Numeral Classifiers in Yucatec Maya:
Variation and reanalysis

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numeral classifiers in Yucatec Maya

Numeral	Numeral classifier	Noun

(1)   **hun-**   **p'éel(h)**   **xanab**

one-   CL.UNIT   shoe   'one shoe'

(Briceño Chel 1992, Lucy 1992, Miram 1983, Lehmann 2010, 2023)

The following categories must be introduced:
- sortal classifiers
- mensural classifiers
- measure nouns

classifiers and measuring expressions

sortal classifiers

☞ type or class to which the counted individual belongs:

(2) **jun-túul** **k'éek'en**
one-CL.ANIM pig 'one pig' (ANIMATE)

(3) **jun-kúul** **wayu'um**
one-CL.PLANT huaya 'one huayatree' (PLANT)

(4) **jun-ts'íit** **kib**
one-CL.EXTENDED wax 'one candle' (LONG OBJECT)

Sortal classifiers are required for *certain* quantifiers (numbers of Mayan origin, interrogative quantifier), i.e., they fulfill a "cardinality function" if this is not built into the numeral (see Lehmann 2010, Bale & Coon 2014, Bale et al. 2019, Little et al. 2022)

mensural classifiers

☞ quantity or measure of an entity ('slice', 'chunk', etc.) or aggregates of wholes ('pair', 'stack ', etc.).

(5) **jun-wóol**   **xa'ak'**

  one-CL.ROUND   spice   'one ball of spices' (BALL)

(6) **jun-lóoch'**   **ixi'im**

  one-CL.BUNDLE   maiz   'one bundle of maiz' (BUNDLE)

Unlike sortal classifiers, these elements do not classify the meaning of the noun, but denote a measure according to which the content of the noun is measured.

measure nouns

☞ nouns expressing measure that cannot be attached to the numerals (in contrast to mensural classifiers).

(7) p'is ten óox-*(p'éel) kiiloj bu'ul!

weigh[IMP] 1.SG three-CL.UNIT kilo bean

'Weigh three kilos of beans for me!' (Briceño Chel 1994: 147)
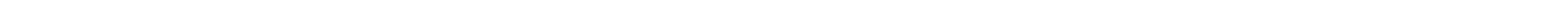
summary

	sortal classifiers	mensural classifiers	measure nouns
attach to numerals	+	+	−
express measure	−	+	+

current phenomena

current phenomena

Basic observation:

classifier *p'éel* ‚CL.UNIT' is generalized.

general classifier

☞ a special instance of sortal classifier that has the abstract meaning 'UNIT' and can be applied to any entity.

(7) **jun-p'éel**   **wayu'um**

one-CL.UNIT   huaya   'one huayatree'

cf. **jun-kúul**   **wayu'um**

one-CL.PLANT   huaya   'one huayatree'

(8) **jun-p'éel**   **kib**

one-CL.EXTENDED   wax   'one candle'

cf. **jun-ts'íit**   **kib**

one-CL.EXTENDED   wax   'one candle'

.

current variation: phenomenon A

The general classifier replaces the *sortal* classifiers:

jun-túul **k'éeken**

one-CL.ANIM pig

jun-p'éel **k'éeken**

one-CL.UNIT pig

'one pig'

Atlas of Yucatec Maya Online, Q163

https://spw.uni-goettingen.de/shiny/yuc/
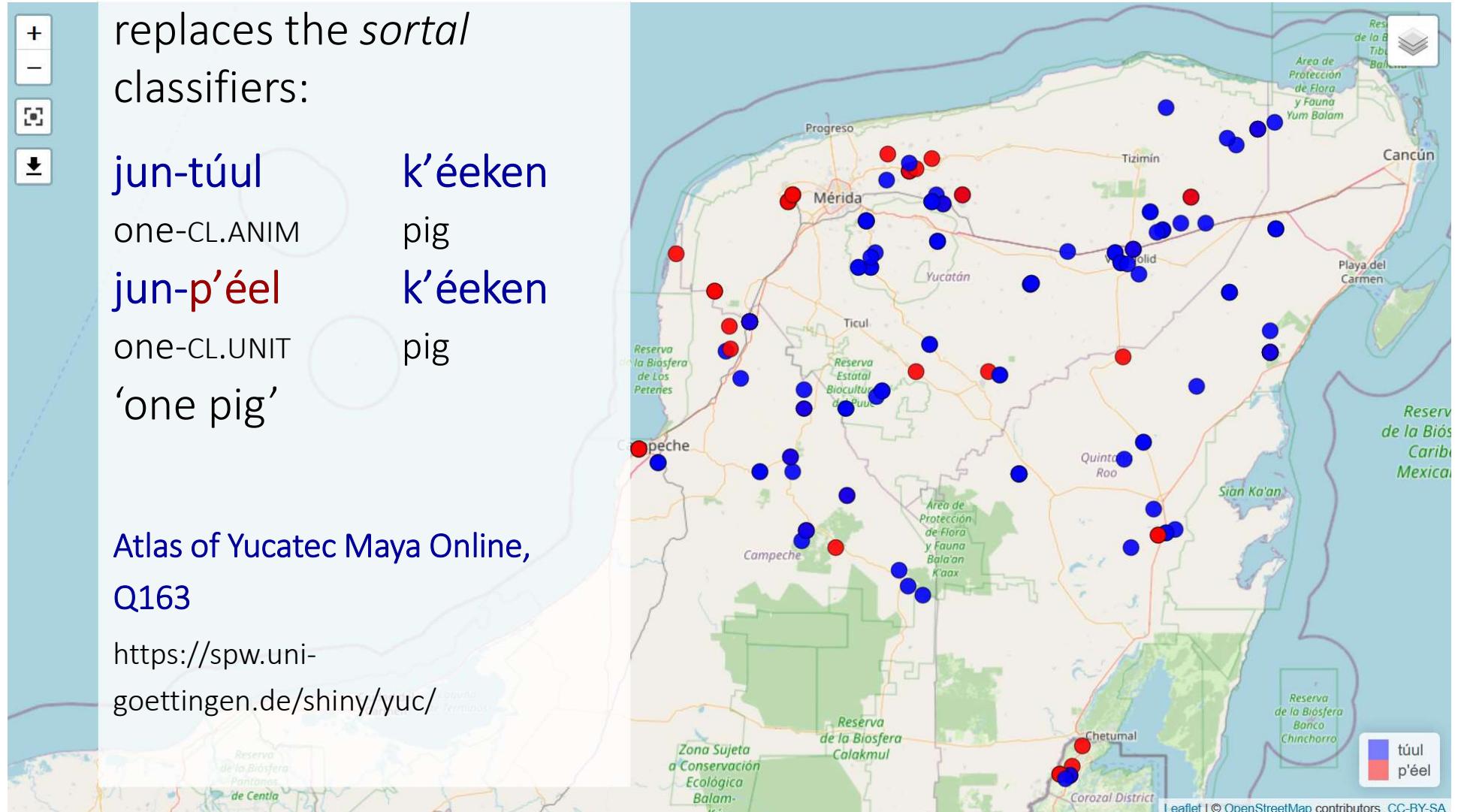
current variation: phenomenon A

not a recent development:
Diccionario de San Francisco (dating back to Pio Perez in 1690): *Hunppel u lak* 'one A.3 friend'

p'éel during the Colonial Period was used for unclassified nouns (e.g., Spanish loans for coins, measures, domestic objects, etc.) and gradually assumed the role of an all-purpose numeral classifier. (Bricker 2019: 240)
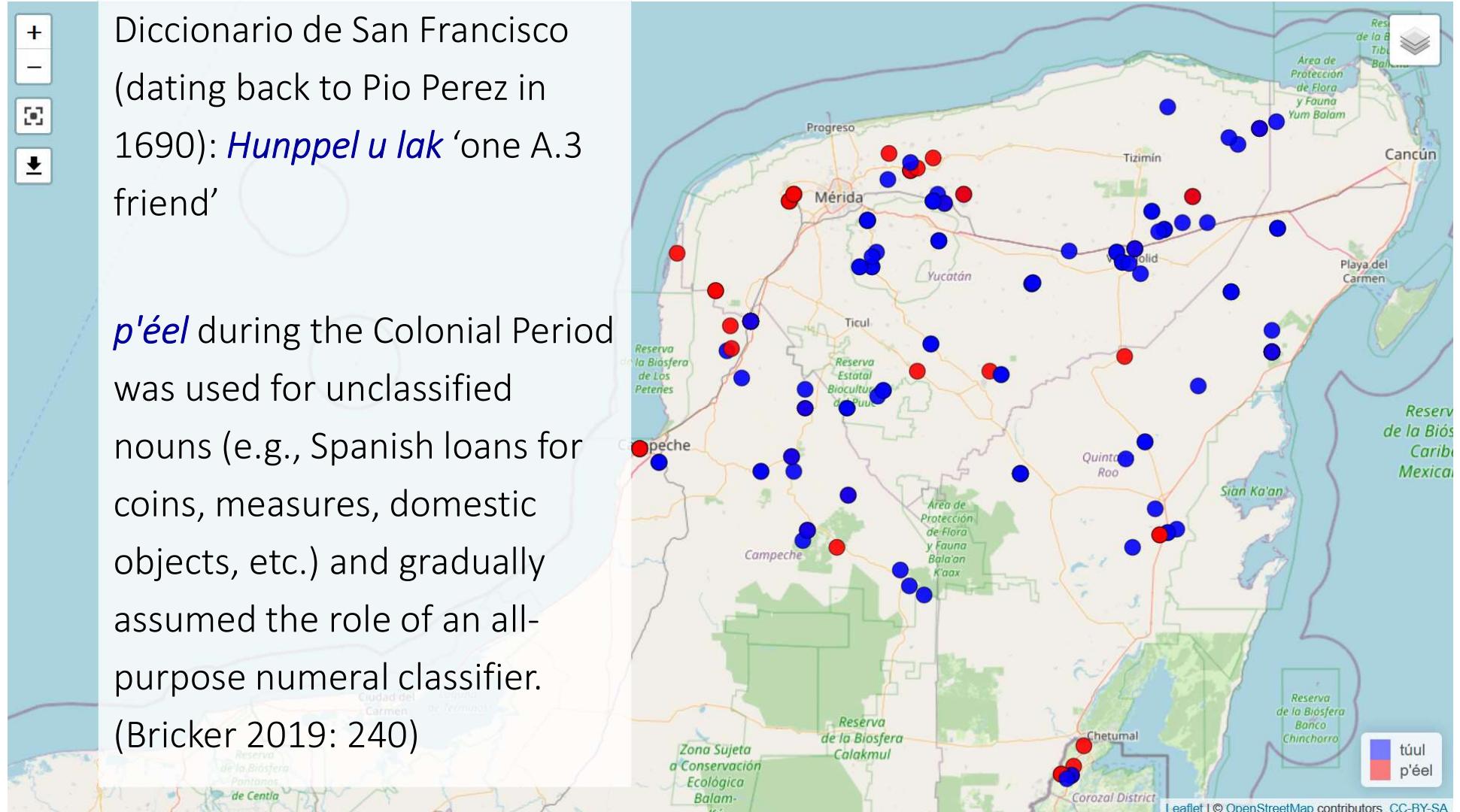
current variation: phenomenon B

The general classifier appears with *mensural* classifiers:

jun-kúuch   **si'**

one-CL.LOAD   firewood

jun-p'éel kúuch si'

one-CL.UNIT   CL.LOAD   firewood

'one load of firewood'

Atlas of Yucatec Maya Online, Q179

https://spw.uni-goettingen.de/shiny/yuc/

Clf
Gen Clf
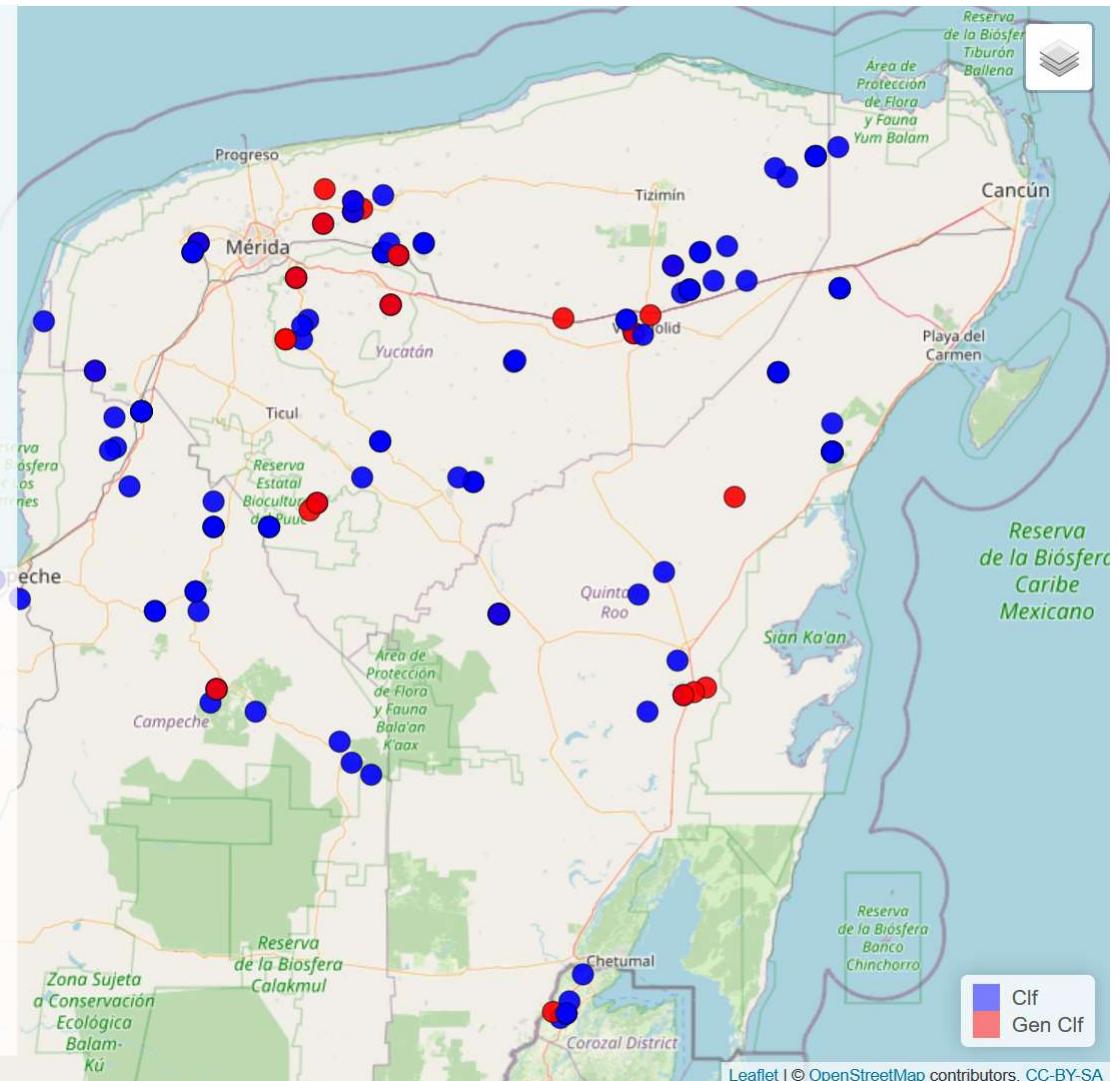
current variation

Our question:

Does the use of p'éel in measurement constructions go back to the the replacement of sortal classifiers by p'éel?
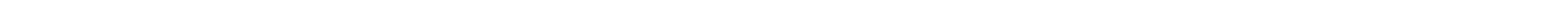
hypotheses

hypotheses and predictions

| hypotheses	predictions
Change in the general classifier UNIT classifier → general marker of the *Cardinality Function*.	'Num-Unit'/'Num-Sort' (sortal) predictor for 'Num-Unit Measure'/ 'Num-Measure'
Change in the mensural classifiers mensural classifiers → measure nouns.	different types of mensural classifiers may behave differently

predictions about the distribution in Space

- If phenomenon B depends on phenomenon A, B constructions (Unit Measure) will occur in subset of the locations where A constructions (Unit instead of Sortal) occur.

(a) Subset
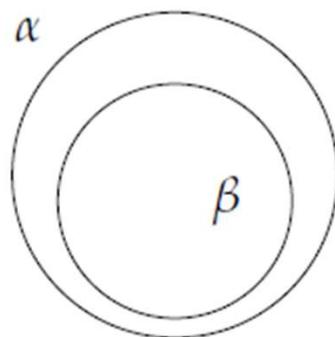
(b) Disjoint

(c) Overlapping

α

β

α

β

α

β
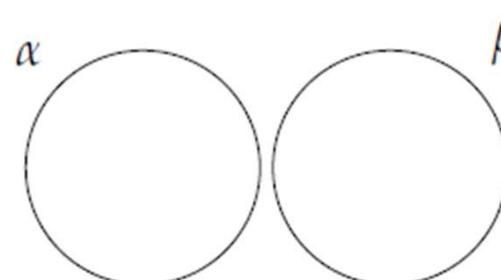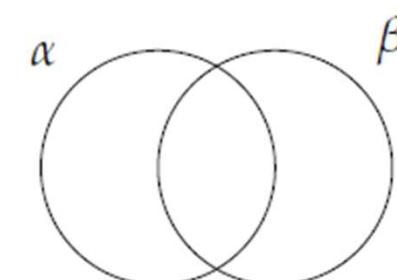
results

results: between mensural classifiers

Different types of mensural classifiers behave differently!

Measure-Types Plot
% 'Num-Unit Measure' out of total occurrences (*y*-axis) and *n* of total occurrences (*x*-axis) of each mensural classifier; trendlines per measure type

Observation
The use of the general classifiers is more likely with less frequent mensural classifiers.
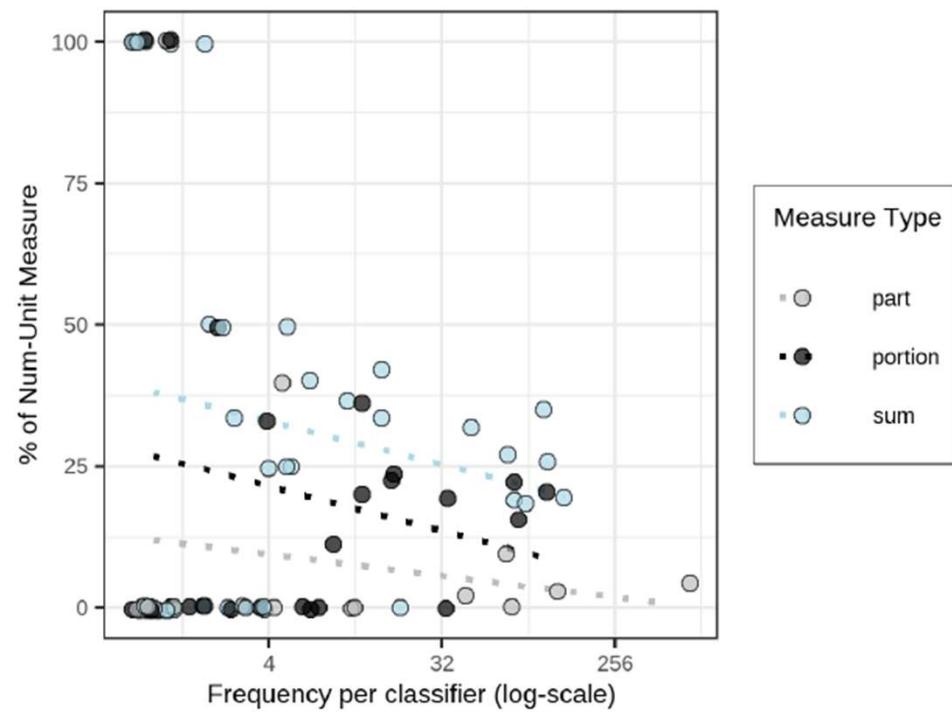
results: sortal classifiers in Space

The sortal classifiers are replaced by the general classifier in the Northwest and West.
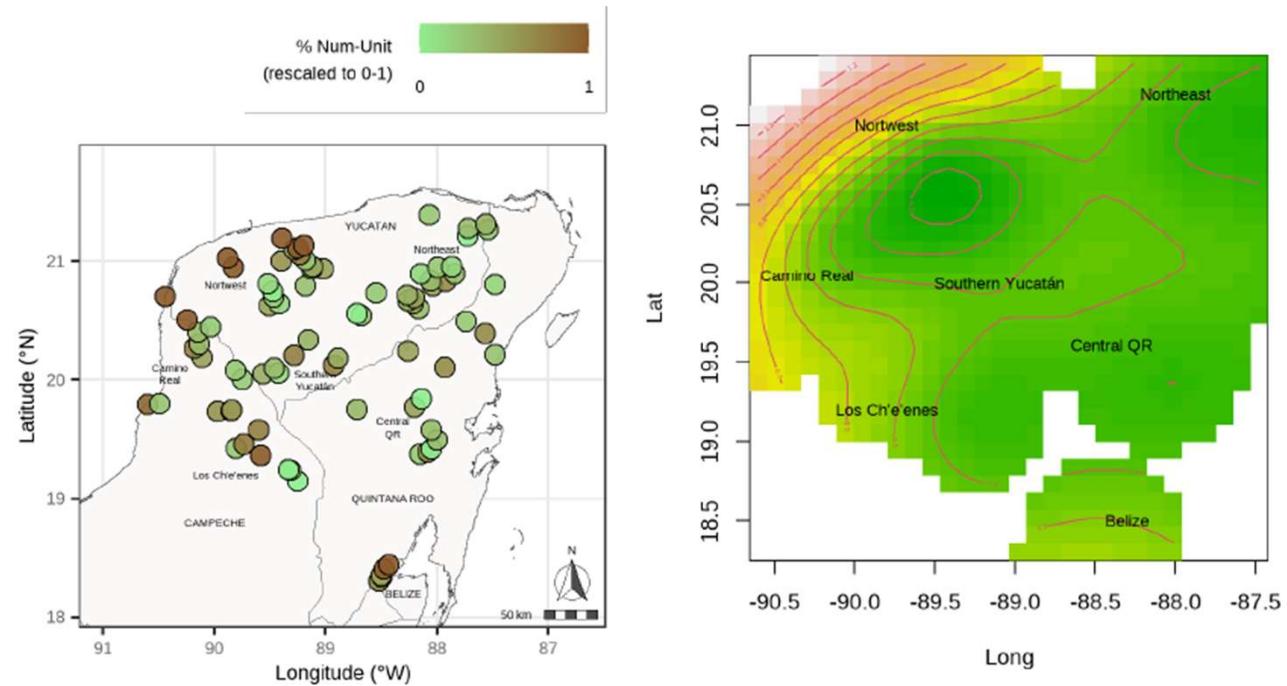
Sortal Classifiers in SPACE: LEFT PANEL: % Num-Unit out of total Num-Unit/Num-Sort; RIGHT PANEL: coefficients of space of the GAM on the occurrence of 'Num-Unit'

results: mensural classifiers in Space

The ‚unit Measure' construction is more likely in the Eastern part of the peninsula (all measure types)
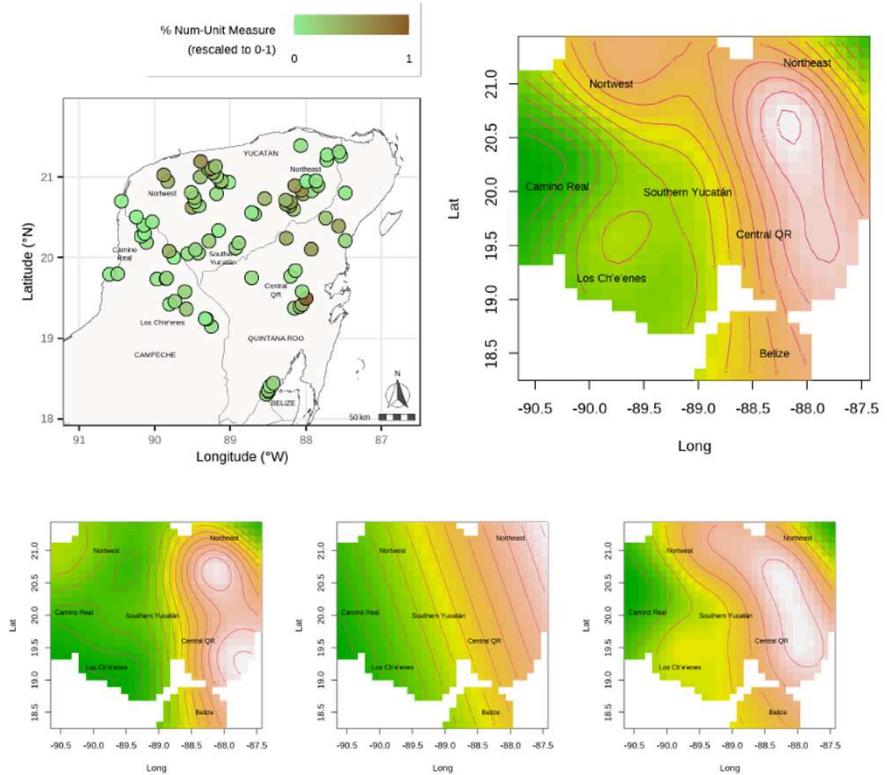
Mensural Classifiers in SPACE: TOP LEFT: % 'Num-Unit Measure' out of total 'Num-Unit Measure'/'Num-Measure'; TOP RIGHT: GAM-coefficients of space on the occurrence of 'Num-Unit Measure'; BOTTOM LEFT: coefficients for *Parts*; BOTTOM MIDDLE: coefficients for *Portions*; BOTTOM RIGHT: coefficients for *Sums*

conclusions

conclusions

Our question:

Does the use of p'éel in measurement constructions go back to the the replacement of sortal classifiers by p'éel?

Our findings:

- The geographical distribution of our data shows that these developments take place in different áreas.

- Variation between mensuratives with respect to the use of *p'éel* (such that the less frequent ones appear with *p'éel* more often).

☞ mensural classifiers > measure nouns.

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more details in

Blaha Pfeiler B, Skopeteas S (2023) Numeral classifiers in Yucatec Maya: Microvariation and Syntactic Change. *Journal of Historical Syntax* (under review). https://www.academia.edu/107389892/

references

references: history of Yucatec Maya

Lexicography

- Bricker, Victoria, Po'ot Yah, Eleuterio & Ofelia Dzul de Po'ot 1998. *A Dictionary of the Mayan Language, as spoken in Hocabá, Yucatán*. Salt Lake City: University of Utah Press.

History

- Beltrán, R P. Fr. Pedro. 1859. *Arte del idioma maya: reducido a sucintas reglas y semilexicon yucateco* (segunta edición). Mérida de Yucatán: J. D. Espinosa.
- Bricker, Victoria R. 2019. *A Historical Grammar of the Maya Language of Yucatan: 1557-2000.* Salt Lake City: The University of Utah Press.
- Michelon, Oscar (Ed.). 1976. *Diccionario de San Francisco*. Graz: Akademische Druck- u. Verlagsanstalt.

references: numeral classifiers in Yucatec Maya

- Briceño Chel, Fidencio. 1992. El uso de sufijos clasificadores numerales y de mensurativos en el maya yucateco. *Estudios de Lingüística Aplicada* 15/16, 69-80.

- Lehmann, Christian. 2010. On the function of numeral classifiers. In Franck Floricic (ed.), *Essais de typologie et de linguistique générale. Mélanges offerts à Denis Creissels*. Lyon: École Normale Supérieure, 435-445.

- Lehmann, Christian. 2023. *La lengua maya de Yucatán*. Sitio internet: (www.christianlehmann.eu/ling/sprachen/maya/index.php)

- Lucy, John A. 1992. *Grammatical categories and cognition: a case study of the linguistic relativity hypothesis*. Cambridge: Cambridge University Press.

- Miram, Helga-Maria. 1983. *Numeral Classifiers im Yukatekischen Maya*. Verlag für Ethnologie, Hannover.

references: numeral classifiers in Mayan

For our argumentation, we cited:

- Bale, Alan & Jessica Coon. 2014. Classifiers are for numerals, not for nouns: Consequences for the mass/count distinction. *Linguistic Inquiry* 45(4). 695–707. doi:10.1162/ling_a_00170.

- Bale, Alan, Jessica Coon & Nicholás Arcos. 2019. Classifiers, partitions, and measurements: Exploring the syntax and semantics of sortal classifiers. *Glossa: a journal of general linguistics* 4(1). 77.1–30. doi:10.5334/gjgl.752.

- Little, Carol-Rose, Mary Moroney & Justin Royer. 2022. Classifiers can be for numerals or nouns: Two strategies for numeral modification. *Glossa: a journal of general linguistics* 7(1). 1–35. doi:10.16995/glossa.8437.

See further relevant readings in:

https://spw.uni-goettingen.de/projects/maya/sct-NOM.php

references: inferences from variation in space

Gravity Models and micro-variation in lexicon:

- Blaha Pfeiler B, Skopeteas S (2022) Sources of convergence in indigenous languages: Lexical variation in Yucatec Maya. PLoS ONE 17(5): e0268448. https://doi.org/10.1371/journal.pone.0268448

Numeral Classifiers and Diachronic Developments

- Blaha Pfeiler B, Skopeteas S (2023) Numeral classifiers in Yucatec Maya: Microvariation and Syntactic Change. *Journal of Historical Syntax* (under review). https://www.academia.edu/107389892/

Atlas of Yucatec Maya Online

- Blaha Pfeiler, Barbara, Stavros Skopeteas & Elisabeth Verhoeven (2022). *Atlas of Yucatec Maya Online*. Online resource. Version 0.0.1, https://spw.uni-goettingen.de/shiny/yuc/

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