Meronyms in conception and grammar

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A teaser quote

* "Meronymy is generally not thought to be as central to lexical/semantic organization as the other -*onym* relations. The relation between meronyms and holonyms is not as necessary as the relation between hyponyms and their hyperonyms. Many parts are optional (a wingless bird is still a bird) and the same part names often apply to many different wholes - for instance, *handle* is always a part-name, but is not the part of any particular kind of thing, since doors, jugs, suitcases, and hammers all have (very different) handles. Thus, while meronym relations can be helpful in defining words, they are not as widespread or as consistent as the other 'onym relations." (Murphy & Koskela 2010:123)

* Meronymy is central in understanding the development of spatial language

* The process by which meronyms, like 'handle', are connected to different wholes deserves a lot of attention as it reveals a level of schematization responsible for the incurring polysemy.

* Today, in this conference we are taking exception to this perhaps one-sided generalization.

Overview

* Meronymy defined

* Meronymy as a lexical or semantic/conceptual relation

* Body-part terms as meronyms

* Processes that create meronyms

    * lexicalization via metonymy and metaphor

* Meronymy and grammaticalization

* Meronymy in semantic typology

Meronymy

* or, "partonymy", or "partonomy", or "part-whole" relation

* x IS-A-PART-OF y or y HAS-A x

* PORTION > PART - PIECE (Croft & Cruse 2004)

* PORTION: "the containment of one region or regions within another region" (*One section of the city was blocked off*)

* PART: a portion characterized by self-sufficiency in that it has internal cohesion, and distinctness as an object (*The kit includes all the parts to make a boat*)

* PIECE: an accidental portion with no definable relations to the whole other than origin (*There were several pieces of the boat found after the explosion*)

* PART-WHOLE relation is lexically relevant

Part-whole relation & Meronymy
(Croft & Cruse 2004)

* Part-whole relation: a semantic relation that links two perceptually salient individuated entities in the world

* Meronymy: lexical relation between meanings

Part-Whole relation

* Relies on the conceptualization of PART and PARTNESS

* PART: a conceptualization based on a basic PART-WHOLE image schema (Lakoff 1987; Johnson 1987)

* PART: cohesive and distinct as an object (e.g., window - house)

* subject to gradience: some parts are better than other parts (e.g., handle-cup > aluminum-bike) (Chaffin 1992)
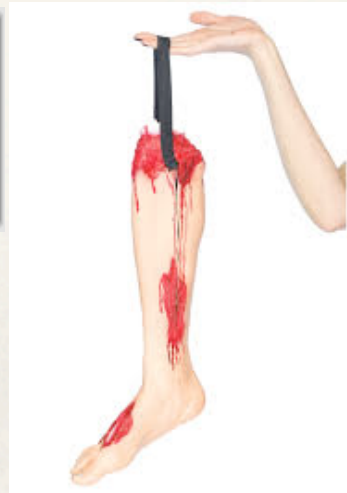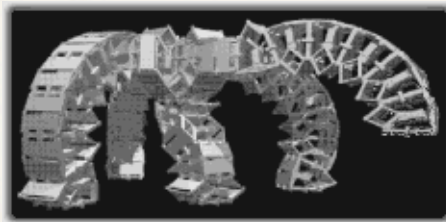
Gradience Factors (Croft & Cruse 2004)

1. The boundary of X does not transgress the boundary of Y

2. X shares all its substance with Y

3. The boundaries of X can in principle be denonstrated in a well-formed whole Y.

4. The sharper (more salient) the discontinuity between X and non-X the better the part

5. The greater the internal cohesion of X the better the part

6. X has a definable function relative to Y

7. X is autonomous: exact replicas of X also count as parts

8. There is type-consistency between X and Y

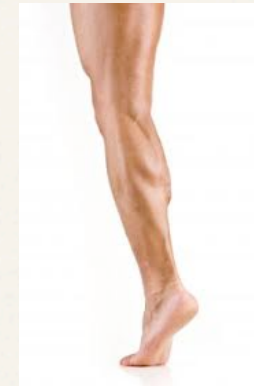# Body parts are prototypical PARTS: LEG

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8. There is type-consistency between X and Y

1. the boundary of the leg does not transgress the boundary of the body

2. the leg is made of the same substance as the body

3. the boundaries of the leg can be demonstrated by joints and motion separate from the rrest

4. the hip joint creates a sharp boundary for the leg

5. the leg is internally cohesive

6. the legs function as a support for the body

7. replicas of leg also count as leg ?

8. the leg and the body are within the same conceptual and experiential domain

If body parts are prototypical parts, how do body parts terms fare as meronyms?

1. separated body parts? organ donations?

2. prosthetic leg? artificial heart? titanium hips?

3. demonstrable boundaries? across languages? (c.f. Tarascan foreheads include the nose)

4. Do wrists separate hands from arms in all languages?

5. some parts more cohesive than others (e.g., eye > back; finger > arm)

6. definable function: eye > cheek

7. Prosthetic leg vs. leg vase?

8. type consistency between part and body: contextually determined

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Is meronymy a lexical or a semantic/conceptual relation?

* Lexical (Saeed 2003) or semantic relation (Murphy 2010; Croft & Cruse 2004)?

* As a lexical relation,

    * it would be stable across contexts of use

    * it would presuppose a certain level of generalization of the match between a part and a specific whole

        * I've lost a leg!

            * Does leg, by its mere mention, evoke the type of the whole? Or, the type of the whole is contextually recovered?
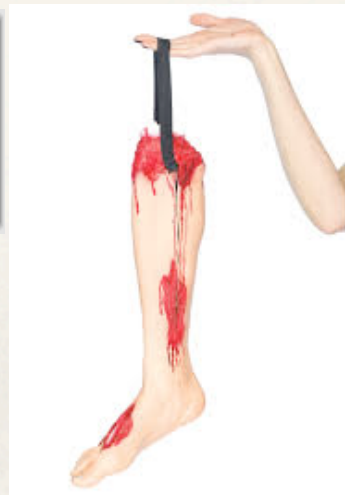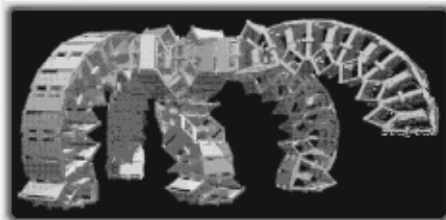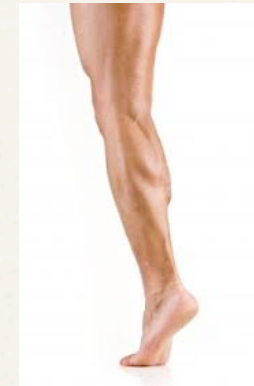
Is meronymy a lexical or a semantic/conceptual relation?

* The different conceptualizations of leg are motivated by different types of wholes --> semantic/conceptual relation

* Yet, Croft & Cruse (2004) argue for the retention of meronymy as a lexical relation because of its intuitive appeal but also the cross-linguistic generalizations that have been proposed regarding names of body parts!

* The challenge that lays ahead is to identify such cross-linguistic generalizations

Why is meronymy 'hot'?

* One particular meronymic relation, that pertaining to terms that name body parts, figures prominently in

  * the conceptualization of space across languages (Language & Cognition Group at the Max Planck Institute for Psycholinguistics, Nijmegen)

  * the historical development of grammatical forms that express spatial relations (Heine, Claudi & Hünnemeyer 1991; Bowden 1992; Svorou 1994; Heine & Kuteva 2002)

  * cross-linguistic comparison in search of patterns (Brown 1976; Anderson 1978; Enfield, Majid, van Staden 2006; MesoSpace)

Body part terms and space

* In comparing languages in the expression of space, patterns that figure prominently involve the lexical sources of spatial grammatical forms:

    * body-part terms, most frequently

    * landmark terms

    * object-part terms

    * verbal roots, participial forms

Body part terms as sources of spatial grams

(Sources: Heine, Claudi & Hünnemeyer 1991; Bowden 1992; Svorou 1994; Heine & Kuteva 2002)

BODY PART TERM	SPATIAL GRAM
heart, stomach, blood	INSIDE
head	TOP
buttocks, hip, foot	BOTTOM
breast/chest, waist	MIDDLE
face, eye, forehead, mouth, breast/chest	FRONT
back	BACK
ear, flank, ribs, heart	SIDE
forehead, mouth	EDGE

Animal body part terms as sources of spatial grams

(Sources: Heine, Claudi & Hünnemeyer 1991; Bowden 1992; Svorou 1994; Heine & Kuteva 2002)

BODY PART	SPATIAL GRAM
head	FRONT
back	TOP
belly	BOTTOM
tail, buttocks, loin	BACK

Environmental landmarks as sources of spatial grams

(Sources: Heine, Claudi & Hünnemeyer 1991; Bowden 1992; Svorou 1994; Heine & Kuteva 2002)

LANDMARK TERM	SPATIAL GRAM
House, hole, shore/land	INSIDE
field, doorway	OUTSIDE / FRONT
Sky/heaven, summit, peak/mountain, top/roof, cape	TOP
Ground, earth, soil, root	BOTTOM
Track, trail, trace, footprint	BACK
riverside	SIDE
further bank	OPPOSITE
fish dam	ACROSS
shore/land	ALONG
canyon	MEDIAL/BETWEEN
road	VIA/THROUGH/TOWARDS

Relational object part terms as sources of spatial grams

(Svorou 1994; Heine & Kuteva 2002)

OBJECT PART	SPATIAL GRAM
front	FRONT
end, tip, behind side	BACK
top, top side	ON TOP
underside, bottom	UNDER
side, edge, border	SIDE
middle, center	MIDDLE
interior side	INSIDE
exterior side	OUTSIDE
circumference	AROUND

Understanding the patterns

* Lexicon - Grammar continuum

    * Lexical items and grammatical forms are related diachronically;

    * Grammar is dynamic, emerging out of language use (Hopper 1988), and involves the institutionalization of recurent productive patterns of linguistic behavior of speakers.

    * Both lexicon and grammar are gradient.

Grammaticalization path of locative constructions

(Svorou 1994)

body part
landmark → object part → region
adjacent
to object
part → region
projected
from
object part →

noun

genitive
construction

locative
construction

condensed
locative
construction

back

the back of the house

in the back of
the house

in back of
the house
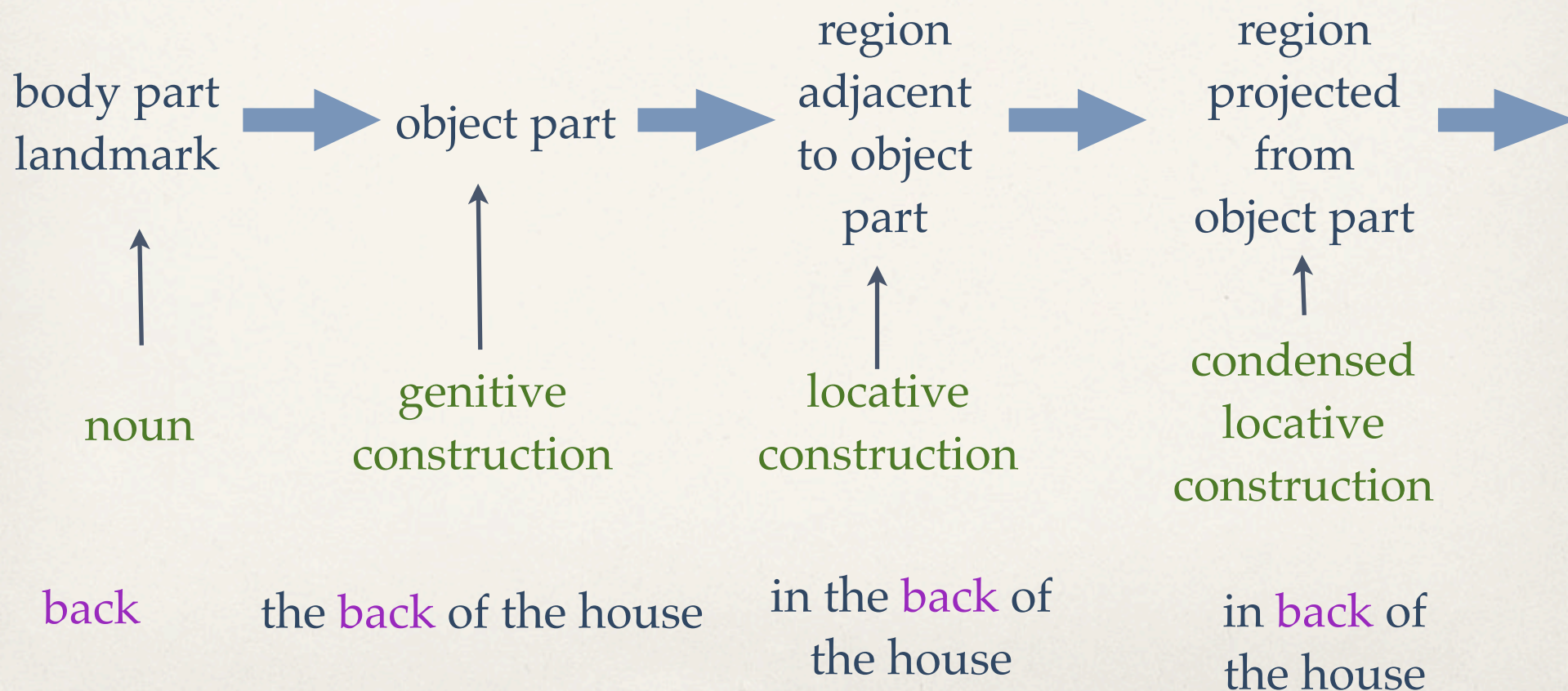
Lexicalization & grammaticalization

* Both are diachronic processes that have their roots in synchronic innovation and variation

* "Lexicalization is the change whereby in certain linguistic contexts speakers use a syntactic construction or word formation as a new contentful form with formal and semantic properties that are not completely derivable or predictable from the constituents of the construction or the word formation pattern. Over time there may be further loss of internal constituency and the item may become more lexical" (Brinton & Traugott 2005:96)

    * nostril < OE nosþyrel (nose + hole)

* "Grammaticalization is the change whereby in certain linguistic contexts speakers use parts of a construction with a grammatical function. Over time the resulting grammatical item may become more grammatical by acquiring more grammatical functions and expanding its host-classes." (Brinton & Traugott 2005:99)

    * among < OE on gemang 'in crowd'

    * beside < OE be sidan 'by side'

Diachronic change along clines of lexicality (L) and grammaticality (G) (Brinton & Traugott 2005:102)
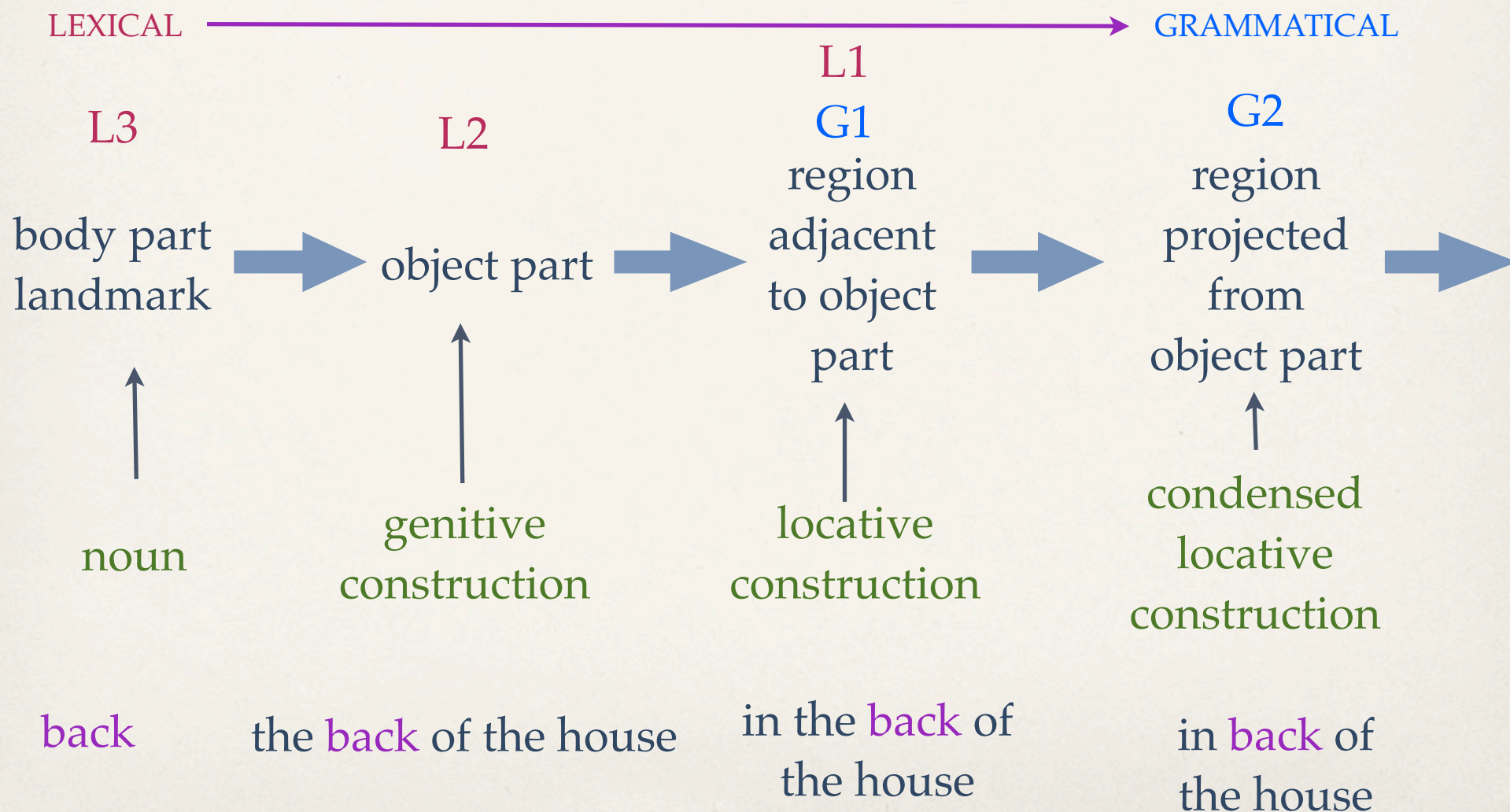
Non-productive

L3   L2   L1

$\longleftarrow$ Semiproductive $\longrightarrow$

G1   G2   G3

Productive

Grammaticalization path of locative constructions

(Svorou 1994)

LEXICAL ⟶ GRAMMATICAL

L3	L2	L1 G1	G2
body part landmark	object part	region adjacent to object part	region projected from object part
↑	↑	↑	↑
noun	genitive construction	locative construction	condensed locative construction
back	the back of the house	in the back of the house	in back of the house

The processes of change: Grammaticalization

- Semantic change: gradual schematization of the spatial gram

  - referential noun > relational noun > spatial gram > multifunction gram

- Morphosyntactic change:

  - morpho-phonological reduction

    Abkhaz -axᵒla 'inside' < `axᵒda 'neck' + -la (preverb)

  - loss of syntactic autonomy

    Halia i kopiyna 'under' < kopi 'buttocks'

  - loss of relator marking

    Bihari hia-(ka) upara 'breast-(GEN) above'

Constraints on Grammaticalization of spatial grams

(Svorou 2002)

Degree of Grammaticalization

HIGH ←— reduced, bound, condenced, schematic

* IN

* TOP/BOTTOM

* FRONT/BACK

* SIDE

Morphophonological reduction
Degree of syntactic autonomy
Loss of obligatory marking
Degree of schematization

LOW

Metaphor & Metonymy as schematizing processes in lexicalization and grammaticalization

* Metaphor: transfer of properties of the source domain to a target domain with which it bears some resemblance; based on encyclopedic knowledge

    * leg --> leg of the chair

* Metonymy: "one conceptual entity provides access to another conceptual entity" (Kövesces & Radden 1998:39); based on incorporation of inferences

    * object --> place of the object

    * the back of the house --> region adjacent to the back of the house --> region projected from back of the house

* Metaphor as a result of abstraction over recurrent - intraspeaker and interspeaker - metonymic transfers.

    * back --> back of the refrigerator: may be a result of metonymic imposition of a front and a back based on interactional/pragmatic experience and not just visual assymetries.

    * before (spatial) --> before (temporal): spatial and temporal anteriority coincide in movement frames

"Global" Metaphor or "local" geometry?

* The MacLaury (1989) -Levinson (1994) debate:

  * Is the lexicalization of body-part terms as relational terms based on metaphor or on an algorithm based on shape and axis of the possessor?

* LEG: In its extension to other wholes, is its "partness" conceptualized richly, including functional (walking, standing) and other properties or is simply its geometry of an elongated, thin, attached part adequate?
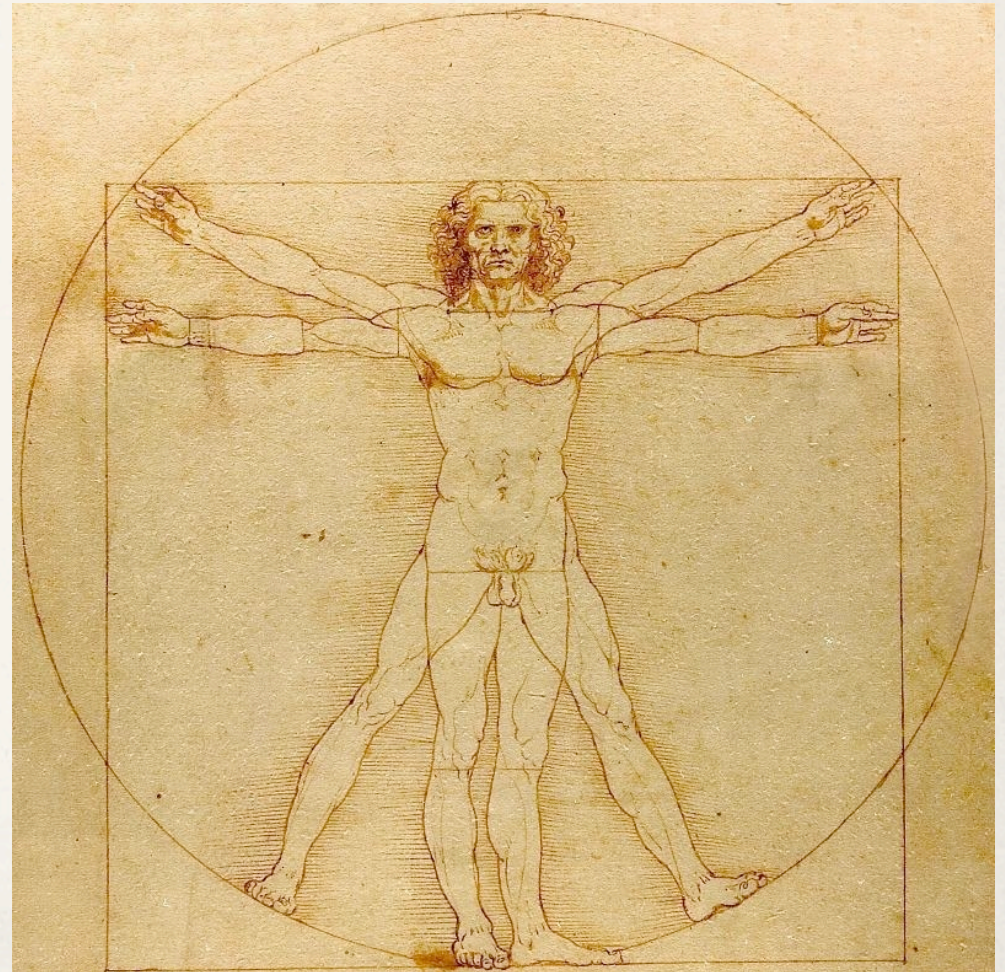
Shape-based lexicalization: LEG

* octopus < Gr. oktō 'eight' + pous 'foot, leg'

* polypod < Gr. poly 'many' + pous 'foot, leg'

* Mod. Greek 'centipede' = saranda-podarousa 'forty-legged'

Anthropomorphic abstraction ?

✣ Although there's an underlying implication of a body as the whole, it is questionable whether the conceptualization of LEG in the octopus, a polypod, centipede requires the image of the human.

Are bodies abstracted as cylinders?

Shape-based lexicalization: LEG

Solar-powered plane completes third leg of flight across America

The Solar Impulse successfully lands in St. Louis early Tuesday to finish the third leg of its five-leg trek from San Francisco to New York.

http://news.cnet.com/8301-11386_3-57587530-76/solar-powered-plane-completes-third-leg-of-flight-across-america/
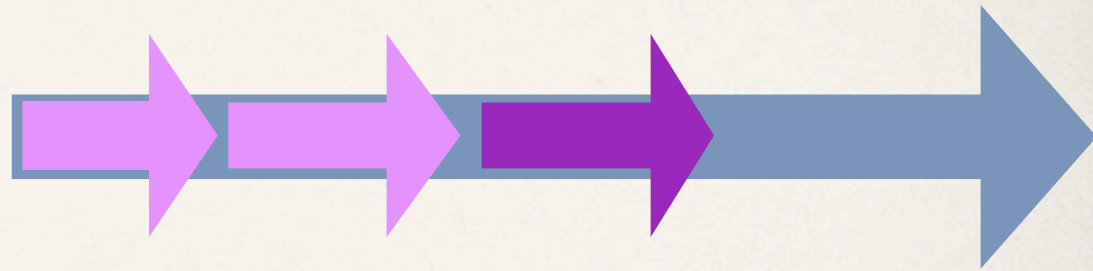
Where do body part terms come from?

* Frequently, the ultimate sources are generally unknown because of the depth of time (e.g., Buck 1949 talks about the "inherited group" of body part terms which give no clue as to their sources)

* In other cases, etymology reveals certain lexicalization strategies for the creation of body part terms.

* Morphosyntactically, such lexicalizations involve isomorphism and derivation.

  * Halia mata 'face' < mata 'eye'

  * Mod.Gr. prosopo 'face' < Anc.Gr. proso:pon 'face' < pros 'in.front' o:pa 'eyes'

* Semantically, they involve metonymic and metaphoric processes.

* Renewal of body part terminology is effected by recycling existing linguistic material in the language, or via borrowing.

  * Mod. Gr. ɣamba 'calf of leg'< Ital. gamba < Anc. Gr. kamba 'a bend' < kamptō 'I bend' (Lat. campus 'a bend, a low place)

Basis	Example lexicalization	Process
Spatial Contiguity w/other body part	Halia mata 'face' < mata 'eye'	Metonymy: PART FOR REGION ADJACENT TO PART
	Mod.Gr. prosopo 'face' < Anc.Gr. proso:pon 'face' < pros o:pa in.front eyes	
	Slavic nogu 'leg' < nogu 'foot' < nogu 'nail, claw'	
	Mod. Gr. astraɣalos 'ankle' < *ostra-ɣ-al-os < *ostra < IE *ostr̩ 'bone'	
	Maasai eŋkorion 'back' > 'spine'	
Structural similarity w/other body art	Tarascan -tʃa- 'neck' < 'calf of leg'	Metaphor
	Hausa wuyarhannu 'wrist' ('neck of arm') < wuya 'neck'; wuyarkafa 'ankle' (neck of foot) < wuya 'neck'	
From landmark terms	Burushashki -yáʈis 'head' < -yáʈis 'mountain peak' < yáʈe/ yaʈ 'up above, on top' (adv.) < 'upper' (adj.)	Metaphor
From posture verbs	Mod. Gr. agkonas 'elbow' < Anc. Gr. agkon < IE *ank- 'to bend'	Metonymy: ACTION FOR PART EFFECTING ACTION
	Mod. Gr. ɣamba < Ital. gamba < Anc. Gr. kamba < kamptō 'I bend' (Lat. campus 'a bend, a low place)	
From spatial adverbs	Mod. Gr. pisinos 'buttocks, ass' (coll.) < opisinos (adj.) <*opiθinos < opisō, opis-θen (adv.) < opi/epi (prep.) + -θen (abl./gen.) 'behind' , IE *dhe- 'behind'	Metonymy Euphemistically: REGION FOR ADJACENT PART

Conclusions

* The diachronic view of spatial grams has revealed an important connection of lexicon and grammar and has allowed us to look at them as points on a cline.

    * Metonymy and metaphor figure as processes in both lexicalization and grammaticalization.

    * Such schematization processes are accomodated into the morphosyntactic machinery of individual languages.

* How does that inform semantic typology?

    * It provides a framework to understand typological differences and similarities as dynamic, potentially changing.

    * It allows for inter-speaker and intra-speaker variation and attributes changes not only to individual conceptualizations as innovations but to the institutionalization of innovations.

* In-depth language-specific study of the abrupt meaning changes that body part terms undergo in lexicalizing into relational object parts and the slow micro-changes they undergo in grammaticalizing in relational constructions can lead to a better understanding of the nature and basis of meronymy and its diverse cross-linguistic patterns.

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