Language Typology and Language Universals
Sprachtypologie und sprachliche Universalien
La typologie des langues et les universaux linguistiques

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XI. Lexical typology
Lexikalische Typologie
La typologie lexicale

85. Lexical typology from a cognitive and linguistic point of view

1. Is there such a thing as lexical typology?

In 1957, Joseph H. Greenberg enumerated the following six classes of linguistic typologies: "phonologic, morphologic, syntactic, those pertaining to canonic form [i. e. word classes, phonemic morpheme structures etc.], semantic, and symbolic [including onomatopoeia etc.]" (71). Morphological, syntactic, and even phonological typology is well established (→ Art. 48–84; 94–98). By 'semantic', Greenberg clearly means 'lexical-semantic', but we may wonder if a (lexical-)semantic typology exists at all, because the lexicon seems to be too full of interlingual diversity and of idiosyncrasies to lend itself to systematic typological studies.

As soon as 1953, Ullmann had sketched "a linguistic typology based on semantic features" (1953: 237), a proposal he took up again in his fundamental 1963 article on "Semantic universals" (²1966), putting forward "[...] four [...] features [...] – motivation, generic *versus* specific terms, polysemy, and homonymy –" that "may, if studied on a suitable scale, yield criteria for linguistic typology" (237 f.; for the application of these criteria see sections 4., 3.2.1./3., 6.1., and 6.2.).

Less optimistic, the Praguian typologist Vladimír Skalička claims "dass es nicht möglich ist, die Verschiedenheiten des Wortschatzes mit den typologischen Methoden zu beschreiben" (1965: 152). Interestingly, though, what he underlines is not the above-mentioned too great diversity, but the too great similarity of languages, that he takes for granted on onomasiological grounds: "Für jede Sprache gibt es dieselbe Aussenwelt und so auch dieselbe Basis des Wortschatzes. [...] Die Unterschiede in der Konstruktion [sc. der lexikalischen Systeme] unterliegen unbedeutenden Schwankungen, die mit Hilfe der Statistik behandelt werden können" (1965: 157; this opinion does not prevent Skalička from furnishing several excellent examples for what will be discussed in 3.3.1., 4.4.2., and 6.1.).

As to the tension between lexical diversity and similarity, a potential new stimulus for typology could have been simply the reorientation of language typology towards language universals research (cf. Greenberg 1966b, with substantial clues for lexical typology: esp. 100–111; cf. also Lehrer 1974: 150–172; see below 3.2.2.). Still, it is symptomatic that lexical typology received important inspirations especially from the "safe" borderland between grammatical typology and lexicology (cf. Plank 1984; Müller-Gotama 1992; Lehmann 1990; Rijkhoff 2000; Antinucci 1977; Geisler 1988; Bossong 1998; Lyons 1967; Hengeveld 1992; Heine 1997; Feuillet 1998; see below 5.1./2.). Undeniably, a further, though limited, encouragement for lexical typologists came from Cognitive Semantics (cf. Talmy 1985 and 1991; see below 5.2.1.). Yet, lexical-typological studies remained *disiecta membra*.

So, in 1992 Lehrer still deplored (249 f.) that lexical typology was not mentioned in the two recent linguistic encyclopedias Crystal 1987 and Newmeyer 1988. The same holds for Glück 1993. Similarly, a few years ago,

König (1996: 48) and Lang (1996: 314) found lexical typology still in its infancy.

We should not neglect, however, the less spectacular contributions of (even traditional) contrastive and structural linguistics and of anthropology to lexical typology (see also below 3.2.1., 3.3.3., 4.4.2., 5.1., 5.2., and 6.). After all, a first – at that time up-to-date – synthesis of what could be called 'lexical typology' was written, not surprisingly, from the point of view of contrastive linguistics (Schepping 1985).

In order to systematize relevant problems and achievements, we first have to define the central task of lexical typology and then relate it to essential aspects of human language and of language studies. As Lehrer puts it, lexical typology is concerned with "the characteristic ways in which language [...] packages semantic material into words" (1992: 249). More precisely, problems of lexical typology are only a subset of the problems linked to the universal of 'discursivity', as defined by Oesterreicher: "In meinen Augen ist die Diskursivität insofern als der für jede ernstzunehmende typologische Forschung unverzichtbare Grundbegriff zu betrachten, als mit ihm notwendig die Betrachtung der Prinzipien der *Verknüpfung* von Inhaltsprozessen mit Ausdrucksprozessen gefordert ist, als mit ihm die Zeichenbildung auf allen relevanten Ebenen der sprachlichen Strukturierung ins Zentrum rückt" (1989: 241 f.). In the realm of lexical typology, the connection between content (i. e. conceptual) processes and expression processes is always considered in relation to the linguistic unit of the lexeme – in a positive and in a negative sense: languages also can diverge in that one of them uses a particular, single lexeme where the other uses a more complex word, a lexeme belonging to another part of speech, a sequence of lexemes, etc. (see 4.4.2., 5.). The problems of lexical typology, then, can be systematized with respect to current parameters of linguistic investigation (s. section 2., Figure 85.1).

Quite in Ullmann's tradition, this article will not deal with "the semantics of so-called 'form-words' – pronouns, articles, conjunctions, prepositions, etc. – which, though they behave like words in some respects, have a purely grammatical function and do not therefore belong to the lexical system of a language" (1966: 219).

2. Parameters of lexical typology

Universals and typology are currently regarded as complementary. Nevertheless, two different emphases have to be distinguished: first of all, comparative semanticists can search mainly for substantial lexical universals without denying divergences in detail (cf. already Ullmann 1966: 249 f., and especially Anna Wierzbicka's works as, e. g. 1996; 1999; Goddard/Wierzbicka 1994; → Art. 87); secondly – and that will be the concern of the present article –, they can note the lexical differences, reveal typological similarities and alliances and finally search for underlying general principles and relational, often implicational, universals (as for the importance of implicational universals, cf. Greenberg et al. 1966, xix f.; Coseriu 1975; Croft 1990: 44–63; with special regard to lexical typology: Ullmann 1966: 220).

Any contrastive and typological study of languages presupposes a *tertium comparationis*. When the linguistic objects under examination are signifying units, i. e. signs (lexemes or grammemes), it is difficult to find a *tertium* based on the *signifiant* and to carry out a semasiological-typological investigation. In opposition to this, it is natural to take semantic, conceptual *tertia* and to conduct the investigation from an onomasiological perspective (for a sound 'noematic' methodology in terms of *Außereinzelsprachlichkeit*, cf. Heger 1990/91). As shown in Figure 85.1, lexical typology, too, will be implemented primarily from an onomasiological perspective (3., 4., and 5.), whereas semasiological considerations will be of minor importance in this field, though not totally absent (6.). The onomasiological perspective will be subdivided according to the distinction between the paradigmatic and the syntagmatic axis (for further subdivisions, see the sections indicated in Figure 85.1). In theory, the synchrony-diachrony dichotomy could apply as well, but the present article will be limited to synchronic issues, though diachronic implications will emerge repeatedly.

As for the 'cognitive' approach, the ultimate three cognitive relations underlying all semantic relations and patterns in the lexicon are the associative relations of 'contiguity', 'similarity', and 'contrast' (cf. Jakobson 1956; Raible 1981; Koch 1991: 284; 1999a: 140 ff.; 2001a; Blank 1997: 131–156). Starting with these primitives, we can generate all the other cognitively fundamental principles: 'frame'

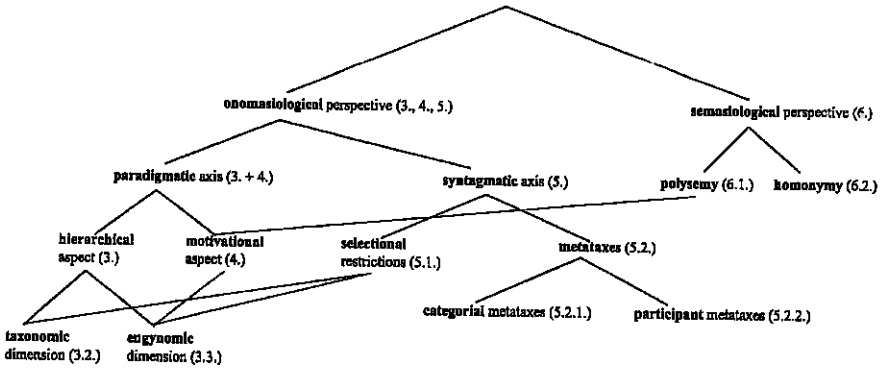


Fig. 85.1: Parameters of lexical typology

and 'prototype' (for these two concepts, cf. e. g. Fillmore 1975; 1985; Rosch 1978; Taylor 1995: 38–92; Kleiber 1990; Barsalou 1992; Ungerer/Schmid 1996: 1–113, 205 ff.; Koch 1996; 1999 a; see also below 3.1., (ii)); 'metaphor' (cf. Bühler 1965: 342–350; Black 1977; Lakoff/Johnson 1980; Koch 1994), and 'taxonomy' (see below 3.1., (i)).

3. Onomasiological perspective: paradigmatic axis: hierarchical aspect

Without doubt, the richest domain of lexical typology is the onomasiological investigation on the paradigmatic axis, which is concerned with the organizational principles of conceptual material with respect to single lexical units. We have to distinguish between the hierarchical aspect (3.) and the motivational aspect (4.). The hierarchical aspect consists in exploring how the cognitive "material" is organized with respect to conceptual hierarchies.

3.1. Types of conceptual hierarchies

To obtain valid observations in this field, we have to strictly distinguish between two fundamental hierarchical dimensions: taxonomic hierarchies and relations (i) and engynomic hierarchies and relations (ii).

(i) As shown in Figure 85.2, taxonomic relations are: (a) relations of conceptual inclusion between a superordinate concept and subordinate concepts (e. g. between TREE on the one hand and OAK, FIR, or APPLE-TREE on the other, the latter belonging to different particular frames); (b) relations of co-taxonomic similarity between subordinate concepts of the same superordinate concept (e. g. between OAK and FIR, OAK and APPLE-TREE etc.). In view of the fact that prototype theory severely criticizes traditional logical-taxonomic semantics (cf. Taylor 1995: 22–58; Kleiber 1990: 21–117), it has to be stressed that even prototype theory – especially with regard to basic levels and 'folk taxonomies' – rests on the principle of taxonomy as such (even though in an attenuated and "chastened" form). Taxonomic hierarchies in this sense undeniably constitute one basic dimension of onomasiological-paradigmatic lexical typology (see 3.2.). In the following, I call the conceptual complex corresponding to a taxonomic hierarchy '(taxonomic) field'.

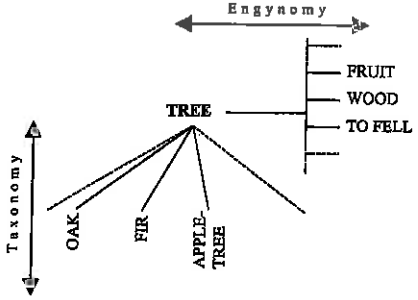


Fig. 85.2: Taxonomy and engynomy (example TREE)

(ii) The term 'engynomy' derives from Anc. Gr. *ἐγγύς* 'near, close' (cf. *τὸ σύνεγγυς* 'the contiguous (thing)' in Aristotle, *De memoria et reminiscentia*, 451b: 18–22). As exemplified in Figure 85.2, engynomic relations are: (a) contiguity relations between a conceptual/perceptual frame and its elements (e. g. between TREE on the one hand and FRUIT, WOOD, or TO FELL on the other); (b) contiguity relations between elements of the same frame (e. g. between FRUIT and WOOD, WOOD and TO FELL etc.; these examples show that TOTUM-PARS relations and PARS-PARS relations, i. e. 'partonomies', are only one type of engynomic relations). Engynomic relations in this sense constitute another basic dimension of onomasiological-paradigmatic lexical typology (see 3.3.). In the following, I call '(engynomic) domain' the conceptual complex corresponding to an engynomic hierarchy (cf. Koch 1998: 120 ff.; 1999a: 144–153; 2001b).

Table 85.1: SIBLING section of the KINSHIP field

Malay	[born of the same parents] *saudara*							
E.	[female] *sister*				[male] *brother*			
Hung.	*nővér*				*fivér*			
	[elder] *néne*		[younger] *hug*		[younger] *öcs*		[elder] *bátya*	
Malay	*kakak*		*adik*				*abang*	
Jap.	[own] *ane*	[other's] *imōto*	[own] *onēsan*	[other's] *imōtosan*	[own] *ōtōto*	[other's] *ōtōtosan*	[own] *ani*	[other's] *onīsan*

Without doubt, the richest domain of lexical typology is the onomasiological investigation on the paradigmatic axis, which is concerned with the organizational principles of conceptual material with respect to single lexical units. We have to distinguish between the hierarchical aspect (3.) and the motivational aspect (4.). The hierarchical aspect consists in exploring how the cognitive "material" is organized with respect to conceptual hierarchies.

(Note, with respect to Cruse 1986: 136–180, that 'taxonomy' here includes natural kinds as well as nominal kinds and that 'engynomy' comprises much more than 'meronomy/partonomy').

3.2. Taxonomic dimension

When describing the taxonomic dimension, lexical typology can naturally take advantage of the experiences of Structural Semantics and Componential Analysis, as developed in the European linguistic tradition since the 1830s (Trier 1931; Hjelmslev 1957; Pottier 1964; Greimas 1966; Coseriu/Geckeler 1981; cf. also Schepping 1985: 185). An emblematic example of relevant "structurations" differing between languages is the taxonomic field of KINSHIP (see the SIBLING section of this field represented for some languages in Table 85.1; cf. Steinthal/Misteli 1893: 1 f.; Hjelmslev 1957: 104; Ullmann 1966: 251 f.; Baldinger 1984: 83). 'Structuration' in this sense means 'taxonomic organization' of lexical units (for the examples in Tables 85.1 and 85.2, cf. Koch 1998: 114 f.; 2000: 101 f.).

3.2.1. Taxonomic interlingual divergence patterns

We can establish a systematics of interlingual divergence patterns in the taxonomic organization of lexical units. According to a first pattern (TAXOα), one language type A and another language type B disagree by choosing, within a given taxonomic hierarchy, different levels of abstraction to organize conceptual material, i. e., type B is taxonomically more fine-grained than type A (cf. Ullmann 1966: 227 ff.; Schwarze 1983: 204): e. g., type A = Malay *saudara* (but see below for more details) vs. type B = E. *sister*/*brother*; or type A = English vs. type B = Jap. *ane*/*imōto*/*onēsan*/etc., as illustrated in Table 85.1; (cf. Table 85.2: type A = English, German, Rumanian etc. vs. type B = Latin, French, ... Hopi, ..., Swahili; as to the differences within type B, see pattern TAXOγ below):

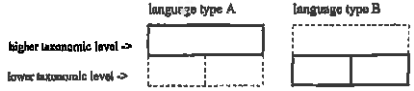


Fig. 85.3: Taxonomic interlingual divergence pattern TAXOα

According to a second pattern (TAXOβ), one language type A may lexicalize at the same time two (or more) different taxonomic levels, whereas another language type B displays only one – either the more fine-grained or

the less fine-grained type (e. g., type A = Hung. *nővér/fivér* and *néne/hug/bátyalőcs* vs. type B_1 = E. *sister/brother*, as illustrated in Table 85.1; note that Hung. *nővér* and *fivér* are neologisms of about 1840):

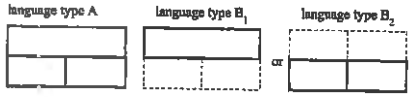


Fig. 85.4: Taxonomic interlingual divergence pattern TAXOβ

The divergence pattern TAXOβ can apply recursively. According to Table 1, Malay is type A in comparison to English. However, E. *brother/sister* corresponds to type B_1 with respect to Malay *kakak/adik/abang*, but to type B_2 with respect to Malay *saudara*.

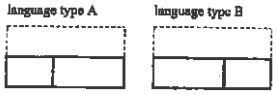


Fig. 85.5: Taxonomic interlingual divergence pattern TAXOγ

According to a more intricate taxonomic interlingual divergence pattern (TAXOγ: Figure 85.5), one language type A and another language type B – both equally fine-grained – disagree by organizing conceptual material differently at the same level of abstraction of a taxonomic hierarchy (e. g. Latin vs. French, Ital., etc. vs. Hopi, Guaraní vs. Swahili according to Table 85.2).

So far, taxonomic interlingual divergence was a matter of lexical invariance and differentiation at distinct levels of abstraction (in

Table 85.2: HAIR (cf. also Geckeler 1993: 162; Koch, P., 2000: 102)

	→ HEAD	→ BEARD	→ HUMAN BODY	→ ANIMAL
E.	*hair*			
Germ.	*Haar*			
Rum.	*păr*			
Russ.	*vólos*			
Bret.	*bleven*			
Arab.	*ša'ra*			
Itza (Maya)	*tzo'otz(el)*			
Basque	*ilelbilo* (dialectal variants)			
Lat.	*capillus*		*pilus*	
Fr.	*cheveu*	*poil*		
Ital.	*capello*	*pelo*		
Hung.	*hajszál*	*szőrszál*		
Turk.	*saç*	*kıl*		
Jap.	*kami (no ke)*	*ke*		
Hopi	*höömi*	*sowitsmi*	*pöhö*	
Guaraní	*avalacäragüe*	*tendïvá*	*tagué*	
Swah.	*unywele*	*udevu*	*laika*	*nyoyalunyoya*

pattern TAXOα, e. g., type A displays lexical invariance at one level, whereas the fine-grained type B displays differentiation at the next lower level, etc.). In these cases, it is sound to interpret lexical invariance not as polysemy but, like Structural Semantics would do, as monosemy (thus, for E. *sister* in Table 85.1 we would not postulate two senses 'elder female sibling' and 'younger female sibling', but only one sense 'female sibling'). There is also a type of lexical invariance that covers two levels of abstraction in a taxonomic hierarchy, as with B_1 in language type B in Figure 85.6:

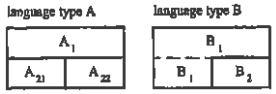
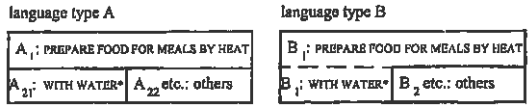


Fig. 85.6: Taxonomic interlingual divergence pattern TAXOδ

In the taxonomic field HUMAN BEING, for instance, English is a type B language with B_1 = *man* (expressing the concepts HUMAN BEING as well as MALE HUMAN BEING) and B_2 = *woman*, in contrast to German as a type A language with A_1 = *Mensch*, A_{21} = *Mann*, and A_{22} = *Frau*. In this taxonomic field, other type B languages are especially Romance languages, except Rumanian (e. g. Fr. B_1 = *homme*; B_2 = *femme*). Other type A languages are: Mod.Gr. A_1 = *ánθropos*, A_{21} = *ándras*, A_{22} = *jinéka*; Lat. A_1 = *homo*, A_{21} = *vir*, A_{22} = *mulier*; Rum. A_1 = *om*, A_{21} = *bărbat*, A_{22} = *femeie*; Russ. A_1 = *čelov'ék*, A_{21} = *mužčina*, A_{22} = *ženščina*; Hung. A_1 = *ember*, A_{21} = *férfi*, A_{22} = *nő, asszony*; Turk. A_1 = *insan, adam*, A_{21} = *erkek*, A_{22} = *kadın*; Arab. A_1 = *'insān*, A_{21} = *ragul*, A_{22} = *'imra'a* (cf. also, for other concepts, Schwarze 1983, 206 f.).

A pattern somewhat analogous to Figure 85.6 occurs in "culinary" verb semantics (cf. Lehrer 1974, 155–167):



* or WATER-BASED LIQUID (WINE, STOCK, MILK ...)

Fig. 85.7: Vertical lexical differenciation vs. vertical polysemy in culinary verb semantics

Type A languages are, for instance: English (A_1 = *to cook*; A_{21} = *to boil*); French (A_1 = *cuire*; A_{21} = *(faire) bouillir*); Persian (A_1 = *poxtæn*; A_{21} = *jusandæn*); Japanese (A_1 = *ryōri-suru, nitaki*; A_{21} = *niru*); Navaho (A_1 = *chi'yáán 'alnéézhgo*; A_{21} = *shibéezhgo*). Type B languages are, for instance: German (B_1 = *kochen*); Polish (B_1 = *gotawać*); Yoruba (B_1 = *sè*). Chinese, e. g., is mixed (A_1/B_1 = *pengjen*; A_{21} = *chŭ*).

To summarize, language type A in Figures 85.6 and 85.7 is characterized by a 'vertical lexical differentiation' A_1/A_{21}, whereas language type B shows a 'vertical polysemy' (Gévaudan, ms.) in B_1. In the field of culinary verb semantics, vertical polysemy is clearly motivated by the prototypical status of PREPARING FOOD FOR MEALS BY HEAT WITH WATER = BOILING within the taxonomy PREPARING FOOD FOR MEALS BY HEAT (due perhaps to the highly cultural character of BOILING, doubly mediated by water and by the recipient: cf. Lévi-Strauss 1964: 21–24). Nevertheless, the analysis in terms of polysemy of B_1 surely is preferable to the structuralist analysis in terms of monosemy of B_1, based on an 'inclusive opposition' between the unmarked lexeme B_1 (meaning '(male) human being') and the marked lexeme B_2 (meaning 'female human being') (cf. Coseriu/Geckeler 1981, 57 n. 103). Indeed, we can distinguish, even within the paradigmatic lexical organization of a type B language system, two senses of B_1 bound together with two different series of oppositions (cf., e. g., E. *man* /vs./ *animal, plant* etc. on the one hand and *man* /vs./ *woman, child* etc. on the other; Germ. *kochen* /vs./ *backen, brauen* etc. and *kochen* /vs./ *braten, grillen* etc.).

3.2.2. Universals and hierarchies

The taxonomic interlingual divergence patterns discussed in 3.2.1. are of a very general, undoubtedly universal nature and independent of particular taxonomic fields. The question is whether we can formulate less abstract generalizations concerning individual taxo-

nomic fields. In this respect, Structuralism was rather inclined to stress the idiosyncrasies of lexicalization in particular languages (cf. esp. Hjelmslev 1957; Coseriu/Geckeler 1981: 21–27). It is obvious that this point agrees largely with Wilhelm v. Humboldt's concept of *innere Sprachform* (Humboldt 1979: 463 ff.; cf. Trabant 2000) and with elements of the Whorfian Hypothesis (Whorf 1956). It is undeniable that the individual "fingerprint" of any particular language has to be respected as a product of historical and cultural circumstances in its own right (cf. also Lehrer 1974: 169 f.; publications of the last few years have given a fresh impulse to discussions on linguistic relativity: cf. Gumperz/Levinson 1996; Niemeier/Dirven 2000; Pütz/Verspoor 2000). Nevertheless, cautious – often implicational – generalizations are not impossible and do not necessarily contradict language diversity in the realm of the lexicon.

In particular, interesting generalizations have been formulated for kinship terms, for colour terms, for culinary terms verb semantics, and for dimension terms.

The more or less fine-grained character of taxonomic distinctions seems to depend, interlingually and intralingually, at least in part on: 1° factual universals, 2° implicational distance hierarchies, and 3° implicational markedness hierarchies (note that for the sake of terminological precision we have to distinguish taxonomic and engynomic 'hierarchies' as relational principles from 'implicational hierarchies' as assessment principles; in 2° and 3° in the following, we are concerned with implicational hierarchies in relation to taxonomic hierarchies).

1° Factual universals. Kroeber (1909) reduced the hundreds or thousands of conceivable relationships in the taxonomic field of kinship concepts to eight fundamental underlying dimensions: 1. *generation*; 2. *consanguineal vs. affinal*; 3. lineal or collateral; 4. *sex of relative*; 5. sex of connecting relative; 6. sex of speaker; 7. age in generation; 8. condition of life of connecting relative. Kroeber already identified two language types in relation to these dimensions: the "European" type (represented by English) expressing a smaller number of dimensions, but more completely (i. e. in larger parts of the kinship vocabulary) vs. the "American Indian" type expressing a greater number of dimensions, but less completely (i. e. only in part of the kinship vocabulary so that the number of kinship lexemes is not necessarily superior to the number found in European languages).

Three of the above-cited dimensions (the italicized ones), however, seem to be universal according to Greenberg (1966: 110), which only means that they are present at least at some point of the lexical kinship term systems of all languages. Thus, with respect to (4.) 'sex of relative', Bavenda has only one lexeme for the second ascending generation (*makhulu* 'grandparent'), but two for the first ascending generation (*khotsi* 'father' and *mme* 'mother'). "It is indeed a probable 'factual universal' that all systems distinguish male and female parent by separate terms [...]" (op. cit.: 101).

2° Implicational distance hierarchies. The eight dimensions of kinship term systems mentioned above (1°) provide, among other things, a rationale for measuring distances between positions in a taxonomy. These distances can in turn account for the taxonomically more or less fine-grained lexicalization in different languages. Greenberg (1966b: 108–110) pointed out that kinship relationships differing in two dimensions are jointly lexicalized with less probability than those differing in only one dimension. The section GRANDPARENT, for instance, is quadripartite with respect to the dimensions (4.) sex of relative and (5.) sex of connecting relative (FATHER'S FATHER – MOTHER'S FATHER – FATHER'S MOTHER – MOTHER'S MOTHER). But of the fifteen theoretically possible lexicalization types, only three are really common: the coarse-grained type with only one overall word (e. g. the already cited Bavenda *makhulu*), the two-word English type (*grandfather/grandmother*, indifferent to dimension (5.)), and the fine-grained four-word type (e. g. Swed. *farfar/morfar/farmor/mormor*). Except for the overall type, all those logically possible types that would jointly lexicalize FATHER'S FATHER and MOTHER'S MOTHER, differing in two dimensions, do not occur, and types that jointly lexicalize MOTHER'S FATHER and FATHER'S MOTHER, differing in two dimensions as well, do not occur or are rather rare.

3° Implicational markedness hierarchies. For kinship relationships Greenberg established the following hypothetical markedness hierarchy (confirmed also by text frequencies of kinship terms):

(1) FIRST ASCENDING GENERATION
< EGO'S GENERATION/FIRST DESCENDING GENERATION
< SECOND ASCENDING GENERATION
< SECOND DESCENDING GENERATION
< THIRD ASCENDING GENERATION
< THIRD DESCENDING GENERATION

Since a taxonomically more fine-grained structure is less probable (though not impossible) with more marked relationships, this hierarchy would also account, e. g., for the Bavenda data presented in 1° (since FIRST ASCENDING GENERATION < SECOND ASCENDING GENERATION). Likewise, it would be fully compatible with the following universal formulated by Greenberg (1966: 107): "distinction of sex [sc. of relative] in the second descending generation implies the same distinction in the second ascending generation, but not vice versa" (since SECOND ASCENDING GENERATION < SECOND DESCENDING GENERATION). Indeed, of the four types logically possible, only three occur: a type without any sex distinction in both generations (e. g. Amharic *ayat*, Rotuman *ma'pitj*), the English type (*grandfather/grandmother/grandson/granddaughter*) and a third type, represented, e. g., by Logoli with *guga* 'grandfather'/*guku* 'grandmother'/*omwitjuxulu* 'grandchild'.

According to the structuralist view, colour terms were considered an outstanding example of arbitrary, language-particular (taxonomic) categorization (cf. Hjelmslev 1957; curiously enough, it is the field of colour that proved to be inaccessible to a non-trivial description in terms of structuralist distinctive features: cf. Jackendoff 1983: 113). Ullmann, however, already observed: "These differences are highly significant, but it would be equally interesting to know whether there are any elements common to all classifications of colors, any distinctions which have to be expressed everywhere" (1966: 251). Indeed, Berlin/Kay (1969), insisting on the notion of 'focal colour', achieved to set up an implicational hierarchy of (basic) focal colours. Surely, some of Berlin/Kay's data and conclusions had to be revised (cf. an overview in Taylor 1995: 10–13; cf. also Schepping 1985: 186–188); in particular the two anthropologists had underestimated the importance of (taxonomic) differentiation. Nevertheless, it seems possible to establish the following type of a universal implicational hierarchy of taxonomic distinctions underlying the diversity of language-particular basic colour term systems:

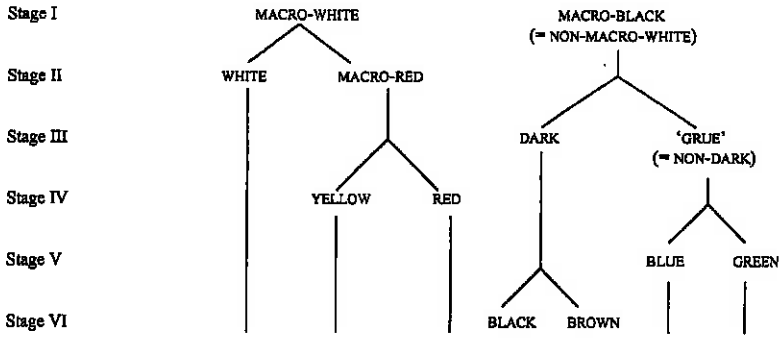


Fig. 85.8: Implicational hierarchy of taxonomic distinctions for basic colours (after Wierzbicka 1990: 144 f.)

If a language has colour differentiation corresponding to a stage *n*, we can predict that it will also possess all the differentiations corresponding to the stages $x < n$ (according to certain authors, however, stage IV may optionally be prior to stage III). Whereas Kay/McDaniel (1978) attribute the progressive differentiation of colour terms to neurophysiological processes in the perception of colour, Wierzbicka (1990) relates it to a number of universal 'environmental concepts' corresponding to prototypical supports of colours in human experience: DAYLIGHT (→ WHITE), NIGHTTIME (→ MACRO-BLACK), FIRE (→ [MACRO-] RED), SKY (→ BLUE) etc. (interestingly, she in this way integrates an engynomic component into the foundations of an implicational hierarchy for taxonomic distinctions).

Another conceptual field that – at least at the top of the taxonomic hierarchy – may be

governed by certain implicational markedness hierarchies is that of culinary verb semantics (cf. Figure 85.7), for which Lehrer (1974: 164–167) proposed some tentative implications: (i) "In general, if a language has at least two cooking words that contrast, one [i. e. A_{21} or B_1] will be used for boiling" (this is valid also for languages like Jacaltec or Ge where A_1 is lacking); (ii) "if a language has three or more cooking words, in addition to a term for boiling [i. e. A_{21} or B_1], the non-boiling domain [i. e. A_{22} or B_2 etc.] will be subdivided"; etc. Highly relevant parameters seem to be, for instance, the result of the cooking process and, related to this, the differences between cooking in water and in fat, between direct and indirect heat, etc.

Basic dimension terms, one of the earliest fields of application for Structural Semantics (cf. Greimas 1966 c: 31–36), have been submitted to typological studies by Ewald Lang during the last decade (cf. e. g. Lang 1996). Besides the prominence of the vertical axis – a factual universal (1°) determined by gravity and the upright walk of man – he distinguishes a proportion-based strategy of lexicalization on the one hand, and an observer-based strategy on the other.

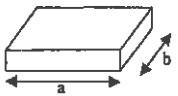


Fig. 85.9

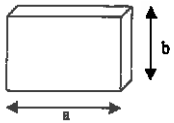


Fig. 85.10

Being a prototypical representative of the proportion-based type, Chinese gives priority to the maximal (most extended) axis *a* and unitarily denominates it *cháng* in Figure 85.9 as well as in Figure 85.10. Axis *b* then, remaining just as a transversal in relation to *a*, is denominated *kuān* in Figure 85.9, whereas the corresponding term in Figure 85.10 is *gāo* because of the prominence of the vertical axis *b*. Korean, an observer-based language (albeit with some exceptions), denominates the axis (*a* or *b*) that coincides with the observer axis in Figure 85.9 and 85.10 *selo*, and the axis (*a* or *b*) transversal to the observer axis *kalo* (*nophi* being an alternative for *b* in Figure 85.10 – independently of the observer – due to the prominence of the vertical axis). Despite some divergences in detail, English and German agree in that they have a mixed strategy: proportion-based for Figure 85.9 (*a* = E. *long*, Germ. *lang*; *b* = E. *wide*, Germ. *breit*), observer-based for Figure 85.10 (*a* = E. *wide*, Germ. *breit* or E. *long*, Germ. *lang*, depending on the position of the observer; because of the prominence of the vertical axis, *b* always = E. *high*, Germ. *hoch*). Further refinements of the parameters involved seem to reveal a scalar lexical typology (from proportion-based to observer-based; cf. Lang 1996: 344–348):

(2) Chinese – Russian – Polish – Slovak – German – Korean

Another well-known example of taxonomic, typological differences in the lexicon is the dyad of verbs for COMING and GOING (cf. for German vs. Spanish: Heger 1966, 168 f.; for English: Fillmore 1966). In this field, Ricca (1993) establishes a typology for 20 European languages with respect to deixis, *Aktionsart*, and mode. A first group of 'fully deictic languages' concentrated around the Mediterranean and in the Balkans (Table 85.3, A) displays a lexical split corresponding to the contrast between a CENTRIPETAL movement (towards the *hic et nunc* of the speaker: e. g. Span. *venir*) and a CENTRIFUGAL movement (away from the *hic et nunc* of the speaker: e. g. Span. *ir*). In a second, central and northern group of 'mainly deictic languages' (Table 85.3, B), the lexical split still corresponds prototypically to CENTRIFUGAL vs. CENTRIPETAL movement, but it is often counterbalanced by *Aktionsart* factors (e. g. E. *to come* vs. *to go*). In a third, northeastern group of 'non-deictic languages' (Table 85.3, C), there is no lexical split on deictic grounds (e. g. Russ. *idti*).

Table 85.3: Typology of movement verbs in European languages (after Ricca 1993)

A fully deictic	B mainly deictic	A non-deictic
Portuguese	Serbo-Croatian	Czech
Spanish	Slovenian	Polish
Italian	German	Ukrainian
Albanian	French	Russian
Modern Greek	Dutch	Lithuanian
Hungarian	English	
Finnish	Danish	
	Swedish	

Within these groups, there are further differentiations. For instance, Portuguese and Spanish are particularly restrictive, excluding any use of the centripetal verb with a SECOND PERSON GOAL.

3.2.3. Levels of abstraction

A major issue in prototype theory is the discovery of salience effects in the vertical dimension of (folk) taxonomies: the 'basic level' of categorization, e. g. BIRD, is cognitively more salient than the 'superordinate level', e. g. ANIMAL, and the 'subordinate level', e. g. ROBIN (cf. Berlin 1978; Rosch 1978; Taylor 1995: 46–51; Kleiber 1990: 78–91; Ungerer/Schmid 1996: 60–109). The taxonomic dimension of lexical typology seems to be an ideal testing ground for basic-level theory.

As is well-known, the morphosyntactic features of superordinate level terms are frequently, though not necessarily, somewhat deviant (cf. also Mihatsch 2000): e. g. E. *furniture*, Germ. *Möbel* (uncountable; but cf. Fr. *un meuble*); Germ. *Geschwister* (plurale tantum; but cf. E. *sibling*). Subordinate level terms, in turn, are often, though not necessarily, compounds whose head is the corresponding basic level term: e. g. Aguaruna (Ecuador) basic: *ipák* 'achiote (*Bixa orellana*)'; subordinate: *beeŋ ipák* 'kidney achiote', *čamíŋ ipák* 'yellow achiote', *hémpe ipák* 'hummingbird achiote', *šiŋ ipák* 'genuine achiote' (Berlin 1978: 20). From here a connection leads to the motivational aspect of lexical typology (4.3.1./2.).

The salience and unmarkedness of the basic level could suggest that the choice of levels of abstraction in lexicalization is cross-linguistically determined by an implicational hierarchy: if in a given language the super-/subordinate level is lexicalized, the basic level is lexicalized as well, but not vice versa. This seems to be confirmed by several data (cf. Taylor 1995: 49 f.), though a large cross-linguistic study is still lacking. All languages seem to have, for instance, at least some 'basic' colour terms (3.2.2., 3°), but many – perhaps all? – of them do not have a superordinate term. In German, neither *farbig* 'coloured' (excluding BLACK, WHITE, and GREY) nor *bunt* 'colourful, multicoloured' serves this purpose. In the field of kinship terms, English has the basic level terms *sister* and *brother* as well as the superordinate term *sibling*, whereas French has only the basic level terms *sœur* and *frère*, but no superordinate term (and, therefore, has to resort to the syntagmatic expression *frères et sœurs*). Looking to the opposite end of the hierarchy, German, for instance, has the basic level term *Pferd* 'horse' as well as the subordinate level terms *Schimmel* 'white horse', *Rappe* 'black horse', *Fuchs* 'sorrel' etc., whereas Latin possesses only the basic level term *equus* (and has to recur to syntagmatic expressions: *equus albus/niger/russeus/* etc.).

Yet, things are surely more complicated, given the interlingual divergence patterns TAXOα and TAXOβ (3.2.1.). First of all, there are methodological problems with basic level. Apart from its presumable context-dependence (cf. Kleiber 1994), the basic level cannot always easily be assigned to empirical cross-linguistic lexical material. For instance, we may wonder which one of the five taxonomically different types visible in Table 85.2 lexicalizes just the basic level: English/German etc.? Latin? French/Italian etc.? Hopi/Guaraní? or Swahili? Even for BIRD, one of the favorite examples of prototype theory, we have to cope with awkward cases: Macedo-rumanian, e. g., has nothing but a lexeme *pul'* 'little bird' (Coseriu 1990: 279; cf. also Albrecht 1995: 26 f.). Still greater problems arise when we consider colour terms of older European languages, like Latin, which does not possess terms for WHITE, BLACK, BLUE etc., but only lexemes like *albus* 'mat white', *candidus* 'brilliant white', *ater* 'mat black', *niger* 'shiny black', *caeruleus* 'deep-blue, blackish-blue' etc. (cf. André 1949; Coseriu 1964: 158).

One could think of situating the basic level on varying levels of abstraction, depending on the language and the conceptual field under examination. Such a solution, however, would rule out basic level as a typological *tertium* in favour of relative levels of abstraction. But there is also a factual limit to the solution of varying "basic levels". For a long time, anthropologists, psychologists, philosophers, and linguists have been raising the problem of the level of abstraction aimed at in the languages of "primitive" cultures. The Bushman language, for instance, possesses several terms for different types of eating, but no general lexeme for EATING: */!kà:ŋ́* 'to eat raw meat'; */ùŋ* 'to eat marrow'; */kuŋ* 'to eat fat'; *m* 'to eat fruits'; similarly, it has many terms for different fruits, e. g. */gara* 'fruit of the kareeboom', but no general lexeme for FRUIT (Stopa 1968: 134). Even if there may have been misinterpretations of linguistic material (cf. Hill 1952), the evidence is overwhelming: we note "l'absence à peu près complète de termes génériques, correspondant aux idées proprement générales, et [...] l'extraordinaire abondance des termes spécifiques, c'est-à-dire désignant des êtres ou objets dont une image particulière et précise

se dessine quand on les nomme" (Lévy-Bruhl 1922, 190; cf. also Cassirer 1953: 262–264; Ullmann 1953: 231 f.; 1966: 228–230; Gipper 1972: 92 f.; Schepping 1985: 189 f.). If we let vary the basic level to the extent that it covers even such specific terms, the concept of basic level itself would break down. If, on the contrary, we were to maintain it on a constant level of abstraction, it would yield an overtly ethnocentric cognitive standard with respect to the data of "primitive" languages.

Undoubtedly all these embarrassing examples reveal that the choice of different levels of abstraction in different languages constitutes a highly relevant lexical-typological parameter. But instead of being related to a constant, universal basic level, it should be regarded as an indicator of different 'cognitive styles' in the sense of Hymes (1961). As to the preference for specific terms, it can probably be explained as a characteristic of archaic, oral societies (cf. also Kalmár 1985; meanwhile, several authors have tried to relate the whole Whorfian Hopi/SAE opposition to that between oral and literate cultures: Goody/Watt 1968: 64 f.; Assmann/Assmann 1983: 268; cf. also Ong 1982: 49–57, 174 f.).

Of course, this area of investigation is never immune to misconceptions. Looking to the opposite end of the taxonomic hierarchy, we come across discussions like the one on the "abstract" character of French, as opposed especially to German (cf. Bally 1965: 346 ff., 369; Malblanc 1968: 286; Vinay/Darbelnet 1964: 207; Ullmann 1969: 316; 1966: 227 f.). A meticulous examination of current arguments (Albrecht 1970; 1995) and a confrontation with the taxonomic framework of 3.2.1. reveal, in some cases, the choice of a more abstract taxonomic level in French than in German (cf. Fr. *mettre* 'to put' vs. Germ. *stellen, legen, setzen, stecken, hängen* etc.), but the opposite constellation is not nonexistent (cf. Germ. *Straße* vs. Fr. *rue* 'street'/*route* 'road'); on the other hand, many of the phenomena usually cited concern totally different aspects of lexical typology (engynomy: 3.3.1.; motivation: 4.2.; 4.4.2./3.; metataxis: 5.2.1.; polysemy: 6.1.; homonymy: 6.2.). Apart from this, the confusion of typically French and general Romance characteristics, of language system and discourse traditions, etc., have led in part to erroneous conclusions.

3.3. Engynomic dimension

Unlike the taxonomic dimension, the engynomic one has been neglected for a long time in lexicological studies. When Structural Semantics did deal with engynomic problems, linguists tended to confuse them with taxonomic problems, as our examples will show. Meanwhile, frame theory and studies in partonomies, as components of Cognitive Semantics, have provided us with the necessary prerequisites to put engynomic phenomena in their right place.

In the lexicalization of certain engynomic domains (frames and their elements), critical points seem to come up that compel languages to make typologically relevant decisions. An emblematic example of relevant 'shapings' differing between languages is the engynomic domain of BODY PARTS (cf. Schepping 1985: 185 f.). 'Shaping' in this sense refers to the 'engynomic organization' of lexical units (and should not be confused with – taxonomic – 'structuration': cf. 3.2.).

3.3.1. Engynomic interlingual divergence patterns

Similarly as in the taxonomic dimension, we can establish a systematics of interlingual divergence patterns in the engynomic organization of lexical units, as well. Despite vague analogies to some taxonomic interlingual divergence patterns presented in 3.2.1., the different character of the two types of hierarchies should be stressed.

According to the first engynomic interlingual divergence pattern (ENGYα), one language type A and another language type B disagree by organizing conceptual material differently within the same frame, i. e., generally, by delimitating the parts of a whole differently (there is a rough analogy to patterns TAXOα as well as TAXOγ, since in the case of ENGYα the qualitative aspect of delimitation of parts cannot necessarily be separated from the quantitative aspect of number of parts):

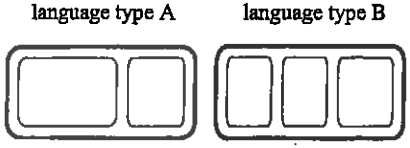


Fig. 85.11: Engynomic interlingual divergence pattern ENGYα

We find particularly salient divergences in the domain of DAY(-TIME). For instance, languages splitting the DAY according to the position of the sun (e. g. Germ. *Nachmittag* and Tuscan Ital. *pomeriggio* TIME (ROUGHLY) FOLLOWING THE PEAK OF SUN'S ALTITUDE) contrast with languages splitting the DAY at the hour of lunch (e. g. Span. *tarde* and Sard. *sero* TIME FOLLOWING LUNCH, which, especially in Spain, can be rather late) (for further interesting aspects, cf. Sobrero 1978: 140–143; Geckeler 1993: 162).

According to a second pattern (ENGYβ), one language type A may lexicalize more different hierarchical levels than another language type B within the same engynomic domain (the analogy to the taxonomic pattern TAXOβ is very vague):

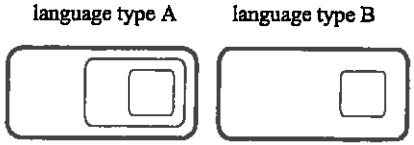


Fig. 85.12: Engynomic interlingual divergence pattern ENGYβ

Thus, for the UPPER and the LOWER LIMB in the domain BODY, type A would correspond to languages that distinguish, among others, the three engynomic (and partonomic) levels ARM – HAND – FINGER and LEG – FOOT – TOE respectively: e. g. Germ. *Arm – Hand – Finger* and *Bein – Fuß – Zeh* (other languages of this type are English, French, Spanish, Urdu, Chinese, Thai, Navaho, Eskimo etc.). Type B, on the other hand, would correspond to languages that distinguish only the two partonomic levels ARM + HAND – FINGER and LEG + FOOT – TOE respectively: e. g. Swahili *mkono* 'arm and hand' – *kidole (cha mkono)* 'finger' and *mguu* 'leg and foot' – *kidole (cha mguu)* 'toe' (before borrowing *futi* from Engl. *foot*); other languages of this type are, e. g., Ibo-Nigerian, Chirah-mbwa, Kewa, and Tzeltal (cf. Brown 1976: 406, 413, 416).

Whereas the aforementioned patterns represent divergences concerning distinct elements of frames or distinct hierarchical levels, the following involve the absence or presence of polysemy between different elements or levels (which is also relevant under the motivational aspect: 4.3.1./2.). According to a pattern ENGYγ, for instance, one language type B unites two contiguous elements of the same frame in a polysemous lexical unit, whereas type A does not:

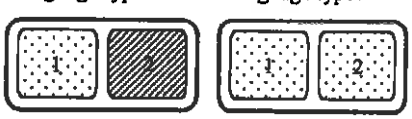


Fig. 85.13: Engynomic interlingual divergence pattern ENGYγ

This can be exemplified by the two concepts 1 = SUN and 2 = DAYLIGHT TIME: They are separately lexicalized (type A), e. g., in E. 1: *sun* / 2: *day*; Germ. 1: *Sonne* / 2: *Tag*; Swed. 1: *sol* / 2: *dag*; Fr. 1: *soleil* / 2: *jour*; Russ. 1: *sólnc'e* / 2: *d'en'ʲ*; Finn. 1: *aurinko* / 2: *päivä*; Pers. 1: *āftāb* / 2: *rūz*; they are united in polysemy (type B: 1+2), e. g., in Hung. *nap*; Mordv. *čʲi*; Jap. *hi*; Chin. *rì* (cf. also Skalička 1965: 156).

The engynomic interlingual divergence pattern ENGYδ is based on the absence vs. presence of polysemy involving different hierarchical levels (for an engynomic and typological reassessment of the examples discussed in connection with Figures 85.14 and 85.15 and with Table 85.4, that have often been erroneously discussed on a par with taxonomic problems, cf. Koch 1998: 114–122; 2000: 102–104):

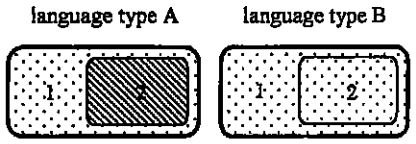


Fig. 85.14: Engynomic interlingual divergence pattern ENGYδ

A particularly relevant example (already noted by Saussure 1916, 160) is the treatment of 1 = ANIMAL concepts (= frame) and the corresponding 2 = MEAT concepts (= element) in different languages. For several, though not all, animals, English behaves according to type A (1: *cow, pig, sheep, calf* / 2: *beef, pork, mutton, veal*), whereas French and Italian, e. g., belong to the polysemy type B (Fr. 1+2: *bœuf* etc., Ital. 1+2: *manzo* etc.). Pattern ENGYδ can also apply alternatively to different hierarchical levels within the same frame, as is shown by the famous example of FOREST/WOODS – TREE – WOOD (cf. Hjelmslev 1957: 104 f.; also Geckeler 1993: 163):

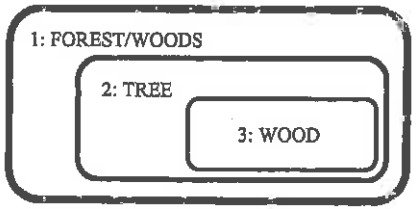


Fig. 85.15: Frame FOREST/WOODS – TREE – WOOD

With respect to this conceptual material, we have essentially three types of languages with respect to the engynomic dimension. Type A possesses three different lexemes, as exemplified here by Latin; type B has a (metonymic) polysemy FOREST/WOODS – WOOD, as here exemplified by French; type C, exemplified by Russian, has a (metonymic) polysemy TREE – WOOD (the possibility of a triple metonymic polysemy, as in Oir. *fid* – and marginal even there – seems to be rather rare):

Table 85.4: Lexicalization types in the frame FOREST/WOODS – TREE – WOOD

		1: FOREST/WOODS	3: WOOD	2: TREE
Type A	three different lexemes	Lat. *silva*	Lat. *lignum*	Lat. *arbor*
Type B	polysemy 1–3	Fr. *bois*	Fr. *bois*	*Fr. arbre*
Type C	polysemy 2–3	Russ. *l'es*	Russ. *d'er'evo*	Russ. *d'er'evo*

Other examples are: (type A:) Germ. 1: *Wald* / 2: *Holz* / 3: *Baum*; Czech 1: *les* / 2: *dřevo* / 3: *strom*; Mod.Gr. 1: *ðásos* / 2: *kstlo* / 3: *ðénðro*; Turk. 1: *koru* / 2: *odun* / 3: *ağaç*; Chin. 1: *sēnlín* / 2: *shù* / 3: *mù(-cái, -tou)*; (type B:) Bret. 1+3: *koad* / 2: *gwezenn* (as for English *woods*, cf. 4.4.3.); (type C): Dan. 1: *skov* / 2+3: *træ*; Srb.-Cr. 1: *šuma* / 2+3: *drvo*; Lith. 1: *girė* / 2+3: *medis*; Lett. 1: *mežs* / 2+3: *kuoks*; Hung. 1: *erdő* / 2+3: *fa*; Finn. 1: *metsä* / 2+3: *puu*; Swah. 1: *msitu* / 2+3: *mti*; Jap. 1: *mori* / 2+3: *ki* (it would be interesting to visualize the obvious arealtypological clusters in a map; according to Witkowski et al. 1981, ca. two-thirds of a sample of 66 languages all over the world belong to type C). Of course, these engynomic patterns are not affected by supplementary taxonomic divergences of the type TAXOα (cf., within the above type A, e. g. Span. 1: *bosque* vs. *selva* vs. *monte* / 2: *madera* / 3: *árbol* or Arab. 1: *γāba* vs. *ħaraǧ* / 2: *šaǧar* / 3: *xašab*; within the above type B, Fr. 1: *bois* vs. *forêt*; Hjelmslev 1957: 104 f., just mixes up all these taxonomic and engynomic interlingual divergences).

A final engynomic interlingual divergence pattern ENGYε (somewhat analogous to pattern TAXOα, with which it actually has been erroneously confused) is as follows:

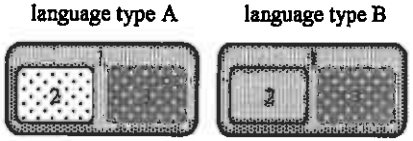


Fig. 85.16: Engynomic interlingual divergence pattern ENGYε

A striking example is the treatment of 1 = DAY (24 HOURS), 2 = DAYLIGHT TIME, and 3 = NIGHT in different languages. Type A languages have separate words for all three concepts: e. g. Swed. 1: *dygn* / 2: *dagn* / 3: *natt*; Russ. 1: *sutky* / 2: *d'en'* / 3: *noč*; Pers. 1: *šebanerūz* / 2: *rūz* / 3: *šab*; Arab. 1: *jaum* / 2: *nahār* / 3: *laila*; Finn. 1: *vuorokausi* / 2: *päivä* / 3: *yö*; Mordv. 1: *či-ńe* / 2: *či* / 3: *ńe*. Type B languages connect 1 and 2 in a metonymical polysemy: e. g. E. 1+2: *day* / 3: *night*; Germ. 1+2: *Tag* / 3: *Nacht*; Fr. 1+2: *jour* / 3: *night* (and similarly other Romance languages); Mod.Gr. 1+2: *(i)mera* / 3: *nixta*; Turk. 1+2: *gün* / 3: *gece*; Hung. 1+2: *nap* / 3: *éj(szaka)*; Jap. 1+2: *hi* (2 also: *hiru*) / 3: *yoru*; Chin. 1+2: *rì* (1 also: *rìzi* or *tiān*; 2 also: *báitiān*) / 3: *yè* (cf. also Skalička 1965,156). The metonymic polysemy of type B clearly is due to the salience of DAYLIGHT TIME within the frame DAY (24 HOURS).

3.3.2. Universals and hierarchies

The engynomic interlingual divergence patterns discussed in 3.3.1. are of a very general, undoubtedly universal nature and independent of particular engynomic domains. As with

taxonomic fields, the question is whether we can formulate less abstract generalizations concerning individual engynomic domains. Since Structuralism, in the final analysis, does not have the power to describe non-taxonomic relations (cf. Koch 1998), the relevant investigations into this area have been conducted instead from an anthropological point of view, venturing cautious – and here, too, often implicational – generalizations and respecting nevertheless the individual "fingerprints" of the particular languages.

It is in the domain of body parts that major achievements have been obtained. Universals of engynomic labeling for this domain include, among others, the following (cf. Brown 1976; Andersen 1978: 352; Wilkins 1996; considerations including other motivational aspects than polysemy would have to be treated in the framework delineated in 4.3.):

① The concepts BODY, HEAD, EYE, NOSE, and MOUTH are labeled in all languages (HEAD always as an immediate part of BODY).
② The concepts FINGER and TOE as well as FINGERNAIL and TOENAIL (or simply NAIL) are always labeled.
③ A concept ARM or ARM+HAND is always labeled (cf. also 3.3.3.).
④ Labeling of a concept HAND presupposes labeling of a concept ARM (but not vice versa). Labeling of a concept FOOT presupposes labeling of a concept LEG or at least LOWER LEG (but not vice versa).

and so on.

Unfortunately, the reliability of the data supporting the cited investigations is not guaranteed in all cases, even for very common languages. Thus, in Andersen (1978: 358) German is mentioned as a language 1° having an ARM-HAND-polysemy like Russian (*ruka*; cf. 3.3.3.), which is not at all the case (cf. Germ. *Arm* vs. *Hand*), and 2° having a LEG-FOOT-polysemy like Irish (*cos*), which holds only for southern dialects, but not for German *tout court* (strangely enough, the striking example Russ. *nogá* 'leg; foot' is not mentioned in this context). Thus, data will have to be checked by future research, and, above all, similar investigations into other important engynomic domains would be desirable.

The purely engynomic universals just mentioned are not to be confused with those universals concerning taxonomic relations within an engynomy (cf. Brown 1976: 405; Andersen 1978: 352):

⑤ Labeling of LEG (+FOOT) presupposes a separate term for ARM (+HAND).
⑥ If both HAND and FOOT are labeled, they are labeled differently (in contrast to other symmetrical parts of upper and lower body).

3.3.3. Levels of depth

The different levels of abstraction we can distinguish in the taxonomic dimension (cf. 3.2.3.) seem to have in the engynomic dimension as a kind of analogon the so called 'levels of depth', especially in partonomies. But the analogy is rather limited. Whereas we can face the question of taxonomic levels of abstraction as a general problem independent of the taxonomic field under examination, the quality and the number of levels of depth seems to depend entirely on the specific engynomic (partonomic) domain considered.

Once again, this has been systematically and cross-linguistically exemplified for body-part terminology (cf. for the following: Liston 1972; Brown 1976; Andersen 1978; as for the reliability of the data used, cf. 3.3.2.). It could be shown here that, just like taxonomic levels of abstraction, partonomic levels of depth, together with salience effects, impinge upon motivational aspects of lexical typology (cf. 4.3.):

① All immediate parts of the whole (BODY) are usually expressed through simple (or at least opaque) lexical items: the universally labeled HEAD and ARM (+HAND) (with the one exception Finn. *kasivarsi*, literally 'hand handle', containing *käsi* 'hand'); if labeled, also LEG (+FOOT) (cf. 3.3.3., ① and ③).
② The less immediate body parts EYE and MOUTH, as universally labeled (3.3.2., ①), as well as FACE and EAR are usually expressed through simple lexical items.
③ The less immediate body parts HAND and FOOT, if labeled, are usually expressed through simple lexical items.
④ The even less immediate, universally labeled body parts FINGER and TOE, if they are not both endowed with two entirely separate, simple lexical items (e. g. Germ. *Finger/Zehe*; Fr. *doigt/orteil*), are expressed through one lexical element appearing either as a simple lexical item or, especially if contextually necessary, as head of a complex lexical item, containing as modifier an expression for FOOT alone (e. g. Fr. *doigt/doigt de pied*; Span. *dedo*

dedo (del pie); Srb.-Cr. *prst|prst (na nozi)*) or for HAND and FOOT (e. g. Chin. *shǒuzhǐ jiǎozhǐ*; Huastec *tihaš in k'ubak|tihaš in akan*) – but never for HAND alone. Note that these observations concern the taxonomic organization within an engynomy, just like those made in 3.3.2., ⑤ and ⑥. and so on.

Partonomic levels are by no means universally organized. According to Liston and Andersen, the concept EAR, for instance, shows up expressed by *ninri* at level 3 in Quechua (attached to the higher levels 2 FACE – 1 HEAD – 0 BODY), by *šutšun* at level 2 in Huastec (attached to levels 1 HEAD – 0 BODY), and by *uho* at level 3 in Serbo-Croatian (attached to levels 2 NON-FACE – 1 HEAD – 0 BODY). The concept HAND appears, expressed by *maki* at level 3 in Quechua (attached to the higher levels 2 FINGER TO ELBOW – 1 ARM – 0 BODY), by *k'ubak* at level 3 in Huastec (but this time as a concept parallel to 3 ARM, both being attached to levels 2 BACK – 1 TRUNK – 0 BODY), and only provisionally expressed by *šaka* 'fist' at level 2 in Serbo-Croatian (attached to levels 1 HAND+ARM – 0 BODY). Despite such divergences, "human anatomical partonomies rarely exceed five hierarchical levels in depth [...] and never exceed six hierarchical levels" (Brown 1976: 404).

In view of the existence of languages, however, where one and the same word covers, for instance, ARM and HAND (and/or likewise for LEG and FOOT), we may ask for the criteria permitting us to determine which levels of such a partonomy are really labeled and which are not. Why should we consider, for instance, as Brown does, Russ. *rukà* as a polysemous word labeling ARM as well as HAND (and likewise for *nogá* with respect to LEG and FOOT; cf. language type B of pattern ENGYδ in Figure 14), while he considers (traditional) Swahili *mkono* or *mguu* as monosemic words labeling only ARM+HAND or LEG+FOOT respectively (example already cited above to illustrate type B of pattern ENGYβ in Figure 12)? As Brown (1976: 407, 415) puts it, speakers of a language with the monosemic solution would regard, e. g., FINGERNAIL/TOENAIL as part of ARM/LEG, whereas speakers of a language with the polysemous solution would not (perhaps because they see HAND/FOOT as "connected to" rather than as "part of" ARM/LEG). Certainly these quite hypothetical issues have to be further corroborated.

4. Onomasiological perspective: paradigmatic axis: motivational aspect

Ferdinand de Saussure, the modern exponent of the arbitrariness of the linguistic sign, nevertheless admitted: "Le principe fondamental de l'arbitraire du signe n'empêche pas de distinguer dans chaque langue ce qui est radicalement arbitraire, c'est-à-dire immotivé, de ce qui ne l'est relativement" (1916: 180). In a quasi typological perspective, he distinguishes 'langues lexicologiques', where the non-motivatedness reaches its maximum, from 'langues grammaticales', where it drops to a minimum (op. cit., 183).

Ullmann (1966: 221 f.) considers the existence of both opaque (i. e. non-motivated) and transparent (motivated) words a semantic universal. He further systematizes linguistic motivation by discriminating phonetic motivation (in onomatopoeic words like E. *sizzle, boom*, etc.), morphological motivation (in cases of word formation like E. *think|er, arm|chair*, etc.), and semantic motivation (in cases of metaphor like E. *bonnet* 'cover of a motor-car engine', *pivot* 'that on which anything depends', etc.). Even though these three types of motivation seem to be of undeniable (lexical-)typological interest, they cannot be considered to be on a par. Note, for instance, that 'morphological motivation' insists on formal properties of words, whereas 'semantic motivation' (in the sense of 'metaphorical motivation') highlights cognitive relations.

4.1. The motivational "square"

To give a more systematic account of motivation, one has to start from the basic constellation represented in Figure 85.17 (cf. also Rettich 1981; Lakoff 1987: 96, 346 f., 448 f., 537–540, and passim): a lexical item L_1 (lexeme, word, idiom) expressing a concept C_1, is motivated with respect to a lexical item L_2 expressing a concept C_2, if there is a cognitively relevant relation between C_1 and C_2, paralleled by a recognizable formal relation between the *signifiants* of L_1 and L_2: e. g. L_1 = E. *bank|er*/L_2 = E. *bank*.

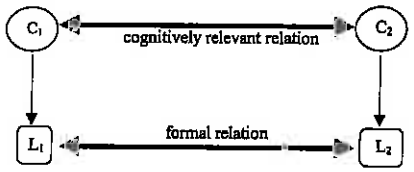


Fig. 85.17: "Motivational square"

The edges of this basic square can undergo different reductions and modifications (see below 4.2., Figure 85.18, 4.3.1., 4.4.2., 4.4.3.).

4.2. Onomatopoeic motivation

In 'primary' onomatopoeia, the square of Figure 85.17 shrinks essentially to the edge L_1–C_1 or rather to L_1–A_1, where A_1 is an acoustic phenomenon (Figure 85.18). Disregarding for the moment the content of the brackets, we can say that L_1 is directly connected with A_1 by a relation of phonological similarity (iconicity), as e. g. in E. *to snore* (Bühler 1965: 208, calls this type "erscheinungstreu"; for onomatopoeia in general, cf. French 1976; Jakobson/Waugh 1979: 182 ff.; Groß 1988; Sharp/Warren 1994; Bredin 1996):

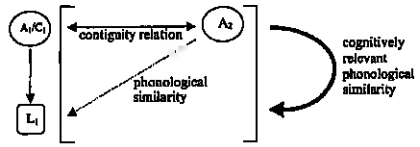


Fig. 85.18: Modified "motivational square" for onomatopoeia

A more complex, but very frequent case can be illustrated by L_1 = E. *cuckoo* that designates a non-acoustic concept C_1 standing in a relation of contiguity to the acoustic phenomenon A_2 [in brackets]. It is only due to this motivation that L_1 is phonologically similar to A_2.

'Secondary' onomatopoeias, like L_1 = Ital. *piccolo*, that do not designate an acoustic phenomenon, but a concept C_1 belonging to another perceptual domain can be explained in two different ways: either like *snore* (assuming an immediate synesthetic similarity relation between L_1 and C_1; Bühler, loc. cit., calls this type "relationstreu" or "gestaltreu") or like *cuckoo* (claiming that speakers designate C_1 by choosing a lexical item L_1 phonetically similar to an imaginary acoustic phenomenon A_2 [in brackets], which is in turn contiguous to C_1: small objects, for instance, are supposed to utter high-pitched sounds like [i]; cf. Pesot 1980: 15).

It is well-known that despite divergences and arbitrary choices in detail (cf. Saussure 1916, 101 f.) there are often clear phonetic "family resemblances" between onomatopoeias in different languages (cf. Ullmann 1966: 224–226): e. g. E. *to snore*, Fr. *ronfler*, Span. *roncar*, Ital. *russare*, Germ. *schnarchen*, Russ. *chrapet'*, Mod.Gr. *ruxalizo*, Hung. *horkolni*, Turk. *horlamak*, Arab. *šaxara*, etc. Even in secondary onomatopoeias, we observe amazing parallels, due probably to converging gestalt perception: e. g. E. *little*, Fr. *petit*, Span. *pequeño*, Ital. *piccolo*, Germ. *klein*, Mod.Gr. *mikrós*, Hung. *kis, kicsi*, Turk. *küçük*, Arab. *sayīr*, Chin. *xiǎo*, etc. (but cf. also E. *small*, Russ. *mal'en'kij*).

It is open to argument whether the frequency of (primary or secondary) onomatopoeias can be a criterion of lexical-typological characterization. In comparison to German and English, French is said to be poor in onomatopoeic words, but other Romance languages seem to be even poorer (cf. Bally 1965: §§ 197 ff., 568; Ullmann 1969: 131; Albrecht 1970: 16, 118–123). In Tamil, "onomatopoeic words [...] are so numerous [...] that they fill an entire dictionary" (Steever 1987: 743). Yoruba displays particularly interesting devices for building up secondary onomatopoeias, especially through reduplication (cf. Pulleyblank 1987: 981 f.).

A more systematic contrastive investigation into a larger language sample is still desirable.

4.3. A three-dimensional model of linguistic motivation

Starting from our basic motivational "square" in Figure 85.17, we have to specify the formal as well as the cognitive relations involved in order to get typologically relevant parameters.

4.3.1. The formal dimension of motivation (transparency)

We can describe the relation between the *signifiants* of L_1 and L_2 in terms of formal contiguity as well as formal similarity. Formal contiguity is here to be understood as a relation of part (L_2) to whole (L_1). This kind of formal contiguity presupposes, in turn, some kind of formal similarity – going in the ideal case until total identity – between L_2 and the corresponding portion of the *signifiant* of L_1, since total formal dissimilarity (as e. g. between L_1 = E. *dairy* and L_2 = *milk*) produces total opacity. There are different types of formal (part-whole) contiguity between L_1 and L_2, among others:

(a) idioms, as e. g. L_1 = E. *to lend a [helping] hand*;

(b) compounds, as e. g. L_1 = E. *post-card*, or lexicalized syntagms, as e. g. L_1 = E. *red wine* (cf. Gévaudan 1999);
(c) derivatives, as e. g. L_1 = E. *bank|er*;
(d) grammatical category alternation, as e. g. L_1 = E. *to shade*;
(e) polysemy, as e. g. in E. *jet* 'nozzle, spout, pipe' and 'stream of water, gas, etc.'.

Derivatives (c) correspond to the basic situation represented in Figure 85.17, where L_2 (e. g. *bank*) constitutes only one, albeit central, part of the whole L_1 (*bank|er*).

On the one hand, this situation can become more complex, when L_2 is duplicated. E.g., in compounds (b) like L_1 *post-card* with L_{21} *card* and L_{22} *post*, each L_2 part covers a considerably smaller portion of L_1 (and similarly for lexicalized syntagms like L_1 *red wine*, with L_{21} *wine* and L_{22} *red*). The same holds for idioms (a), where this is even applied recursively: e. g. first L_1 *helping hand*, with L_{21} *hand* L_{22} and *helping*, and, second, L_1' *to lend a helping hand*, with L_{21}' *to lend* and L_{22}' *a helping hand*.

On the other hand, the basic situation of Figure 85.17 can be radicalized, as in grammatical category alternations (d): e. g. L_1 *to shade* with L_2 *shade*, where the "part" L_2 is even congruent with the "whole" L_1 and where L_2 is very similar to L_1, though not totally identical (notwithstanding the identity in external shape, there is a difference in grammatical category: L_1 = verb/L_2 = noun; besides word class alternation, there also exist, for instance, number alternation and, in languages other than English, gender alternation: see below 4.4.5.).

Ultimately, the most radical – and simple – solution is polysemy (e) as in *jet*, which can be interpreted as if the edge L_1–L_2 in Figure 85.17 has shrunk to a vertex $L_{1=2}$ corresponding to a single lexical expression for both C_1 and C_2 (which are cognitively related to each other). In a certain sense, the aspect of transparency here becomes trivial, because we have the extreme case of part-whole identity L_1 = L_2 and at the same time maximal similarity, i. e. identity of L_1 and L_2.

The formal types of relations discussed in this section correspond to the vertical dimension in Table 85.6. The first line labeled 'formal identity' (00–01 etc.) represents the case $L_{1=2}$, i. e. polysemy. The above list (a)–(e) is far from being complete, since there are many other formal-motivational devices existing in the world's languages (see below 4.4.1.). But despite formal differences in detail, all the relevant lexical devices can supposedly be assigned to positions on the universal continuum that goes from polysemy to relatively complex lexical items such as compounds or idioms (cf. also Figure 85.19).

4.3.2. The cognitive dimension of motivation

As to the relation C_1–C_2 in Figure 85.17, we can specify it in terms of the cognitive-associative relations already mentioned in section 2. and completed in 3.1. Before presenting the entire cross-classification of the formal and the cognitive relations in Table 85.6 below, the cognitive relations are illustrated in Table 85.5, in order to save space, only by (English) examples of the formal types of polysemy (□ 00–01 – etc.) and of suffixation (□ 80–81 – etc.).

The cognitive relations listed in Table 85.5 are necessarily universal, and together with the types of formal relations discussed in 4.3.1, they yield a typologically relevant cross-classification, as represented in Table 85.6, where the cognitive relations correspond to the horizontal dimension (cf. Koch, P., 2000; this is the synchronic adaptation of a systematics originally developed for diachronic lexicology; for the overall systematics and the underlying cognitive relations, cf. Blank 1996; 1997: 157–344; 1998; 2001; in press a and b; Koch 1994; 1996; 1999a; 2001a and b; Gévaudan 1999; in press; cf. also Gauger 1971: 60–134; Guilbert 1975; Schifko 1979).

On the basis of Table 85.6, Ullmann's distinction between 'morphological' and 'semantic' motivation turns out to correspond not to a clear-cut opposition between disjunct motivational devices, but to two cross-classified dimensions of the motivation problem in general: vertical axis = formal 'morphological' dimension (4.3.1.) and horizontal axis = cognitive 'semantic' dimension (4.3.2.).

Note that, as far as the formal relation of polysemy is concerned, there are inevitable intersections with the hierarchical aspect already considered: □ 04/05 (taxonomic super-/subordination) represents the phenomenon of vertical polysemy discussed in 3.2.1., pattern TAXOδ (type E. *man* or Germ. *kochen*); □ 01 (contiguity) represents all the phenomena of metonymic polysemy discussed in 3.3.1. (Figures 85.13, 85.14, and 85.16, always type B; Table 85.4, types B and C).

It goes without saying that in the complex types of motivation like composition or idioms (cf. 4.3.1.) L_2 and the formal relations, but also C_2 and the cognitive relations, are duplicated, as e. g. in E. L_1 *coffee break* / C_1 BREAK FOR HAVING COFFEE with L_{21} *break* / C_{21} SPELL OF RECREATION and L_{22} *coffee* / C_{22} DRINK MADE FROM POWDER OF COFFEE-BEANS, where the head L_{21}/C_{21} corresponds to square 105 and the modifier L_{22}/C_{22} to □ 101 in Table 85.6.

Table 85.5: Cognitive relations, illustrated by polysemy and suffixation

cognitive relation	L_1	C_1	square □ in Table 85.6	L_2	C_2	formal relation
conceptual identity	E. *freedom*	STATE OF BEING FREE	00			polysemy
			80	*free*	STATE OF BEING FREE	suffixation
contiguity	E. *jet*	NOZZLE, SPOUT	01	*jet* = L_1	STREAM OF WATER, GAS ...	polysemy
	E. *banker*	ONE WHO KEEPS ESTABLISHMENT C_2	81	*bank*	ESTABLISHMT. FOR CUSTODY OF MONEY	suffixation
metaphorical similarity	E. *to grasp*	TO COMPREHEND	02	*to grasp* = L_1	TO SEIZE AND HOLD	polysemy
	E. *midget*	VERY SMALL PERSON	82	*midge*	GNAT-LIKE FLY	suffixation
co-taxonomic similarity	E. *fir*	PINE	03	*fir* = L_1	ABIES	polysemy
	E. *bullock*	CASTRATED MALE OF OX	83	*bull*	UNCASTRATED MALE OF OX	suffixation
taxonomic super-ordination	E. *man*	HUMAN BEING	04	*man* = L_1	MALE HUMAN BEING	polysemy
	?	?	84	?	?	suffixation
taxonomic sub-ordination	E. *man*	MALE HUMAN BEING	05	*man* = L_1	HUMAN BEING	polysemy
	E. *booklet*	LITTE C_2	85	*book*	MAJOR BOUND PUBLICATION	suffixation
co-taxonomic contrast	E. *bad* (slang)	EXCELLENT	06	*bad* = L_1	BAD	polysemy
	E. *uncertain*	NOT CERTAIN	86	*certain*	CERTAIN	suffixation
A very rare eighth type of cognitive relation, conceptual or antiphrastic contrast (cf. Blank 1997, 220-225), is neglected here						

4.3.3. The stratificational dimension of motivation

Lexical borrowing is an omnipresent diachronic process in all languages (cf. Hock 1991: 380–425; Trask 1996: 17–30; Campbell 1998: 57–78; for a comprehensive classification that can be mapped onto Table 85.6: Kiesler 1993). As a result, the lexicon of any language displays an internal stratification as to the origin of its lexical material. This 'stratificational' aspect (stratum 1 vs. stratum 2 and so on) corresponds to the front-back dimension in Table 85.6. On the synchronic level and in the present context, this aspect is relevant only inasmuch as determinate lexical items are "felt" as belonging to different strata of the lexicon. Typological implications of the stratificational dimension will become clear in 4.4.3.

4.4. Possible typological applications

The lexical-typological relevance of the motivational grid in Table 85.6 can be illustrated by a choice of possible applications.

4.4.1. Inventory of formal relations

Whereas the horizontal dimension in Table 85.6 constitutes a closed set of universal cognitive relations, the vertical dimension has to account for the great variety of morpholexical devices fulfilling lexical motivation tasks in the world's languages. In the present open-ended version of Table 85.6, this variety is already adumbrated. Besides the universal phenomenon of polysemy (= formal identity), the list contains, first, the current devices of average European languages (present, though, even in other language types): number alternation (□ 30–31–etc.), word class alternation (□ 70–71–etc.; but see below), suffixation (□ 80–81 etc.), prefixation (□ 90–91–etc.), composition (□ 100–101–etc.), lexi-

Table 85.6: Linguistic motivation – a tree-dimensional grid
(the numbers 00, 01, 02, etc., 10, 11, 12, etc. etc. are purely arbitrary and only serve as means for identifying the different squares that are referred to by □ + number in the following)

stratum n

absence of motivation	motivation	conceptual identity	contiguity	metaphorical similarity	taxonomic similarity
	formal identity		01	02	03

stratum 1

absence of motivation	motivation	conceptual identity	contiguity	metaphorical similarity	taxonomic similarity	taxonomic superordination	taxonomic subordination	co-taxonomic contrast
	formal identity		01	02	03	04	05	06
	tone alternation	10	11	12	13	14	15	16
	reduplication	20	21	22	23	24	25	26
	number alternation	30	31	32	33	34	35	36
	gender alternation	40	41	42	43	44	45	46
	voice alternation	50	51	52	53	54	55	56
	stem alternation	60	61	62	63	64	65	66
	word-class flexibility/ alternation	70	71	72	73	74	75	76
	suffixation	80	81	82	83	84	85	86
	prefixation	90	91	92	93	94	95	96
	composition	100	101	102	103	104	105	106
	serial verb	110	111	112	113	114	115	116
	lexical syntagm	120	121	122	123	124	125	126
	idiom	130	131	132	133	134	135	136
	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...

calized syntagms (□ 120–121–etc.), and idioms (□ 130–131–etc.). The list contains, second, less current (or less obvious) devices of average European languages: e. g. gender alternation (□ 40–41–etc.; see below 4.4.5.); voice alternation (□ 50–51–etc.; e. g. Anc.Gr. L_1 *gameîsthai* / C_1 TO MARRY (AGENT = BRIDE) with L_2 *gameîn* / C_2 TO MARRY (AGENT = BRIDEGROOM), example corresponding to □ 41, because involving different perspectives within one frame). The list contains, third, devices typical of certain non-European languages: tone alternation (□ 10–11–etc.; e. g. Lahu (Tibeto-Burman) L_1 *cā* / C_1 TO FEED with respect to L_2 *câ* / C_2 TO EAT, example corresponding to □ 11); reduplication (□ 20–21–etc.; e. g. Yoruba L_1 *lílọ* (deverbal nominal form) with L_2 *lọ* (verb) / C_1 = C_2 = ACTION OF GO, corresponding to □ 20); stem alternation (□ 60–61–etc.; e. g. Arab. L_1 *ʾatʿama* (stem IV) / C_1 TO FEED with L_2 *taʿima* (stem I) / C_2 TO TASTE, TRY, corresponding to □ 61); serial verb (□ 110–111–etc.; e. g. Yoruba L_1 *gbé … wá* / C_1 TO BRING with L_{21} *gbé* / C_{21} TO CARRY and L_{22} *wá* / C_{22} TO COME, where both components correspond to □ 111). But the open list of formal devices in Table 85.6 still has to be completed in order to have an inventory of all the formal devices fulfilling lexical motivation tasks.

In addition, the typologically different shapings of the very general categories appearing in the vertical dimension of Table 85.6 would have to be worked out, as a few examples will show. □ 70–71–etc. comprise word-class flexibility of multifunctional lexemes in languages without inflexion (e. g. Chin. *shàng* 'upper', 'to mount', and 'on'; Hait. Creole *chita* 'to sit down', 'the sitting', and 'stagnant') as well as competing word-class alternation devices in languages with rich inflexion: e. g. alternation through replacement of word-class specific bound grammemes as in Ital. *invit<u>o</u>* 'invitation' with respect to *invit<u>are</u>* 'to invite' (□ 71) vs. alternation with unchanged word-class specific bound grammemes as in Ital. *(l')av<u>ere</u>* 'credit' with respect to *av<u>ere</u>* 'to have' (□ 71) (English is rather near the word-class flexible type: e. g. *open* 'not closed', 'make/became open', and 'open air, space'; cf. also Vogel 1996). – Phrasal verbs as E. *to go up* could be associated to idioms (□ 130–131–etc.), but in some languages they optionally look like a kind of prefixation (□ 90–91–etc.): cf. Germ. *wenn er ihn herüber|lockt* 'if he lures him to come over', but: *er lockt ihn herüber* 'he lures him to come over'; Hung. *elfutott*, but also *futott el* 's/he ran away'. – Lexicalized syntagms (□ 120–121–etc.) comprise typically Romance prepositional phrases as Fr. *livre de poche* 'paperback' (C_{21} BOOK = □ 105; C_{22} POCKET = □ 101) as well as, for instance, Persian *ezāfe* constructions (e. g. Pers. *kise-ye pul* 'purse': C_{21} BAG = □ 105; C_{22} MONEY = □ 101). – Besides the widespread binominal compounds such as E. *coffee break* or Fr. *pause café* (differing only by the opposite modifier-head order), the formal type 'composition' (□ 100–101–etc.) also includes, among others, the typically Romance verb-noun-compounds (e. g. Fr. *ouvre-boîte*, Span. *abre|latas* etc. 'tin opener': cf. for alternative analyses within the framework of Table 85.6: Blank 1998: 21; Gévaudan 1999: 22).

4.4.2. Non-motivatedness, explicitness of transparency and preferences for formal types of motivation

A rather traditional issue is the study of language specific preferences (or non-preferences) for motivation and, within motivation, for different formal types of transparency relations L_1–L_2, independently of underlying cognitive relations: "The proportion of opaque and transparent terms, and the relative frequency of the various forms of motivation, may provide valuable criteria for linguistic typology" (Ullmann 1966: 222; for what follows, cf. op. cit., 222–224, 228; Ullmann 1953; 1969: 127–131, 316; Bally 1965: 341–359; Skalička 1965: 155 f.; Malblanc 1968; Vinay/Darbelnet 1964; Schepping 1985: 189; a critical survey in Blumenthal 1997: 107–111). Composition, for instance, is present in principle in Germanic as well as in Romance languages: e. g. E. *sleeping car* and Germ. *Schlaf|wagen* as well as Fr. *wagon-lit*, Span. *coche cama*, or Ital. *vagone letto* (□ 101 (modifier) + 105 (head) in Table 85.6, in Romance typically, though not generally, opposite order; cf. also the especially Romance verb-noun compound mentioned in 4.4.1.). Nevertheless, it has been stressed frequently enough that German possesses many motivated words (compounds or at least derivatives), whose French equivalents display no synchronic motivation at all or less motivation, whereas other Romance languages and English occupy a somewhat intermediate position: e. g. Germ. *Kaffee|kanne* or E. *coffee|pot* (□ 101 (modifier) + 105 (head)) vs. Fr. *cafet|ière*, Span. *cafet|era*, Ital. *caffett|iera*, or Rum. *cafetieră* (□ 81); Germ. *Finger|hut* (□ 101 (modifier) + 105 (head)) vs. Span. *de|dal*, Ital. *dit|ale*, or Rum. *deget|ar* (□ 81) vs. E. *thimble*, Fr. *dé* (no synchronic motivation); cf. also examples from other languages: Finn. *ava|in* 'key' (□ 81), Arab. *mi|ftāḥun* 'key', Hausa *má|búɗ|i* 'key' (□ 91), derived respectively from Finn. *avata*, Arab. *fataḥa*, Hausa *búɗa*, all 'to close' or 'to open', vs. E. *key*, Fr. *clé*, Span. *llave*, Ital. *chiave*, or Rum. *cheie* (no motivation; for Germ. *Schlüssel*, see 4.4.3. below). On the other hand, French (and other Romance languages, but sometimes also English), makes use of even more explicit formal devices than German: e. g. Fr. *agence de voyage*, Sp. *agencia de viajes*, or Ital. *agenzia di viaggi* (□ 125 (head) + 121 (modifier)) vs. E. *travel agency* or Germ. *Reise|büro* (□ 101 (modifier) + 105 (head)); Fr. *année universitaire*, Sp. *año académico*, Ital. *anno accademico*, or E. *academic year* (□ 125 (head) + 121 (modifier), in English opposite order) vs. Germ. *Studien|jahr* (□ 101 (modifier) + 105 (head)).

These considerations involve the factors of formal (part-whole) contiguity and formal similarity already touched in 4.3.1. We can establish a continuum of degrees of 'explicitness' within transparency, going from absence of motivation via total formal identity

(polysemy; cf. also 6.1.) and formal part-whole identity with more or less formal dissimilarity of the wholes (tone alternation, category alternation) to more and more marked part-whole differentiation (derivation, composition, idioms):

In addition to degrees of explicitness, based on formal part-whole contiguities and formal similarity between whole lexical items (Figure 85.19), we have to specify degrees of congruence within transparency, based on degrees of formal similarity between parts of

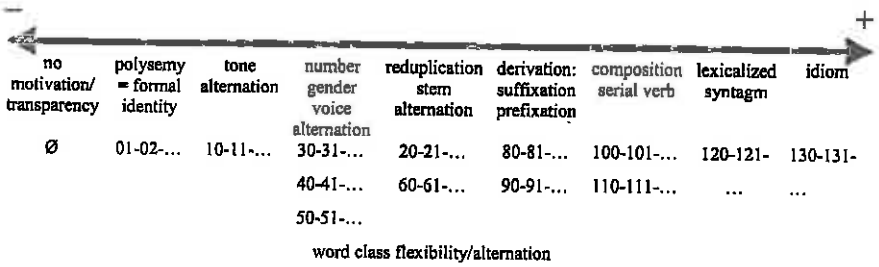


Fig. 85.19: Degrees of explicitness in transparency (numbers referring to squares □ in Table 85.6)

To get valuable typological insights, contrastive observations concerning motivational explicitness would have to be consolidated by large scale investigations broadened in at least two directions: 1° considering a large range of concepts of different domains, and 2° investigating a greater sample of languages. As for point 2°, we can expect typical preferences (and quasi-equivalences) according to different phonological, morphological or syntactic language types, as for instance: tone alternation in tone languages vs. polysemy, voice alternation, derivation, etc. in other languages; gender alternation in languages with extensive gender systems (s. below 4.4.5.) vs. polysemy, nominal derivation, etc. in other languages; stem alternation in Semitic languages vs. polysemy, voice alternation, derivation, etc. in other languages; serial verbs in languages like Hindi, Yoruba, Chinese, Creoles, etc. vs. verbal derivation etc. in other languages, and so on.

4.4.3. Congruence and stratification

The existence of a cognitive relation between two concepts C_1 and C_2 does by no means imply that there actually is an observable formal relation L_1–L_2. In fact, the edge corresponding to the latter relation in Figure 85.17 can be totally lacking, as, for instance, in E. L_1 *journey* / L_2 *to travel* (C_1–C_2 = identity), E. L_1 *dairy* / L_2 *milk*, already cited in 4.3.1. (C_1–C_2 = contiguity), or E. L_1 *queen* / L_2 *king* (C_1–C_2 = taxonomic similarity). In such cases, there is no explicit formal relation at all between L_1 and L_2, i. e. total opacity.

lexical items (cf. the scale of 'diagrammaticity' presented in Dressler 1985: 130 f.). Since congruence presupposes at least minimal explicitness (i. e., polysemy which necessarily achieves maximal congruence), the two continua are organized in the following way:

There are combinations of different degrees of explicitness with different degrees of congruence. A word like Germ. L_1 *Schlüssel* C_1 KEY, belonging theoretically into □ 81 in Table 85.6, has medium explicitness, but clearly reduced congruence with respect to L_2 *schließen* C_2 TO CLOSE (as opposed to totally non-explicit E. *key* on the one hand and to medium-explicit and congruent Hausa *mábudī* on the other hand: cf. 4.4.2). Cases of lexical suppletion correspond to non-congruence: e. g. Fr. L_1 *vitesse* C_1 QUALITY OF BEING FAST, medium-explicit (□ 80), but non-congruent in relation to L_2 *rapide* $C_{1=2}$ QUALITY OF BEING FAST (as opposed to totally non-explicit E. L_1 *speed* in relation to L_2 *fast* on the one hand and to medium-explicit and congruent Ital. L_1 *velocità* in relation to L_2 *veloce* on the other hand).

The presence of more or less congruent motivated lexical items in a given language is an important feature for lexical typology. Languages with strong allomorphic tendencies necessarily reduce lexical congruence: e. g. Anc.Gr. L_1 *pístis* C_1 FAITH (□ 80) in relation to L_2 *peíthesthai* C_1 TO TRUST. But as can be seen from the example of root inflection, congruence depends not only on formal similarity, but also on the vitality of the morph(on)ological patterns concerned. In

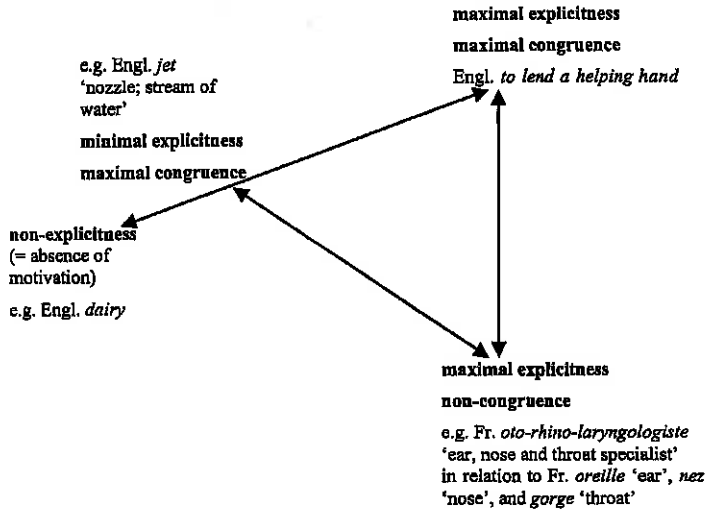


Fig. 85.20: Explicitness and congruence in lexical transparency

Arabic, with its full-fledged root-and-pattern system, cases of root inflection, like L_1 *qārī'* C_1 READER □ 71 in relation to L_2 *qara'a* C_1 TO READ, are highly regular and, hence, transparent; in German, they are still supported by – limited – analogical series (e. g. L_1 *Flug* C_1 FLIGHT □ 70 with L_2 *fliegen* C_1 TO FLY; cf. *Schub*, *Guss*, *Genuss*, etc.), and in English much less so (e. g. L_1 *song* □ 70/71 with L_2 *to sing*).

Note that reduced formal congruence absolutely has to be distinguished from obscured cognitive motivation resulting from semantic change either in L_1 or in L_2 (e. g. Ital. L_1 *calzolaio* C_1 SHOEMAKER with L_2 *calza* C_2 SHOE, but today C_2' STOCKING, C_2 being expressed now by *scarpa*). Since semantic change is omnipresent in all languages, these facts hardly yield a basis for synchronic lexical typology.

On the contrary, a fundamental factor involved in motivational congruence is the third, stratificational dimension of the onomasiological grid in Table 85.6. At first sight, the non-autochthonous character (and origin) of lexical items is a purely diachronic issue. On the synchronic level, these facts seem to be relevant only inasmuch as in a given language, certain components of the lexicon keep a "foreign" aspect, due to non-autochthonous phonological shape, accentuation, inflection, etc. (e. g. latinisms, grecisms, gallicisms, anglicisms, etc. in Modern German; gallicisms, anglicisms, etc. in Spanish, Italian etc.; but even in English, which easily integrates foreign lexical elements, there are the so-called 'hard words'). From the perspective of lexical motivation, however, it is much less the "foreign" aspect of a lexical item than, more generally, the degree of motivational congruence that counts. So, the problem arises in every language containing different strata in its lexicon, even if these are perfectly integrated in the synchronic consciousness of the speakers, as, e. g., Germanic, French, and Latin elements in English; inherited and 'learned' Latin elements in all the Romance languages; Romance, Slavonic, and other strata in Rumanian; Turkic and Arabic elements in Turkish; Iranian and Arabic elements in Persian; *wago* (Japanese) and *kango* (Sino-Japanese) in Japanese; etc. For our purpose, then, it will be sufficient to distinguish merely different 'strata' in the third dimension of Table 85.6 without specifying their (non-)autochthonous status. If the lexicon of a given language contains (at least) two deeply rooted different strata that affect motivation processes in the lexicon, it can be assigned to a "two-storeyed" language type ("langue à deux étages"; cf. Gauger 1971: 168; Ullmann 1966: 223 f.; 1969: 128–131; Albrecht 1970: 28–30. 215–220; Jespersen 1905: 46, 132; Blumenthal 1997: 108; see also

above the end of 3.2.3.). In Japanese, for instance, L_1 *suibun* C_1 MOISTURE contains a modifier L_{22} *sui* (□ 101) borrowed from Chin. *shui* WATER and totally non-congruent with Japanese *mizu* C_{22} (COLD) WATER. Similarly, Turk. L_1 *inşaat* C_1 CONSTRUCTION WORK (originating from Arab. *inšāāt*) is non-congruent with L_2 *kurmak* C_2 TO BUILD. Due to the massive presence of – originally learned – latinisms in the lexicon, Romance languages as well as English belong to a similar lexical language type: cf. e. g. L_1 Fr. *urbain* Span. *urbano* Ital. *urbano* E. *urbain* C_1 RELATED TO THE TOWN/CITY □ 81 (borrowed from Lat. *urbanus*), lacking any congruence with respect to Fr. *ville* Span. *ciudad* Ital. *città* E. *town, city* C_2 TOWN/CITY. Unlike in English, the degree of congruence in Romance languages often depends on the relative impact of sound change on present-day *signifiants*, which is particularly drastic in French: cf., e. g., L_1 Fr. *maturité* C_1 RIPENESS/MATURITY □ 80 (borrowed from Lat. *maturitas*), showing only weak congruence with respect to Fr. *mûr* C_2 RIPE/MATURE vs. L_1 Span. *madurez* Ital. *maturità* with L_2 Span. *maduro* Ital. *maturo*.

In this way, the languages just cited are opposed to a language type favouring motivational relations within one and the same stratum of the lexicon: cf., e. g., Finn. *laki* 'law', *laillinen* 'legal', *laillisuus* 'legality', etc.; Hung. *tudomány* 'science', *tudományos* 'scientific', *tudományosság* 'scientific character', etc. (cf. Sauvageot 1964, 63–66).

4.4.4. From cognitive to formal relations

One of the heuristic assets of the three-dimensional grid in Table 85.6 for lexical typology is the possibility of observing the assignment of formal relations to cognitive relations and vice versa. Starting from a specific cognitive relation between two given (types of) concepts C_1–C_2, we can distinguish different lexical types according to the formal relation L_1–L_2 expressing C_1–C_2 (for the opposite direction see below 4.4.5.). A striking example of the interlingual cognitive equivalence of different formal motivation devices, akin to Fr. *bois* (Table 85.4, language type B FOREST/WOODS – WOOD, characterized by a metonymic polysemy = □ 01 in Table 85.6), is, cognitively speaking, the English solution *woods – wood*, as based on contiguity. It is quite analogous, except that it is realized by number alternation on the formal level (□ 31).

On a large scale, equivalences of this kind can be illustrated here by the cognitive contiguity relation between TREE and FRUIT concepts (cf. Koch 1999c). If the FRUIT concept (C_2) is more salient than the TREE concept (C_1), it is the expression for the latter, L_1, that is almost universally motivated by the expression for the former, L_2 (e. g. E. L_1 *pear-tree* with L_{22} *pear*), or at least, the motivation between the two lexical items is reciprocal (e. g. Ital. *pera* and *pero*). In a sample of 26 European and non-European languages, we find for a salient FRUIT concept C_2, like PEAR, DATE, or MANGO, the following formal types of transparency for expressing the contiguous TREE concept C_1.

This example shows that the different formal realization of one and the same cognitive relation is an interesting onomasiological parameter for lexical typology (having more space, we could visualize the obvious arealtypological clusters in a map).

4.4.5. From formal to cognitive relations

Conversely, we can also start from a specific formal relation L_1–L_2 and determine the different cognitive relations C_1–C_2 that can be expressed through L_1–L_2 in different languages. This can be illustrated here by the formal relation of gender alternation (taking 'gender' not in the narrow sense typical, e. g., of Indo-European and Semitic languages, but including extensive noun class systems found in the majority of Niger-Congo languages; cf. Corbett 1991; Aikhenvald 2000). It is obvious that Swahili, for instance, employs gender (i. e. noun-class) alternation for expressing in a productive way a wide range of cognitive relations (the FRUIT–TREE programme with alternation between classes 3/4 and 5/6, exemplified in Table 85.7, type B, being only one of the examples for the relation of contiguity).

As Table 85.8 shows, Italian, too, surprisingly exploits gender alternation in a somewhat similar way (cf. Koch, P., 2000: 107). To be sure, Italian gender alternation is limited to bilateral correspondences within a two-gender system, whereas Swahili displays multilateral correspondences between its numerous noun classes, and, moreover, gender alternation is less productive in Italian than in Swahili. Nevertheless, even in Italian it still functions as a motivational device with possible extensions to new applications (e. g. to new, exotic fruits like BANANA, in Table 85.8; or, for instance, in *pillolo* PILL FOR MEN in relation to *pillola* PILL FOR WOMEN). From the typological point of view, this issue is highly relevant. The world's languages can be subdivided into those who possess a morphological gender/noun-class system and those who do not (such as, e. g., English, Persian, Turkish, Chinese, Japanese etc.; cf. Aikhenvald 2000: 77–80). The former group can, in turn, be subdivided into a subgroup that makes use of gender alternation as a device for lexical motivation (as Swahili and other affiliated languages, Italian and other Romance languages like Spanish, etc.) and a subgroup that, although possessing gender (French, German, etc.), does not.

Analogous considerations could be made for all the other formal motivation devices in order to reveal their cognitive "load" in different languages or language types.

Table 85.7: Transparency types for the contiguity relation C_1 TREE–C_2 FRUIT

		C_1 PEAR-TREE (et al.)	C_2/C_{22} PEAR (et al.)
type A	metonymic **polysemy** (□ 01)	Sard.I *pira* Russ. *gruša* Czech *hruška*	*pira* *gruša* *hruška*
type B	**gender alternation*** (□ 41)	Ital. *pero*, m. Rum. *păr*, m. Lat. *pirum*, n. Anc.Gr. *ápion*, n. Swah. *mtende*, class 3/4 [DATE-PALM]	*pera*, f. *pară*, f. *pirus*, f. *ápios*, f. *tende*, class 5/6 [DATE]
type C	**suffixation** (□ 81)	Fr. *poirier* Span. *peral** Port. *pereira* Cat. *perer(a)* Czech II *hrušeň* Mod.Gr. *axladjá, apiðjá*	*poire* *pera* *pera* *pera* *hruška* *axláði, apíði*
type D	**composition** (□ 101)	**modifier + head:** E. *pear-tree* Germ. *Birnbaum* Swed. *päronträd* Ndl. *pereboom* Hung. *körtefa* Jap. *nashinoki* Chin. *lí shù* **head + modifier:** Breton. *gwez-pér* Guadel.-Creole *pyé-mango* [MANGO TREE]	 *pear* *Birne* *päron* *peer* *körte* *nashi* *lí* *pér* *mango* [MANGO]
type E	**lexicalized syntagm** (□ 121)	**modifier + head:** Turk. *armut ağaci* **head + modifier:** Sard. II *arbore de pira* Pers. *deraxt-e golâbi* Arab. *šağara al-kummaθrai*	 *armut* *pira* *golâbi* *kummaθrai*

* But cf. Span. L_1 *manzano* with L_2 *manzana* (= type B)

Special case with opposite motivation:		C_1 PEAR	C_2 PEAR TREE
	suffixation (□ 81)	Pol. *gruszka*	*grusza*

Table 85.8: Gender alternation as a formal motivation device: examples from Swahili and Italian

	Swah.	Ital.
contiguity (□ 41)	*mtende*, 3/4 DATE-PALM – *tende* 5/6 DATE *mti*, 3/4 TREE – *kiti*, 7/8 WOODEN STOOL *mkó*, 1/2 DIRTY PERSON – *ukó*, 11/10 DIRTINESS *mzazi*, 1/2 PARENT – *uzazi*, 11/10 BIRTH etc.	*banano* m. BANANA TREE – *banana* f. BANANA *gobbo* m. HUNCHBACK (PERSON) – *gobba* f. HUNCHBACK *canapo* m. ROPE – *canapa* f. HEMP *pendolo* m. PENDULUM – *pendola* f. PENDULUM CLOCK etc.
metaphorical similarity (□ 42)	*mkomo*, 3/4 HAND – *komo*, 5/6 YOUNG WILLOW SHOOT *mkomo*, 3/4 HAND – *ukomo*, 11/10 YOUNG PUMPKIN SHOOT etc.	*foglio* m. SHEET OF PAPER – *foglia* f. LEAF *fronte* m. FRONT – *fronte* f. FOREHEAD *midollo* m. MARROW – *midolla* f. SOFT INNER PART OF BREAD etc.
taxonomic similarity (□ 43)		*pozzo* m. WELL – *pozza* f. PUDDLE *fiasco* m. BIG-BELLIED FLASK – *fiasca* f. FLAT FLASK etc.
taxonomic super-/subordination (□ 44/45)	*mtoto*, 1/2 CHILD – *kitoto*, 7/8 BABY *mlima*, 3/4 MOUNTAIN – *kilima*, 7/8 HILL *udole*, 11/10 FINGER – *kidole*, 7/8 LITTLE FINGER *mtu*, 1/2 MAN – *jitu*, 5/6 GIANT *mto*, 3/4 RIVER – *jito*, 5/6 LARGE RIVER *nyoka*, 9/10 SNAKE – *joka*, 5/6 GIANT BOA/PYTHON etc.	*legno* m. WOOD – *legna* f. FIREWOOD *pezzo* m. PIECE – *pezza* f. PIECE OF CLOTH *tavolo* m. TABLE – *tavola* f. TABLE FOR DINING *fosso* m. DITCH – *fossa* f. PIT etc.

Prima facie, these are semasiological considerations (from form to cognitive relation), but they result from general onomasiological considerations concerning the three-dimensional grid as a whole, and in the final analysis, they yield onomasiological insights about the formal devices that a given language (type) productively exploits for realizing transparency motivated by cognitive connections on the conceptual/perceptual level.

4.4.6. Designation strategies as typological features

The vertical and the horizontal dimension of the onomasiological grid in Table 85.6 also can serve as a measure for designation strategies in different languages with respect to a given (class of) concept(s). In the – restricted – language sample presented in Table 85.9, e. g., we find for the concept MOTORCAR, apart from the absence of motivation (A), essentially two fundamental motivational strategies: taxonomic subordination (C) and contiguity (D, with different subtypes and sub-subtypes), strategy B (taxonomic similarity) being marginal in this sample (diachronically – but no more synchronically – it can be reduced to C). It does not matter that both strategy C and D can be realized by different formal devices (C: □ 05, 105: D: □ 01, 71, 101).

Virtually, the onomasiological grid in Table 85.6 can help us to discover general abstract preferences of designation for given (classes of) concept(s). For example, there seems to be a high probability that the two concepts TO RENT (REAL ESTATE) and TO LET FOR RENT (REAL ESTATE) are expressed in a way that reflects their profound reciprocal cognitive connection: polysemy (□ 01) Fr. *louer*, Span. *alquilar*, Ital. *affittare*, Port. *alugar*, Rum. *a închiria*, Mod.Gr. *enikjázo*, Turk. *kiralamak*; voice alternation (□ 51) Anc.Gr. *misthûsthai* – *misthûn*; stem alternation (□ 61) Arab. *'ista'ğara* (stem X) – *'ağğara* (stem II) / *'āğğara* (stem IV); suffixation (□ 81) Swah. *-pangal-kodi* – *-pangishal-kodisha*; parallel suffixation derived from some

Table 85.9: Designation strategies and subtypes for the concept MOTORCAR

	designation strategy	L_1 expressing C_1 MOTORCAR		L_2 expressing C_2
A	**absence of (synchronic) motivation**	Germ. *Auto* Swed. *bil* Hung. *autó* Turk. *oto*		(cf. 4.4.3)
B	**taxonomic similarity**	Span. *coche*	03	= L_2 *coche* C_2 CARRIAGE
C	**taxonomic subordination**	E. *car* Fr. *voiture* Port. *carro* Hung. *kocsi* Chin. *qìchē* (head)	05 05 05 05 105	= L_2 *car* C_2 VEHICLE = L_2 *voiture* C_2 VEHICLE = L_2 *carro* C_2 VEHICLE = L_2 *kocsi* C_2 VEHICLE L_{21} *chē* C_{21} VEHICLE
D1	**contiguity with part**	Ital. *macchina* Rum. *maşină* Russ. *mašina* Jap. *kuruma*	01 01 01 01	= L_2 *macchina* C_2 MACHINE = L_2 *maşină* C_2 MACHINE = L_2 *mašina* C_2 MACHINE = L_2 *kuruma* C_2 WHEEL
D2	**contiguity with power**	Chin. *qìchē* (modifier) Mod. Gr. *aftokínito* (modifier)	101 101	L_{22} *qì* C_2 STEAM L_{22} *aftó* C_2 SELF
D3	**contiguity with process**	Arab. *sajjāra* Mod.Gr. *aftokínito* (head)	71 71	L_2 *sajjār* C_2 IN PERCEPTUAL MOTION L_{21} *kínito* C_2 MOVED (deriving via 81 from *kinó* TO MOVE)

hypothetical basic form (□ 81) Jap. *kariru* – *kasu*; prefixation/phrasal verb (□ 91/131) Am. E. *to rent* – *to rent out*; Swed. *hyra* – *hyra ut*, Germ. *mieten* – *vermieten*; serial verb (□ 111) Chin. *zū* – *chūzū*; idiom (□ 131) Hung. *bérbe venni* – *bérbe adni* (without motivation: E. *to rent* – *to let*, Russ. *snimát'* – *sdavát' vnájem*; and Hung. *(ki)bérelni* – *kiadni*). Even if the formal motivational devices used may considerably vary in formal details, the underlying cognitive relation is, of course, contiguity in all these cases (two different perspectives within the same frame; cf. Koch 1991: 296f.; 2001b; Blank 1997: 272–275, 393; Waltereit 1998: 76–79).

4.4.7. A heuristic grid

We have to bear in mind that not all the theoretical combinations represented in Table 85.6 are necessarily realized in any of the world's languages. In this sense, Table 85.6 offers an interesting heuristic grid for the search of lexical universals: what are the theoretical combinations that occur in all languages? which are those that do not occur in any language of the world? and why? This can be discussed here only in a highly tentative way with the help of a few examples.

Since polysemy is a universal phenomenon, all the combinations □ 01–02–etc. surely will be found in all languages. In contrast to this, word-class flexibility/alternation is by nature unsuitable for cognitive relations tied to a constant word class (similarity, taxonomic relations, contrast), and it is therefore restricted to the cognitive relations of identity and contiguity: cf. Fr. L_1 *le dîner* C_1 SUPPER □ 70 with L_2 *dîner* C_2 TO TAKE SUPPER; Fr. L_1 *le savoir* C_1 SUM OF WHAT IS KNOWN □ 71 with L_2 *savoir* C_2 TO KNOW; Fr. L_1 *voyager* C_1 TO

TRAVEL □ 70 with L_2 *voyage* C_2 JOURNEY; Fr. L_1 *pomper* C_1 TO PUMP □ 71 with L_2 *pompe* C_2 PUMP. A final example: it would be interesting to explore the range of cognitive relations covered, for instance, by stem alternation. Since the typically three-consonantal Arabic roots seem to be made for seizing conceptual frames (cf. the stimulating remarks in Bühler 1965, 221), it goes without saying that stem alternation can express contiguity relations within frames: e. g. Arab. L_1 *'inkasara* (stem VII) C_1 TO BREAK (INCHOATIVE) □ 61 with L_2 *kasara* (stem I) C_1 TO BREAK (CAUSATIVE). At least taxonomic subordination is likewise possible: e. g. Arab. L_1 *kassara* (stem II) C_1 TO SMASH (= a special manner of breaking) □ 65 with L_2 *kasara* (see above).

By examining in this way all the combinations conceived in Table 85.6, we will achieve a better understanding of the possibilities and limitations of human language in expressing concepts through motivational devices.

5. Onomasiological perspective: syntagmatic axis

If paradigmatic lexical typology deals with problems of packaging conceptual material into single lexical items according to hierarchical (3.) and motivational (4.) principles, syntagmatic lexical typology has to cope with the problems that arise from packaging conceptual material into sequences of lexical items.

5.1. Selectional restrictions

The problem of selectional restrictions has been attracting linguists' attention at least since Porzig's discovery of 'wesenhafte Bedeutungsbeziehungen' in 1934. It has been studied within the generative paradigm (Chomsky 1965: 75–100, 106–111; McCawley 1968: 132–135; Bierwisch 1970; also Lehrer 1974: 173–184) as well as in valency theory (Helbig 1969) and in structural semantics (Coseriu 1967; Coseriu/Geckeler 1981: 63). Coseriu has rightly insisted on distinguishing linguistic 'lexical solidarities' from restrictions due to our encyclopedic knowledge. An interesting aspect for lexical typology, however, is the fact that even language-specific selection restrictions typically seem to recur in particular conceptual spheres. Some of these are, for instance, HORSE (3), HAIR (4), and NOSE (5) (cf. also Bally 1965, § 206):

(3) E. *sorrel*, Fr. *alezan*, Span. *alazán*, Ital. *saurolbaio*, Rum. *roib* (HORSE: SORREL)

(4) (a) E. *fair*, Germ. *blond*, Fr. *blond*, Span. *rubio*, Ital. *biondo*, Lat. *falvus*, Mod. Gr. *ksanθós*, Hung. *szőke*, Arab. *'ašqar* (HUMAN HAIR: FAIR)
(b) Fr. *roux*, Russ. *rýžij* (HUMAN HAIR: RED)

(5) (a) E. *aquiline*, Fr. *aquilin*, Span. *aguileño*, Ital. *adunco*, Rum. *acvilin* (HUMAN NOSE: AQUILINE)
(b) Fr. *camus*, Ital. *camuso* (HUMAN NOSE: SQUAT)
(c) E. *snub* (HUMAN NOSE: SHORT AND TURNED-UP)

As indicated by the dotted lines in Figure 85.1, the syntagmatic problem of selectional restrictions is interwoven with the taxonomic as well as the engynomic hierarchical aspect of the paradigmatic axis. Taxonomically speaking, lexical items for particularly fine-grained concepts (SORREL, FAIR (HAIR), etc.) are selected by virtue of the hierarchy of the selecting concepts (taxonomy: HORSE (3); engynomy: HUMAN HAIR (4), HUMAN NOSE (5)). It is probably not by mere chance that in all these cases there is some connection with the anthropologically fundamental engynomy of BODY PARTS (cf. 3.3.2./3.; even the HORSE taxonomy is subspecified in terms of the body part HAIR).

Müller-Gotama (1992) presents an interesting case of lexical-typological divergence in verb-object collocations with an EFFECTED OBJECT in English, Indonesian, German, Korean, and Russian (Table 85.10). The more specific verb, depending on the taxonomy of EFFECTED OBJECTS, is always acceptable in all five languages (except *kkomay* in Korean), but the possibility of replacing it with an all-purpose verb declines going from English (with a minimal restriction) to Russian (with maximal restrictions). According to Müller-Gotama, this scale of increasing lexical specificity parallels the scale of semantic transparency in grammar in the languages under consideration (as opposed to tendencies of grammaticization).

Indeed, English (but also French) and German seem to differ systematically on the level of 'semantic agreement' (Plank 1984) between verbs and their objects (cf. also König 1996: 49 f.):

(6) (a) *to put on one's glasses* — *mettre ses lunettes* — *die Brille aufsetzen*
(b) *to put on one's jacket* — *mettre son veston* — *das Jackett anziehen*
(c) *to put on a tie* — *mettre une cravatte* — *eine Krawatte umbinden*
(d) *to put on a ring* — *mettre un anneau* — *einen Ring anstecken*

There can be no doubt: "Selektionsbeschränkungen [gehören] unbedingt zu den relevanten Parametern einer 'lexical typology'" (Lang 1996: 348; cf. also Schepping 1985: 190).

5.2. Metataxes

The examples presented in 5.1. have shown interlingual lexical divergences emerging as syntagmatic constraints, without, however, affecting the syntactic categories and functions of the lexical items concerned: the selectional restrictions held between adjective and noun, between verb and object, etc. But lexical typology must also account for divergences involving the packaging of conceptual material into categories and functions within the sentence. From a primarily syntactic perspective, interlingual divergences of this kind have been discussed by Lucien Tesnière under the heading 'metataxis' (Fr. *métataxe*; cf. Koch in press): "Toute langue établit entre les **catégories de la pensée** et les **catégories grammaticales** qui les expriment, certaines correspondances qui lui sont propres. [...] Mais, toutes les langues ne faisant pas forcément appel à la même catégorie grammaticale pour exprimer la même catégorie de la pensée, il en résulte que la traduction d'une langue dans une autre nécessite quelquefois l'appel à une catégorie grammaticale différente. C'est la forme la plus simple de la métataxe" (Tesnière 1959: 284). Even if many metataxes are only of syntactic interest, the cognitive implications discoverable in this quotation foreshadow the possible relevance of metataxes for contrastive lexicology and lexical typology. Indeed, the divergent categorial processing of the conceptual material is an important issue for lexical typology (5.2.1.). Since the verb constitutes at the same time the syntactic pivot and the most complex lexical item of the sentence, the divergent functional organization of its participants is also highly relevant for lexical typology (5.2.2.).

5.2.1. Categorial metataxes

Categorial interlingual divergences with lexical relevance have been described for several conceptual fields and domains: PROPERTY, ASPECT, STATE CHANGE, REALIZATION OF ACTION, ACTION CORRELATING, MOTION, and PART OF SPACE (cf. Talmy 1985; 1991; Lehmann 1990). This will be illustrated here by examples for PROPERTY and MOTION.

Depending on the language type, PROPERTIES are expressed typically through adjectives

Table 85.10: Lexical specifity with EFFECTED OBJECTS

EFFECTED OBJECT	E.	Indon.	Germ.	Kor.	Russ.
	all-purpose verb: *make*	all-purpose verb: *buat*	all-purpose verb: *machen*	all-purpose verb: *mantul*	all-purpose verb not used
DRESS	+/*sew*	+/*jahit*	+/*nähen*	+/(*kkomay*$_{AFF}$)	*/*/
BREAD	+/*bake*	+/*panggang*	+/*backen*	+/*kwup*	*/*/
TEA	+/*brew*	+/*masak*	+/*kochen*	*/*/	*/*/
ROPE	+/*weave*	+/*tenun*	+/*weben*	+/*cca*	*/*/
NEST	+/*weave*	+/*bangun*	+/*bauen*	+/*tul*	*/*/
ROAD	+/*lay*	+/*bangun*	*/*/	+/*noh*	*/*/
HOUSE	*/*/	+/*bangun*	*/*/	*/*/	*/*/

+/ = all-purpose verb possible;
*/ = all-purpose verb not permitted;
?/, ??/ = all-purpose verb more or less problematic
AFF = usable only with AFFECTED OBJECT

(type A), by stative verbs (type B), or by abstract nouns (type C), respectively (there are also mixed types; cf. in general Dixon 1977):

Table 85.11: Expression of PROPERTIES (after Lehmann 1990, 171)

	type A e. g. English	Type B e. g. Turkana	type C e. g. Tamil
attribute	adjective	relativized stative verb	adjective derived from abstract noun
predicative	adjective + copula	stative verb	abstract noun (or derivative)
noun	abstract noun derived from adjective	abstract noun derived from stative verb	abstract noun

In type B languages, PROPERTY concepts can be attributed only by relativization of the corresponding stative verb (7); in languages of type C, they are attributed, except for very few primary adjectives, by derivation of an adjective from the corresponding abstract noun (8):

(7) Turkana
e-kile
M SG-man(NOM)
lɔ-a-mɔn-a-n
REL M SG-3 SG-mean-STAT-SG
'mean man'

(8) Tamil
ganam-ulla manusan
weight-y man
'heavy man'

Rijkhoff (2000) points out that a language can have a major class of adjectives necessarily characterized by the feature [−Shape] only if it has first order nouns characterized by the feature [+Shape] (singular object nouns, set nouns).

Categorial metataxes often produce a kind of syntactic "recasting" (Fr. *chassé-croisé*). This has been studied for MOTION verbs in French, German, and English at least since Charles Bally ([4]1965: 349 f.; Malblanc 1968: 66–70, 92–94, 161–165; Vinay/Darbelnet 1964: 58, 105–107; Wandruszka 1969: 460–469; Schwarze 1983: 205 f.; Schepping 1985: 191; Blumenthal 1997: 11, 70 f.; in terms of syntactic metataxis: Tesnière 1959: 307–310). Within the cognitive paradigm, Talmy (1985; 1991) describes the structure of a MOTION event-frame as consisting of a FIGURE (the moving object), a MOTION, a PATH, a MANNER, and a GROUND (a point or zone of reference for the moving object). As illustrated in Figure 85.21, we can distinguish, with respect to the central component PATH, two language types: (A) 'satellite-framed' languages that render PATH by a 'satellite', i. e. an adverb, a preposition, a verbal prefix, etc., and (B) 'verb-framed' languages that express PATH through the verb (cf. also König 1996: 48 f.; Ungerer/Schmid 1996: 233–246).

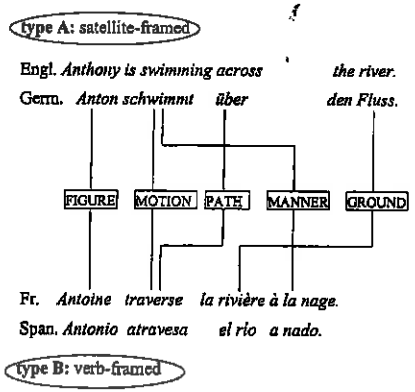


Fig. 85.21: Satellite-framing and verb-framing in a MOTION frame-event (taking up a traditional example from Tesnière 1959: 310; representation after Ungerer/Schmid 1996: 238)

According to Talmy, the satellite-framed type A includes most Indo-European (except Romance) and the Finno-Ugric languages as well as Chinese, Ojibwa, and Warlpiri, whereas the verb-framed type B includes Romance, Semitic, Polynesian, most Bantu, and most Mayan languages as well as Japanese, Tamil, Nez Perce, and Caddo (for Italian as a mixed language, cf. Koch, P., 2000: 108 f.; for Atsugewi as belonging to a third type that conflates FIGURE in the MOTION verb, cf. Talmy 1985: 73 f.). Note that the two types A and B in Figure 85.21 are not totally symmetrical.

In fact, on the cognitive level PATH is indispensable for a MOTION event-frame (except for a few very general verbs like E. *to go*), and on the syntactic level the verb is indispensable for the sentence. So, satellite-framed languages always have to express MOTION and MANNER (conflated in the verb), as well as PATH. In contrast to this, verb-framed languages have to express only MOTION and PATH (conflated in the verb), whereas MANNER is optional. In a strong context (e. g., a very deep river), Fr. *Antoine traverse la rivière!* Span. *Antonio atravesa el río* would be sufficient, and adding the MANNER expression might be rather clumsy (cf. also Slobin 2000). From the taxonomic point of view (3.2.), verb-framed MOTION expressions without MANNER specification belong to a hierarchically higher level, i. e. they are more "abstract" (s. the end of 3.2.3.).

5.2.2. Participant metataxes

Due to the central role of the verb in valency theory, Tesnière (1959: 286–299) takes a particular interest in metataxis affecting the realization of verbal participants (*interversion des actants*). (9 a/b) is a striking example of what he calls *interversion double des actants*, as the subject (S) and the indirect object (IO) of the French verb *manquer* correspond to the direct object (DO) and to the subject of the English verb *to miss* respectively:

(9) (a) E. *Is miss you*DO.
(b) Fr. *Vous*S *me*IO *manquez.*

But whereas according to Tesnière "il s'agit d'exprimer une idée sémantiquement identique par une phrase structuralement différente" (1959: 284), a more sophisticated approach to clause structure reveals that syntactic form and conceptual categories interact in a more intricate way that is highly significant from the typological point of view. There is considerable agreement among linguists as to a stratification of clause structure that comprises at least three levels with non-univocal, but prototypical correspondence patterns: (i) (formal) syntactic structure, (ii) semantic role structure, and (iii) informational structure (cf., e. g., Daneš 1964; Halliday 1970; Dik 1979: 13 f.; Koch 1981: 36–52; Lazard 1981; Givón 1984: 30–36; Oesterreicher 1991: 349–361). So, it is natural to conceive a likewise stratified model of participant metataxes on the (i) syntactic level, on the (ii) semantic-role level, and/or on the (iii) informational level (cf. Koch 1995; in press, section 4.3.2.). In view of the fact that every verbal lexical item *per se* bears a specific – unmarked – informational profile triggering a specific syntactic coding of the participants (cf. Oesterreicher 1991: 353–357), participant metataxes affecting (also) levels (ii) and/or (iii) are of immediate interest for lexical typology.

This can be illustrated, for instance, by psych-verbs that are characterized by the semantic roles of EXPERIENCER and EXPERIENCED. Since neither the EXPERENCIER role nor the EXPERIENCED role is particularly salient on an AGENT-PATIENT continuum (Dowty 1991), psych-verb concepts have reduced semantic transitivity in the sense of Hopper/Thompson (1980), and the syntactic options of different languages depend on informational and lexical factors. We can establish a semantic continuum of the following kind:

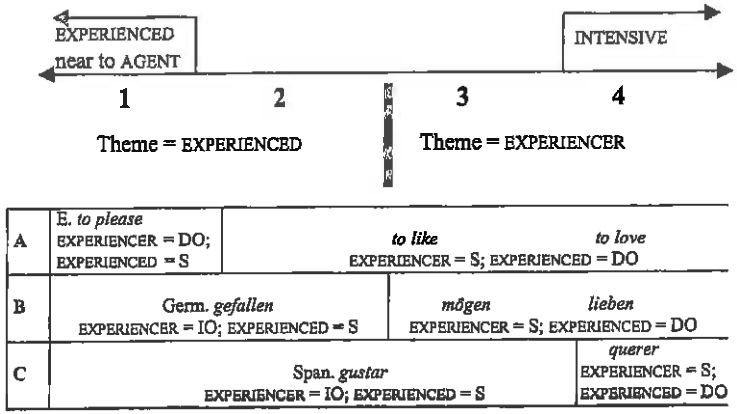


Fig. 85.22: The psych-verb continuum

The interlingual divergences concern not only the more or less transitive syntactic coding of the psych relation, but also lexical split within the whole area 1–4 (cf. Antinucci 1977: 90–92; Geisler 1988; Whitley 1995; Bossong 1998; Koch, I., 2000: 261–283, 294; Koch, P., 2000: 109–111; 2001 c). Languages with high subject prominence (cf. Sasse 1982), like English (A), tend to cover not only the thematic EXPERIENCER (zone 3), but also the thematic EXPERIENCED (zone 2) with one transitive verb (*to like*) that – in the unmarked case – has a thematic EXPERIENCER subject (indeed, E. *please*, used with EXPERIENCED subject, is rather unpopular and almost limited to zone 1: cf. the famous Chomskyan sentence *John is eager to please*; Fr. *plaire* is still more vital, but transitive *aimer* is penetrating into zone 2 as well). Languages with low subject prominence, like Spanish and many other Romance languages (C), tend to cover not only zone 2, but also zone 3 with one non-transitive verb (*gustar*) that has an EXPERIENCER subject (the transitivity split involving a lexical split with *querer* occurs only in zone 4). Interestingly, the overall non-transitive verb regularly renders a thematic EXPERIENCED (zone 2: Span. *Esta cerveza me gusta.* 'I LIKE this beer') as well as a thematic EXPERIENCER (zone 3: *Me gusta la cerveza.* 'I like beer'). A compromise type is realized in German (B), where it is the transition from EXPERIENCED subject to EXPERIENCER subject that triggers a transitivity split together with a lexical split (between *gefallen* and *mögen*; a variant is found in Portuguese, where non-transitive *agradar* with EXPERIENCED subject in zone 1 and 2 is opposed to non-transitive *gostar de* with EXPERIENCER subject, but prepositional EXPERIENCED, covering zone 3 and part of 4). A complete typological picture would have to include other solutions available in the world's languages, as double nominative (for EXPERIENCER and EXPERIENCED) in Jap. *suki*, impersonal constructions (e. g. – marginally – with Rum. *a plăcea* and Anc.Fr. *plaire*), or 'auto-conversion' in polysemous overall verbs with two opposite informational perspectives and valency orientations (e. g. E. *to please s. o.* vs. *Go as you please*; Fr. *répugner à qn.* 'to disgust s. o.' vs. *répugner à qc.* 'to detest s.th.'; with interesting diachronic implications: cf. Koch 1991: 296 ff.; 2001: 73–77; Blank 1997: 276–278; Waltereit 1998: 75–83).

Similar considerations, involving additional taxonomic, engynomic, and motivational problems, could be applied to interactions between the conceptual domains of POSSESSION, LOCATION, and EXISTENCE (cf. Lyons 1967; Clark 1978; Koch 1993; 1999 b; Hengeveld 1992: 73–126; Heine 1997; Feuillet 1998).

6. Semasiological perspective

As already pointed out in section 2., lexical typology is mainly onomasiological. Even the apparently semasiological step from formal to cognitive relations in motivation (4.4.5.) is ancillary to overriding onomasiological questions. Nevertheless, there remain at least two semasiological issues to be discussed in lexical typology: these are the lexical phenomena of polysemy (6.1.) and homonymy (6.2.) that are definable only from the point of view of the *signifiant*.

6.1. Quantitative aspects of polysemy

Qualitative aspects of polysemy are to be treated from an onomasiological perspective in terms of hierarchy (3.2.1., Figure 85.6; 3.3.1., Figures 85.13, 85.14, 85.16) and motivation (4.3.1., passim). If, on the contrary, polysemy is seen as a quantitative feature of language, it has to be treated as a semasiological problem, i. e. from the point of view of the *signifiant* of $L_{l=2}$ (cf. 4.3.1).

Bally (1965, § 569) claims that French is a language that favours lexical polysemy as a motivational device (cf. also Ullmann 1966: 232; Blumenthal 1997: 108). Indeed, it is easy to demonstrate correspondences between polysemous French words and more explicit German word formations: e. g. Fr. *livrer* 'to deliver (merchandise); to cater for; to extradite' vs. Germ. *liefern* 'to deliver', *be|liefern* 'to cater for', *aus|liefern* 'to extradite' (cf. also Fr. *louer* vs. Germ. *mieten*, *ver|mieten* in 4.4.6.). Bally explains the French preference for polysemy by hinting at the tendency towards non-motivation (cf. 4.4.2.), as he believes opacity to stimulate proliferation of senses in a given lexical item (in contrast to a transparent lexical item that is more strongly linked to its "etymological" meaning). This purely semasiological argument ignores the fact that from an onomasiological perspective, polysemy, just like word formation, is itself a motivational device (cf. 4.3.1. above). The real difference resides in the degree of explicitness, which often actually seems to be reduced in French (cf. 4.4.2.). But since explicitness is reduced in other Romance languages and in English as well, we should expect a high polysemy rate in these languages, too. In fact, Skalička (1965: 156) deduces an equally strong tendency towards polysemy from the 'isolating' character of not only French, but also English (for the special sense of 'isolating' in his typological construct, cf. Skalička 1966).

All in all, without statistical evaluation of a large language sample and a wide range of concepts, "it would be difficult to prove that semantic motivation [i. e. polysemy], by metaphor or other means, has greatly benefited by the decline of composition and derivation" (Ullmann 1966: 224) in French or in English (all the more so, as these languages make ample use of latinisms as a supplementary stratum: 4.4.3.; cf. Ullmann 1969: 131).

6.2. Quantitative aspects of homonymy

It goes without saying that the homonymy rate of a given language is a remarkable semasiological feature for lexical typology (cf. Ullmann 1966: 235 ff.). Chinese represents a particularly striking case in point: cf. *lǐ*$_1$ 'ritual, ceremony; politeness'; *lǐ*$_2$ 'lining'; *lǐ*$_3$ 'neighbourhood; (home) village'; *lǐ*$_4$ 'in; inner'; *lǐ*$_5$ 'texture, grain; law, reason, truth; science; to administer, to conduct; to prepare, to arrange'; *lǐ*$_6$ 'vulgar'; *lǐ*$_7$ 'river carp' (these are homophones, but not homographs; note that tone paronyms like *lǐ* and *lì* are not included in the above list!). Another language with a high homonymy (i. e. homophony) rate is French: cf. *cinq* /sɛ̃/$_1$ 'five'; *ceint* /sɛ̃/$_2$ 'girt'; *seing* /sɛ̃/$_3$ 'signature'; *sein* /sɛ̃/$_4$ 'bosom'; *sain* /sɛ̃/$_5$ 'sound; healthy'; *saint* /sɛ̃/$_6$ 'holy'.

7. Concluding remarks

The material presented in this article has repeatedly confirmed Ullmann's statement: "Even languages belonging to the same family and culture will sometimes show remarkable discrepancies" (1966: 252). This means that conversely, the lexical-typological alliances are often independent of genetic and areal connections. Their base must be, instead, of a more general kind.

At first glance, examples of lexical typology may seem somewhat anecdotal. On closer inspection, however, most of the onomasiological examples recurring in the literature turn out to belong to anthropologically fundamental conceptual fields and domains: KINSHIP, HUMAN BODY, HUMAN BEING, PREPARATION OF FOOD, COLOUR, DIMENSIONS, MOTION, DAY AND NIGHT, FOREST–TREE–WOOD–FRUIT, ANIMALS AND MEAT, SOUNDS, MAKING OF OBJECTS, PUTTING ON OBJECTS, PROPERTIES, PSYCHOLOGICAL ATTITUDES, etc. Furthermore, very general cognitive and formal constants in lexical semantics can be highlighted: prototypes (including implicational hierarchies), frames, cognitive relations as represented in Table 85.6, taxonomic and engynomic interlingual divergence patterns, polysemy, explicitness and congruence in transparency, selection restrictions, categorial metataxes, participant metataxes, etc. Very much like grammatical typology, lexical typology has to deal with recurrent designation problems, and despite the great lexical variety in the world's languages, the number of possible solutions does not seem to be unlimited when viewed from a cognitive perspective.

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86. Lexical typology from an anthropological point of view

1. Introduction

Anthropologists have undertaken substantial work on lexical typology most of which is little known to linguists. The modern era of this research began with the publication of Berlin & Kay's (1969) well-known book treating basic color terms (→ Art. 90). Since 1969, two other books dealing with aspects of lexical typology have been published: Greenberg's (1978) edited compilation in the series *Universals of Human Language* entitled *Word Structure* (Volume 3), and my (Brown 1984) *Language and Living Things* treating cross-language lexical uniformities in the folk classification and naming of plants and animals. In addition to these books, numerous articles have appeared. In this essay I review only works published since 1980. For a general overview of earlier literature, readers are directed to Witkowski & Brown (1978) and Brown & Witkowski (1980). (The basic cross-