Revealing cognitive patterns:
A cross-linguistic study of body-part metaphors

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Outline

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Theoretical Background

Body-Part Metaphors

- A body-part term refers to an object or landscape feature:

    (1) a. **table leg**
         b. **arm (of the tree)** "branch"

Body-Part Metaphors

- A body-part term refers to an object or landscape feature:

  (1) a. **table leg**
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- Different names for the same phenomenon:
  - metaphor (Heine 1997), extension (Tversky 2002), meronymy (Tilbe 2017), partial colexification (François 2008)

Cognitive Basis

- "Since metaphor is based on the perception of **similarities**, [...] when an analogy is **obvious**, it should give rise to the same metaphor in various languages; hence the **wide currency** of expressions like the 'foot of a hill' or the 'leg of a table'." (Ullmann 1963)

The different Dimensions of Similarity

Dimension of Shape

- Body-part terms are applied on the basis of the shape of the object part and the internal geometry of the object itself
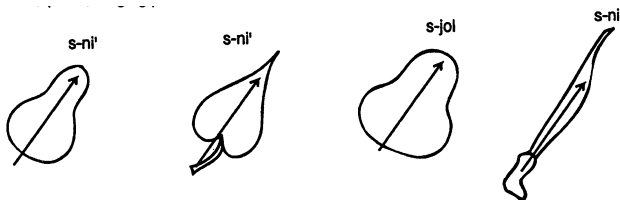(Levinson 1994) .

Figure 1: Extension of *nose* in Tzeltal (Levinson 1994).

Dimension of Spatial Alignment

- "the head is frequently associated with space, more concretely with the front and top regions" (Ibarretxe-Antuñano 2012)

(2)   Mendi.buru-ra   igo   ginen
        mountain.head-ALL ascend.PFV AUX
        'We climbed to the top of the mountain'

(Basque, Ibarretxe-Antuñano 2012)

Dimension of Function

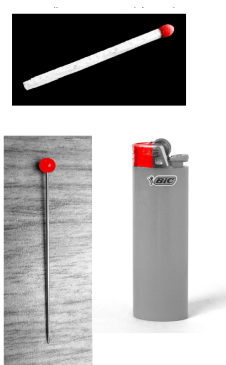- Tilbe (2017) compares two Mesoamerican languages (Tseltal, Zapotec) and English

Figure 2: Stimuli of the 'Shape-Function-Triad' experiment (Tilbe 2017).

Dimension of Function

- Tseltal and Zapotec speakers base their choice on an analogy of *shape*.
- English speakers use an analogy based on the function of object and body parts.

A cross-linguistic Study of Body-Part Metaphors

Theoretical Background   **Study**   Results   Future Project   Conclusion
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Aim

- A systematic typological study to investigate:
    1. the frequency of body-part metaphors
    2. the use of the three dimensions of similarity (function, spatial alignment, shape)
    3. examine cross-linguistic tendencies and language variation
- Hypothesis: A body-part metaphor is more frequent if it is related to more dimensions of similarity.
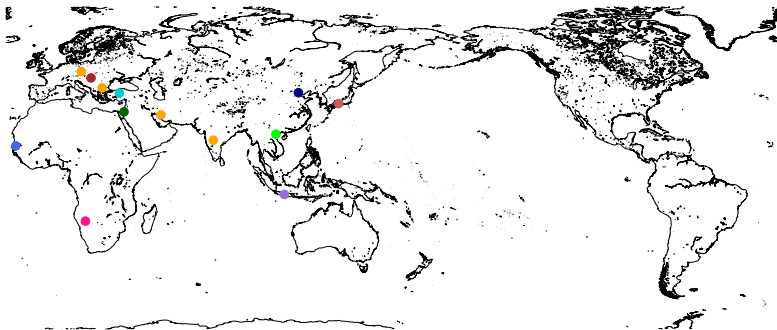
Languages

Figure 3: Language sample.

Participants

- 13 native speakers of the following languages:
    - Czech, Marathi, Persian, Greek, Vietnamese, Wolof, Mandarin Chinese, Khoekhoe, Hungarian, Japanese, Hebrew, Turkish, and Bahasa Indonesia

Material

Table 1: Examples from the seed list (92 metaphors in total).

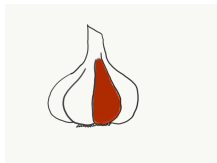| Body-part metaphor	Source Language
toes of the garlic	German
ear of the corn	English
head of the baguette	Wolof
eye/ear of the needle	English/German
leg of the ladder	Wolof
ear of the jug	English
saw tooth	German, English
mouth of the river	German
face of the sky	Vietnamese

Method

Figure 4: Elicitation material (53 pictures in total).

(3)   sarımsağ-ın dişi
        garlic-GEN tooth
        'garlic clove'
        (lit. 'tooth of the garlic', Turkish)
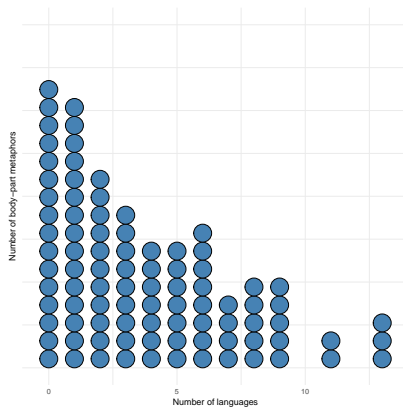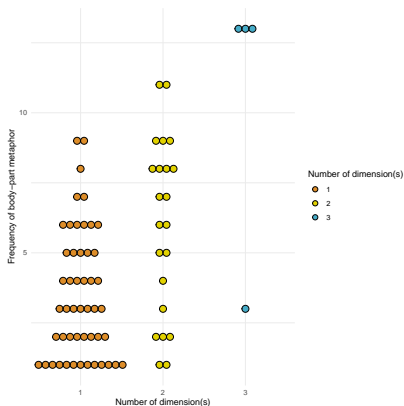
Results

Frequency of Body-Part Metaphors

Figure 5: Frequency of body-part metaphors in the language sample.

Correlation between Frequency and Dimensions of Similarity

Figure 6: Frequency of body-part metaphors in relation to their classification into the three dimensions.

Theoretical Background   Study   **Results**   Future Project   Conclusion
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Language Variation

(4) Wolof

    a. taat-u   mburu
       butt-GEN bread
       'end piece of the baguette' (lit. '**butt** of the bread')

    b. bopp-u   mburu
       head-GEN bread
       'end piece of the baguette' (lit. '**head** of the bread')

Language Variation

(5) Vietnamese
    a.   đầu bánh
           head bread
           'end pieces of the baguette' (lit. '**head** of the bread')

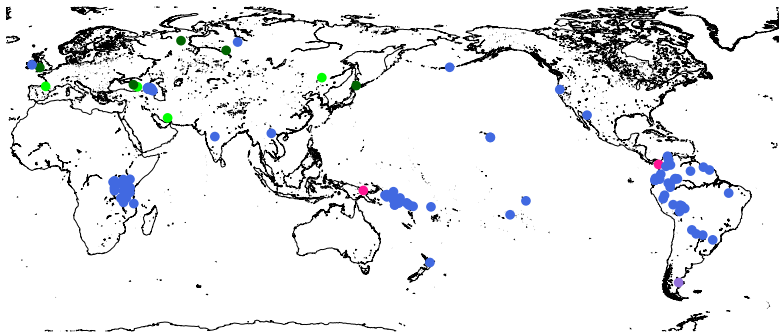## Language Variation

(6) Czech

    a.   patk-a   chleb-a
          heel-DIM bread-GEN
          'end pieces of the baguette' (lit. '**heel** of the bread')

Future Project

Future Project

- Investigation of body-part metaphors in a variety of different languages by using the CLICS^2 database (List et al. 2018b):
  - Searching for body-part terms and their colexifications

Body-Part Search: Concept SKIN

Figure 7: Colexifications of SKIN~BARK (blue), SKIN~SKIN (OF FRUIT) (green), SKIN~BASKET (pink), SKIN~BASKET~BARK (purple), and SKIN~BARK~SKIN (OF FRUIT) (light green) in the CLICS[2] database.

Colexifications of SKIN~BARK

Figure 8: Segment of 141 colexifications of SKIN~BARK in the CLICS[2] database.

Goal

- A database of morpheme-segmented wordlists

A Case Study

Language	Concept	Source Form
Abui	TREE	bata
Abui	SKIN	kul
Abui	BARK	bata kul
Nung-Fengshan	TREE	fai
Nung-Fengshan	SKIN	naŋ
Nung-Fengshan	BARK	naŋ fai

Table 2: Concepts from the CLICS^2 database.

Conclusion

Conclusion

- The phenomenon seems to occur in a variety of different languages.
- Different dimensions of similarity between the object/landscape feature and body-part play a role in the (metaphorical) mapping.
- To determine cross-linguistic patterns, we need a morpheme-segmented database.

Conclusion

- The phenomenon seems to occur in a variety of different languages.
- Different dimensions of similarity between the object/landscape feature and body-part play a role in the (metaphorical) mapping.
- To determine cross-linguistic patterns, we need a morpheme-segmented database.

Thank you!

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