Patterns of body~object colexifications across languages

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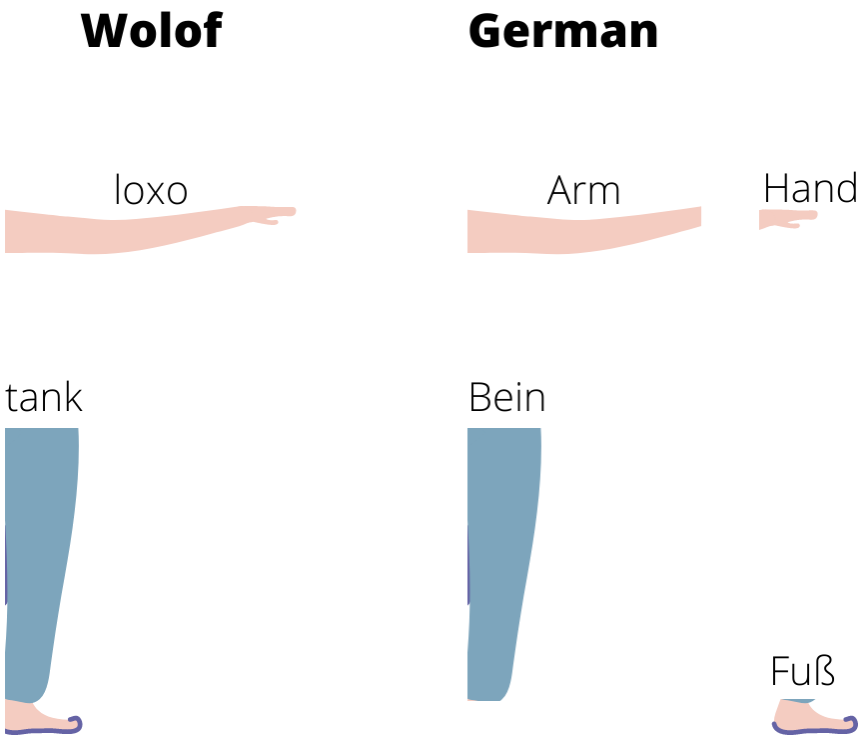
Lexical Typology

- the study of variation of word meanings across languages
- identifying cross-linguistic patterns
- one central question: *What different meanings can be expressed by one and the same lexeme?* (Koptjevskaja-Tamm, Vanhove & Koch 2007)

Language differences in body terminology



Salience of body parts

- most studies focus on how the body is divided into linguistic units (e.g., Andersen, 1978; Brown, 1976; Majid et al., 2006)
- shape features such as *round* and *long* are particularly salient (Andersen 1978)
- functional significance is involved in part naming and object categorization (Tversky & Hemenway 1984; Morrison & Tversky 2005)
- visual discontinuities play a role in segmenting the body into parts (Majid & van Staden 2015)

Visual salience of body parts

- Based on the findings of previous studies, a body part is visually salient if it is a distinctly perceptible external part of the body.
  - For example, the head, arm, and leg are visually salient, but the brain, liver, and bones are not.

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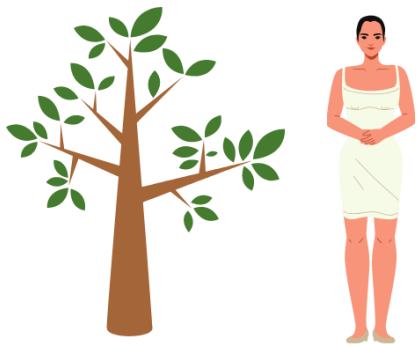
  - For example, the head, arm, and leg are visually salient, but the brain, liver, and bones are not.
- Borderline cases such as teeth are generally disregarded in previous literature, but are considered visually salient in the present study.

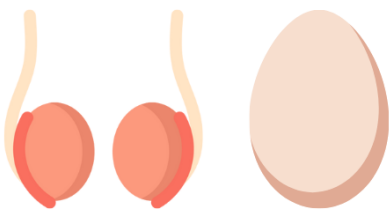
Colexification

- a descriptive concept that refers to a lexical form being associated with two distinct meanings (François 2008)
- one word denoting two related or unrelated concepts
  - Note that I will use a "∼" if two concepts are colexified.

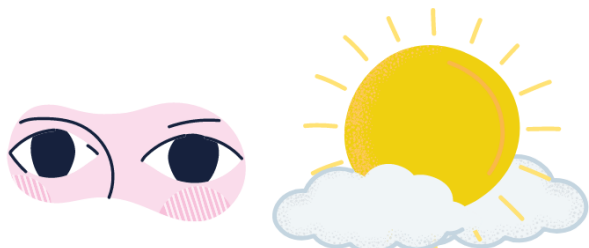
Some cross-linguistic patterns of body~object colexifications



BARK~SKIN



TESTICLES~EGG



EYE~SUN

EYE~SEED

Cross-linguistic patterns of body~object colexifications

- some colexifications between body part and object concepts occur more frequently across languages (Brown & Witkowski 1981, 1983)
- they offer insights into the role of polysemy for semantic change (Koch 2008; Urban 2011)
- there are areal patterns of specific colexifications (e.g., Schapper, San Roque & Hendery 2016; Gast & Koptjevskaja-Tamm, 2019)

Frequency of body~object colexifications

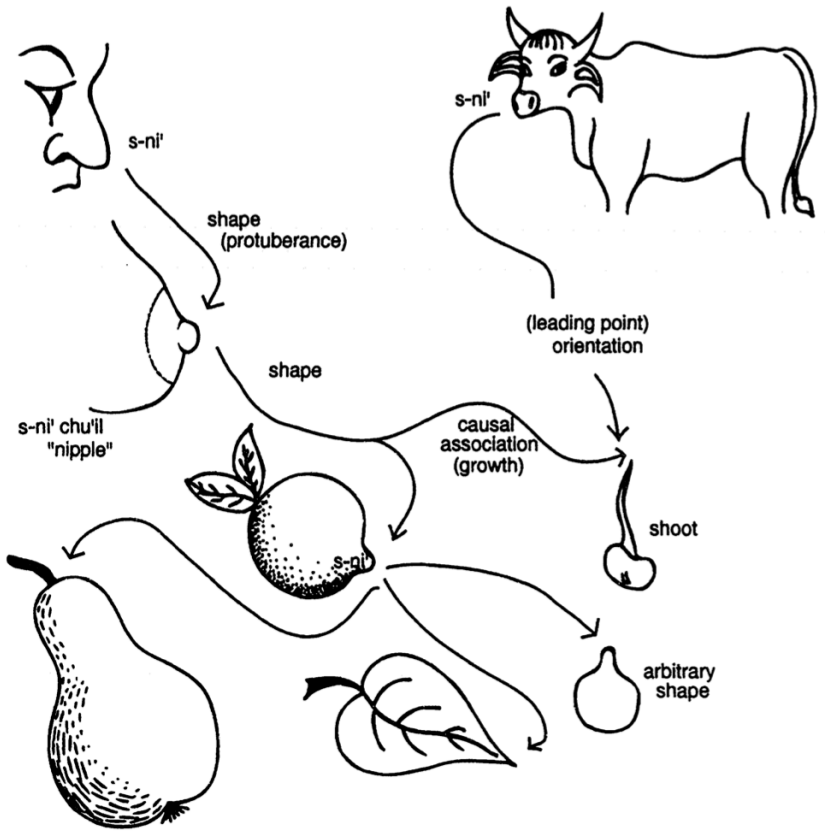


Figure 1: Body part extensions with *s-ni'* 'nose' in Tzeltal (Levinson 1994).

Frequency of body~object colexifications

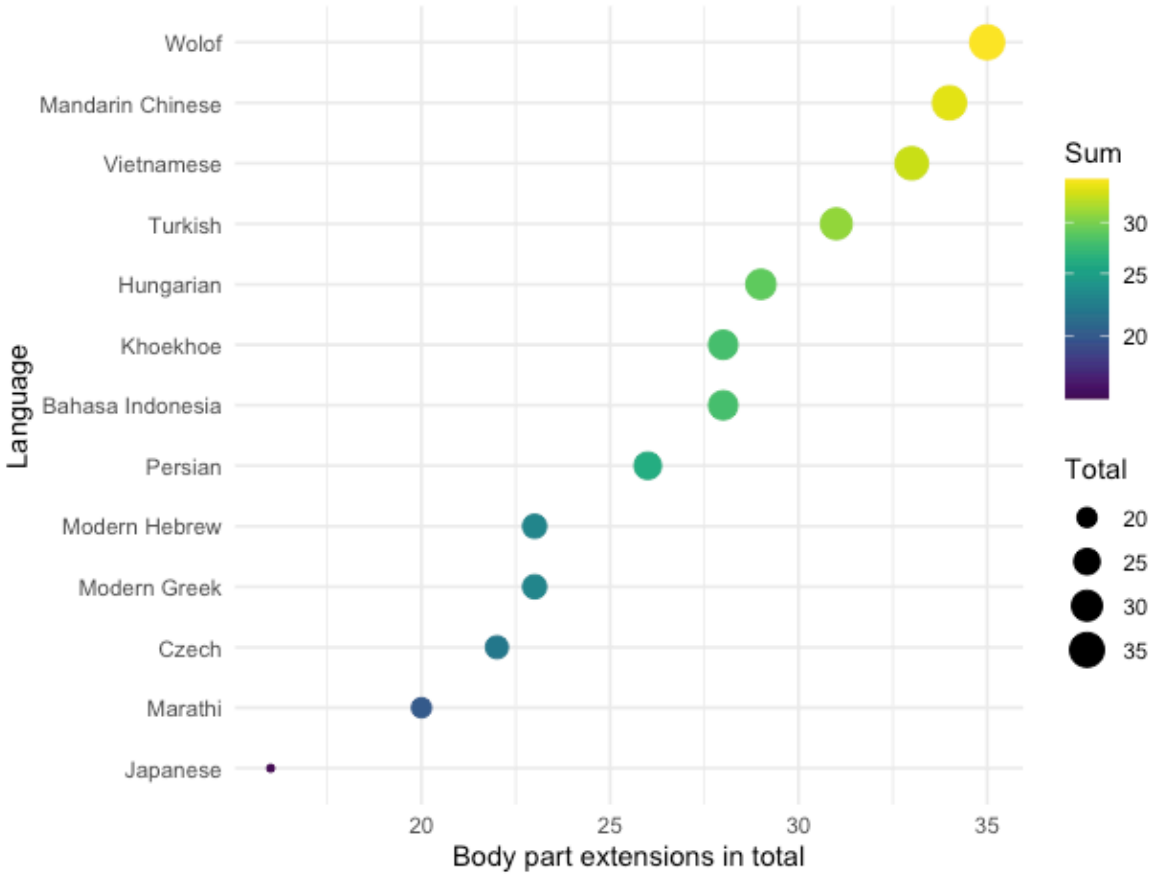


Figure 2: Body part extensions across 13 languages (Tjuka 2019).

Aim

- a systematic study of body~object colexifications across the languages of the world
- test hypotheses about the visual salience of body parts
- identify cross-linguistic patterns of colexification

Research questions

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- Are there differences in the frequencies and distribution patterns of certain body~object colexifications?
- Do languages have a tendency to use more or less body~object colexifications?

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2. Most colexifications occur in one language family, whereas only a few colexifications appear in several language families.

Database of Cross-Linguistic Colexifications

The CLICS^3 database offers colexifications of 2,906 concepts across 2,940 languages (Rzymski et al. 2019, `https://clics.clld.org/`).

- based on a reference catalogue for concepts: Concepticon (List et al. 2016)
- structured in a network
- data sets include, for example, IDS (Key & Comrie, 2016), WOLD (Haspelmath & Tadmor, 2009)

Database of Cross-Linguistic Colexifications

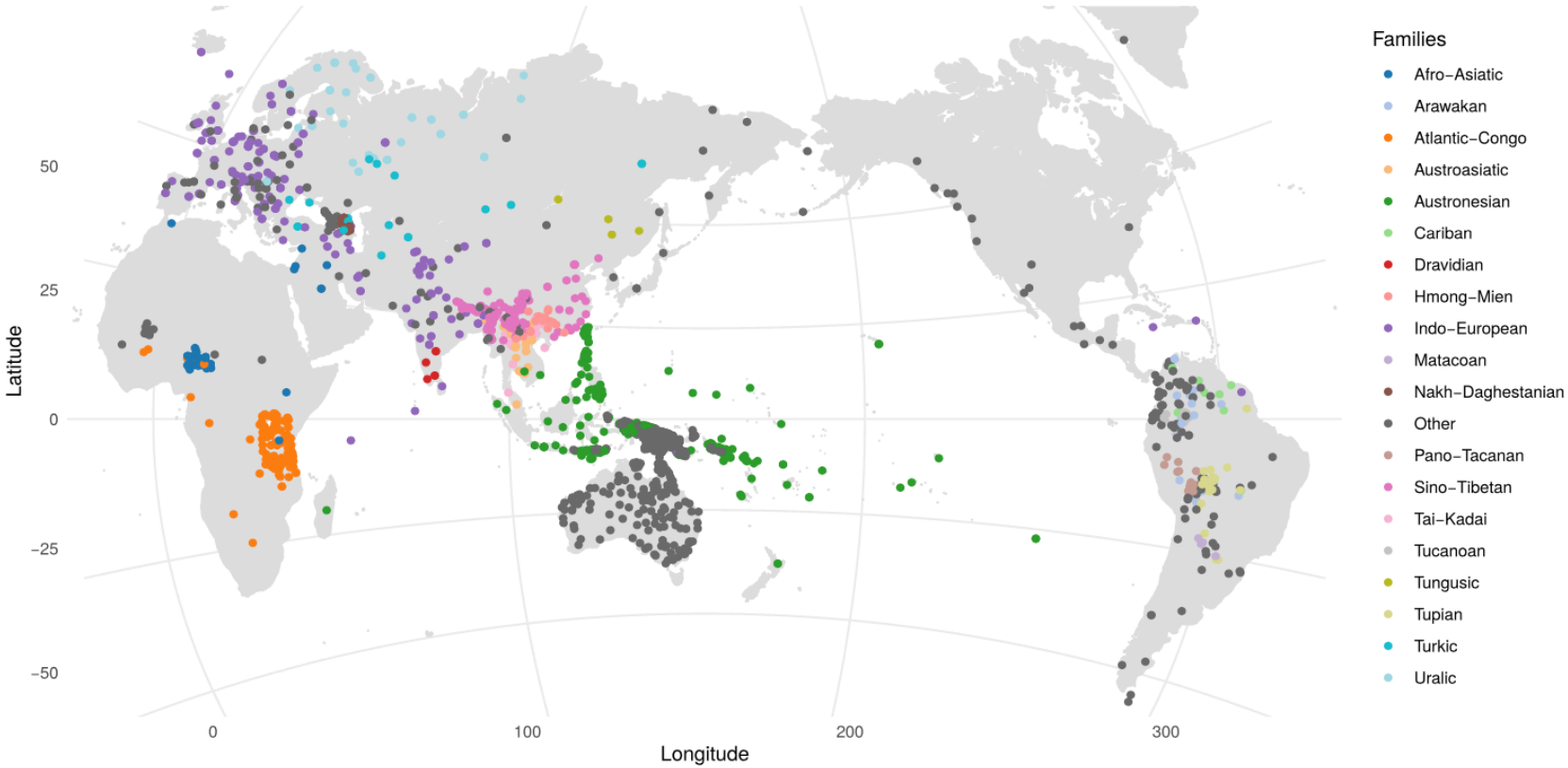


Figure 3: Distribution of languages in CLICS^3 (Rzymski et al. 2019).

Database of Cross-Linguistic Colexifications

For the present study,

- the threshold was lowered from 3 to 1 language families.
- only a subset of colexifications were included.

Results

- 137 human body part concepts
- 1,071 object (part) concepts
  - the object concepts are comprised of items from different categories, e.g., tool, food, landscape, plants, and furniture.
- **1,719 body~object colexifications**

Body part frequencies

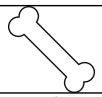
Body Part	Concept	Freq. Colexification
	HEAD	56
	ARM	52
	TOOTH	52
	EYE	51
	LEG	50
	MOUTH	50
	BONE	48
	SKIN	45
	HAND	42

Figure 4: The 10 most frequent body part concepts that colexify with object concepts.

Frequency of body~object colexifications

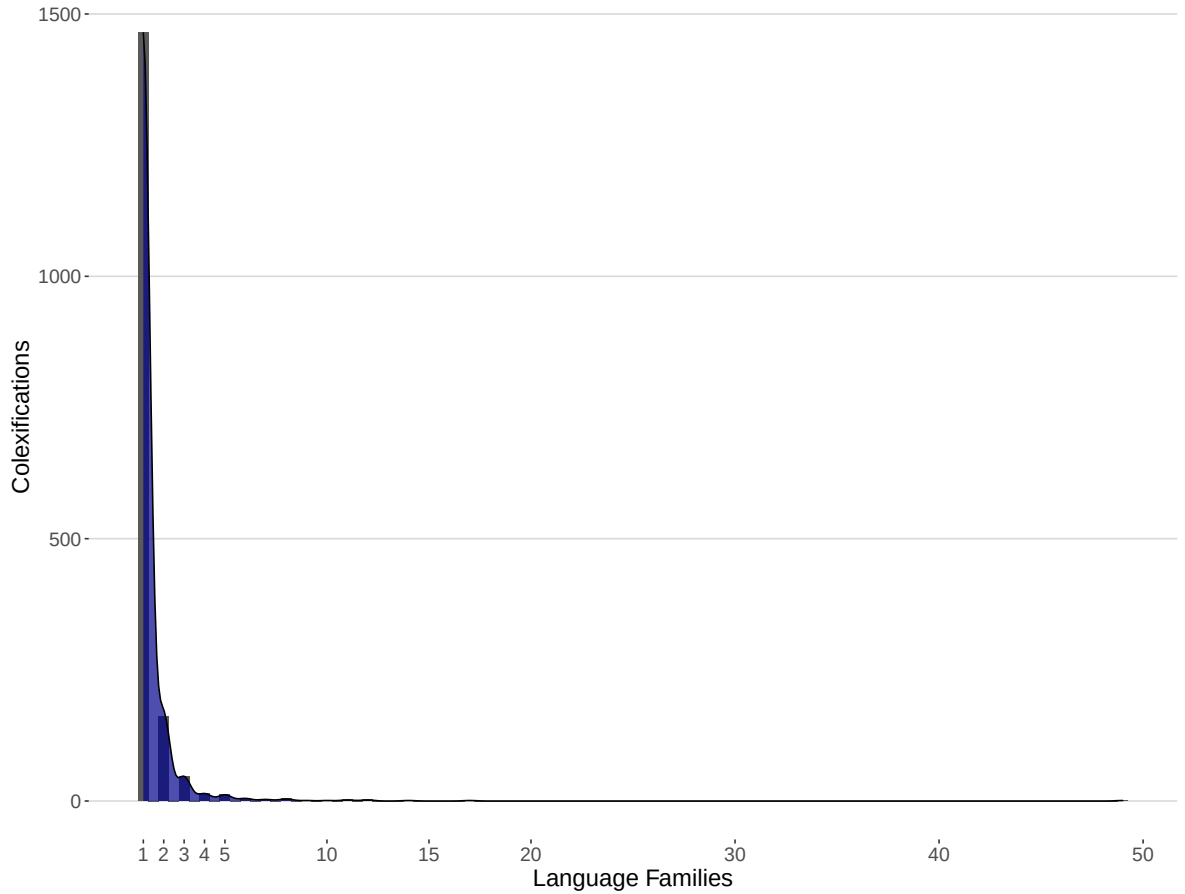


Figure 5: Frequency of body~object colexifications across language families.

Frequency of body~object colexifications

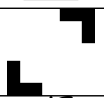
Body Part	Concept	Object (Part)	Concept	Families	Languages
	SKIN		BARK	49	209
	TESTICLES		EGG	17	36
	NECK		COLLAR	14	49
	HEAD		TOP	12	37
	BUTTOCKS		BOTTOM	12	18
	MOUTH		EDGE	11	19
	EYE		SEED	11	17
	HAIR		LEAF	10	33
	THROAT		COLLAR	9	11

Figure 6: The 10 most frequent body~object colexifications.

Cross-linguistic patterns

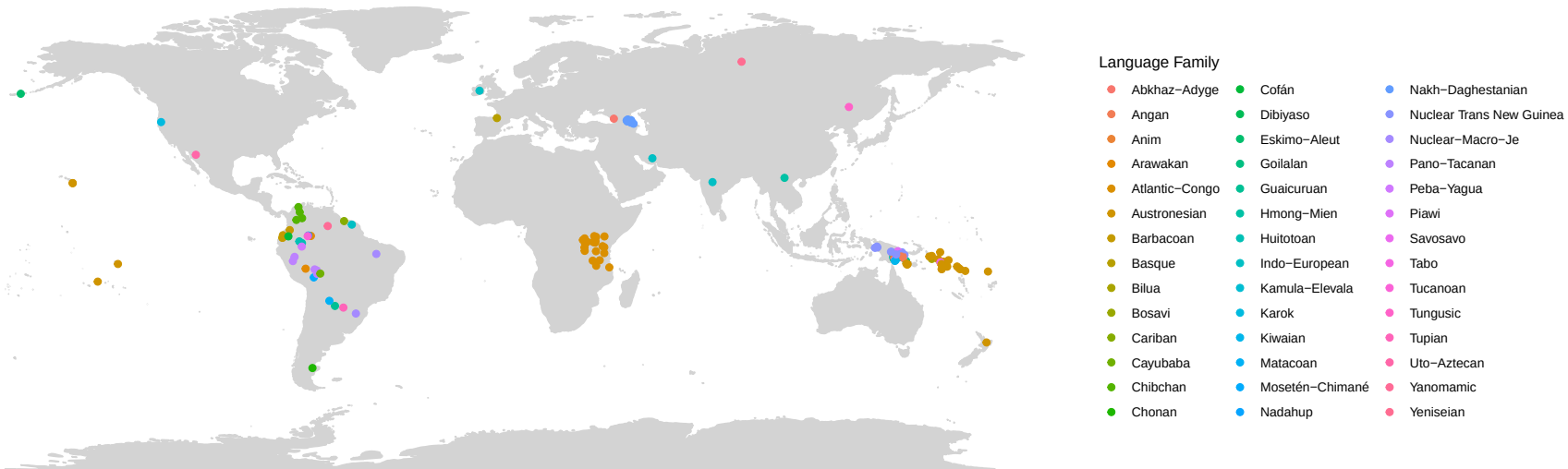


Figure 7: Distribution of languages with the colexification SKIN~BARK.

Cross-linguistic patterns

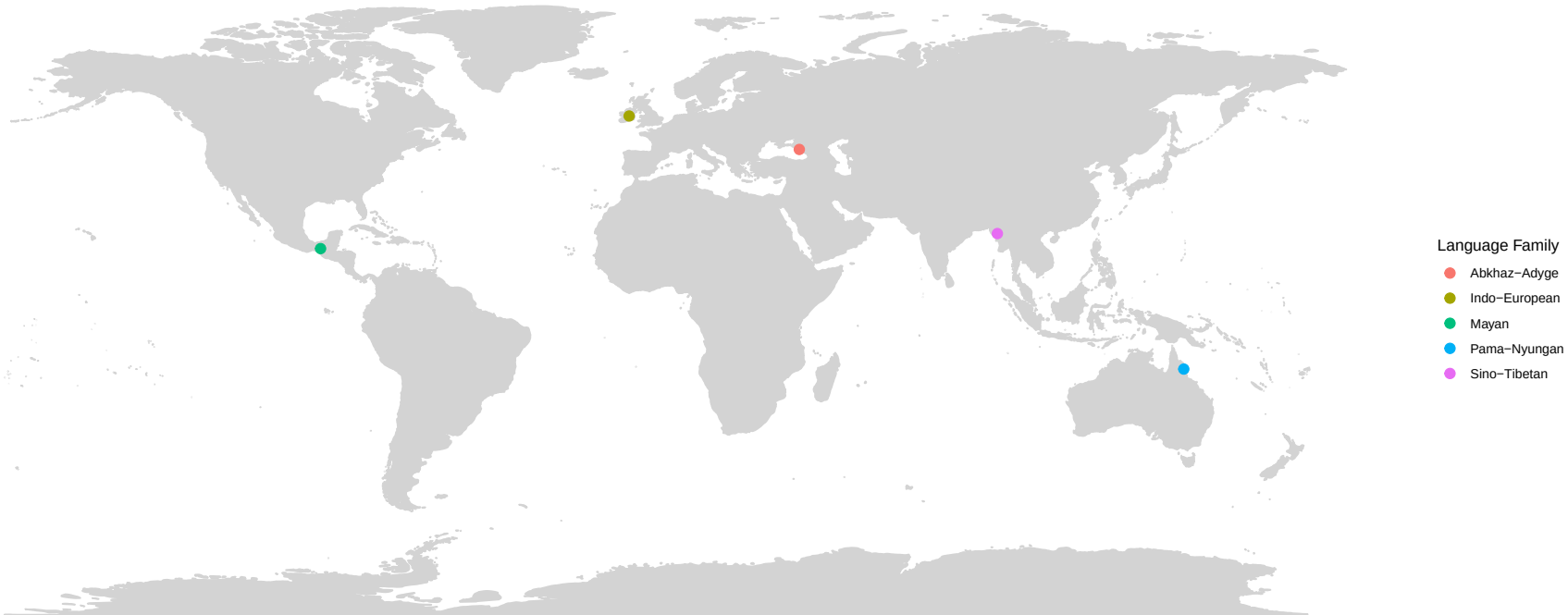


Figure 8: Distribution of languages with the colexification HEAD~ROOF.

Areal patterns

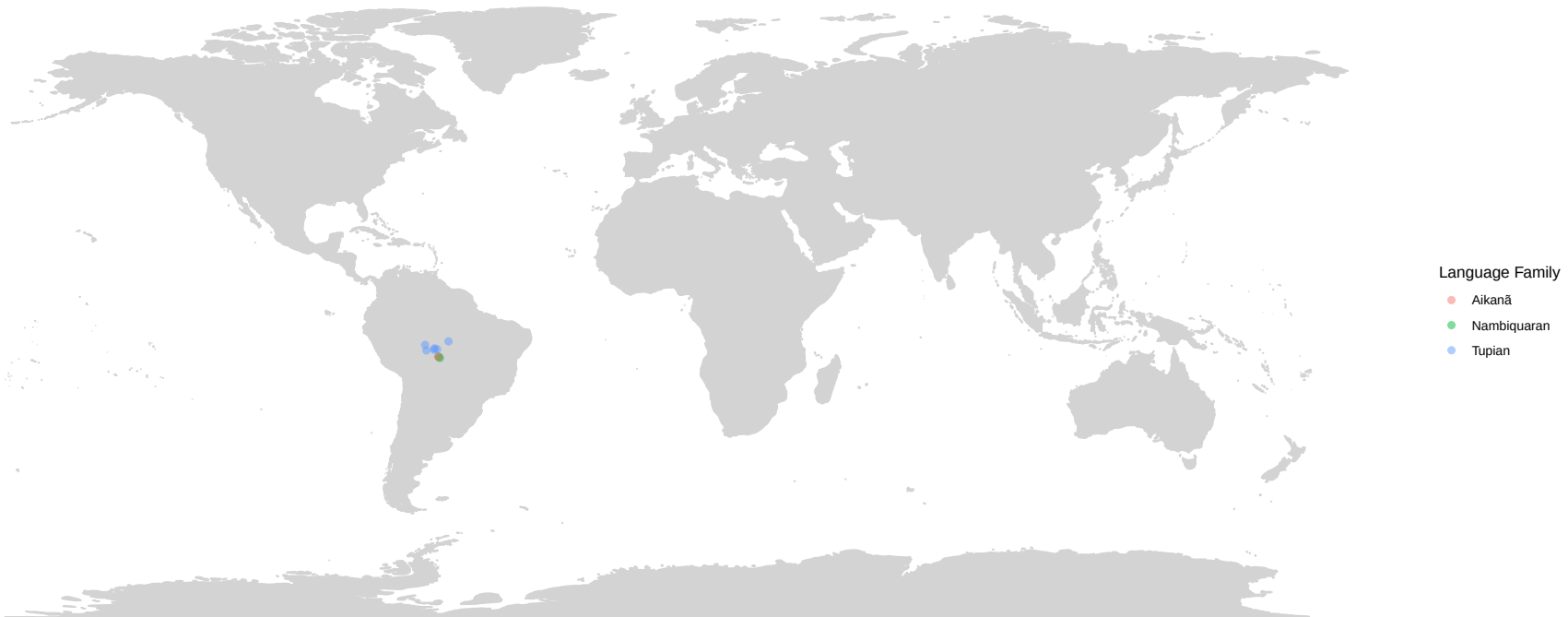


Figure 9: Distribution of languages with the colexification NOSE~ROOT.

Conclusion

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- There is one exception to the hypothesis, i.e., BONE.
- The results support general assumptions about common patterns of polysemy (e.g., Andersen 1978; Brown & Witkowski 1983).

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- Most body~object colexifications are specific to a particular language family and thus may be based on genealogical relationships between languages.
- There are only a few seemingly widespread colexifications (e.g., SKIN~BARK).

Limitations

- CLICS^3 contains only a few partial colexifications (e.g., *table leg* is not included).

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- There exists a potential bias in concepts documented in CLICS^3, i.e., more concrete than abstract concepts.

Further considerations

- finding explanations for language variation
  - Why do languages differ in terms of the body part term they use for the same object concept (e.g., NOSE/HEAD~TIP OF OBJECT)?

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- finding explanations for language variation
  - Why do languages differ in terms of the body part term they use for the same object concept (e.g., NOSE/HEAD~TIP OF OBJECT)?
- testing mechanisms behind meaning extensions in experiments
- investigating other types of colexifications
  - Are there differences in cross-linguistic patterns between body~object colexifications versus body~emotion colexifications?

Many thanks to Maïa Ponsonnet for her insightful feedback during the preparation of this talk!

If there are any open questions, you can find me here:

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Graphical representation of colexification network

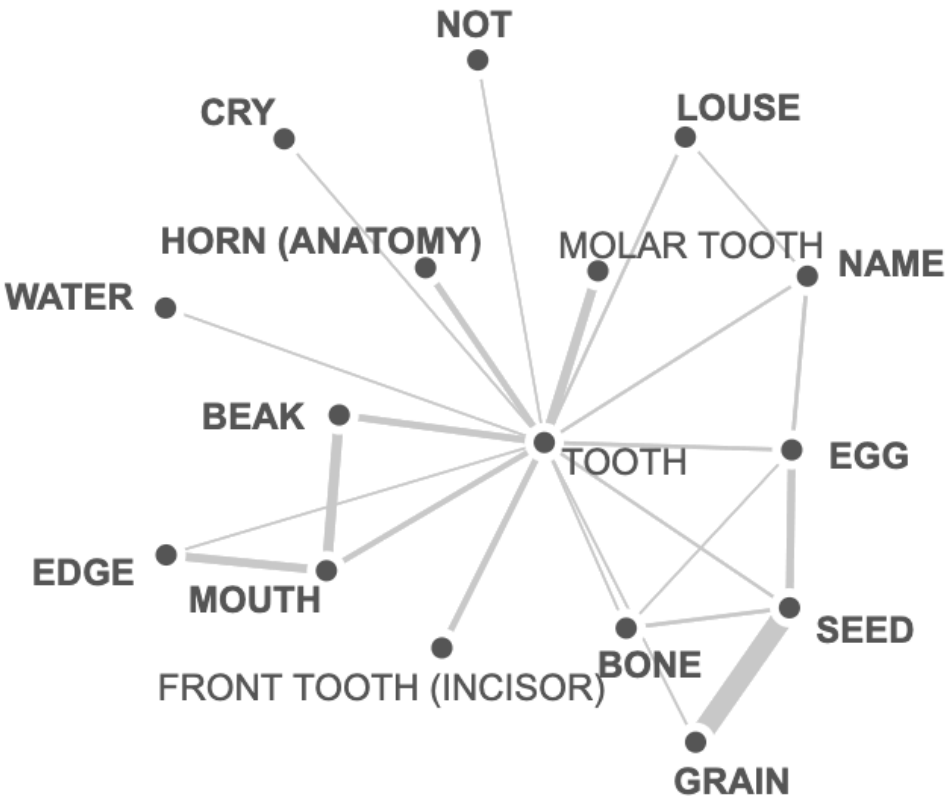

Figure 10: Subgraph of TOOTH in CLICS[3]

(https://clics.clld.org/graphs/subgraph_1380).

Graphical representation of colexification network

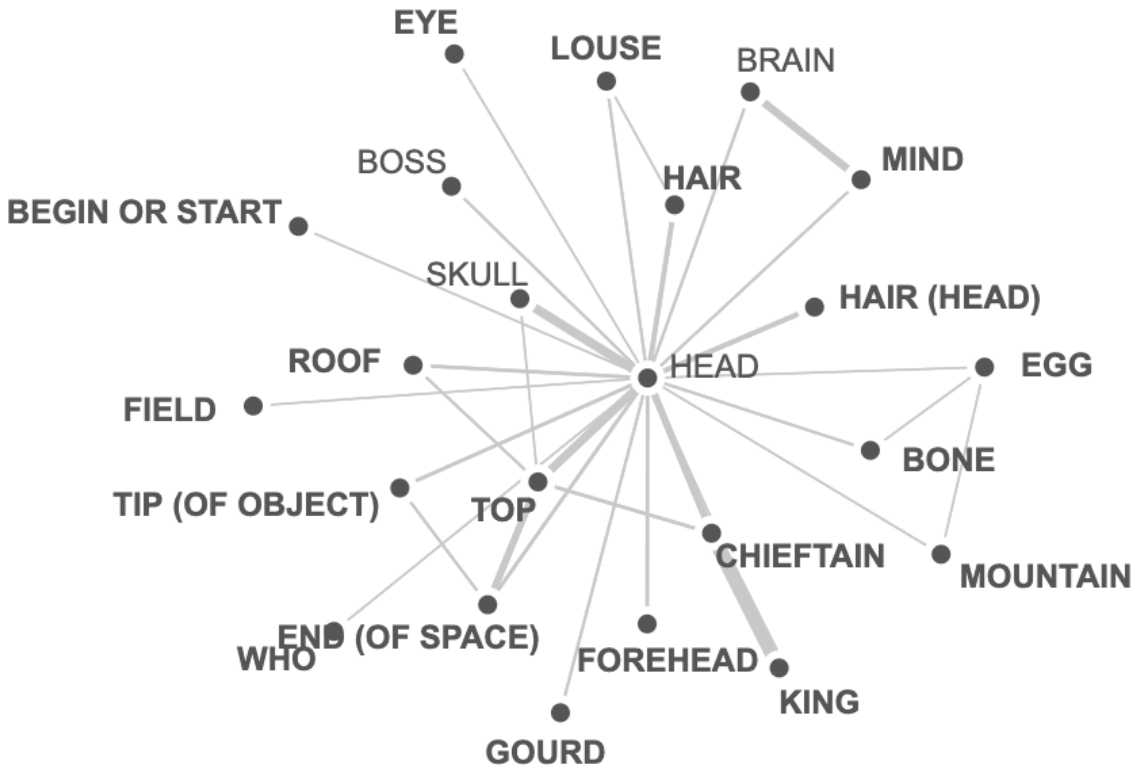

Figure 11: Subgraph of HEAD in CLICS[3]

(https://clics.clld.org/graphs/subgraph_1256).