

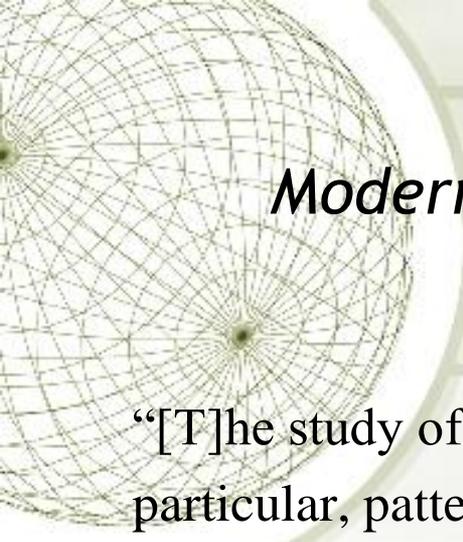
Typology, universals and the lexicon

Maria Koptjevskaja Tamm

Dept. of linguistics, Stockholm university

tamm@ling.su.se,

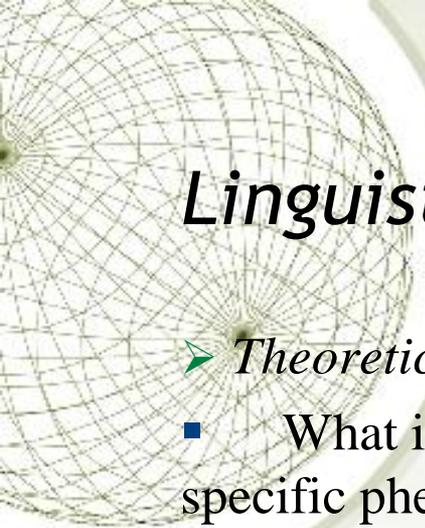
<http://www.ling.su.se/staff/tamm>



Modern linguistic typology vs. linguistic universals

“[T]he study of linguistics patterns that are found cross-linguistically, in particular, patterns that can be discovered solely by cross-linguistic comparison” (Croft 1990: 1)

“In the past century, typology was mostly used an alternative method in pursuing one of the same goals as generative grammar: to determine the limits of possible human languages and, thereby, to contribute to a universal theory of grammar. The paradigm result was the absolute universal law that would rule out as linguistically impossible what would see logically imaginable, e.g., a language with a gender distinction exclusively in the 1st person singular” (Bickel 2007: 238).



Linguistic typology vs. linguistic universals

➤ *Theoretical questions I:*

- What is universal / frequent and what is language particular in a specific phenomenon, what phenomena are frequent / rare?
- What generalizations can be made about attested vs. possible patterns?
- How can the attested cross-linguistic patterns / generalisations be explained?

The Universals Archive in Konstanz

The Universals Archive

Home

Browse

Search

Rara

Login

Result

6



of 16

<<<

>>>

Number

517 (used to be 519 in the old version)

Original

If a language has gender distinctions in the 1st person, it always has gender distinctions in the 2nd or 3rd person, or in both.

Standardized

IF there are gender distinctions in the 1st person [of the personal pronoun], THEN there are gender distinctions in the 2nd and/or 3rd person.

Formula

gender (1 person) \Rightarrow gender (2 &, V. 3 person)

Keywords

pronoun, gender, person, 1, 2, 3

Domain

inflection

Type

implication

Status

achronic

Quality

absolute

Basis

30 languages of [Greenberg 1963](#) sample

Source

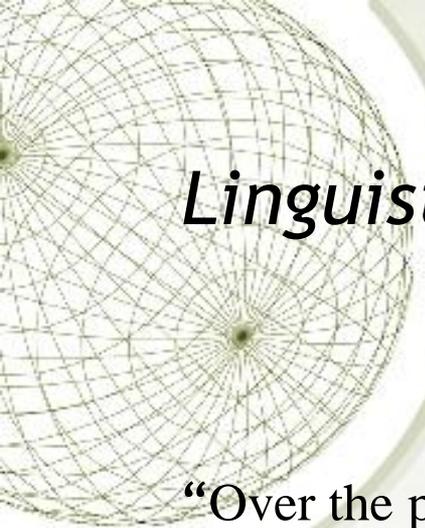
[Greenberg 1963](#): 96, #44

Counterexamples

By Frans Plank  03.08.2006, 09:49
In Thai (Daic, Austroasiatic) ([Uspensky 1965](#): 214, [Uspensky 1968](#): 11, [Uspensky 1972](#): 63) gender (sex) can be distinguished only in the 1st person. Tocharian A (IE) has gender contrast in personal pronouns exclusively in 1st person singular.

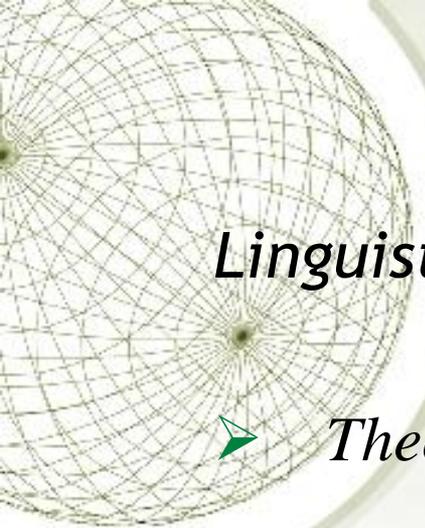
Comments

By Frans Plank  03.08.2006, 09:49
Supported by [Corbett 1991](#): 131, on the basis of some 200 lgs.



Linguistic typology as population science

“Over the past decade...[i]nstead of asking “what is possible?”, more and more typologists ask “what’s where why?”. Asking “what’s where?” target universal preferences as much as geographical or genealogical skewings, and results in probabilistic theories stated over properly sampled distributions. Asking “why?” is based on premises that (i) typological distributions are historically grown and (ii) that they are interrelated with other distributions” (Bickel 2007:238)



Linguistic typology as population science

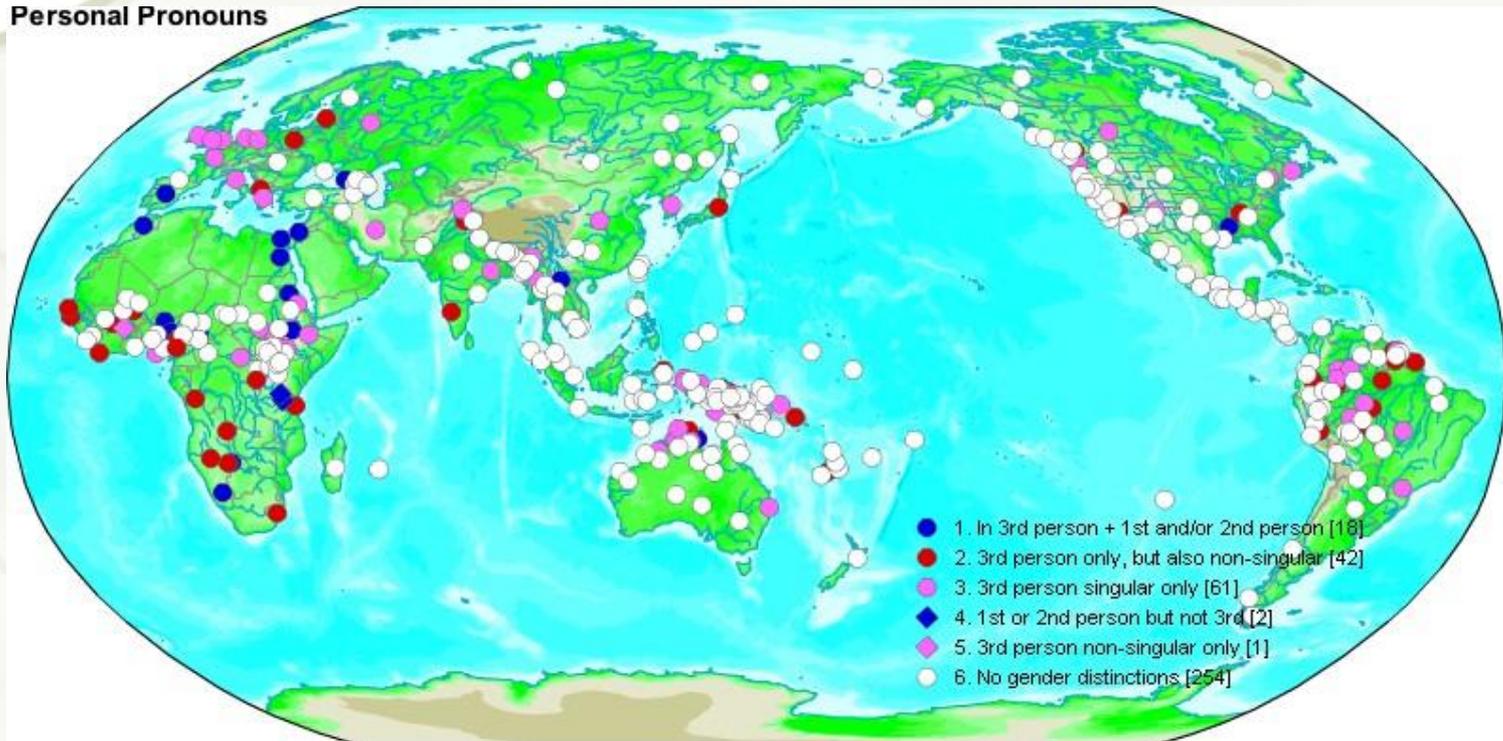
➤ Theoretical questions II:

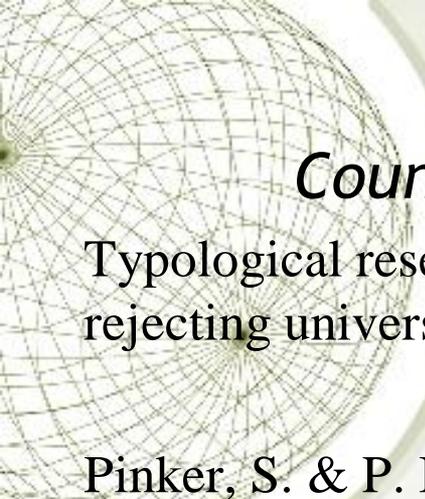
- Which phenomena are genetically stable and which are subject to contact-induced change?
- How are the various linguistic phenomena distributed across the world's languages?
- How can the attested distribution of the different patterns across languages be explained?

Gender distinctions in independent personal pronouns (Anna Siewierska)

Haspelmath, M., M. Dryer, D. Gil & B. Comrie (2005). *The World Atlas of Language Structures (WALS)*. Oxford: Oxford University Press

Personal Pronouns





Counterevidence against suggested universals

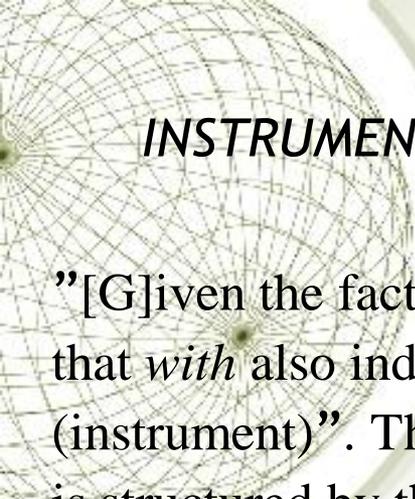
Typological research provides thus an empirical basis for confirming or rejecting universalist claims coming from various linguistic theories.

Pinker, S. & P. Bloom (1990), Natural language and natural selection. *Behavioural and Brain Sciences* 13: 707-726.

Evans, N. & S. Levinson (2009), The Myth of Language Universals: Language diversity and its importance for cognitive science. *BBS*

“Every language has X:

- major phrasal categories (NP, VP, etc.)
- rules of linear order
- verb affixes signalling aspect and tense



INSTRUMENTS AS COMPANIONS (Lakoff & Johnson 1980: 134-135)

”[G]iven the fact that *with* indicates accompaniment in English, it is no accident that *with* also indicates instrumentality, as in ”I sliced the salami *with* a knife. (instrument)”. The reason that this is not arbitrary is that our conceptual system is structured by the metaphor an instrument is a companion. It is a systematic, not an accidental, fact about English that the same word that indicates accompaniment also indicates instrumentality..With few exceptions, the following principle holds in all the languages of the world:

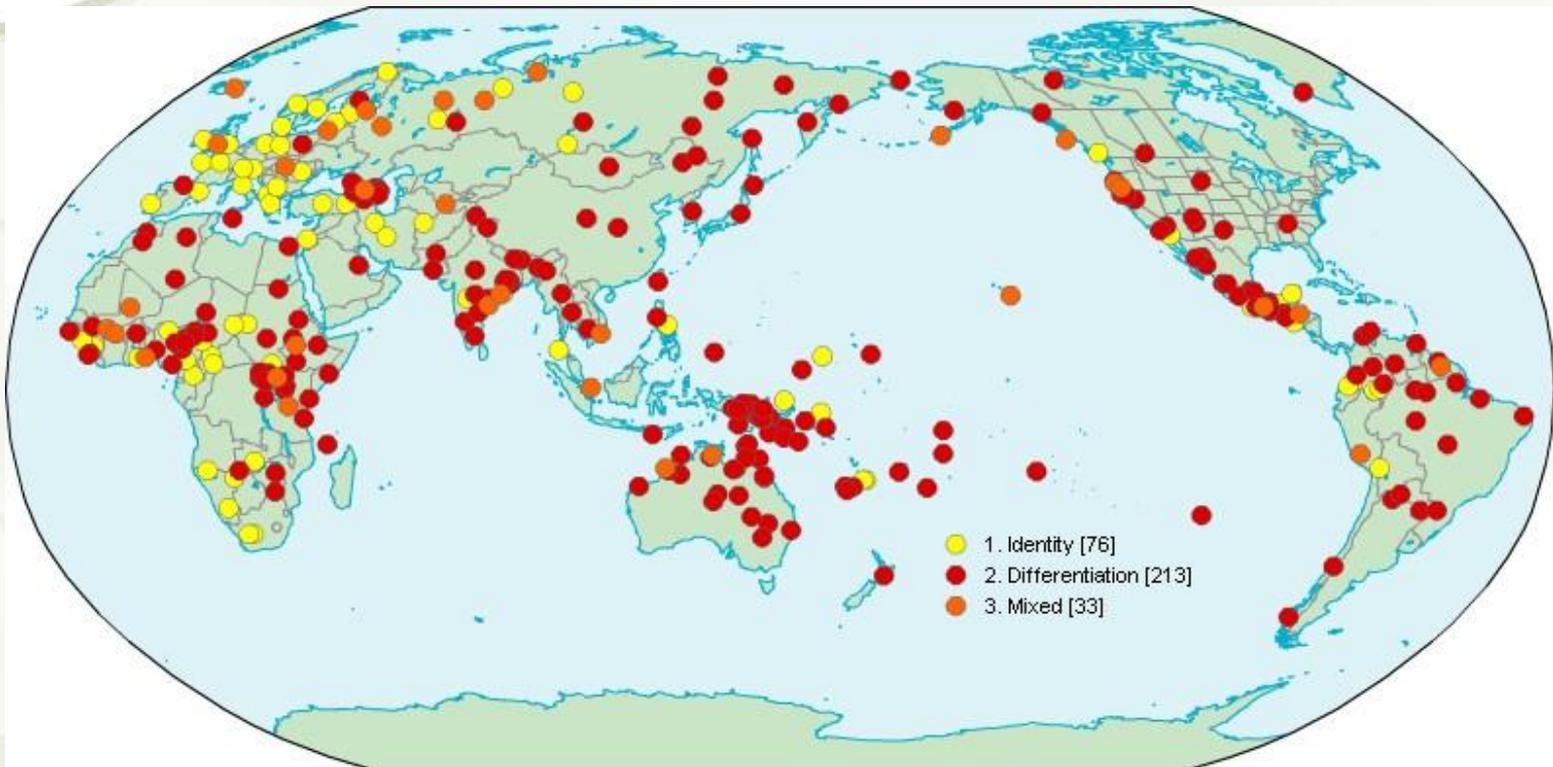
The word or grammatical device that indicates accompaniment also indicates instrumentality.

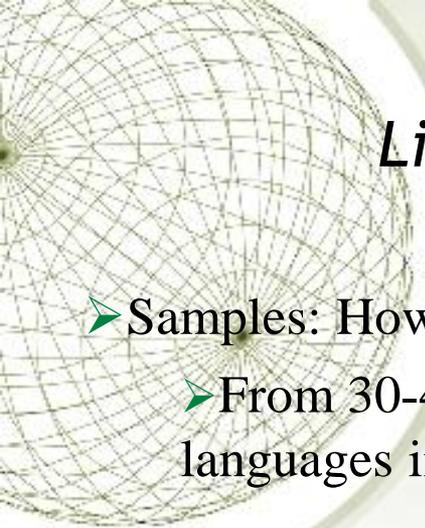
Since the experience on which the metaphor AN INSTRUMENT IS A COMPANION are based are likely to be universal, it is natural that this grammatical principle holds in most languages.”

Stolz 2005, "Comitatives and Instrumentals": a global 322-language sample

The coherent languages: 50% of the European languages, 30% of the African languages, 9% of the Pacific languages in the sample.

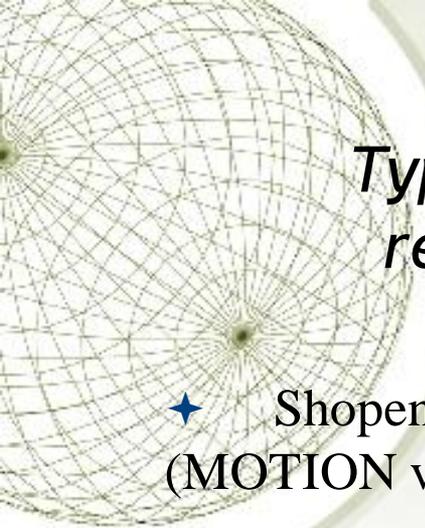
Haspelmath, M., M. Dryer, D. Gil & B. Comrie (2005). The World Atlas of Language Structures (WALS). Oxford: Oxford University Press





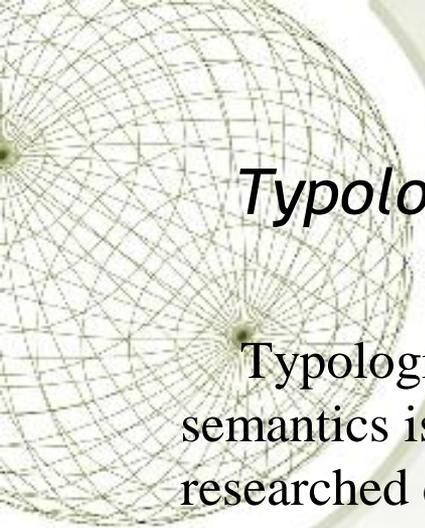
Linguistic typology and methodology

- Samples: How many and what languages to include?
 - From 30-40 languages to several hundreds (and even more, ≈ 1100 languages in Dryer's chapters on word order in *WALS*);
 - the issue of representativity
- Data collection: How to get relevant and reliable data?
 - Cross-linguistic identification of phenomena (“the apples-and-pears issue”)
 - Data sources



Typological research on lexical semantics as represented in major typological projects

- ✦ Shopen (ed.) 1985: 20 chapters, only one on lexical semantics (MOTION verbs, Talmy)
- ✦ EUROTYP: 9 thematic groups, none on lexical semantics
- ✦ World Atlas of Language Structures (WALS): among 142 chapters only 6 on lexical semantics (COLOUR; HAND/ARM; HAND/FINGER)
- ✦ “Standard” textbooks in typology - hardly anything
- ✦ The Universals archive: 159 (out of 2029) universals refer to the lexicon, but very few of these deal with semantics



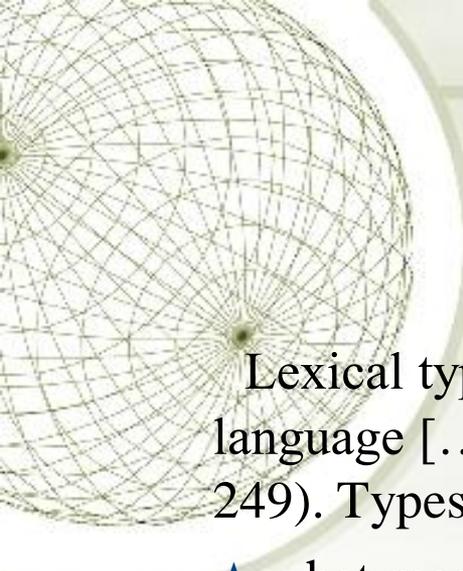
Typological research on lexical semantics otherwise

Typological research on the lexicon in general and on lexical semantics is, however, by no means a virgin soil. Some of the best researched domains are **BODY, KINSHIP, COLOUR, PERCEPTION, MOTION, DIMENSION, CUT / BREAK, POSTURE, PAIN.**

For an overview see

Koptjevskaja-Tamm, M., M. Vanhove & P. Koch, 2007 Typological approaches to lexical semantics. *Linguistic Typology*, 11-1: 159 - 186.

Koptjevskaja-Tamm, M., 2008 Approaching lexical typology, in



Lexical typology

Lexical typology is concerned with the “characteristic ways in which language [...] packages semantic material into words” (Lehrer 1992: 249). Types of questions:

- ✦ what meanings can(not) be expressed by a single word in different languages?
- ✦ how does the lexicon interact with the grammar?
- ✦ what different meanings can be expressed by one and the same lexeme or by lexemes synchronically and historically derived from each other (polysemy, semantic shifts etc.)?

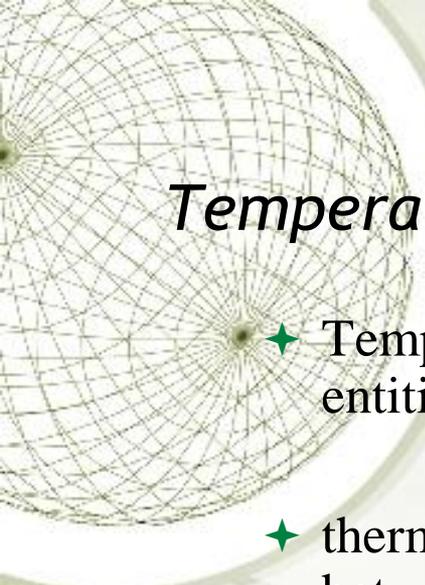


Illustrating the three foci of lexical typology: Linguistics of temperature

Sutrop 1998, 1999; Plank 2003, Koptjevskaja-Tamm & Rakhilina 2006, Koptjevskaja-Tamm & Sahlgren (work in progress).

Why temperature?

- ✦ Temperature phenomena are universal, relatively easily perceptible by humans and crucial for them;
- ✦ Their conceptualisation involves, however, a complex interplay between external reality, bodily experience and evaluation of the relevant properties with regard to their functions in the human life in a particular cultural setting.

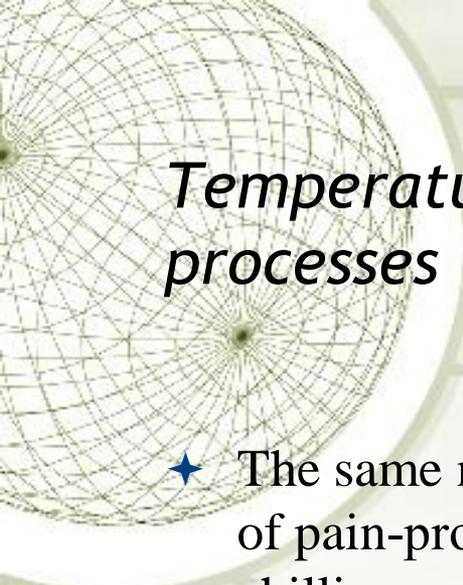


Temperature perception in humans : physiology

- ✦ Temperature sensation/evaluation of the temperature of other entities, based on perception received by the skin, and
- ✦ thermal comfort, having to do with maintaining heat balance between the heat produced by metabolism and the heat lost or gained as a result of other physiological processes.

Different temperature scales with their own reference points:

- ✦ the physiological zero and the neutral zone ($\approx 31\text{--}36^\circ\text{C}$): subject to sustained thermal adaptation, and
- ✦ the comfort zone ($3\text{--}4^\circ\text{C}$ within 17.5°C and 31°C), dependent on the habitual temperature in the group's environment.



Temperature perception vs. other physiological processes

- ★ The same nociceptor, VR1 (sensory neurons involved in the detection of pain-producing stimuli) is activated by painful heat ($\geq 45^{\circ}\text{C}$) and by chilli peppers (i.e., by capsaicin found in them) (Clapham 1997).
- ★ Certain emotional responses involve temperature regulation: e.g. anger leads to increased body heat.

Physical environment: variable

Humans live under amazingly different climatic conditions and differ in their exposure to high vs. low temperatures, both under natural and human-made conditions (cf. a sauna, a refrigerator).



Temperature properties of entities: variable

Entities differ wrt their temperature properties:

- ◆ some have constant temperature properties

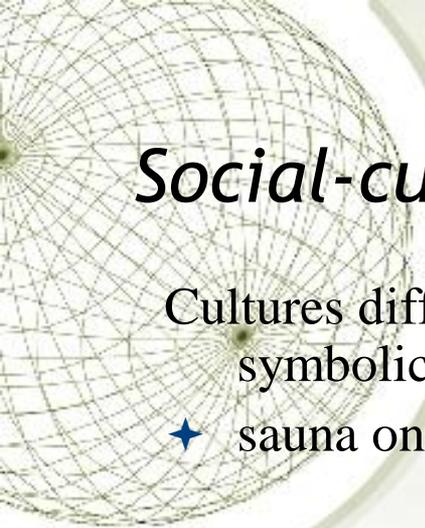


- ◆ some have preferable temperature properties
- ◆ some are primarily used for thermal comfort



- ◆ some have irrelevant temperature properties (e.g., books)

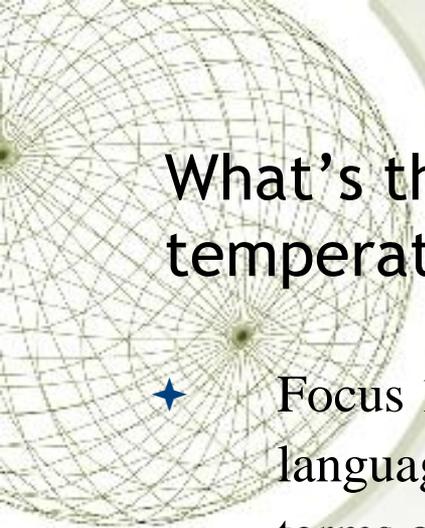




Social-cultural practices: variable

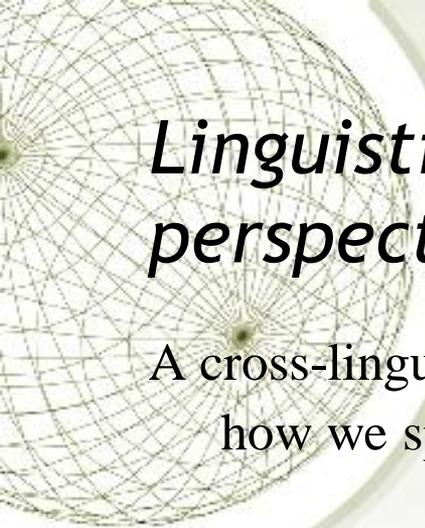
Cultures differ in their “temperature-related” practices and in the symbolic value of temperature evaluation:

- ★ sauna once again
- ★ a division of the world into ‘hot’ and ‘cold’ entities in Mesoamerica
- ★ a division of consumables and body conditions into ‘hot’, ‘cool’, ‘cold’ etc. in South-East Asia



What's there to be studied wrt to linguistics of temperature?

- ★ Focus 1: What temperature concepts are encoded as words across languages, what distinctions are made in the systems of temperature terms and what factors underlie them?
- ★ Focus 2: How are temperature concepts lexicalized across languages in terms of word classes? What syntactic constructions are used for talking about temperature perception?
- ★ Focus 3: What are the possible extensions of temperature terms to other domains? Where from do the temperature terms come? How can their meanings change?



Linguistics of temperature in a cross-linguistic perspective

A cross-linguistic study may tease apart the role of the different factors in how we speak about temperature:

- ✦ Neurophysiology and cognition
- ✦ Environment
- ✦ Social-cultural practices
- ✦ Genetic relations
- ✦ Linguistic contact

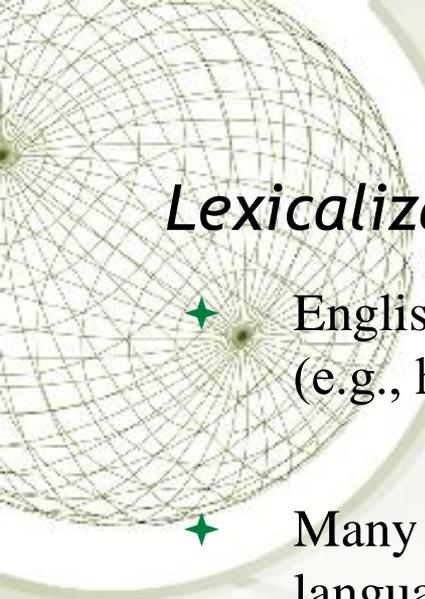


Lexicalization of temperature concepts: universal vs. language-specific

Do all languages lexicalize temperature concepts?

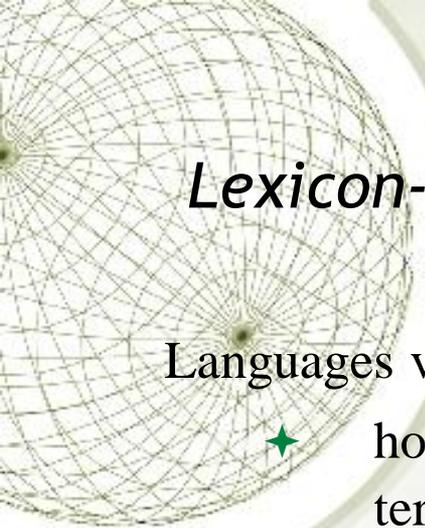
The null hypothesis: yes, but this has to be checked. However, we know already:

- ✦ Many (most?) languages lack the word for the functional concept ‘temperature’
- ✦ Languages differ as to how many temperature terms they have and how these categorize the temperature domain in general.



Lexicalization of temperature concepts

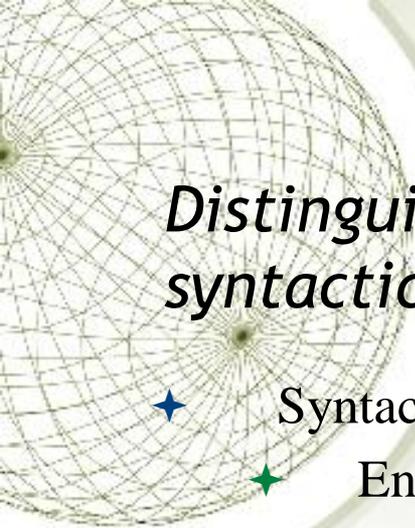
- ✦ English, Russian, Swedish: elaborated systems with six or more terms (e.g., hot, warm, lukewarm, chilly, cool, cold; freeze...)
- ✦ Many languages have only two temperature terms – e.g., the Oceanic languages spoken on Vanuatu (Alex François p.c.) – or three – e.g., Yucatec Maya (Olivier Le Guin p.c.).
- ✦ Even languages with a comparable degree of elaboration within their temperature systems can vary considerably as to what distinctions are relevant. E.g., what distinguishes ‘warm’ and ‘hot’; whether there is a distinction between tactile and non-tactile perception, etc. (cf. Russian vs. Swedish, Koptjevskaja-Tamm & Rakhilina 2006)



Lexicon-grammar interaction within the temperature domain

Languages vary considerably as to

- ✦ how temperature concepts are lexicalized across languages in terms of word classes (cf. *hot – heat, cold – freeze*), and
- ✦ what syntactic constructions are used for talking about temperature perception



Distinguishing among the temperature subdomains: syntactic constructions vs. lexical means

- ★ Syntactic constructions

- ★ English: The stones are cold, It is cold here, I am cold

- ★ German: Die Steine sind kalt, Es is kalt hier, Mir ist kalt

- ★ French: Les pierres sont froides, Il fait froid, J'ai froid

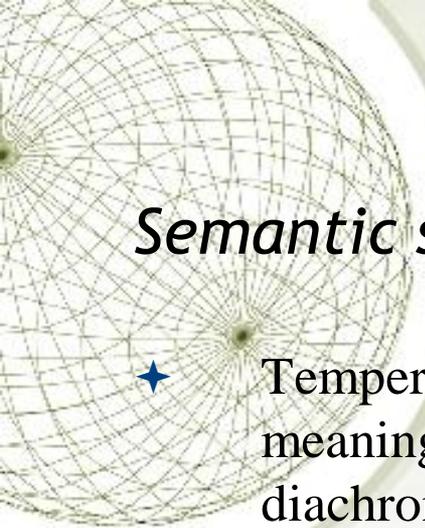
- ★ Lexical means

- ★ English: I am freezing

- ★ German: Ich friere

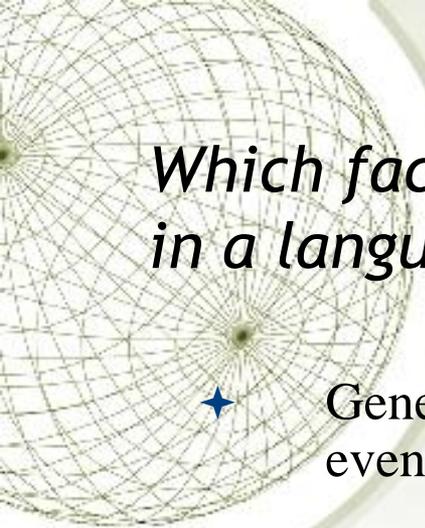
- ★ Syntactic constructions and lexical means

- ★ Japanese: *Ishi ga (SUB) tsumetai, Kyô wa (TOP) samui, (Watashi wa ((TOP) samui*



Semantic shifts relevant for the temperature domain

- ✦ Temperature meanings are often semantically related to other meanings, either synchronically (within a polysemantic lexeme) or diachronically.
- ✦ Temperature concepts are often used for talking about emotions ('hot temperament', 'warm feelings') and for referring to other perceptual modalities ('hot spices').
- ✦ Temperature meanings can develop from others, e.g., 'burn, fire' > 'hot', or 'ice' > 'cold'.
- ✦ The meanings of temperature terms can also change within the temperature domain itself (e.g., 'warm, hot' > 'lukewarm', as in Lat. *tep-* 'warm', Sanskrit *tápas* 'heat' vs. English *tepid* 'lukewarm', or Swed. *sval* 'cool' vs. German *schwül* 'stiffy, unpleasantly warm').



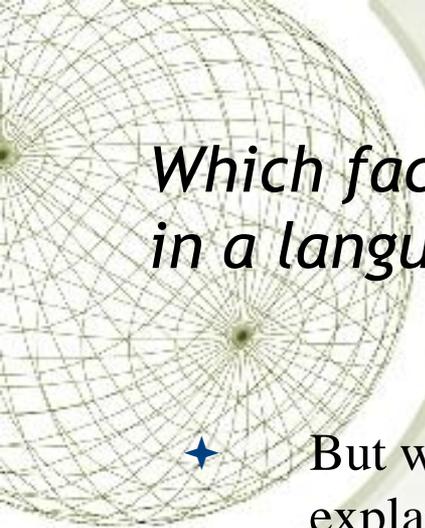
Which factors shape the linguistic temperature system in a language / across languages?

- ✦ Genetic factors: cf. *Hot, heiß, het; warm, varm; cold, kalt*. But even closely related languages can show amazing differences.
- ✦ Language contact: cf. *cool; hot line; 'cold' for 'slow'* in several African languages (e.g., Bambara and Bozo – Mande, Cerma and Nateni – Gur)?
- ✦ Environmental (climatic) factors: can the paucity of the temperature terms in the Oceanic be related to the relatively narrow range of temperature fluctuations in the environment?
- ✦ Social-cultural practices: cf. the abundance of temperature terms for qualifying water in Ewe related to food preparation, bathing, washing, medicinal and ritual purposes.



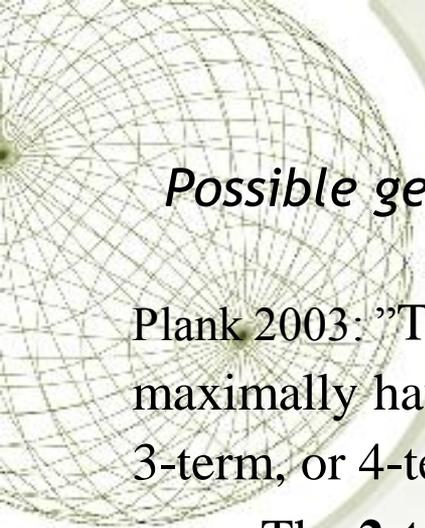
Categorization within the temperature domain: talking about water in Ewe (Felix Ameka p.c.)

- (1) Tsi-a fá
‘The water is cool/cold’
- (2) Tsi-a gblɔ
‘The water is lukewarm’ (e.g., for medicinal purposes)
- (3) Tsi-a xɔ dzo (e.g., for medicinal purposes)
‘The water is hot’
- (4) Tsi-a vé
‘The water is painfully hot’
- (5) Tsi-a fie (e.g., for bathing dead corpses)
‘The water has boiled’



Which factors shape the linguistic temperature system in a language / across languages (cont.)?

- ✦ But what about temperature-related "universals" that can be explained by neurophysiology and cognition, rather than by the more external and accidental factors?



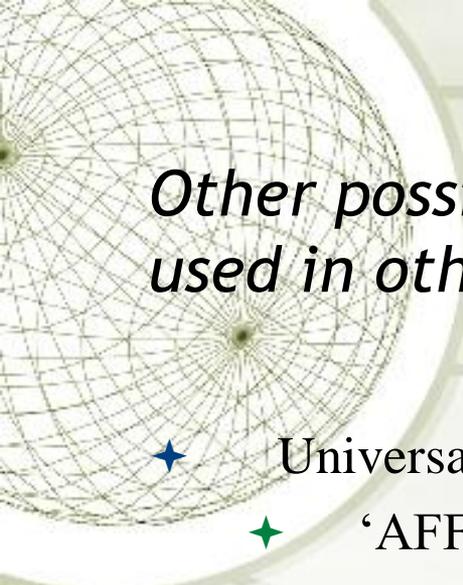
Possible generalizations? Universal 1

Plank 2003: "The number of basic temperature terms a language can maximally have is probably quite limited. Probably there are only 2-term, 3-term, or 4-term systems of basic terms.

The **2-term** system only distinguishes **warm** and **cold**, as an equipollent opposition.

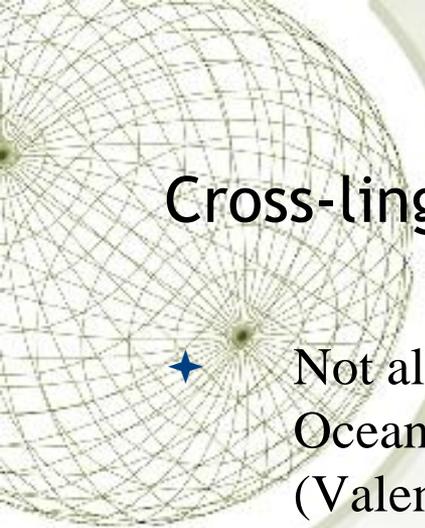
The **3-term** system distinguishes **warm** (pleasant for the human perceiver/experiencer, unmarked), **cold** (unpleasantly non-warm, marked relative to warm), and **hot** (unpleasantly, even dangerously very-warm, also marked, forming the opposite of cold in terms of extremes).

The **4-term** system adds a neutral term for the absence of either a pleasant or an unpleasant perception/experience of temperature, **luke**. Luke can probably not be added to equipollent 2-term systems."



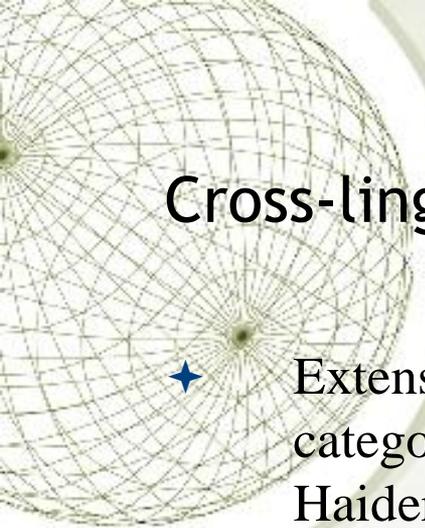
Other possible generalizations: temperature words used in other domains

- ★ Universal metaphors suggested within cognitive linguistics:
 - ★ ‘AFFECTION IS WARMTH’ (Lakoff & Johnson 1997:50)
 - ★ ‘ANGER IS HEAT’ (Kövecses 1995, also Goossens 1998; cf. also Shindo 1998-99).
- ★ Cross-modal perception: ‘hot day’ vs. ‘hot pepper’



Cross-linguistic differences

- ★ Not all languages use temperature expressions in other domains. Oceanic languages (Alex François), Pirahã (Dan Everett), Nganasan (Valentin Goussev & Maria Brykina): no uses of temperature words in addition to the straightforward temperature situations.
- ★ Languages differ as to whether they can use ‘hot’ for cross-modal perception: e.g. peppers can be sharp (Russian, German) and strong (Swedish) (cf. Rakova 2003).



Cross-linguistic differences (cont.)

- ✦ Extensions from the temperature domain are dependent on categorization within it. Palula (Henrik Liljegren & Naseem Haider): due to the lack of lexical elaboration within the warmer part of the temperature domain, both metaphors ‘anger is heat’ and ‘affection is warmth’ are realized by one and the same adjective *taatu*, cf. *so taatu miish* ‘He is an angry person’ (lit. ‘He is a hot/warm person’) vs. and *taatu hiRu* ‘generous’ (lit. ‘a hot/warm heart’).
- ✦ Languages can show “unexpected” extensions. Swahili (Il’ja Grountov), Wolof (Michel-Loïc Perrin: ‘nice’ extensions from ‘cool’ rather than ‘warm’ (due to climatic conditions)



Moving from observations towards a systematic cross-linguistic study

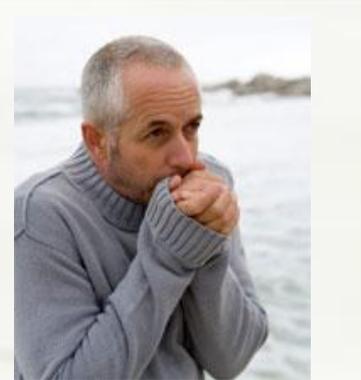
We need

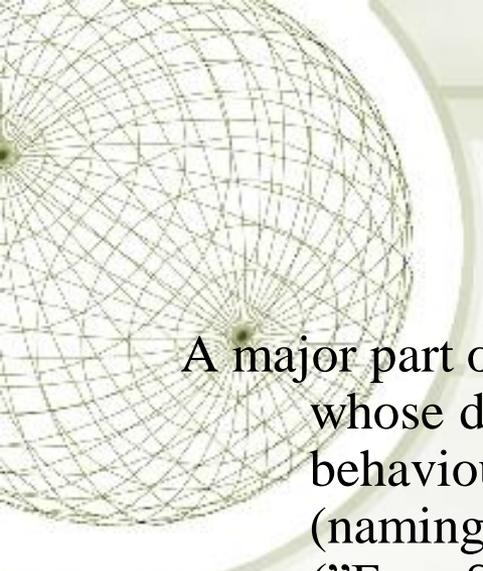
- ★ good methods for data collection, for cross-linguistic identification of studied phenomena and for their (semantic) analysis, and
- ★ reasonable consensus on a meta-language used for semantic explications and on the ways of representing meanings

Methods for data collection: stimuli



Methods for data collection: stimuli





A major part of research on lexical typology has been conducted on domains whose denotation lends itself easily to description by means of simple behaviouristic procedures: body (pointing, e.g., on a picture), colour (naming and classifying coloured chips), motion (describing pictures ("Frog Story"), video clips).

- ☞ "Denotation-based" definitions work differently well for different kinds of situations.
- ☞ The methodologies may be too far from the actual language use.
- ☞ Quine's "Gavagai" problem: how does a learner know what an observed instance of a word used in context refer to?



Parallell texts

ParaSol: A Parallel Corpus of Slavic and other languages http://www.uni-regensburg.de/Fakultaeten/phil_Fak_IV/Slavistik/RPC/

Bulgakov, M. “The Master and Margarita”

Ru: Angličanin, – podumal Bezdomnyj, – iš’, i ne žarko emu v perčatkax.

En: ‘An Englishman...’ thought Bezdomny, ‘Phew, he must be hot in those gloves!’

- ✦ BSX: ...nije mu vručina u rukavicama!
- ✦ Cz: ...že mu není horko v těch rukavičkách!
- ✦ Pl: ...Taki upał, a ten siedzi w rękawiczkach!
- ✦ By: ...i ne gorjača jamu ũ pal’čatkax!
- ✦ Ger: ...daß er nicht schwitzt mit den Handschuhen!
- ✦ Sw.: vad varm han måste vara med sina handskar!



Methods (cont.)

In general, denotation-based methods of data collection and parallel texts neglect the problem of polysemy vs. semantic generality (how to move from an etic definition to an emic one).

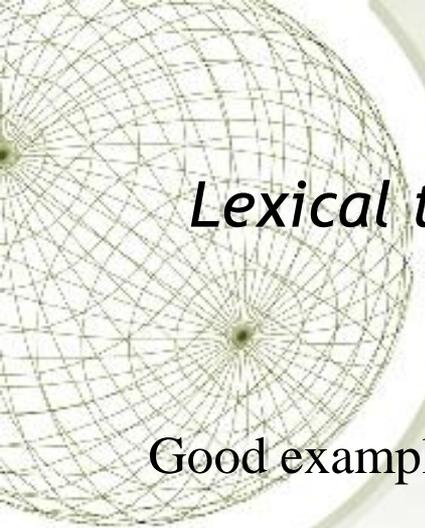
The question is also whether and how we can discover what the different words and expressions really "mean" for the speakers of a particular language.

- Questionnaires of different kinds:
www.ling.su/staff/tamm/tempquest.pdf



HUGE!!!

The issue of meta-language



*Lexical typology as collaboration of specialists with
different research expertise*

Good examples:

- ✦ the aqua-motion and pain projects in Moscow
- ✦ the work of the “language and cognition”-group at MPI in Nijmegen
- ✦ hopefully the temperature project