A. General introduction

B. Lexical hierarchies

C. Lexical motivation

D. Syntagmatic axis

E. Outlook
1. The problem of the *tertium comparationis*

“Any typology requires a language-independent yardstick against which the units under comparison can be measured [...]. This problem is particularly acute in semantic typology [...]” (Evans, in press: 508).

“From a theoretical point of view, the overriding issue for lexical typology concerns the *tertium comparationis*. What are the optimal concepts and categories to support the systematic investigation of lexicons and lexicological phenomena across the world’s languages?” (Goddard, submitted).
1. The problem of the *tertium comparationis*

- language comparison = comparison of linguistic **signs**
- linguistic **signs** = (two?)-level entities
Semiotics in the Saussurean (1916) tradition:

**Fig. 1**

Koch, Lexical typology, 2010-8-24
1.1. Onomasiology and semasiology

Semiotics in the “cognitive semantics” tradition

(e.g. Haiman 1980; Taylor 1999):

![Diagram](image-url)

**Signifier** (expression) **Form** → **Concept**

**Encyclopedic Meaning**
1.1. Onomasiology and semasiology


Fig. 3

Koch, Lexical typology, 2010-8-24
A realistic semiotics, exemplified:

Fr. *viande* ‘meat’ (as opposed to ‘flesh’)

( vs. Fr. *chair*)

all we know about MEAT

Fig. 4
A realistic semiotics, exemplified:

Sp. *carne* ‘meat+flesh’

all we know about MEAT and FLESH
1.1. Onomasiology and semasiology

Semiotic perspectives:

- Sign
- Signifier
- Signified
- Concept

Form: ‘meaning$_1$’

Semasiology

‘meaning$_2$’

Fig. 6
1.1. Onomasiology and semasiology

Semiotic perspectives:

- Sign
- Signifier
- Signified

- Concept
- 'Meaning$_1$'
- 'Meaning$_2$'

Fig. 7a

Koch, Lexical typology, 2010-8-24
1.1. Onomasiology and semasiology

Typological comparison based on **signifying** units:

- **Language A**
  - Signifier
  - Signified
  - Concept

- **Language B**
  - Signifier
  - Signified
  - Concept

Semasiologically based

**E.g.:** Are there languages that have more polysemy than others?

**Fig. 9**
1.1. Onomasiology and semasiology

Typological comparison based on **signifying** units:

**signifier** | **signified**
---|---
**language A** | **language B**

**concept**

**onomasiologically based**

**tertium comparationis**

Fig. 11

Koch, Lexical typology, 2010-8-24
The new discussion on linguistic ‘relativity’:

• Lucy 1992
• Niemeier 2000; Pütz 2000
• Gentner/Goldin-Meadow 2003

cf. also: • Luque Durán 2001: 15-53, 489-541
• Koptjevskaja-Tamm 2008: 13-26
• Evans, in press: 508-511
“For morphosyntactic comparison to be possible, we must hold the meaning constant – at least this must be universal. [...] The question of semantic universals is the most difficult to answer [...]. Translation is generally possible, even if not always straightforward. Notice that for the purpose of typological comparison we do not need identity of strictly linguistic meanings. All we need is some level of meaning at which meanings must be commensurable. [...] as long as there is translatability of simple concepts, comparison should be possible” (Haspelmath 2007: 127f.).
“[...] posing some abstract, ‘universal’ level of semantic representation leaves open the question what kind of meaning-based categories these ‘simple concepts’ belong to. Are they psychologically real or are they theoretical constructs? Are they linguistic or non-linguistic semantic categories? [...] how can we be sure that the translational equivalent in some other language involves the same, rather abstract meaning” (Rijkhoff 2009: 101).
### Conceptual inventories for onomasiological research:

<table>
<thead>
<tr>
<th>denomination</th>
<th>reference</th>
<th>number of concepts</th>
<th>purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Begriffssystem</em></td>
<td>Hallig/Wartburg 1963</td>
<td>over 8,000</td>
<td>dialectological investigation</td>
</tr>
<tr>
<td><em>Dictionnaire onomasiologique des langues romanes</em></td>
<td>Vernay 1991-96 (DOLR)</td>
<td>uncompleted with nearly 3,000</td>
<td>onomasiological systematics</td>
</tr>
<tr>
<td><em>Dictionary of Selected Synonyms in the Principal Indo-European Languages</em></td>
<td>Buck 1949</td>
<td>nearly 1,500</td>
<td>etymology of Indo-European</td>
</tr>
</tbody>
</table>

➤ basis of the Intercontinental Dictionary Series (IDS), edited by EVA Leipzig (Key/Comrie) [http://lingweb.eva.mpg.de/ids/]: 1,310 concepts; 214 languages; → typological research
1.2. Conceptual inventories

Conceptual inventories for onomasiological research:

<table>
<thead>
<tr>
<th>denomination</th>
<th>reference</th>
<th>number of concepts</th>
<th>purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Wörterbuch der vergleichenden Bezeichnungslehre</em></td>
<td>Schröpfer 1979-94</td>
<td>uncompleted with nearly 1,100</td>
<td>recurrent diachronic semantic patterns</td>
</tr>
<tr>
<td>Swadesh list(s)</td>
<td>Swadesh 1955; 1960</td>
<td>2 versions: about 200 and 100</td>
<td>lexicostatistics, glottochronology</td>
</tr>
<tr>
<td><em>Natural Semantic Metalanguage (NSM)</em></td>
<td>Wierzbicka 1996; Goddard, submitted</td>
<td>63</td>
<td>claim for universality</td>
</tr>
</tbody>
</table>
### NSM Primes (Goddard, submitted: Table 1):

<table>
<thead>
<tr>
<th>Term</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>I, YOU, SOMEONE, SOMETHING~THING, PEOPLE, BODY</td>
<td>substantives</td>
</tr>
<tr>
<td>KIND, PART</td>
<td>relational substantives</td>
</tr>
<tr>
<td>THIS, THE SAME, OTHER~ELSE</td>
<td>determiners</td>
</tr>
<tr>
<td>ONE, TWO, SOME, ALL, MUCH~MANY</td>
<td>quantifiers</td>
</tr>
<tr>
<td>GOOD, BAD</td>
<td>evaluators</td>
</tr>
<tr>
<td>BIG, SMALL</td>
<td>descriptors</td>
</tr>
<tr>
<td>KNOW, THINK, WANT, FEEL, SEE, HEAR</td>
<td>mental predicates</td>
</tr>
<tr>
<td>SAY, WORDS, TRUE</td>
<td>speech</td>
</tr>
<tr>
<td>DO, HAPPEN, MOVE, TOUCH</td>
<td>actions, events, movement, contact</td>
</tr>
<tr>
<td>BE (SOMEWHERE), THERE IS, HAVE, BE (SOMEONE/SOMETHING)</td>
<td>location, existence, possession, specification</td>
</tr>
<tr>
<td>LIVE, DIE</td>
<td>life and death</td>
</tr>
<tr>
<td>WHEN~TIME, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT</td>
<td>time</td>
</tr>
<tr>
<td>WHERE~PLACE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE</td>
<td>space</td>
</tr>
<tr>
<td>NOT, MAYBE, CAN, BECAUSE, IF</td>
<td>logical concepts</td>
</tr>
<tr>
<td>VERY, MORE</td>
<td>intensifier, augmentor</td>
</tr>
<tr>
<td>LIKE~WAY</td>
<td>similarity</td>
</tr>
</tbody>
</table>
## 1.2. Conceptual inventories

<table>
<thead>
<tr>
<th>inventory</th>
<th>number of concepts</th>
<th>claim for universality?</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Begriffssystem</em> Hallig/Wartburg</td>
<td>~8,000</td>
<td>no</td>
</tr>
<tr>
<td>DOLR Vernay</td>
<td>~3,000</td>
<td>no</td>
</tr>
<tr>
<td>Buck/IDS</td>
<td>1,300-1,500</td>
<td>no</td>
</tr>
<tr>
<td>Schröpfer</td>
<td>1,100</td>
<td>only with respect to the patterns</td>
</tr>
<tr>
<td>Swadesh list</td>
<td>~200/100</td>
<td>yes, but problematic</td>
</tr>
<tr>
<td>NSM</td>
<td>63</td>
<td>YES!</td>
</tr>
</tbody>
</table>
“[...] semantic molecules are complex meanings which are decomposable into combinations of semantic primes but which function as units in the structure of other, more complex concepts” (Goddard, submitted: section 2.):
1.3. Substantialist vs. relational approach

“[…] semantic molecules must be meanings of lexical units in the language” (Goddard, submitted: section 2.).

“[…] many complex concepts have multiple “nestings” of molecule within molecule” (ibid.).

(63) **universal concepts**

(hundreds of thousands of) **concepts** expressed in languages

---

**Fig. 12**

(63) **NSM primes**

identity

molecule [m]

molecule [m]
1.3. Substantialist vs. relational approach

“[…] a semantic template is a structured set of component types shared by words of a particular semantic class […]” (Goddard, submitted: section 3.)

Fig. 12
1.3. Substantialist vs. relational approach

(1/2/3) *Someone X was drink-/eat-/ñb-ing something Y:* (English/Kamal)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>s.o. X was doing s.th. to s.th. Y with the mouth [m] for some time because of this, s.th. was happening to this s.th. at the same time</td>
</tr>
<tr>
<td>b.</td>
<td>at many times s.o. does s.th. like this to s.th. when it is like this: this s.th. is s.th. like / not like water [m] / Ø this s.o. wants this s.th. to be inside their body</td>
</tr>
<tr>
<td>c.</td>
<td>when s.o. does s.th. like this to s.th. for some time the same thing happens many times it happens like this: this s.o. does s.th. to this s.th. with their mouth [m] because of this, after this, part of this s.th. is for a very short time inside this s.o.’s mouth [m] after this, this s.o. does s.th. else to it with their mouth [m] because of this, after this, it is not inside this s.o.’s mouth [m] anymore, it is somewhere else inside this s.o.’s body for some time</td>
</tr>
<tr>
<td>d.</td>
<td>if s.o. does s.th. like this to s.th. for some time, after some time, all parts of this s.th. can be inside this s.o.’s body</td>
</tr>
</tbody>
</table>

"relational analysis"
1.3. Substantialist vs. relational approach

**tertia comparationis** = substantially based on the (very few) universal concepts

→ ‘substantialist’ approach

(63) universal concepts

(hundreds of thousands of) concepts expressed in languages

identity

molecule [m] template

molecule [m]

(63) NSM primes

→ bottom-up approach

Fig. 12
1.3. Substantialist vs. relational approach

‘substantialist’ approach

(63) universal concepts (hundreds of thousands of) concepts expressed in languages

Is the “substance” correct?

WANT = prime? (cf. Koptjevskaja-Tamm 2008: 26; Evans, in press: 516)
1.3. Substantialist vs. relational approach

identification of a given conceptual field/domain

(hundreds of thousands of) concepts expressed in languages

signifier(s) and signified(s) in particular languages

language 1: Kamal ſb

language 2: E. eat vs. drink

language 3: Germ. essen vs. trinken vs. fressen vs. saufen

Koch, Lexical typology, 2010-8-24
1.3. Substantialist vs. relational approach

identification of conceptual distinctions and constants

→ bottom-up

analysis of conceptual interrelations

(hundreds of thousands of) concepts
expressed in languages

signifier(s) and signified(s) in particular languages

→ ‘relational’ approach

language 1
language 2
language 3

tertia comparationis: depend on relations between concepts

Fig. 13

Koch, Lexical typology, 2010-8-24
1.3. Substantialist vs. relational approach

Relational approach:

Language A

(signifier) signified

Language B

(signifier) signified

conceptual field/domain

onomasiological top-down

Fig. 14a

Koch, Lexical typology, 2010-8-24
1.3. Substantialist vs. relational approach

Relational approach:

Language A

- Signifier
- Signified

Language B

- Signifier
- Signified

Semasiological control (bottom-up)

Concept

Relational analysis

Fig. 14b

Koch, Lexical typology, 2010-8-24
1.3. Substantialist vs. relational approach

‘substantialist’ bottom-up approach vs. ‘relational’ top-down-bottom-up approach

e.g. NSM

- strictly universalist (as for the *tertia*)
- not necessarily universalist (as for the *tertia*), but open to universals
- not simply structural semantics!

- Its application to particular languages ultimately presupposes a previous relational approach

Äußereinzelsprachlichkeit (Heger 1990/91)

Koch, Lexical typology, 2010-8-24
2. Parameters of lexical typology

Lexical typology

- Onomasiological perspective (with semasiological control)
- Semasiological perspective
  - Paradigmatic axis
    - Lexical hierarchies (B.)
  - Syntagmatic axis (D.)
    - Lexical motivation (C.)

- E.g. polysemy

Fig. 15b
2. Parameters of lexical typology

“[…] the characteristic ways in which language […] packages semantic material into words” (Lehrer 1992: 249)

Kamal ſb E. eat Germ. essen
drink trinken
drink fressen
drink saufen

‘denotational range of signs’ (cf. Evans, in press: 511)

paradigmatic “packaging”

Fig. 16b
2. Parameters of lexical typology

“[…] the characteristic ways in which language […] packages semantic material into words” (Lehrer 1992: 249)

E. sibling(s)
Fr. frères et sœurs

syntagmatic
“packaging”

= projection of conceptual material onto single vs. sequences of lexical items
3.1. Introduction: the Hjelmslev example

(cf. Hjelmslev 1957, 104f.)

Fig. 17b

Koch, Lexical typology, 2010-8-24
3.1. Introduction: the Hjelmslev example

Fig. 18

Koch, Lexical typology, 2010-8-24
3.1. Introduction: the Hjelmslev example

Taxonomic hierarchy

concept A

- a B is an A
- concept B
- a D is a B
  - concept D
  - concept E
- concept C
  - concept F
  - concept G

F and G are types of C

Fig. 19

Koch, Lexical typology, 2010-8-24
3.1. Introduction: the Hjelmslev example


Fig. 20
3.1. Introduction: the Hjelmslev example

Fr. *bois*  
(concept Y)

Fr. *forêt*  
(concept Z)
3.1. Introduction: the Hjelmslev example

Granularity divergences within a taxonomic hierarchy

Y and Z are types of X

Concept Y

Concept Z

Coarse-grained: Danish, German

Fine-grained: French

(Cf. Koch 1998; 2005)
### 3.1. Introduction: the Hjelmslev example

**The typological relevance of taxonomic granularity**

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan.</td>
<td>skov</td>
</tr>
<tr>
<td>Germ.</td>
<td>Wald</td>
</tr>
<tr>
<td>Lat.</td>
<td>silva</td>
</tr>
<tr>
<td>Russ.</td>
<td>l’es</td>
</tr>
<tr>
<td>Anc.Gr.</td>
<td>hýlē</td>
</tr>
<tr>
<td>Mod.Gr.</td>
<td>ḍásos</td>
</tr>
<tr>
<td>Hung.</td>
<td>erdő</td>
</tr>
<tr>
<td>Jap.</td>
<td>mori</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fr.</td>
<td>bois</td>
</tr>
<tr>
<td>E.</td>
<td>wood(s)</td>
</tr>
<tr>
<td>Ital.</td>
<td>bosco</td>
</tr>
<tr>
<td>Sp.</td>
<td>monte</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fr.</td>
<td>forêt</td>
</tr>
<tr>
<td>E.</td>
<td>forest</td>
</tr>
<tr>
<td>Ital.</td>
<td>foresta</td>
</tr>
<tr>
<td>Sp.</td>
<td>selva</td>
</tr>
</tbody>
</table>

(cf. Koch 2005)

Fig. 23
3.1. Introduction: the Hjelmslev example

\[
\begin{array}{c|cc|c}
 & Baum & arbre \\
træe & & \\
Holz & & bois \\
skov & Wald & forêt \\
\hline
\end{array}
\]

(Danish) (German) (French)

Fig. 24

Koch, Lexical typology, 2010-8-24
3.1. Introduction: the Hjelmslev example

A taxonomic relation?

Dan. *træ*?

(concept \( X = ? \))

Y and Z are types of \( X \) (?)

Fr. *arbre* / Germ. *Baum*   Fr. *bois* / Germ. *Holz*

(concept \( Y: \) TREE)     (concept \( Z: \) WOODEN MATERIAL)

Fig. 25

3.1. Introduction: the Hjelmslev example

Aristotle: \((\text{sýn})\text{engys}\)
‘close, contiguous’

‘Engynomic’ hierarchy

Fig. 27

Koch, Lexical typology, 2010-8-24
(c.f. Koch 1999)
3.1. Introduction: the Hjelmslev example

Typological relevance of ± polysemy within ‘engynonomic’ hierarchies ➔ 5.1.
3.1. Introduction: the Hjelmslev example

Fig. 28b

Typological relevance of ± polysemy within ‘engynomic’ hierarchies $\Rightarrow$ 5.1.
3.2. Taxonomic vs. engynomic hierarchies

(Danish) (German) (French)

træ Baum Holz forêt

Baum arbre Holz bois

skov Wald forêt

engynomic divergence
taxonomic granularity
3.2. Taxonomic vs. engynonomic hierarchies

onomasiological perspective (with semasiological control)

paradigmatic axis

lexical hierarchies (B.)
taxonomic dimension (4.)

lexical motivation (C.)

engynonomic dimension (5.)

syntagmatic axis (D.)
3.2. Taxonomic vs. engynomic hierarchies

**lexical hierarchies**

- **taxonomic dimension**
  - conceptual ‘fields’
  - extension of categories
  - categorization
  - relations of inclusion
  - “Y is a X”, “Y and Z are X”

- **engynomic dimension**
  - conceptual ‘domains’
  - frames
  - joint lexicalization
  - relations of contiguity
  - “Y is part of X”, “Y and Z are part of X”, “Y (and Z) belong(s) to X”, etc.

Fig. 30

Koch, Lexical typology, 2010-8-24
Task 1 for students

conceptual field/domain HAIR
Task 1 for students: HAIR

Fig. 31a

→ HEAD

FILAMENT GROWING FROM THE SKIN

Fig. 31b

→ BEARD

Fig. 31c

→ ANIMAL

→ HUMAN BODY

Koch, Lexical typology, 2010-8-24
A **taxonomic** problem for lexical typology: **HAIR** as a conceptual field

<table>
<thead>
<tr>
<th>→ HEAD</th>
<th>→ BEARD</th>
<th>→ H. BODY</th>
<th>→ ANIMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swahili <em>unywele</em></td>
<td>Swahili <em>udevu</em></td>
<td>Swahili <em>laika</em></td>
<td>Swahili <em>(u)nyoya</em></td>
</tr>
<tr>
<td>Guaraní <em>ava / acárague</em></td>
<td>Guaraní <em>tendîvá</em></td>
<td></td>
<td>Guaraní <em>tagué</em></td>
</tr>
<tr>
<td>Fr. <em>cheveu</em></td>
<td></td>
<td>Fr. <em>poil</em></td>
<td></td>
</tr>
</tbody>
</table>

E. *hair*
Questions with respect to the taxonomic level:

1. To which taxonomic type belong(s)
   – your mother tongue?
   – the language(s) of your speciality?

2. Are there other types in your material?

3. Is there some kind of implicational hierarchy with respect to the taxonomic distinctions? Possible explanation?
An *engynomic* problem for lexical typology: HAIR as a conceptual domain

Fig. 32a  Fig. 32b

Koch, Lexical typology, 2010-8-24
Fig. 33b

Frame: AGGREGATE OF HAIRS

E. hair

contiguity

Element: SINGLE HAIR

E. hair

metonymic polysemy

Task 1 for students: HAIR

Koch, Lexical typology, 2010-8-24
Task 1 for students: HAIR

Frame: AGGREGATE OF HAIRS
(Fr. cheveux (PL))

Element: SINGLE HAIR
(Fr. cheveu)

contiguity
Questions with respect to the engynonomic level:

1. To which engynonomic type belong(s)
   – your mother tongue?
   – the language(s) of your speciality?

2. Why seems joint lexicalization of SINGLE HAIR and of AGGREGATE OF HAIRS so “natural”?
4.1. Case study I: KINSHIP terms

The SIBLING section of the KINSHIP field:

<table>
<thead>
<tr>
<th>Malay</th>
<th>[born of the same parents] saudara</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.</td>
<td>sibling</td>
</tr>
<tr>
<td>[female]</td>
<td>sister</td>
</tr>
<tr>
<td>[male]</td>
<td>brother</td>
</tr>
<tr>
<td>Fr.</td>
<td>sœur</td>
</tr>
<tr>
<td></td>
<td>frère</td>
</tr>
<tr>
<td>Hung.</td>
<td>növér</td>
</tr>
<tr>
<td>[elder]</td>
<td>néne</td>
</tr>
<tr>
<td>[younger]</td>
<td>hug</td>
</tr>
<tr>
<td>[younger]</td>
<td>öcs</td>
</tr>
<tr>
<td></td>
<td>[elder] bátya</td>
</tr>
<tr>
<td>Malay</td>
<td>kakak</td>
</tr>
<tr>
<td></td>
<td>adik</td>
</tr>
<tr>
<td></td>
<td>abang</td>
</tr>
<tr>
<td>Jap.</td>
<td>[+own] ane</td>
</tr>
<tr>
<td></td>
<td>[–own] imōto</td>
</tr>
<tr>
<td></td>
<td>[+own] onē-san</td>
</tr>
<tr>
<td></td>
<td>[–own] imōto-san</td>
</tr>
<tr>
<td></td>
<td>[+own] ōtōto</td>
</tr>
<tr>
<td></td>
<td>[–own] ōtōto-san</td>
</tr>
<tr>
<td></td>
<td>[+own] ani</td>
</tr>
<tr>
<td></td>
<td>[–own] onīsan</td>
</tr>
</tbody>
</table>

Fig. 34 (cf. Ullmann 1966: 251f.; Greenberg 1980; Baldinger 1984; Koch 2001: 1145; Evans, in press: 508-511)
4.2. Case study II: LOCATIVE predicates

(4a) E. The book is on the table.
(4b) Germ. Das Buch liegt auf dem Tisch.

(5a) E. The cup is on the table.
(5b) Germ. Die Tasse steht auf dem Tisch.

(6a) E. The picture is on the wall.
(6b) Germ. Das Bild hängt an der Wand.

etc.

(cf. Ameka/Levinson 2007)
4.2. Case study II: LOCATIVE predicates

verbless construction: Saliba

game verb:
- copula: English, Tamil, Chukchi, Tiriyó
- locative/existential verb: Japanese, Ewe, Yukatek, Lavukaleve

3-7 verbs:
- postural verbs: Arrern-te, Dutch, Goemais
- ground-space verbs: Tidore

9-100 postural verbs: Tzeltal, Zapotec, German, Laz, Likpe

(cf. Ameka/Levinson 2007)
5.1. Case study III: TREE—WOODEN MATERIAL—LAND COVERED WITH TREES

5.1. Case study III: TREE—WOODEN MATERIAL—LAND COVERED WITH TREES

Solution of 66% of the language sample studied in Witkowski et al. 1981
5.1. Case study III: TREE—WOODEN MATERIAL—LAND COVERED WITH TREES


Rather rare:
French, Breton, English (\textit{wood(s)}) [Old Irish]
5.2. Case study IV: ± causative verbs

+Causative/–causative alternation

(7) Germ. *Das Parlament hat die Gesetze geändert.*

\[
\begin{align*}
S &= (\text{PROTO-})\text{AGENT} \\
\text{DO} &= (\text{PROTO-})\text{PATIENT}
\end{align*}
\]

‘Parliament has changed the laws.’

(8) Germ. *Die Gesetze haben sich geändert.*

\[
\begin{align*}
S &= (\text{PROTO-})\text{PATIENT}
\end{align*}
\]

‘The laws have changed.’

Koch, Lexical typology, 2010-8-24
Lexical +causative/–causative alternation

(9) Fr. *Le parlement a changé les lois.*

\[
\begin{align*}
S &= \quad \text{(PROTO-)AGENT} \\
\text{DO} &= \quad \text{(PROTO-)PATIENT} \\
\end{align*}
\]

‘Parliament has changed the laws.’

(10) Fr. *Les lois ont changé.*

\[
\begin{align*}
S &= \quad \text{(PROTO-)PATIENT} \\
\end{align*}
\]

‘The laws have changed.’

Koch, Lexical typology, 2010-8-24
5.2. Case study IV: ± causative verbs

Frame: CHANGE$^{+}\text{caus}$
Germ. ändern

Element: CHANGE$^{-}\text{caus}$
Germ. sich ändern

contiguity
5.2. Case study IV: ± causative verbs

Frame: \( \text{CHANGE}^{+\text{caus}} \)
Fr. \textit{changer}

Element: \( \text{CHANGE}^{-\text{caus}} \)
Fr. \textit{changer}

contiguity

metonymic polysemy

(cf. Koch 2005: 24-28)
5.2. Case study IV: ± causative verbs

**Lexical ±causative alternation**

<table>
<thead>
<tr>
<th>sample: 21 languages</th>
<th>concepts tested: 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>25</td>
</tr>
<tr>
<td>Modern Greek</td>
<td>16.5</td>
</tr>
<tr>
<td>German</td>
<td>9.5</td>
</tr>
<tr>
<td>French</td>
<td>8</td>
</tr>
<tr>
<td>Lezgian</td>
<td>5</td>
</tr>
<tr>
<td>Romanian</td>
<td>3</td>
</tr>
<tr>
<td>Udmurt</td>
<td>2.5</td>
</tr>
<tr>
<td>Hindi-Urdu</td>
<td>2</td>
</tr>
<tr>
<td>Arabic, Hebrew</td>
<td>1</td>
</tr>
<tr>
<td>Finnish, Japanese, Lithuanian</td>
<td>0.5</td>
</tr>
<tr>
<td>Armenian, Georgian, Indonesan, Mongolian, Russian, Swahili, Turkish, Hungarian</td>
<td>0</td>
</tr>
</tbody>
</table>
## 5.2. Case study IV: ± causative verbs

**Lexical ±causative alternation**

<table>
<thead>
<tr>
<th>Sample: 80 languages</th>
<th>Concepts tested: 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ossetic</td>
<td>9</td>
</tr>
<tr>
<td><strong>German, Hausa, Mandarin, Thai</strong></td>
<td>5,5–6</td>
</tr>
<tr>
<td>Efik, <strong>Lezghi</strong></td>
<td>4,5–5</td>
</tr>
<tr>
<td><strong>Greek, Nharo, Piro, Portuguese</strong></td>
<td>4</td>
</tr>
<tr>
<td>Drehu, Siberian, Tibetan, Yupik</td>
<td>2,5–3</td>
</tr>
<tr>
<td>Fula, Garawa, Knwme, Malay, Ngbandi, Tolai, Tunica, Vietnamese</td>
<td>1,5–2</td>
</tr>
<tr>
<td>Araona, Arabic, Ewe, Ingush, Kolami, Martuthunira, Mixe, Neneta , Nunggubuyu, Papago, Seneca, Tiwi, Warao, Western Desert, Yagaria, Yimas</td>
<td>0,5–1</td>
</tr>
<tr>
<td>(42 languages)</td>
<td>0</td>
</tr>
</tbody>
</table>

(numbers according to Nichols et al. 2004)