

ILONA KOUTNY

From semantic networks to dictionary structures

Abstrakt (Od sieci semantycznych do struktur słownikowych). Studium bada, jak myśli stają się słowami oraz jaki zakres semantycznych relacji między słowami można umieścić w słowniku. Analiza dotyczy różnic w segmentacji świata zawartej w słowach, realizacji pojęć w poszczególnych częściach mowy oraz językowej formy czynników wydarzeń na podstawie pięciu języków etnicznych (węgierskiego, polskiego, angielskiego, francuskiego i niemieckiego) oraz języka planowego esperanto. Semantyczna łączliwość, tak jak odzwierciedla się ona w słowotwórstwie, wpływa na sposób konceptualizacji świata w danym języku.

Tradycyjne słowniki alfabetyczne zawierają mniej informacji na temat haseł leksykalnych niż bazy danych, chociaż w celu poznania słów potrzebna jest znajomość kontekstu, w jakim występują. Na zakończenie artykułu przedstawiono strukturę trójjęzycznych słowników tematycznych, które zawierają więcej semantycznych relacji potrzebnych dla przyswajania języka.

Abstract. This paper investigates how thoughts become words, and to what degree semantic relationships between words can be captured in dictionaries. It analyses differences in the segmentation of the world by words, realisations of notions in parts of speech, and the linguistic appearance of event factors on the basis of five ethnic languages (Hungarian, Polish, English, French and German) as well as the planned language Esperanto. Semantic compositionality as reflected in word derivation and formation contributes to the way the world is conceptualized in a given language.

Traditional alphabetically ordered dictionaries contain less information for entries than data bases, although to know a word means to know the system of its semantic relations, the contexts, where it can be used. Finally, the structure of trilingual thematic dictionaries that include more of the semantic relations necessary for language acquisition is presented.

1. Relation of language and thought

The priority of language or thought has always been a controversial problem in the philosophy of language. The basic question is if thought comes into being first, and

then it takes linguistic form or it can exist only in linguistic form. There is a general agreement that thought normally takes place in linguistic form.

It happens nevertheless often in emotional situations that people find it difficult to formulate their feelings by means of words. Topographic thinking also can do without words. Having something in mind, it can happen that the words do not follow; what is said is not what was meant, e.g. *left* instead of *right* or *Tuesday* instead of *Thursday*. Bilinguals or polyglots struggle sometimes to formulate their thoughts in one or the other language. It can occur that someone cannot remember, in which language they have received some information. All these facts argue for the approach that the information is not stored in the brain in linguistic form, but it is formulated in the target language when activated. Fodor (1975) supposes a structured *language of thought* with a compositional semantics. Concepts are mapped into words. The mental lexicon contains words with semantic, syntactic and phonetic knowledge about them.

On the other hand, according to linguistic relativism based on the Sapir-Whorf hypothesis, the categories of thinking are determined by the linguistic structure of the native language. For example, the Hungarian language does not have gender or any distinction between *he* and *she*, therefore the attribution of sex to a person is only a secondary step in contrast with French, German or Polish where speaking about somebody the gender has to be specified because of the grammatical gender of words.

Some languages are sensitive to the expression of time and have several categories (as does English), some others emphasize aspect (as do the Slavic languages), and they incorporate these categories into their morphology, i.e. conjugations. The biggest difference is manifested in the vocabulary and phraseology of languages. The linguistic picture of the world going back to Herder and Humboldt has a long tradition. It has imprints in grammar, semantics and pragmatics (see Bartmiński 1999, Anusiewicz et al. 2000, Bańcerowski 2008 etc.). Bańcerowski (2010) emphasizes the role of language in the human experiences about the world.

In the following, we will investigate in what forms notions (word categories, verbal frameworks) appear, how they are related to the event structure, how the world is segmented into words and which semantic relations maintain among them. A planned language, Esperanto is also included in the comparisons in order to see how it shares the semantic features of its source languages. In the second part, the dictionary representation of these relations will be investigated.

2. Linguistic appearance of notions

2.1. Segmentation of the reality by words

The elements of the same reality can be perceived differently and named differently. The distinction between *tree* and *wood* (De: *Baum* and *Holz*, Fr: *arbre* and *bois*) in which the second is the non-living counterpart of the first is in opposition with the

single Hungarian concept ‘fa’ (Japanese *ki*). This illustrates the differences in segmentation of the world by words. Similarly Hungarian does not distinguish between living and non-living for *skin/leather* ‘bőr’ or *pig/pork* ‘disznó(hús)’ although the neighboring Indo-European languages do distinguish these categories.

Another example for different segmentation is manifested by color names. Although the colors can be determined precisely by physical parameters, there are differences between languages in how they express the color names, how many basic colors they have. According to the researches of Berlin and Kay (1969 based on 100 languages) there are 11 basic colors: black and white; red; yellow and green; blue; brown; grey, orange and purple and pink where their appearances also represent a hierarchy. Polish distinguish three blues: *blekitny*, *niebieski*, *granatowy* according to their increasing darkness. Although Hungarian has two names for red: *piros* and *vörös*, they are lexicalized variants of the same color (Koutny 2011).

2.2. Differences in word classes

In languages where word classes are at all present, normally there are special relations between them: notions related to objects become words as nouns, activities as verbs and properties as adjectives. Here are four basic physical sensations:

Hu	éhes	szomjas	fázik	melege van
En	hungry	thirsty	be/feel cold	be hot
De	hungrig	durstig	frieren, jm kalt sein	jm warm sein
Fr	avoir faim	avoir soif	avoir froid	avoir chaud
Pl	głodny	chce się pić komu	zimno komu	gorąco komu
Eo	malsata, malsati	soifa, trinkema soifi	malvarmi, esti malvarme al iu	varmi, esti varme al iu

The two basic sensations *hungry* and *thirsty* most frequently become adjectives and are used with the verb *to be* in sentences, but French has an expression with the verb *to have* and a noun. Although there is an adjective in Polish (*spragniony* in a figurative sense), a verbal expression is used for *thirsty*. Esperanto has the adjectival form, but the verbal versions (*malsati*, *soifi*) are also used, even the noun form is possible (*havi/senti malsaton*, *soifon*).

The other two sensations are expressed by verb and an adjective expression similar to German, in French there is an analogy with the first two expressions: *avoir* ‘to have’ + sensation. The Polish structure is also similar to the German one: the experiencer is in the dative case + ‘is’ + sensation. The verbal form and also the above mentioned forms are used in Esperanto. Different forms of different languages can be used because of the

grammatical flexibility of Esperanto. The root (normally a bound morpheme) indicates the notion, and a word class ending is needed for the realisation in a given word class. The primary realisation of a root is often similar to that of its source languages which conduct some esperantologists to suppose a so called grammatical character of roots (for a discussion see Jansen 2011). The English roots – at the same time words – are often syntactically ambiguous (with noun, verb or adjective realisations), but these have an additional sememe in different classes, e.g. *warm* as verb contains *make* (e.g. *to warm the meal*).

3. Relations between notions and between words

Many relationships can be stated between notions as opposite, hierarchical (hyponymy and hiperonymy), associative relations, because concepts in memory are related, they result in semantic networks. Only some of these – relevant from the point of view of word creation – will be presented as follows.

3.1. Expression of opposites

Association experiments prove that the notions are stored in the brain on the basis of proximity in meaning or pronunciation. The opposite pairs are from these relationships. There are some affixes in different languages to express the opposite in some cases. In these cases one element of the pair is the basic word which can have beyond its meaning also a neutral one: e.g. *mały* – *duży* (Hu: *kicsi* – *nagy*), but the normal question is *Jak duże jest twoje mieszkanie?* (Hu *Milyen nagy a lakásod?* En *How big is your flat?*), happy – unhappy (Hu: *boldog* – *boldogtalan*). There are examples for opposite affixes: in German *un-*, in Polish *nie-*, French *mal-*, *mé-*, and English *in-*, *il-*, *des-*. In Hungarian there is a regular suffix with 6 allomorphes *-tlan/tlen...*, in Esperanto the systematic prefix *mal-* is used as the basic expression of opposite (although some neologisms appeared mainly in the poetic language).

Hu	<i>boldog</i> – <i>boldogtalan</i>	<i>elégedett</i> – <i>elégedetlen</i>	<i>rövid</i> – <i>hosszú</i>
En	happy – unhappy	satisfied – unsatisfied	short – long
De	<i>glücklich</i> – <i>unglücklich</i>	<i>zufrieden</i> – <i>unzufrieden</i>	<i>kurz</i> – <i>lang</i>
Fr	<i>heureux</i> – <i>malheureux</i>	<i>content</i> – <i>mécontent</i>	<i>court</i> – <i>long</i>
Pl	<i>szczęśliwy</i> – <i>nieszczęśliwy</i>	<i>zadowolony</i> – <i>niezadowolony</i>	<i>krótki</i> – <i>długi</i>
Eo	<i>feliĉa</i> – <i>malfeliĉa</i>	<i>kontenta</i> – <i>malkontenta</i>	<i>mallonga</i> – <i>longa</i>

3.2. Derived notions – derived words

To express new notions there are different well known possibilities for creating new words. They can be created or borrowed, existing words can receive more meanings, or derivation can produce a new word from an existing one to mention only the most common tools. To express derived notions by derived or compound words is a characteristic of agglutinative languages; other languages can use analytic forms. This is valid for Hungarian and also in Esperanto and there with an absolute consistency (see the table below).

Hu	<i>osztálytárs</i>	<i>iskolátárs</i>	<i>honfitárs</i>	<i>'egyvallású'</i>
En	<i>class-mate</i>	<i>school-mate</i>	countryman <i>compatriot</i>	<i>co-religionist</i>
De	<i>Mitschüler</i>	<i>Mitschüler</i>	Landsmann	<i>Glaubensgenosse</i>
Fr	<i>camarade de classe</i>	<i>camarade d'école</i>	<i>compatriote</i>	<i>co-religionist</i>
Pl	<i>kolega (z klasy)</i>	<i>kolega szkolny</i>	rodak	<i>współwyznawca</i>
Eo	<i>samklasano</i>	<i>samlernejano</i>	<i>samlandano</i>	<i>samreligiano</i>

Rimarks: osztály, klaso 'class', iskola, lernejo 'school', ország, lando 'country', vallás, religio 'religion'.

This results often in Esperanto words which can be translated only by a phrase in English: e.g. *malindulino* 'a woman not worthy of respect', *eksbelulo* 'a man who was once handsome'. Therefore, the principle of *semantic compositionality* is valid, and the derived words are motivated. In this case, the logical relationships between words are also reflected in their forms. The derivation is not only a morphological operation, but it manifests a special world view. The relation between notions becomes more explicit: *manĝilo* (= eating tool 'cutlery') shows its relation to eating. The linguistic picture of the world in Esperanto is analyzed in grammar and vocabulary in Koutny 2010.

3.3. Factors of events

In speaking about activities, an event is a basic notion: something is happening with different participants in different circumstances, using the terms of FrameNet based on frame semantics (Fillmore et al.): there is a *frame* and a *script*. Furthermore every event occurs in a given time and place, in some manner. The same reality can be presented from different points of view, e.g. the event of *selling* supposes the seller and the buyer, the merchandise and the money (the place, time and manner belong to accessorial information).

Sy sells sg to sy for sg

e.g.: A man (A) sold apples to his neighbour (B) during the weekend in his plot for a favourable price.

The same event can be approached from another aspect:

Sy buys sg from sy for sg

e.g.: Another man (B) bought apples from his neighbor (A) during the weekend in his plot for a favourable price.

If another verb is used then the grammatical function of the participants is different. The event could be presented even from the point of view of the merchandise by the application of passive voice:

Sg was sold to sy for sg.

Could a linguistic relation hold between these factors? The main element is the verb which expresses the activity and determines the other participants of the event by making use of prepositions and/or case endings (depending on the given language). Some of these factors could be derived morphologically from the verb. The following three verbs (*sell*, *work* and *learn*) are examples.

	agent	activity	object of act.	place of act.
Hu	eladó	eladás	áru	üzlet
En	seller	sale, selling	goods	shop, store
De	Verkäufer	Verkauf	Ware	Geschäft
Fr	vendeur	vente	marchandise	boutique
Pl	sprzedawca	sprzedaż	towar	sklep
Eo	vendisto	vend(ad)o	varo, vendaĵo	vendejo

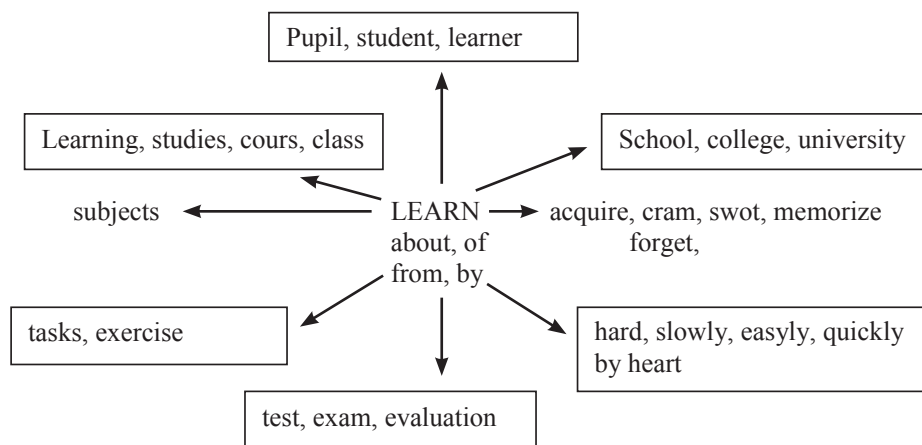
	agent	activity	object of act.	tool of act.	place of act.
Hu	dolgozó, munkás	munka	munka	munkaeszköz	munkahely
En	worker	work(ing)	work	work tool	work place
De	Arbeiter	Arbeit	Arbeit	Arbeitsmittel	Arbeitsstelle
Fr	travailleur, ouvrier	travail	travail	outil de travail	place de travail
Pl	pracownik	praca	praca	środek pracy	miejsce pracy
Eo	laboristo	labor(ad)o	laboraĵo	laborilo	laborejo

	agent	activity	object of act.	tool of act.	place of act.
Hu	tanuló, diák	tanulás	tanulnivaló	taneszköz	iskola
En	student, pupil, learner	learning	subject matter	learning materials	school
De	Schüler	Lernen	Lernstoff	Lernmittel	Schule
Fr	élève	apprentissage	(qc à apprendre)	–	école
Pl	uczeń	nauczanie się, nauka	–	środek nauczania	szkoła
Eo	lernanto	lern(ad)o	lernaĵo	lernilo	lernejo

From the above tables it turns out, that the possibilities of derivation are not always utilized in a given language or it has different possibilities for the same meaning. Esperanto makes use of all possibilities although *vendaĵo* makes way for *varo* in most cases. Also in Hungarian, the derived words (*eladó, dolgozó, tanuló*), or compound words (*munkaeszköz, taneszköz*) prevail because of its agglutinative character. The isolating Chinese proceeds similarly when putting together unchanged elements: *xue* 'learn' → *xuesheng* 'pupil', *xuexiao* 'school'.

3.4. Semantic networks

A word has relations in different levels with its synonyms, hiperonyms and hyponyms, with related activities, properties and other associative elements, with the collocations and phrasemes where it takes part. Knowing a word means to know the system of its semantic relations, the context, where it can be used. For **learning** a network of relations might be as follows.



The frames for given events can be stored in the database FrameNet (for English). Many other semantic relations (synonyms, collocations) are available in the database of WordNet (available already for several languages). Interest in semantic networks has grown also in information science (França); establishing *ontologies* has become one of the tasks of artificial intelligence.

Traditional dictionaries contain only a few expressions in the entry of the lexeme (depending on the size of the dictionary): the most important semantic description in monolingual dictionary or the translations in bilingual dictionary, the obligatory structural elements as prepositions. Many other elements would be needed to enlighten the effective use of a lexeme. It is easier to learn words which belong to the same word family or occur often together. Language acquisition means not only learning of isolated words, but acquisition of the context of their usage. A thematic dictionary structure will be presented which try to find a compromise between these two approaches (5.).

4. Dictionary structures

4.1. Alphabetical dictionaries

Mono- or bilingual alphabetical dictionaries list the lexemes in a conventional order to ensure a easy access to them; therefore the relationships between the words of the same semantic field and other relations are omitted. Only some of them can appear in the examples and expressions. Monolingual comprehensive dictionaries make use of more related notions for the definition of the word, e.g. hiperonyms as in:

dog common domestic animal, a friend of man, of which there are many breeds (Oxford Advanced Learner's Dictionary), the Hungarian monolingual dictionary (*Magyar Értelmező Szótár*) is more explicit:

kutya ház- és nyájőrzésre, vadászatra használt vagy kedvtelésből tartott háziállat 'dog domestic animal used for guarding the house and flock, for hunting or kept for pleasure.'

In the case of events, the participants are needed, e.g.:

előadás irodalmi, zenei, stb. alkotásnak, műsornak közönség előtti bemutatása. 'performance presentation of a literary, musical etc. work, of a program for a public'.

4.2. Onomasiologic dictionaries (thesauri)

Onomasiologic dictionaries (thesauri) start from the concept, and assign words to it (cp. Reichmann 1989). Thesauri can be (Marello 1989):

- *cumulative*: lists only lexemes with related words;
- *definitional*: defines the words in thematic groups;
- *bi- or plurilingual*: gives equivalents in other language(s).

Additionally, formal and encyclopedic information may be found in a thesaurus. An alphabetical index completes these kinds of dictionaries for the easier retrieval. The still popular *Roget's Thesaurus* (first published by P. M. Roget in 1852) is the prototype. It gave birth to other thesauri such as the German dictionary of Dornseiff in 1934 and the Hungarian dictionary of Póra in 1907. The cumulative thesaurus helps educated people in writing. The *Longman Lexicon of Contemporary English* (T. McArthur 1981) is an example of a definitional thesaurus – which is convenient also for non-native users.

4.3. Thesaurus dictionaries

Dictionaries of synonyms provide the main words and connect synonyms to them. The 'Hungarian Word Treasury' *Magyar szókincstár* (Kiss 1999) contains a huge vocabulary of synonyms from different stylistic layers. The synonyms can also be understood in terms of expressions (an example is the small dictionary of Tótfalusi 1997), therefore the equivalence is at the level of the situation.

Structural and semantic relations are connected in the collocation dictionary *BBI* (Benson et al. 1986, 2010³: *The BBI Combinatory Dictionary of English*, there is also an online version). It contains both linguistic and nonlinguistic information; it provides verbs and adjectives often used with the given noun, e.g.:

lecture	deliver / give / attend / follow a lecture; a lecture about / on
life	lead, prolong, save a life; devote one's life to; active, ascetic, busy, full, hard, hectic, miserable, stormy
dog	breed, keep, walk a dog; mad, rabid, vicious, wild; gun, Eskimo, guard, guide, hunting, pet, police, sheep, toy dog, watchdog; bite, growl, salivate, snap, snarl, whine, yelp; puppy, bitch

The newest thesauri such as the *Oxford Learner's Wordfinder* (1997) or the *Longman Language Activator* (2003) present important words in alphabetical order with related words and expressions with explanations and references to further related words in the given field or topic. This type of work is called an *analog dictionary* or *thesaurus dictionary*.

4.4. Thematic dictionaries

The thematic dictionaries collect everyday words into thematic groups and sub-groups; they are destined for language learners. Alphabetical order is mainly used within the groups. Sometimes some related words are located under the main words, but there

is no deeper lexicographic elaboration or conceptual grouping. The bilingual Polish dictionaries are popular such as the *Harald's dictionary* (English/French/German–Polish versions), for Hungarian, the thematic dictionary *Öné a szó* (Hungarian–German/English, American, Emericzy 1997) is available. Description of other dictionaries s. Koutny 2001.

5. Special thematic dictionaries with three languages

The *Magyar–Lengyel Tematikus szótár* ('Hungarian–Polish Thematic Dictionary', Koutny et al. 2000, description also in Koutny 2001) began with a complex internal structure for everyday language vocabulary. The participants and the main circumstances of an event are provided along with the event. The verbs and adjectives characteristic for their usage accompany the nouns. The culturally bound vocabulary can be better located in this framework in its natural place. The linguistic picture of the world is captured by the grouping of notions and location of the elements. This principle was applied also in the trilingual mini-dictionaries by Koutny (2003, 2005, 2008).

The target demographic of the dictionaries is language learners, including those preparing for examinations. They are also convenient for brushing up on vocabulary in a given language. The dictionaries can be used for learning two or all of the three languages used in the dictionary. Besides everyday language some other registers, such as slang, are included to some extent.

The trilingual dictionaries with Esperanto as a linguistic and cultural bridge between the two ethnic languages are an experiment. Only the thematic restriction makes it at all possible to find near equivalents in three languages. There are great differences in the British-American and Hungarian pictures of the world and in the organization of everyday life. Esperanto does not always have fixed terms for social structures; for example, it does not have a standardized system or policy for education (from elementary to high school) or housing. Its regular derivation system, however, endows it with a large degree of flexibility to function as a bridge between the two other languages (English–Hungarian or German–Polish as for the two current series of mini-dictionaries). So its disadvantage becomes an advantage. It can express also different linguistic structures. Both sides are mapped onto Esperanto, which then takes on the role of interlingual and intercultural mediator.

5.1. Macrostructure

The dictionary structure is more elaborated than that one of ordinary thematic dictionary: not by alphabetical order but some kind of everyday logic orders the lexemes inside a thematic group, e.g. from the general to the more specific, from the distant to the close. For example in the subchapter **Basic factors of education** the entries are:

education, crèche (US day-care center), nursery school (US pre-school, kindergarten), school, teacher, pupil (US student), class (BR form, US grade), learn / (activity) study sg, learning, material, capability (ability), know sg, course, school year (at university academic year), holidays (US vacation). **Subjects, lesson, evaluation** is the next subchapter etc. These items make up a framework of the topic of discussion and other words and expressions are subordinated to them.

5.2. Microstructure

Most of the headwords are nouns, but a verb or an adjective can take this role if it can be the center for other related (associated) words. Adjectives are dominant in the field of human properties. In the case of nouns, the subordinated groups are (cp *language* in the German-Esperanto-Polish dictionary below).

- first group (nouns): types and synonyms,
- second group: verbal expressions related to the noun (with the governments) ,
- third group: adjectives often used with the given noun
- forth group: associated words and expressions.

These groups can be embedded into another one (2-3 levels of hierarchy), so the dictionary structure is closer to a thesaurus.

LANGUAGE

Sprache *f*

- Mutter~
Fremd~
natürliche ~
Plan~
- sich verbreiten
abstammen von etw
aussterben
- o agglutinierende
gefährdete
gemeinsame
- ♣ Sprachverwandschaft *f*
Universalie *f*
Sprachgebiet *n*
- Anglophonie-Gebiet

lingvo

- gepatra ~
fremda ~
natura ~
plan~
- disvastiĝi
deveni de io
formorti
- o aglutina, algula
endanĝer(igit)a
komuna
- ♣ lingvoparenceco
universalajo
lingvo|regiono/
areo
- Anglalingvio

język

- ~ ojczysty
~ obcy
~ naturalny
~ planowy
- rozpowszechni(a)ć się
pochodzić od czego
wymierać
- o aglutinacyjny
zagrożony
wspólny
- ♣ pokrewieństwo językowe
uniwersalia *pl*
obszar językowy
- obszar anglojęzyczny

learn sg

- ~ at school/ in a course/at university
 ~ to write
 ~ to be a doctor
 ~ English
 ~ a trade
nfl swot (up), *US* cram sg

study sg

- o systematically
 well/badly
 easily
 with difficulty
 hard
 persistently
 ~ sg by heart/ rote
 superficially
 thoroughly
 ♣ something to learn
 effort

lerni ion

- ~ **en lernejo/ kurso/ universitato**
 ~ **skribi**
 ~ **por esti kuracisto**
 ~ **angle, la anglan**
 ~ **metion**
lernegi/enkapigi ion
laŭvorte, engurdi ion

studi ion

- o **sisteme**
bone/malbone
facile
malfacile, pene
streĉe
persiste
 ~ **parkere, parkerigi ion**
surface
(ĝis)funde
 ♣ **lern(end)aĵo**
fortostreĉo

(meg)tanul vmit

- iskolában/tanfolyamon / egyetemen ~
 írni ~
 orvosnak ~
 angolul/angolt ~
 szakmát ~
 (be)magol, *nfl* bevág vmit

tanul(mányoz) vmit

- o rendszeresen
 jól/rosszul
 könnyen, játszva
 nehezen, kínlódva
 keményen
 kitartóan
 könyv nélkül, kívülről
 felületesen
 alaposan
 ♣ tanulnivaló
 erőfeszítés

Summary

Knowledge organized in the mental lexicon has different relationships between its elements. The linguistic realization of this knowledge is culture dependent. Every language contains a special linguistic picture of the world. The parallelism present between the notions and between the words was investigated as was their compositionality. The high degree of compositionality is characteristic for the linguistic picture of the planned language Esperanto and to some extent to the agglutinative Hungarian.

The different semantic relations between the lexemes contribute to their whole meaning. Data bases can provide some of them, but traditional dictionaries lack them; alphabetical order can not cope with this problem, and onomasiologic dictionaries are difficult for language learners to use.

A thematic dictionary series was presented, where a special structure was designed to incorporate many of the semantic relations and the event structure in an easy-to-use format for everyday vocabulary in order to help the communicative learning and teaching of students.

Bibliography

- Anusiewicz, Janusz, Dąbrowska, Anna, Fleischer, Michael 2000: Językowy obraz świata i kultura. Projekt koncepcji badawczej. In: Dąbrowska, A. – Anusiewicz, J. (eds): *Językowy obraz świata i kultura*. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego. „Język a Kultura 13”.
- Bañcerowski, Janusz 2008: *A világ nyelvi képe* ‘Językowy obraz świata’. Budapest: Tinta Kiadó.
- Bañcerowski, Janusz 2010: A nyelv szerepe az emberi valóság megalkotásában. ‘The role of language in the creation of reality’. In: *Magyar Nyelv* 2010/2.
- Fillmore, Charles J. et al.: *The FrameNet Project*. <http://www.icsi.berkeley.edu/~framenet/>.
- Fodor, Jerry 1975: *The Language of Thought*. New York: Crowell., see also the Internet Encyclopedia of Philosophy: <http://www.iep.utm.edu/fodor/>.
- França, Patricia Cunha: Onomasiological dictionaries and ontologies. http://www.academia.edu/367274/Onomasiological_dictionaries_and_ontologies.
- Jansen, Wim 2011: Esperanto: a language made transparent? In: Kees Hengeveld (ed.): *Transparency in Functional Discourse Grammar*. Amsterdam: ACLC. *Linguistics in Amsterdam* 4. <http://linguisticsinamsterdam.nl/aclc/04/nr02/a03>.
- Koutny, Ilona 2001: A fogalomosztályozástól a tematikus szótárakig ‘From notion classification to thematic dictionaries’. In: *Hungaro–Slavica* 2001. *Studia in honorem Jani Bancerowski*. István Nyomárkay (ed.). ELTE, Szlav és Balti Filológiai Intézet. Budapest. 113–121.
- Koutny, Ilona 2004: A fogalomtól a nyelvi kifejezésig ‘From concept to linguistic expression’. In: Ladányi M., Dér Cs., Hattyár H. (eds) 2004: „...még onnét is eljutni túlra...” Nyelvészeti és irodalmi tanulmányok Horváth Katalin tiszteletére. Budapest: TINTA Könyvkiadó. 361–368.
- Koutny, Ilona 2010: Esperantlingva bildo de la mondo. In: Detlev Blanke, Ulrich Lins (eds) 2010: *La arto labori kune. Festlibro por Humphrey Tonkin*. Rotterdam: UEA: 290–305.
- Koutny, Ilona 2011: In welchen Farben sehen die Ungarn die Welt? Kontrastiv-phraseologische Untersuchung. In: *Berliner Berichte zur Hungarologie* 16, Berlin – Budapest. 169–187.
- Marello, Carla 1989: The Thesaurus. In: Hausmann, F.-J./Wiegand, H.-E./Reichmann, O./Zgusta, L. (Hrsg.): *Dictionaries. An International Handbook*. Berlin. New York.
- Reichmann, O. 1989: Das onomasiologische Wörterbuch: ein Überblick. In: Hausmann, F.-J. / Wiegand, H.-E. / Reichmann, O. / Zgusta, L. (eds): *Dictionaries. An International Handbook*. Berlin. New York.

Dictionaries

- Benson, Morton, Benson, Evelyn, Ison, Robert 1986, 2010³: *The BBI Combinatory Dictionary of English: A Guide to Word Combinations*. Amsterdam. Philadelphia; online version available: <http://www.diclib.com/cgi-bin/d1.cgi?l=en&base=bbicombinatory&page=showindex>.
- Kiss, Gábor 1999²: *Magyar szókincstár. Rokon értelmű szavak, szólások és ellentétek szótára*. Budapest: Tinta Kiadó.
- Koutny, Ilona, Jarmolowicz, Jolanta, Gizińska, Csilla, Fórizs, Emília 2000: *Magyar–lengyel tematikus szótár. Węgiersko-polski słownik tematyczny*. Poznań: ProDruk.
- Koutny, Ilona 2003: *English-Esperanto-Hungarian mini-dictionary on Language and Communication*. Poznań: ProDruk.
- Koutny, Ilona 2005: *English-Esperanto-Hungarian mini-dictionary on Human Life and Housing*. Poznań: ProDruk.
- Koutny, Ilona, Brosch C., Jaskot, M., Vogt, H. 2008: *Deutsch-Esperanto-Polnisches kleines Wörterbuch: Sprache und Kommunikation*. Poznań: ProDruk.

Tótfalusi, István 1997: *Színes szinonimatár*. Budapest.

Trappes-Lomax, Hugh 1997: *Oxford Learner's Wordfinder Dictionary*. Oxford: Oxford University Press.

FrameNet https://framenet.icsi.berkeley.edu/fndrupal/framenet_search

Word Net <http://wordnetweb.princeton.edu/perl/webwn>

Websites checked: 03/2013