasa Indonesia

se-*(orang) guru
one-CLF teacher
‘a/one teacher’

satu (orang) guru
one CLF teacher
‘a/one teacher’

dua (orang) guru
two CLF teacher
‘two teachers’

Ch'ol (Mayan), numerals of Mayan origin require a classifier (13)-(15a), while Spanish-based numerals block it (14)-(15b):

- Ch'ol numeral (CLF obligatory)
- (13) a. **ux-p'ej tyumuty**
 three-CL egg
 'three eggs'
 b. *ux tyumuty
 three egg

- Spanish loan numeral (No CLF)
- (14) a. ***nuebe-p'ej tyumuty**
 nine-CL egg
 b. **nuebe tyumuty**
 nine egg
 'nine eggs'

- (15) a. **Tyi k-mäñä ux-p'ej mansana.** Ch'ol numeral (CLF obligatory)
 ASP 1ERG-buy three-CL apple
 'I bought three apples.'
 b. **Tyi k-mäñä nuebe mansana.** Spanish loan numeral (No CLF)
 ASP 1ERG-buy nine apple
 'I bought nine apples.'

(Bale and Coon 2014:701, 702)

Cf. Japanese

Native: hito-ri 'one (person)', huta-ri 'two (persons)', mit-ari 'three (persons)', yot-tari, *it-tari, *mut-tari...
 Chinese loans: *iti-nin (iti-nin mae), *ni-nin (ni-nin mae/gumi), san-nin, *si-nin, go-ni, roku-nin...
 yo-nin

NUM CLF N'

N' In some languages CLF marking depends on the head N'.

Vietnamese

hai *(cái) chân vịt (CLF obligatory)
two CL propeller (leg duck)
'two propellers'

hai (cái) nhà máy (CLF optional)
two CL factory (house machine)
'two factories'

hai màu (CLF not possible)
two color
'two colors' (Simpson and Ngo 2018)

Hungarian

CLFs generally optional with count nouns

nyolc (szem) alma/gyöngy
eight CL apple/pearl
'eight apples/pearls'

But for a small number of nouns CLF-marking is obligatory

nyolc *(szem) kávé/bors/mák/rizs/búza/homok
eight CL coffee/pepper/poppy/rice/wheat/sand
'eight coffee beans/peppercorns/poppy seeds/grains of rice/wheat/sand'

hét (szál) gyertya/répa
seven CL candle/carrot
'seven candles/carrots'

hét *(szál) fű/haj/széna/szalma
seven CL grass/hair/hay/straw
'seven blades of grass/hair/hay/straw'

Dékány, Éva. 2022. Classifiers for nouns, classifiers for numerals. Proceedings of NELS 52 (pp.245–258).

Functional typology (機能類型論) reveals other large-scale limitations of form-based, holistic typology

Research method based on the form-function correlation patterns

CLF-(/Gender-) marking is not only construction-specific but also use/function-dependent

NP use/Referring function (as HEAD of NP) Modification use/Restricting function (as MODIFIER of head)

CLF-marking of DEM (this/that) (4 logical possibilities)	NO	NO	(English)
	YES	YES	(Mandarin)
	YES	NO	(Khorta)
	NO	YES	?

NP use

English

This is mine.

Mandarin

这 本 是 我的。

Zhè běn shì wǒ de.

this CLF COP 1SG NMLZR

'This is mine.'

Khorta[#]

i=**ta** hamɽ lagi

this=CLF 1SG.NMLZR COP.1SG

'This is mine.'

Modification use

This book is mine.

这 本 书 是 我的。

Zhè **běn** shū shì wǒ de.

this CLF book COP 1SG NMLZR

'This book is mine.'

i=***ta** kitap hamɽ lagi

this=CLF book 1SG.NMLZR COP.1SG

'This book is mine.'

Cf. i kitap=**ta** hamɽ lagi

this book=CLF 1SG.NMLZR COP.1SG

'This book is mine.'

kitab=**ta** hamɽ lagi

book=CLF 1SG.NMLZR COP.1SG

'**The** book is mine.'

[#]Indo-Aryan spoken mainly in Jharkhand, India; courtesy of Petra P. Paudyal

Numeral

tũa khô đâ bà-mũa
2SG want take mango
kì kèn?
 how.many CLF_{FRUIT}

‘How many mangos do you want?’

Demonstrative

pôn mii bà-mũa sị kèn.
1SG have mango four CLF
‘I have four mangos.’

Genitive

tìn nì cìn khố
pôn.
CLF_{PIECE} this meat GEN 1SG
‘This is my meat.’

Again, you cannot simply say
CLFs are obligatory, optional,
or absent in Northern Thai.

NP use

(pôn khô đâ)
[số kèn]
two CLF
‘(I want) two.CLF’

[kèn nì] wăn.
CLF this sweet
‘This one is sweet.’

(tìn) [khố tũa]
CLF GEN 2SG
mii nă?
have where
‘Where is yours?’

NO/OPT

Modification use

bà-mũa [số kèn]
mango two CLF
‘two mangos’

bà-mũa [(kèn) nì]
mango CLF this
‘this mango’

cìn *tìn [khố tũa]
meat CLF GEN 2SG
‘your meat’

YES is not seen

What is generally believed to be optional marking is revealed to be untrue **once usage patterns are considered**

In Western Armenian, the presence or absence of **a classifier is completely optional**, as shown in (8). (For similar examples and observations, see Donabédian 1993.)

(8) yergu (**had**) dəgha
two CL boy
'two boys'

Bale and Coon (2014:699)

A: How many apples did you buy?

B: **Armenian** (Luiza Kloyan) 'I bought two (apples).'

(1) Erku (**hat**) xnjor gneč'i. (Optional in Modification use)
two CLF apple buy.AOR.1sg

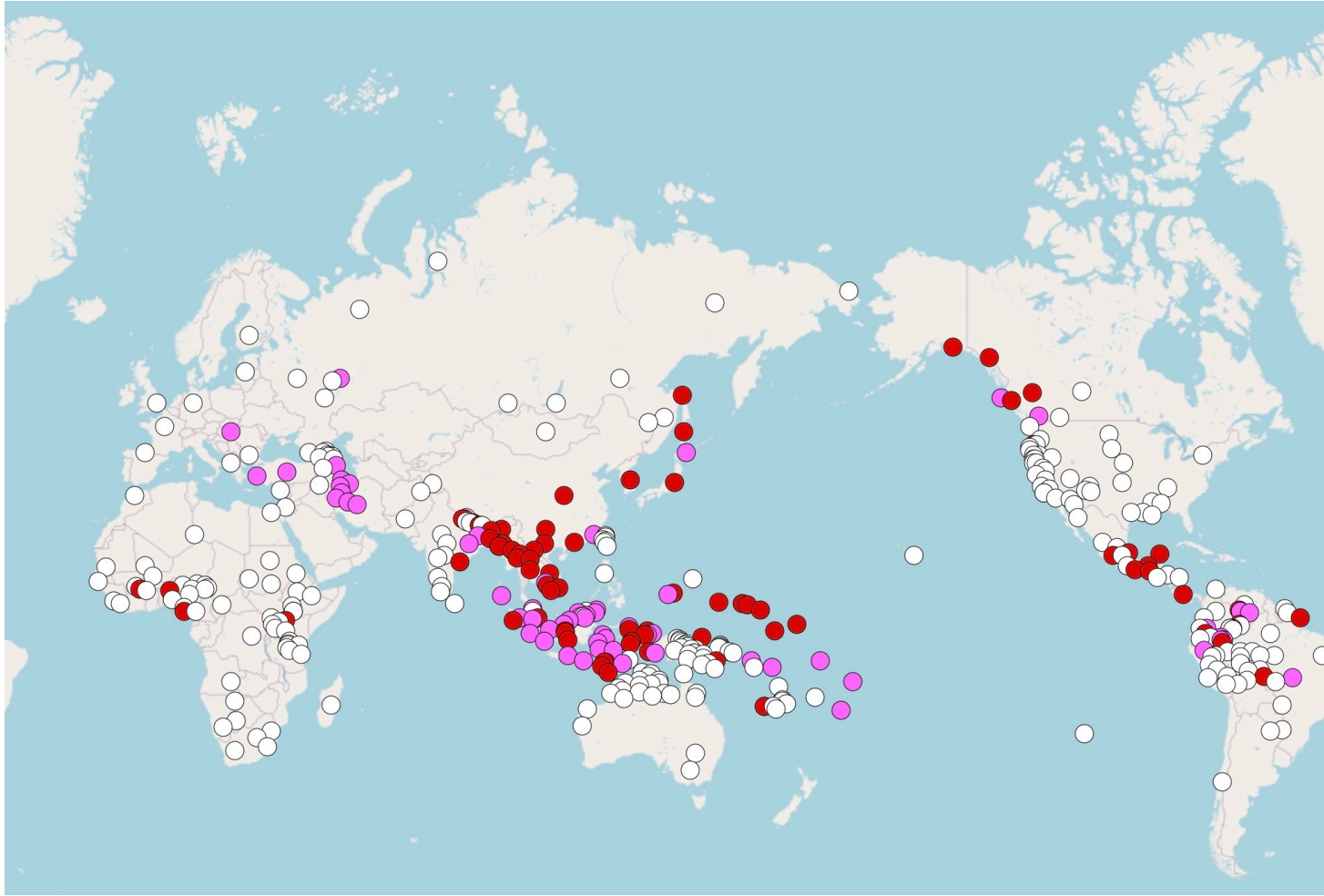
(2) Erku *(**hat**) gneč'i. (**Obligatory in NP use**)
two CLF buy.AOR.1SG

(3) Erku (**hat**). (**Optional in NP use--may be absent in informal speech**)

Obligatory CLF-use seen in NP use; similar pattern also seen Turkish (Yu Kuribayashi, Yui Suzuki p.c.)

As seen above, form-based, holistic typology assumed in WALS has numerous problems

Feature 55A: Numeral Classifiers



Values		
<input type="checkbox"/>	• ▾	Absent 260
<input checked="" type="checkbox"/>	• ▾	Optional 62
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On the other hand, **functional typology**, seeking form-function correlations, **reveals very fundamental methodological issues associated with the past approaches to classifier-/gender-marking and directs us to a more adequate approach.**

Methodological problems in the current treatments of gender and CLFs

- Only one of the two major uses/functions of CLF- and gender-marking is seriously considered

Thai numeral

khun tɔŋkaan mǎa
2SG want dog
kìi tua?
how.many CLF_{BODY}
'How many dogs
do you want?'

NP use/

Referring function

(chǎn tɔŋkaan)
[sìi tua].
four CLF_{BODY}
(I want) 'four.CLF.'
↑

Modification use/

Restricting function

mǎa [sìi tua]
dog four CLF
'four dogs'

Portuguese "adjective"

Qual é o seu carro?
'Which is your car?'

O branco.
'The.M white.M.'

carro branco
'white.M car'

Qual é a sua casa?
'Which is your house?'

A branca.
'The.F white.F.'
↑

casa branca
'white.F house'

NP use/Referential function is treated secondarily as arising from the deletion of a head noun of the modification structure—similar to the treatment of so-called headless relative clauses.

Cf. Greenberg (1974:19) "It is indeed universal in languages with numeral classifier constructions that **the head noun may be deleted** when it has been either previously mentioned or can be supplied from the non-linguistic context."

Based on this (problematic) methodological perspective, the following kind of characterizations have been made

Aikhenvald (2019: p.9) *Genders and classifiers*. Oxford: OUP

TABLE 2. Noun categorization devices and their scope

TYPE	SCOPE	WHAT IS CATEGORIZED
I Gender	Attributive NP or clause	Head noun, A/S or S/O; oblique
II Numeral classifiers	Numeral/quantifier NP	Head noun
III Noun classifiers	Noun	Head noun
IV Possessive classifiers	Possessive NP	Possessed noun
V Verbal classifiers	Clause	S/O or oblique
VI Locative classifiers	Adpositional NP	Noun referring to a location
VII Deictic classifiers	Attributive NP	Head noun ? ←

But there are both classifier- and gender-marked forms, ranging from numerals to verbal-based nominalizations, that do/can not modify a head noun.

Cf. Vietnamese,

NP use
(with no head noun)

YES

Tôi muốn[quả này]
1SG want CLF this
'I want this (e.g., apple).'

Modification use
(with a head noun)

NO

táo [*quả này]
apple CLF this
'this apple'

Summary of the problems in the current methodology

Distribution patterns of NUM+CLF/Gender

NP use

(i) NO

→ (ii) OPT

(iii) OPT

Data?

→ (iv) YES

→ (v) YES

(vi) YES ←

Modification use

NO (English)

NO (Marathi)

OPT (Jingpo)

NO (Sikuni)

OPT (Halkomelem, Tariana, Khorta)

YES



(Mandarin, Thai, Newar, Korean, Japanese;
Gender in Portuguese and other IE lgs)

- This type of diverse marking patterns has not been considered.
- Wrong perspective; modification pattern considered to to the starting point of analysis
- If the function of CLFs/Genders were to categorize (the referent) of a head noun, (ii) and (iv) would be hard to explain; (v) would also be problematic.
- Missing the primacy of gender/CLF marking in NP use, as in the case of ordinary nominalizations.

Classifier-marked forms that cannot modify

Numerals

Marathi classifier marking

ek-jaN aal-aa
one-CLF came.M
'One (HUMAN) came.'

a'. ek *-jaN mulgaa
one CLF boy
'one boy'

Demonstratives

Vietnamese classifier marking on demonstratives

a. tôi thích [con này]. NP use
I like CLF this
'I like this (e.g. a cat).'

a'. tôi thích con mèo [*con này]. Modification use
 I like CLF cat CLF this
 'I like this cat.'

Genitive

Northern Thai

NP use

[(tìn) [khǎwŋ p̄əən]]
CLF GEN 1SG
mii nǎy?
have where
'Where is mine?'

Modification use

cín [*tìn [khǎwŋ p̄əən]]
meat CLF GEN 1SG
mii nǎy?
have where
'Where is my meat?'

Adjectives, V-based nominalizations

Zauzou 若柔語 (Tibeto-Burman, Loloish; southern China; (courtesy of Tetsuya Miyagishi)

Stative ("Adjectival")

a. [ɲa⁵⁵ ʔõ³³] nɛ³¹ ŋu³³ khyi³¹ ʔõ³³ NP use
small CLF TOP 1SG dog CLF
'The small one is my dog.'

a'. [ɲa⁵⁵ *ʔõ³³] khyi³¹ Modification use
small CLF dog
'a small dog'

Eventive

b. [ʔa³³ɲi³³ ɕi⁵⁵ ʔõ³³] nɛ³¹ ŋu³³ (zɛ³³) ɣou⁵³phõ³⁵ NP use
yesterday die CLF TOP 1SG GEN cock
'The one that died yesterday is my cock.'

b.' [ʔa³³ɲi³³ ɕi⁵⁵ *ʔõ³³] ɣou⁵³phõ³⁵ Modification use
yesterday die CLF cock
'the cock that died yesterday'

Gender-marked forms that cannot modify

Numerals

Telugu (Dravidian; courtesy of Niranjan Uppoor)

- NP use
- a. okkadu vacca:du
one.M came.3M.SG
'One.M came.'
- b. okkati vaccindi
one.F came.3F.SG
'One.F came.'
- c. okkati vaccindi
one.N came.3F.SG
'One.N (e.g. a dog) came.'

- Modification use
- a'. okka/*okkadu abba:yi
one/one.M boy
'one boy'
- b'. okka/*okkati amma:yi
one/one.F girl
'one girl'
- c'. okka/*okkati kukkalu
one/one.N dog
'one dog'

Demonstratives

Kannada (Dravidian) gender marking (courtesy of Niranjan Uppoor)

a. a-**vanu** nanna geḷeya
that-M my friend

Lit. 'That masculine near the third person or someone not present is my friend.' 'He who is away from me is my friend.'

a'. aa geḷeya
that friend
'that friend'

*a-**vanu** geḷeya
that-M friend

b. i-**valu** nanna geḷati
this-F my friend
Lit. 'This feminine one near me is my friend.'
'She who is near me is my friend.'

c. a-**du** nanna mane
that-N my house
Lit. 'That neuter one is my house.'
'That is my house.'

b'. ii huḍugi *i-**valu** huḍugi
this girl this-F girl
'this girl'

c'. aa mane *a-**du** mane
that house that-N house
'that house'

Genitives

Kannada (Dravidian) **gender** marking (courtesy of S.N. Sridhar)

a. Aa seevaka(nu) [nanna tande-ya-**vanu**].
that servant (M) my father-GEN-M
'That manservant is my father's.'

a'. [nanna tande-ya(*-**vanu**)] seevaka(nu)
my father-NMLZR-M servant(M)
'my father's manservant'

b. Aa seevaki [nanna tande-ya-**valu**].
that maid my father-GEN-F
'That maid is my father's.'

b'. [nanna tande-ya(*-**valu**)] seevaki
my father-NMLZR-F maid
'my father's maid'

Adjectives, V-based nominalizations

Kannada **gender** marking (courtesy of Niranjan Uppoor)

Stative (“Adjectival”)

a. [[Ettarad-a]-**vanu**] nanna maga.
tall-NMLZR-**M** my son
‘The tall one is my son.’

a’. [[[ettarad-a](*-**vanu**)] huḍuga]
tall-NMLZR-**M** boy
‘tall boy’

b. [[Ettarad-a]-**valu**] nanna magaḷu.
tall-NMLZR-**F** my daughter
‘The tall one is my daughter.’

b’. [[[[ettarad-a](*-**valu**)] huḍugi]
tall-NMLZR-**F** girl
‘tall girl’

Eventive

c. [Band-a-**vanu**] nanna geḷeya.
came-NMLZR-**M** my friend
‘The one.M who came is my friend.’

c’. [[Band-a (*-**vanu**)] huḍuga] nanna geḷeya.
came-NMLZR(*-**M**) boy my friend
‘The boy who came is my friend’

d. [Band-a-**valu**] nanna geḷati.
came-NMLZR-**F** my friend
‘The one.F who came is my friend’

d’. [[Band-a (*-**valu**)] huḍugi] manna geḷati.
came-NMLZR(*-**F**) girl my friend
‘The girl who came is my friend.’

Nominalization analysis of CLF/Gender marking

Must analyze the forms that cannot/do not modify first

Marathi classifier marking

NP use/Referring function

a. don-**jaN** aal-yaa
two-CLF_{HUMAN} came.M
'Two (HUMAN(.Epicene)) came.'

Modification use/Restricting function

a'. don *-**jaN** mule
two CLF_{HUMAN} boys
'two boys'

CLF -**jaN** nominalizes the numeral "don" deriving an N-based NMLZ that denotes "thing" entities embodying the concept of the quantitative unit "two", and which fall in the HUMAN category (e.g., two boys, two men, two teachers).

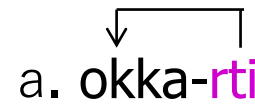
Contrary to the conventional wisdom, (numeral) CLFs do not classify the referent of a head noun, which may not exist. Instead, they operate on the numeral (and others) (with) which they mark/form constituency.

Same applies to Gender marking

Must analyze the forms that cannot/do not modify first

Telugu gender marking

NP use/Referring function

a.  okka-rti vaccindi
one-F came.3F.SG
'One.F came.'

Modification use/Restricting function

a'. okka *-rti amma:yi
one -F woman
'one woman'

-rti nominalizes the numeral "okka" deriving an N-based nominalization that denotes "thing" entities embodying the concept of the quantitative unit "one", and which fall in the FEMININE category (e.g. one girl, one woman, one female teacher)

Contrary to Corbett's (1991, others) analysis, gender marking is not triggered by an agreement controlling head noun, which may not exist. Instead, genders, just like CLFs, operate on numerals (and others) to/with which they mark/ form constituency.

Same analysis holds for those gender/CLF forms that may also modify, as in Vietnamese numeral CLFs

NP use/Referring function

Tôi muốn [ba quả]
'I want three (e.g., apples).'

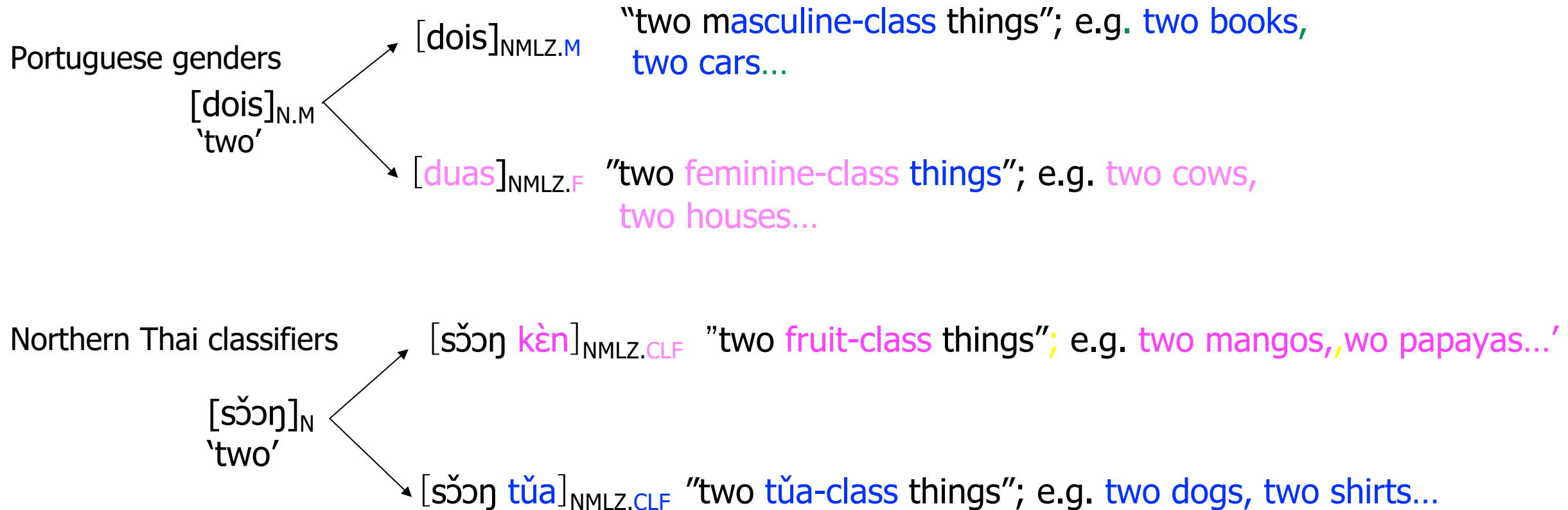
Modification use/Restricting function

[[ba quả] táo] (simply a use of N-based NMLZ)
'three apples'

quả nominalizes the numeral "three" deriving an N-based nominalization that denotes "thing" entities embodying the concept of the quantitative unit "three", and which fall in the quả/fruit category (e.g., apples, mangos, oranges)

Summary of the nominalization analysis of gender-/classifier-marking

Genders and classifiers are **classifying nominalizers** that yield/derive lexical/grammatical **nominalizations** that denote “things” and **thing-like entities** that are **in metonymic relation** to the concept of the base structure and **that are classified according to the nominal classes of the language.**



Context determines what these nominalized structures actually denote when used in discourse

Northern Thai classifiers

Context 1

tũa khây dâay
2SG want take
măa kîi tũa ?
dog how.many CLF [sǒɔŋ tũa].
'How many dogs two CLF
do you want? 'Two.' (dogs)

Context 2

tũa khây dâay sîn
2SG want take sarong
kîi tũa?
how.many CLF [sǒɔŋ tũa].
'How many sarongs two CLF
do you want? 'Two.' (sarongs)

Portuguese gender

Context 1

Qual é o seu carro ?
'Which is your car?'

O branco.
the.M white.M
'The white (one).' (car)

Context 2

Qual é o seu chapéo ?
'Which is s your hat?'

O branco.
the.M white.M
'The white (one).' (hat)

Cf. Ordinary metonymy:

Speaker A: I heard the health benefit of red wine/orange juice...

Speaker B: Oh, we should then drink a glass a day. (glass > red wine/orange juice)...

Just like ordinary nouns* grammatical NMLZs have two uses

Portuguese

Structure

Use

Form

[um-a]
'one.F'

NP use/.....
Referring function

(Eu veo) [[um-a]]_{NP}.
'(I see) one-F/
(one feminine thing).'

Modification use/
Restricting function

[[um-a] casa]_{NP}
'one.F house'

Northern Thai

[kèn ní]
CLF this

NP use/.....
Referring function

[[kèn ní]]_{NP} wǎan.
'This one is sweet.'

Modification use/
Restricting function

bà-mûaŋ [(kèn) ní]]
'this mango'

*e.g. [[Cotton]_N]_{NP} is in high demand. (NP use)
[[cotton]_N shirt]_{NP} (Modification use)

Evidence supporting our analysis: The nominalization function of gender-/classifier-marking

Portuguese

Lexical (noun-forming) nominalization by genders

'kill/assasinate'	kill- er	- er	(non-classifying nominalizer)
assassin-	assassin- o	- o	} (classifying nominalizers)
	'(male) killer'		
	assassin- a	- a	
	'(female) killer'		

amig**o**/amig**a** 'friend.M/friend.F', filh**o**/filh**a** 'son/daughter', ti**o**/ti**a** 'uncle/aunt'

japonês > japones**a** 'female Japanese' professor > professor**a** 'female teacher',
freguês > fregues**a** 'female customer', camponês > campones**a** 'female farmer',
marquês > marques**a** 'marquise'

dout**or** > doutor**a** 'female doctor', matad**or** > matador**a** 'female killer',
cant**or** cantor**a** 'female singer'

Grammatical (not nouns) nominalization by genders

O [assassin-o] é meu pai

O [sentado na cadeira] é meu pai

ART.M sitting.M in.the chair is my father

'The one sitting in the chair is my father.'

A [assassin-a] é minha mãe

A [sentada na cadeira] é minha mãe.

ART.F sitting.F in.the chair is my mother

'The one sitting in the chair is my mother.'

Cf. Non-classifying nominalization English

[Sitting in the chair] is none other than my old man/woman.

Lexical: (I read it in one) [sitting]

Northern Thai

Lexical (noun-forming) nominalizations by CLFs

V-based

khon khàp ló̌t 'driver'

CLF drive(v) car

hoon̄ hian 'school'

CLF study(v)

kan thǎ̌y 'plow'

CLF plow (v)

láan káa 'shop'

CLF sell (v)

N-based

khon nǎ̌a 'northern (Thai) people'

CLF north

hoon̄ yaa 'hospital'

CLF medicine

kèn tǎ̌a 'eyeball'

CLF eye

nîw tǐ̌n 'toe'

CLF foot

Cf. V-based and N-based English nominalizations

sing--er

speak-er

wash-er

London-er

village-r

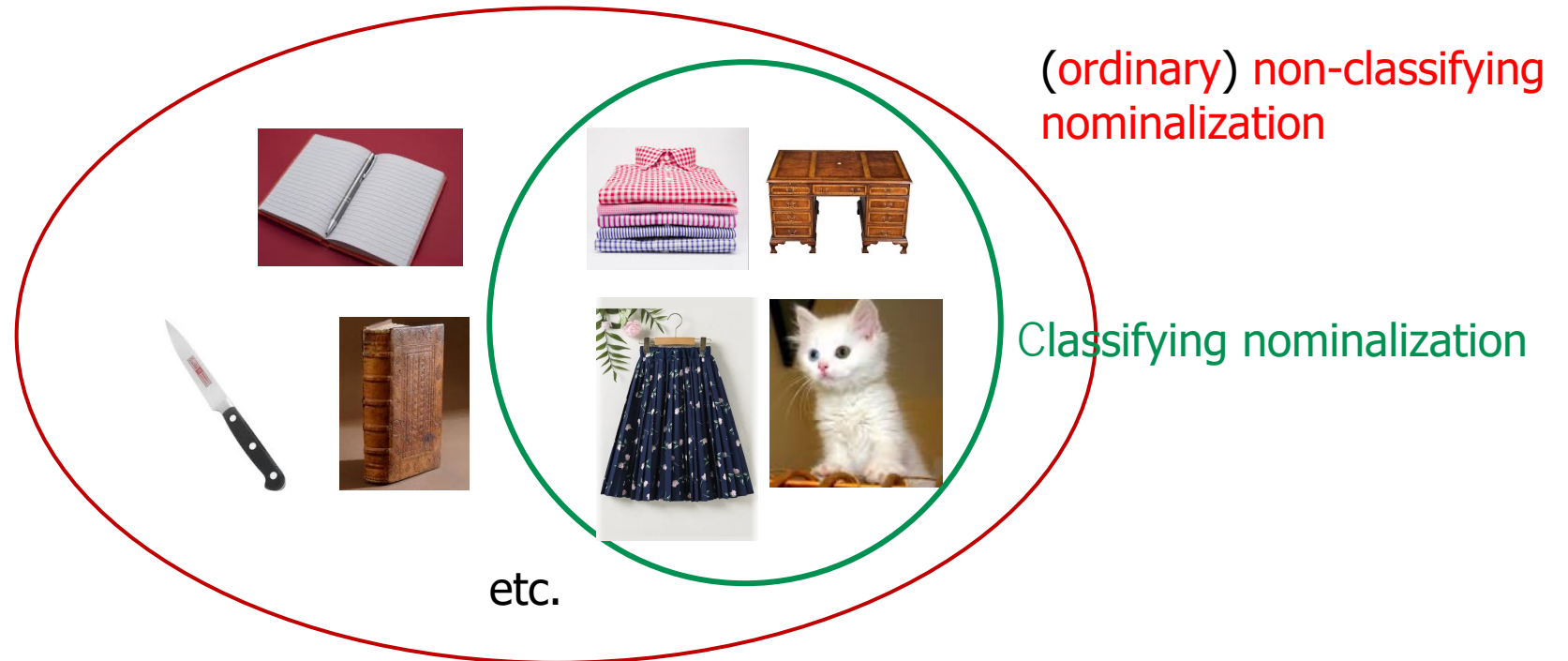
YouTube-r

Grammatical nominalizations

Northern Thai

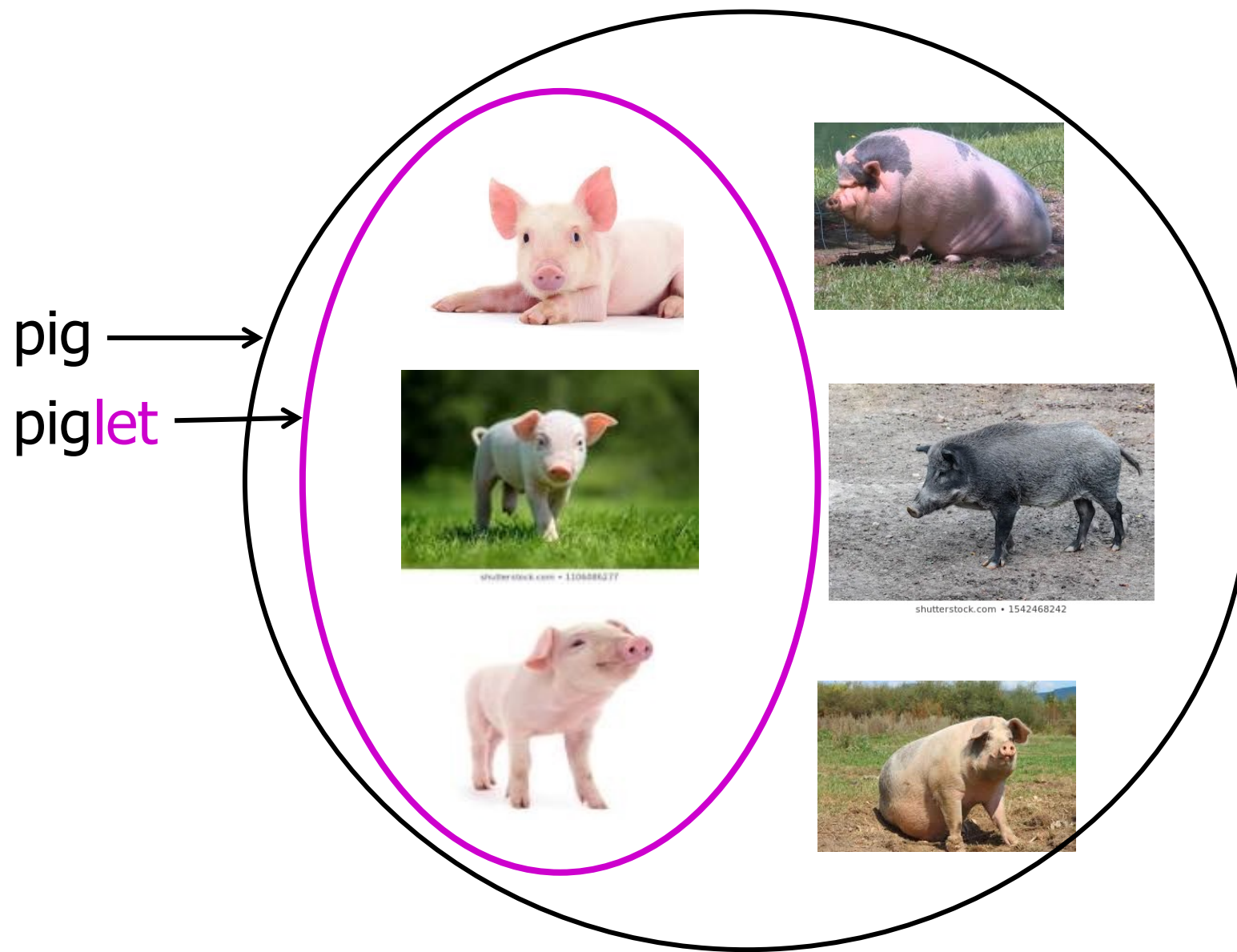
tǔa [tîi pôn sǔu tàwaa] pʰeɛŋ kʰanàat
NMLZR 1SG buy yesterday very expensive
‘[What I bought yesterday] was very expensive.’

NMLZR=nominalizer



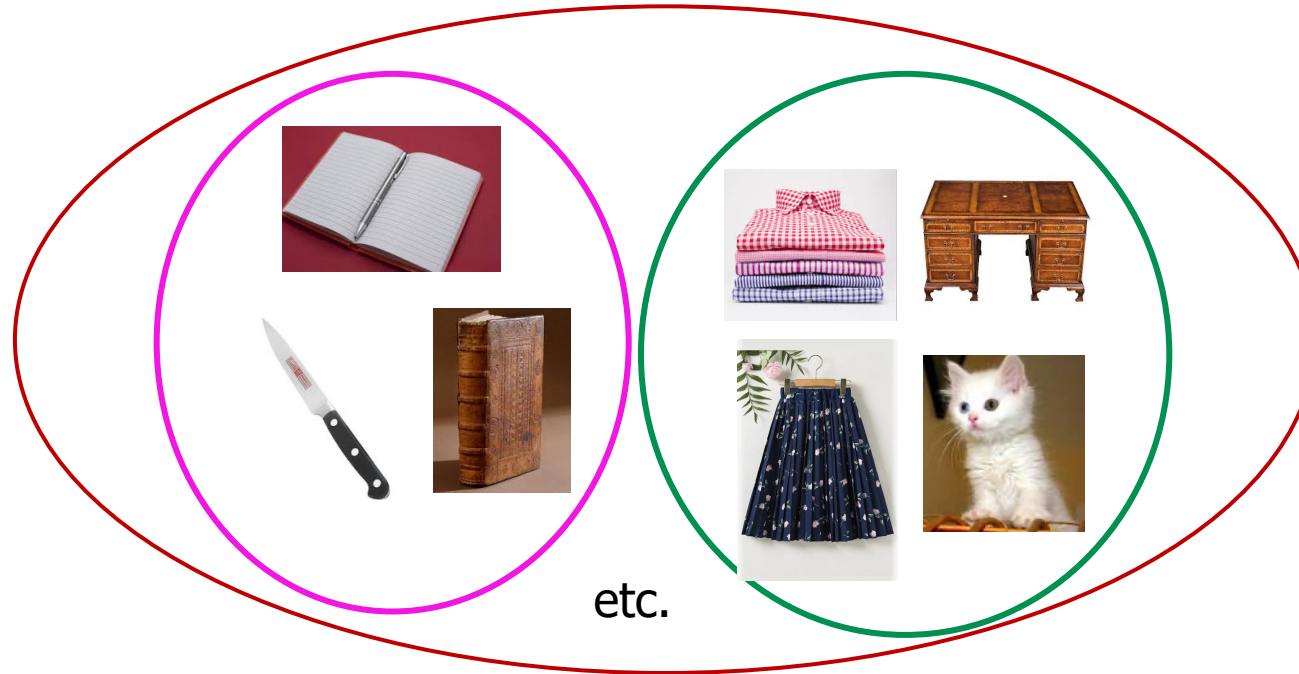
CLF-marking derives a new nominal structure with a new set of denotations, just like a diminutive derivation such as,

Diminutive derivation/nominalization (=derivation of nominals)



Grammatical nominalizations

{ tǔa
lém } Northern Thai
[tǐi pôn sǔu tàwaa] pɛ̌ɛŋ khanàat
NMLZR 1SG buy yesterday very expensive
'what I bought yesterday was very expensive'



Another new struture with a new set of denotations

What is known as **a relative clause** is no more than **a modification use** of **V-based grammatical nominalizations**

NP use

[(tǔa) [tîi pên sêu tàwaa] péeŋ khanàat]_{NMLZ}]_{NMLZ}
CLF NMZLR 1SG buy yesterday very expensive
‘What/The one I bought yesterday was very expensive.’

Structure: V-based grammatical nominalizations

[(tǔa) [tîi pên sêu tàwaa] péeŋ khanàat]_{NMLZ}]_{NMLZ}
CLF NMZLR 1SG buy yesterday very expensive

Modification use

sîn [(tǔa) [tîi pên sêu tàwaa] péeŋ khanàat]_{NMLZ}]_{NMLZ}
skirt CLF NMZLR 1SG buy yesterday very expensive
‘The skirt that I bought yesterday was very expensive.’

There is nothing like a relative clause as an independent structure apart from the use of a V-based grammatical nominalization as a modifier.

Dynamicization of functional typology

Accounting for crosslinguistic marking patterns

Telugu (Dravidian; courtesy of Niranjan Uppoor)

a. okkadu vacca:du
one.M came.3M.SG
'One.M came.'

a'. okka/*okkadu abba:yi
one/one.M boy
'one boy'

b. okkarti vaccindi
one.F came.3F.SG
'One.F came.'

b'. okka/*okkarti amma:yi
one/one.F girl
'one girl'

c. okkati vaccindi
one.N came.3F.SG
'One.N (e.g. a dog) came.'

c'. okka/*okkati kukkalu
one/one.N dog
'one dog'

There is no logical reason that gender-marked numerals cannot modify a head noun, as in Telugu, in view of

Kannada (Dravidian) obba-lu huḍugi
one-F girl
'one girl'


Nepali (Indo-Aryan) Tin oT-A keT-A
three CLF.COUNT-M.PL child-M.PL
'three boys'

Same can be said about restrictions in CLF-marking

	NP use		Modification use	Early stage
Vietnamese	Tôi muốn [quả này] 1SG want CLF this 'I want this.'	→X→	táo [*quả này] apple CLF this 'this apple'	NO
Northern Thai	[kèn ní] wǎan. CLF this sweet 'This one is sweet.'	---→	bà-mûaŋ [(kèn) ní] mango CLF this 'this mango'	OPT
Zauzou (Loloish)	[ʔa ³³ ʔõ ³¹] nɛ ³¹ ɲu ³³ pe ³³ ze ³³ khyui ³¹ this CLF TOP 1.PL.EXCL GEN dog 'This is our dog.'	→	khyui ³¹ [ʔa ³³ ʔõ ³¹] dog this CLF 'this dog'	YES Late stage of change

Plausible explanation is a diachronic one, namely gender-/CLF-marking spreads from NP-use domain to the modification context across time, but the timing of the spread varies across languages.

Dynamic functional-typological perspective

NP use/ Referring		Modification use/ Restricting		NUM+CLF/Gender
	(i) NO	↓	NO	English
	(ii) OPT Innovation	↓	NO	Marathi
	(iii) OPT (differentiation)	↓	OPT	Jingpo
	(iv) YES Spreading (uniformity)	↓	NO	Sikuan
	(v) YES Innovation (differentiation)	↓	OPT	Halkomelem, Tariana, Khortha,
	(vi) YES Spreading (uniformity)	↓	YES	Mandarin, Thai, Newar, Korean, Japanese; Gender in IE

Starting point: the NP-use forms must be the starting point of analysis.

The other crosslinguistic marking patterns represent the developmental stages of the CLF/Gender marking. Like,

What motivates this kind of alternating pattern of change of innovation and spreading/leveling?

Pioneer functionalists

The more economical or more abundant use of linguistic means of expressing a thought is determined by the need...Everywhere we find modes of expression forced into existence which contain only just so much as is requisite to their being understood. ←

Paul, Hermann 1880/1889. *Prinzipien der Sprachgeschichte*
(Halle: Max Niemeyer; Translation by H.A. Strong 1881/1891
and by Hans Hock 1991)

In order to understand how and why a language changes, the linguist must keep in mind two ever-present and antinomic factors: first, the requirements of communication, "Hearer's economy" the need for the speaker to convey his message, and second, the principle of least effort, which makes him "Speaker's economy" restrict his output of energy, both mental and physical, to the minimum compatible with achieving his ends.

Martinet, André 1962. *A Functional View of Language*.
Oxford: Clarendon Press. P.139

Speaker's economy > Simplification/form uniformity (S) > Reflecting the unity/oneness of the conceptual category involved

Hearer's economy > Diversification/formal variation (D) > Reflecting differences in communicative function (e.g., referring or restricting the denotation?)

Crosslinguistic difference in the marking pattern

Starting point is the forms that cannot/do not modify

Marathi classifier marking

NP use/Referring function

a. don-**jaN** aal-yaa
two-CLF_{HUMAN} came-M
'Two (HUMAN(.Epicene)) came.'



Modification use/Restricting function

a'. don-***jaN** mule
two CLF_{HUMAN} boys
'two boys'

Forms are differentiated according to their use/functions

Nepali classifier marking

NP use/Referring function

a. ek **dʒʌna** a-e-k-o
one CLF_{HUMAN} come-PST-PERF-M was-M.PST
'One (HUMAN(.M)) had come.'



Modification use/Restricting function

a'. ek **dʒʌna** keɽo
one CLF_{HUMAN} boy
'one boy'

Form identity reflecting the shared conceptual category (of classifying nominalizations)

Nepali is a step ahead of Marathi in the spreading of the CLF marking to the modification context. The former has achieved the speaker's economy, while the latter maintains the hearer's economy.

Same pattern of development seen in gender marking

Telugu gender marking (as in Tamil and Malayalam)

NP use/Referring function

a. okka-*rti* vaccindi
one-F came.3F.SG
'One.F came.'



Modification use/Restricting function

a'. okka *-*rti* amma:yi
one -F woman
'one woman'

Kannada gender marking

NP use/Referring function

a. obba-*lu* bandaḷu
one-F came.3FSG
'One.F came.'



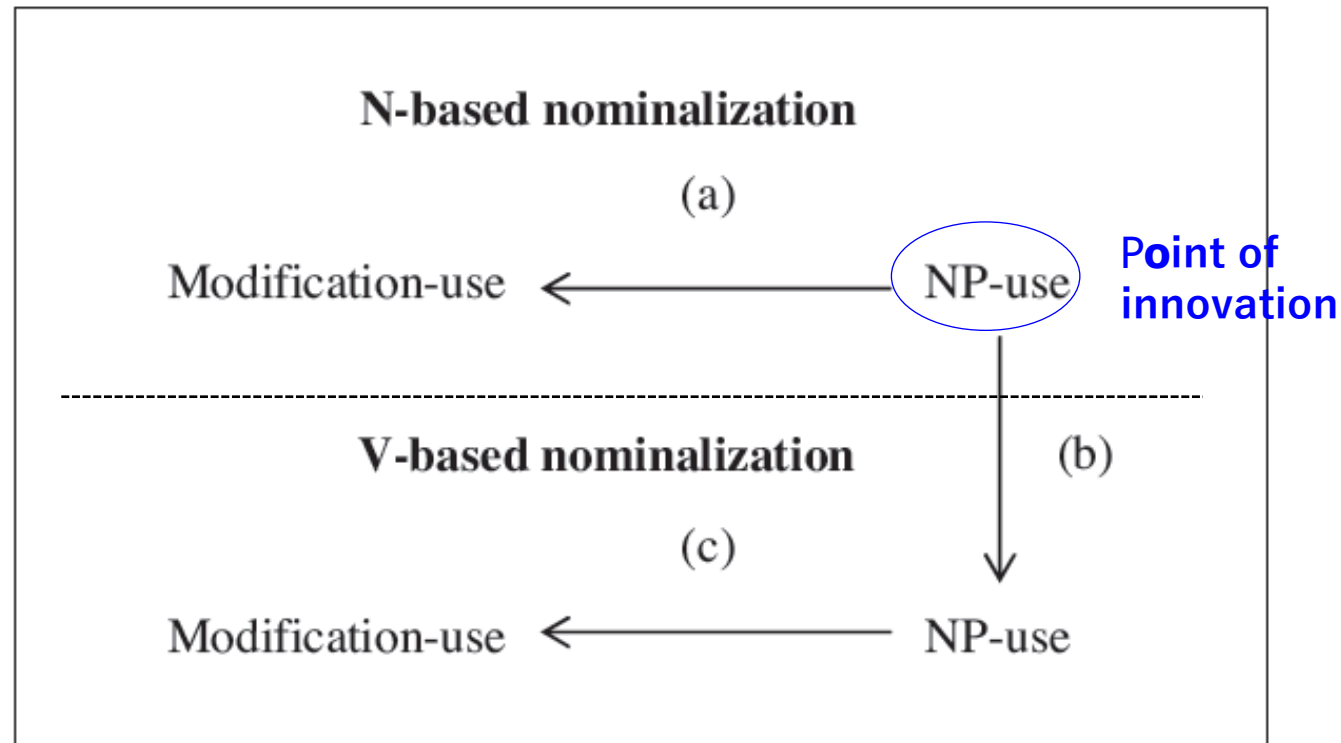
Modification use/Restricting

a'. obba-*lu* huḍugi
one-F girl
'one girl'

Kannada is a step ahead of Telugu in the spreading of gender marking to the modification context to achieve the speaker's economy.

Manner of spreading of nominalization markers

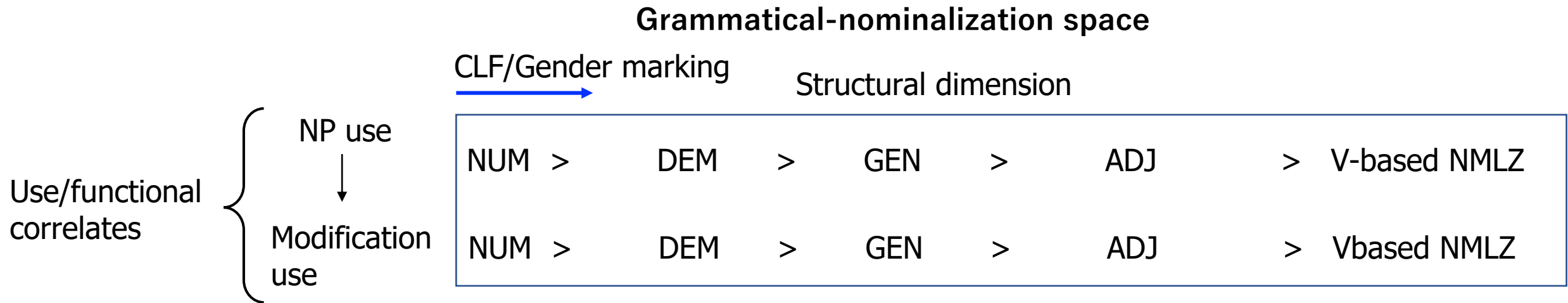
Figure 1: Directions of spread of nominalization markers



(Shibatani and Shigeno 2013: 120)

Shibatani, Masayoshi and Hiromi Shigeno. 2013. Amami nominalizations. *International Journal of Okinawan Studies*, Vol. 7. 107-139.

Patterns of spread of nominalization markers

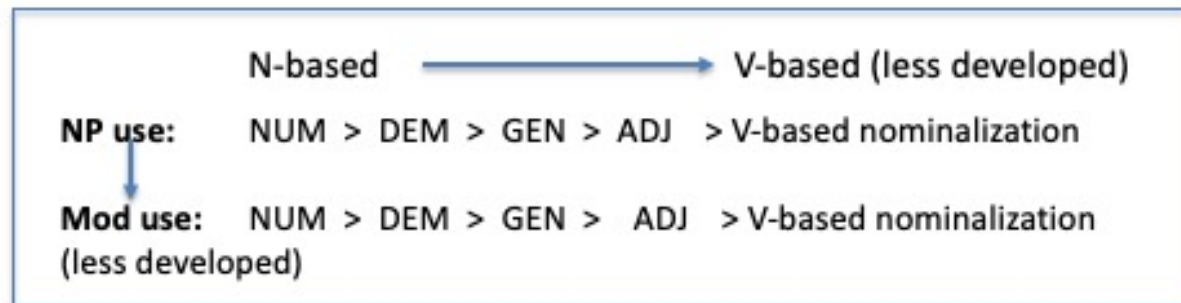


Constraints on synchronic distributions of nominalization markers, incl CLFs/Genders

- Cross-dialectal/linguistic variations in CLF-/Gender-marking are expected due to communicative dynamism
- (Overt) CLF-/Gender-marking is likely found (in the NP-use context) at the left edge of the hierarchy
- Universal constraints can be drawn along the two dimensions, similar to the Keenan-Comrie attempt on those on relative clause constructions

Predications on diachronic developments of nominalization markers, incl CLFs/Genders

- A historically older form of a language shows a less developed pattern of CLF-/Gender-marking
- Cross-dialectal/linguistic variations are expected, reflecting the historical pattern above



Assamese and Assamese Bengali (Case study by Gitanjali Bez, Gauhati University)

Old Assamese (less developed than both Nalbariya dialect and Modern Standard Assamese)

NP use: ^{OPT}NUM > ^{OPT}DEM > *GEN > *ADJ > *V-based nominalization

Mod use: ^{OPT}NUM > ^{OPT}DEM > *GEN > *ADJ > *V-based nominalization

Nalbariya dialect (reflects a less developed pattern than Modern Standard Assamese)

NP use: NUM > DEM > *^{OPT}GEN > *^{OPT}ADJ > *^{OPT}V-based nominalization

Mod use: NUM > ^{OPT}DEM > *GEN > *ADJ > *V-based nominalization

Modern Standard Assamese

NP use: NUM > DEM > *^{OPT}GEN > *^{OPT}ADJ > *^{OPT}V-based nominalization

Mod use: NUM > ^{OPT}DEM > ^{OPT}GEN > *ADJ > *V-based nominalization

Cross-linguistically

Bengali (similar to Nalbariya Assamese)

NP use: NUM > DEM > *^{OPT}GEN > *^{OPT}ADJ > *V-based nominalization

Mod use: NUM > *DEM > *GEN > *ADJ > *V-based nominalization

Development of **gender marking** in major Dravidian languages

Telugu, Tamil, Malayalam (K V Subbarao, Niranjana Uppoor, Rajendran S)

NP use: NUM > DEM > GEN > ADJ > V-based (participle)

Mod use: *NUM > *DEM > *GEN > *ADJ > *V-based (participle)

Kannada (Niranjana Uppoor)

NP use: NUM > DEM > GEN > ADJ > V-based (participle)

Mod use: NUM > *DEM > *GEN > *ADJ > *V-based (participle)

No mark=CLF-marking obligatory, OPT=optional marking, *OPT="optional"; marking when the referent is definite, *X=marking of X not possible

Implications for non-gender/non-CLF languages

Describing “adnominals” (noun modifiers) in English?

Numeral	three dogs
Demonstrative	this dog, that dog
Genitive/Possessive	my dog, my neighbor's dog
Adjective	white dog,
Relative clause	The dog [which is barking] is yours.
Noun	cotton shirt, London parks

Why do these forms **belonging to different parts of speech (word classes)/constructions** all modify a noun? Do they have anything in common, which unifies them and allows them to function as a noun modifier?

What CLF/Gender languages suggest

These modifiers
are all
grammatical
nominalizations
in modification
use

Numeral **three** dogs
Demonstrative **this** dog, **that** dog
Genitive/Possessive **my** dog, **my neighbor's** dog
Adjective **white** dog,
Relative clause The dog [**which is barking**] is yours.
Noun **cotton** shirt, **London** parks

We have seen that these “adnominals” from numerals to relative clauses are **a unified phenomenon as indicated by gender-/classifier-marking**; they are all nominalized structures.
What modifies a noun isn't a NUM, DEM, etc. but a derived nominal structure, similar to nouns (e.g., cotton, London).

Some internal evidence for the nominalization analysis of English adnominals

Basic meanings of numerals

(1) quantitative units

(Talking about numbers denoting quantitative units)

Two is larger than one. (quantitative unit > a singular verb form)

Dois é maior que um. (Portuguese)

(2) numeral letters



(Looking at the above numeral letters)

One is blue and two is red. (a letter "2" > a singular verb form)

Um é azul e dois é vermelho.

But **when numerals nominalize**, they denote “things” (metonymic to the basic quantitative units; “things” embodying the basic numeral concepts)

Speaker A: Are there cows out there?

Há **vacas** ali? (Portuguese; **feminine denotation**)

Speaker B: Yes, I see three.

Sim, eu vejo três.

One is eating grass, and **two are** drinking water.

Uma está comendo capim e **duas estão** bebendo água.

two “things” > a plural verb form

Speaker A: Are there cars out there?

Há **carros** ali? (**masculine denotation**)

two **feminine** “things” > a **F** plural verb form

Speaker B: Yes, I see three.

B: Sim, eu vejo três.

One is blue and **two are** red.

Um é azul e **dois são** vermelhos.

two “things” > a plural verb form

two **masculine** “things” > a **M** plural verb form

Traditional analysis of **genitives**; as **noun declension/case inflection**

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985.
A Comprehensive Grammar of the English Language. Essex: Longman.

P. 336

Table 6.2 Personal pronouns with subjective, objective, and genitive case forms

SUBJECTIVE	<i>I</i>	<i>we</i>	<i>you</i>	<i>he</i>	<i>she</i>	<i>it</i>	<i>they</i>	<i>who</i>
OBJECTIVE	<i>me</i>	<i>us</i>		<i>him</i>	<i>her</i>		<i>them</i>	<i>who(m)</i>
GENITIVE determinative independent	<i>my</i> <i>mine</i>	<i>our</i> <i>ours</i>	<i>your</i> <i>yours</i>	<i>his</i>	<i>her</i> <i>hers</i>	<i>its</i>	<i>their</i> <i>theirs</i>	<i>whose</i>

NP-use forms

One immediate problem with this: what about *John's*, *my neighbor's*, which are not pronouns?

Many languages treat these as a unified phenomenon:

măa [khǒŋ tǔa] 'your dog', măa [khǒŋ Kultida] 'Kultida's dog' (Northern Thai)

Major problems with the traditional analysis of genitives/possessives

Table 6.2 Personal pronouns with subjective, objective, and genitive case forms

SUBJECTIVE	<i>I</i>	<i>we</i>	<i>you</i>	<i>he</i>	<i>she</i>	<i>it</i>	<i>they</i>	<i>who</i>
OBJECTIVE	<i>me</i>	<i>us</i>		<i>him</i>	<i>her</i>		<i>them</i>	<i>who(m)</i>
GENITIVE determinative independent	<i>my</i> <i>mine</i>	<i>our</i> <i>ours</i>	<i>your</i> <i>yours</i>	<i>his</i>	<i>her</i> <i>hers</i>	<i>its</i>	<i>their</i> <i>theirs</i>	<i>whose</i>

These two groups of forms differ significantly in both semantic and syntactic properties, warranting two separate treatments

Semantically, Subjective (or Nominative) and Objective (or Accusative) forms (I/me, you/you, he/him, etc.), on the one hand, and Possessive (or Genitive) forms (my/mine, your/yours, his, etc.), on the other, denote/refer to different entities

I (pâən) like you.
Look at me (pâən) !

Refer to the speaker



Look at mine (khǎwng pâən) !

Refers to what is metonymically/
intimately connected to the speaker



Etc.

Syntactically, **Subjective/Objective** forms and **Genitive forms** are distributed differently

Subject position

He/*him/his/John's is big.

Subjective forms occur only in subject position.

Object forms cannot; but **Genitive/possessive** forms can.

Object position

Look at *he/him/his/Johns.

Object forms occur only in object position

Subject forms cannot; but **Genitive/possessive** forms can.

Modifier position

*he/*him/his/John's book

- **Inflected forms** occur only in specific syntactic positions
- **Genitives/Possessives**, on the other hand, denote things, like ordinary nouns—they are **grammatical nominalizations** marked by inflectional morphology or cliticization of /z/ (written as 's). Syntactically, they occur anywhere like ordinary nouns.

We see this clearly in CLF languages because things denoted by genitives may be classified;

$\left\{ \begin{array}{l} \text{tǔa} \\ \text{lém} \\ \text{kèn} \end{array} \right\}$ Northern Thai
[khǒŋ pĕən] πέηη khanàat
'Mine is very expensive.'

Implications for classifier/gender languages

Nominalization does not necessarily exhibit **overt** marking:
e.g. [three]_N 'three' > [[three]_N]_{NMLZ} 'three (things)'



There can be classifying nominalizations that do not exhibit overt marking.

Of the major Romance languages Portuguese and Romanian both **morphologically** distinguish gender for "one" and "two" but not for higher numbers; the others do so only for "one".

overtly gendered/classifying

Esses dois são meus . 'These two.M are mine.M..'	dois carros 'two cars'
Essas duas são minhas . 'These two.F are mine.F.'	duas casas 'two houses'

covertly gendered/classifying

Esses três são meus . 'These.M three are mine.M.'	três carros 'three cars'
Essas três são minhas . 'These.F three are mine.F.'	três casas 'three houses'

One should not assume that a given form is not classifying simply because morphological marking is absent.