Faces and Limbs from Apache to Ngwi

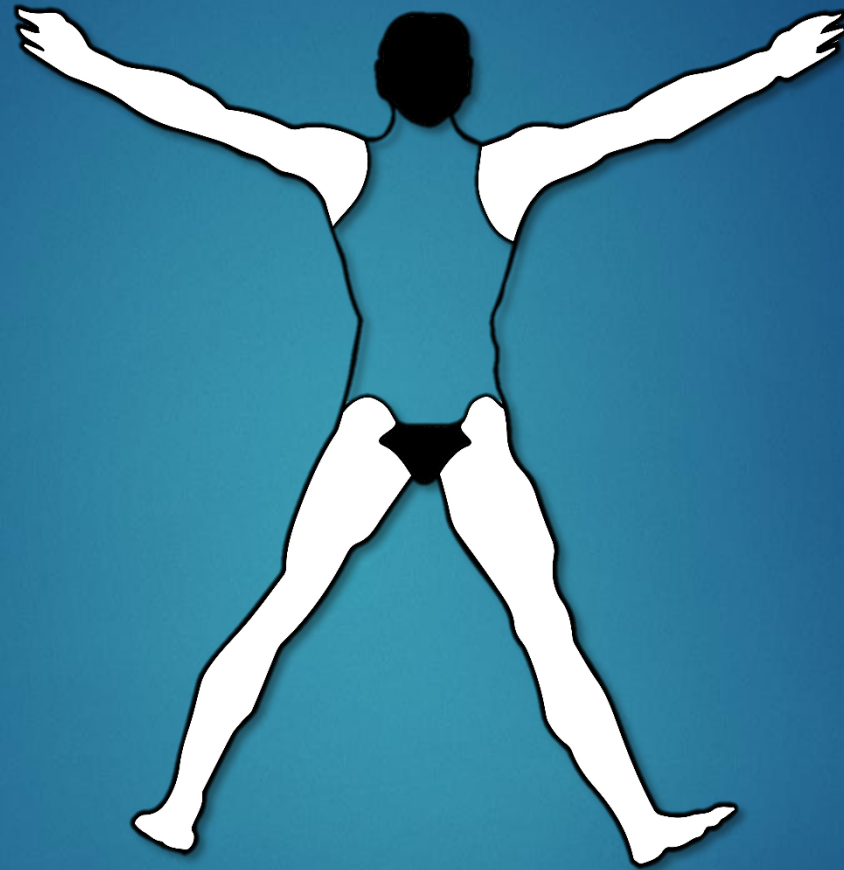## ON VERTICAL MERONYMY AND PROPORTIONAL HARMONY

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Meronymy across Languages: Lexicalization, Semantics, Morphosyntax
September 27-28, 2013, Instituto de Investigaciones Antropológicas,
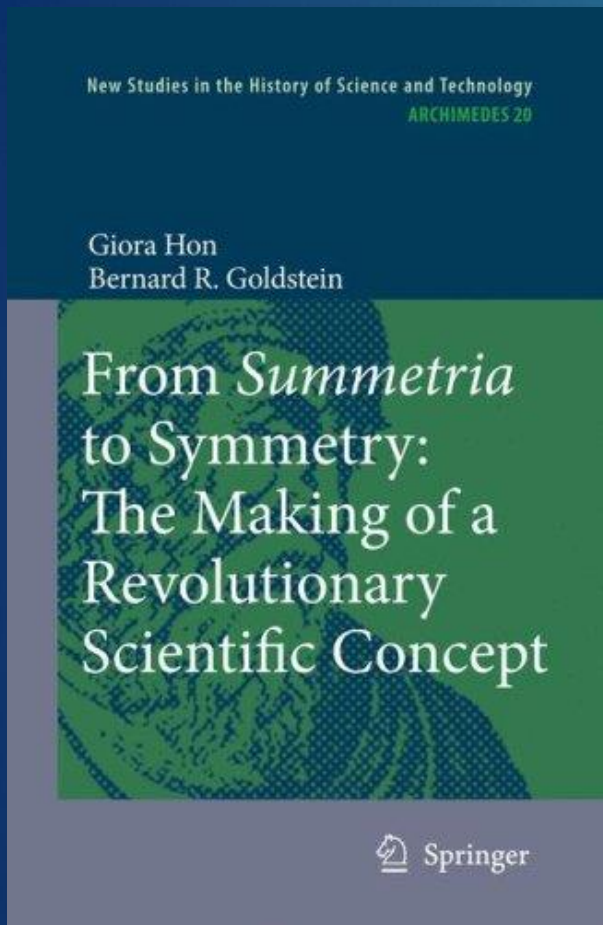*Universidad Nacional Autónoma de México, Mexico City, Mexico*

1. Introduction: Symmetry, proportional harmony and embodied modelling

RYERSON
UNIVERSITY

1. Introduction: Symmetry, proportional harmony and embodied modelling

New Studies in the History of Science and Technology
ARCHIMEDES 20

Giora Hon
Bernard R. Goldstein

From *Summetria* to Symmetry: The Making of a Revolutionary Scientific Concept

Springer

Hon & Goldstein (2008)

Bilateral (left-right) symmetry is absent in the ancient/medieval understanding of *Summetria*.

Summetria involves awareness of part-whole proportionality or harmony, especially involving vertical oppositional relations bisected by transverse planes (separating top from bottom)

Conceptual awareness of bilateral symmetry constitutes a revolution of thought, but not until the end of the 18th century.

First clearly documented in the work of Adrien-Marie Legendre (1794), building on a century of work by others.
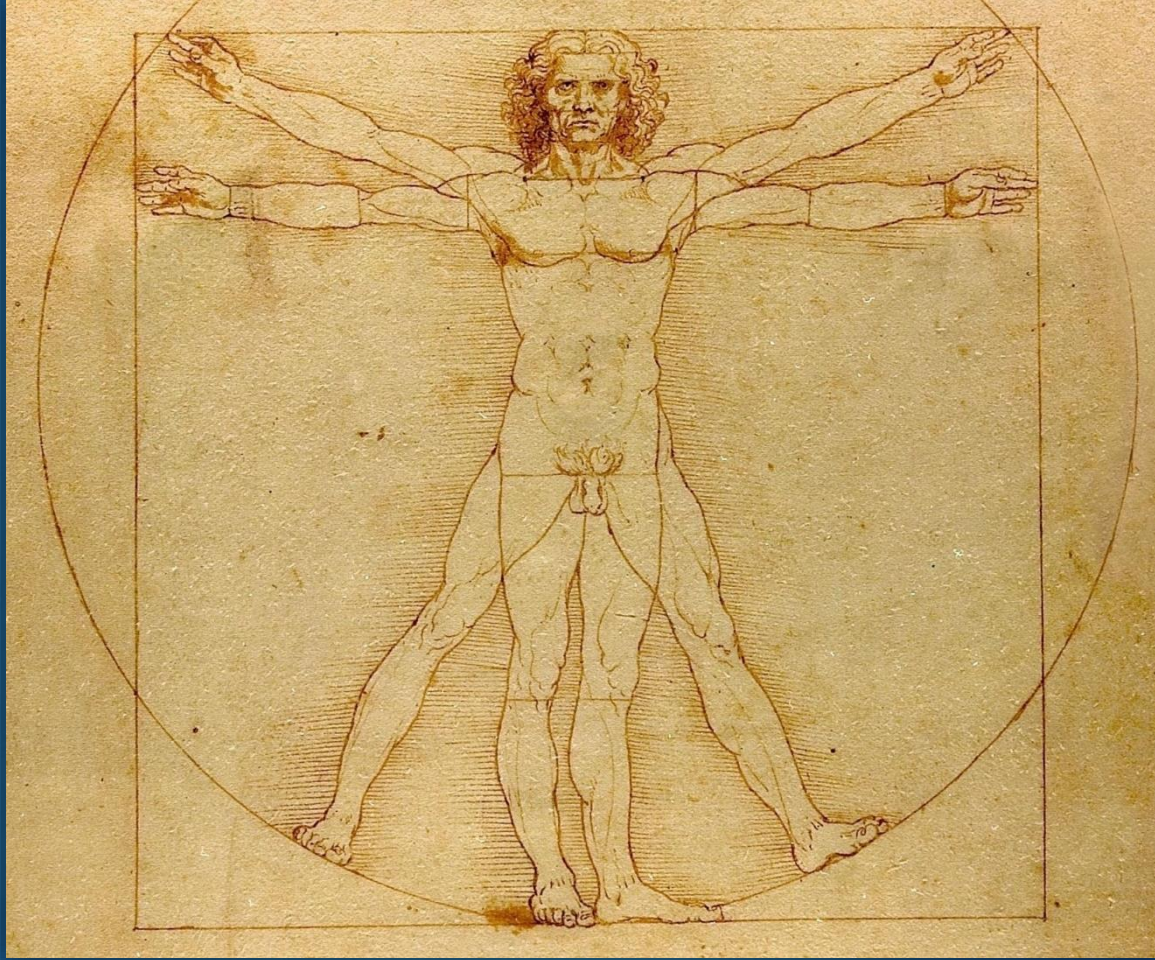
1. Introduction: Symmetry, proportional harmony and embodied modelling

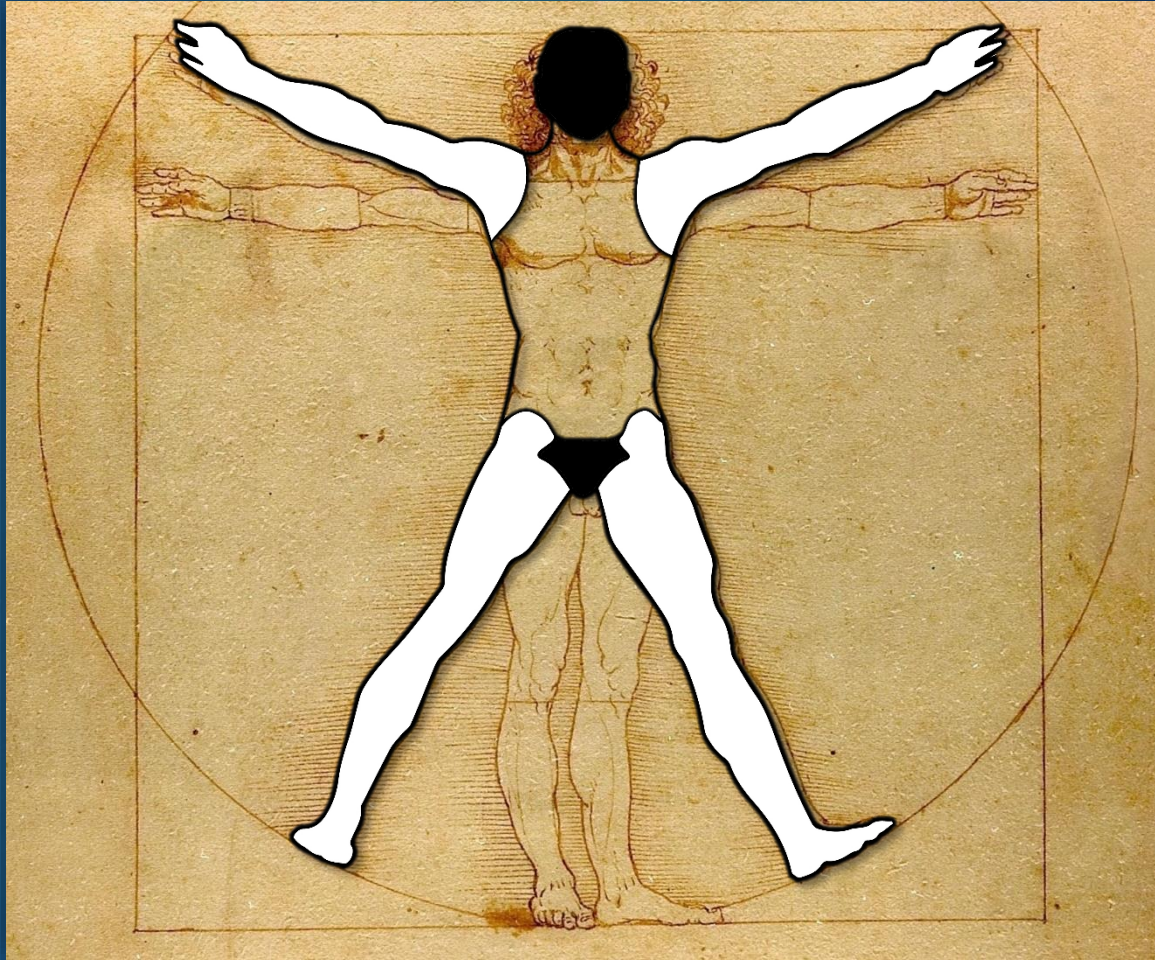**Horizontal symmetry** (right-left enantiomorphy) is bisected by a vertical (sagittal) plane.

Vertical symmetry (upper-lower proportional harmony) is bisected by a horizontal (transverse) plane

1. Introduction: Symmetry, proportional harmony and embodied modelling

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	ARM	:	LEG
	Hand	:	Foot
	finger	:	toe
	fingernail	:	toenail
	palm	:	sole
	forearm	:	shin/calf
	elbow	:	knee
	upper arm	:	thigh
	shoulder	:	hip

	FACE(/HEAD)	:	GROIN(/BUTT)
	MOUTH	:	VAGINA OR ANUS
	lips	:	labia
	uvula	:	clitoris
	eyes	:	testicles
	nose	:	penis
	cheeks	:	butt cheeks
	beard/hair	:	pubic hair

vertical intrafield embodied phenomenology

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Ancient embodied understanding:
"As above, so below; as below, so above"
(Graphic from a woodcut by D. Stolcius von Stolcenbeerg, 1624)

2. Vertical intrafield embodied modelling and natural tendencies of semantic change

Wilkins (1996)

"Natural tendencies of semantic change and the search for cognates"

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Seven major language families consulted:
- Austronesian
- Bantu
- Dravidian
- Indo-European
- Papuan
- Tibeto-Burman
- Various Native American languages

2. Vertical intrafield embodied modelling and natural tendencies of semantic change

One of five natural tendencies:
"Where the waist provides a midline, it is a natural tendency for terms referring to parts of the upper body to shift to refer to parts of the lower body and vice versa (e.g., 'elbow' ←→ 'knee'; 'uvula' → 'clitoris'; 'anus' → 'mouth')."
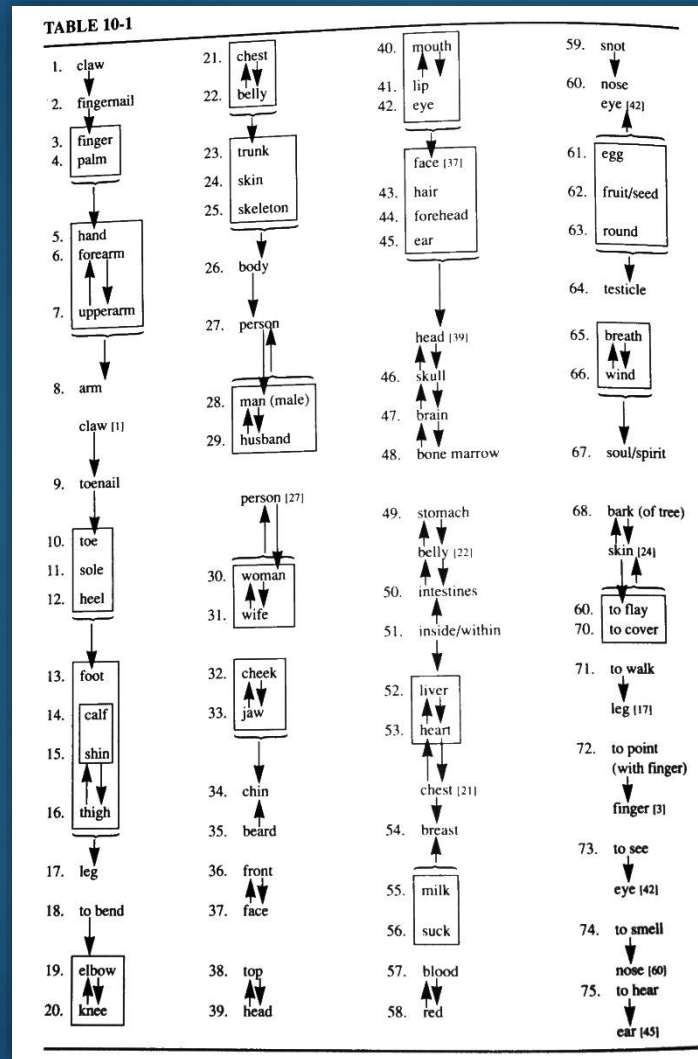(Wilkins 1996: 273-274)

Describes these as
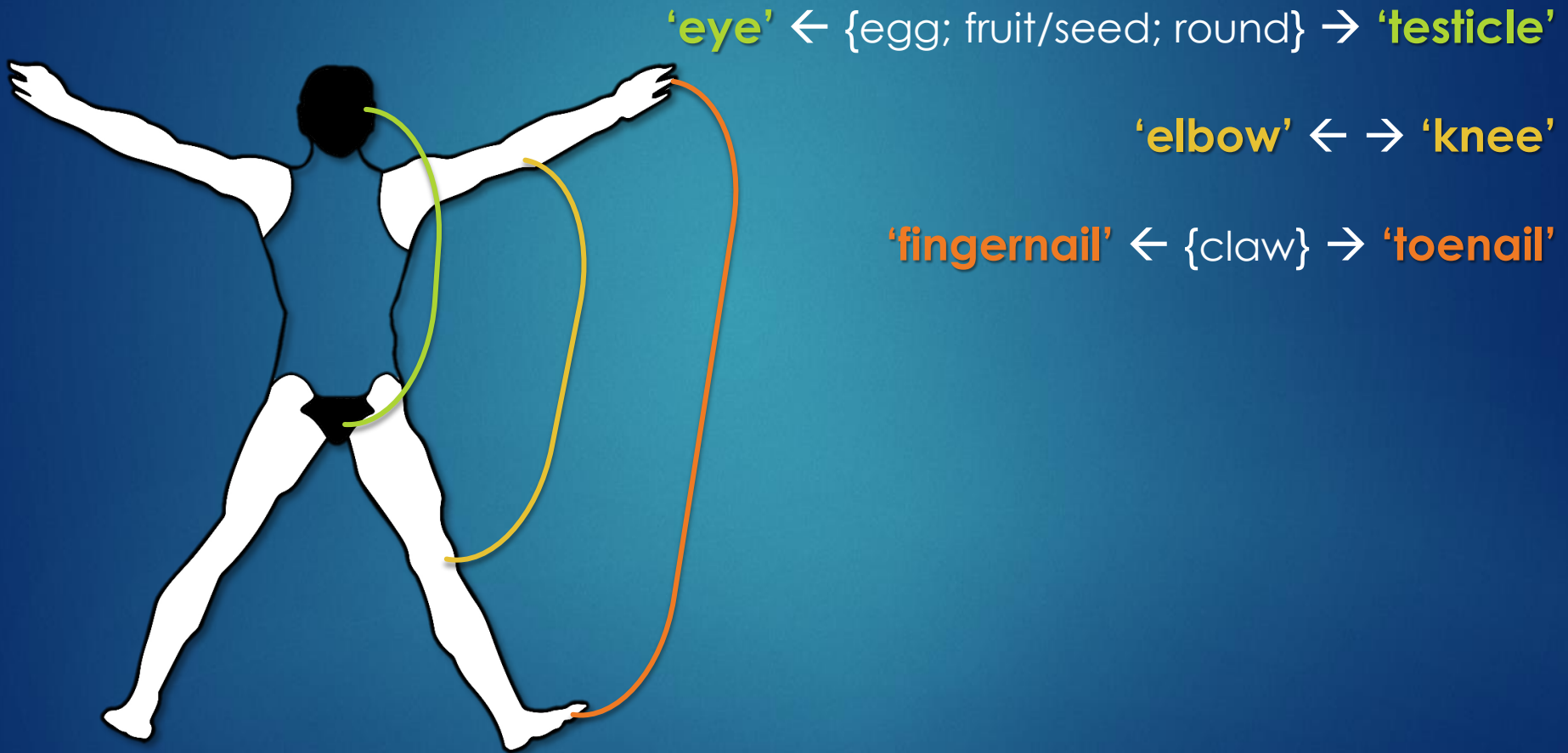**"intrafield metaphoric changes"**
(1996: 274-275)

2. Vertical intrafield embodied modelling and natural tendencies of semantic change

(Wilkins 1996: 284)
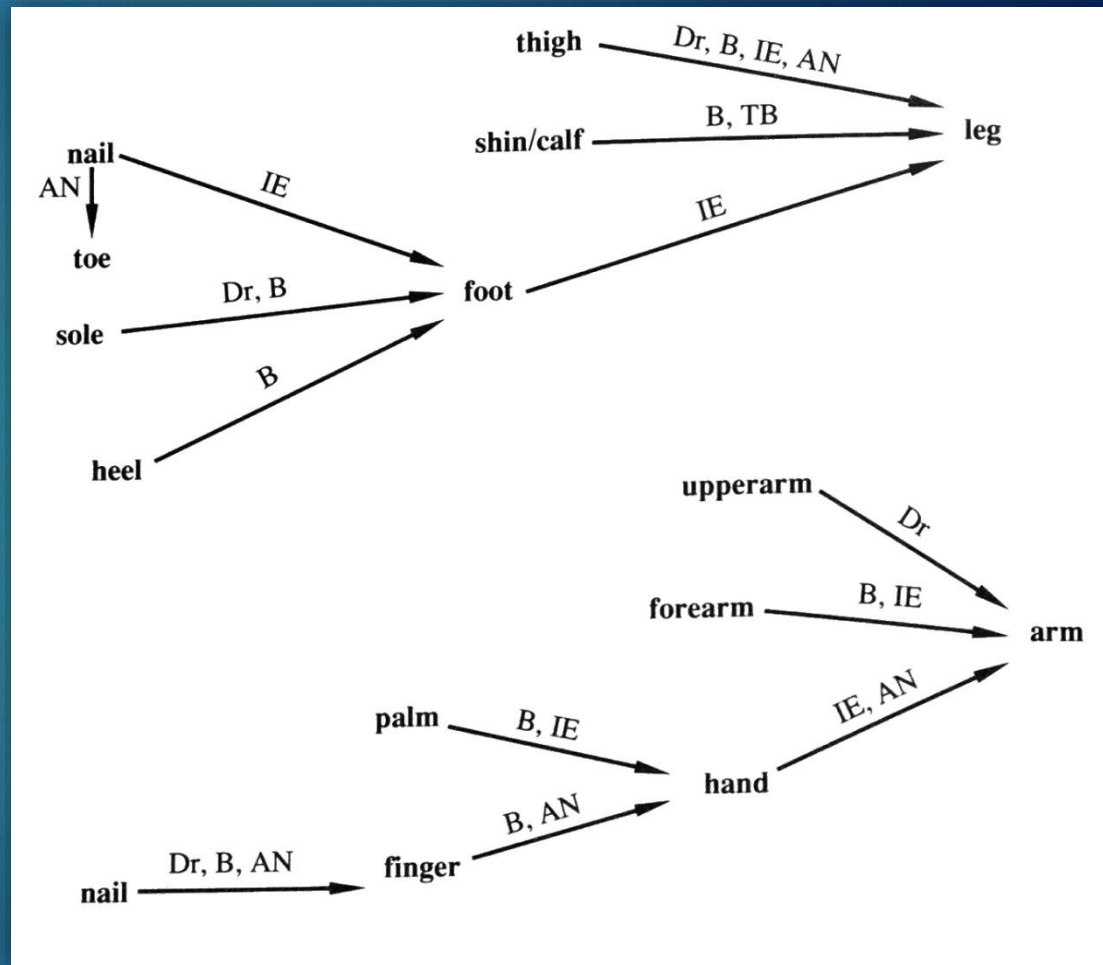

TABLE 10-1

2. Vertical intrafield embodied modelling and natural tendencies of semantic change

(Wilkins 1996: 284)

'**eye**' ← {egg; fruit/seed; round} → '**testicle**'

'**elbow**' ← → '**knee**'

'**fingernail**' ← {claw} → '**toenail**'

2. Vertical intrafield embodied modelling and natural tendencies of semantic change

From Wilkins (1996: 276) Table 10.5:
"Attested semantic changes involving visible parts and visible wholes"

3. Mapping the upper and lower appendages

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English Evidence (Peicemeal only)

unified concepts
   'nails'
   'appendages'
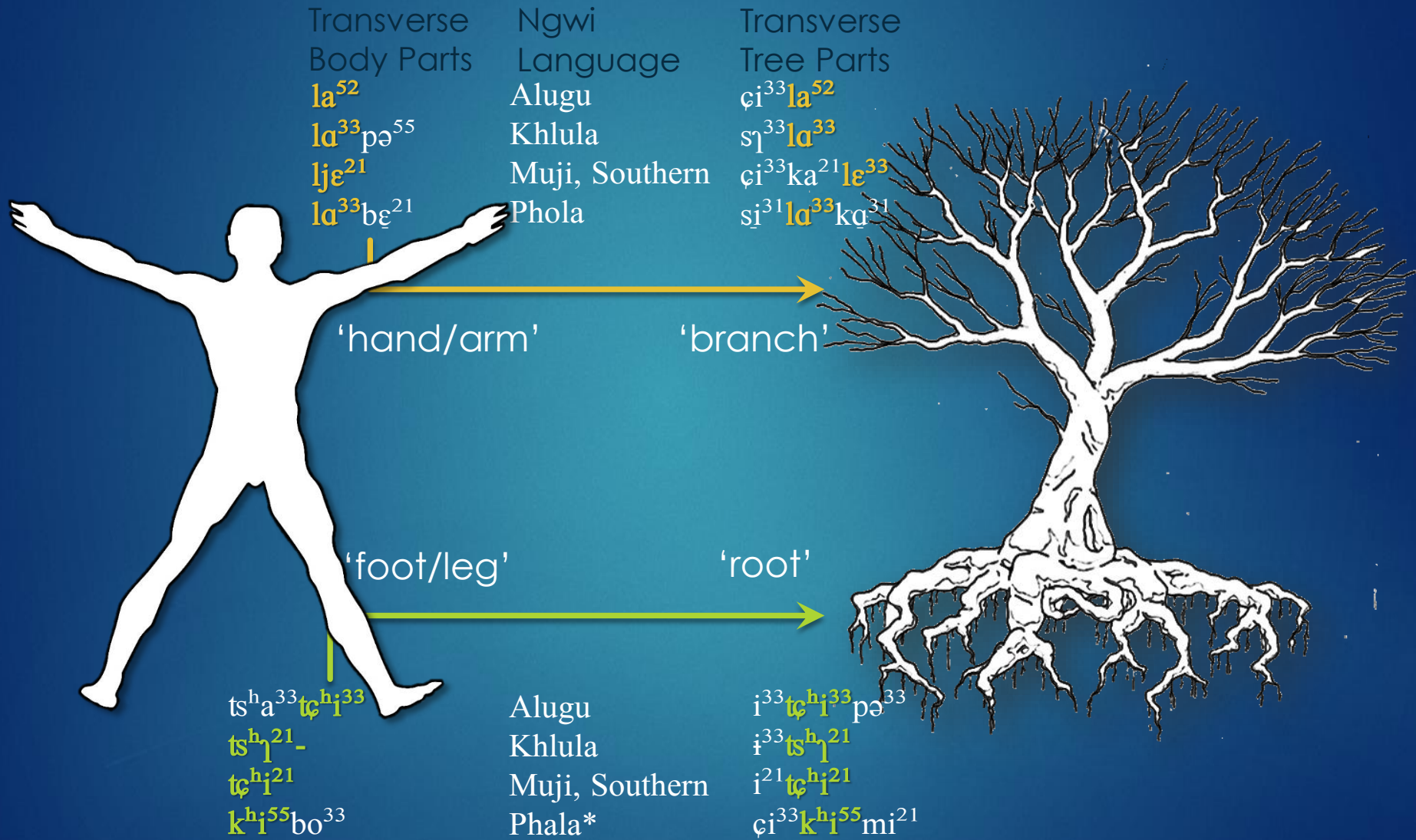unified mappings
   'limbs'
   'digits'
unified idioms
   'an arm and a leg'

No lexicalized oppositional evidence (?)
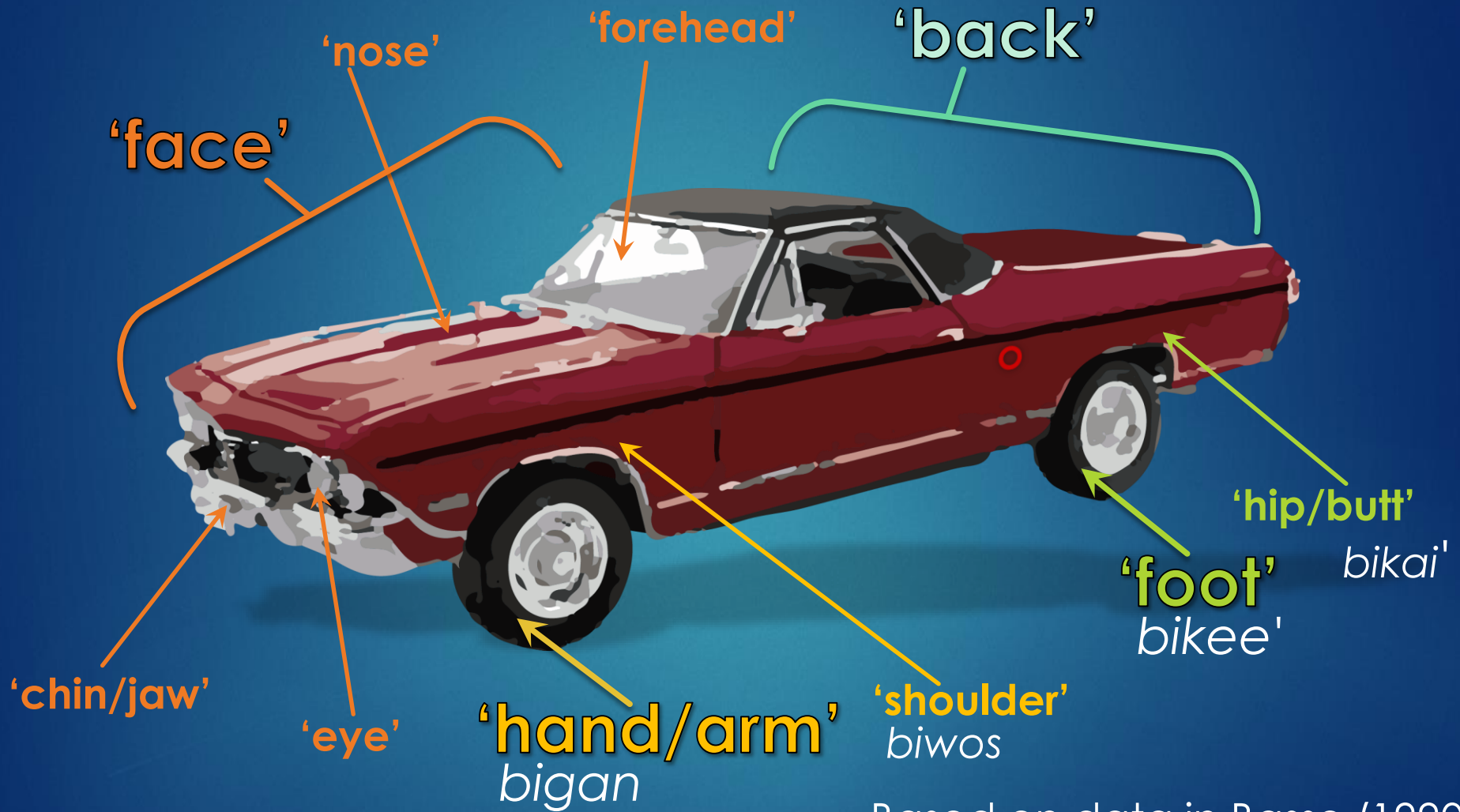
3. Mapping the upper and lower appendages

Ngwi Language Data (Tibeto-Burman), Yunnan Province, China (see Pelkey 2011, 2011a)

Transverse Body Parts	Ngwi Language	Transverse Tree Parts
la^{52}	Alugu	çi^{33}la^{52}
la^{33}pə^{55}	Khlula	sɿ^{33}la^{33}
ljɛ^{21}	Muji, Southern	çi^{33}ka^{21}lɛ^{33}
la^{33}bɛ^{21}	Phola	si̱^{31}la^{33}ka^{31}

'hand/arm' → 'branch'

'foot/leg' → 'root'

tsʰa^{33}tɕʰi^{33}	Alugu	i^{33}tɕʰi^{33}pə^{33}
tsʰɿ^{21}-	Khlula	ɨ^{33}tsʰɿ^{21}
tɕʰi^{21}	Muji, Southern	i^{21}tɕʰi^{21}
kʰi^{55}bo^{33}	Phala*	çi^{33}kʰi^{55}mi^{21}

*(close relative of Phola)

3. Mapping the upper and lower appendages

'nose'

'forehead'

'back'

'face'

'hip/butt'
bikai'

'chin/jaw'

'eye'

'foot'
bikee'

'hand/arm'
bigan

'shoulder'
biwos

Based on data in Basso (1990)

4. Modelling the upper and lower faces

Among the "lower animals," the color, shape, and arrangement of the parts of the face often "mimic" the colors and shapes of the organs in the genital region, constituting a sort of sexual advertisement that has survival value for the species. Thus we find the mandrill (Papio sphinx), a ferocious looking baboon of West Africa, with flaming scarlet cheeks that match the vivid crimson of his testes.

Matisoff (1978: 159-160)

4. Modelling the upper and lower faces

In process.

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In process.

4. Modelling the upper and lower faces

The two 'faces' in Sherpa Ritual Symbolism
Systematic symbolism of embodied vertical meronymy

(Paul 1973; Matisoff 1978: 161-165)

UPPER FACE	:	LOWER FACE
(the 'knower')		(the 'subject')

Nose [subordinate]   :   **penis** [dominant]
Eyes [dominant]   :   **testicles** [subordinate]
Mouth [nourishment]   :   **anus** [waste]

Associative pairs in opposition that must be conscientiously reconciled.

Opposition, Markedness, Antithetical symmetries

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

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Levinson (1994): Striking Claims

- "leave behind the notion of metaphor entirely" (1994: 812)
- "invoking no world knowledge and thus excluding comparison (metaphorical or otherwise) to other entities." (812)
- "Rather, the terms are applied on the basis of the internal geometry of the object itself." (813)
- "stripped of their bodily associations" (821)

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

Image Schemas in Embodied Cognitive Science
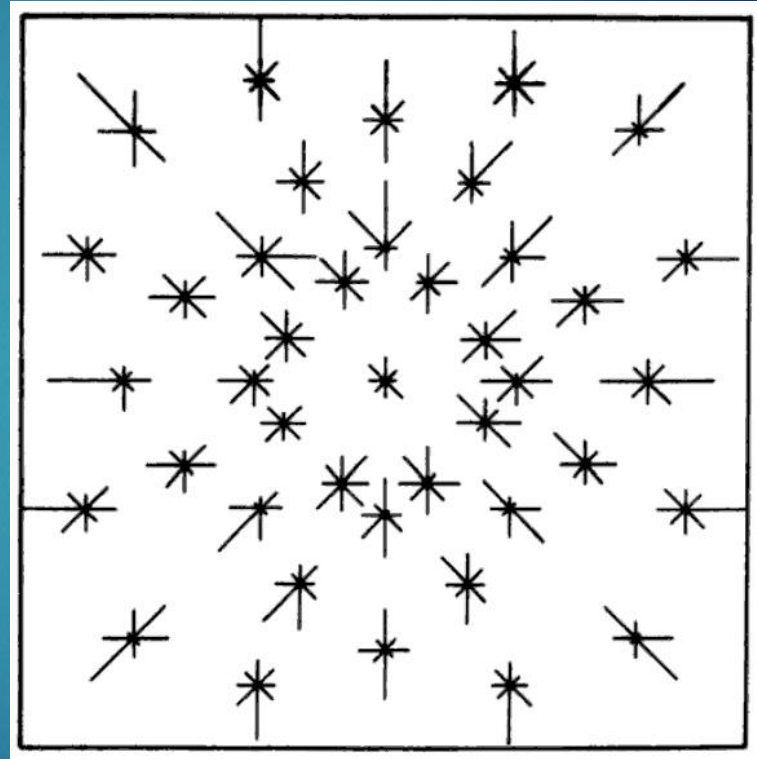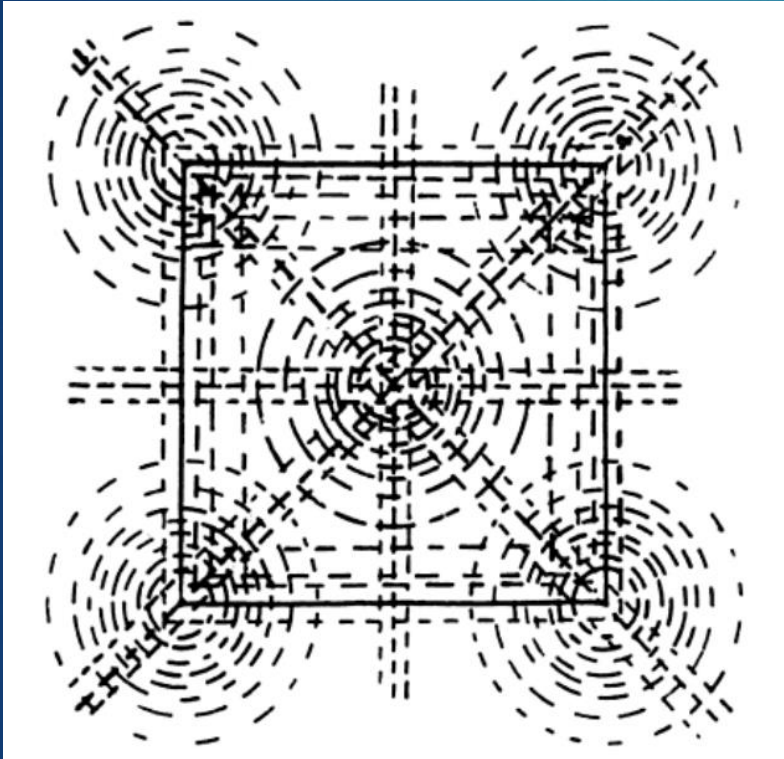
Mark Johnson:

Kant drew too hard a line between mental activity and physical activity. (1987: 168)

Imagination: "a pervasive structuring activity by means of which we achieve coherent, patterned, unified representations" (Johnson 1987: 168)
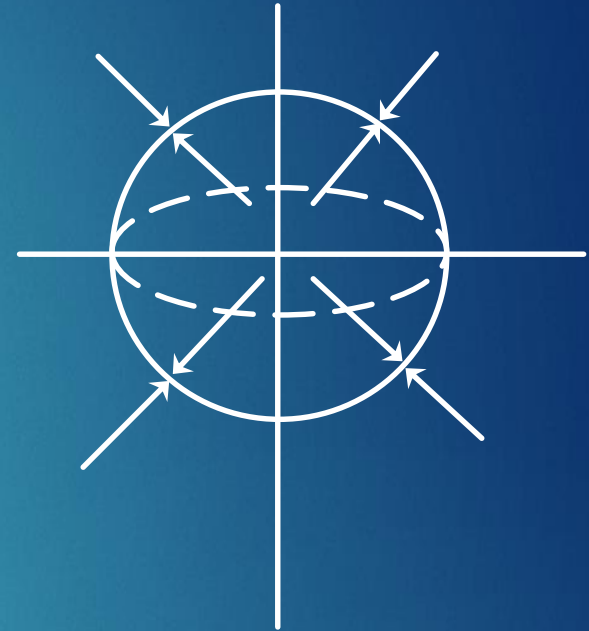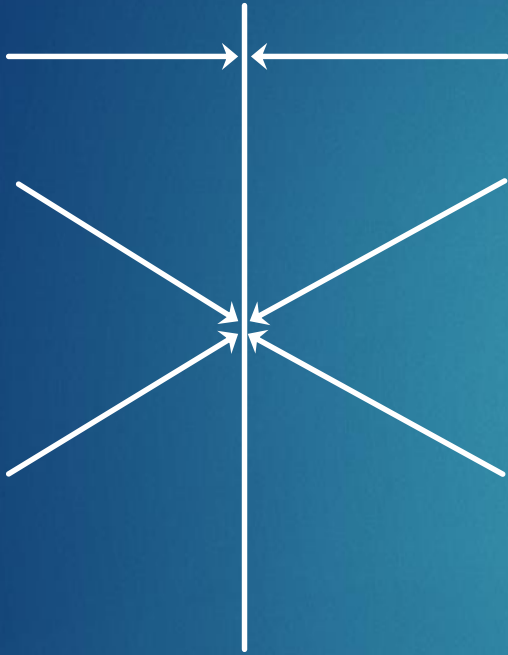
5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

"The hidden structure of a square"

Two illustrations of visual/psychological balance from Arnheim (1974: 13, 15)
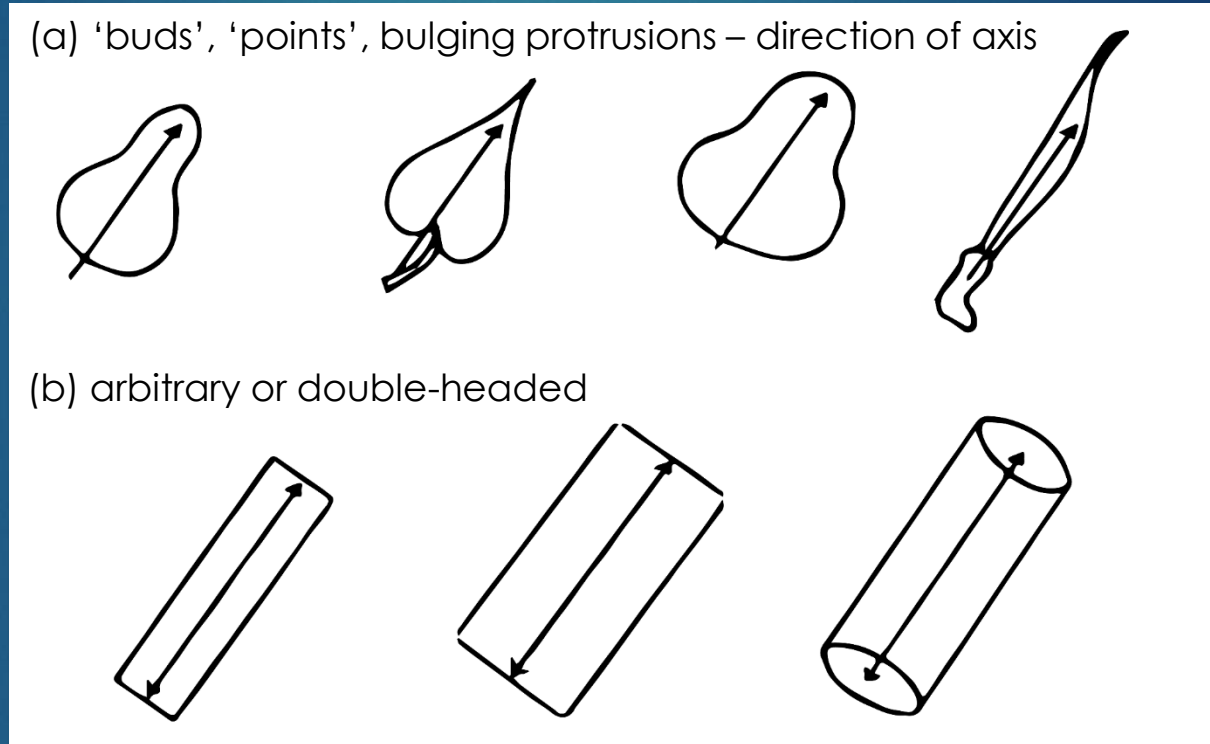
Balance and Equilibrium Schemas

"In every case, balance involves a symmetrical (or proportional) arrangement of forces around a point or axis. The prototypical [BALANCE] schema can thus be represented by an axis and force vectors" (Johnson 1987: 85).

Reproductions of Johnson's (1987: 86-87) prototype BALANCE schema and EQUILIBRIUM schema

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

Levinson (1994: 818): From Figure 11: "Finding the direction of the model axis"

(a) 'buds', 'points', bulging protrusions – direction of axis

(b) arbitrary or double-headed

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

sjol 'head'

'hand/arm' *s-k'ab*

s-k'ab

y-it 'buttocks'

'lower leg/foot' *y-akan*

y-akan
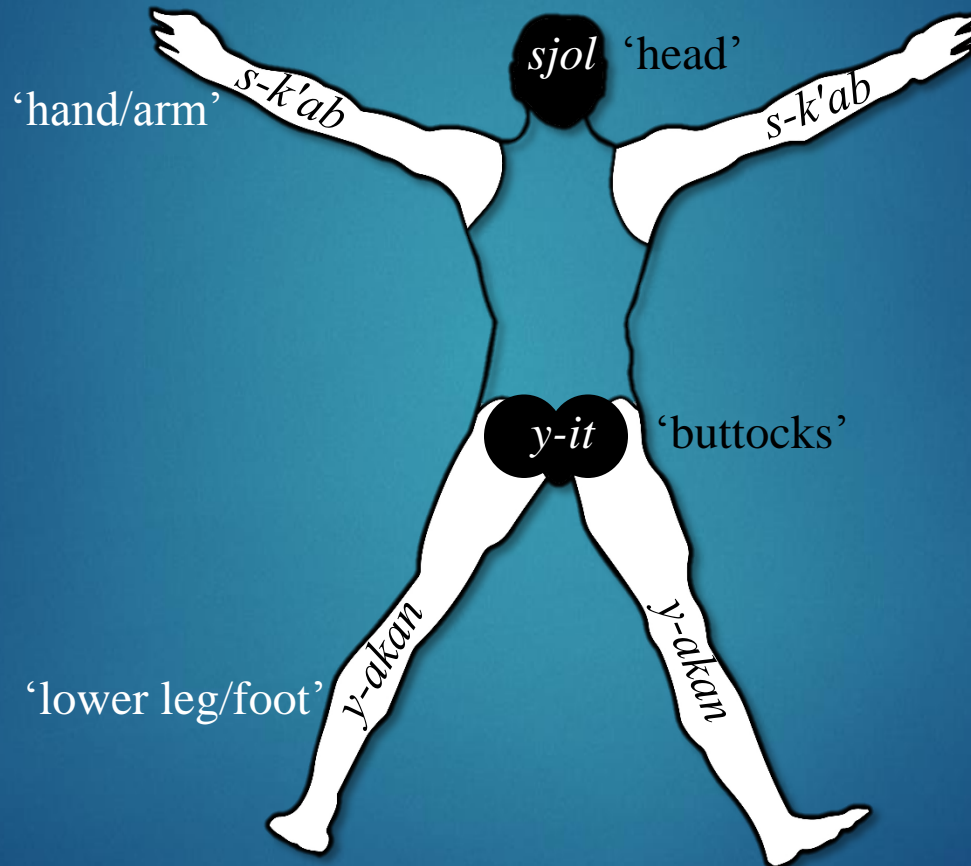
5. Levinson (1994) Reconsidered: Markedness, Image-schemas and embodied mapping
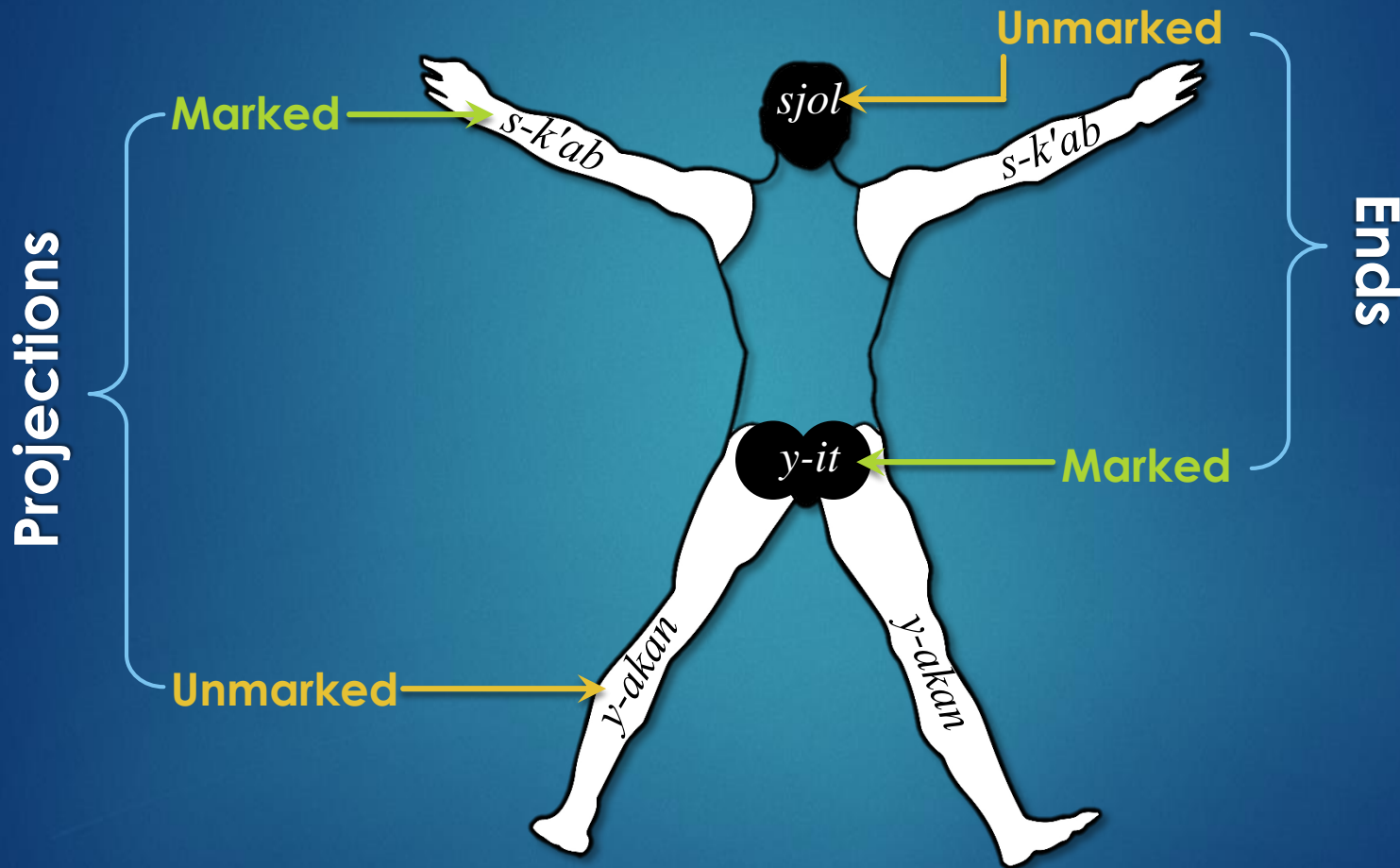
5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

LEVINSON'S QUERRY:

"And why use *s-ni'* 'nose' as the prototype protrusion, and not say *x-chu'* 'breast'? Why ignore all the metaphorical possibilities of shoulders, chins, chests, cheeks, and so on? How would one block the application of such terms under any free metaphorical process?"

(1994: 835)

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

Pelkey's Reply:

The metaphorical process is not free but constrained. The constraints are organized according to universally available antithetical oppositions arranged in paradigm sets. In this case, the nose happens to be the most conspicuous single protrusion on the upper face. The upper face/head, in turn, is selected as an unmarked point of growth, narrower than, or more open than, its foundation, or antithetical paradigm set (whatever its orientation may be).

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

LEVINSON'S REBUTTAL:

"On the object-centered account, there is no reference to rich sets of vocabulary in parallel domains. There is simply a need for whatever terms are required by the particular geometrical distinctions. For each object, we need terms for each end of the model axis, between one and four for the facets related to the orthogonal axis"

(1994: 835)

5. Levinson (1994) Reconsidered: Markedness, Image-Schemas and embodied mapping

Pelkey's Rejoinder:

The axis in question is not vertical but transverse. This, however, places vertical relations in contrast. In other words, the transverse bisection (i.e., above and below the waist-line) sets up oppositional contrasts between upper and lower face paradigms and upper and lower appendage paradigms, along with the feature marking these naturally entail.

6. Conclusion:
Oppositional Paradigms in Embodied Meronymy

Affirming…

"general-purpose meronyms that are assigned across arbitrary classes of objects according to the geometry of the parts and the whole." (Bohnemeyer & Tucker, in press, 21)

With further theses …

This is an embodied geometry, projected both visually and experientially according to inverse oppositional patterns.

These patterns are universally available but may or may not be made explicit, lexicalized or systematically manifested from culture-to-culture.

These patterns are, nonetheless, organized into paradigm sets (whether deliberate or latent) according to various axes that bisect the human body image.

These axes may be experienced not only sagitally (involving left-right oppositional modelling) but also transversely (involving upper-lower oppositional modelling) and _____ (involving front-back oppositional modelling).

If selected for conceptual organization, these models will be mapped onto objects and areas spatially in ways that are both metaphorical and algorithmic.

The metaphorical and the algorithmic are reconciled by focusing attention on marked vs. unmarked values that hold between inter-field and intra-field meronymic relations.

"We humans think in order to act and we act as *part of* our thinking."
Johnson and Rohrer (2007: 26)

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